Report of Investigation
into the Collision between
the Hong Kong registered
bulk carrier *Great Wealth*
and the Chinese fishing vessel
*Zhe Xiang Yu 27009* off Zhoushan, China on 13 May 2012

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

21 Aug. 2014
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 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 to wards 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.
Table of Contents

<table>
<thead>
<tr>
<th></th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Summary</td>
</tr>
<tr>
<td>2</td>
<td>Description of the vessels</td>
</tr>
<tr>
<td>3</td>
<td>Sources of information</td>
</tr>
<tr>
<td>4</td>
<td>Outline of events</td>
</tr>
<tr>
<td>5</td>
<td>Analysis of information</td>
</tr>
<tr>
<td>6</td>
<td>Conclusions</td>
</tr>
<tr>
<td>7</td>
<td>Recommendations</td>
</tr>
<tr>
<td>8</td>
<td>Submissions</td>
</tr>
</tbody>
</table>
1. **Summary**

1.1 The Hong Kong registered bulk carrier *Great Wealth* (the bulk carrier) loaded with 73,050 MT of iron ore in bulk at Panaji Port, India departed under even keel draft of 14.2 m on 29 April 2012. Her discharging port was Lanshan, China and the estimated time of arrival (ETA) was on 14 May 2012.

1.2 At about 0402 local time (UTC+8) on 13 May 2012, the chief officer of the bulk carrier took over the watch-keeping duty. A few minutes later he went to the toilet and leaving the deck cadet alone on the bridge until about 0418 when the bulk carrier collided with the People’s Republic of China registered fishing vessel *Zhe Xiang Yu 27009* (the fishing vessel) in an approximate position 29°09.1’N 123°04.7’E, off Zhoushan, China.

1.3 The weather conditions at that time were:

<table>
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<tr>
<th>weather</th>
<th>visibility</th>
<th>wind</th>
<th>sea</th>
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<tr>
<td>raining</td>
<td>4 nautical miles</td>
<td>north-northeast/force 5 to 6</td>
<td>wave 2 meters</td>
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1.4 Prior to the collision, the fishing vessel was sailing at a speed of two knots while all her crew members were hauling the fishing net for harvest and nobody was on the bridge. When the one nautical mile (nm) range alarm on the ship’s automatic identification system (AIS) was triggered at about 0412, the master of the fishing vessel came back to the bridge for watch-keeping and took actions of collision avoidance, but it was too late.

1.5 Following the collision, the fishing vessel sustained damages to the bow, the bulwark and the side plate of the bridge on the starboard side and some wooden boards on deck were found missing during the accident. One crew member of the fishing vessel was missing. On the other hand, the bulk carrier suffered several paint scratches on her bow and minor indents at the forecastle Bosun store.

1.6 The investigation revealed the following contributory factors:

(i) The chief officer left the bridge without being properly relieved by the master or another competent navigating officer. The lookout onboard the bulk carrier was unqualified at the material time. Therefore the bulk carrier neither complied with the requirement of Regulation II/1 of the STCW\(^1\) nor Rule 5 (Look-out) of the COLREGS\(^2\);

(ii) Due to no qualified watch-keeping officer on the bridge, the bulk carrier failed to comply with the requirements of the COLREGS, such as to use all available means to determine if risk of collision existed (Rule 7 - Risk of Collision), to take positive and substantial action in ample time (Rule 8 - Action to Avoid
Collision) and to keep well clear of the stand-on vessel (Rule 16 - Action by
Give-way Vessel). The action of collision avoidance taken by the deck cadet
was adjusting the ship’s course by “auto pilot” at time of three minutes before
the collision to give way to the fishing vessel. This action was neither
substantial nor in a timely manner; and

(iii) The fishing vessel did not maintain a proper lookout as required by Rule 5
(Look-out) of the COLREGS.

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1 STCW - International Convention on Standards of Training, Certification and
2 COLREGS - International Regulations for Preventing Collisions at Sea, 1972, as
amended.
2. Description of the vessels

2.1 Great Wealth (大盛)

2.1.1 Ship Information

Flag : Hong Kong, China
Port of Registry : Hong Kong
IMO No. : 9595709
Call Sign : VRIN6
Type : Bulk Carrier
Year of Built : 2011
Gross Tonnage : 40,913
Net Tonnage : 25,963
Length (Overall) : 225.0 m
Breadth : 32.26m
Summer Deadweight : 75570 MT
Main Engine : MAN B & W 5S60ME-C7
Engine Power : 8833KW
Service speed : 14.5 knots / 99 RPM
Classification Society : China Classification Society
Shipbuilder : Jiangyin Chengxi Shipyard Co Ltd, China
Ship Owner : King Strategy Ltd
Ship manager : Sinotrans Ship Management Ltd
2.1.2 The bulk carrier was classed with China Classification Society. She had 7 cargo holds with a total capacity of 90,068 cubic meters. The accommodation and the main machinery space were situated aft.

2.1.3 The navigational equipment on board consisted of a standard magnetic compass, a gyro compass, nautical charts and nautical publications, a global positioning system (GPS), an automatic identification system (AIS), a voyage data recorder (VDR), a speed log, an echo sounder, an operational mode indicator (rudder, propeller, thrust and pitch) and a daylight signaling lamp as well as three sets of very high frequency (VHF) radios and two radars.

2.1.5 She was manned with 23 crew members i.e. 1 master, 3 deck officers, 1 deck cadet, 4 engineers, 1 electrician engineer and 13 ratings. The master was of Bangladesh nationality and the rest of the crews were Chinese.

Figure 1 – *Great Wealth* (大盛)
2.2  Zhe Xiang Yu 27009 (浙象渔27009)

2.2.1 The available ship Information

| Nationality | China |
| Port of Registry | Xiang Shan, Zhe Jiang province |
| Type | Fishing Vessel |
| Year of Built | 2011 (according to the building contract) |
| Gross Tonnage | 113 |
| Owner | Zhao Xing Lai (赵兴来) |
| Persons onboard | 7 |

2.2.2 The fishing vessel was manned by 7 Chinese crewmembers/fishermen.

Figure. 2 – Zhe Xiang Yu 27009 (浙象渔27009)
3. **Sources of Information**

3.1 Information provided by the management company of *Great Wealth*, included:
   a) VDR of *Great Wealth*.
   b) Statements of the master, the chief officer and the deck cadet of *Great Wealth*.
   c) Survey report prepared by Trade-wind Marine Surveyors & Consultants Ltd.
   d) Company reports.

3.2 Information provided by the Maritime Safety Administration of Ning Bo, Zhe Jiang, the People’s Republic of China.
4. Outline of Events
4.1 Account of Great Wealth

4.1.1. The Hong Kong registered bulk carrier Great Wealth (the bulk carrier) loaded with 73,050 MT of iron ore in bulk at Panaji Port, India departed under even keel draft of 14.2 m on 29 April 2012. Her discharging port was Lanshan, China and the ETA was on 14 May 2012.

4.1.2. At about 0400 on 13 May 2012, the second officer and the duty able-bodied seaman (AB) handed over bridge watch to the chief officer and the deck cadet as usual. The bulk carrier was sailing on a course of 043° with a speed of about 13.5 knots. She was in a position about 60 nm off Zhoushan Island. It was raining and the wind was north-northeastly of force five to six on the Beaufort wind scale. Wave at sea was about two meters high and the visibility was around 4 nm. In the vicinity of Great Wealth, there were a number of fishing vessels and most of them were drifting or steaming slowly.

4.1.3. At 0402, the second officer finished his watch and left the bridge. The bulk carrier was steered by “auto pilot” with both port and starboard steering motors. The two radars were working on 12 nm scale (S-band) and 6 nm scale (X-band) respectively. The chief officer found that there were fishing vessels on the starboard side of his ship and another three or four fishing vessels at about three nm away from his port bow with a closest point of approach (CPA) of 0.3 nm. The chief officer kept his vessel steady on course 043°.

4.1.4. As soon as the bulk carrier passed clear of the fishing vessels on the starboard side at 0406, the chief officer altered course to 053° by “auto pilot” and gave a wide berth (CPA 0.5 nm) to the fishing vessels on his port bow, which were about two nm away displaying white lights (Figure 3).

Figure 3 – stage 1, at time of 0406 on 13 May 2012
4.1.5. Thereafter, the chief officer told the deck cadet to keep a sharp lookout and he went to the toilet which was located at the back of wheel house.

4.1.6. Then there was only the deck cadet on the bridge for keeping watch. At 0412 the deck cadet found one of the drifting fishing vessels (later identified as Zhe Xiang Yu 27009) about one nm away on port bow of his ship suddenly started moving and trying to cross his bow (Figure 4). At 0415, the deck cadet adjusted the ship’s course to port by “auto pilot” (Figure 5). At around 0417 the chief officer returned to the bridge and saw the fishing vessel displaying a white light and very close to his port bow. At that time, the bulk carrier’s heading was 037° and she was turning to port continuously. The chief officer immediately enquired the deck cadet about the situation and asked whether the rudder was on manual steering or not and the deck cadet answered “No”. The wheel was immediately switched from “auto pilot” to “manual steering”. The helm was put to port and the ship continued turning to port.

Figure 4 – stage 2, at time of 0412 on 13 May 2012
4.1.7. The fishing vessel passed along his port side. The chief officer rushed out to the port side of the bridge wing for checking. Over there, he saw the fishing vessel had passed clear and remained afloat.

4.1.8. Thereafter, the chief officer came back to the bridge and ordered “hard a starboard and steady”. The ship’s heading was 008° at 0419.

4.1.9. Then the chief officer asked the deck cadet whether or not there was any contact with the fishing vessel. The deck cadet answered him that the fishing vessel had passed at a very short distance and he was not sure if any collision had occurred or not.

4.1.10. At 0540, the master of the bulk carrier came to the bridge and greeted the chief officer and the deck cadet. As everything looked fine, he left the bridge at about 0550.

4.1.11. At 0625 hours, the chief officer was in doubt and he still suspected that his vessel might have collided with the fishing vessel. So he asked the master to come on the bridge.

4.1.12. At 0638, after discussion with the chief officer, the master reported to Zhoushan Rescue Coordinator Centre (RCC) over the phone about the suspected collision with a fishing vessel.

Figure 5 – stage 3, at time of 0415 on 13 May 2012
4.1.13. At 0720, Ningbo Maritime Safety Administration instructed the bulk carrier to proceed to Ningbo for investigation.

4.1.14. At 1736 on 13 May 2012, the bulk carrier arrived and dropped anchor at No. 1 Inner Anchorage of Beilun Port.

4.2 Account of Zhe Xiang Yu 27009

4.2.1. The Chinese fishing vessel Zhe Xiang Yu 27009 (the fishing vessel) sailed from Hepu Fishing Harbor, Zhejiang, China at 0800 on 1 May 2012 with seven crew members on board. She took about 8 hours to arrive at the fishing ground No. 198. Upon arrival, the fishing vessel started fishing by means of single trawling and there were three harvests each day.

4.2.2. At about 0400 on 13 May 2012, the crew started hauling the fishing nets to harvest and all crew were working together on deck while the fishing vessel was steaming at a speed of about 2 knots without navigating officer on the bridge. The master, who was also the owner of the fishing vessel, set one nm alert on the AIS. At that time, the fishing vessel was displaying the sidelights, stern light, two all-round lights in a vertical line, the upper being green and the lower being white.

4.2.3. At about 0412 while the fishing vessel was heading south, the AIS alarm sounded and the master came to the bridge immediately. He found a large northbound vessel (later identified as Great Wealth) approaching his vessel on the starboard bow (Figure 6). The master thought that the bulk carrier would give way to his vessel as usual, so he did not take any action at the first moment.

4.2.4. About two minutes later, the master found that the bulk carrier did not take any action to avoid collision, so he immediately turned the wheel hard over to starboard. The fishing vessel turned very slowly due to part of the fishing net being in the water and she was steaming at low speed. Even worse was that the master found the bulk carrier started turning to port at that moment. As a result, the bow of the bulk carrier collided with the starboard bow of his ship at about 0418. Shortly afterwards, there was a second impact on the starboard side mid-ship of the fishing vessel. Immediately, the fishing vessel heeled severely to starboard reaching about 40 degrees.
The master fell on the deck and he called out loudly the names of other crew members. Seawater flooded heavily all over on deck. Shortly afterwards, the master stood up by himself and found the bulk carrier did not stop and continued sailing northbound.

The fishing vessel regained upright after the seawater shed overboard. The master went down to the main deck and found some crew members had fallen into the water. The chief engineer climbed back into the fishing vessel by himself. With the effort of the master and the chief engineer, two fishermen were rescued from the water.

Other fishing vessels in the vicinity were called for assistance and they arrived at the scene for the search and rescue (SAR) of the remaining three fishermen. Two of them were rescued shortly afterwards, but the cook was still missing. At 0450, more fishing vessels arrived at the scene to assist in the SAR operation. Local RCC was also reported and one tug boat was deployed to the scene to assist. According to the master, a total of 15 fishing vessels had been engaged in the SAR operation which lasted for about 12 hours.

At 1500 on 13 May 2012, *Zhe Xiang Yu 27009* was towed by the fishing vessel “*Zhe Xiang Yu 27050*”, with the escort by other fishing vessels. At 2200 on 13 May 2012, *Zhe Xiang Yu 27009* returned to Hepu Fish Harbor.
4.2.9. The tug boat remained at scene to continue the SAR operation until the morning on 15 May 2012. At the request of the daughter of missing fisherman, “Zhe Xiang Yu 27009” returned to the accident site for SAR which was started from 1500 on 15 May 2012 until 2000 on 16 May 2012, but in vain.

Figure 7 - the location of the incident (about 60 nm off Zhoushan Island)
5. Analysis of Information

5.1 Certification and Experience of Personnel

5.1.1 The master of *Great Wealth* held a valid Master Certificate of Competency issued by United Kingdom and a Class 1 Licence (Deck Officer) issued by the Marine Department of the Government of Hong Kong Special Administrative Region. He was first employed as a master in year 2000 and joined *Great Wealth* as a master on 5 April 2012.

5.1.2 The officer of the watch (OOW), i.e. the chief officer of *Great Wealth* held a valid Master Certificate of Competency issued by the People’s Republic of China and a Class 1 Licence (Deck Officer) issued by the Marine Department of the Government of Hong Kong Special Administrative Region. He joined *Great Wealth* as a Chief Officer on 23 September 2011.

5.1.3 The deck cadet joined *Great Wealth* on 23 September 2011 and it was his first seafaring experience.

5.1.4 There was no information available about the crew’s certificate of the fishing vessel *Zhe Xiang Yu 27009*.

5.2 Certification of the vessels

5.2.1 The ship certificates of *Great Wealth* were issued by China Classification Society. The Document of Compliance (DOC) for the ship management company for safe operation of vessel and the ship Safe Management Certificate (SMC) were issued by American Bureau of Shipping. All statutory certificates for the vessel were valid at the time of accident.

5.2.2 Although repeat requests had been made to the Fisheries Bureau of the People’s Republic of China Ministry of Agriculture to obtain the statutory certificates of *Zhe Xiang Yu 27009*. There was no any reply from them. Therefore no information of the relevant certificates of the fishing vessel was available.

5.3 Weather and Visibility

5.3.1 According to the master and the OOW of *Great Wealth*, at the time of the collision, the weather condition was raining, and the wind was north-northeasterly at force five to six on Beaufort wind scale. Wave at sea was about two meters high and the visibility was around four nm. The weather condition was not considered to have any bearing on the occurrence of the accident.
5.4 Actions taken by *Great Wealth* (the bulk carrier)

5.4.1 On 13 May 2012, the chief officer of the bulk carrier, after taking over the watch keeping duty for a while, left the bridge and went to the toilet at the back of the wheelhouse from approximately 0406 to 0417. During this period the deck cadet was left alone on the bridge for lookout. The deck cadet was very young and inexperienced. He was a fresh university graduate and it was the first time he worked on board the vessel from September 2011. The deck cadet did not hold any certificate as deck officer or watch-keeping rating. He was not qualified and competent to carry out lookout duty on the bridge. The OOW should never leave the bridge unless he was properly relieved by the master or another competent navigating officer. The regular watch keeping AB for 0400 to 0800 watch had been assigned for day work and his watch keeping duty was replaced by the deck cadet. Under such a work arrangement with high density of fishing vessels in the area (refer to figure 7 – location of the incident), the OOW did not inform the master and request for additional lookout. Therefore, the bulk carrier did not comply with the requirement of STCW and failed to comply with Rule 5 (Look-out) of the COLREGS.

5.4.2 As there was no qualified navigation officer on the bridge of the bulk carrier at the material time, the relevant requirements in the COLREGS could not be complied with. The bulk carrier failed to use all available means to determine if risk of collision existed. As a giving-way vessel, she did not take positive and substantial action in ample time to keep well clear of the stand-on vessel, the fishing vessel. At 0415 on 13 May 2012, three minutes before the collision, the deck cadet adjusted the ship’s course by “auto pilot” to give way to the fishing vessel. This action was neither substantial nor in a timely manner. As a result the bulk carrier failed to comply with Rule 7 (Risk of Collision), Rule 8 (Action to avoid Collision) and Rule 16 (Action by Give-way Vessel) of the COLREGS.

5.4.3 At about 0417, the chief officer returned to the bridge and found the fishing vessel was very close to his port bow and then passed along the vessel’s port side. The chief officer was not sure but suspected that the ship collision did occur. However, without immediately stopping the vessel to check and confirm, the chief officer decided to continue the voyage. It was only after two hours later, at 0638 on the same day, that he changed his mind and reported the incident to the master and then the master reported it to Zhoushan RCC.

5.5 Actions taken by *Zhe Xiang Yu 27009* (the fishing vessel)

5.5.1 It was stated by the master of the fishing vessel that all crew members on board were engaged in the fishing operation on deck before the collision happened. The
bridge of the fishing vessel was left unattended while she was making way through
water until the pre-set AIS one nm alarm was triggered. The fishing vessel did
not maintain a proper lookout which caused too late to determine the risk of
collision and to take action of collision avoidance. She failed to comply with
Rule 5 (Look-out) of the COLREGS.

5.6 **Fatigue and alcohol impairment**

5.6.1 There was no evidence to suggest that alcohol or drugs were taken by any of the
crewmembers of both vessels involved in the collision.

5.7 **Damage to the Vessels and Casualties subsequent to the collision**

5.7.1 As a result of the collision, the bulk carrier sustained paint scratches on the bow
(Figure 8 and 9). Also the shell plating of starboard bow was slightly dented
inboard at the forecastle Bosun store.

5.7.2 The fishing vessel sustained damages to the bow, the bulwark, the side plate of the
bridge on the starboard side and some wooden boards on deck were found missing
during the accident (Figure 10 and 11). One crew member of the fishing vessel
was missing.

Figure 8 - *Great Wealth* port bow paint scratches
Figure 9 - *Great Wealth* starboard bow paint scratches.

Figure 10 - Starboard bow of *Zhe Xiang Yu 27009* buckled/torn partly.
Figure 11 - bulwark on starboard side of Zhe Xiang Yu 27009 buckled, bent and partly torn
6. Conclusions

6.1 The Hong Kong registered bulk carrier *Great Wealth* (the bulk carrier) loaded with 73,050 MT of iron ore in bulk at Panaji Port, India departed under even keel draft of 14.2 m on 29 April 2012. Her discharging port was Lanshan, China and the ETA was on 14 May 2012.

6.2 At about 0402 on 13 May 2012, the chief officer of the bulk carrier took over the watch-keeping duty. A few minutes later he went to the toilet and leaving the deck cadet alone on the bridge until at about 0418 when the bulk carrier collided with the People’s Republic of China registered fishing vessel *Zhe Xiang Yu 27009* (the fishing vessel) in an approximate position 29°09.1’N 123°04.7’E, off Zhoushan, China.

6.3 The weather conditions at that time were:

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6.4 Prior to the collision, the fishing vessel was sailing at a speed of two knots while all her crew members were hauling the fishing net for harvest and nobody was on the bridge. When the one-nm range alarm on the ship’s AIS was triggered at about 0412, the master of the fishing vessel came back to the bridge for watch-keeping and took actions of collision avoidance, but it was too late.

6.5 Following the collision, the fishing vessel sustained damages to the bow, the bulwark and the side plate of the bridge on the starboard side and some wooden boards on deck were found missing during the accident. One crew member of the fishing vessel was missing. On the other hand, the bulk carrier suffered several paint scratches on her bow and minor indents at the forecastle Bosun store.

6.6 The investigation revealed the following contributory factors:

(i) The chief officer left the bridge without being properly relieved by the master or another competent navigating officer. The lookout onboard the bulk carrier was unqualified at the material time. Therefore the bulk carrier neither complied with the requirement of Regulation II/1 of the STCW nor Rule 5 (Look-out) of the COLREGS;

(ii) Due to no qualified watch-keeping officer on the bridge, the bulk carrier failed to comply with the requirements of the COLREGS, such as to use all available means to determine if risk of collision existed (Rule 7 - Risk of Collision), to take positive and substantial action in ample time (Rule 8 - Action to Avoid Collision) and to keep well clear of the stand-on vessel.
(Rule 16 - Action by Give-way Vessel). The action of collision avoidance taken by the deck cadet was adjusting the ship’s course by “auto pilot” at time of three minutes before the collision to give way to the fishing vessel. This action was neither substantial nor in a timely manner; and

(iii) The fishing vessel did not maintain a proper lookout as required by Rule 5 (Look-out) of the COLREGS.
7. **Recommendations**

7.1 The owner/management company of *Great Wealth* is recommended to issue notice/circular to draw the attention of their masters and officers to the findings of this report and remind them to comply with the STCW and the COLREGS at all times. The owner/management should inform the Shipping Division of Marine Department corrective actions taken accordingly.

7.2 The Shipping Division of Marine Department, as flag Administration of the vessel, in considering the findings of this accident investigation, should consider taking a shipboard SMC audit.

7.3 Hong Kong Merchant Shipping Information Note should be issued to promulgate lessons learnt from this accident.

7.4 The People’s Republic of China Ministry of Agriculture Fisheries Bureau (中華人民共和國農業部漁業局), as a regulatory authority is recommended to issue a notice/circular to draw the attention of the masters and officers of the Chinese fishing vessels to the finding of this report. The master and officers should be reminded to comply with the COLREGS at all times, in particular, Rule 5 (Look-out).
8. **Submissions**

8.1 In the event that the conduct of any person or organization is commented in an accident investigation report, it is the policy of the Marine Department to send a copy of the draft of the report, in part or in its entirety, to that person or organization for their comments.

8.2 The draft report has been sent to the following parties for comments:

   a) The owner/management company, the master and chief officer of *Great Wealth*.
   b) The owner/master of *Zhe Xiang Yu 27009*.
   e) The Shipping Division of Hong Kong Marine Department.

8.3 Submission had been received from the Shipping Division of Hong Kong Marine Department and the draft investigation report had been amended as appropriate according to the submission.