Report of Investigation

into the collision between the
Hong Kong registered
container ship “CSCL Ningbo”
and the Chinese registered
cargo ship “Jin Hai Da 18”
on 23 August 2006
Preliminary Inquiry No. 3 of 2006

In accordance with Section 51 (1) of the Merchant Shipping Ordinance (Chapter 281), on 24 August 2006, the Director of Marine appointed Mr. LI San-tai, Surveyor of Ships (Nautical) to carry out a Preliminary Inquiry into the circumstances attending the casualty.
Purpose of Investigation

This incident is investigated, and published in accordance with the IMO Code for the Investigation of Marine Casualties and Incidents promulgated under IMO Assembly Resolution A.849(20). 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 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

1.1 At about 2315 local time on 23 August 2006, the Hong Kong registered container ship *CSCL Ningbo* collided with the Chinese registered cargo ship *Jin Hai Da 18* at approximate position 24°10.5’N 118°17.0’E. At the time of the accident, the weather conditions were fine with east-northeasterly wind at force 3. The sea was slight and the visibility was about 7 nautical miles (n.m.). The current was setting northwest at the rate of 2.8 knots. *CSCL Ningbo* sustained minor damages to the hull on the port side and *Jin Hai Da 18* immediately sank after the collision. Five crew members were rescued and three crew members were found missing.

1.2 The investigation revealed the following probable causes of the collision:

1.2.1 *Jin Hai Da 18* which was a give-way vessel to *CSCL Ningbo* appeared to have failed to comply with Rule 15 of the Collision Regulations (COLREGS) to keep out of the way of the latter vessel in the crossing situation.

1.2.2 *CSCL Ningbo*, being a stand-on vessel, appeared to have failed to comply with Rule 8 of COLREGS to take early action to slow down, stop or reverse her engine in order to avoid collision.
2. **Description of the vessels**

2.1 **CSCL NINGBO**

2.1.1 Particulars

<table>
<thead>
<tr>
<th>Description</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Port of Registry</td>
<td>Hong Kong, China</td>
</tr>
<tr>
<td>IMO No.</td>
<td>9227015</td>
</tr>
<tr>
<td>Call sign</td>
<td>VRBH5</td>
</tr>
<tr>
<td>Type</td>
<td>Container Ship</td>
</tr>
<tr>
<td>Year Built</td>
<td>2002</td>
</tr>
<tr>
<td>Gross Tonnage</td>
<td>39,941</td>
</tr>
<tr>
<td>Net Tonnage</td>
<td>24,458</td>
</tr>
<tr>
<td>Length Overall</td>
<td>260.05 metres</td>
</tr>
<tr>
<td>Breadth</td>
<td>32.25 metres</td>
</tr>
<tr>
<td>Summer Draft</td>
<td>12.626 metres</td>
</tr>
<tr>
<td>Main Engine</td>
<td>SHI HSD MAN B&amp;W 8K90MC-C</td>
</tr>
<tr>
<td>Engine Power</td>
<td>36,515 kW</td>
</tr>
<tr>
<td>Speed</td>
<td>24 knots</td>
</tr>
<tr>
<td>Class</td>
<td>Det Norske Veritas (DNV)</td>
</tr>
</tbody>
</table>

2.1.2 **CSCL NINGBO** is a container ship classed with Det Norske Veritas Classification Society. It has 7 cargo holds with a cargo capacity of 4,253 Twenty-foot Equivalent Units (TEU). The accommodation and the main machinery space are situated aft. The navigational equipment consists of two sets of radar with Automatic Radar Plotting Aids (ARPA), two sets of Very High Frequency (VHF) radiotelephone, two sets of Global Positioning System (GPS) Navigator, a gyro compass, a magnetic compass, a course recorder, an echo sounder, a Doppler log and an Automatic Identification System (AIS).

2.1.3 The vessel was manned by a Master, four deck officers, five engineers, an electrical officer, one deck cadet and ten ratings. Senior deck and engineer officers were Indian nationals while the junior deck and engineer officers and ratings were Philippine nationals.

2.1.4 **CSCL NINGBO** was engaged in a run between the ports in the United States east coast, Central America and Asia.
2.2 **JIN HAI DA 18**

2.2.1 Particulars

<table>
<thead>
<tr>
<th>Port of Registry</th>
<th>Fuzhou</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>Cargo Ship</td>
</tr>
<tr>
<td>Year Built</td>
<td>1994</td>
</tr>
<tr>
<td>Gross Tonnage</td>
<td>950</td>
</tr>
<tr>
<td>Net Tonnage</td>
<td>532</td>
</tr>
<tr>
<td>Length Overall</td>
<td>67.96 metres</td>
</tr>
<tr>
<td>Breadth</td>
<td>9.8 metres</td>
</tr>
<tr>
<td>Summer Draft</td>
<td>3.8 metres</td>
</tr>
<tr>
<td>Main Engine</td>
<td>Diesel</td>
</tr>
<tr>
<td>Engine Power</td>
<td>441 kW</td>
</tr>
</tbody>
</table>

2.2.2 *Jin Hai Da 18* was a Chinese cargo ship engaged in coastal trade. It had two cargo holds. The accommodation and the main machinery space were situated aft. The navigational equipment consisted of one set of radar, two sets of V.H.F., one set of Global Positioning System (GPS) Navigator, an echo sounder and a magnetic compass.

2.2.3 The vessel was manned by a Master and seven crew members, all of Chinese nationals.
3. Sources of Evidence

3.1 Master and crew members of CSCL Ningbo

3.2 Xiamen Maritime Safety Administration, China
4. Outline of Events

4.1 Account of CSCL Ningbo

4.1.1 CSCL Ningbo departed from Xiamen at about 2100 on 23 August 2006 to Hong Kong. On the bridge with the pilot were the Master, Third Officer and an Able-bodied Seaman (AB). It was almost half-loaded with 2,434 TEUs on board with departure drafts of 10.00 meters and 10.50 meters forward and aft respectively.

4.1.2 After the pilot disembarked at 2215, the Master manoeuvered the ship at various courses.

4.1.3 It was stated by the Master and in the log book of CSCL Ningbo that the weather conditions were fine. The wind was east-northeasterly at force 3 and the sea was slight. The visibility was about 7 nautical miles (n.m.). The current was setting northwest at the rate of 2.8 knots.

4.1.4 Both radars were in operation and displayed with north-up mode. The range of Radar No. 1 on the port side of the bridge was set at 3 n.m. and 6 n.m. alternatively while the Radar No. 2 on the starboard side of the bridge was set at 6 n.m. and 12 n.m. alternatively. A warning would be given when the closest point of approach (CPA) was 1 n.m. or time of closest point of approach (TPCA) was 15 minutes. Two sets of GPS were in operation. The VHF radio was listened on channels 8, 9 and 16. All navigational equipment were functioning normally.

4.1.5 At 2218, the engine was increased to full ahead and at 2234, the engine was increased to 90 rpm (revolutions per minute). At 2248, the Master handed over the watch to the Third Officer when the vessel was passing Light Buoy No. 8. The Master remained on the bridge.

4.1.6 At about 2305, the vessel was on a course of 121°T and the Third Officer observed a target on the radar on port bow at a range of about 2 n.m. The ARPA (Automatic Radar Plotting Aids) indicated that the approaching vessel was on a course of 200°T and at a speed of 6 knots. The CPA was almost 0 n.m. and the TPCA was 10 minutes. The masthead lights and green sidelight of the approaching vessel were observed visually by the Master and Third Officer. The Third Officer tried to attract the attention of the other vessel by calling the vessel on VHF channel 16 and sounding ship’s whistle as well as
flashing signal light but there was no response from the other vessel.

4.1.7 At 2310, when the ship was in position 24°12'.0 N 118°16'.2 E, the Third Officer took avoiding action by altering course to starboard to 149°T as the other vessel did not take any action as a give-way vessel. At 2312, the Master ordered a hard-to-starboard helm when the target vessel was at a range of 20 metres and not taking any action.

4.1.8 At 2315, the Master felt sudden hull vibrations and heard two banging noises on port side and he thought that his vessel had collided with the target vessel. At 2316, the Master sounded the general alarm and emergency station mustered and engine was slowed down. Before the collision, the vessel was on a course of 149°T and at a speed of 18.5 knots but the course had been altered to 180°T to avoid collision.

4.1.9 At 2320, the Master reported the collision to Xiamen Vessel Traffic Services (VTS) on VHF channel 8. At 2321, the engine was stopped and a full inspection was made on the vessel. It was found that there were several scratches on the port side and several dents on the side shell of the port quarter below waterline. At 2328, the vessel proceeded at a slow speed to conduct a Search and Rescue (SAR) operation for the other vessel at the place of collision. At 2338, the ship’s agent was informed of the incident.

4.1.10 At 1118 on 24 August 2006 i.e. the next day the vessel was anchored at No. 2 Anchorage as instructed by Xiamen VTS. Officials from Xiamen Maritime Safety Administration (MSA) boarded the ship at about 1400 to carry out an investigation.

4.2 Account of Jin Hai Da 18

4.2.1 At the time of the accident, there were eight crew members on board Jin Hai Da 18. Five of them were rescued and three crew members including the Master and a sailor who were on duty in the wheelhouse were found missing.

4.2.2 According to the survived crew members, Jin Hai Da 18 departed from Pin Tan in Fuzhou at about 0800 on 23 August 2006 bound for Guangzhou. It had a cargo of about 1,500 tonnes of steel product.

4.2.3 Most of the survived crew members stated that they were asleep when the collision occurred at 2315 on 23 August 2006. The Chief Engineer was on his
way to the bridge when the collision took place. He stated that the starboard bow of *Jin Hai Da 18* was struck by the port bow of *CSCL Ningbo*. After the first contact, the stern of *Jin Hai Da 18* impacted on the mid-body and stern of *CSCL Ningbo* after her bow was bounced off from the bow of the latter vessel.

4.2.4 After the collision, *Jin Hai Da 18* listed to port and sank shortly. The Chief Engineer, Chief Officer and Second officer were rescued by fishing vessels while the other two sailors were rescued by a search and rescue (SAR) vessel.

4.2.5 In accordance with the statement from the Second Officer, *Jin Hai Da 18* was on a course of between 220°T and 230°T at a speed of 6 to 7 knots when he handed over the watch to the Master at 2000. The Second Officer had switched on the radar before he handed over the watch to the Master.

4.4 Xiamen Vessel Traffic Services (VTS)

4.4.1 The traffic at the entrance to Xiamen was monitored and regulated by Xiamen VTS. The area where the accident happened was under the surveillance of Xiamen VTS and the tracks of the ships involved in the collision were recorded by its radar.

4.4.2 There were two ships involved in the incident, the VTS participating ship *CSCL Ningbo* and the other non-participating ship *Jin Hai Da 18*.

4.4.3 It was seen that *CSCL Ningbo* was steering a course of about 149°T at a speed of about 20.5 knots while *Jin Hai Da 18* was steering a course of about 228°T at a speed of about 8 knots before the collision. Two ships were crossing so as to involve risk of collision. *Jin Hai Da 18* was a give-way ship whereas *CSCL Ningbo* was a stand-on ship. *CSCL Ningbo* altered course to starboard to 149°T at 2310 with a view to avoiding collision and *Jin Hai Da 18* maintained a course of about 229°T at a speed of about 8 knots until they collided with each other. The position of the collision was about 24°10.5’N 118°17.0’E and the time of the collision was 2315 (Figure 3).
4.4.4 There was little traffic in the vicinity of the accident location.

Figure 3  Diagram showing the tracks of *CSCL Ningbo* and *Jin Hai Da 18*
5. Analysis of Evidence

5.1 Competency and experience of the navigators of CSCL Ningbo and Jin Hai Da 18

5.1.1 The Master of CSCL Ningbo is a holder of a Certificate of Competency as Master issued by India on 3 July 2001 and a Hong Kong Class 1 Foreign-going Deck Officer Licence issued on 28 July 2006. He has been serving as Master for about 4 years and he joined CSCL Ningbo on 17 July 2006.

5.1.2 The Third Officer is a holder of a Certificate of Competency as Third Mate issued by Philippines on 22 December 2003 and a Hong Kong Class 3 Foreign-going Deck Officer Licence issued on 22 December 2005. He has been serving as Third Officer for about 3 years and he joined CSCL Ningbo on 16 December 2005.

5.1.3 The Master of Jin Hai Da 18 is a holder of a Certificate of Competency as Master issued by the Maritime Safety Administration of China for vessels between 500 and 3000 gross tons plying within the coastal areas of China. He has been serving at sea for about 8 years and he had joined Jin Hai Da 18 for about 8 months when the collision took place.

5.2 Certification and navigational equipment of the vessels in collision

5.2.1 The statutory trading certificates of both vessels were valid and in order.

5.2.2 The navigational equipment of both vessels were reported working properly.

5.3 Weather conditions

5.3.1 The weather was reported to be fine with east-northeasterly wind at force 3. The current was setting northwest at the rate of 2.8 knots. Visibility was about 7 n.m. The weather conditions are not considered to have any bearing on the occurrence of the accident.

5.4 Damages sustained to CSCL Ningbo and Jin Hai Da 18

5.4.1 CSCL Ningbo sustained minor hull damage to port side shell. Extent of
damage includes minor scratches/indentation on the port bow, midship and port quarter (Figures 5 and 6). There was also slight deformation of side shell longitudinal and main frame web stiffeners on the port side.

Figure 5  Minor scratch marks were found on the port bow

Figure 6  Minor scratch marks were found on the port quarter
From the damages found on *CSCL Ningbo*, it can be inferred that the port bow of *CSCL Ningbo* struck against the starboard bow of *Jin Hai Da 18*. As the speed of *CSCL Ningbo* was much faster than *Jin Hai Da 18*, its bulbous bow rubbed against the starboard bow of *Jin Hai Da 18* making it heeled to the port. As *CSCL Ningbo* took avoiding action by turning rapidly to starboard, its bow steered away from *Jin Hai Da 18* but its midship and port quarter struck the superstructure of *Jin Hai Da 18* again.

### 5.5 Actions taken by *CSCL Ningbo*

#### 5.5.1 Being a stand-on vessel, *CSCL Ningbo* failed to comply with Rule 8 of COLREGS to avert the collision when *Jin Hai Da 18* was not taking appropriate actions to keep clear of *CSCL Ningbo*. Knowing that there was a risk of collision with the target vessel when the Third Officer first saw *Jin Hai Da 18* at a range of 2 n.m. on the port bow at 2305 and the target vessel was not taking any action, he did not take any action to avoid collision. Although the Master handed over the watch to the Third Officer at 2248, when he observed *Jin Hai Da 18* visually and found that the Third Officer was not taking any avoiding action at 2305, he should have taken over the command of the vessel from the Third Officer and took early avoiding action by alteration of course or reducing, stopping or reversing the engine. At 2310, the Third Officer took avoiding action by altering course to starboard to 149°T. At 2312, the Master ordered a hard-to-starboard helm when the target vessel was at a range of 20 metres and not taking any action. Despite the above actions, collision could not be avoided.

#### 5.5.2 After the collision at 2315, *CSCL Ningbo* slowed down her engine at 2316 and stopped her engine at 2321. At 2328, *CSCL Ningbo* put her engine on dead slow ahead and commenced to conduct a Search and Rescue (SAR) operation for the other vessel at the place of collision. *CSCL Ningbo* should stop her engine and initiate SAR operation instantly after colliding with *Jin Hai Da 18* so that the chance of recovering survivors from the latter vessel might be enhanced.

### 5.6 Actions taken by *Jin Hai Da 18*

#### 5.6.1 Since all duty crew members in the wheelhouse had died, it does not know why the bridge team did not take appropriate action to avert the collision. According to the Xiamen VTS records, *Jin Hai Da 18* was crossing from the
port side to starboard side of CSCL Ningbo, therefore it was a give-way vessel to CSCL Ningbo and should keep out of the way of the other vessel in a crossing situation. Under such circumstances, Jin Hai Da 18 should have taken early avoiding action by either altering its course to starboard to pass the stern of CSCL Ningbo or slowing down, stopping or reversing her engine so that CSCL Ningbo could pass ahead of it. However Jin Hai Da 18 took no action to keep out the way of CSCL Ningbo as required by Rule 15 of COLREGS and resulting in a collision.

5.7 Fatigue and Drug

5.7.1 The duty hours of the Master and the Third Officer of CSCL Ningbo on that day had not been excessive and they were not fatigued.

5.7.2 There was also no evidence that either alcohol or drug was taken by them.

5.8 Rescue operation

5.8.1 At 2320 on 23 August 2006, CSCL Ningbo informed Xiamen Rescue Coordination Centre (RCC) about the collision. At 2330 Fuqian Rescue Coordination Centre (FRCC) was informed and CSCL Ningbo was instructed to conduct a search and rescue (SAR) operation for the crew members on board Jin Hai Da 18.

5.8.2 At 2340 FRCC dispatched a rescue vessel from Xiamen and fishing vessels in the area to take part in the SAR operations. Navigational warning was also broadcast on the VHF to invite passing-by vessels to assist in the SAR operations.

5.8.3 The rescue vessel located a liferaft at 0710 on 24 August 2006 i.e. the next morning and two sailors from Jin Hai Da 18 were rescued from the liferaft.

5.8.4 At about 0800, the Chief Officer and Second Officer were rescued by a fishing vessel.

5.8.5 At 0806, SAR operations were upgraded and marine launches, marine police launches, 16 fishing boats and SAR helicopter were instructed to conduct the
SAR operations.

5.8.6 At about 1300, the Chief Engineer was rescued by another fishing vessel.

5.8.7 At 1955 on 26 August 2006, SAR operations were stopped.
6. Conclusions

6.1 At about 2315 local time on 23 August 2006, the Hong Kong registered container ship CSCL Ningbo collided with the Chinese registered cargo ship Jin Hai Da 18 at approximate position 24°10.5’N 118°17.0’E.

6.2 At the time of the accident, the weather conditions were fine with east-northeasterly wind at force 3. The sea was slight and the visibility was about 7 n.m.. The current was setting northwest at the rate of 2.8 knots.

6.3 Jin Hai Da 18 immediately sank after the collision. Five crew members were rescued and the other three members were found missing.

6.4 CSCL Ningbo sustained minor damages to the hull on the port side.

6.5 The investigation revealed the following probable causes of the collision:

6.5.1 Jin Hai Da 18 which was a give-way vessel to CSCL Ningbo appeared to have failed to comply with Rule 15 of COLREGS to keep out of the way of other vessel in the crossing situation.

6.5.2 CSCL Ningbo, being a stand-on vessel, appeared to have failed to comply with Rule 8 of COLREGS to take early action to slow down, stop or reverse her engine to avoid collision when Jin Hai Da 18 was not taking appropriate avoiding action in accordance with COLREGS.
7. **Recommendations**

7.1 A copy of this report is to be sent to the owner and the Master of *CSCL Ningbo*, the owner of *Jin Ha Da 18* and the Maritime Safety Administration of Xiamen informing them the findings of this report.

7.2 A Merchant Shipping Information Note (MSIN) should be issued to draw the attentions of all concerned parties to the lessons learnt in the incident.

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 report to that person or organization for their comments.

8.2 The relevant parts of the final draft of the report were sent to the following:

Owner, Master and Third Officer of *CSCL Ningbo*
Owner of *Jin Hai Da 18*

8.3 No submissions were received from the Owner, Master and Third Officer of *CSCL Ningbo* and the owner of *Jin Hai Da 18*. 