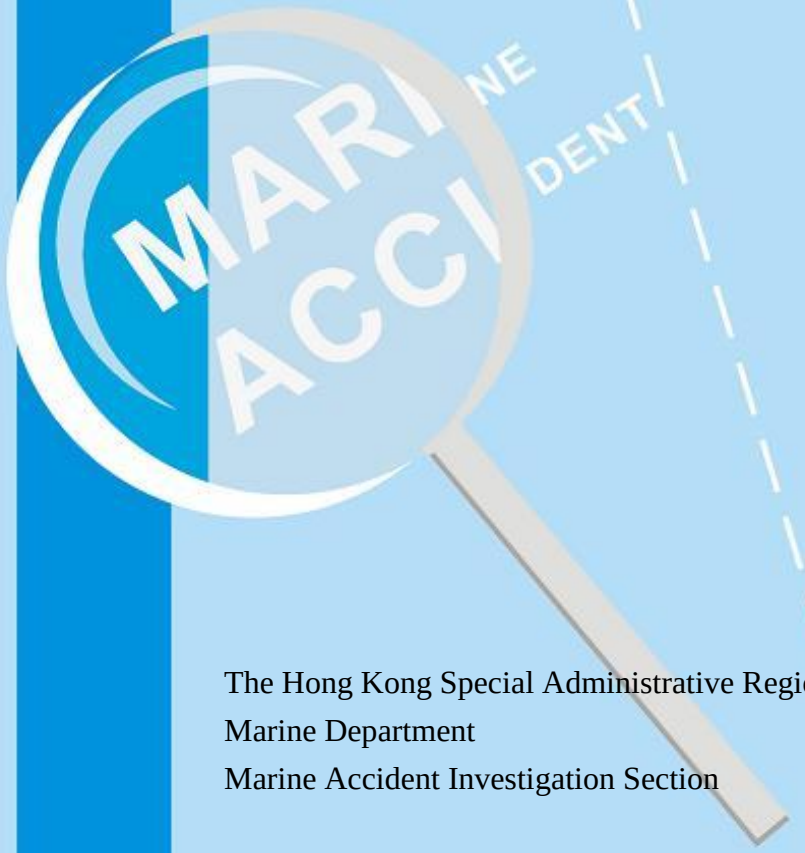
Report of investigation into the incident of the Hong Kong registered cargo vessel "Eastern Amber" hit a wreck in the position west coast of Korea on 4 March 2015



The Hong Kong Special Administrative Region
Marine Department
Marine Accident Investigation Section

09 November 2015

Purpose of Investigation

This incident is investigated in accordance with the Code of the International Standards and Recommended Practices for a Safety Investigation into a Marine Casualty or Marine Incident (the Casualty Investigation Code) adopted by IMO Resolution MSC 255(84).

The purpose of this investigation conducted by the Marine Accident Investigation and Shipping Security Policy Branch (MAISSPB) of Marine Department, in pursuant to the Merchant Shipping Ordinance Cap. 281, the Merchant Shipping (Safety) Ordinance (Cap. 369), the Shipping and Port Control Ordinance (Cap. 313), or the Merchant Shipping (Local Vessels) Ordinance (Cap. 548), as appropriate, is to determine the circumstances and the causes of the incident with the aim of improving the safety of life at sea and avoiding similar incident in future.

The conclusions drawn in this report aim to identify the different factors contributing to the incident. They are not intended to apportion blame or liability towards any particular organization or individual except so far as necessary to achieve the said purpose.

The MAISSPB has no involvement in any prosecution or disciplinary action that may be taken by the Marine Department resulting from this incident.

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1. Summary

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1.2 At about 2255 on 4 March 2015, *the vessel* hit a wreck in the position 36°04.68'N 125°47.91'E. The hull of *the vessel* sustained serious damage and sea water ingressed into No.1 cargo hold. Subsequently, *the vessel* listed to the port side and was trimmed by ship's bow.

1.3 The master abandoned *the vessel* with all the crewmembers a few minutes after the accident. A salvage operation commenced on 6 March 2015. However, t*he vessel* capsized on 10 March 0215 and sank on 13 April 2015. No personal injury and oil pollution was reported.

1.4 The investigation into the accident revealed that the contributory causes were as follows:

- The master of *the vessel* did not ensure that all the latest navigational information and warnings had been considered in the voyage planning before sailing;
- The exchange of Maritime Safety Information (MSI) by means of VHF between ship and shore was not effectively carried out; the navigation officers of *the vessel* did not endeavor to clarify and heed the warning messages from shore;
- The bridge team members of *the vessel* did not properly follow the bridge procedures as they failed to communicate with their fellow members the navigation warnings and instructions received from shore; and
- The navigation officers of *the vessel* did not maintain a proper look-out as they did not spot the wreck marked by a red light and having a ship mast protruding seven metres above the sea surface.

2. Description of the Vessel

Name of vessel	:	*Eastern Amber* (Fig.1)
Flag	:	Hong Kong, China
Port of Registry	:	Hong Kong
IMO No.	:	9570084
Call Sign	:	VRGP7
Ship Type	:	General Dry Cargo Ship
Year of Built (Delivery)	:	25 March 2010
Gross Tonnage	:	4433
Net Tonnage	:	2526
Deadweight	:	6563 mt
Length (Overall & LBP)	:	LOA: 104.2 m / LBP: 97.5 m
Breadth (moulded)	:	17.20 m
Depth (moulded)	:	8.50 m
Summer Draft	:	6.60 m
Main Engine & Power	:	Diesel Engine, 1X 8DKM-28, Mcr: 2,500KW
Classification Society	:	Bureau Veritas (BV)
Management Company	:	Asia Maritime Pacific (Shanghai) limited
Minimum safe manning	:	16
Persons onboard	:	18

Fig.1 – *Hong Kong registered cargo vessel "Eastern Amber*"

Fig.2 – "*Eastern Amber*" went to capsize during salvage

3. Sources of Evidence

3.1 The statements provided by the Master and crew of "*Eastern Amber*";

3.2 The management company "*Eastern Amber*";

3.3 The Korean Maritime Safety Tribunal;

3.4 NAVAREA XI Coordinator.

4. Outline of Events

All the times are local (UTC + 9) if it is not otherwise specified.

4.1 At about 1800 on 3 March 2015, the Hong Kong registered general cargo vessel "*Eastern Amber*" (*the vessel*) departed Inchon for Busan. The cargo holds of *the vessel* were loaded with a total of 650 pieces of logs.

4.2 Due to the severe weather condition, the master anchored *the vessel* in No.1 anchorage of Inchon at about 2030 on the same day to wait for the weather condition to turn better.

4.3 At about 1300 on 4 March 2015, *the vessel* resumed the voyage.

4.4 At about 2000, the 3rd officer took over the watch on bridge from the chief officer. He found that *the vessel* had deviated to starboard side of the planned route. The chief officer told him to maintain *the vessel's* course at 180° and continue proceeding on that course to reduce ship rolling.

4.5 At about 2210, the 3rd officer found a vessel (*vessel A*) on a reciprocal course at about 8 n.m[1] on her headway. A risk of collision was observed to exist. He used VHF to alert *vessel A* and an agreement that both vessels would pass each other on their port sides was achieved.

4.6 The 3rd officer then adjusted the course from 180° to 185°accordingly. He also received a VHF call from the local administration (Korea Coast guard) advising that *the vessel* was approaching a danger and therefore asking her to alter course to 190°. The 3rd officer did not completely understand the nature of the danger but just followed the instruction and altered ship course to 190°.

4.7 At about 2230, the master came on bridge. He found no significant target but *vessel A* on her headway in the vicinity by surveillance of radar. Considering the severe rolling of *the vessel*, the master altered the course to 165° in order to pass the starboard of *vessel A*. At the same moment, the Coast Guard called the master to alter ship course to 090° without giving any reason. The master did not follow this instruction.

4.8 At about 2255, *the vessel* hit an underwater object on her port bow. The master saw a weak red light on the unknown object after the contact. It was

[1] n.m – Nautical mile. 1 n.m. = 1852 meters.

later confirmed that the object was a wreck which sank at that location on 7 January 2015. A big bang and severe vibration of *the vessel* were caused by the contact. The master received a call then from the Coast Guard and was advised to alter her course to 270°. The master altered the course to 270° and slowed down her propulsion to dead slow ahead.

4.9 At about 2300, the emergency alarm was rung by the duty officer. The master ordered to abandon ship about 5 minutes later. The 2nd officer activated the distress transmission of EPIRB, IMARSAT C and SART. The chief officer immediately proceeded to check the hull condition at the forward. However, he retreated after he found that the forward part of *the vessel* was submerging into the water.

Fig.3- Condition of "*Eastern Amber*" after hitting a wreck.

4.10 Gradually, the bow of *the vessel* was fully submerged into the water. She listed to port side as sea water ingressed from the damaged hull at the port bow.

4.11 The starboard side lifeboat was launched and automatically released from the falls. While the boat was waterborne, it had drifted away before crewmembers embarked the boat. They switched to and successfully launched the port side lifeboat with a total of nine crewmembers embarking the boat.

4.12 The two inflatable liferafts were also launched, but the crewmembers could not embark anyone of them due to failure of the embarkation ladder. The port side lifeboat sailed away from *the vessel*. All the nine crewmembers were later on rescued by a ship in the vicinity.

4.13 The remaining nine crewmembers, who had to stay on board *the vessel* as no lifeboat or liferaft was available for them to evacuate, were later on rescued by a rescue boat deployed by the Korea Coast Guard.

4.14 After daylight broke in the morning on 5 March 2015, the 3rd engineer of *the vessel* together with two Korea Coast Guard officers embarked *the vessel* to close all oil supply valves to prevent the leakage of oil into the sea.

4.15 On 6 March 2015, the Nippon salvage company sent a tug boat to commence salvage operation of *the vessel*. *The vessel* was intended to be towed to Jeju Island after a temporary repair by the salvage company. The master and the chief engineer returned to *the vessel* together with the salvage team. During the towage, the master monitored the condition of *the vessel* while the chief engineer arranged for the discharge of water from cargo holds.

4.16 On 10 March 0215, the chief engineer found that the problem of water ingress into No.1 cargo hold was worsening. *The vessel* further listed to the port side by about 15°. The salvage team used a tug boat to evacuate all personnel from *the vessel*.

4.17 At about 2040 hours on 10 March 0125, *the vessel* capsized at position 33°34.36'N 126°46.13'E, about 9 n.m from Jeju Island.

Fig.4-"*Eastern Amber*" capsized during salvage

4.18 In view that there was no imminent risk of *the vessel* sinking after capsize, the salvage work was continued. Since no refuge port agreed to render

assistance prior to the oil kept in *the vessel* being removed, *the vessel* was ordered to be towed out of Korean waters.

4.19 After more than one month of salvage operation, at about 1825 on 13 April 2015, *the vessel* finally sank in the position 32°35.28'N 127°06.04'E. It was about 80 n.m south of the Jeju Island. The vessel was declared total lost on 17 March 2015.

5. Analysis

Vessel and crew's certificate

5.1 The Hong Kong registered general cargo vessel "*Eastern Amber*" (*the vessel*) was delivered to service on 25 March 2010. On the date of accident, all statutory certificates of *the vessel* were valid.

5.2 According to the Minimum Safe Manning Certificate, *the vessel* should be manned with at least 16 crew members including the master. *The vessel* actually was manned with a total of 18 Mainland Chinese crewmembers including the master. All of them held valid Certificates of Competency respective to their posts on board *the vessel*. The master had been serving on board *the vessel* for about three months as a master. The 3rd officer, as a duty officer on the bridge at the time of accident, was newly promoted to the rank of a 3rd officer on 3 March 2015, just 1 day before the accident. He joined *the vessel* as a training officer on 25 May 2014.

Cargo stowage, securing and stability of the vessel

5.3 At departure from Inchon, Korea, *the vessel* was fully laden with 650 pieces of logs in the two cargo holds. The cargo distribution and departure condition are summarized in the table below:

	Capacity	Vol. (m^3)	Weight (mt)	% of Vol.	Draft F/A (m)
No.1 hold	4397	2454.415	2945	55.8%	--
No.2 hold	4335	1809.235	2171	41.7%	--
Total	8732	3428	5116	--	5.4 / 6.0

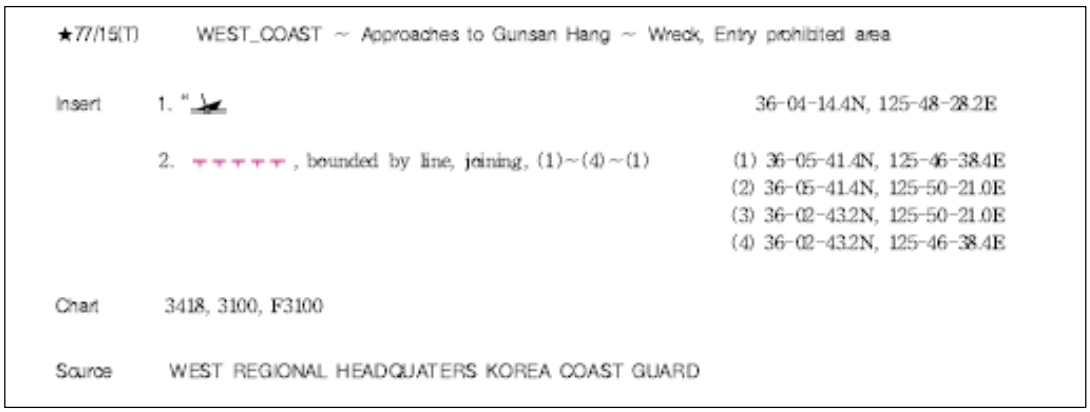
5.4 *The vessel* was considered to have no stability issue arising in her departure condition.

The wreck and No. 77/15 (T) Notice to Mariners

5.5 On 7th January 2015, a Korea registered local barge "Daeheung 7" sank in the position 36°04.14'N 125°48.28'E, i.e. the position of the contact. The mast of the wreck was about seven metres above the sea surface.

5.6 On 30 January 2015, No.77/15(T)[2] notice to mariners was issued by Korea Hydrographic and Oceanographic Administration on the Notice to Mariners Weekly Edition 5 (Fig.5). A wreck symbol showing any portion of hull or superstructure at level of chart datum should be inserted in the concerned charts in the position 36°04.24'N 125°48.47'E and a square Area of Entry Prohibited be bounded by line around the wreck. According to company's SMS procedure, the master was responsible to ensure receiving weather report and navigational warning. However, the master of *the vessel* did not follow such procedure to obtain the aforementioned local notice for safety of navigation.

5.7 On 5 March 2015 (one day after the accident), based on the Korea Notice 77/15(T), a temporary notice 1159(T)/15 (Fig.6) was published on the Weekly Edition 10 of Admiralty Notice to Mariners.



★77/15(T) WEST_COAST ~ Approaches to Gunsan Hang ~ Wreck, Entry prohibited area

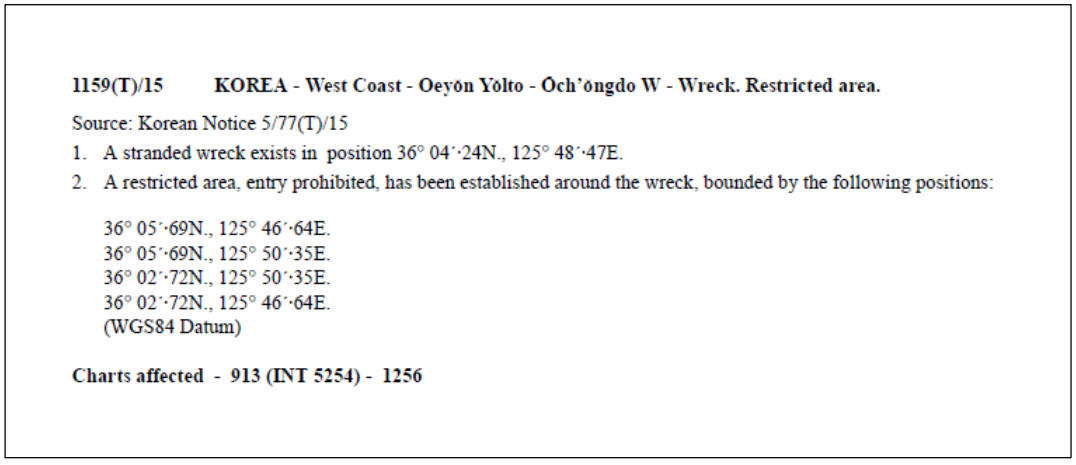
Insert 1. " 36-04-14.4N, 125-48-28.2E

2. , bounded by line, joining, (1)~(4)~(1) (1) 36-05-41.4N, 125-46-38.4E
(2) 36-05-41.4N, 125-50-21.0E
(3) 36-02-43.2N, 125-50-21.0E
(4) 36-02-43.2N, 125-46-38.4E

Chart 3418, 3100, F3100

Source WEST REGIONAL HEADQUATERS KOREA COAST GUARD

Fig.5-The Notice 77/15(T) was issued on 30 January 2015 by local administration



1159(T)/15 KOREA - West Coast - Oeyŏn Yŏlto - Och'ŏngdo W - Wreck. Restricted area.

Source: Korean Notice 5/77(T)/15

1. A stranded wreck exists in position 36° 04'·24N., 125° 48'·47E.
2. A restricted area, entry prohibited, has been established around the wreck, bounded by the following positions:

36° 05'·69N., 125° 46'·64E.
36° 05'·69N., 125° 50'·35E.
36° 02'·72N., 125° 50'·35E.
36° 02'·72N., 125° 46'·64E.
(WGS84 Datum)

Charts affected - 913 (INT 5254) - 1256

Fig.6-The Notice 1159(T)/15 was issued on 5 March 2015 by UK.

[2] No. 77/15(T)[2] : Korea local Notice to Mariners No.77/15(T), (T) meant temporary notice to mariners.

5.8 Except other navigation warnings on weather forecast, gunnery exercise etc., *the vessel* did not receive other information of the wreck by Navtex receiver or Inmarsat-C.

5.9 The Korea Hydrographic and Oceanographic Administration submitted the warning information (No.15-30) of the wreck to Navarea XI Coordinator (i.e. Hydrographic and Oceanographic Department of Japan Coast Guard) on 28 January 2015. However, according to all the weekly summaries of Navarea XI Warnings from 31 January 2015 to 7 March 2015 issued by the Navarea XI Coordinator, there was no evidence indicating that the maritime safety warning information of the wreck had been published. It was found that this temporary notice was not broadcast as NAVAREA warning through Navtex, or Inmarsat-C EGC channel while *the vessel* was in the west coast area of Korea.

5.10 Navigation warning on the obstruction of the wreck had been continuously broadcast by Korea Coast Guard via VHF since the sinking of the wreck there. It was therefore believed that the navigation obstruct, i.e. the wreck was broadcast by VHF only as an additional broadcasting means after the Notice of 77/15(T) had been published on 30 January 2015. Yet, this broadcast by VHF was not received by the master of *the vessel*.

The south approaching route to Inchon, Korea

5.11 *The vessel* arrived at the port of Inchon, Korea from Solomon Islands. *The vessel* then departed Inchon on 3 March 2015 and bounded south to Busan. Both voyages of *the vessel* passed through the south approaching of Inchon, including the area of the wreck.

5.12 The master of *the vessel* did not receive any notice or navigation warning of the wreck on the route from the local agent or port authority. The communication between ship and shore was considered inadequate to effectively exchange Maritime Safety information (MSI).

5.13 The passage plan was prepared without any navigation warning or notice about the wreck in the position of the routes. On the chart of navigation, the wreck symbol was not inserted. The route was planned to pass by the "Entry Prohibited Area" of the wreck.

Communication and response actions

5.14 At about 2210, the 3rd officer, who was on watch on bridge, received a VHF call from the Korea Coast Guard. He was advised that *the vessel* was unsafe to proceed on her prevailing course and was instructed to alter to starboard side on a course of 190°. The 3rd officer did not understand why it was unsafe for *the vessel* to proceed. He admitted that he did not completely understand, through the VHF communication, what the danger was and where it lay. He also did not make sure that he was aware of the status of the danger. He just followed the instruction to steer on the course by 190°.

5.15 As this situation was developing, the 3rd officer did not further consult the Coast Guard to clarify the situation, nor did he inform the master of this critical information immediately. His vigilance to the developing risk was low and hence he lost the valuable time for him and the master of *the vessel* to determine the imminent risks and take timely appropriate actions to avoid the accident.

5.16 At about 2230, the master was on bridge but the 3rd officer still did not inform the master of the warning given by the Korea Coast Guard through VHF calling. While the master was making an alternation of course to port side, which was opposed to the Coast Guard's instruction given to the 3rd officer earlier, the 3rd officer still did not alert the master. One of the possible reasons was that the 3rd officer was newly promoted and hence was hesitant towards challenging an action taken by the master. As such, the communication between bridge team members was very poor and did not comply with the bridge procedure.

5.17 At the time when *the vessel* was bounding on a course of 165°, the Coast Guard called the master to alter to a course of 090°, but no further information of the wreck in the forward of *the vessel* was communicated to the master. The master did not follow the instruction. Instead, he had maintained the course of 165° until the contact that occurred at about 2255.

5.18 The master was also not aware of the risk and did not clarify with the Coast Guard upon receiving his instruction. Subsequently, the master failed to further determine if there was any risk of collision or if any other navigational danger existed. The master lost the last chance to avoid the accident.

Look-out on bridge

5.19 The mast of the wreck was about 7 metres above the sea surface. A weak red light was seen by the master of *the vessel* after the accident. However, as *the vessel* was approaching the wreck, the duty officer and the master did not spot the wreck with red light by sight look-out or radar surveillance, therefore, *the vessel* eventually contacted with the wreck. The look-out of the watch-keepers was considered not maintained properly.

Weather condition

5.20 At the time of the accident, it was cloudy, with northerly wind of force about 6 to 7 on the Beaufort scale, and wave was about 3 metres in height. The visibility was about 5 n.m. It was considered as a fair weather condition in the open sea and that should not have contributed to the accident.

Abandon-ship

5.21 *The vessel* was trimmed by bow and listed to port side after the accident. The bow of *the vessel* was submerged into the water and that caused the master to order abandoning *the vessel*. However, the abandoning ship procedures were not properly followed by the master and crewmembers.

5.22 The starboard lifeboat was disconnected from its falls automatically. As the lifeboat was waterborne, it drifted away without carrying any crewmember. According to the statements of the master, the speed of *the vessel* was about 4 to 5 knots at that moment. It was observed that the painters and the lifeboat hooks were not set properly.

5.23 At the first attempt of launching the port side life boat, the crewmembers were not able to board the lifeboat because there was a big gap between *the vessel* and the lifeboat caused by *the vessel*'s listing to the port side. They retrieved the lifeboat and embarked the lifeboat, before launching it again. A total of nine crewmembers embarked the port side lifeboat. One of the boat hooks was disconnected automatically, followed by another hook being released manually by the crew. However, the officer in charge of the boat was not on board the lifeboat.

5.24 The two inflatable liferafts were also launched, but the crewmembers could not embark anyone of them due to failure of the embarkation ladder. The maintenance of embarkation ladder was not in good order.

5.25 The engine crew evacuated from the engine room without shutting down fuel oil supply to the engines. The 4th engineer had to be sent onboard under escort by two officers of Korea Coast Guard in order to shut down the fuel oil supply valves.

Salvage operation

5.26 *The vessel* listed to port side at a maximum angle of 35° with her bow trimmed downwards. The Nippon Salvage Company was assigned to salvage *the vessel*. The salvage operation was commenced on 6 March 2015. The salvage team intended to stop the water ingress and tow *the vessel* to a refuge port. The weather condition became severe, and *the vessel* listed further during the towage operation. *The vessel* eventually capsized on 10 March 2015 and sank on 13 April 2015. The salvage of *the vessel* was in vain. *The vessel* was declared total lost on 17 March 2015.

6. Conclusions

6.1 On 3 March 2015, the Hong Kong registered cargo vessel "*Eastern Amber*" (*the vessel*) departed Inchon to Busan.

6.2 At about 2255 on 4 March 2015, *the vessel* hit a wreck in the position 36°04.68'N 125°47.91'E. The hull of *the vessel* sustained serious damage and sea water ingressed into the No.1 cargo hold. Subsequently, *the vessel* listed to the port side and was trimmed by ship's bow.

6.3 The master abandoned *the vessel* with all the crewmembers a few minutes later after the accident. A salvage operation was commenced on 6 March 2015. However, t*he vessel* capsized on 10 March 0215 and sank on 13 April 2015. No personal injury and oil pollution was reported.

6.4 The investigation into the accident revealed the main contributory factors of the accident as follows:

- The master of *the vessel* did not ensure that all the latest navigational information and warnings had been considered in the voyage planning before sailing;
- The exchange of Maritime Safety Information (MSI) by means of VHF between ship and shore was not effectively carried out as the navigation officers of *the vessel* did not endeavor to clarify and heed the warning messages from shore;
- The bridge team members of the vessel did not properly follow the bridge procedures as they failed to communicate with their fellow members the navigation warnings and instructions received from shore; and
- The navigation officers of *the vessel* did not maintain a proper look-out as they did not spot the wreck marked by a red light and having a ship mast protruding seven metres above the sea surface.

6.5 The following safety issues were also found in the investigation:

- The safety procedure for abandoning ship was not properly complied with by the master and crewmembers on board;

- The lifeboats and liferafts of the vessel were not maintained properly for readily launching and embarkation during emergency situations;
- The maritime safety warning information of the wreck had not been received by *the vessel* from Navtex or Inmarsat-C EGC.

7. Recommendations

7.1 The ship management company of *"Eastern Amber"* should issue a safety circular informing all masters and officers of the findings of this accident investigation.

7.2 The ship management company and masters in whole fleet should ensure that the shipboard safety management system is properly implemented. An additional audit for the ship management company by recognized organization is to be arranged to verify the effectiveness of the safety management system in particular:

(a) effective communication of Maritime Safety Information (MSI) among bridge team members and between ship and shore is carried out;

(b) all navigational information and warnings are considered in the voyage planning before ship sailing;

(c) navigation officers of the watch perform proper look-out at all times;

(d) all life-saving appliances on board are well maintained and are ready for use in case of emergency; and

(e) all officers and crewmembers are well trained and conversant with all emergency procedures including abandoning of ship.

7.3 The investigation report should be provided to the Korean Maritime Safety Tribunal and the NAVAREA XI Coordinator for their information and necessary actions.

7.4 The investigation report should be provided to the Shipping Division of the Marine Department for their information.

8. Submission

8.1 In the event that the conduct of any person or organization is criticized in an accident investigation report, it is the policy of the Marine Department that a copy of the draft report in entirety or in part, should be given to that person or organization so that they can have an opportunity to express their comments on the report or offer evidence not previously available to the investigating officer.

8.2 Copy of the draft report shall be sent to the following parties for comments:

a. The management company, the master and the 3rd officer of *"Eastern Amber"* ;

b. The Korean Maritime Safety Tribunal and the NAVAREA XI Coordinator;

c. The Shipping division of Marine Department as the flag administration.

8.3 Comments were received from company only and the report was amended as appropriate.