REPUBLIC OF CYPRUS
MARINE ACCIDENT AND INCIDENT INVESTIGATION COMMITTEE

[Investigation Report No: 55E /2014]

Very Serious Marine Casualty

Death of Seaman due to entry into enclosed space, on the Multi-Purpose Dry Cargo Ship "UBC TOKYO", at the port of Vitoria - Brazil, on the 28th of June, 2014

Foreward

The sole objective of the safety investigation under the Marine Accidents and Incidents Investigation Law N. 94 (I)/2012, in investigating an accident, is to determine its causes and circumstances, with the aim of improving the safety of life at sea and the avoidance of accidents in the future.

It is not the purpose to apportion blame or liability.

Under Section 17-(2) of the Law N. 94 (I)/2012 a person is required to provide witness to investigators truthfully. If the contents of this statement were subsequently submitted as evidence in court proceedings, then this would contradict the principle that a person cannot be required to give evidence against themselves.

Therefore, the Marine Accidents and Incidents Investigation Committee, makes this report available to interested parties, on the strict understanding that, <u>it will not be used in any court proceedings anywhere in the world.</u>

GLOSSARY OF ABBREVIATIONS AND ACRONYMS

AB - Able Bodied Seaman, an experienced and qualified member of the deck crew
APT – After Peak Tank
Aus - Australian ladder
BA - Breathing Apparatus
CC - Cargo Compartment (Cargo Hold)
Foreman - Supervisor/Shore
C/O – Chief Officer
CoC - Certificate of Competency
CYCOSWP – Cyprus Code of Safe Working Practices for Merchant Seamen
CPR - Cardiopulmonary resuscitation
DPA - Designated Person Ashore
EEBD - Emergency Escape Breathing Device
GT - Gross Tons
H2S - Hydrogen Sulphide (an extremely hazardous, toxic gas)
ISM Code - International Management Code for the Safe Operation of Ships
Knots - Speed in nautical miles per hour
MPDCS -Multi Purpose Dry Cargo Ship
DBT –Double Bottom Tank
DO – Diesel Oil
DOT – Diesel Oil Tank
ETA - Estimated Time of Arrival
EDT - Estimated Time of Departure
IMO - International Maritime Organization
ILO - International Labour Organization
LT - Local Time
m - metre
MT - Metric Ton
OOW - Officer of the Watch
OS - Ordinary Seaman
OOW - Officer of the Watch
ppm - parts per million
PTW - Permit to Work
RA - Risk Assessment
2/O - Second Officer
SMC - Safety Management Certificate
SMS - Safety Management System
SOLAS - The International Convention for the Safety of Life at Sea 1974 (as amended)
STCW - The International Convention on the Standards of Training, Certification and Watchkeeping for Seafarers 1978 (as amended
VHF - Very High Frequency Hand Held Radio (Walky Talky)
UTC - Universal Time Co-ordinated
ZT - Zone Time

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Summary

A fatality was investigated in which a Second Officer suffered Acute Myocardial Infarction (Heart Attack) when entered in an enclosed space.

In conducting its investigation, the Marine Accident Investigation Committee (MAIC) reviewed events surrounding the accident, conducted extensive interview of the Master at Company's headquarters at Limassol-Cyprus, reviewed written statements from the crew members involved and documents provided by the ship's Management Company and performed analyses to determine the causal factors that contributed to the accident, including any management system deficiencies.

Accident Description

The accident occurred at approximately 05:00 LT on 28/06/2014 at Praia Mole Terminal No2, Vitoria-Brazil, when the Second Officer of the M/V "UBC TOKYO", entered in a Cofferdam containing an Australian ladder, leading to a cargo hold. His purpose was to check for damages in the hold, as soon as discharging of the hold was completed.

Two other crew members who went into the cofferdam to assist the Second Officer lost their consciousness.

The alarm was raised by the Chief Officer and a rescue operation was undertaken by the ship's rescue team. The Second Officer and the other two crew members were recovered from the cofferdam.

Fire and rescue services subsequently attended. Fire-fighters provided first aid on the ship's deck, until two Ambulances with Paramedics arrived.

The two crew members who went into the cofferdam to assist the Second Officer regained consciousness, but, despite intensive resuscitation efforts, the Second Officer, did not survive. He passed away during his transfer to the hospital, despite best efforts (injection and defibrillator assistance), of the Ambulance's Paramedics.

The Direct Cause of the accident (death) was Acute Myocardial Infarction.

The Root Cause of the accident was perceived absence of threat in an enclosed space.

The Contributing Causes of the accident were:

1. Violation of the enclosed space entry procedure.
2. Disregard of defenses (barriers) i.e. safety signs at the entrance of an enclosed space.
3. Failure to use defenses (barriers) i.e. any of the ship's Personal Protective Equipment.
4. Ongoing corrosion of the Cofferdam's steel structure that caused oxygen depletion.
5. Oxygen depletion (most probably oxygen depletion and maybe Petcoke cargo dust) was a contributing factor to the death of the Second Officer, due to his medical condition and a contributing factor to the loss of consciousness of the other two crew members.
6. Pre-Existing Physical Illness of the Second Officer.
7. Lack of familiarization with the Procedure for entering into enclosed spaces.
8. No implementation of the Drill Plan.

Recommendations

1.Management Company to consider that these violations may also carry consequences.
2. Management Company to consider installing fans in the Cofferdams which start automatically when the cover of the hatchway opens.
3. Management Company to develop specific procedure for entry into the Cofferdams.
4. Management Company to place on board additional oxygen analyzers
5. Management Company to follow up the implementation of the Drills Plan through the DPA.

2. Factual Information

2.1. Ship particulars

IMO: 9300752
Name of ship: UBC TOKYO
Call sign: C4DT2
MMSI number: 210786000
Flag State: CYPRUS
Type of ship: Multi-Purpose Dry cargo ship Equipped for Container Carriage
Gross tonnage: 24, 140
Length overall: 182.59m
Classification society: GL
Registered ship owner: Speedwave Shipping Co. LTD, Limassol-Cyprus ID: 4104114
Ship's Company: Athena Marine Co. LTD, Limassol-Cyprus ID:1469388
Year of build: 2005
Deadweight: 37,865
Hull material: Steel
Hull construction: Single Hull
Propulsion type: AKASAKA Mitsubishi 6UEC52LS 7900KW @ 12 0 RPM, 14,5Kn@25MT F.O.
Type of bunkers: IFO & MDO
Number of crew on ship's certificate: 17

2.2. Voyage particulars

Port of departure: Venezuela Jose Terminal
Port of Destination: Vitoria, Brazil
Type of voyage: International
Cargo information: 36,750 MT Green Delayed Petroleum Coke in bulk
Manning: 22
Draft: Fwd= M Aft=M

2.3. Marine casualty or incident information

Type of marine casualty/incident: Very Serious Marine Casualty
Date and time: 28/06/2014 @05:00 LT
Position: Lat.: Long.:
Location: Praia Mole Rerminal 2, Vitoria-Brazil
External and internal environment: Slight sea, Gentle br, Partly cloudy, Night, Vis. good
Ship operation and voyage segment: In port-Discharging

Place on board: **Enclosed Space-Cofferdam/Void Space**

Human factors: **Yes/ Human Error /Decision**

Consequences
Death: 1
Injury: 2

2.4. Shore authority involvement and emergency response

Fire –fighters provided first aid on the ship's deck until two (2) Ambulances with Paramedics arrived and transferred the Second Officer and the AB to the Hospital.

Fig.1 M/V "UBC TOKYO"

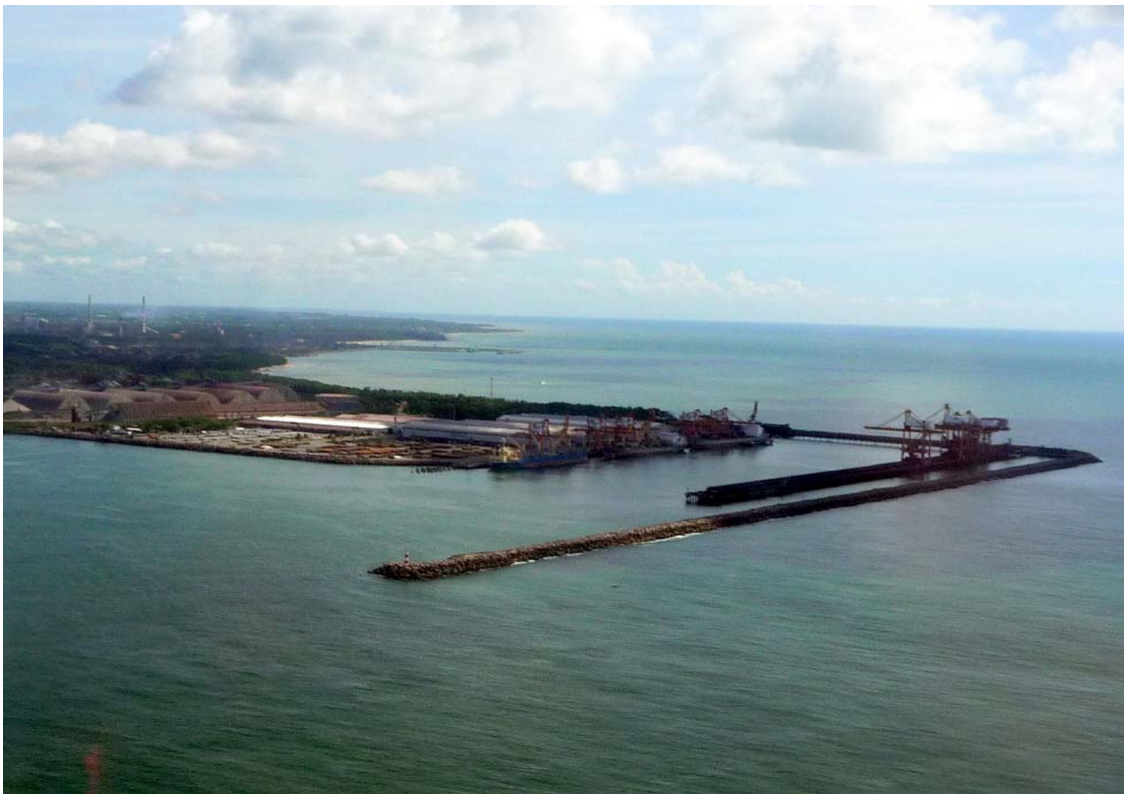


Fig.2 Praia Mole Terminal Vitoria-Brazil

Fig.3 " UBC TOKYO" at the Praia Mole Terminal, Port of Tubarão, on the day of the accident-Aft

Fig.4 UBC TOKYO at the Praia Mole Terminal, Port of Tubarão, on the day of the accident-Forward

Fig.5 Google Earth image of the accident site

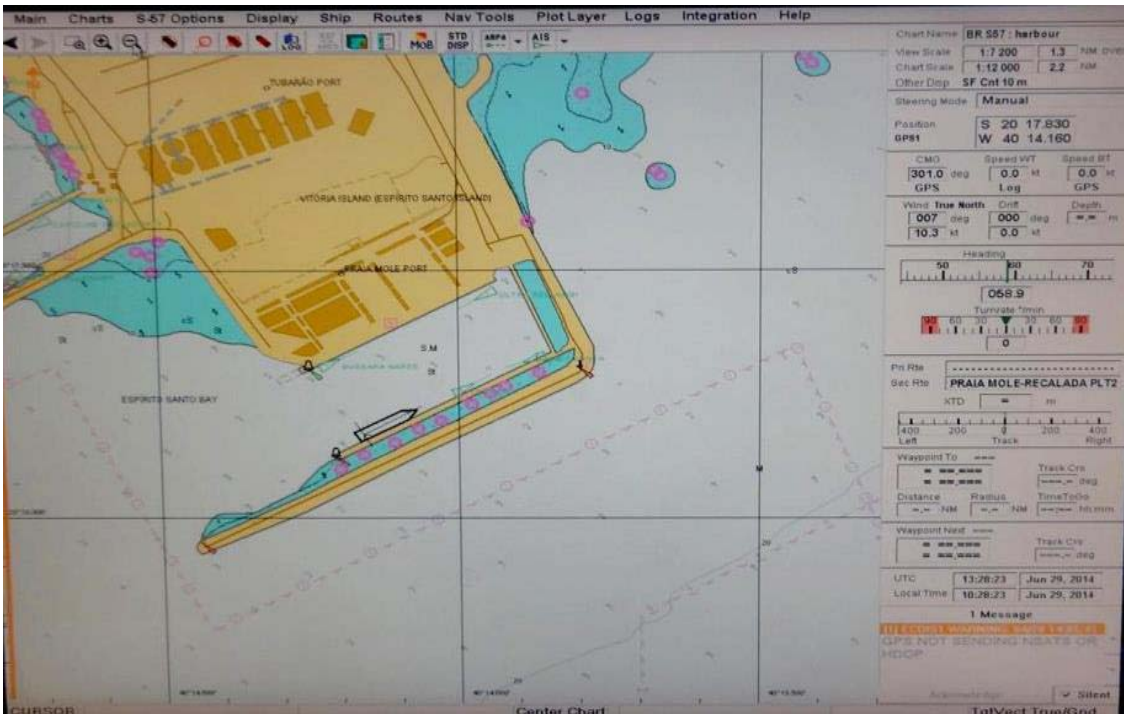


Fig.6 Image from the ECDIS of "UBC TOKYO"- ship's position on the day of the accident

3. Narrative

3.1 Sequence of Events:

1. On 01/06/2014 the M/V "UBC TOKYO", departs from Jose Terminal at Venezuela, loaded with 36,750 MT Green Delayed Petroleum Coke in bulk.

2. Loaded passage from 01/06/2014 until 14/06/2014 i.e. 14 days.

3. On 14/06/2014 at 15:30 hours LT arrives at Vitoria anchorage, Brazil.

4. From 14/06/2014 until 27/06/2014 at anchor in Vitoria anchorage.

5. On 27/06/2014 at 12:00 hours LT berthing starboard side alongside Vitoria, Praia Mole Coal Terminal, Berth No 2.

6. On 27/06/2014 at 13:30 hours LT commencing discharging operations.

7. On 28/06/2014 at 03:15 hours LT, completed discharging and sweeping of No3 Cargo Compartment (CC) (Cargo Hold). Stevedores leaving via the forward vertical ladder. Hatch Covers (HC) remain open.

8. On 28/06/2014 at around 04:30 Hrs LT, the Second Officer (2/O) on Watch (12 – 6), the A.B. on watch (4 – 8) and the Ordinary Seaman (OS) on watch (4 – 8) (who is on duty at the Gangway as Watchman with Security duties), meet at the Gangway at the starboard side of the ship. Discharging and Ballasting operations in progress.

9. The 2/O says to the OS and the AB that he will go to No 5 CC which completed discharging to check for damages.

10. At 04:35 Hrs LT, the Second Officer (2/O) on wach (12 – 6) instructs the A.B. on watch (4 – 8) to tell to the Shore Crane Operators to discharge cargo from the starboard (stbd) side of the CC No2 and CC No6, due to the fact that the ship inclines to stbd. Also, to take soundings of all ballast tanks, starting from No4 Double Bottom Tank (DBT) which is being ballasting.

11. AB acknowledges receipt of task.

12. AB prepares his sounding tools.

13. AB proceeds onto the Main Deck near No5 CC's Hatch Coaming (HC).

14. 2/O meets AB on Main Deck near No5 CC' HC and tasks him to open No5 CC's entrance hatchway cover. (AB holds entrance hatchway covers padlock keys).

15. AB asks the 2/O, from which way he wants to go in the No5 CC, i.e. via the straight vertical ladder which is located at the forward corrugated bulkhead of the No5 CC, or via the Australian (Aus) ladder which is installed within a Cofferdam located between the aft bulkhead of the No5 CC and the forward (fwd) bulkhead of No6 CC.

16. The 2/O says via the Aus ladder.

15. The 2/O and AB open No5 CC's aft entrance hatchway cover. (Cofferdam's lights Off)

16. The 2/O asks the AB if he knows where in the accommodation the Cofferdam's lights' switches are, and orders the AB to go inside the Accommodation to switch-on the Cofferdam's lights.

17. The AB goes into the Accommodation, switches on the Cofferdam's lights and asks on his VHF the 2/O if they are ON.

18. The 2/O replies on his VHF: "It is now On-Thank you".

19. The AB proceeds to perform his task.

20. The AB takes first, sounding of No4 Ballast Tank.

21. AB reports sounding of No4 Ballast Tank to the 2/O on the VHF.

22. The 2/O does not confirm receipt (no reply).

23. The AB calls on the VHF the OS who is on duty at the Gangway and reports the sounding of No4 Ballast Tank.

24. The AB proceeds forward to take soundings from No1-2-3 Ballast tanks.

25. **At 05:20** the Chief Officer (C/O) wakes up. Turns On his VHF on Channel 6 and calls the 2/O in order to ask him about the cargo operation. No reply by the 2/O. The C/O does not worry. He considers that it was normal not to get a reply because the 2/O may be far from the Accommodation or may be checking the forward mooring lines.

26. **At 05:23** the C/O calls twice the 2/O on the VHF- No reply from the 2/O.

27. The AB overhears on his VHF the C/O while is taking sounding of No3 Ballast Tank.

28. The AB grabs his VHF radio and informs the 2/O that the C/O is calling him "Second Officer come in- Chief is calling you"

29. No reply from the 2/O.

30. The C/O asks the AB: "Have you seen the 2/O? How many holds completed discharging?

31. The AB answers to the C/O that he doesn't know, because he is occupied with the ballasting operation and constantly taking soundings of No4 port & stbd DBTs.

32. The AB calls on his VHF the OS and asks him: "Did you see the 2/O?"

33. The OS replies: “Not yet. Maybe he is still in No5 CC”.

34. The C/O assumes that the 2/O’s VHF may have run out of battery while he was still in No5 CC and orders the AB to find the 2/O.

35. The AB goes to No5 CC’s Hatch Coaming. The Hatch Covers are open. Looks over the Hatch Coaming, inside the hold. He does not see the 2/O.

36. The AB goes to No5 CC’s aft entrance hatchway and shouts twice – No reply.

37. The AB proceeds aft to take soundings from No 5-6 DBTs & After Peak Tank (APT).

38. The AB passes in front of the Gangway, going aft for sounding the APT and says to the OS “I didn’t see the Second Mate inside the hold No5, maybe he is checking the draft now - you did not notice passing here in the Gangway?”

39. The OS answers to the AB “I am sure – he did not pass from here”.

40. The AB replies to the OS: “After I record on the sounding board, I will go down in No5 hold to check for the Second Officer”.

41. The OS replies to the AB “I can record it”.

42. The AB gives to the OS the sounding record written on a small piece of paper (in order to record the soundings taken, on the sounding board).

43. The AB immediately goes to the No5 CC aft entrance hatchway.

44. The AB arrives at No5 CC aft entrance hatchway, smells normal air, no odor, no fumes.

45. The AB is entering from No5 CC aft entrance hatchway into the Cofferdam, proceeds downwards and feels a little different temperature, but still no sign of any present fumes, so he continues stepping down.

46. The AB stands on the first platform of the Aus ladder, sees something at the next platform (2nd platform of the Aus Ladder).

47. The AB steps down a little bit further to see better and realizes that is the 2/O lying on the 2nd platform of the Aus ladder, facing downwards.

48. **At 05:26 Hrs LT**, the AB grabs his VHF and calls the Gangway OS “Call for help – tell the Chief Officer that the 2/O is down on the platform unconscious”. The AB feels difficulty in breathing, but he can still breathe. He does not notice any fumes therefore he thinks that the 2/O may have slipped on the ladder and fell and proceeds down to help him. Whilst proceeding down on the ladder, he calls him twice “Sec are you OK?” When he reaches him, checks his breathing and pulse. Then, the AB collapses/looses consciousness - he thinks that he is at his home, lying on his bed with lights off.

Fig.7 Entrance hatch on deck and Lower door in the Cargo Hold

Fig.8 Entrance hatch on deck

Fig.9 Lower door in the Cargo Hold

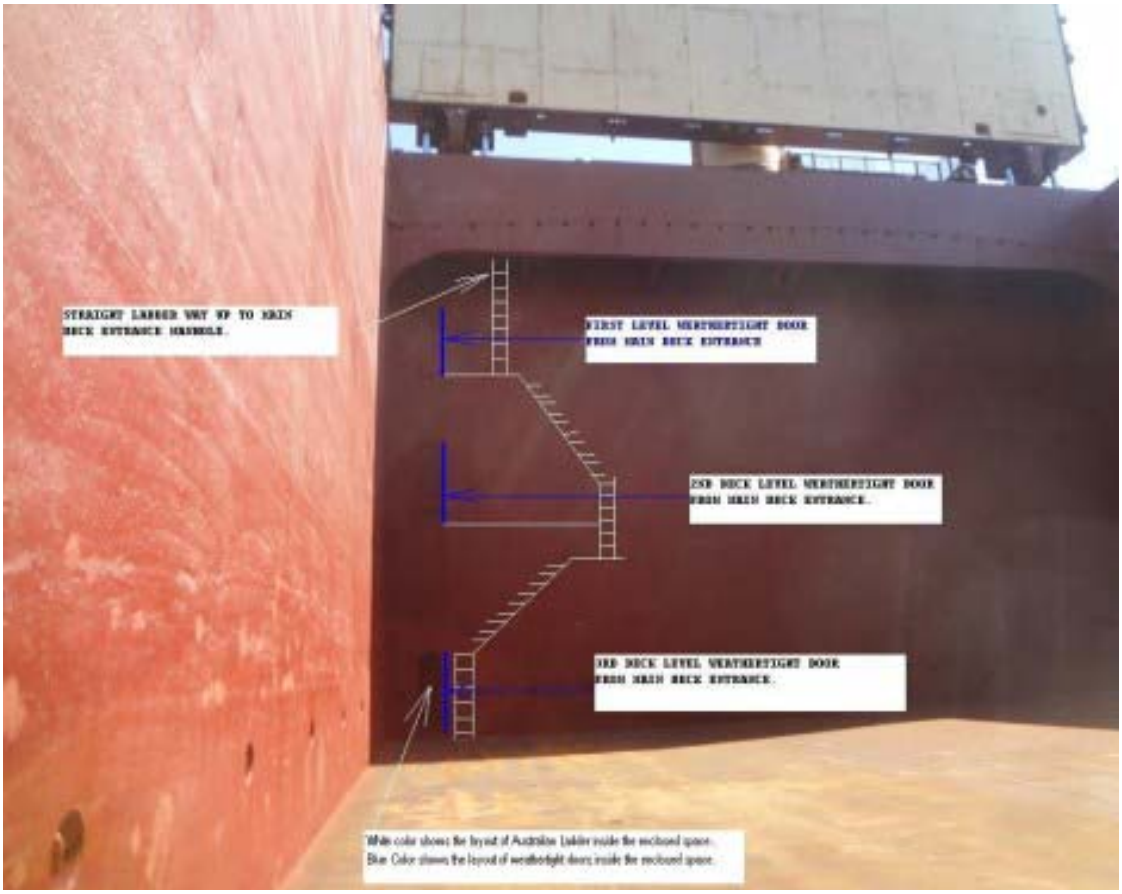


Fig.10 Aus Ladder installed within Cofferdam

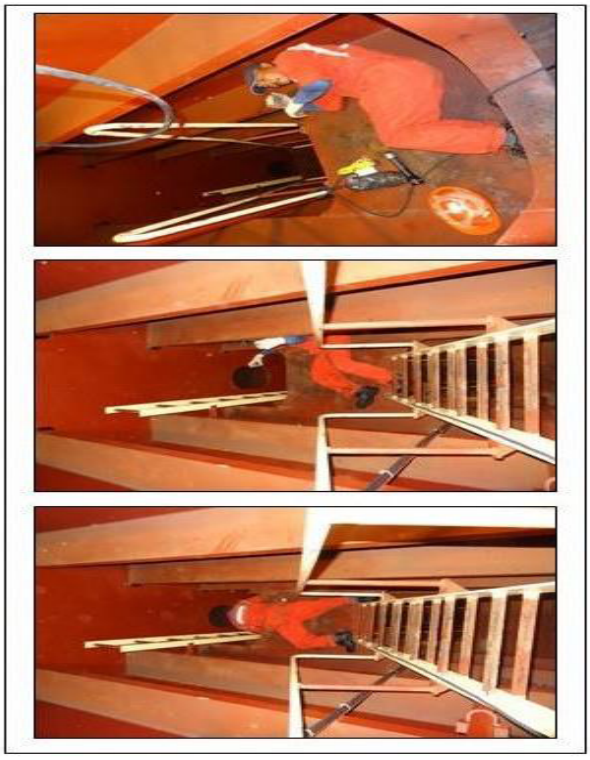


Fig.11 The OS up, close to the entrance hatch- The 2/O and AB at the same level

49. The C/O hears on his VHF the AB's call (done at 05:26) and assumes that the 2/O fell down from the No5CC's Aus ladder. He calls on his VHF the Engine Room and asks to stop the ballasting operation (stop the pumps) and orders the Gangway OS, to check what assistance is needed at No5 CC's aft entrance hatch.

50. Gangway OS rushes to No5 CC's aft entrance hatchway and sees the AB sitting on the second platform of the Aus ladder and the 2/O lying down, in front of the AB. He calls them by their names and steps down, to the second platform, grabs the AB to pull him up, but his body shakes, steps up to the first platform, loses his consciousness and falls down on the first platform.

51. Then, the C/O arrives at No5 CC's aft entrance hatchway, where he sees the OS lying down, on the Aus ladder first platform.

52. **At 05:30** the Chief Officer goes into the Accommodation and raises the ALARM to wake up all crew. He announces on the Public Address System of the ship that there is a casualty at No5 CC aft entrance hatchway on the Aus ladder and that Breathing Apparatuses (BA) sets are needed.

53. Bosun wakes up-recognizes Chief Officer's voice saying that there is a casualty at No5 CC aft entrance hatch on the Aus ladder. He wears his clothes and then goes to the Safety Locker, takes a BA set and proceeds to No5 CC aft. At the same time, the Third Officer (3/O) and the Wiper hear the announcement and rush to the Safety Locker, take BA sets and proceed to No5 CC aft.

54. Ship's Rescue Team gathers at No5 CC aft with four (4) BA sets. The Master arrives at the scene. The C/O informs Master that there are three (3) persons in the Cofferdam i.e., the 2/O, the AB and the OS. The Cargo Supervisor/Shore (Foreman) arrives at the scene. The Master tells him that medical assistance is needed immediately. The Foreman calls for assistance.

55. Bosun puts on one BA set and enters into the Cofferdam. (According to the Master's statement, the BA set was checked by the 3/O, and found operational).

56. Bosun sees on the 1st platform the OS and on the 2nd platform the 2/O and AB.

57. Bosun speeks to the OS who is conscious and replies.

58. Bosun calls for assistance to get the OS out from the Cofferdam. He assists him to stand up and ties a rope around him. Then the OS is being heaved up on the deck by crew members.

59. Bosun proceeds down to the 2nd platform.

60. Bosun speeks to the 2/O and AB but they don't answer. Then he checks their breathing. The AB is breathing weakly but the 2/O no. (The 2/O is facing down- and his head and arms are in the hole leading to the next level of the Aus ladder).

61. In the mean time the Wiper puts on a BA set (assisted by the C/O).

62. Two other crew members put on BA sets and enter into the Cofferdam. The one of these two was the new Bosun.

63. Bosun ties a rope around the unconscious AB, the Wiper keeps his arms up and then the new Bosun assists him to step up on the Aus ladder, until is being heaved up on the deck by other crew members.

64. Fire-fighters (just arrived at the scene after they were called by the Foreman) checking him and find that he is breathing - he recovers without provision of first aid.

65. The Wiper checks the unconscious 2/O's pulse. He can't feel it. Tries to lift him up but he can't because the 2/O is too heavy, therefore he calls for assistance.

66. Bosun goes down again and ties a rope around the 2/O and then he is being heaved up on the deck by crew members.

67. The Fire-fighters start providing resuscitation to the 2/O.

68. Two Ambulances arrive. The AB is being transferred in the one and the 2/O in the other. The 2/O is injected and is provided defibrillator assistance.

69. The AB in the ambulance which is transferring him to the hospital recovers his senses/consciousness and says "Please help Second Mate". He remains in the Hospital about eight (8) hours and returns to the ship.

70. The 2/O dies. His body will remain in the Mortuary about one month according to the local practice. The Coroner's report will be released about 45 days later according to the local practice.

71. His personal belongings are recorded sealed and photographed on board and will be sent to his family from the next port of call.

72. Coroner's report:

    A post mortem examination of the 2/O indicated that he died as a result of Acute Myocardium Infarction.

    Conclusions of the Coroner's report:
    Given the data collected during necropsy and results of examination we conclude that the cause of death was: Acute Myocardium Infarction.

1. If there was death? Yes
2. What is the cause of death? Acute Myocardium Infarction
3. Which instrument or means employed that caused the death? Natural death
4. If it was produced by poison, fire, explosives, smothering or torture by insidious or cruel (response specified). Not for all items

4. Analysis

(The purpose of the analysis is to determine the contributory causes and circumstances of the accident as a basis for making recommendations to prevent similar accidents occurring in the future).

The following analysis draws on documents and written statements from the crew provided by the vessel's Management Company, an interview taken from the Master by the MAIC Investigator at the Company's Headquarters at Limassol, an accident investigation report prepared by the ship's Management Company (as required by ISM Code Section 9) and a P&I Club's representative report.

4.1 People Factors

Training and Certification

"UBC TOKYO" was manned with crew licensed, qualified and medically fit in accordance with the requirements of the International Convention on Standards of Training Certification and Watchkeeping (STCW) Convention as amended.
The 2/O was holder of STCW II/1-Certificate of Competency "Officer in Charge of a Navigational Watch". The AB and the OS were holders of STCW II/4-Certificate "Deck Rating, Support Level".
Training for entering enclosed spaces is a subject included in the Basic Safety Training which all seafarers are undergoing as required by the STCW Code as amended: Part A Chapter VI/1-4: "Precautions to be taken prior to entering enclosed spaces").

A lack of training and certification was not a contributory factor to the accident

Manning level

At the time of the incident, she was manned well in excess of the vessel's Minimum Safe Manning Document. She had a crew of 22, although her Minimum Safe Manning Document provides for 17. The Master was Polish and all others Filipinos including one Deck and one Engineer Cadets.

A lack of manpower was not a contributory factor to the accident.

Alcohol Impairment

There was no evidence to suggest that alcohol or drugs were taken by any of the crew members involved in the accident**.**

Fatigue

Fatigue was not considered a contributory factor, due to those on watch being rested prior to undertaking duty, more than 6 hours.

Organization on board

While in port the scheduled daily work hours of the Chief Officer and the Bosun who perform non-watchkeeping duties are (06-12) - (13-17).
Watchkeeping duties are performed by the Second Officer (00-06) - (12-18) and the 3/O (06-12) - (18-24).

Three ABs (AB1, AB2, AB3) perform watchkeeping duties AB1 (4-8)-(16-20), AB2 (08-12)-(20-24), AB3 (00-04)-(12-16).
Two OSs and one Deck Cadet perform Security duties mainly being at the Gangway.
OS1 (4-8)-(16-20), OS2 (00-04)-(12-16), and the Deck Cadet (08-12)-(20-24).
At the time of the accident i.e. at about 05:00, on watch were the Second Officer (00-06) - (12-18), the AB1 (4-8)-(16-20), OS1 (4-8)-(16-20).

Rank		**Age**	**On Board**
Master	(STCW II/2)	54	4 Months
Chief Officer	(STCW II/2)	40	2 Months
Second Officer	(STCW II/1)	40	2 Months
A.B.	(STCW II/4)	25	10 Months
O.S.	(STCW II/4)	27	2 Months

There was no language barrier between the AB and OS and their officers.
Their duties corresponded to their qualifications and experience.

There was no evidence to suggest that, the organizational conditions on board were a contributory factor to the accident.

Working and Living Conditions
At the time of the incident, the ship had valid Maritime Labour Compliance Certificate (MLC) issued by GL, along with a Declaration of Maritime Labour Compliance (DMLC) issued by her flag state.

There was no evidence to suggest, that, the working and living conditions was a contributory factor to the accident.

Physiological, Psychological, Psychosocial Condition
All crew members involved were holders of medical certificate for service at sea issued in compliance with the STCW and MLC, 2006 Conventions as amended. They were certificated as fit for sea duty without restrictions and not suffering from any medical condition likely to be aggravated by service at sea or to render the seafarer unfit for such service or to endanger the health of other persons on board.

There was no evidence to suggest that involved crew members' physical, physiological, psychological, or psychosocial condition was such that could have contributed to the accident. They were physically and mentally fit to perform their job.

4.2 Ship and Cargo

The Ship

M/V "UBC TOKYO" is a Multi-Purpose Dry Cargo Ship equipped for container carriage. She has 6 Holds / 6 Hatches. Her Cargo Gear consists of 3x36 MT Mitsubishi cranes with 3x12 cubic meters grabs.

She has LOA / LBP x B x D: 182.59 /174.60 x 28.60 x 15.06 M and DWT 37,865 at summer draft.

Main Engine "Akasaka-Mitsubishi 6UEC52IS". Output 7890 KW@120 RPM.

MDG/Aux. Engine 2 x Yanmar 6N18AL/550KWX120RPM.

At the time of the accident, she was classed with the GL and had valid certificates including an ISM certificate. The maintenance records indicated that she was maintained in accordance with existing regulations and approved procedures.

There was no evidence of any defect or malfunction that could have contributed to the accident.

The ship availed Personal Protective Equipment (PPE) consisting of four (4) Breathing Apparatus (BA) sets, an Oxygen Content Meter, a Gas Detector, Gas Masks and Dust Masks. The Oxygen Content Meter was kept by the Chief Officer.

She has 6 Holds / 6 Hatches. Between holds i.e. between 1-2, 2-3, 4-5, 5-6 there is an empty space, named Void Space (Cofferdam), which is considered as Enclosed Space according to the definition contained in IMO Resolution A . 1050 (27).

(IMO ResolutionA.1050 (27) Paragraph 2.1: Enclosed space means a space which has any of the following characteristics: 1-limited openings for entry and exit-2 inadequate ventilation; and-3 is not designed for continuous worker occupancy).

In the Cofferdam an Australian ladder (Aus ladder) is installed. The Aus ladder is a requirement of the Australian government, for ships which are going to load grain, ores, or other bulk cargoes from an Australian port. Through the Cofferdam and its Aus ladder, is provided access to the aft of the hold. Access to the forward of the hold is provided by a vertical ladder attached on the forward corrugated bulkhead. Access to the Cofferdam from the main deck, is provided by an entrance hatchway with hatch cover. The entrance hatchway cover closes watertightly with butterflies and rubber packing. It can be padlocked. On one of the sides of entrance hatchways is visibly written**: "CAUTION-BE SURE TO CONFIRM PROPER OXYGEN CONTENT BEFORE ENTERING INTO CARGO HOLD OR VALVE SPACE – NO SMOKING NO OPEN FIRE".** On the cover of the entrance hatches is written: "**RESTRICTED AREA-AUTHORIZED PERSONNEL ONLY-UNAUTORIZED PRESENCE IN THIS AREA COSTITUTES A BREACH OF SECURITY"**

The Aus ladder avails two intermediate platforms for providing rest to the workers using it and inclined sections with protecting rails. At the lower end of the Cofferdam, at tanktop level, there is a watertight door which provides access to the hold. When it is closed, becomes part of the holds aft bulkhead.

During the last voyage, i.e. from the 1st until the 27th of June, all Cofferdams' entrance hatchway covers were closed and padlocked. Also all lower doors leading into the holds were closed before commencement of loading at Jose Venezuela, (to not leak cargo from the holds into the Cofferdams). Any one of the ship's Cofferdams was for about a month, an hermetically enclosed space. Photographs of the lower part of the Cofferdam show that rust was formed. It is assumed that the reason was consumption of oxygen which existed in the hermetically closed Cofferdam. Ongoing corrosion of the Cofferdam's steel structure caused oxygen depletion. The deterioration in O2 levels would have been slow and progressive. Normal air contains 21% oxygen. Subsequent measurements made by the Management Company's Superintended indicated that the oxygen content in ship's Cofferdams at the level of the 2nd platform was 14% which causes respiration increase and poor judgment. Oxygen content 8-10% causes fainting (weakness) unconsciousness, nausea, vomiting.

It is assumed that ongoing corrosion of the Cofferdam's steel structure that caused oxygen depletion was a contributing factor to the accident.

Fig. 12 Lower part of Cofferdam – Rusty surface

Fig.13 Vertical access ladder attached on the forward corrugated bulkhead

Acute myocardial infarction, is the medical name for a heart attack, refers to a heart condition that is caused when the blood circulation or flow is abruptly cut off from the heart. The break in circulation lasts long enough to cause tissue damage or death.

Heart attack is when the heart muscle doesn't get enough oxygen. Cells start dying and it cancause a permanent damage. If it's in a big area it can cause the heart to stop working. Mostly it happens when the arteries get plugged by fat, takes years to accumulate but when it happens- it can be deadly.

It may be a work-related injury if it results from unusual stress or unusual exertion. Therefore, it can be assumed that if the oxygen content was about 14% or less, could have caused the 2/O respiration increase which led to stress and subsequent heart attack.

The fact that the other two crew members, the AB and the OS lost consciousness but did not suffer heart attack, leads to the conclusion that the 2/O had a heart problem. Probably he wasn’t aware off and not diagnosed during pre-embarkation medical examination. Hadn’t had a heart problem he would have lost his consciousness or asphyxiated, but would not have suffered a heart attack.

Therefore it is assumed that oxygen depletion was a contributing factor to the death of the Second Officer, due to his medical condition and a contributing factor to lose consciousness for the other two crew members.

The Cargo

The ship was loaded with 36,750 MT Green Delayed Petroleum Coke in bulk.

UK P&I Club's, Loss Prevention Bulletin 858-12/12 states:

Quote

Petroleum coke (petcoke) is a bulk by-product of oil refining. Among other end-uses, it is traded as a form of fuel (*e.g.* for cement manufacture) or an input to other industrial applications (*e.g.* smelting). It is commonly transported at sea in bulk carriers. As with most other bulk cargoes, after discharge there remain residues in the holds and on deck which must be cleaned before new cargoes can be loaded.

The physical properties of petcoke:
Petcoke is a black powder, granular or needle-like substance, consisting mainly of carbon (84-97%), produced during the thermal decomposition of heavy oils in refining.
It exists in various forms, including green coke (also known as raw or delayed petcoke), calcineable, sponge, needle or regular petroleum coke.
Green petcoke is the product of delayed coking and contains significant hydrocarbon content. It has a distinctive hydrocarbon smell and depending on the heating rate of the refining process, can contain from 4 to 15% volatile material, including Polycyclic Aromatic Hydrocarbons (PAH).
Petcoke Material Safety Data Sheets (MSDS), the classification of petroleum substances according to the EU dangerous goods directive 4 and the GESAMP/EHS5 composite list of hazard profiles 2003/2004 all state that petcoke is *not* considered a hazard to the marine environment. It is also worth noting that, although petroleum coke is described as non-hazardous, <u>there are potential human health effects relating to the small particulate matter within the powder or granules as inhaled (i.e. airborne) dust.</u>

Unquote

The Consignor of the cargo, provided to the ship, the Form for cargo information.
Among other information, the following are stated:
Quote

Material Hazard Evaluation 1.0 states: "Health: non-hazardous unless dust is produced or off-gases emitted" and Precautionary Statement: <u>caution</u>: do not inhale dust. Coke is combustible solid.

Health Hazard Data 6.0 states: Toxicity summary: Practically non-toxic, except when dust or Have gases are emitted. Acute exposure symptoms. <u>Inhalation: pulmonary irritation due to dust or off gases.</u>

Unquote

It could not be established whether dust or off gasses escaped from the hold, through the lower door (the access door, from the Cofferdam into the hold). Pulmonary irritation (Health Hazard Data 6.0), can be a contributing factor in causing Acute Myocardial Infarction to a person who already has a problem like coronary artery stenosis, by causing him stress which in turn can further diminish the blood flow into the coronary circulation therefore block of oxygen going to the heart muscle.

Nevertheless, stronger is the hypothesis of oxygen depletion in the Cofferdam, as explained above. If the Coroner's finding was asphyxia, the oxygen depletion would have been the only reason of the 2/O death.

Therefore it is assumed, that the 2/O already had a problem. Most probably oxygen depletion and maybe Petcoke cargo dust contributed to cause him acute myocardial infarction.

4.3 Environment

External environment

Praia Mole Coal Terminal: Two berths are available for discharging coal for ships of 300.00m Length, 50.00m Beam and 16.00m Max. Draft. Ship berthed at Berth No2.
Berth No2 is fitted with 2 Gantry cranes of 50 MT SWL x 41m.
Discharging rate is about 15,000 MT/day each crane.
The weather and sea conditions according to the ship's Log-Book were: Wind NW 3, the Sea was Slight 3, Clear Sky, Air Temperature 21degrees C˚, it was night i.e. dark and the visibility was good.

External influences At the time of the incident (at about five o'clock in the morning), there were no any external influences like visits or inspections etc.

4.4 Safety Management:

IMO ResolutionA.1050 (27) Paragraph 3 provides:
Quote
SAFETY MANAGEMENT FOR ENTRY INTO ENCLOSED SPACES
3.1 The safety strategy to be adopted in order to prevent accidents on entry to enclosed spaces should be approached in a comprehensive manner by the company.
3.2 The company should ensure that the procedures for entering enclosed spaces are included among the key shipboard operations concerning the safety of the personnel and the ship, in accordance with paragraph 7 of the International Safety Management (ISM) Code.
3.3 The company should elaborate a procedural implementation scheme which provides for training in the use of atmospheric testing equipment in such spaces and a schedule of regular onboard drills for crews**.**
3.3.1 Competent and responsible persons should be trained in enclosed space hazard recognition, evaluation, measurement, control and elimination, using standards acceptable to the Administration.
3.3.2 Crew members should be trained, as appropriate, in enclosed space safety, including familiarization with onboard procedures for recognizing, evaluating and controlling hazards associated with entry into enclosed spaces.
3.4 Internal audits by the company and external audits by the Administration of the ship's safety management system should verify that the established procedures are complied with in practice and are consistent with the safety strategy referred to in paragraph 3.1.
Unquote

The Cyprus Code of Safe Working Practices for Seafarers Chapter 6.5 Entry into dangerous spaces reads as follows:

Quote

6.5.1 A dangerous space is defined as "any enclosed or confined space in which it is foreseeable that the atmosphere may at some stage contain toxic or flammable gases or vapours, or be deficient in oxygen, to the extent that it may endanger the life or health of any person entering that space." Chapter 16.4 gives advice on identifying these hazards.

6.5.2 The master is required to ensure that all unattended dangerous spaces are secured against entry, except when it is necessary to enter.
6.5.3 Employers must have procedures in place for entering and working in confined spaces, and it is the master's responsibility to ensure these are followed. No person should enter or remain in a dangerous space except in accordance with the set procedures.

6.5.4 The guidance in this Code (Chapter 16) must be taken into account both in drawing up and implementing the procedures.
Unquote

Definition of "Enclosed Space"

In accordance with the definition of the IMO Resolution A. 1050 (27) and the CYCSWP 6.5.1 the ship's Cofferdams were identified as "Enclosed Spaces" because they were provided with limited openings for entry and exit, they were subject to poor natural ventilation and were not designed for continuous occupancy.
As required by CYCSWP 6.5.2., as "Enclosed Spaces" were secured against entry with padlocks.

Procedures to be followed for entry into an enclosed space

The safety management system SMS should provide procedures for entry into enclosed spaces. The procedures for entering enclosed spaces are included among the key shipboard operations concerning the safety of the personnel and the ship, in accordance with paragraph 7 of the International Safety Management (ISM) Code.
Risk assessment has been made by the Management Company for Entry into Enclosed Spaces and was included in the Quality and safety Management Manual. A Procedure for "Entry into Enclosed Spaces was developed by the Management Company and was included in the Safety Manual. The ship was supplied with the documentation required by the Safety SMS, to effect safe entry into an enclosed spaces. Prior to entering the enclosed spaces the SMS (Safety Manual) required the following check list to be completed: "Enclosed Space Entry Permit".

There was a general procedure for entering into enclosed spaces as required by IMO Resolution A. 1050 (27) paragraph 3.2 and CYCSWP 6.5.3, but not a specific one for entry into the Cofferdams. ISM internal audits of the SMS, did not find any observations or deficiencies indicating non compliance in practice with the established procedures.

The fact that there was a general procedure for entry into enclosed spaces but not a specific one is not considered as contributing factor to the accident.
Nevertheless a specific one would have been an additional defense against the hazards of enclosed spaces.

Familiarization

Crew familiarization check list does not make explicit reference for a procedure for entry into enclosed spaces. (RED FILE – Crew Familiarization Checklist (On-board)). No familiarization with onboard procedures for entry into enclosed spaces was provided.

The only crew awareness effort regarding enclosed space entry was made by showing a "Videotel" movie entitled "Entering into Enclosed Space". The most resent watching was on 10/05/2014.

Lack of familiarization with the Procedure *for entering* into enclosed spaces, *is considered as contributing factor to the accident.*

Drills

There is a "Shipboard Drill Plan", which includes drills to be done every two months for entry into enclosed spaces. From the beginning of the year until the date of the incident no one drill was performed. Drills on board ships have the purpose to provide an opportunity to test and prove procedures and equipment in realistic settings, and they practice the crews in implementing procedures that they can fall back on during emergency situations, when there is great urgency, and confusion. Without this kind of training, the AB and the OS were not prepared in the rescue from enclosed spaces, and they resorted to instinctively enter in the enclosed space to try to assist their colleagues.

No implementation of the Drill Plan is considered as contributing factor to the accident.

Signage

The entrance hatchway cover closes watertightly with butterflies. It can, be padlocked. On the side of the entrance hatchway, is visibly written**: "CAUTION- BE SURE TO CONFIRM PROPER OXYGEN CONTENT BEFORE ENTERING INTO CARGO HOLD OR VALVE SPACE – NO SMOKING NO OPEN FIRE".** On the cover of the entrance hatchway is written: "**RESTRICTED AREA-AUTHORIZED PERSONNEL ONLY-UNAUTORIZED PRESENCE IN THIS AREA COSTITUTES A BREACH OF SECURITY"**

Despite the existence of well visible safety signs which should have been seen many times by the seafarers involved in the incident, it is a fact that there were completely disregarded.

Disregard of safety signs is considered as contributing factor to the accident.

4.5 People Factors – Crew members involved

The Second Officer

The 2/O was on board about two months. He embarked on19/4/2014 at New Orleans, whilst the ship was loading grain cargo. He travelled with the ship in loaded condition to Puerto Cabello, Venezuela where she discharged grain cargo. Then, travelled with the ship in ballast condition to Jose, Venezuela where she loaded "Petcoke" for Vitoria Brazil. On completion of discharging at Puerto Cabello, he should have entered in the holds to inspect for damages.
It is presumed that the 2/O had the opportunity to get to know the arrangement of holds and their accesses, particularly the existence of the Aus ladders in the Cofferdams, and the existence of the lower doors at tanktop level for access from the Cofferdam to the hold and vise-versa- it is the only different structural item of Bulk Carriers vis-à-vis this type of ship.
Therefore he should have realized the configuration of the holds (box shape) and that there are at each hold, one vertical ladder forward and one Aus ladder aft. He should have

realized that the Aus ladder was installed in a Cofferdam and that the lower door was like a normal door. Even if he didn't use it he should have seen it. He should have seen also the warnings on the entrance hatches about safety and security. He knew that the entrance hatchways were padlocked. He knew that the lights switches were located in the Accommodation.
He met at about 04:30 at the Gangway with the OS and the AB and declared his decision that he will go into No 5 CC which completed discharging to check for damages. The 2/O decided to inspect the No 5 CC, after discharging and sweeping, and before the expiration of his watch at 06:00.
The AB and OS did not express any opinion/disagreement**.**
Then, the 2/O met the AB on the Main Deck near No5 CC's hatch coaming and told him to open No5 CC's entrance hatchway cover. The AB held the No5 entrance hatchway cover's padlock key. It was the practice on board to keep all Cofferdams containing Aus ladders, locked for safety and security reasons and for not leaking bulk cargo during loading from the CC into the Cofferdam.
The AB asked the 2/O, from which way he wants to go into the No5 CC, i.e. via the straight vertical ladder which is located at the forward corrugated bulkhead of the No5 CC, or via the Aus ladder which is installed within a Cofferdam located between the aft bulkhead of the No5 CC and the forward bulkhead of No6 CC. The 2/O said via the Aus ladder. It is much easier to use the Aus ladder which is an inclined ladder with intermediate platforms for rest, instead of the vertical ladder located at the forward side of the hold. The 2/O and AB proceeded to the No5 CC's aft entrance hatch Cover, to open it. The warning placard was well visible **"CAUTION - BE SURE TO CONFIRM PROPER OXYGEN CONTENT BEFORE ENTERING INTO CARGO HOLD OR VALVE SPACE – NO SMOKING NO OPEN FIRE".**

As they opened the cover they realized that the Cofferdam's lights were off. They did not suspect that the atmosphere in the Cofferdam could be dangerous. Disregard of the warning. The only problem for them in the Cofferdam was lighting. Therefore, the 2/O sent the AB to switch on the lights. The switches are in the accommodation. The 2/O did not consider that the AB could bring the oxygen content meter from the C/O's cabin/office in the Accommodation.

The AB again, did not express any opinion/disagreement. The AB did not propose to ventilate the Cofferdam. When the AB switched on the lights, everything was o.k., therefore the AB continued with his ballasting task, leaving the 2/O unattended.

Conclusions of the Coroner's report:
Quote:
Given the data collected during necropsy and results of examination we conclude that the cause of death was: Acute Myocardium Infarction.

If there was death? Yes
What is the cause of death? Acute Myocardium Infarction
Which instrument or means employed that caused the death? Natural death
If it was produced by poison, fire, explosives, smothering or torture by insidious or cruel (response specified). Not for all items
Unquote
Pre-Existing Physical illness is a factor, when a physical illness that existed at the time the individual boarded the ship or began the task causes an unsafe situation. If the Coroner's finding was asphyxia, the <u>oxygen depletion would have been the only reason</u> of the 2/O death. The fact that the death was caused by Acute Myocardium Infarction, leads

to the conclusion, that oxygen depletion was a contributing factor, but the 2/O had a Pre-Existing Physical illness, even if he was not aware of it.

Therefore it is assumed, that Pre-Existing Physical Illness, was a contributing factor to the accident.

Violation

Although there was no written formal procedure to inspect the holds as soon as cargo operation is completed, although he was not ordered by his superiors to do it, the 2/O decided so. He willfully disregarded the warning signs and the enclosed space entry procedure and deliberately entered into the Cofferdam.

Was the Violation Exceptional or Routine? If it was routine, then it was acceptable by his superiors because they would have notice it. But, there is no evidence to support that. If it was exceptional, then it has to do more with his character.

Violation of the enclosed space entry procedure and disregard of the warning signs was a contributing factor to the accident.

Inattention

Inattention is a factor when the individual has a state of reduced conscious attention due to a sense of security, self-confidence, boredom or a perceived absence of threat from the environment which degrades performance. Lack of a state of alertness or readiness to process immediately available information. The 2/O as well as the AB and the OS, were exposed to the information needed to perform safe entry into an enclosed space.

a)The existence of the warning placard at the entrance hatchway .

b) Every one seafarer has heard about similar cases happening on merchant ships.

c) It is a subject included in the Basic Safety Training which all seafarers are undergoing as required by the STCW Code as amended: Part A Chapter VI/1-4: "Precautions to be taken prior to entering enclosed spaces").

Therefore it is assumed that Inattention due to a perceived absence of threat was a contributing factor to the accident.

The AB

The AB was on board about ten months. He had got Familiarization regarding the Cargo and Ballast System. He should have entered many times in the CC's, for cleaning, maintenance etc. He should have seen the warning placards for safety and security on the entrance hatchways. It is presumed he had the opportunity to get to know the arrangement of holds and their accesses and that the Cofferdams were determined as enclosed spaces.

He assisted the 2/O to open the cover of the entrance hatchway and did not express any objection.

According to the AB's statement, at 05:26 Hrs LT whilst he stepped down in the Cofferdam, felt difficulty in breathing, but he could still breathe. He did not notice any fumes therefore he thought that the 2/O may have slipped on the ladder and fell and proceeded downwards to help him. He felt difficulty in breathing, but because there were no fumes he considered that the atmosphere is safe. Even when he felt difficulty in breathing, had no suspicion of dangerous atmosphere in the Cofferdam.

Therefore it is assumed that Inattention due to a perceived absence of threat and instinctive reaction to assist his 2/O were the reasons that led him to put his life into danger.

The OS

The OS was on board about two months. He had got Familiarization regarding the Cargo and Ballast System. He should have seen the warning placards for safety and security on the entrance hatchways.
According to his statement, he rushed to No5 CC's aft manhole and saw the AB sitting on the second platform of the Aus ladder and the 2/O lying down, in front of the AB. He called them by their names and stepped down, to the second platform, grabbed the AB to pull him up, but his body was shaking, stepped up to the first platform, lost his consciousness and fell down on the first platform. Fortunately he realized that the atmosphere was not safe and stepped up from the second to the first platform.

Therefore it is assumed that like the AB, Inattention due to a perceived absence of threat and instinctive reaction to assist his 2/O were the reasons that led him to put his life into danger.

The Chief Officer

The C/O was about two months on board. He should have known the configuration of the holds, Cofferdams and all ship's spaces. When he was informed that the 2/O was lying down in the Cofferdam he thought that may have slept and fell down. He did not suspect anything about the atmosphere, for the same reason, i.e. inattention due to a perceived absence of threat. Only after he had seen all three crew members lying down in the Cofferdam suspected that the atmosphere was dangerous and made announcement via the public address system of the ship. *Again, a perceived absence of threat.*

Psychobehaviourial factors:

Complacency is a factor when the individual's state of reduced conscious attention due to an attitude of overconfidence, undermotivation or the sense that others "have the situation under control" leads to an unsafe situation.
Overaggressive is a factor when an individual or a crew member is excessive in the manner in which they conduct a mission.
Excessive Motivation to Succeed is a factor when the individual is preoccupied with success to the exclusion of other mission factors leading to an unsafe situation.
Technical/Procedural Knowledge is a factor when an individual was adequately exposed to the information needed to perform a task, but **did not absorb it**. Lack of knowledge implies no deficiency in the training program, but rather the failure of the individual to absorb or retain the information. (Exposure to information at a point in the past does not imply "knowledge" of it.)
Considering the above mentioned Psychobehaviourial factors, it is considered that Complacency and Lack of Technical/Procedural Knowledge are the factors that apply in this particular case. The 2/O as well as the AB and the OS, were exposed to the information needed to perform safe entry into an enclosed space:

a)The existence of the warning placard at the entry hatch coaming.
b) Every one seafarer has heard about similar cases happening on merchant ships.
c) It is a subject included in the Basic Safety Training which all seafarers are undergoing as required by the STCW Code as amended: Part A Chapter VI/1-4: "Precautions to be taken prior to entering enclosed spaces".

MAIIF statistics have identified the following as the most common contributory factors in enclosed space accidents:

- Complacency leading to lapses in procedures
- Lack of knowledge
- Potentially dangerous spaces not being identified
- Would-be rescuers acting on instinct and emotion

Complacency and Lack of Knowledge and Inattention formed the seafareres' mindset, i.e. the perception of absence of threat in the hermetically enclosed cofferdams.

5. CONCLUSIONS

The Direct Cause of the accident (death) was Acute Myocardial Infarction.

The Root Causes of the accident were inattention, complacency and lack of knowledge which formed a perceived absence of threat in an hermetically enclosed space.

The Contributing Causes of the accident were:

1. Violation of the enclosed space entry procedure.

2. Disregard of defenses (barriers) i.e. safety signs at the entrance of an enclosed space.

3. Failure to use defenses (barriers) i.e. any of the ship's Personal Protective Equipment.

4. Ongoing corrosion of the Cofferdam's steel structure that caused oxygen depletion.

5. Oxygen depletion (most probably oxygen depletion and maybe Petcoke cargo dust) was a contributing factor to the death of the Second Officer, due to his medical condition and a contributing factor to the loss of consciousness of the other two crew members.

6. Pre-Existing Physical Illness of the Second Officer.

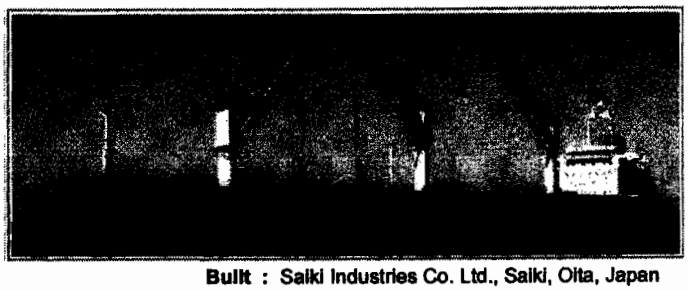
7. Lack of familiarization with the Procedure for entering into enclosed spaces.

8. No implementation of the Drill Plan regarding enclosed space entry.

6. Recommendations

1. Management Company to consider that these violations may also carry consequences.
2. Management Company to consider installing fans in the Cofferdams which start automatically as the cover of the hatchway opens.
3. Management Company to develop specific procedure for entry into the Cofferdams.
4. Management Company to place on board additional oxygen analyzers.
5. Management Company to follow up the implementation of the Drills Plan through the DPA.

UBC UNITED BULK CARRIERS



SHIP'S PARTICULARS

Name of Vessel: **MV " UBC TOKYO "**

Official No. (IMO No.)	9300752	**Built :**	Saiki Industries Co. Ltd., Saiki, Oita, Japan
Call Sign	C4DT2	**Date of Keel Laying**	17th December 2004
Type / Kind of Vessel	Multi- Purpose Dry Cargo Ship Equipped for Container Carriage	**Date of Launching**	1st August 2005
Port of Registry	LIMASSOL	**Date Delivered**	5th October 2005
Flag	CYPRUS	**Registered Number**	GL 110982
Gross Tonnage	24,140	**Class**	Germanischer Lloyd
Net Tonnage	13,402	**Panama PC/UMS Net**	20098
Registered Length	175.38 meters	**Panama ID No.**	6002730
Length Overall	182.59 meters	**Bow to bridge distance**	156.84 meters
Breadth (Moulded)	28.60 meters	**Length Between Perpendiculars**	174.60 meters
Depth (Moulded)	15.06 meters	**Height Keel/Mast**	47.50 meters

	Summer	Winter	Tropical	Tropical Fresh Water
Displacement	46,903 MT	45,841 MT	47,968 MT	47,946 MT
Deadweight	37,865 MT	36,803 MT	38,930 MT	38,908 MT
Draft	10.870 m	10.644 m	11.096 m	11.345 m
Freeboard	4.190 m	4.416 m	3.964 m	3.715 m

SHIP'S CARGO / STORAGE CAPACITIES:

Fresh Water Allowance	249 mm	**T.P.C. (summer)**	47.02 MT	**Total Grain Capacity**	48,818.51 m³ / 1,724,009 ft³
Tanktop Strength	22 MT / m²	**Light Ship**	9,038.00 MT	**Total Bale Capacity**	48,580.32 m³/ 1,715,598 ft³

Hold Capacity (Grain)	**cbm / cuft**	**Hatch Opening (L x W)**		**Hold Dimensions (L x W x H)**	
Hold #1	5,469.91 m³ / 193,169 ft³	**Hatch #1**	20.34 x 11.50 m	**Hold #1**	19.1x(20.0x12.3)x15.84 m
Hold #2	9,302.62 m³ / 328,519 ft³	**Hatch #2**	24.34 x 23.00 m	**Hold #2**	24.8 x 24.0 x 15.73 m
Hold #3	9,314.89 m³ / 328,952 ft³	**Hatch #3**	24.34 x 23.00 m	**Hold #3**	24.8 x 24.0 x 15.73 m
Hold #4	9,298.73 m³ / 328,381 ft³	**Hatch #4**	24.34 x 23.00 m	**Hold #4**	24.8 x 24.0 x 15.73 m
Hold #5	9,314.89 m³ / 328,952 ft³	**Hatch #5**	24.34 x 23.00 m	**Hold #5**	24.8 x 24.0 x 15.73 m
Hold #6	6,117.47 m³ / 216,036 ft³	**Hatch #6**	22.34 x 14.73 m	**Hold #6**	17.6x(9.56x22.8)x15.73 m

Cargo Gear	3 x 36 tons / MITSUBISHI	**HFO storage capacity**	1,494.49 MT
Grabs	3 X 12m³	**MDO storage capacity**	289.60 MT
Anchors Chains	11.5 shackles	**BALLAST volume total**	12,339.05 MT

STEERING CONDITIONS		**MANEUVERING CONDITIONS**	
Maximum Rudder Angle	35°	**Critical revolutions**	60 - 72 rpm
	23.6 sec. (w/ 1 power unit)	**Minimum rpm**	41 rpm
	12.1 sec. (w/ 2 power unit)	**Minimum speed to maintain course proppeller stopped**	5 knots

SHIP'S COMMUNICATION FACILITIES

MMSI No.	210786000
INMARSAT-C Telex	421078610 / 421078611
INMARSAT-FBB Phone	870 773 189 097
INMARSAT-FBB Fax	870 783 823 765
IRIDIUM PILOT Phone	881 677 731 033
E-mail	ubc.tokyo@ships.athenamarine.com.cy
Mobile Phone	+1 610 203 4613

ENGINES:

Main Egine	AKASAKA - Mitsubishi 6UEC52LS
Output of Engine	7,980 KW x 120 rpm
Speed/Consumption	14.5 knots, 25MT HFO / day
M.D.G./Aux. Engine	2 X YANMAR 6N18AL / 550 kW X 120 rpm

OWNERS:	**SPEEDWAVE SHIPPING COMPANY LIMITED** 284 Arch Makarios III Ave., Fortuna Court, Block b 2/F 3105 Limassol, CYPRUS	Owner's Identification No.: **4104114**
MANAGERS:	**ATHENA MARINE CO. LTD** Hartmann House, 32 Miltonos Street, CY-3050 Limassol, CYPRUS P.O. BOX 70185, CY-4161 Limassol, CYPRUS	Company Identification No.: **1469388** Tel: + 357 25 585 438 Fax: + 357 25 585 686 www.intership-cyprus.com
OPERATORS:	**UNITED BULK CARRIERS (USA)** 900 West Valley Road, Suite 100, Wayne, PA 19087 USA	Tel: + 1 610 995-2600 Fax: + 1 610 995-2277 www.unitedbulkcarriers.com

SPEEDWAVE SHIPPING COMPANY LIMITED
MV
UBC TOKYO
LIMASSOL

ς Ταξιδιού No. HC-5 | από from PRAIA HOLE | προς towards

16 ώρες Ora	17 Ναυτικές σημειώσεις και εγγραφές σύμφωνα με εθνικούς και διεθνείς κανόνες και κανονισμούς, μέτρα που λήφθηκαν με σκοπό την αξιοπλοΐα, την ασφάλεια της ζωής στη θάλασσα, προστασία του φορτίου, ασφάλεια του πλοίου και προστασία του περιβάλλοντος Nautical remarks and entries according to national and international rules and regulations; measures taken in the interest of sea-worthiness; safety of life at sea; care of cargo, safety of the vessel and environmental protection	18 Υπογραφή Αξιωματικού Φυλακής Signature Watch Officer	19 Μετρήσεις υδροσυλλεκτών και άδειων δεξαμενών στις _____ ώρα Διαμ/σμα AP ΔΕ Soundings of bilges/empty tanks at 0700 Hrs Compt. Port Stbd		
	0010 - PAYLOADER IN HOLD No-5		FD	E	
	0100 - DISCH. SHIFT to HOLD No-2 FROM HOLD No-1 0220 - STEVEDORES START cleaning HOLD No.5		DB1	11.05	11.54
	0215 - Finish Disch. HOLD No-5		DB2	11.75	11.70
	0400 - PAYLOADER FROM HOLD No-5 SHIFT to HOLD No-6		DB3	11.60	11.42
0900 AN	0515 c/o call all crew by public address to come		DB4	10.75	10.90
SEAGAMAN	on board as the ship for immediately evacuate for the crew inside will spare hold no.5. Please stay attached Accident Report.		DB5	11.79	11.64
	0600 - CARGO OPERATION IN PROGRESS		DB6	3.76	3.16
			APT	8.95	
0900			FW	2.18=69.2	1.42=76.6
	1000 - CARRIED OUT SOLAS MONTHLY AND WEEKLY INSPECTION AS PER SOLAS CHAP III REG. 20			BILGES	
200 DER	1120 - Resume Disch. HOLD No-3		1	E	E
SIAN	1200 - CARGO OPERATION IN PROGRESS C.O.W. TO c/o		2	E	E
	1300 - CARRIED OUT SECURITY AND SAFETY FAMILIARISATION WITH NEW CREW		3	E	E
			4	E	E
1600 AN			5	E	E
SEAGAMAN			6	E	E
	1800 - CARGO OPERATION IN PROGRESS C.O.W. to 3/6				
2000					
0410					
050					
400 DER					
SIAN	2400 - CONTINUOUS DISCHARGING OPERATION C.O.W. TO c/o				

SPEEDWAVE SHIPPING COMPANY LIMITED MV UBC TOKYO LIMASSOL

μός ρολογιών
e/clocks:

Κατανάλωση πόσιμου ύδατος T: 43
Fresh water consumption t:

Υπόλοιπο πόσιμου ύδατος T: 105.7
R.O.B. Fresh water t:

Υπόλοιπο έρματος T:
Ballast water t:

μπαταρίες:
battery:

Υπογραφή και σφραγίδα ηλεκτρονικά
To be signed and stamped daily

SPEEDWAVE SHIPPING COMPANY LIMITED MV UBC TOKYO

Υπαρχος ή Υποπλοίαρχος
Staff Captain or Chief Mate

Πλοίαρχος
Master

Επίσημο Ημερολόγιο του / Official Log Book of UBC TOKYO

Ημέρα και Ημερομηνία: / Day and Date: SATURDAY 28 JUNE 2014

1 Ώρα / Time	2 Βαρόμετρο / Barometer	3 Θερμοκρασία Ανέμου °C / Temperature Air °C	4 Θάλασ. °C / Sea °C	5 Σχετική Υγρασία% / Relative Humidity%	6 Άνεμος Κατεύθ. / Wind Direction	7 Ένταση / Force	8 Κατάσταση Θάλασσας / Sea Scale	9 Αληθής Πορεία / True Course	10 Ένδειξη Γυροσκοπικής Πυξίδας / Gyro Compass Readings	11 Σφάλμα Γυροσκοπικής Πυξίδας / Gyro Compass Error	12 Ένδειξη Μαγνητικής Πυξίδας / Magnetic Compass Reading	13 Παραλλαγή Μαγνητικής Πυξίδας / Magnetic Compass Error	14 Ένδειξη Δρομόμετρου NLP / Log Reading NLP
								VSL STARBOARD SIDE ALONG @ PRAIA					
0600	1016	21		87	NW	2			412 (+d A)				
1200	1018	25	24	84	NNW	2			—	—	"	—	—
1800	1015	25		81	NNW	2			—	—	"	—	—
2400	1017	22		83	NNW	2			—	—	—	—	—

SPEEDWAVE SHIPPING COMPANY LIMITED
M/V UBC TOKYO
LIMASSOL

ΜΕΣΗΜΒΡΙΝΗ ΑΝΑΦΟΡΑ - NOON REPORT

Μεσημβρινό στίγμα, Πλάτος φ = / Noon Position latitude φ =
Μήκος λ = / Longitude λ =
Διάρκεια ταξιδιού / Time at Sea: H. ω. / d h
λ. + ποταμοπλόηση / min + time river/port passage

Ημερήσιο διάστημα = / Day's run = ω. λ / h min v.μ. / nm
Ημερήσια μέση ταχύτητα / Day's average speed: μίλια / kn
Ολική απόσταση / Total distance: μίλια + ποταμοπλόηση / nm + distance river

ΝΚΠ: 10813
RCS

ΚΥΠΡΙΑΚΗ ΔΗΜΟΚΡΑΤΙΑ
REPUBLIC OF CYPRUS

MS 38A

ΥΠΟΥΡΓΕΙΟ ΣΥΓΚΟΙΝΩΝΙΩΝ ΚΑΙ ΕΡΓΩΝ - MINISTRY OF COMMUNICATIONS AND WORKS
ΤΜΗΜΑ ΕΜΠΟΡΙΚΗΣ ΝΑΥΤΙΛΙΑΣ - DEPARTMENT OF MERCHANT SHIPPING
ΛΕΜΕΣΟΣ - LEMESOS

Πιστοποιητικό Ασφαλούς Επάνδρωσης - *Minimum Safe Manning Document*

Εκδίδεται σύμφωνα με τις διατάξεις του περί Εμπορικής Ναυτιλίας (Ασφαλής Επάνδρωση, Ώρες Εργασίας και Τήρηση Φυλακής) Νόμου του 2000 όπως τροποποιήθηκε και του κανονισμού V/14 (2) της Διεθνούς Σύμβασης για την Ασφάλεια της Ανθρώπινης Ζωής στη θάλασσα, 1974 όπως τροποποιήθηκε.
Issued under the provisions of the Merchant Shipping (Safe Manning, Hours of Work and Watchkeeping) Law 105(I) of 2000 as amended and Reg.V/14 (2) of the International Convention for the Safety of Life at Sea, 1974 as amended.

Όνομα Πλοίου *Name of ship*	**UBC TOKYO**	**Ολική Χωρητικότητα** *Gross Tonnage*	**24140**
Δ.Δ.Σ. *Distinctive number or letters*	**C4DT2**	**Ολική ισχύς μηχανών πρόωσης** *Main propulsion power (KW)*	**7980**
Αρ. Δ.Ν.Ο *IMO number*	**9300752**	**Τύπος πλοίου** *Type of Ship*	**OFFSHORE SERVICE VESSEL**
Λιμάνι Νηολόγησης *Port of Registry*	**ΛΕΜΕΣΟΣ** *LIMASSOL*	**Περιοδικά μη επανδρωμένο μηχανοστάσιο** *Periodically unattended machinery space*	~~**Ναι**~~ **/ Όχι** ~~*Yes*~~ */ No*
Πλοιοδιαχειρίστρια Εταιρεία όπως αναφέρεται στο Πιστοποιητικό Ασφαλούς Διαχείρισης του πλοίου *Company as referred onto the vessel's Safety Management Certificate*		**ATHENA MARINE CO.LTD**	

Περιοχή Πλόων: Παγκόσμιοι
Trading Area: Worldwide

Το πλοίο στό οποίο αναφέρεται αυτό το πιστοποιητικό θεωρείται ότι είναι ασφαλώς επανδρωμένο, όταν κατά τον απόπλου φέρει προσωπικό που δεν είναι κατώτερο σε αριθμό και βαθμό / ειδικότητα όπως καθορίζεται στον παρακάτω πίνακα.
The ship named in this document is considered to be safely manned if, when it proceeds to sea, it carries not less than the number and grades/capacities of personnel specified in the table below.

Βαθμός / Ειδικότητα *Grade/capacity*	**Πιστοποιητικά (STCW-95 Καν.)** *Certificates (STCW- 95 Reg.)*	**Αριθμός Προσώπων** *Number of persons*
Πλοίαρχος *Master*	**Καν. II/2** *Reg.*	**ΕΝΑΣ (1)** *ONE*
Υποπλοίαρχος *Chief Officer*	**Καν. II/2** *Reg.*	**ΕΝΑΣ (1)** *ONE*
Αξ/κος υπεύθυνος φυλακής ναυσιπλοΐας *Officer in charge of a navigational watch*	**Καν. II/1** *Reg.*	**ΔΥΟ (2)** **TWO**
Πρώτος Μηχανικός *Chief Engineer Officer*	**Καν. III/2** *Reg.*	**ΕΝΑΣ (1)** **ONE**
Δεύτερος Μηχανικός *Second Engineer Officer*	**Καν. III/2** *Reg.*	**ΕΝΑΣ (1)** *ONE*
Αξ/κός υπεύθυνος φυλακής μηχανοστασίου *Officer in charge of an engineering watch*	**Καν. III/1** *Reg.*	**ΕΝΑΣ (1)** *ONE*
Μέλος πληρώματος που αποτελεί μέρος φυλακής ναυσιπλοΐας *Rating forming part of a navigational watch*	**Καν. II/4** *Reg.*	**ΤΡΕΙΣ (3)** *THREE*
Πλήρωμα καταστρώματος *Deck Rating(s)*	———	**ΤΡΕΙΣ (3)** *THREE*
Μέλος πληρώματος που αποτελεί μέρος φυλακής μηχανοστασίου *Rating forming part of an engineering watch*	**Καν. III/4** *Reg.*	**ΤΡΕΙΣ (3)** *THREE*
Πλήρωμα Μηχανής *Engine Rating(s)*	———	———
Μάγειρας *Cook*	———	**ΕΝΑΣ (1)** *ONE*
		Ολικός Αρ.: ΔΕΚΑΕΠΤΑ (17) *Total No: SEVENTEEN*

Το πιστοποιητικό αυτό είναι είναι έγκυρο εφόσον οι προϋποθέσεις που αναφέρονται στο πίσω μέρος εφαρμόζονται .
The present document is valid as long as the conditions listed overleaf are complied with.

M/V "UBC TOKYO"

Ειδικές απαιτήσεις ή συνθήκες εάν υπάρχουν:
Special requirements or conditions, if any:

(1) **Το πιστοποιητικό θεωρείται άκυρο όταν το πλοίο εκτελεί πλόες εκτός των περιοχών που καθορίζονται στο Πιστοποιητικό Ασφάλειας Ραδιοεπικοινωνιών.**
This document ceases to be valid when the named ship is engaged in sea areas outside those designated in the Safety Radio Certificate.

(2) **Οι ρυθμίσεις τήρησης φυλακής να είναι σύμφωνα με την STCW 78 όπως τροποποιήθηκε και την Απόφαση της Γενικής Συνέλευσης του Διεθνούς Ναυτιλιακού Οργανισμού A.1047 (27).**
Watchkeeping arrangements shall be in accordance with the STCW 1978 Convention as amended and (IMO) Assembly Resolution A.1047(27).

(3) **Οι βαθμοί/ειδικότητες και αριθμοί προσωπικού που αναγράφονται στο πιστοποιητικό υποδεικνύουν τον ελάχιστο αριθμό προσώπων που είναι αναγκαία για την ασφάλεια της ναυσιπλοΐας, την προστασία, την ασφαλή λειτουργία του πλοίου και την προστασία του περιβάλλοντος. Η ναυτολόγηση επιπρόσθετου προσωπικού που πιθανόν να είναι αναγκαίο για χειρισμό φορτίου και έλεγχο, συντήρηση και τήρηση φυλακών καθώς επίσης για συμμόρφωση με τις απαιτήσεις τήρησης καθορισμένων περιόδων ανάπαυσης, αποτελεί ευθύνη του πλοιοκτήτη / διαχειριστή και του πλοιάρχου.**
The grades/capacities and numbers of personnel listed in this document indicate the minimum number of persons necessary for the safety of navigation, the security, the safe operation of the ship and the protection of the environment. The engagement of additional personnel as may be considered necessary for cargo handling and control, maintenance and watchkeeping and as needed for compliance with the required rest periods, is the responsibility of the owner/manager and the master.

Εκδόθηκε στην Λεμεσό στις 19/12/2012
Issued at Limassol on

ΤΜΗΜΑ ΕΜΠΟΡΙΚΗΣ ΝΑΥΤΙΛΙΑΣ
DEPARTMENT OF MERCHANT SHIPPING

Εξουσιοδοτημένος Λειτουργός
Authorised Officer

IMO CREW LIST

☑ ARRIVAL ☐ DEPARTURE

1.1 Name of Ship	Type of Ship	2. Port of Arrival	3. Date of Arrival
UBC Tokyo	Multi-Purpose Dry Cargo Ship	Praia Mole, Brazil	14 Jun 2014

1.2 IMO Number	1.3 Call Sign	4. Flag State of Ship	5. Last Port of Call	6. Nature and No. of identity doc.
9300752	C4DT2	CYPRUS	Jose Terminal, Venezuela	PASSPORT

7. No.	8. Family Name, Given Name	9. Rank or rating	10. Nationality	11. Date of Birth	Place of Birth	
1	MLECZKO, PRZEMYSLAW P.	MASTER	POLISH	18 May 1960	BILGORAJ	EA4200318
2	BAGUHIN, EDWIN GULTIANO	C/O	FILIPINO	20 Oct 1974	BUTUAN CITY	EB9945652
3	SITJAR, CRISTOPHER MONTERO	2/O	FILIPINO	12 Oct 1974	QUEZON CITY	EB8302580
4	CELINDRO, EDWARD RYAN P.	3/O	FILIPINO	24 Jun 1981	MATI, DAVAO ORIENTAL	EB0097483
5	TUBLE, EDILBERTO FRANCISCO	C/E	FILIPINO	10 May 1964	ZAMBOANGA CITY	EB6458474
6	TUBLE, PETER F.	2/E	FILIPINO	09 May 1973	ZAMBOANGA CITY	EB1442831
7	INOVEJAS, REYAND H.	3/E	FILIPINO	11 Jul 1986	ISABELA, BASILAN	EB0211143
8	GREGORIO, CRISOSTOMO S.	ELE	FILIPINO	27 Jan 1970	BACNOTAN, LA UNION	EB9671618
9	UY, DICSON Q.	FTR	FILIPINO	23 Dec 1984	NEGROS ORIENTAL	EB6489065
10	GABASA, RENE S.	BSN	FILIPINO	11 Aug 1961	JORDAN, ILOILO	EB5157145
11	MACALALAD, JAN KING L.	AB	FILIPINO	04 Jan 1989	CALOOCAN CITY	EB5772564
12	SUAN, RICHARD R.	AB	FILIPINO	14 Nov 1978	CEBU CITY	EB5640760
13	VILLAREAL, REYNALDO JR. R.	AB	FILIPINO	15 Oct 1985	MALOLOS, BULACAN	XX5397962
14	AFANTE, RAFAEL S.	OS	FILIPINO	22 Jul 1988	CAMARINES SUR	EB3153633
15	BAUSO, EVAN MICHAEL T.	OS	FILIPINO	01 Jan 1987	QUEZON CITY	EB3383383
16	REYES, EDWARD IGNACIO	OLR	FILIPINO	19 Aug 1978	BATAAN	EB6504021
17	YANOC, MICHAEL FORTIN	OLR	FILIPINO	02 Mar 1985	SAN JOSE, ANTIQUE	EB2264268
18	FRANCISCO, DAN ALFRED G.	WPR	FILIPINO	27 Aug 1990	QUEZON CITY	EB0197040
19	LODRITA, NEMESIO B.	CK	FILIPINO	03 Jan 1972	TRINIDAD, BOHOL	XX5134050
20	NAZARRO, RICHARD C.	MESSMAN	FILIPINO	14 Aug 1986	LAS PINAS, METRO MANILA	EB9351130
	ADDITIONAL CREW FOR TRAINING PURPOSES					
21	TUMBAGAHAN, JOHN DONALD F.	D/CRT	FILIPINO	29 Sep 1992	TANGALAN, AKLAN	EB5438854
22	TOBIAS, MARVIN GREGG E.	E/CDT	FILIPINO	22 Feb 1993	NORTH COTABATO	EB7751622

Convention on Facilitation of International Maritime Traffic

IMO FAL FORM 5

12. Date and signature by master, authorized agent or officer

14-Jun-14

SPEEDWAVE SHIPPING COMPANY LIMITED
MV UBC TOKYO
LIMASSOL

Przemysław Mleczko
Master

UBC Tokyo crew list on 2014-06-29

	Rank	Name	Sign on date	Sign off date
1	Master	Milivoj Ilic	27.06.2014	...
2	Master	Przemyslaw Mleczko	25.02.2014	30.06.2014
3	Chief Officer	Edwin Baguhin	19.04.2014	...
4	Third Officer	Edward Ryan Celindro	25.02.2014	...
5	Chief Engineer	Edilberto Tuble	19.04.2014	...
6	Second Engineer	Julius Macalacad	27.06.2014	...
7	Second Engineer	Peter Tuble	29.08.2013	29.06.2014
8	Third Engineer	Reyand Inovejas	08.12.2013	...
9	Electrician	Crisostomo Gregorio	25.02.2014	...
10	Fitter	Dicson Uy	25.02.2014	...
11	Bosun	Rene Gabasa	14.10.2013	30.06.2014
12	Bosun	Rodrigo Batas	27.06.2014	...
13	Able Seaman	Josepherson Palacio	27.06.2014	...
14	Able Seaman	Mark Mendez	27.06.2014	...
15	Able Seaman	Jan King Macalalad	10.09.2013	30.06.2014
16	Able Seaman	Reynaldo Jr. Villareal	14.10.2013	29.06.2014
17	Able Seaman	Richard Suan	25.02.2014	...
18	Ordinary Seaman	Evan Michael Bauso	19.04.2014	...
19	Ordinary Seaman	Emilio Jr. Pangasian	27.06.2014	...
20	Ordinary Seaman	Rafael Afante	10.09.2013	29.06.2014
21	Oiler	Edward Reyes	19.04.2014	...
22	Oiler	Michael Yanoc	19.04.2014	...
23	Wiper	Raymund Verayo	27.06.2014	...
24	Wiper	Dan Alfred Francisco	10.09.2013	29.06.2014
25	Cook	Nemesio Lodrita	10.09.2013	...
26	Messman	Richard Nazarro	25.02.2014	...
27	Deck Cadet Rating	John Donald Tumbagahan	25.02.2014	...
28	Engine Cadet	Marvin Gregg Tobias	10.09.2013	...

ATHENA MARINE CO LTD	RED FILE		Created by:	SQA Depart
			Approved by:	DPA
			Issue Date:	22/01/2013
	Table of Shipboard Working Arrangement		Issue No:	01
			Revision No:	Initial
			Page:	1 of 1
	Doc. Code	RF- PERS#21	Doc. Control	9300752

Name of Ship: UBC TOKYO Flag of Ship: CYPRUS IMO Number: 9300752 Latest update of the table: JUNE '2014

This report will be in the official Language of the Ship which is English (1) to (1) pages

The maximum hours of work are applicable in accordance with ILO's Maritime Labour Convention, 2006, and with any collective agreement exception authorized by relevant flag / international regulation and with the International Convention on Standards of Training Certification and Watchkeeping for Seafarers, 1978, as amended.

Maximum hours of work: 14 hours in any 24 hours period and 72 hours in any seven day period.

Other Requirements:

Position / Rank[1]	Scheduled daily work hours at sea		Scheduled daily work hours in port		Comments[2]	Total daily work hours	
	Watchkeeping (from – to)	Non-Watchkeeping duties (from-to)	Watchkeeping (from – to)	Non-Watchkeeping duties (from-to)		At sea	In port
C/O	(04-08) - (16-20)	(09-11)		(06-12) - (13-17)		10	10
2/O	(00-04) - (12-16)	(10-12)	(00-06) - (12-18)			10	12
3/O	(08-12) - (20-24)	(13-15)	(06-12) - (18-24)			10	12
BSN		(06-12) - (13-17)		(06-12) - (13-17)		10	10
AB1	(04-08) - (16-20)	(09-11)	(04-08) - (16-20)	(09-11)		10	10
AB2	(08-12) - (20-24)	(13-15)	(08-12) - (20-24)	(13-15)		10	10
AB3	(00-04) - (12-16)	(10-12)	(00-04) - (12-16)	(10-12)		10	10
OS1		(06-12) - (13-17)	(04-08) - (16-20)	(09-11)		10	10
OS2		(06-12) - (13-17)	(00-04) - (12-16)	(10-12)		10	10
D/CDT		(08-12) - (13-17)	(08-12) - (20-24)			10	10

Signature of the Master :

1. For those position / ranks that are also listed in the Ship's minimum safe manning document, the terminology used should be the same as in that document.
2. For Watchkeeping personnel, the comments section may be used to indicate number of hours to be devoted to unscheduled work and any such hours should be included in the appropriate total daily work hours column.

SPEEDWAVE SHIPPING COMPANY LIMITED
MV UBC TOKYO
LIMASSOL

M/V UBC TOKYO

LIMASSOL / C4DT2

CREW'S SCHEDULE OF WATCHES

(DECK DEPARTMENT)

Note: This will served as guide of working times, TIME TABLES are laid down for **At Sea** and **In-Port**, as follows:

I. AT SEA:

A. DAYWORKERS:

Monday - Friday

Rank/ Name	Time Start	Time End	Time Taken Off	Total Working Time	Remarks
BSN GABASA, R.	0600	1700	1 - Hour for (Meal Time)	10-Hrs	Coffee Time of 20 min x 2 are included daily from 10AM & 3PM.
OS1 AFANTE, R.	0600	1700		10-Hrs	
OS2 BAUS, E.	0600	1700		10-Hrs	
D/RCD TUMBAGAHAN J.D.	0800	1700		8-Hrs	

II. B. WATCHKEEPERS/ LOOKOUT: (Bridge lookout only nightime / Daywork during daytime)

Rank/ Name	Time Start	Time End	OVERTIME	Total Working Time	Remarks
2/O SITJAR / AB3 SUAN	0000 - 1200	0400 - 1600	1000 - 1200	10-Hrs	Coffee Time of 20 min x 2 are included daily from 10AM & 3PM.
C/O BAGUHIN / AB1 MACALALAD	0400 - 1600	0800 - 2000	0900 - 1100	10-Hrs	
3/O CELINDRO / AB2 VILLAREAL	0800 - 2000	1200 - 2400	1300 -1500	10-Hrs	

III. IN-PORT AND AT ANCHOR:

Rank/ Name	Time Start	Time End	OVERTIME	Total Working Time	Remarks
AB3 SUAN R. R.	0000 - 1200	0400 - 1600	1000 - 1200	10-Hrs	Coffee Time of 20 min x 2 are included daily from 10AM & 3PM.
AB1 MACALALAD, J.	0400 - 1600	0800 - 2000	0900 - 1100	10-Hrs	
AB2 VILLAREAL, R.	0800 - 2000	1200 - 2400	1300 -1500	10-Hrs	

DOUBLE WATCH AT SEA AND IN PORT

Rank/ Name	Time Start	Time End	OVERTIME	Total Working Time	Remarks
OS2 BAUSO, E.	0000 - 1200	0400 - 1600	1000 - 1200	10-Hrs	Coffee Time of 20 min x 2 are included daily from 10AM & 3PM.
OS1 AFANTE, R.	0400 - 1600	0800 - 2000	0900 - 1100	10-Hrs	
D/RCD TUMBAGAHAN J.D.	0800 - 2000	1200 - 2400		8-Hrs	

NOTES:

Times outside of the working time such as Saturday + Sunday + Holiday are treated as overtime.

IV.

Notes on STCW'95: That the administrations shall require that **watch schedules** be posted where they are easily accessible. All watch going personnel shall have a minimum rest of 10 hours in any 24 hours period. The rest period may be divided in two periods, one of which shall be at least 6 hours in length. For more details, see STCW'95 section A-VIII/1.

Prepared by :

C/Off. Baguhin, E.

SPEEDWAVE SHIPPING COMPANY LIMITED
MV UBC TOKYO
LIMASSOL

Approved by:

Capt. Przemysław Mleczko

Record of hours of work of seafarers as at 30/06/2014

Calculated as per MLC 2006

Name of ship: **UBC Tokyo** IMO-Number: **9300752** Flag of ship: **Cyprus**

Seafarer (full name): **Sitjar Cristopher** Position / rank: **2/O**

Month and year: **June, 2014**

Hours	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1.Sun	O O	O O	O O	O O	O O	O O					O O	O B	O O	O O	O O	O O								
2.Mon	X X	X X	X X	X X									X X	X X	X X	X X	O O	O O						
3.Tue	X X	X X	X X	X X									X X	X X	X X	X X	O O	O O						
4.Wed	X X	X X	X X	X X									X X	X X	X X	X X	O O							
5.Thu	X X	X X	X X	X X									X X	X X	X X	X X	O O							
6.Fri	X X	X X	X X	X X									X X	X X	X X	X X	O O							
7.Sat	O O	O O	O O	O O									O O	O O	O O	O O								
8.Sun	O O	O O	O O	O O									O O	O O	O O	O E	E E	E E						
9.Mon	X X	X X	X X	X X									X X	X X	X X	X X	O O							
10.Tue	X X	X X	X X	X X									X X	X X	X X	X X	O O							
11.Wed	X X	X X	X X	X X									X X	X X	X X	X X	O O							
12.Thu	O O	O O	O O	O O									O O	O O	O O	O O								
13.Fri	X X	X X	X X	X X									X X	X X	X X	X X	O O							
14.Sat	O O	O O	O O	O O									O O	O O	O O	O O								
15.Sun	O O	O O	O O	O O									O O	O O	O O	O E	E E							
16.Mon	X X	X X	X X	X X									X X	X X	X X	X X	O O							
17.Tue	X X	X X	X X	X X									X X	X X	X X	X X	O O							
18.Wed	X X	X X	X X	X X									X X	X X	X X	X X	O O							
19.Thu	X X	X X	X X	X X									X X	X X	X X	X X	O O							
20.Fri	X X	X X	X X	X X									X X	X X	X X	X X	O O							
21.Sat	O O	O O	O O	O O									O O	O O	O O	O E	E E							
22.Sun	O O	O O	O O	O O									O O	O O	O O	O O								
23.Mon	X X	X X	X X	X X									X X	X X	X X	X X								
24.Tue	X X	X X	X X	X X									X X	X X	X X	X X								
25.Wed	X X	X X	X X	X X									X X	X X	X X	X X								
26.Thu	X X	X X	X X	X X	O O	O O							X X	X X	X X	X X								
27.Fri	X X	X X	X X	X X	O O	O O							X X	X X	X X	X X	O O	O O						
28.Sat	O O	O O	O O	O O	O O																			
29.Sun																								
30.Mon																								
Hours	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23

I agree that this record is an accurate reflection of the hours of work or rest of the seafarer concerned.

Signature of master or authorised person: _____ Signature of seafarer: _____

SPEEDWAVE SHIPPING COMPANY LIMITED
MV UBC TOKYO
LIMASSOL

Record of hours of work of seafarers as at 30/06/2014

Calculated as per MLC 2006

Name of ship: **UBC Tokyo** IMO-Number: **9300752** Flag of ship: **Cyprus**

Seafarer (full name): **Macalalad Jan King** Position / rank: **AB**

Month and year: **June, 2014**

Hours	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1. Sun					O	O	O	O	O	O	O	O	O				O1	O	O	O	O	O	O	O
2. Mon					X	X	X	X	X	X	X	X2	B	O	O	O	X	X	X	X	X	X	X	X
3. Tue					X	X	X	X	X	X	X	X	B	O	O	O	X	X	X	X	X	X	X	X
4. Wed					X	X	X	X	X	X	X	X	B	O	O	O	X	X	X	X	X	X	X	X
5. Thu					X	X	X	X	X	X	X	X	B	O	O	O	X	X	X	X	X	X	X	X
6. Fri					X	X	X	X	X	X	X	X	B	O	O	O	X	X	X	X	X	X	X	X
7. Sat					O	O	O	O	O	O	O	O					O	O	O	O	O	O	O	O
8. Sun					O	O	O	O	O	O	O	O				E	E	E	E	E	O	O	O	O
9. Mon					X	X	X	X	X	X	X	X	B	O	O	O	X	X	X	X	X	X	X	X
10. Tue					X	X	X	X	X	X	X	X	B	O	O	O	X	X	X	X	X	X	X	X
11. Wed					X	X	X	X	X	X	X	X	B	O	O	O	X	X	X	X	X	X	X	X
12. Thu					O	O	O	O	O	O	O	O					O	O	O	O	O	O	O	O
13. Fri					X	X	X	X	X	X	X	X					X	X	X	X	X	X	X	X
14. Sat					O	O	O	O	O	O	O	O					O	O	O	O	O	O	O	O
15. Sun					O	O	O	O	O	O	O	O				E	E	E	O	O	O	O	O	O
16. Mon					X	X	X	X	X	X	X	X	B	O	O	O	X	X	X	X	X	X	X	X
17. Tue					X	X	X	X	X	X	X	X					X	X	X	X	X	X	X	X
18. Wed					X	X	X	X	X	X	X	X	B	O	O	O	X	X	X	X	X	X	X	X
19. Thu					X	X	X	X	X	X	X	X					X	X	X	X	X	X	X	X
20. Fri					X	X	X	X	X	X	X	X	B	O	O	O	X	X	X	X	X	X	X	X
21. Sat					O	O	O	O	O	O	O	O				E	E	E	O	O	O	O	O	O
22. Sun					O	O	O	O	O	O	O	O					O	O	O	O	O	O	O	O
23. Mon					X	X	X	X	X	X	X	X					X	X	X	X	X	X	X	X
24. Tue					X	X	X	X	X	X	X	X					X	X	X	X	X	X	X	X
25. Wed					X	X	X	X	X	X	X	X					X	X	X	X	X	X	X	X
26. Thu					X	X	X	X	X	X	X	X					X	X	X	X	X	X	X	X
27. Fri					X	X	X	X	X	X	X	X					X	X	X	X	X	X	X	X
28. Sat					O	O	O	O																
29. Sun																								
30. Mon																								
Hours	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23

[redacted]

I agree that this record is an accurate reflection of the hours of work or rest of the seafarer concerned.

1. Port watch 2. Maneuvering 3. Sea watch

Signature of master or authorised person: Signature of seafarer:

SPEEDWAVE SHIPPING COMPANY LIMITED MV UBC TOKYO LIMASSOL

Record of hours of work of seafarers as at 30/06/2014

Calculated as per MLC 2006

Name of ship: **UBC Tokyo** IMO-Number: **9300752** Flag of ship: **Cyprus**

Seafarer (full name): **Bauso Evan Michael** Position / rank: **OS**

Month and year: **June, 2014**

Hours	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1. Sun	O O	O O	O O	O O							O	O O	B B	O O	O O	O O	O O							
2. Mon									X X	X X	X X	X X	B B	X X	X X	X X	X X	O O	O					
3. Tue									X X	X X	X X	X X	B B	X X	X X	X X	X X	O O	O					
4. Wed									X X	X X	X X	X X	B B	X X	X X	X X	X X	O O	O					
5. Thu									X X	X X	X X	X X	B B	X X	X X	X X	X X	O O	O					
6. Fri									X X	X X	X X	X X	B B	X X	X X	X X	X X	O O	O					
7. Sat									O O	O O	O O	O O	B B	O O	O O	O O	O O							
8. Sun									O O	O O	O O	O O				E	E E	E E						
9. Mon									X X	X X	X X	X X	B B	X X	X X	X X	X X	O O	O					
10. Tue									X X	X X	X X	X X	B B	X X	X X	X X	X X	O O	O					
11. Wed									X X	X X	X X	X X	B B	X X	X X	X X	X X	O O	O					
12. Thu									O O	O O	O O	O O												
13. Fri									X X	X X	X X	X X	B B	X X	X X	X X	X X	O O	O					
14. Sat									O O	O O	O O	O O	B B	O O	O O	O O	O O							
15. Sun									O O	O O	O O	O O				E	E E							
16. Mon									X X	X X	X X	X X	B B	X X	X X	X X	X X	O O	O					
17. Tue									X X	X X	X X	X X	B B	X X	X X	X X	X X	O O	O					
18. Wed									X X	X X	X X	X X	B B	X X	X X	X X	X X	O O	O					
19. Thu									X X	X X	X X	X X	B B	X X	X X	X X	X X	O O	O					
20. Fri									X X	X X	X X	X X	B B	X X	X X	X X	X X	O O	O					
21. Sat									O O	O O	O O	O O	B B	O O	O O	B E	E E							
22. Sun									O O	O O	O O	O O												
23. Mon									X X	X X	X X	X X	B B	X X	X X	X X	X X	O O	O					
24. Tue									X X	X X	X X	X X	B B	X X	X X	X X	X X	O O	O					
25. Wed									X X	X X	X X	X X	B B	X X	X X	X X	X X	O O	O					
26. Thu									X X	X X	X X	X X	B B	X X	X X	X X	X X	O O	O					
27. Fri									X X	X X	X X	X X	B B	X X	X X	X X	X X	O O						
28. Sat	O O	O O	O O	O O									O O	O O	O O	O O								
29. Sun	O O	O O	O O	O O									O O	O O	O O	O O								
30. Mon	X X	X X	X X	X X									X X	X X	X X	X X								
Hours	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23

[redacted]

I agree that this record is an accurate reflection of the hours of work or rest of the seafarer concerned.

1. Manoeuvre

Signature of master or authorised person: Signature of seafarer:

SPEEDWAVE SHIPPING COMPANY LIMITED
MV UBC TOKYO
LIMASSOL

MARITIME MEDICAL AND LABORATORY CLINIC, INC.

Accreditation #: 13-056-14-MF-2
2nd Floor Paragon Tower 531 A. Flores St. Ermita, Manila
Contact #: 526-3809 / 526-3812 / 526-3815 ; Fax #: 526-3816
Email Address: marmedlabclinic@gmail.com ; marmedlabclinic@yahoo.com ; marmedlabclinic@hotmail.com

Rev. No.: 01
Rev. Date: 29-10-13
Issued Date: 05-11-13

MEDICAL CERTIFICATE FOR SERVICE AT SEA

Approved and authorized by the Department of Health (DOH) and the Maritime Industry Authority (MARINA) of the Republic of the Philippines Issued in compliance with STCW Convention, 1978, as amended Section A-I/9 Paragraph 7 and the Maritime Labour Convention, 2006

Last Name: SITJAR	Date of Birth: 12-Oct-1974	Place of Birth: QUEZON CITY, M.M.	Age: 39
Given Name: CRISTOPHER	Nationality: FILIPINO	Religion: ROMAN CATHOLIC	
Middle Name: MONTERO	Civil Status: Single ☐ Married ☑	Gender: Male ☑ Female ☐	

Address: 43 B UNIT 303 SCHOLL ST. GRACE VILLAGE, QUEZON CITY

Passport No: EB8302580	SIRB: B0942274	Company: ASSOCIATED SHIP MANAGEMENT SERVICES, INC.

Position applied for: Deck ☑ Engine ☐ Steward ☐ Others ☐ Please Specify: SECOND OFFICER

DECLARATION OF THE AUTHORIZED PHYSICIAN

Confirmation that identification documents were checked at the point of examination:	Yes ☑	No ☐
Hearing meets the standards in STCW code, Section A-I/9?	Yes ☑	No ☐
Unaided hearing satisfactory?	Yes ☑	No ☐
Visual acuity meets standards in STCW code, Section A-I/9?	Yes ☑	No ☐
Colour vision meets standards in STCW code, Section A-I/9? *Date of last colour vision test:* 17 JUNE 2013	Yes ☑	No ☐
Visual Aids (tick if worn)	Spectacles ☐	Contact Lenses ☐
Fit for lookout duties?	Yes ☑	No ☐
No limitation or restrictions on fitness? *If "NO" specify limitations or restrictions:*	Yes ☑	No ☐
Is applicant suffering from any medical condition likely to be aggravated by service at sea or to render the seafarer unfit for such service or to endanger the health of other persons on board?	Yes ☐	No ☑

This is to certify that a medical and physical examination was given to:

SITJAR, CRISTOPHER M.
(Name of Seafarer)

Result:

FIT FOR SEA DUTY: ☑ UNFIT FOR SEA DUTY: ☐

MA. JOSEFINA J. HABER, M.D.
Name and Signature of Examining/Authorized Physician

Date of examination: 15-Mar-2014

Approved by:

JOSELITO L. DE GUZMAN, M.D., FPCOM
Medical Director

JOSELITO L. DE GUZMAN, M.D.
Medical Director 0080390
2/F Paragon Tower 531 A. Flores St., Ermita, Manila Philippines 1000
Tel: 526-38-09 Fax: 526-3816

Name of issuing authority: JOSELITO L. DE GUZMAN, M.D., FPCOM
Address: 2nd Floor Paragon Tower 531 A. Flores St. Ermita, Manila

Physician's certifying authority: PROFESSIONAL REGULATION COMMISSION
Physician's license number: 0080390

I have read and understood and was informed of the contents of the certificate and the right to a review in accordance with the paragraph 6 of section A-I/9 of the STCW code.

Seafarer's Name and Signature: SITJAR, CRISTOPHER M. Date: 17-Mar-2014
(This signature should be affixed in the presence of the examining physician)

Date of Issuance of PEME Certificate : 17-Mar-2014 Date of Expiration of PEME Certificate: 06-Nov-2016

MMOP 1313

FEDERAL REPUBLIC OF BRAZIL
STATE OF ESPÍRITO SANTO
VITÓRIA

SWORN IN PUBLIC TRANSLATOR AND OFFICIAL INTERPRETE
Juçára Touriño de Moraes
Praça San Martin, nº 56 - Ed. San Martin, s/201
Praia do Canto - CEP 29055-170 - Vitória - ES
Tel.: (27) 3324-5971

I the undersigned, ***Juçára Touriño de Moraes***, hereby certify that I am duly sworn and qualified as a public translator and official interpreter in the city of Vitória, capital of the State of Espírito Santo, Brazil, registered under number 028; that the attached document written in Portuguese was presented to me to be translated into the English language. It reads as follows:

No: 4897 Book: 63

FEDERATIVE REPUBLIC OF BRAZIL

DEATH CERTIFICATE

NAME:
CRISTOPHER MONTERO SITJAR

MATRICULATION:
02466101552014400205216009573043

SEX	COLOUR	CIVIL STATUS AND AGE
Male	Dun-coloured	Married – 39 years

PLACE OF BIRTH	IDENTITY CARD
Quezon City, Phillipines	

VOTER
No

PARENTS
Erlin Bionso Sitjar and Yolanda Montero Sitjar.

DATE AND PLACE OF THE DEATH	DAY	MONTH	YEAR
On the twenty eighth (28) of June (06) of the year two thousand and fourteen (2014), at 07:30h	28	06	2014

PLACE OF DEATH
Vitória - ES

CAUSA MORTIS
Acute Myocardial Infarct

PLACE OF THE BURIAL
Holycross Novaliches Cemitery, Manila Memorial Park, MMP Holycross Brgy. San Bartolome, Navaliches, Quezon City. Phillipines.

DECLARANT
Celso Martins Pimentel, profession: attorney, married, born in Vitória-ES, Identity no. 4261 OAB[1]-ES, resident at Av. Saturnino de Brito, 9[illegible]/10[illegible], Praia do Canto, Vitória-ES.

NAME AND CRM[2] OF THE PHYSICIAN
Gervásio Scabelo, Coroner, CRM no. 2088

REMARKS/ANNOTATIONS
Registration Date: The fourteenth (14) of July (07) of the year two thousand and fourteen (2014). The deceased was married to Emely Belen Sitjar and left properties to be inventoried. He did not leave known will and left underage children inheritors and/or interdicts. He left 3 underage children: Ma. Nimue Chloe Belen Sitjar, aged 15; Matt Nathan Cyrus Belen Sitjar, aged 4; Marcus Neil Christian Belen Sitjar, aged 2. Date of the burial: August 8, 2014, at 03:00 pm. The dedeased's place of birth: Quezon City, Phillipines. Passport No. EB8302580. Complementing the name of the cemetery: Bartolome, Navaliches, Quezon City, Phillipines. Nothing further being declared, the declarant undertook full responsibility for the information rendered.

SARLO NOTARY'S OFFICE
Official and Notary Public: Rodrigo Sarlo Antonio
County of Vitória
Av. N. S. da Penha, 549, Lj 1, Ed. Wilma
Santa Lúcia, Vitória-ES
Phone: (27) 2124-9500
www.cartoriosarlo.com.br

The content of the Certificate is true and I give it full faith.

Vitória-ES, July 14, 2014.

Ubirajara Neves Fraga
Clerk

SARLO NOTARY'S OFFICE
Rodrigo Sarlo Antônio
Official Notary Public
Rômulo Alves da Mota Neves
Deputy
Rita de Cássia Pandolfi
Deputy
Av. Nossa Sra. da Penha, 549
Santa Lúcia
CEP: 29056-250
Vitória-ES

Judiciary Power of the State of Espirito Santo
Digital Seal of Fiscalization
024661.KCA1409.31502
Emoluments: R$ 0,00 Fees: R$ 0,00 Total: R$ 0,00
Check authenticity in www.tjes.jus.br

UBIRAJARA 1st. copy

UBC TOKYO.

GOVERNO DO ESTADO DO ESPÍRITO SANTO
SECRETARIA DE ESTADO DA SEGURANÇA PÚBLICA
POLÍCIA CIVIL
DEPARTAMENTO MÉDICO LEGAL

LAUDO DE EXAME CADAVÉRICO

RG. N° 1340/2014

Ao(s) vinte e oito dias do mês de junho do ano de dois mil e quatorze às 10:50 horas, nesta cidade de Vitória, Estado do Espírito Santo, e no Departamento Médico Legal, em atenção à solicitação do Exmo (a). Senhor (a) Delegado (a) do DPJ de Vitória/ES, por meio do Of. nº 5001/14, eu, abaixo assinado, em cumprimento da minha missão de médico legista e observando as exigências legais, procedi ao **EXAME CADAVÉRICO** na pessoa de **CRISTOPHER MONTERO SITJAR**, 39 anos de idade, nascido (a) aos 12/10/1974, natural de Filipinas/ES, filho (a) de Erlin Bionisio Sitja e de Yolanda Montero Sitjar, residia à School Street, Nº 438, Bairro Gace Village, Quezon, Filipinas, sendo o seu corpo procedente do Apart Hospital/ES, respondendo aos seguintes quesitos: 1°) Se houve morte; 2°) Qual a causa da morte; 3°) Qual o instrumento ou meio que produziu a morte; 4°) Se foi produzida por meio de veneno, fogo, explosivo, asfixia ou tortura por meio insidioso ou cruel (resposta especificada).

Assim realizada a perícia, passo a oferecer o laudo que se segue: HISTÓRICO: Ao(s) 28 dia(s) do mês de junho de 2014, à(s) 10:50 hora(s), deu entrada no necrotério desta unidade o corpo que foi dito ser da pessoa acima qualificada. Das informações observadas, consta ter a mesma, segundo os dados coletados, o periciado é oriundo do Apart Hospital com quadro de morte a esclarecer . DESCRIÇÃO: As vestes constam de macacão amarronzado. O corpo apresenta os seguintes sinais de morte: rigidez, pupilas fixas e hipostases, compatíveis com mais de 06 horas de morte. EXAME EXTERNO: O cadáver é do sexo masculino, cor branca, 168 centímetros de estatura, biotipo normolíneo, cabelos pretos, lisos e com tamanho médio , olhos castanhos e sem traumas, dentes preservados, aparentando idade alegada. Sinais particulares não detectados. Genitália externa masculina normal. Lesões externas: Ausências de lesões epidérmicas traumáticas em região cervical, região dorsal, região torácica, região abdominal, região glútea, região genital, regiões axilares e em membros. EXAME INTERNO: Segmento cefálico: Couro cabeludo sem infiltrações hemorrágicas e sem lesões externas. Ausência de fraturas cranianas externas ou internas. Ausência de hemorragias intracranianas. Região cervical: sem alterações externas de interesse médico legal . Tórax e abdome: abertas as cavidades torácica e abdominal, constatou-se ausência de hemotórax, pulmões sem lesões traumáticas, coração com excesso de tecido adiposo e com áreas de isquemia, fígado com palidez, baço sem alterações macroscópicas e ausência de hemoperitôneo. Observação: Coletado swab sanguíneo para análise de DNA(envelope nº 131152). Coletado sangue para avaliação alcoólica. Coletado urina e estômago com conteúdo para avaliação toxicológica. CONCLUSÕES: Diante dos dados colhidos durante a necropsia e dos resultados, conclui-se que a causa da morte foi: **INFARTO AGUDO DO MIOCÁRDIO**. **RESPOSTAS AOS QUESITOS OFICIAIS**: Ao 1º: Sim; ao 2º: **INFARTO AGUDO DO MIOCÁRDIO**; ao 3º: Morte natural; ao 4º: Não para todos os itens. xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx

Dr. Willian Sebastião de Souza
Médico Legista CRM/ES 9356

14/07/14-gpg

TERMO DE INQUIRIÇÃO - PRIMEIRA TESTEMUNHA

Aos trinta dias do mês de junho do ano de dois mil e quatorze na Seção de Inquéritos Administrativos da Capitania dos Portos do Espírito Santo, às 09h, MLECZKO PRZEMYSLAW PIOTR, polonês, casado, filho de Jaroslaw Mleczko e de Danuta Mariliewicz, com 54 anos de idade, Capitão de Longo Curso - CLC, passaporte nº EA4200318, Carteira de Marítimo n° 0149302, Comandante do NM UBC TOKYO, residente em 37-700, Przemysl, Poland,127/4 Grunwaldzya Street, acompanhado da Tradutora Pública Juçara Touriño Moraes, matrícula da JUCEES nº 028, e do Advogado Alexandre Braga Népio, OAB/ES nº 9996, neste ato nomeado e legitimamente constituído como seu advogado, depois de prestar o compromisso de dizer a verdade, passou a ser inquirido pelo Sr. Encarregado do Inquérito sobre a acidente com pessoas em espaço confinado, ocorrido no NM UBC TOKYO, em 28 de junho de 2014, na seguinte forma: **Perguntado**: desde quando o Sr. atua como comandante do navio UBC TOKYO? **Respondeu**: que é o comandante do navio há 4 meses. **Perguntado**: Quem é o Correspondente P&I e o agente do navio no Estado? **Respondeu**: que o correspondente é a SEASTAR e a agencia é a VITÓRIA LOG MARÍTIMA. **Perguntado**: Quem é o proprietário e o armador do navio? **Respondeu**: que é a SPEEDWAVE COMPANY LTD. **Perguntado**: Quando e onde ocorreu o acidente? **Respondeu**: que dia 28 de junho entre 4h40 e 5h20. Ocorreu no espaço vazio entre os porões nº 5 e 6, por boreste, onde fica o acesso ao porão nº 5. **Perguntado**: onde o depoente se encontrava no momento do fato, objeto do inquérito? **Respondeu:** que estava na sua cabine. **Perguntado**: Que sabe a respeito? **Respondeu**: que estava em seu camarote repousando quando, por volta de 5h35, foi despertado pelo anúncio no fonoclama de que havia ocorrido um acidente no espaço vazio entre os citados porões, convocando a tripulação para comparecer ao local do acidente com aparelho de respiração. Desceu rapidamente até o local do acidente e lá já estava o imediato do navio que estava coordenando os trabalhos de carga, descarga, lastro e deslastre, e que também era o chefe da equipe de resgate. Ao chegarem os membros da tripulação convocados, foram designados para o resgate o contramestre atual, o próximo contramestre e o auxiliar de serviços gerais, preparando-se para a descida com o equipamento de respiração. O primeiro a ser resgatado foi o OS, pois é o que estava mais próximo. Foi resgatado rapidamente, pois ainda estava consciente e saiu auxiliado por um dos membros da equipe de socorro. Os outros dois prosseguiram e encontraram o marinheiro AB dois níveis abaixo, meio inconsciente e o retiraram do espaço. Enquanto isso o terceiro membro da equipe desceu para procurar o 2º oficial que

foi encontrado no último nível, completamente inconsciente. Para removê-lo foram utilizados dois homens, pois o espaço é muito estreito. Quando o 2º oficial foi retirado já estavam no convés os Bombeiros, a equipe de paramédicos, e duas ambulâncias, disponíveis no cais. Foi tentada a ressuscitação no 2º oficial, enquanto ambos eram conduzidos para o hospital. À tarde foi informado pelo agente que o oficial havia falecido, notícia esta confirmada posteriormente pelo P&I. **Perguntado**: O senhor tem conhecimento das recomendações da IMO para entrada em espaços confinados a bordo de navios, constantes na Resolução A.864(20) adotada em 27 de Novembro de 1997? **Respondeu**: que possui conhecimento das recomendações da IMO, porém não se recorda da sua denominação e data de adoção. **Perguntado**: O senhor tem conhecimento das recomendações Organização Internacional do Trabalho (ILO) para entrada e trabalho em espaços confinados a bordo de navios, constantes no Capítulo 10 do Código de Práticas para a Prevenção de Acidentes a bordo de navios no mar e no porto? **Respondeu**: que sim, porém também não se recorda da sua denominação e data de adoção. **Perguntado**: os tripulantes envolvidos no acidente também tinham conhecimento das citadas instruções? **Respondeu**: que talvez não saibam exatamente das instruções, porém sabem que somente podem descer nos espaços confinados sem a autorização do depoente ou o imediato. **Perguntado**: neste evento em particular o 2º Oficial tinha autorização para entrar no espaço? **Respondeu**: que tenha conhecimento não. Para este tipo de atividade existe um check-list a ser cumprido e assinado por várias pessoas, inclusive pelo depoente, o que não foi feito. Os tripulantes não estavam autorizados a realizar a atividade. **Perguntado**: os tripulantes acidentados eram adequadamente capacitados e treinados para trabalho em espaços confinados, com conhecimento e compreensão dos perigos de entrar nesses espaços? **Respondeu**: que sim. **Perguntado**: Os tripulantes acidentados estavam adequadamente vestidos a fim de evitar o risco de contato de substâncias tóxicas ou de produtos químicos com a pele ou os olhos, e portando Equipamentos de Proteção Individual (EPI) e equipamentos individuais detectores de gases? **Respondeu:** que esses equipamentos não são utilizados a bordo, pois não é um navio de transporte de substâncias químicas. Os tripulantes trajavam os EPIs apropriados para o trabalho em navio graneleiro, ou seja, capacete, botas, luvas, óculos de proteção, macacão de algodão e mascaras para proteção contra pó. O navio possui oxímetro e detector de gás, porém ficam de posse do imediato sendo disponibilizados quando necessário. Caso sejam solicitados a transportarem produtos químicos, o armador e/ou afretador deverão providenciar os equipamentos de segurança adequados. **Perguntado**: O espaço confinado estava adequadamente sinalizado e

identificado? **Respondeu**: que sim. Existe um aviso no acesso alertando sobre a necessidade de verificar os níveis de oxigênio antes de entrar no compartimento. Os acessos ficam trancados com cadeados e o 2º oficial estava de posse da chave, pois era o responsável pelos trabalhos no convés. **Perguntado**: Foi dada ao trabalhador uma autorização para entrada no espaço confinado, assinada pelo Comandante do navio ou pelo responsável técnico pelo serviço a ser executado, devidamente preenchida em **Respondeu**: que não foi dada a referida permissão. O navio possui formulários apropriados para a permissão da execução do trabalho, que não foram utilizados. Tais formulários estão de acordo com a legislação vigente, porém não se recorda da sua denominação e data de adoção. **Perguntado**: que tenha conhecimento, o 2° oficial tinha conhecimento da necessidade de cumprir este check-list? **Respondeu**: que sim. **Perguntado**: a que possível causa o Sr. atribui o acidente? **Respondeu**: que não sabe atribuir. Declarou ainda que o 2º oficial era bastante experiente. **Perguntado**: a quem o Sr. atribui a possível responsabilidade pela ocorrência do acidente? **Respondeu**: que aos próprios acidentados. **Perguntado**: na opinião do Sr. o que poderia ter sido feito para que não ocorresse o acidente? **Respondeu**: que deveriam ter sido cumpridos os procedimentos de segurança, que eram exaustivamente treinados. **Perguntado**: o senhor tem algo mais a declarar, ou que queira acrescentar ao seu depoimento? **Respondeu**: que não. Solicita cópia do depoimento. E nada mais disse, nem lhe foi perguntado, pelo que se deu por findo o presente depoimento que, lido e achado conforme, assina com o Encarregado do Inquérito, comigo, Escrivão que o escrevi.

MLECZKO PRZEMYSLAW PIOTR
Comandante

ARTUR VARELLA GOMES
CMG (RM1)
Encarregado do Inquérito

JUÇARA TOURINO MORAES
JUCEES nº 028
Tradutora

ALEXANDRE BRAGA NEPIO
OAB/ES 9996
Advogado

DAVID CARDOSO DE ARAUJO
SO-RM1-FN-MU 76.1206.35
Escrivão

Maria Philippou

From: Michalis Pouris [mpouris@intership-cyprus.com]
Sent: Πέμπτη, 21 Μαΐου 2015 9:07 πμ
To: COrphanos@maic.gov.cy
Cc: mphilippou@maic.gov.cy
Subject: RE: M/V "UBC TOKYO" Accident June 2014- Investigation
Attachments: 2OFF.PDF; AB.PDF; OS.PDF

Dear Mr. Orphanos,

Further to my previous message kindly find attached the requested familiarisation checklists for the seafarers involved in the subject accident.

Best Regards

MICHALIS POURIS
HEAD OF SAFETY & QUALITY ASSURANCE DEPARTMENT

INTERSHIP NAVIGATION CO LTD
Hartmann House
32 Miltonos Street, CY-3050 Limassol,
P.O. Box 70185, CY-4161, Limassol Cyprus

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FAX +357 25 58 57 56
DIRECT +357 25 84 71 23
MOB +357 99 52 69 48
E-MAIL mpouris@intership-cyprus.com
WEB www.intership-cyprus.com

From: Michalis Pouris
Sent: 20 May 2015 17:30
To: 'COrphanos@maic.gov.cy'
Cc: mphilippou@maic.gov.cy
Subject: RE: M/V "UBC TOKYO" Accident June 2014- Investigation

Dear Mr. Orphanos,

Kindly find attached the requested procedures and the drill plan for 2014. The familiarisation checklists will follow shortly.

Should you have any additional questions please do not hesitate to contact us.

ATHENA MARINE CO LTD	RED FILE		Created by:	SQA Dept.
			Approved by:	DPA
			Issue Date:	01/03/2010
	Crew Familiarisation Checklist (On-board)		Issue No:	04
			Revision No:	Initial
			Page:	1 of 5
	Doc. Code	PERS#06	Doc. Control	9300752

Vessel Name: UBC TOKYO **Rank:** 2ND OFFICER

Name: SITJAR, CRISTOPHER **Date:** 20 APRIL 2014

Prior to sailing of the vessel, it is the Master's and Duty Officer's responsibility to ensure that the new crew member is immediately familiarized and briefed about the following:

PART A – Safety Issues

☑	Check the ability to communicate with others [English language for Safety & Duties]
☑	Muster List / Assigned Duties
☑	Security Duties
☑	Location of Lifeboats & Liferafts / Muster Point
☑	Escape Route from Cabin to Muster Point
☑	Escape Routes from Engine Room
☑	Use of Survival Equipment (Locate and Don Lifejacket, Breathing apparatus/ Escape Sets, Survival suits/ thermal aids)
☑	All alarms & Emergency Signals
☑	Watchkeeping Duties / Arrangements
☑	Smoking Regulations in force
☑	Demonstrate closing /Opening of Fire/ Watertight /Watertight doors
☑	Activate Portable Fire Extinguishers
☑	Identify the Designated Person Ashore and Alternate
☑	Location & Use of All Fire Fighting Equipment
☑	Location & Operation of (i) Emergency Fire Pump (ii) Emergency Generator
☑	Location / Use of Emergency Stops / Quick Shut-Off Valves
☑	Location of Vent Flaps
☑	Launching of Lifeboats & Liferafts
☑	Location & Use of VHF Emergency Radios
☑	Demonstrate Understanding of Safety Information / Symbols and Alarm Signals
☑	*Procedures for " Man Overboard "*
☑	Immediate actions when detecting fire or smoke, raising of alarms
☑	Actions after hearing " Abandon ship " or " General Alarm "
☑	All locations of Muster stations, station bills and it's content
☑	Special duties assigned in case of life boat launching
☑	Special duties assigned in case of fire (fire squad)
☑	Demonstration of vessel's internal communication system
☑	Introduction to all crew members
☑	Check of crew member's safety working clothes and uniform - by Master
☑	Cabin control - all cabin items received in good order

PART B – Safety & Quality Management System

☑	Company Policies introduced and explained
☑	Job description – Duties and Responsibilities
☑	SOLAS Training and Fire Fighting Manual (familiar with location and contents)
☑	Receive Information & Demonstrate Understanding of Ship Specific Procedures : (i) Shipboard Oil Pollution Emergency Plan (ii) Emergency Plan (iii) Garbage Management Plan
☑	Master / Chief Engineer interview – Discuss Company and Standing Orders

☑ All Department Familiarisation - Environment

	Item	Remarks	Date Completed
☑	Read the Environmental Policy		20/06/14
☑	Videotel Corse with regards ISO 14001		20/06/14
☑	Made Aware of Legal Requirements – each port		20/06/14
☑	Made Aware of Environmental Aspects		20/06/14
☑	Made Aware of Targets and Objectives		20/06/14
☑	Made Aware of Environmental Management Plan		20/06/14
☑	Aware of Waste Management Procedures		20/06/14
☑	Aware of Ballast Water Management		20/06/14

CAPT. MLECZKO, D.	2/O SITJARIC.	C/O TSAGUHIN, E.
Master (Name, Signature and Vessel's Stamp)	Crew Member (Name, Signature)	Department Head (Name, Signature)

INTERNATIONAL SHIPPING COMPANY LIMITED LIMASSOL

ATHENA MARINE CO LTD	RED FILE		Created by:	SQA Dept.
			Approved by:	DPA
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	Crew Familiarisation Checklist (On-board)		Issue No:	04
			Revision No:	Initial
			Page:	1 of 5
	Doc. Code	PERS#06	Doc. Control	9300752

Vessel Name: UBC TOKYO **Rank:** ABLE SEAMAN

Name: MACALALAD, JAN KING L. **Date:** 11 SEPT 2013

Prior to sailing of the vessel, it is the Master's and Duty Officer's responsibility to ensure that the new crew member is immediately familiarized and briefed about the following:

PART A – Safety Issues

☑	Check the ability to communicate with others [English language for Safety & Duties]
☑	Muster List / Assigned Duties
☑	Security Duties
☑	Location of Lifeboats & Liferafts / Muster Point
☑	Escape Route from Cabin to Muster Point
☑	Escape Routes from Engine Room
☑	Use of Survival Equipment (Locate and Don Lifejacket, Breathing apparatus/ Escape Sets, Survival suits/ thermal aids)
☑	All alarms & Emergency Signals
☑	Watchkeeping Duties / Arrangements
☑	Smoking Regulations in force
☑	Demonstrate closing /Opening of Fire/ Watertight /Watertight doors
☑	Activate Portable Fire Extinguishers
☑	Identify the Designated Person Ashore and Alternate
☑	Location & Use of All Fire Fighting Equipment
☑	Location & Operation of (i) Emergency Fire Pump (ii) Emergency Generator
☑	Location / Use of Emergency Stops / Quick Shut-Off Valves
☑	Location of Vent Flaps
☑	Launching of Lifeboats & Liferafts
☑	Location & Use of VHF Emergency Radios
☑	Demonstrate Understanding of Safety Information / Symbols and Alarm Signals
☑	Procedures for " Man Overboard "
☑	Immediate actions when detecting fire or smoke, raising of alarms
☑	Actions after hearing " Abandon ship " or " General Alarm "
☑	All locations of Muster stations, station bills and it's content
☑	Special duties assigned in case of life boat launching
☑	Special duties assigned in case of fire (fire squad)
☑	Demonstration of vessel's internal communication system
☑	Introduction to all crew members
☑	Check of crew member's safety working clothes and uniform - by Master
☑	Cabin control - all cabin items received in good order

PART B – Safety & Quality Management System

☑	Company Policies introduced and explained
☑	Job description – Duties and Responsibilities
☑	SOLAS Training and Fire Fighting Manual (familiar with location and contents)
☑	Receive Information & Demonstrate Understanding of Ship Specific Procedures : (i) Shipboard Oil Pollution Emergency Plan (ii) Emergency Plan (iii) Garbage Management Plan
☑	Master / Chief Engineer interview – Discuss Company and Standing Orders

ISN INTERSHIP NAVIGATION	RED FILE		Created by:	SQA Depart
			Approved by:	DPA
			Issue Date:	01/03/2010
	Crew Familiarisation Checklist (On-board)		Issue No:	04
			Revision No:	Initial
			Page:	3 of 5
	Doc. Code	PERS#06	Doc. Control	9300752

☑ All Department Familiarisation - Environment

	Item	Remarks	Date Completed
☑	Read the Environmental Policy		SEPT. 10, 2013
☑	Videotel Corse with regards ISO 14001		SEPT. 10, 2013
☑	Made Aware of Legal Requirements – each port		SEPT. 10, 2013
☑	Made Aware of Environmental Aspects		SEPT. 10, 2013
☑	Made Aware of Targets and Objectives		SEPT. 10, 2013
☑	Made Aware of Environmental Management Plan		SEPT. 10, 2013
☑	Aware of Waste Management Procedures		SEPT. 10, 2013
☑	Aware of Ballast Water Management		SEPT. 10, 2013

CAPT. [illegible] Master (Name, Signature and Vessel's Stamp)	MACALALAD, JON KING C Crew Member (Name, Signature)	CIO E. BAGUHIN Department Head (Name, Signature)

MV TOKYO
WAVE SHIPPING COMPANY LIMITED
LIMA

ATHENA MARINE CO LTD	RED FILE		Created by:	SQA Dept.
			Approved by:	DPA
			Issue Date:	01/03/2010
	Crew Familiarisation Checklist (On-board)		Issue No:	04
			Revision No:	Initial
			Page:	1 of 5
	Doc. Code	PERS#06	Doc. Control	9300752

Vessel Name: UBC TOKYO **Rank:** O/S

Name: BAUSO, EVAN MICHAEL **Date:** 20 APRIL 2014

Prior to sailing of the vessel, it is the Master's and Duty Officer's responsibility to ensure that the new crew member is immediately familiarized and briefed about the following:

PART A – Safety Issues

☑	Check the ability to communicate with others [English language for Safety & Duties]
☑	Muster List / Assigned Duties
☑	Security Duties
☑	Location of Lifeboats & Liferafts / Muster Point
☑	Escape Route from Cabin to Muster Point
☑	Escape Routes from Engine Room
☑	Use of Survival Equipment (Locate and Don Lifejacket, Breathing apparatus/ Escape Sets, Survival suits/ thermal aids)
☑	All alarms & Emergency Signals
☑	Watchkeeping Duties / Arrangements
☑	Smoking Regulations in force
☑	Demonstrate closing /Opening of Fire/ Watertight /Watertight doors
☑	Activate Portable Fire Extinguishers
☑	Identify the Designated Person Ashore and Alternate
☑	Location & Use of All Fire Fighting Equipment
☑	Location & Operation of (i) Emergency Fire Pump (ii) Emergency Generator
☑	Location / Use of Emergency Stops / Quick Shut-Off Valves
☑	Location of Vent Flaps
☑	Launching of Lifeboats & Liferafts
☑	Location & Use of VHF Emergency Radios
☑	Demonstrate Understanding of Safety Information / Symbols and Alarm Signals
☑	Procedures for " Man Overboard "
☑	Immediate actions when detecting fire or smoke, raising of alarms
☑	Actions after hearing " Abandon ship " or " General Alarm "
☑	All locations of Muster stations, station bills and it's content
☑	Special duties assigned in case of life boat launching
☑	Special duties assigned in case of fire (fire squad)
☑	Demonstration of vessel's internal communication system
☑	Introduction to all crew members
☑	Check of crew member's safety working clothes and uniform - by Master
☑	Cabin control - all cabin items received in good order

PART B – Safety & Quality Management System

☑	Company Policies introduced and explained
☑	Job description – Duties and Responsibilities
☑	SOLAS Training and Fire Fighting Manual (familiar with location and contents)
☑	Receive Information & Demonstrate Understanding of Ship Specific Procedures : (i) Shipboard Oil Pollution Emergency Plan (ii) Emergency Plan (iii) Garbage Management Plan
☑	Master / Chief Engineer interview – Discuss Company and Standing Orders

ISN INTERSHIP NAVIGATION	RED FILE		Created by:	SQA Depart
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☑ All Department Familiarisation - Environment

	Item	Remarks	Date Completed
☑	Read the Environmental Policy		20 APRIL 2014
☑	Videotel Corse with regards ISO 14001		20 APRIL 2014
☑	Made Aware of Legal Requirements – each port		20 APRIL 2014
☑	Made Aware of Environmental Aspects		20 APRIL 2014
☑	Made Aware of Targets and Objectives		20 APRIL 2014
☑	Made Aware of Environmental Management Plan		20 APRIL 2014
☑	Aware of Waste Management Procedures		20 APRIL 2014
☑	Aware of Ballast Water Management		20 APRIL 2014

CAPT. MLECZKO	O/S BAUSO, E.M.	C/O BAGUHIN, E.
Master (Name, Signature and Vessel's Stamp)	Crew Member (Name, Signature)	Department Head (Name, Signature)

GREENWAY SHIPPING COMPANY LIMITED
M/V
EDO TOKYO
LIMASSOL

M/V UBC TOKYO **CALLSIGN: C4DT2**

TITLE : ENTERING INTO ENCLOSED SPACE

PLACE : CREW MESS / VESSEL AT PUERTO CABELLO, VENEZUELA

DATE/TIME: 10 MAY 2014 1400 LT

THE FOLLOWING CREW HAVE ATTENDED THE VIDEOTEL MOVIE

NO.	NAME OF CREW	RANK	SIGNATURE
1	CAPT.MLECZKO,PRZEMYSLAW	MAS	
2	BAGUHIN, EDWIN	C/O	
3	SITJAR, CRISTOPHER	2/O	
4	CELINDRO,EDWARD RYAN	3/O	
5	TUBLE, EDILBERTO	C/E	
6	TUBLE,PETER	2/E	
7	INOVEJAS,REYAND	3/E	
8	GREGORIO,CRISOSTOMO	ELECT	
9	GABASA,RENE	BSN	
10	UY,DICSON	OTR	
11	MACALALAD,JAN KING	AB1	
12	SUAN,RICHARD	AB2	
13	VILLAREAL,REYNALDO	AB3	
14	AFANTE,RAFAEL	OS1	
15	BAUSO, EVAN MICHAEL	OS2	
16	REYES, EDWARD	OLR1	
17	YANOC, MICHAEL	OLR2	
18	FRANCISCO,DAN ALFRED	WPR	
19	LODRITA,EMILSIO	COOK	
20	NAZARRO,RICHARD	STWD/TR	
21	TUMBAGAHAN,JOHN DONALD	D/CDT	
22	TABIAS,MARVIN GREGG	E/CDT	

Prepared by:

CELINDRO, E.R.
3rd Officer

Noted:

SPEEDWAVE SHIPPING COMPANY LIMITED MV UBC TOKYO

CAPT. MLECZKO,P
Master

UK P&I CLUB

L P Bulletin

Friday 7th December 2012

Bulletin 858 - 12/12 - Petroleum Coke Bulk Cargo: Tank Washing, Cleaning Products and Discharge Implications

The Club has received many enquiries recently concerning the discharge of Petcoke hold washings. In order to clarify the situation the following paper has been put together by The International Tanker Owners Pollution Federation Limited (ITOPF) which assesses the issues and provides guidance.

Petroleum coke ('petcoke') is a bulk by-product of oil refining. Among other end-uses, it is traded as a form of fuel (*e.g.* for cement manufacture) or an input to other industrial applications (*e.g.* smelting). It is commonly transported at sea in bulk carriers. As with most other bulk cargoes, after discharge there remain residues in the holds and on deck which must be cleaned before new cargoes can be loaded. The cleaning process typically entails dry sweeping, high pressure water washing, the application of a chemical cleaner and a final high pressure water wash. In theory, the dirty wash water is either disposed of at sea or discharged for treatment in land-based reception facilities. However, given increasingly stringent national and international legislation *e.g.* MARPOL, it is becoming ever more important to ensure that a proper disposal route is followed. It is also possible for vessels carrying petcoke to be involved in an incident which results in a loss of the cargo at sea. The purpose of this bulletin is to briefly describe the physical properties of petcoke, the environmental implications of its discharge or loss at sea, the properties and effects of petcoke cleaning agents and some of the national and international policies relating to its disposal.

PHYSICAL PROPERTIES

Petcoke is a black powder, granular or needle-like substance (See Figure 1.), consisting mainly of carbon (84-97%), produced during the thermal decomposition of heavy oils in refining. It exists in various forms, including green coke (also known as raw or delayed petcoke), calcineable, sponge, needle or regular petroleum coke.

Green petcoke is the product of delayed coking and contains significant hydrocarbon content. It has a distinctive hydrocarbon smell and, depending on the heating rate of the refining process, can contain from 4 to 15% volatile material, including Polycyclic Aromatic Hydrocarbons (PAH).

Fig 1: Petcoke

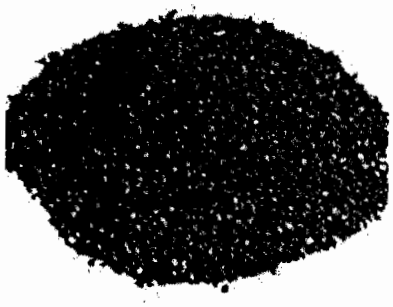

Table 1: Properties of Petcoke

Property[1]	Fuel-Grade Green	Anode-Grade Calcined
Sulphur (wt%)	2.5-5.5	1.7-3.0
Ash (wt%)	0.1-0.3	0.1-0.3
Nickel (ppm)	Not determined	165-350
Vanadium (ppm)	200-400	120-350
Residual [2,3] hydrocarbon (wt%)	9-12	<0.25
Bulk density (g/cm3)	Not determined	0.8
Real density g/cm3)	Not determined	2.06

Calcined petroleum coke is derived from green coke by heating to high temperatures (> 1,200°C). This process removes virtually all of the hydrocarbon content (*i.e.* to < 0.1%). However in order to suppress dust, a small amount (< 0.3%) of oil might be added to the cargo. This may have implications in the case of loss or disposal at sea as the added oil may result in surface sheens. It is also common to use a fine water spray containing surfactants to suppress dust. The surfactant reduces the surface tension of the water, thus making it more effective at wetting the cargo and reducing the volume of water necessary. It is commonly applied in a dilute (between 100:1 and 3,000:1) form and normally classed as non-hazardous.

The exact properties of petcoke depend on the source of the crude oil feedstock and the heating process used. However, major components would be expected to be within the ranges illustrated in Table 1. Trace metals such as nickel and vanadium may be present at ppm levels. The specific gravity of petcoke ranges from 0.8-2.1 relative to water. Therefore, the product specification for each cargo must be consulted to determine if it will float or sink. As a rule of thumb, most petcoke products will sink in seawater. Petcoke is stable and insoluble in water and is therefore likely to form a slurry if discharged at sea.

ENVIRONMENTAL EFFECTS OF PETROLEUM COKE

Petcoke Material Safety Data Sheets (MSDS), the classification of petroleum substances according to the EU dangerous goods directive[4] and the GESAMP/EHS[5] composite list of hazard profiles 2003/2004 all state that petcoke is *not* considered a hazard to the marine environment. It is also worth noting that, although petroleum coke is described as non-hazardous, there are potential human health effects relating to the small particulate matter within the powder or granules as inhaled (*i.e.* airborne) dust. *

[1] *Lee et al. 1997.*
[2] *http://www.iupac.org/publications/pac/1995/pdf/6703x0473.pdf*
[3] *CONCAWE 1993 Product dossier no. 93/105: Petroleum Coke. Brussels.*
[4] *www.lycos.ltd.uk/legislation-library/concawe_class_01_53.../file*
[5] *GESAMP is the Joint Group of Experts on the Scientific Aspects of Marine Environmental Protection, an advisory body consisting of experts nominated by the sponsoring agencies (IMO, FAO, UNESCO –IOC, WHO, IAEA, UN, UNEP). The group has developed a list of hazard profiles for chemical substances that are carried in bulk at sea and may enter the marine environment.*

FORM FOR CARGO INFORMATION
for Solid Bulk Cargoes

BCSN

Shipper (Cliente)	**Transport document number** 1
Consignee (Cliente)	**Carrier** UNITED BULK CARRIERS
Name/Means of Transport M/V TOKYO **Port/Place of Departure** JOSE PORT , VENEZUELA **Port/Place of Destination** PRAIA MOLE , BRAZIL	**Instructions or other matters** Not applicable
General description of the cargo (type of material/particle size) Coque de Petroleo a Granel - Nao Calcinado (Green Delayed Petroleum Coque in Bulk - Non Calcined)	**Grosse mass (Kg / Tonnes)** 35.000 MT approximate

Specification of the bulk cargo, if applicable

Stowage Factor:	1,25 to 1,67 m3/t
Angle of Repose, if applicable:	Not Applicable
Trimming Proceedures:	No Trimming Facilities
Chemical Properties if potential hazzard*:	MHB

*e.g., Class & UN No. or MHB

Group of the cargo

_____ Group A & B*
_____ Group A*
X Group B
_____ Group C

*For cargoes which may liquefy (group A and group A & B cargoes

Transportable moisture limit

Not Applicable: not subject to liquification due to particle size

Moisture content at shipment

Typically less than 9%

Relevent special properties of the cargo

"This cargo is not hazardous to the marine environment"

Additional certificates*

not applicable Certificate of moisture content and transportable moisture limit
not applicable Weathering certificate
not applicable Exemption certificate
not applicable Other (specify)

*if required

Declaration

I hereby declare that the consignment is fully and accurately described and that the given test results and other specification are correct to the best of my knowledge and belief and can be considered as representative for the cargo to be loaded.

SPEEDWAVE SHIPPING COMPANY LIMITED LIMASSOL

28 May 2014

Name/status, company/organization
CYGMAR as agent for PETROENERGIA

Vicente Quevedo
Coordinador de Operaciones
Cygmar
Cygmar Services, C.A.
Cygmar Marine Services
Rif: J-30776925-1

Place and date
Jose , 27/05/2014

Signature on behalf of shipper

SPEEDWAVE SHIPPING COMPANY LIMITED MV UBC TOKYO LIMASSOL

Trade name: Petroleum Coke
Synonyms: none

MATERIAL HAZARD EVALUATION

(Per OSHA hazard communication standard [29 CFR PART 1910.1200]) (OHCS)

Health: non-hazardous unless dust is produced or off-gases emitted.

Precautionary Statement: caution: do not inhale dust. Coke is combustible solid.

HMIS rating: Health 1 Flammability 2 Reactivity **0**

1.0 Generic composition / components

Components	CAS #	%	Hazard data
Petroleum coke	64741-79-3	100	Non-hazardous except for Gases.

PDVSA PETROLEUMO
21 MAY 2014

SPEEDWAVE SHIPPING COMPANY LIMITED
MV UBC TOKYO
LIMASSOL

2.0 Physical Data

Physical hazard classification (per 29 CFR part 1910.1200

YES	Combustible solid	No	Flammable	No	Pyrophoric
NO	Compressed gas	No	Organic peroxide	No	Reactivity
NO	explosive	No	oxidizer	Yes	Stable (except with flames or sparks

Boiling point, 780 mmhg, °C (°F) (°F): NA.
Specific gravity (go/60 °F) (H2O=1): <1
Vapor density (air = 1): 1
% volatiles by volume :none
Melting point: °C(°F): NA
Vapor pressure, mmhg 25 °C :NA
Solubility in H20, % by height: insoluble
Evaporation rate (Butyl Acetate =1: NA
PH Of undiluted product: NA
Appearance and odor: Grey-black porous solid, practically no odor

3.0 Fire and Explosion Data

Flash point, coc °C (°F)	//	no
Flash point, pH, °C (°F)	//	no
Autoignition, °C (°F)	//	670 (1238)
NFPA Rating²	//	Health 1 Flammability: 2 Reactivity 0
Material ignition concentration // 1 onz./ft3 (dust cloud)		
Flammable limits (% by volume in air) // lower: no upper: no		
Extinguishing media // CO, dry chemical, halon water spray or foam		
Special fire fighting procedure // wear self-contained breathing apparatus when in a confined area. Shut off ignition sources. Isolate area until off gases have dissipated.		
Unusual fire or explosion hazard // combustible. Can be by heat, sparks or flames. Spontaneous heating and combustion may occur deep in mass. Water can be used to reduce airborne dust.		

SPEEDWAVE SHIPPING COMPANY LIMITED
MV UBC TORYC
LIMASSOL

4.0 Reactivity Data

Stability: Stable
Conditions contributing to instability: May burn does not ignite readily. Avoid operations Which create dust clouds, where electrical devices are unclassified, and/or ignition sources are present.
Incompatibility: strong oxidants and fluorine.
Hazardous Decomposition products: possible oxides Of C, N and S. (Thermal, unless otherwise specified).

Conditions contributing to hazardous polymerization: None

5.0 Spill or leak procedures

Procedures If material is Spilled:
*Eliminate all ignition sources.
*Sweep up and place in suitable clean, dry containers for later disposal.
*Prevent entry into waterways, streams and drainage systems.
*Avoid creating large dust clouds and inhalations of dust.
*Report spills as required to appropriate authorities.

Waste Disposal:

*It is the responsibility of the user to determine if the material is a hazardous waste at the time of disposal.
*Check before disposing to be sure you are in compliance with all applicable laws and regulations.
*RCRA Emergency Hotline Number: 800-424-9346.
*U.S Coast Guard National Response Center: 800-424-8802.

6.0 Health Hazard Data

SPEEDWAVE SHIPPING COMPANY LIMITED
MV UBC TOKYO
LIMASSOL

Health hazard classification
(Per 29 CFR part 1910.1200)

No	Carcinogen	No	Corrosive
No	Animal Carcinogen	No	Irritant
No	Suspect Carcinogen	No	Sensitize
No	Mutagen	No	Teratogen
No	Highly Toxic	Yes	Teratogen
No	Toxic		Target Organ: Lung

Product listed as carcinogen or potential carcinogen by:

NTP No IARC No OSHA No Other No

Toxicity summary: practically non-toxic, except when dust or Have gases are emitted.

Major route (s) Of entry: practically non-toxic, except when dust or off gases.

Acute exposure symptoms.

Inhalation: pulmonary irritation, due to dust or off gases.
Dermal contact: dust may adhere to skin.
Eye contact: dust may present physical discomfort.
Ingestion: not applicable.

Chronic exposure symptoms

Inhalation: repeat or prolonged exposure to coke may aggravate existing pulmonary conditions.

Dermal: repeated or prolonged exposure may cause irritation. PNAs, if present, may cause photosensitization of the skin.

Eyes: repeated or prolonged exposure to dust under certain conditions may cause conjunctivitis.

Other special effects
None.

Medical conditions aggravated by exposure

Dermal contact: pre-existing dermatoses.

Inhalation: pre-existing pulmonary.

First Aid and emergency procedures for acute effect

Inhalation: remove from exposure to fresh air immediately. If breathing has stopped. Administer artificial respiration. Keep person warm and at rest. Seek medical attention immediately.

Dermal: for contact with coke dust, was affected area thoroughly with soap and water.

Eyes: for contact coke dust, wash eyes immediately with large amounts Of water, occasionally lifting upper and lower lids, until no evidence Of chemical remains, or about 15 min. If irritation persist, see medical attention.

Ingestion: not applicable.
Notes to physician: none.

7.0 Special protection information.

Ventilation requirements: provide local exhaust or process enclosure ventilation to meet published exposure limits.

Permitted threshold air concentrations:
Petroleum coke: none assigned.

Nuisance dust: TLV-TWA 10 mg/m3
OSHA-PET 10 MG/M3

Specific personal protection equipment:

Respiratory: use dust or organic respirator, jointly approved by the National Institute for Occupational Safety and Health and the Mine Safety and Health Administration (OSHA ans. MSHA).

Eyes: use dust resistant safety goggles.

SPEEDWAVE SHIPPING COMPANY LIMITED
MV UBC TOKYO
LIMASSOL

WARNING:

COMBUSTIBLE SOLID - MAY UNDERGO AUTOIGNITION IF STORED WITHOUT ADEQUATE VENTILATION AND ROTATION OF PRODUCT.

HANDLING:

Keep away from heat, sparks and flames.
Use only with adequate ventilation.
Do not inhale fumes or dusts.
Rotate stock to prevent.

FIRST AID:

Inhalation: remove from exposure to fumes Or dusts seek medical aid.

Dermal: wash with soap and water. Seek medical aid

Eyes: Flush with water

SPEEDWAVE SHIPPING COMPANY LIMITED
MV
UBC TOKYO
LIMASSOL

Other clothing or equipment: use protective (impervious) clothing and equipment to prevent repeat or prolonged skin contact with coke dust.

8.0 Transportation and special precautions

Storage: Assure ventilation for dust and fumes. Do not store near heat, flame or strong oxidizers.

Caution: empty containers may contain product residue, which could include flammable or explosive vapors.
Consult appropriate Federal State and local authorities before reusing, reconditioning, reclaiming, recycling or disposing of empty containers and/or waste residues of this product.

Dot information:

Proper shipping name: petroleum coke.
Hazard class: ORM-C
Hazard identification number: none assigned.
Placard: none

9.0 Environmental Data

Product name: petroleum coke.
Product n°. : 07 - 406

SARA TITLE III

Section 313 - toxic chemicals

This product does not contain toxic chemicals of section 313 Of Title III Of superfuod Amendments and Reauthorization act Of 1986 (SARA) and 40 CFR part 372.

Components	Cas #	%
None	NA	NA

Section 311 - hazard categories

No	not applicable	Yes	fire hazard
No	acute (immediate health hazard.	No	sudden release of pressure hazard
No	chronic (delayed health hazard	No	reactive hazard

SPEEDWAVE SHIPPING COMPANY LIMITED
MV
UBC TOKYO
LIMASSOL

Section 302 / (A) - Extremely Hazardous Substances

(RQ = Reportable quantity)
(TPQ = Threshold planning quantity)

This product does not contain extremely hazardous substance Of section 302 / (A).

Component	CAS #	%	RO lbs	TPO lbs
None	–	–	–	–

Clear Water Act

Under section 311 (b) (4) Of the Clean Water Act, discharges Of the crude oil and petroleum products in any kind or form to surface waters must be immediately reported to the National Response Center: 800-424-8802.

Compressive Environmental, response, Compensation & Liability Act (CERCLA)- Section 102 Hazardous Substances.

Component	CAS #	%	RO lbs	TPO lbs
None	–	–	–	–

Petroleum and petroleum fractions are exclude from the list of CERCLA hazardous substances by section 101 (14) of CERCLA.

Federal Regulations

Reported in TSCA Inventory:

Product	X Yes	No	NA
Components	Yes	No X	NA

Protective measures during repair and maintenance of contaminated equipment:
*Avoid breathing dust.
*Wash skin thoroughly after banding
*Remove soiled clothing.
*Use dust or off-gas protection if need.
*Refer to section 7.0 - special protection information.

SPEEDWAVE SHIPPING COMPANY LIMITED
MV
LIMASSOL

MANUFACTURA Y MERCADEO

To: Master MT. UBC TOKYO
From: PDVSA pETROCEDENO.

CARGO CERTIFICATE OF PETROLEUM COKE

Please be advised about cargo information according to international regulations-Solas Convention Chapter VI-.

Specification Of bulk cargo: **green delayed petroleum coke.**
Stowage factor: 45-47 **cbf / MT.**
Angle Of repose: **46° min - 50° max.**
Transportation Of cargo: **about 5.3-km belt length with a rate Of 200-300 Mt per hour to stowage pad.**
Loading procedure: **conveyor belts system-only one shiploader-only one hatch at same time.**
Loading temperature: **110 °F.**
Properties: **please see our Material Safety Data Sheet.**
Transportation by sea: **product must be carried with the hatches closed in hermetic conditions.**

Received by:

SPEEDWAVE SHIPPING COMPANY LIMITED M/V UBC TOKYO LIMASSOL

Master signature

SPEEDWAVE SHIPPING COMPANY LIMITED M/V UBC TOKYO LIMASSOL

By PDVSA

Loading Master

Date: MAY 07 ,2011

Master: M/T: UBC TOKYO
Present.
Dear Sir:

Your vessel has been nominated to load the following cargo:

GRADE	QUANTITY (MT)	TEMPERATURE	STOWAGE FACTOR	LOADING RATE
GREEN DELAYED PETROLEUM COKE	49.500 +/- 10%	110	45-47	880 APROX.
	APPROX	APPROX		

The system to load the vessel is delivery by one shiploader.

Please write down the vessel's cargo quantity requested:

_____

The maximum loading rate, which my vessel can receive, is:

_____

Note:

The draft survey will be performed by ATLAS MARINE Company as independent surveyors together with your Chief Officer, please do not take official draft until surveyor is present.

Please, notify at our Terminal's representative (jetty man) on board, one hundred tons (100) before completed cargo, this is in order to clean all our loading system.

By PDVSA

_____

Loading Master

Received:

_____

Master/vessel's stamp

SPEEDWAVE SHIPPING COMPANY LIMITED
M/V
UBC
LIMASSOL

UBC Tokyo

The company established a team of experienced persons in order to find tasks and actions onboard that involved considerable risks during their execution and which were tabulated below. The Assessment Team assessed involved risks considering normal parameters without involving any unexpected factors. It is the responsibility of the crew to re-assess the risk if on the specific task/action there are parameters which affect the risk level.

The below list is not exhaustive therefore the responsibility lies with the vessel to conduct risk assessment when and where deemed necessary by the professional judgement of the officers onboard.

The office assessment team (OAT) which has been involved to establish the below list of risk assessment is as follows:

1. Mr. Uwe Kowalewski– Head of Technical Department
2. Capt. Christian Harling – Fleet superintendent
3. Capt. Marek Klein - Fleet Superintendent
4. Mr. Michalis Pouris - Head of SQA Department

CARGO OPERATIONS

Task activity with the potential to cause harm	Type of injury which can result if harm occurs (what if something goes wrong?)	Current Control Measures in Place	of Risk	Severity of Harm may result from the Risk	Risk Level
Cargo falling down	Injury, damages to the property	Company Circulars	2	3	
Lashings falling down	Injury, damages to the property	Company Circulars	2	3	
Cargo falling overboard	Financial damages	Company Circulars	2	2	
Slip on the wet or oily surface	Injury	Company Circulars	1	3	
Falling down from height, in Cargo Hold	Injury, death	Company Circulars	2	3	
Loading/lashing equipment failure	Injury, death, damages to the property	Company Circulars	2	2	

ENCLOSED SPACE ENTRY OPERATIONS

Hazard / Task activity with the potential to cause harm	Consequence / Type of injury which can result if harm occurs (what if something goes wrong?)	Current Control Measures in Place	Likelihood of Risk	Severity of Harm may result from the Risk	Risk Level
Not properly ventilated	Death	Code of Safe Working Practices	2	5	[illegible]
	Damage to property (explosion)	Code of Safe Working Practices	2	5	[illegible]
Not checked atmospheric conditions	Death	Code of Safe Working Practices	2	5	[illegible]
Not calibrated equipment.	Death	Code of Safe Working Practices / calibration instructions currently missing from our manual	2	5	[illegible]
Crew not following safety procedures	Death	Code of Safe Working Practices	1	5	

Maria Philippou

From: Michalis Pouris [mpouris@intership-cyprus.com]
Sent: Τετάρτη, 20 Μαΐου 2015 5:30 μμ
To: COrphanos@maic.gov.cy
Cc: mphilippou@maic.gov.cy
Subject: RE: M/V "UBC TOKYO" Accident June 2014- Investigation
Attachments: 217 Drill Plan 2014.pdf; Chapter 6.pdf

Dear Mr. Orphanos,

Kindly find attached the requested procedures and the drill plan for 2014. The familiarisation checklists will follow shortly.

Should you have any additional questions please do not hesitate to contact us.

Best Regards

MICHALIS POURIS
HEAD OF SAFETY & QUALITY ASSURANCE DEPARTMENT

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WEB www.intership-cyprus.com

From: Cleanthis Orphanos [mailto:COrphanos@maic.gov.cy]
Sent: 19 May 2015 10:34
To: Michalis Pouris
Cc: 'Maria Philippou'
Subject: M/V "UBC TOKYO" Accident June 2014- Investigation

Dear Mr Pouris,

With regards to the investigation of the a.m. vsl, pls provide:

Chapter 6 – Entry into Enclosed Spaces

If forced ventilation is used at least four air changes must take place before entry is allowed. Where only natural ventilation is possible the space must be allowed to 'breathe' for at least 24 hours.
In certain spaces such as double bottom tanks, the most effective way of ensuring full ventilation must be to fill the compartment with clean sea water and then pump it out allowing fresh air to be drawn in.
Regardless of the method employed no entry will be allowed until tests have shown that a safe, breathable atmosphere exists.
Duct keels are provided with fixed ventilation systems which must be in operation for at least 15 minutes before any entry is permitted.

6.5 Entry Procedures
No one may enter an enclosed space without the permission of the Officer in charge who will first ensure that the necessary tests have been completed and that the requirements of the ENCLOSED SPACE ENTRY CHECK LIST are complied with in full.

Normally not more than one Senior Officer from any department will enter an enclosed space at one time.

6.6 Enclosed Space Entry Checklist
The check list will be completed by the Officer in charge of entry and approved by the Master. A separate check list will be completed for each entry operation and will include details of the following:-

1) Spaces to be entered.
2) Reason for entry - inspection, maintenance, repair etc.
3) Entry and exit points.
4) Results of atmosphere checks as applicable to type of ship and cargo.
5) Names of persons entering
6) Times of entry and expected duration.
7) Method and frequency of communication, e.g. walkie-talkies.
8) Name of link man. It is important to position a man outside the entrance to the space to act as a communications link.
9) The officer on the Bridge (if ship at sea) will maintain communications with the link man as he will be able to sound the emergency alarm without delay if a problem occurs.
10) Details of ventilation method.
11) Where personal oxygen meters are used their function should be tested first.
12) At least one compressed air breathing apparatus with fully charged air cylinder must be positioned outside the point of entry, together with resuscitation and rescue equipment.

An example of the ENCLOSED SPACE ENTRY CHECK LIST is shown at the end of this section.

6.8 Enclosed Space Entry Checklist

ISN	ENCLOSED SPACE ENTRY PERMIT	GF#01

MV..... DATE.....

General

Location / Name of Enclosed Space.....

Reason for Entry.....

This permit is valid from.....hrs Date..... (See Note 1)

to..... ..hrs Date.....

Section 1 – Pre-Entry Preparations
(To be checked by the master or responsible officer)

- ☐ Has the space been segregated by blanking off or Isolating all connecting pipelines? .....
- ☐ Have valves on all pipelines serving the space been Secured to prevent their accidental opening? .....
- ☐ Has the space been cleaned? .....
- ☐ Has the space been thoroughly ventilated? .....
- ☐ Pre-entry atmosphere tests: (See Note 2)

Readings Oxygen..... % vol (21 %)
Hydrocarbon..... % LFL (Less than 1%)
Toxic Gases..... ppm (specify gas & PEL)

(See Note 3)

- ☐ Have arrangements been made for frequent atmosphere checks to be made while the space is occupied and after work breaks? .....
- ☐ Have arrangements been made for the space to be continuously ventilated throughout the period of occupation and during work breaks? .....
- ☐ Is adequate illumination provided .....

Is rescue and resuscitation equipment available for immediate use by the entrance to the space? .....

THIS PERMIT IS RENDERED INVALID SHOULD VENTILATION OF THE SPACE STOP OR IF ANY OF THE CONDITIONS NOTED IN THE CHECK LIST CHANGE

Notes:

1. The Entry Permit should contain a clear indication as to its maximum period of validity, which, in any event, should not exceed a normal working day.

2. In order to obtain a representative cross-section of the compartment's atmosphere, samples should be taken from several depths and through as many openings as possible. Ventilation should be stopped for about 10 minutes before the pre-entry atmosphere tests are taken.

3. Tests for specific toxic contaminants, such as benzene and hydrogen sulphide, should be undertaken depending on the nature of the previous contents of the space.

SHIPBOARD DRILL PLAN

VESSEL NAME: UBC Tokyo **YEAR:** 2014

Drills	Freq.	[redacted]																							
		Date	Result	Date	Result	Date	Result	Date	Result	Date	Result	Date	Result	Date	Result	Date	Result	Date	Result	Date	Result	Date	Result	Date	Result
SDR-00001 Fire Drill	1 M					1	10					8	10			9	10							18	10
SDR-00003 Freefall Boat Manoeuvering Drill	3 M							5	10							9	10					8	10		
SDR-00005 Abandon Ship Drill	1 M	5	10	2	10	1	10	5	10	4	10	8	10	2	10	9	10	15	10	25	10	8	10	18	10
SDR-00007 Freefall Boat Drill (Simulation)	6 M							5	10	21	10														
SDR-00008 Freefall Boat Lowered by Davits/Crane	3 M					5	10					19	10					2	10					13	10
SDR-00009 Launch & Manoeuvring of the Rescue Boat	3 M					5	10					17	10					2	10					13	10
SDR-00010 Use of Liferafts Drill	3 M					15	10					15	10					15	10					19	10
SDR-00011 Man Overboard Drill	3 M	19	10					24	10					4	10					22	10				
SDR-00012 Steering Gear Failure Drill	3 M			23	10					4	10					7	10					8	10		
SDR-00013 Security Drill	3 M	19	10									21	10					15	10					19	10
SDR-00014 SOPEP or SMPEP Drill/Training	1 M	19	10	23	10	15	10	5	10	17	10	15	10	12	10	9	10	15	10	25	10	8	10	27	10
SDR-00015 Cargo Spillage & Contamination Drill	1 Y	19	10																						
SDR-00016 Collision Drill	1 Y							6	10																
SDR-00017 Grounding and Stranding Drill	1 Y													19	10										
SDR-00018 Main Engine Failure Drill	1 Y																							27	10
SDR-00019 Main & Emergency Electrical Power Failure Drill	1 Y															9	10								
SDR-00020 Hull Failure Drill	1 Y					15	10																		
SDR-00021 Flooding Drill	1 Y																	15	10						
SDR-00023 Cargo Jettison Drill	1 Y									17	10														
SDR-00024 First Aid / Serious Injury incl. Rescue by Helicopter Drill	1 Y																			25	10				
SDR-00025 First Aid / Serious Injury incl. Rescue from Tanks Drill	1 Y															9	10								
SDR-00026 First Aid / Serious Injury incl. Rescue from Enclosed Spaces Drill	1 Y			23	10											9	10								
SDR-00027 First Aid / Serious Injury incl. Search and Rescue Operations Drill	1 Y											8	10												
SDR-00028 Emergency Towning Drill	3 M													19	10					25	10				
SDR-00029 Enclosed Space Entry and Rescue Drill	2 M																					8	10	27	10
SDR-00030 Recovery of persons from the water Drill	6 M																			22	10				

Name of Master: **Signature:** **Date:**	**TRAINING NEEDS IDENTIFIED:**

Name of Master: **Signature:** **Date:**	**TRAINING NEEDS IDENTIFIED:**

1. 2/0 :
2. A/B
3. O/S

SH-1150	HO-1	P12/19

W.T.BHD SECTION
(FR119 W.T.)