

General Cargo Ship Sam Bo II Major Marine Occurrence

Executive Summary

At 1354 on 5 August 2021, the Taiwan-flagged general cargo ship Sam Bo II (Official No. 015424), with a gross tonnage of 1,416 and port of registry at Kaohsiung, was en route to Port of Budai, Chiayi. While altering course to starboard to enter the main channel, the ship was unable to control her heading and deviated from the channel. The ship subsequently stranded on the northern side of the main channel and was further driven by waves toward the northern breakwater, where she grounded on the tetrapods. The hull was eventually breached, resulting in flooding and sinking. No casualties or environmental pollution were reported in this occurrence.

In accordance with the Transportation Occurrence Investigation Act, Taiwan, and the definition of major transportation occurrences specified therein, the Taiwan Transportation Safety Board was the independent agency in charge of investigating the marine accident. The organizations and agencies invited to participate in the investigation included the Maritime and Port Bureau of the Ministry of Transportation and Communications, Taiwan International Ports Corporation, Ltd. and Far Ocean Marine Transport Corp.

After comprehensive investigation and analysis of the factual data, a total of 8 findings and 6 safety recommendations were obtained.

The findings related to probable causes are as follows:

1. Prior to arrival, Sam Bo II obtained clearance from the Port of Budai Vessel Traffic Service (VTS) to enter the port. However, due to the effects of the southwesterly wind, swell, and insufficient under-keel

clearance, the ship became difficult to maneuver and ultimately grounded.

2. The Budai Management Office VTS of the Taiwan International Ports Corporation, Ltd., Kaohsiung Branch, did not effectively implement the safety recommendations previously issued by this Board in the Sheng Li case, and therefore did not carry out appropriate traffic control measures.

The findings related to risk are as follows:

1. In accordance with the control regulations, the maximum permitted draft included an additional 0.5 meters for under-keel clearance. However, insufficient consideration was given to the effects of strong winds and swell, including wave-induced motions and hydrodynamic interaction, which may result in discrepancies between the calculated and actual under-keel clearance, thereby creating a navigational safety risk.
2. The Vessel Traffic Management Information System at Port of Budai did not effectively provide alerts for ships deviating from the designated channel, posing a risk to fairway monitoring.
3. Port of Budai was equipped with only one radar, which was out of service at the time of the occurrence. Consequently, drifting oyster racks and small craft not fitted with the Automatic Identification System (AIS) could not be detected or displayed on the VTS electronic chart system.
4. The bathymetric chart currently issued by Port of Budai is not an official navigational chart. The depth data were provided for reference only and cannot be used by ships for position fixing via the Global Positioning System (GPS). In other words, updated depth information is not effectively available to masters for safe navigation.

The other findings are as follows:

1. The deck logbook of Sam Bo II did not record the results of pre-departure tests of navigational equipment on the day of the occurrence or the preceding day, which was not in accordance with the company's Safety Management System (SMS) procedures.
2. The company did not arrange pre-sailing familiarization training for newly joined crew members, including the master of Sam Bo II, prior to boarding, which was not in accordance with the company's SMS requirements.

Safety Recommendations

To Far Ocean Marine Transport Corp.

1. Improve berthing plans across the fleet by scheduling arrivals to avoid periods preceding low tide. During the summer southwest monsoon, when sea conditions are unfavorable, particular attention shall be paid to ensuring adequate under-keel clearance for safe navigation.
2. Ensure that all ships in the fleet are duly instructed to comply with the company's Safety Management System (SMS) procedures by properly recording the results of pre-arrival and pre-departure equipment tests, in order to support safe ship operations.

To Taiwan International Ports Corporation, Ltd.

1. Where fairway depths cannot be effectively maintained, ensure the implementation and effective enforcement of Article 33 of the Commercial Port Act by applying entry and departure controls during periods of lowest tide for ships with draft limitations or grounding risk.
2. Develop measures to provide monthly surveyed bathymetric data for use in ship position fixing, in order to enhance the safety of commercial

shipping operating in Port of Budai.

3. Where fairway depths cannot be effectively maintained, and taking into account weather conditions, swell, and under-keel clearance, implement entry and departure control measures for ships with draft limitations or grounding risk.
4. Increase the utilization of radar as the primary means of surveillance, with Automatic Identification System (AIS) data as a supplementary source, and ensure both are integrated and displayed simultaneously on the electronic chart system to enable Vessel Traffic Service (VTS) operators to promptly identify risks and take appropriate action.

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.