

# **Container Vessel ANGEL Major Marine Occurrence**

## **Executive Summary**

On July 20, 2023, a Palau-Flagged container ship named ANGEL (hereinafter referred to as "the ANGEL") with a gross tonnage of 16,145 and IMO number 9256406, was anchored at the second anchorage of Kaohsiung Port. The ship carried 19 Azerbaijani crew members and was loaded 1,349 brand-new 20-foot empty containers. From July 4 to July 20, the cargo holds of the ANGEL experienced continuous water ingress, the water level in the no.4 and no.5 cargo holds reaching approximately 4.5 meters. At around 0824 on July 20, the ANGEL suffered generator failure, resulting in a total loss of power. At 0931 hours, the master of the ANGEL issued a distress signal. At 1000 hours, the master ordered the crew to abandon ship, and subsequently, 19 crew members were safely evacuated to shore by a Coast Guard vessel. At 0530 on July 21, the ANGEL sank in waters 2.8 nautical miles west of Kaohsiung Port. This incident resulted in a total loss of the ANGEL, with containers drifting and sinking in the surrounding waters.

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, TIPC Marine Corporation, Ltd., Kaohsiung Marine Shipperservice Co., Ltd. and All Ports Transportation Co., Ltd.

After comprehensive investigation and analysis of the factual data, a total of 13 findings and 7 safety recommendations were obtained.

**The findings related to probable causes are as follows:**

1. The ANGEL had long suffered from inadequate maintenance, resulting in damage to the cargo hold floor structure. After departing from Colombo, the floor of the no. 3 cargo hold on the starboard side cracked, causing ballast water from the starboard side of ballast tank no. 3 to leak into no. 3 cargo hold. Following cargo loading at Dalian, the severe corrosion of the cargo hold floor led to its rupture due to the pressure from the container weight. This caused ballast water from the ballast tanks beneath the no. 4 and no. 5 cargo holds to leak into the no. 4 and no. 5 cargo holds. Furthermore, the ANGEL's remote ballast water control system was malfunctioning. After departing from Dalian, the fully loaded cargo holds made it impossible for the crew to enter the cargo holds to handle the water ingress and leakage.
2. On the day of the occurrence, the ANGEL's fuel pipeline was blocked by sludge and residue, which caused the main generator to shut down. This led to a total loss of power, and consequently, the ballast water pump ceased operation. The ship continued to list to port side at 45 degrees, resulting in a large volume of seawater rushing into the aft cargo holds and the engine room, ultimately causing the ANGEL to sink.

**The findings related to risk are as follows:**

1. The ANGEL sailed with a full load of containers when the flooding issue in the cargo holds exceeded the crew's capacity to handle it due to a combination of factors, including: (a) damage to the hull, ballast water pipelines, and valves due to long-term lack of maintenance; (b) blockage, rust, or breakage of the sounding pipes; and (c) blockage of the bilge sewage wells and potential failure of the check valves to close properly.
2. The ship had not undergone a dry-dock inspection for over 5 years, and the ship owner and management company did not conduct an underwater hull

inspection at the first convenient port or anchorage, as required by the Classification Society. They also did not carry out an additional International Safety Management (ISM) audit or complete 17 recommendations and 4 recommendation memorandums within the deadline set by the Classification Society. These failures led to a missed opportunity to prevent the occurrence.

3. Ten days before the occurrence, the Flag state (Palau) was aware that the ANGEL was in an unseaworthy condition but failed to notify Taiwan's maritime authorities. This prevented them from requesting assistance regarding the ANGEL prior to the occurrence.
4. Four days before the occurrence, the shipping agent (S5 ASIA) was busy handling ANGEL's emergency entry into the port and planning backup plans. The agent failed to notify the port authority that the ANGEL's cargo holds were flooded and the ship had almost lost its seaworthiness.
5. Despite the ship management company (ZULU) establishing a safety management system and work guidelines before departure, it failed to effectively implement training for the handover of new and old crew members and did not promptly provide resources to address the water ingress issue. The ship's engine room had numerous problems, and severe flooding in the cargo holds during navigation made it impossible for the crew to resolve the listing issues.
6. Before the occurrence happened, the crew of the ANGEL was changed, and the chief officer, facing threats to their safety, sent an emergency (Pan-Pan) email to the International Transport Workers' Federation (ITF) and the Singapore Maritime and Port Authority.
7. When this accident occurred, the Kaohsiung VTS adopted the trust principle for anchoring ships. When a ship applied for anchoring upon arrival, the shipowner was not required to provide information about Protection and

Indemnity Insurance (P&I).

**The other findings are as follows:**

1. At the time of the occurrence, the ship had carried a master and 18 crew members, all Azerbaijani nationality. All 19 crew members held valid certificates of competency issued by the competent authority of the ship's Flag state.
2. There is no evidence indicating that the ANGEL was subjected to external force impacts or contacted navigational obstacles. There is no evidence indicating that crew fatigue, crew qualifications, and weather factors are related to this occurrence.
3. After the sinking of the ANGEL, there were discrepancies in the ship-related certificates provided by the shipowner (Navramar), the Classification Society (INTLREG), and the ship management company (ZULU), making it impossible to confirm the validity of the ANGEL vessel's relevant certificates at the time of the occurrence.
4. After the occurrence, the Port of Kaohsiung, Taiwan International Ports Corporation, Ltd. revised its anchorage management regulations. The anchoring period for ships is set at 7 days, during which the ship must maintain seaworthiness and valid shipowner's liability insurance (Protection and Indemnity Insurance, P&I). Additionally, it requires ship agents to register relevant certification documents in the maritime administration system and to affirm that the vessels they represent are safe and seaworthy.

**Safety Recommendations**

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

1. Continue to maintain communication with the Palau Maritime Authority,

proactively grasp and mutually provide information on flagged ships that have concerns regarding seaworthiness, in order to ensure the timeliness of port state control inspections between the two countries.

**To Taiwan International Ports Corporation, Ltd.**

1. Actively disseminating information to ship agencies is essential to ensure they have a comprehensive understanding of the ships they represent. If there are concerns about seaworthiness, they should promptly report to the competent authorities to ensure port safety and navigation order.
2. Re-examine the management regulations for anchorage use, enhance training on anchorage operational procedures, and promote the submission of valid shipowner's liability insurance (Protection and Indemnity Insurance, P&I) documents for ships anchoring in port, to improve navigation operations in the port area and anchorage.

**To S5 ASIA (HONG KONG) Limited Taiwan Branch**

1. Comply with the management regulations for shipping agents, and accurately understand the conditions of the ships they represent entering the port. If there are any concerns regarding seaworthiness, they should promptly report to the competent authorities to ensure port safety and navigational order.

**To Palau International Ship Registry (PISR)**

1. Supervise the registered ships and their management companies. If there are concerns regarding the seaworthiness of a ship, they should promptly report them to the relevant port state and coastal state maritime authorities to ensure port safety and the safety of ship navigation.
2. Reference the pertinent provisions of the International Maritime Organization (IMO) convention), supervise the ship inspection quality and certificate

management procedures of the International Register of Shipping (INTLREG) to ensure that inspected ships comply with the safety regulations of the Flag State and the IMO. Strengthen oversight of ships with time-bound improvement deficiencies and take timely control measures to reduce the risk of ships losing their seaworthiness while in navigation.

### **To International Register of Shipping (INTLREG)**

1. Enhancing the quality of ship inspections and certificate management procedures to ensure that inspected ships comply with the safety regulations of the Flag State and the IMO. Strengthen control over ships with time-bound improvement deficiencies and take timely control measures to reduce the risk of ships losing their seaworthiness while in navigation.

**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.