Oil Tanker TONG YUN and Bulk Carrier FPMC B FOREVER

Major Marine Occurrence

Executive Summary

At 1206 hours on June 8, 2024, the Taiwan-flagged oil tanker TONG YUN (IMO No. 9566356, gross tonnage 28410) was departing from the Second Entrance of the Port of Kaohsiung. At the same time, the Liberia-flagged bulk carrier FPMC B FOREVER (IMO No. 9445253, gross tonnage 94710) was entering the same channel. At approximately 1309 hours, after the two vessels passed each other in the two-way traffic route of the Second Entrance, the starboard side of TONG YUN contacted the offshore breakwater. at the outer area of the Second Entrance. The vessel's hull and the breakwater sustained damage. No casualties or environmental pollution resulted from the 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; Taiwan International Ports Corporation, Ltd.; the Kaohsiung Pilot Office; CPC Corporation, Taiwan; Energy Shipping Co., Ltd; Formosa Plastics Marine Corporation; and the maritime investigation authority of Liberia.

After comprehensive investigation and analysis of the factual data, a total of 17 findings and 14 safety recommendations were obtained.

The findings related to probable causes are as follows:

1. While waiting for port entry in the approach channel of the Second Entrance at the Port of Kaohsiung, FPMC B FOREVER gradually drifted toward the two-way traffic route under the influence of wind and current. No evident maneuvering was observed from the vessel's pilot to maintain position, which led to the vessel progressively occupying the two-way traffic route and further restricting the outbound navigation space of TONG YUN.

2. After receiving a notification from the VTS, the pilot of FPMC B FOREVER indicated that corrective action would be taken. However, the vessel maintained After the two vessels met in the two-way traffic route of the Second Entrance, at approximately 1309 hours, TONG YUN’s starboard side contacted the offshore breakwater on its original heading toward TONG YUN. When the situation became critical and required evasive action, the pilot of FPMC B FOREVER considered that turning starboard could result in a collision between the vessel's port quarter and TONG YUN, and therefore decided to proceed ahead with increased engine power. In response, the master of TONG YUN executed an additional starboard maneuver to avoid FPMC B FOREVER. Although the vessel successfully avoided FPMC B FOREVER, it eventually contacted the offshore breakwater on its starboard side.

3. In this occurrence, the pilot of FPMC B FOREVER did not comply with the relevant regulations established by the competent authority, including the provision in the Vessel Navigation Regulations of the Port of Kaohsiung that prohibits inbound vessels from entering or drifting within the two-way traffic route without authorization, as well as the requirement in the Port of Kaohsiung Vessel Traffic Service Manual that vessels navigating outside the channel shall give way to those navigating within the channel.

The findings related to risk are as follows:

1. The pilot of FPMC B FOREVER did not follow the guidance in IMO Resolution A.960(23) regarding Master/Pilot Information Exchange (MPX). During the pilotage, the pilot only provided information concerning tug assistance but did not sufficiently discuss the drifting position, shiphandling approach, or navigation rules with the master, resulting in the master's inability to fully comprehend the pilot’s maneuvering plan and related port information.

2. The two pilots on FPMC B FOREVER did not effectively demonstrate the expected level of cooperation between dual pilots, nor did they adjust the pilotage strategy in response to positional deviation. As a result, the vessel's intended position was not effectively maintained during the inbound maneuver.

3. The bridge team of FPMC B FOREVER did not adequately fulfill the relevant requirements of the vessel’s Safety Management Manual during pilotage. The team failed to promptly verify the pilot's maneuvering intentions and did not effectively perform its supervisory duties, with insufficient coordination and monitoring. This may have increased the risk during port entry and departure.

4. After the pilot disembarked, the master of TONG YUN had to navigate independently through the two-way traffic route, manage traffic conditions, respond to VTS calls, and coordinate with the pilot of the inbound vessel. As the master was less familiar with the port layout, hydrographic conditions, and operational environment compared to the pilot, the risk associated with navigation may have increased.

5. Although VTS officers communicated multiple times with FPMC B FOREVER to coordinate port traffic sequencing, there was no indication that warnings or recommendations were provided regarding the vessel's presence

in the two-way traffic route. This did not fully comply with the IMO Guidelines for Vessel Traffic Services, which state that a VTS should be capable of identifying unsafe traffic situations and providing timely information, advice, or warnings as necessary.

6. Since the construction of the offshore breakwater, the available navigable area on the northern side of the two-way traffic route at the Second Entrance of the Port of Kaohsiung has become restricted. If a vessel enters the channel in violation of regulations, it may increase the difficulty of meeting or maneuvering, resulting in higher navigational risk and operational pressure.

7. Although there are clear port navigation lane separation rules for the Second Entrance of the Port of Kaohsiung, additional interpretations introduced through conclusions from the Port Navigation Safety Coordination Meetings have led to ambiguity in practical application. As a result, head-on encounters between inbound and outbound vessels in the two-way traffic route continue to occur.

8. While channel management is legally supported by the Commercial Port Law and the Aids to Navigation Act, the ability of Kaohsiung VTS to enforce pilot-related violations is limited under the current vessel violation reporting and penalty framework. This constrains the effectiveness of VTS in executing its responsibilities related to vessel and channel management.

The other findings are as follows:

1. At the time of the occurrence, the steering gear, main engine, and navigational equipment of both TONG YUN and FPMC B FOREVER were functioning properly.

2. During the occurrence, the wind was westerly at Beaufort scale 3 to 4, the tide was ebbing, and the current flowed toward the northwest and north-northwest

at approximately 1 knot. The weather was clear with good visibility.

3. Under current procedures, Kaohsiung VTS coordinates vessel traffic based on whether a pilot is on board, assigning communication and coordination responsibilities separately to VTS01 and VTS02. This division of duties may affect the effectiveness of VTS in monitoring and managing vessel traffic and does not fully comply with the Port of Kaohsiung VTS Operational Guide and the established workstation duty assignment protocol.

4. Although the current port shuttle boats in the Port of Kaohsiung meet basic regulatory requirements, they do not conform to professional standards for pilot transfer operations. This may affect the safety and efficiency of the pilot transfer. To enhance pilotage safety, further improvements in pilot boat specifications and equipment standards are needed to ensure safe and stable boarding and disembarkation operations.

5. Due to the limitations of current shuttle boat performance, most pilot disembarkation areas in Taiwan ports are still located within the port. As offshore disembarkation is not feasible, this may increase the risk of contact with facilities or other vessels during in-port maneuvering. This operational practice differs from the standards and procedures adopted in most international commercial ports of advanced countries.

6. The traffic separation scheme (TSS) in the Port of Kaohsiung's Second Entrance has been in place since 2002. However, due to the construction of the Intercontinental Terminal Phase II and the offshore breakwater, and changes in traffic patterns associated with vessels operating at that terminal, the current traffic environment differs from the original TSS design. According to IMO recommendations on fairway planning, channel design should be periodically reviewed and adjusted in response to changes in maritime traffic conditions. There is a need to evaluate and adjust the current

TSS in the Port of Kaohsiung to address the risks arising from these changes.

Safety Recommendations

To Formosa Plastics Marine Corporation

1. Strengthen decision-making training for the fleet to handle abnormal situations during port entry and departure, enhance the master's ability to intervene in shiphandling when necessary, reinforce the bridge team's responsibility to continuously monitor pilotage operations, and improve the overall effectiveness of emergency response.

To the Maritime and Port Bureau, Ministry of Transportation and Communications

1. Supervise pilots' compliance with relevant port regulations and VTS management mechanisms, and improve the effectiveness of dual-pilot coordination to enhance port management and navigational safety.
2. In collaboration with Taiwan International Ports Corporation, Ltd., review current VTS-related regulations, fairway management practices, and violation handling procedures to ensure effective implementation of channel management and to strengthen the advisory and warning functions of VTS.
3. Assist Taiwan International Ports Corporation, Ltd. in reviewing the current operational model of the TSS in the Second Entrance of the Port of Kaohsiung, and carefully assess the appropriateness of vessel meeting arrangements in the two-way traffic route, taking into consideration the maneuvering challenges introduced by the offshore breakwater.
4. Support Taiwan International Ports Corporation, Ltd. in developing supporting measures for pilot disembarkation within the port waters of Kaohsiung, including traffic guidance, channel clearance, and contingency

mechanisms, to improve navigational safety and overall port operational efficiency.

To Kaohsiung Pilot Office

1. Strengthen pilots' compliance with relevant port regulations and VTS management mechanisms, and enhance the effectiveness of dual-pilot coordination to improve port management and navigational safety.
2. Align the pilot training programs provided by the competent authority with the operational requirements of pilotage, such as enhancing simulation-based training and practical exercises, to ensure that pilots can proficiently apply acquired skills during actual operations.

To Taiwan International Ports Corporation, Ltd.

1. Enhance VTS operators' awareness, judgment, and response to unsafe vessel traffic conditions, and ensure that timely information, advice, or warnings are provided to vessels in accordance with the IMO Guidelines for Vessel Traffic Services.
2. Review the current division of duties among VTS workstations to ensure alignment with the Port of Kaohsiung VTS Operational Guide, and to reinforce the intended monitoring and management functions of regional vessel traffic services.
3. In collaboration with the Maritime and Port Bureau, MOTC, review existing VTS-related regulations, channel management practices, and violation handling procedures to enable effective enforcement of fairway management and to strengthen the advisory and warning functions of VTS.
4. Jointly review with the Maritime and Port Bureau, MOTC, the current operational model of the TSS at the Second Entrance of the Port of Kaohsiung.

Carefully assess the appropriateness of inbound and outbound vessel meetings in the two-way traffic route, taking into account the maneuvering challenges introduced by the offshore breakwater, in order to reduce the risks associated with vessel encounters in the channel.

5. Work with the Maritime and Port Bureau, MOTC, to develop supporting measures for pilot disembarkation within the port waters of Kaohsiung, including traffic guidance, channel clearance, and related contingency mechanisms, to reduce the maneuvering burden on outbound vessel masters and enhance both navigational safety and overall port operational efficiency.

6. Ensure that all port-related management measures are implemented in accordance with formal announcements, and avoid relying solely on meeting conclusions as the basis for operational practices. Where appropriate, incorporate such conclusions into official regulations to maintain clarity and effectiveness in the port management system.

7. Review the current fairway system planning of the Port of Kaohsiung, evaluate the impact of the Kaohsiung Intercontinental Container Terminal and the newly constructed offshore breakwater on the maritime traffic environment, analyze the navigational risks introduced by these developments, and formulate appropriate response strategies to ensure navigational safety and traffic efficiency.

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.