



Report of investigation into the
collision between the Hong Kong
registered oil tanker

“Brightoil Lucky” and

the two Chinese fishing vessels

“Lu Rong Yuan Yu 377” and

“Lu Rong Yuan Yu 378”

in position 39°47.4’N 132°07.9’E
on 5 October 2017



The Hong Kong Special Administrative Region

Marine Department

Marine Accident Investigation Section

6 March 2020

Purpose of Investigation

The purpose of this investigation conducted by the Marine Accident Investigation and Shipping Security Policy Branch (MAISSPB) of Marine Department is to determine the circumstances and the causes of the incident with the aim of enhancing the safety of life at sea and avoiding similar incidents in future.

It is 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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Summary

On 5 October 2017, the Hong Kong-registered oil tanker “*Brightoil Lucky*” (*the vessel*) collided with two Chinese fishing vessels “*Lu Rong Yuan Yu 377*” (“377”) and “*Lu Rong Yuan Yu 378*” (“378”) in position 39°47.4’N 132°07.9’E at about 0500 hours. “378” capsized resulting in the loss of 13 lives. *The vessel* and “377” sustained minor damages.

The investigation revealed that *the vessel* failed to implement the Safety Management System (SMS) effectively as revealed from the wrongful navigational watchkeeping arrangements. Instead of following the requirement to have a proper look-out in the hours of darkness, the chief officer in charge of the navigational watch (OIC) of *the vessel* was the sole person at the time when the accident happened at night. Apart from this, the chief officer also failed to call assistance and follow master’s order to call the master when encountering dense traffic of fishing vessels.

The investigation also found that both *the vessel* and the fishing vessels failed to take appropriate actions to avoid collision in accordance with the requirements of the Convention on the International Regulations for Preventing Collisions at Sea, 1972 (the COLREGS). Due to the loss of situation awareness, the chief officer also failed to report the disappearance of “378” to the master thus missing the best time to conduct immediate Search and Rescue (SAR) operation for the fishermen trapped inside the capsized “378”.

1. Description of the vessels

1.1 *The vessel* (Figure 1)

Ship's name	: <i>Brightoil Lucky</i>
Flag	: Hong Kong, China
Port of registry	: Hong Kong
IMO number	: 9402469
Type	: Oil Tanker
Year built, shipyard	: 2009, Hanjin Heavy Industries Co. Ltd.
Gross tonnage	: 63,294
Net tonnage	: 34,735
Summer deadweight	: 115,458.7 tonnes
Length overall	: 249.97 metres
Breadth	: 44.00 metres
Engine power, type	: 13,560 kW, Hyundai MAN B&W 60SMC-C7
Classification society	: Lloyds Register (LR)
Registered owner	: Brightoil Lucky Tanker Ltd
Management company	: V.Ships Asia Pte. Ltd.

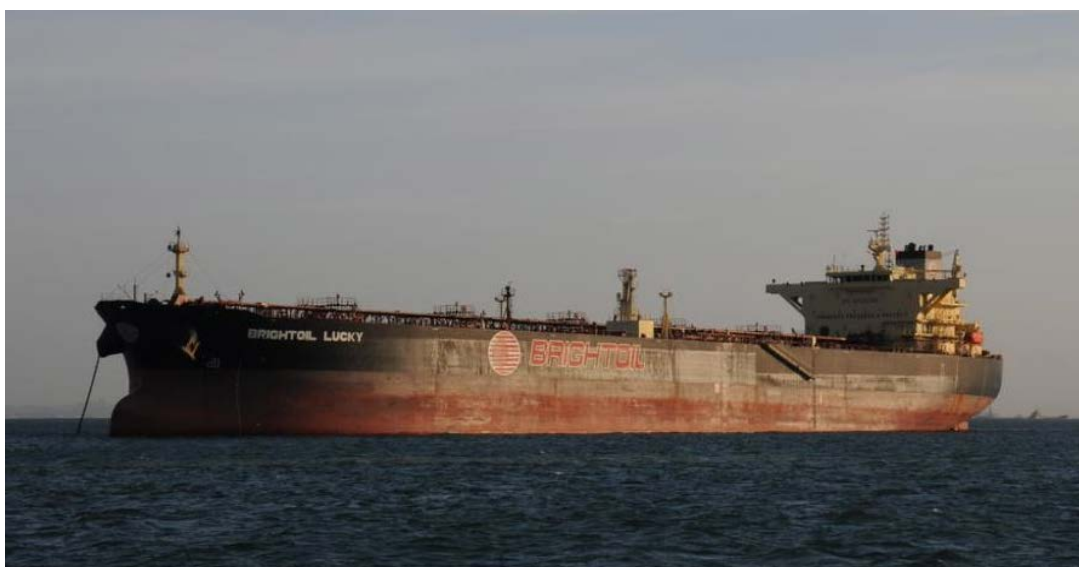


Figure 1 *The vessel*

1.2 “377” (Figure 2) and “378”

Ship's names	:	<i>LU RONG YUAN YU 377</i> and <i>LU RONG YUAN YU 378</i>
Flag	:	China
Port of registry	:	Shidao
Type	:	Stern Trawler
Material of hull	:	Steel
Gross tonnage	:	290
Length overall	:	39.74 metres
Breadth	:	7.60 metres
Depth	:	3.80 metres
Registered owner	:	Rongcheng City Rongyuan Fishery Co., Ltd
Year built, shipyard	:	2013, Rongcheng Yuantong Shipbuilding and shiprepairing Co., Ltd.
Main engine, power	:	1 x XCW6200ZC-10, 810 kW



Figure 2 “377”

2. Sources of evidence

- 2.1 Information provided by the ship management company of *the vessel* (the Company).
- 2.2 Information provided by the owner of “377” and “378”.
- 2.3 Information provided by the Maritime Safety Administration of the People's Republic of China (China MSA).

3. Outline of events

(All times were local time UTC + 10 hours unless otherwise specified)

The vessel

- 3.1 On 1 October 2017, *the vessel* departed from Longkou, China in ballast condition to Kozmino, Russia.
- 3.2 In the early morning on 5 October 2017, *the vessel* proceeded northeasterly at about 120 nautical miles (nms) east of North Korean coast. At 0400 hours, *the vessel's* course was 016° and the speed was 12.5 knots. No other vessel was in the immediate vicinity of *the vessel*. At a distance of about 10 nms forward of *the vessel* on the horizon, however, there appeared a number of lights and the chief officer as the OIC confirmed that those lights were emitted from a number of fishing vessels engaging in fishing activities.
- 3.3 At 0402 hours, the chief officer planned a “corridor” waterway among the fishing vessels. He then altered *the vessel's* heading to the “corridor” by adjusting the heading from 016° to 005° on the autopilot. *The vessel* consequently passed a number of fishing vessels at close range of about one cable¹.
- 3.4 The chief officer stated that most of the fishing vessels were stationary. Only a few of them were moving on erratic courses at a speed of about 2.5 knots. The fishing vessels in the area did not display lights for fishing operation (i.e. trawling) as required by the COLREGS, but displayed very bright white lights located on mast top and on the deck for attracting fish. Some of these fishing vessels were equipped with Automatic Identification System (AIS) and transmitted data to *the vessel* successfully.

¹ A cable is a nautical unit of distance that equal to one-tenth of a nautical mile or approximately 185 metres.

- 3.5 At 0442 hours, the chief officer adjusted *the vessel's* heading from 005° to 002° on the autopilot in order to increase the passing distance to the fishing vessels on her starboard side. At about 0450 hours, the chief officer observed that a number of stationary fishing vessels started to move westerly at a speed of about 2.5 knots. The chief officer estimated that about 15 fishing vessels were crossing the head of *the vessel* from starboard to port.
- 3.6 At 0452 hours, the chief officer acquired echoes on the radar screen for two fishing vessels crossing *the vessel* from starboard to port. They were later identified by AIS as “377” and “378”, which maintained a generally westerly moving direction with speed of about 2.5 knots.
- 3.7 At 0456 hours, the chief officer adjusted *the vessel's* heading from 002° to 358° on the autopilot in order to increase the Closest Point of Approach (CPA) between “377” and *the vessel*. The chief officer stated that he could not alter the course further to port due to the presence of several fishing vessels on her port side at close range. At 0457 hours, *the vessel* collided with “377” near *the vessel's* No.1 starboard water ballast tank (WBT). After the collision, “377” continued in passing along the starboard side of *the vessel*.
- 3.8 In his cabin, the second officer felt an impact vibration. Through the cabin side scuttle, he saw the mast and white lights of a fishing vessel on *the vessel's* starboard side. He then went to the bridge.
- 3.9 At 0458 hours, “378” was at *the vessel's* starboard forward position at close range and kept crossing ahead of *the vessel*. When “377” was passing along the starboard midship of *the vessel*, the chief officer adjusted *the vessel's* heading to starboard from 358° to 004° in an attempt to pass the stern of “378” and to keep *the vessel's* stern clear of “377”. At about 0500 hours when *the vessel* was turning to starboard, the chief officer lost sight of “378” which had

entered into the forward blind sector of *the vessel*. Figure 3 is a sketch showing the movement of *the vessel* before the collision with “378” up to 0458 hours.

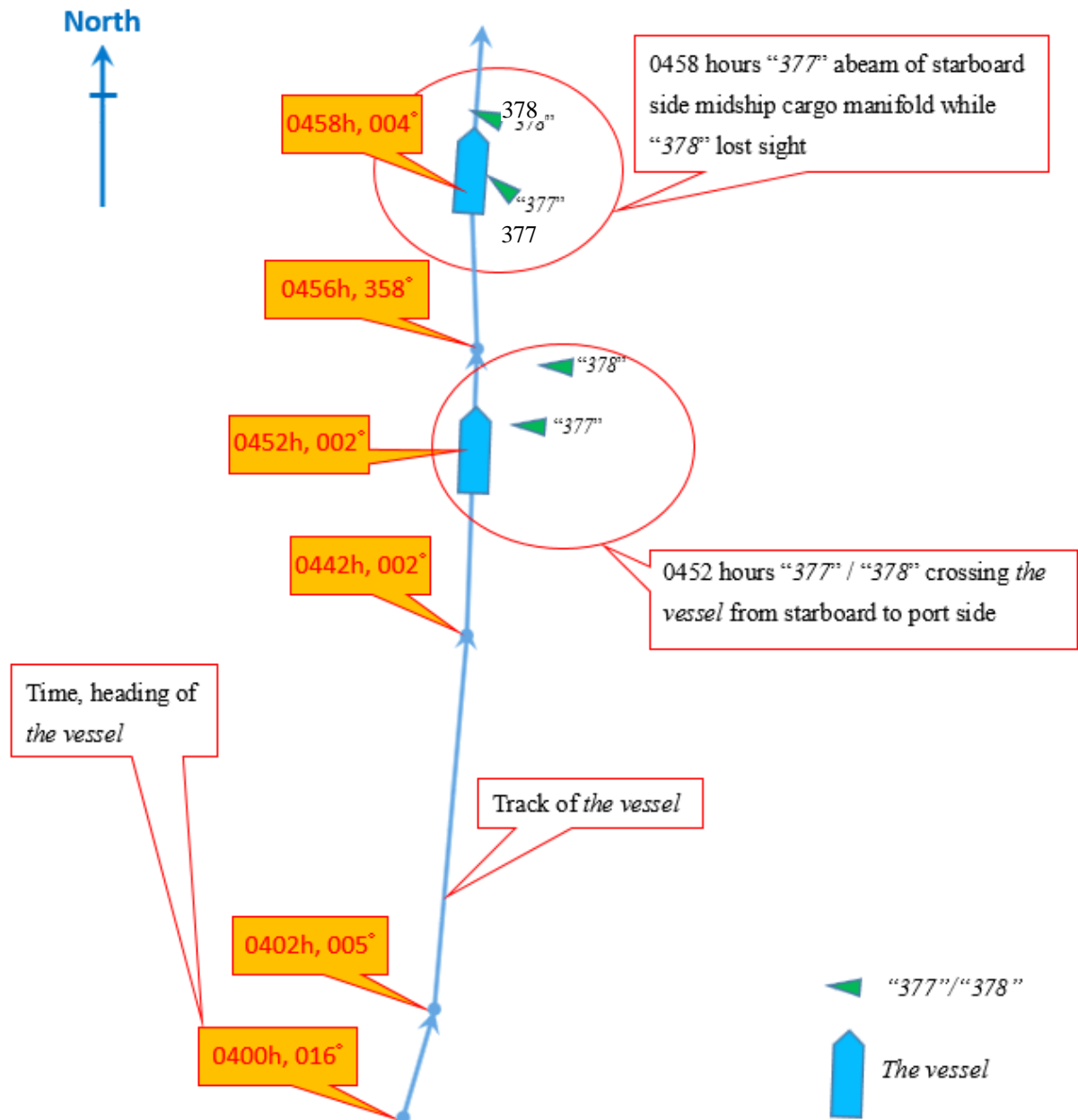


Figure 3 Sketch showing the movement of *the vessel* before collision with “378”

3.10 At around 0502 hours, the second officer arrived at the bridge. He went to the starboard bridge wing and saw “377” being cleared from the stern of *the vessel*. The second officer did not see and was not aware of the presence of “378”.

- 3.11 At 0505 hours, the chief officer reported the collision with “377” to the master. However, he did not mention the presence and the loss of sight of “378”.
- 3.12 At 0544 hours, the master reported the minor collision accident with “377” to the Company. *The vessel* did not contact “377” to check whether assistance was required and continued her voyage at a speed of around 12 knots.
- 3.13 A damage inspection was carried out by *the vessel’s* crew at around 0630 hours. Some deformation occurred on the port side bulbous bow and in way of the starboard side of No.1 WBT. No serious damage was found.

Fishing vessels “377” and “378”

- 3.14 Limited information was available for “377” and “378”.
- 3.15 It was reported that “377” and “378” were engaged in trawl fishing operation bounding westerly before the collision. “378” collided with *the vessel* and capsized. 12 of her 16 fishermen were trapped inside the fishing vessel and were drowned to death. The four remaining fishermen were rescued by a nearby fishing vessel “*LU RONG YU 52733*” from the sea, but one of them was declared dead on the spot.

Search and rescue (SAR) operation

(The following times were Singapore and Hong Kong Time UTC + 8 hours)

- 3.16 At 0845 hours on 5 October 2017, upon receiving the notification of the Maritime Rescue Coordination Centre (MRCC) of Beijing, the Hong Kong MRCC informed the Company about the collision incident of *the vessel* with fishing vessels.
- 3.17 At 0848 hours, the Company advised *the vessel* to return to the location of collision for SAR operation.

- 3.18 At 1355 hours, Beijing MRCC informed the Company that fishing vessel “378” was capsized after the collision. Some of her fishermen were missing.
- 3.19 At 1607 hours, *the vessel* arrived at the collision scene. At 2050 hours, two patrol boats of Japan MRCC were on standby on site and confirmed that 12 persons of “378” were missing.
- 3.20 At 1130 hours on 6 October 2017, *the vessel* was released to continue her voyage for Singapore as instructed by the Company.
- 3.21 On 6 October 2017, the dead bodies of the 12 missing fishermen were recovered from “378” by the Japan Coast Guard. The SAR operation was then stood down.

4. Analysis

Manning of *the vessel* and crew's working experience

- 4.1 *The vessel* was manned by 21 crew including the master. They came from Russia, Bulgaria and the Philippines.
- 4.2 The Russian master held a valid Class 1 Licence for deck officer and joined *the vessel* on 7 August 2017.
- 4.3 The Bulgarian chief officer held a valid Class 2 Licence for deck officer and joined *the vessel* on 24 July 2017 for his first service with the Company.
- 4.4 The manning of *the vessel* and qualification of the crew met the mandatory requirements.

Manning of “377” and “378”

- 4.5 “378” was manned by 16 fishermen including the master. They came from China and North Korea. The owner of “378” advised that all fishermen held valid appropriate certificates and complied with the minimum safe manning requirements of her administration. No manning information of “377” was available.

Certificates of *the vessel*, “377” and “378”

- 4.6 The statutory certificates of *the vessel*, “377” and “378” were valid and in order.

Fatigue, alcohol and drugs abuse

- 4.7 After the collision, alcohol tests were conducted for the bridge team of *the vessel* with no abnormalities found.
- 4.8 The record of the “Hours of Work and Rest” of *the vessel* was checked. The master and deck officers rested no less than 10 hours per day after departure from Longkou, China on 1 October 2017.

- 4.9 The investigation did not reveal that the crew of *the vessel* had suffered from fatigue or drug and alcohol abuse.
- 4.10 No information was available for the fishermen of “377” and “378” with respect to fatigue, drug and alcohol abuse.

Weather, visibility and tidal stream conditions

- 4.11 The weather was overcast with south-easterly wind force two. The visibility was about 12 nms. The weather condition should not be considered as the contributory factor causing the accident.

Damages of *the vessel*, “377” and “378”

- 4.12 A damage survey of *the vessel* was carried out by LR surveyor after she arrived in Singapore on 16 October 2017. Some deformation was found on the shell plating in way of the starboard side of No. 1 WBT and the fore peak tank (FPT). An internal inspection of FPT was carried out. The inspection, however, could not conclude that the deformation at FPT was caused by the collision with “378” as the damage was not newly formed.
- 4.13 The port side of “377” collided with the starboard side of *the vessel* and sustained minor damages to her port deck and handrails (Figure 4). No personal injury and oil pollution were reported by “377”.

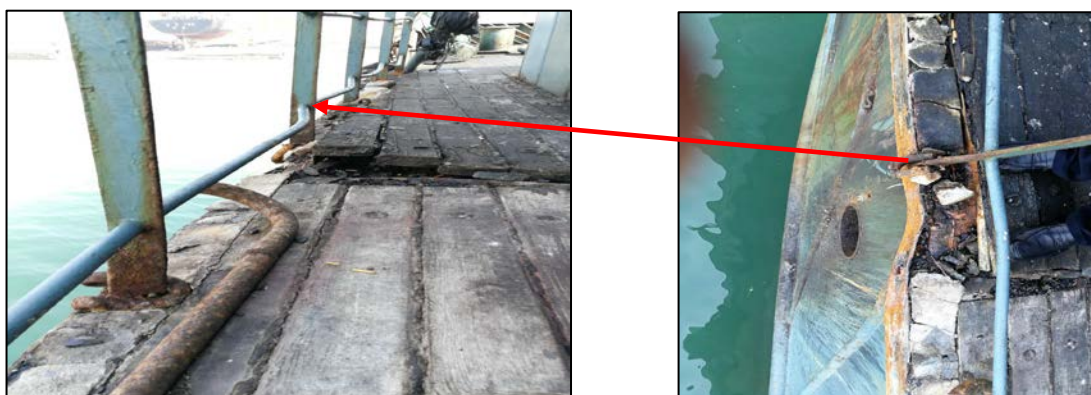


Figure 4 Damage to port deck and handrails of “377”

- 4.14 After the collision, “378” capsized and floated upside down in the sea (Figure 5). It was deduced that *the vessel’s* bow had hit the port side of “378” causing the latter to capsize abruptly. 12 out of the 16 fishermen on board “378” could not escape in time. *The vessel’s* crew did not notice the impact of the collision with “378”.



Figure 5 “378” floating upside down in the sea

Accident account of *the vessel*

- 4.15 The Seafarers' Training, Certification and Watchkeeping Code (STCW Code) sets out the general watchkeeping arrangements and principles to be observed. In general, the master of every ship should ensure that watchkeeping arrangements are adequate for maintaining a safe navigational watch. A proper look-out shall be maintained at all times. Further to the STCW Code, ICS Bridge Procedures Guide (ICSBPG) issued by the International Chamber of Shipping (ICS) also recommends that OIC should not be the sole look-out on

the bridge in the hours of darkness. Indeed, *the vessel's* SMS also requires look-out to be on bridge for navigational watch during darkness.

- 4.16 Against all the requirements and guidance mentioned in the above paragraph, however, all navigational watch ratings who were qualified to perform look-out duties on board *the vessel* were assigned for daytime work. As a result, no watch ratings were available for night time watchkeeping and the OIC became the sole look-out on the bridge. Astonishingly, the master gave no notice to such watchkeeping arrangements which defied the shipboard SMS procedures. Obviously, the SMS had not been implemented effectively.
- 4.17 The master's standing order in the night order book stated that "*call me if dense fishing activity, CPA 2 nms, TCPA (Time of Closest point of approach) 20 minutes*". Obviously, the chief officer as the OIC had neither arranged look-out for night time watchkeeping nor followed the master's standing order to call the master when *the vessel* encountered dense traffic of fishing vessels.
- 4.18 In accordance with Rule 16 of the COLREGS, a give-way vessel shall, so far as possible, take early and substantial action to keep well clear of the way of another vessel in order to avoid collision. Such early and substantial action would imply, without limiting to, altering course at large angle; slow down ship's speed; giving off warning signals by light and sound etc. As revealed by ECDIS² record, *the vessel* as the give-way vessel in the accident only altered her course in succession of small course adjustments trying to give way to fishing vessels in close range (about 1 cable). While the chief officer as the OIC apparently failed to follow Rule 16 of the COLREGS, the root causes were by large due to:

² ECDIS (Electronic Chart Display and Information System) is a computer-based navigation system that is used as an alternative to paper navigation charts. Integrated with a variety of real-time information, ECDIS is an automated decision aid capable of continuously determining a vessel's position in relation to land, charted objects, navigation aids and unseen hazards.

- (i) the wrong watchkeeping arrangement whereby the chief officer was the sole person on the bridge without assistance of look-out. As a result, it was not possible for the chief officer alone to maintain safe navigation in such dense fishing vessels traffic situation; and
- (ii) the chief officer failed to follow the master's standing order (as stated in paragraph 4.17 above.).

4.19 Perhaps without feeling the collision impact with “378”, the chief officer only reported the collision incident with “377” to the master. With all the focus placed on “377” which was found safely afloat after the collision, *the vessel* carried on with her voyage without stoppage. As a result, the best time to carry out immediate SAR operation for the fishermen of capsized “378” was missed.

Accident account of “377” and “378”

4.20 No detailed navigational information was available for these two fishing vessels. In accordance with *the vessel's* ECDIS record, these two fishing vessels were stand-on vessels. As the stand-on vessels, both vessels' masters failed to follow Rule 17 of the COLREGS by taking action to avoid collision when it was apparent that *the vessel* as the give-way vessel did not take early and substantial action to keep well clear of their vessels.

Follow up actions by the Company after the accident

- 4.21 After the accident, the Company launched an investigation and took the following follow up actions:
- (i) a circular was issued to all masters of its fleet to review and discuss the compliance with the COLREGS and the company procedures, in particular the watchkeeping arrangements in the hours of darkness;
 - (ii) the guidance for preparing Master's Standing Order & Night Order and the minimum requirement of CPA / TCPA to call master was revised; and

(iii) “Safe Navigation Campaign” and “Navigation Audit” were launched across the fleet to improve navigational safety.

5. Conclusions

- 5.1 At about 0500 hours on 5 October 2017, *the vessel* collided with two fishing vessels “377” and “378”. “377” sustained minor damage to her port deck and handrails. “378” capsized and floated upside down in the sea. Four out of the 16 fishermen of “378” were rescued by a nearby fishing vessel but one died on the spot. The dead bodies of the remaining 12 fishermen were later found inside the capsized “378”.
- 5.2 The investigation revealed that the main contributory factors of the accident were -
- (i) the implementation of SMS was ineffective. As addressed in paragraph 4.16, *the vessel* failed to follow the SMS’s requirements of watchkeeping arrangements. The master gave no notice to the wrongful watchkeeping arrangements, especially the need to provide look-out in the hours of darkness. The chief officer as the OIC became the lone person on the bridge;
 - (ii) the chief officer as the OIC of navigational watch failed to call assistance and follow master’s order to call the master when encountering dense traffic of fishing vessels;
 - (iii) as a give-way vessel, the chief officer did not take early and substantial action for collision avoidance in accordance with Rule 16 of the COLREGS;
 - (iv) the fishing vessels as stand on vessels failed to take actions to avoid the collision when the give-way vessel was not taking appropriate action according to Rule 17 of the COLREGS; and
 - (v) loss of situation awareness – the chief officer was not aware of the disappearance of “378” thus missing the crucial time to conduct immediate SAR operation for the fishermen.

6. Recommendations

- 6.1 The Company should circulate this investigation report to its fleet and inform all masters, officers and crew of the findings.
- 6.2 In addition to the follow up actions taken after the accident, the Company should carry out an internal audit for *the vessel* to confirm its compliance with the shipboard SMS requirements.
- 6.3 The Company should enhance onboard training in bridge resource and team management for all bridge team members, particularly in the area of situation awareness, in order to achieve effective management and teamwork with a view to reducing the risk of human error and the error going undetected.
- 6.4 A copy of the investigation report should be sent to the China MSA and the owner of “377” and “378” for their information of the findings and the lessons learnt from the investigation.
- 6.5 A Hong Kong Merchant Shipping Information Notice is to be issued to promulgate the lessons learnt from the accident.

7. Submission

7.1 The draft report had been sent to the following parties for their comments:

- (i) the Company and the master of *the vessel*;
- (ii) the owner of “377” and “378”;
- (iii) the China MSA; and
- (iv) the Ship Safety Branch of the Marine Department.

7.2 By the end of the consultation, no comment was received from the above mentioned parties.