Bulk Carrier YUAN SHUN Major Marine Occurrence

Executive Summary

On June 7, 2024, the Hong Kong-flagged bulk carrier “YUAN SHUN,” with 24 crew members on board, was transporting granulated slag from Japan's Kisarazu Port to Taipei Port and made a scheduled stop at Keelung Port for supplies. During berthing at Keelung Port around 19:19 local time, the vessel contacted the West No. 24 wharf, resulting in flooding of its fore peak tank and damage to the wharf's curb and underwater steel plate, though no injuries or oil pollution occurred. At 1858 hours, a marine pilot from Keelung Port boarded the ship to guide the “YUAN SHUN” into Keelung Port. At 1914 hours, “YUAN SHUN” passed through the breakwater. At 1918:19 hours, the bow of “YUAN SHUN” made contact with the West No. 24 wharf while berthing at the West No. 24 wharf of Keelung Port. The occurrence caused flooding of the forepeak tank of "YUAN SHUN" and damage to the wharf. No injury or oil pollution occurred in this occurrence.

In accordance with the Taiwan's Transportation Occurrence Investigation Act and the Casualty Investigation Code of the International Maritime Organization, the TTSB is an independent transportation occurrence investigation agency responsible for conducting this investigation. The investigation team also included members from the Maritime and Port Bureau of the Ministry of Transportation and Communications, the Taiwan International Ports Corp., Ltd., the TIPC Marine Corporation, Ltd., the Keelung Port Pilot Office, the Ocean Grow Ship Management Company, and the Hong Kong Marine Department.

After comprehensive investigation and analysis of the factual data, a total of 10 findings and 7 safety recommendations were obtained.

The findings related to probable causes are as follows:

1. The YUAN SHUN entered the port at a higher speed, maintaining significant starboard turning momentum after passing through the breakwater entrance. The pilot ordered “hard port” and “full astern” to control the ship’s speed and turning momentum. However, YUAN SHUN lacked the assistance of the ahead propeller wash, resulting in ineffective rudder response to counteract the starboard turning momentum and correct the heading. The ship's near-full load condition, along with the wind behind, the downstream current, and the transverse force from astern propulsion, all contributed to the difficulty in turning the ship to portside.

2. The pilot's berthing plan did not provide sufficient maneuvering space and time for effective coordination with tugboats, resulting in inadequate control of the ship's heading and speed. Consequently, the ship made contact with the West No.24 wharf at a speed of 4 knots and a 70-degree angle, causing damage to the bow and the underwater pier structure.

The findings related to risk are as follows:

1. The pilot obtained the consent of the YUAN SHUN’s master for applying the assistance of two tugboats before pilotage, however the ship proceeded directly to the West No. 24 wharf for starboard-side berthing after entering the port, without utilizing the turning basin or the assistance of tugboats for turning and speed reduction, thereby increasing the risk of contact with the wharf.

2. There was insufficient information exchange between the master of the YUAN SHUN and the pilot, including a lack of discussion regarding emergency and contingency plans. The pilot's inadequate monitoring of the positions of both tugboats increased the risk of contact with the wharf.

The other findings are as follows:

1. At the time of the occurrence, Keelung Port experienced a north-northwest wind at Beaufort scale level 3 to 4, with clear weather conditions and fair visibility during the high tide period.
2. The pilot held a valid license issued by the Ministry of Transportation and Communications of the Republic of China (R.O.C.).
3. The master and crew members held valid certificates of competency issued by the maritime authority of the People's Republic of China.
4. The work and rest hours of the master and crew of the YUAN SHUN in the 72 hours before the incident were normal, ruling out fatigue as a contributing factor.
5. The work and rest hours of the pilot and tugboats' crew in the 72 hours before the incident were normal, ruling out fatigue as a contributing factor.
6. The YUAN SHUN's main engine, auxiliary machinery, and steering gear were functioning normally, ruling out equipment failure or structural damage as contributing factors.

Safety Recommendations

To Keelung Harbor Pilot Office

1. Implement pilot management regulations with safety as the top priority. Strengthen procedures for handling port entry and departure operations of heavily loaded and extra-wide ships. This includes facilitating information exchange with the ship's master, planning for tugboat deployment in advance, and conducting thorough assessments of berthing risks and emergency preparedness measures.
2. Enhance coordination mechanisms with the port authority and the TIPC

Marine Corporation, Ltd. by establishing written records and regularly updating operating procedures, at least including case analysis, new personnel training (such as tugboat captains and VTS operators), and emergency response procedures for ships in the harbor area.

To Ocean Grow International Shipmanagement Consultant Corp.

1. Supervise the management of ships to ensure the completion of voyage planning and risk assessments before entering port. Consider sea and weather conditions during port entry, and enhance the information exchange between the master and the pilot. Implement necessary measures when safety concerns arise regarding pilotage operations.

To Taiwan International Ports Corporation Ltd.

1. Take an inventory of the berths in Keelung Port that require special berthing operations, formulate corresponding operational guidelines, and announce them promptly. For example, vessels berth at West No. 24 wharf, where port-side berthing should be adopted to ensure safe maneuvering space during the berthing process. Starboard-side berthing required prior approval from the Keelung Harbor Pilot Office.

2. Implement the Directives for the dispatch and management of tugboats at international commercial ports to ensure timely assistance during ship entry into ports, especially when ships experience power loss or have limited maneuverability.

3. Enhance coordination mechanisms with TIPC Marine Corporation, Ltd. and the pilots' office by establishing written records and regularly updating operating procedures, at least including case analysis, new personnel training (such as VTS operators), and emergency response procedures for ships in the harbor area.

To TIPC Marine Corporation, Ltd.

1. Enhance coordination mechanisms with the pilots' office and the port authority by establishing written records and regularly updating operating procedures, at least including case analysis, new personnel training (such as tugboat captains), and emergency response procedures for ships in the harbor area.

Note: The final report of this occurrence investigation is published in Chinese. To facilitate understanding for non-Chinese readers, the Executive Summary has been translated into English. While every effort has been made to ensure accuracy, discrepancies may occur. In the event of any inconsistency, the Chinese version shall prevail.