



## SIMPLIFIED SAFETY INVESTIGATION REPORT

201704/007

REPORT NO.: 07/2018

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The Merchant Shipping (Accident and Incident Safety Investigation) Regulations, 2011 prescribe that the sole objective of marine safety investigations carried out in accordance with the regulations, including analysis, conclusions, and recommendations, which either result from them or are part of the process thereof, shall be the prevention of future marine accidents and incidents through the ascertainment of causes, contributing factors and circumstances.

Moreover, it is not the purpose of marine safety investigations carried out in accordance with these regulations to apportion blame or determine civil and criminal liabilities.

### NOTE

This report is not written with litigation in mind and pursuant to Regulation 13(7) of the Merchant Shipping (Accident and Incident Safety Investigation) Regulations, 2011, shall be inadmissible in any judicial proceedings whose purpose or one of whose purposes is to attribute or apportion liability or blame, unless, under prescribed conditions, a Court determines otherwise.

The report may therefore be misleading if used for purposes other than the promulgation of safety lessons.

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### **MV UMM SALAL** **Grounding in position 02° 51.00' N 101° 00.36' E,** **2.45 nautical miles South of One Fathom Bank,** **Selangor, Malaysia** **06 April 2017**

### Course of events

MV *Umm Salal* completed the cargo operations and was on stand-by engines at 1300. The pilot boarded at 1330. The unberthing operations, which commenced at 1340 were uneventful and at 1430, the vessel dropped the pilot and commenced her sea passage towards Khor Fakkan, UAE.

By 1510, *Umm Salal* was making 18 knots. Seeing no particular issues, the master gave the conn to the duty navigational OOW, who was accompanied by an AB serving as a look-out. Soon after, the master left the bridge.

Given that the vessel had just left the port, the navigational OOW still had some reports and documents to process and send to the master. However, this did not take long and at 1520, the required reports were emailed to

the master from the computer, which was on the bridge at the aft bulkhead<sup>1</sup>.

Once the required documents had been emailed, the OOW joined his look-out in the wheelhouse. According to the OOW, all navigational equipment was in good working order. Aware of the numerous fishing buoys in the area, the OOW instructed the look-out to pay particular attention for the buoys.

At about 1522, *i.e.* two minutes after joining the look-out, the OOW noticed two ships on his port side. Assessing the situation, he concluded that the CPA was too small and that the vessels would cross the bow.

<sup>1</sup> The wheelhouse is an open plan, incorporating the chartroom and other equipment aft of the bridge main console.

In view of his concerns, the OOW altered course to starboard by 5°. Following the course alteration, the OOW kept monitoring the situation on the radar only. At 1526, the OOW observed that the situation remained critical and the course was altered again to starboard by further 10°.

The OOW recalled that at about 1530, the chief engineer came on the bridge and requested some information from the engine movement book. The OOW proceeded to the chart room and provided the information to the chief engineer, who left the bridge about two minutes later.

Soon after the chief engineer left the bridge, at about 1533, the OOW noticed the ship vibrating. Concerned about this, the OOW looked at the echo sounder's front panel which read a depth of 2.0 m. The ECDIS indicated that the vessel was heading towards a shallow patch of water<sup>2</sup> (Figure 1).



**Figure 1: Screenshot from the ECDIS showing vessel heading in shallow water**

Upon seeing the vessel's position, the OOW changed steering to manual and turned the wheel hard to starboard. In the meantime, the master had also felt the vibration and quickly made his way to the bridge. By the time he arrived, the vessel's speed had dropped from 18 knots to 15 knots.

The master pulled the telegraph to full astern. However, it was soon noticed that the vessel

<sup>2</sup> ECDIS is the primary means of navigation.

was not responding to the helm orders and the speed was dropping rapidly until the vessel came to a stop. It was immediately suspected that the vessel was hard aground in position 02° 51.00' N 101° 00.36' E.

VTIS Klang was informed of the situation and an emergency team was mustered and requested to proceed with the sounding of the ballast tanks. Eventually, it was confirmed that the vessel had run aground on soft mud and that there were no damages to the underwater portion of the vessel.

During the following morning, a diver ensured that the rudder and propeller were free and clear from the shallows while deballasting operations were commenced. Following clearance from the local authorities, the main engine was started astern and within six minutes, the vessel was afloat again.

### **Extent of the damages**

An underwater survey by a class approved diver was carried out on 16 April 2017 at the port of Khor Fakkan, UAE. The underwater portion of the vessel, including bilge keels, propeller, and rudder had no structural damages.

Indentations were found on the bottom shell plating approximately within an area of approximately 0.5 m wide and 3.0 m deep, in way of water ballast tank no. 2 port. No signs of cracks were observed. The general condition of the antifouling was also found good, with some bare metal exposed.

### **Cause of the grounding<sup>3</sup>**

Evidence suggested that the OOW had a traffic situation which necessitated his full attention and also alterations of course.

<sup>3</sup> The purpose of a marine safety investigation is to determine the circumstances and safety factors of the accident as a basis for making recommendations, and to prevent further marine casualties and incidents from occurring in the future.

Throughout this entire process, the OOW had to interpret his observations and plan his actions practically on his own, which is considered to be the immediate cause of the accident.

It is legitimate to submit that the OOW may have had an issue with the management of the workload and the control of attention because of the necessity to compute multiple tasks in a very critical time, with limited attentional focus in a dynamic environment.

The traffic situation evolving ahead of the ship prevented the OOW from shifting his attention to the navigational aids which were clearly indicating that the vessel was heading into shallow waters.

On his own, the OOW was unable to shift his attention between the various systems providing the data. Unable to mitigate the situation effectively, not least because he was on his own and having, out of necessity, altered course to a heading, which had not been pre-planned, the vessel ran into shallow waters and remained stranded.

The entry of the chief engineer, although it did not contribute directly to the accident, may have interfered with the OOW to diagnose and correct the vessel's course, thereby preventing it from running into shallow waters. However, it has to be submitted that the grounding happened a few minutes after the chief engineer left the bridge and hence the possibility to alter the course and steer away from shallow waters was actually very remote.

### **Barrier system failure**

The OOW had just joined the vessel on the day before the accident. Information received by the safety investigation suggested that the Company's familiarisation checklist (Fleet Marine Notice No. 15A) had been completed by the OOW.

For the purpose of the safety investigation, the ECDIS can be considered to be a symbolic barrier system, rather than a piece of navigational equipment.

Contrary to other types of barrier systems (e.g., physical and functional), symbolic barrier systems require the intervention of the operator (in this case the navigational OOW). The necessary intervention of the OOW was compromised on three accounts:

1. The OOW was not monitoring the ECDIS because of the situation with the vessels in close proximity to *Umm Salal*;
2. The fact that he left the bridge to go to the chart room; and
3. No audible alarms were heard throughout the bridge to warn the OOW that the vessel was heading in shallow waters.

A post-accident inspection after the accident confirmed that although the alarms on the ECDIS were functional, these were intentionally turned off to avoid continuous activation. Therefore, it may be concluded that not only was the (timely) intervention missing because of the evolving situation, but the feature which could have triggered the intervention had been switched off.

Another (ineffective) symbolic barrier was the echo sounder. The post-accident inspection revealed that the minimum alarm depth was set at 1960 m. It was therefore evident that the equipment's alarm had never activated.

Symbolic barriers are often complimentary to immaterial barriers. In this case, the monitoring of ECDIS (which is an integral part of the watchkeeping practice) is addressed in the Company's SMS, chapter 7. The safety investigation is unaware as to whether the above practice had long been established on board. However, this was not excluded, given that the master was very well

aware that the ECDIS and echo sounder alarms were either deactivated or had a set-value which rendered the equipment ineffective.

## **RECOMMENDATIONS**

United Arab Shipping Company Ltd. is recommended to:

*07/2017\_R1* ensure that navigational equipment on board is used properly, especially equipment fitted with audible and visual alarms.

**SHIP PARTICULARS**

Vessel Name:	<i>Umm Salal</i>
Flag:	Malta
Classification Society:	Lloyd's Register of Shipping
IMO Number:	952857
Type:	Container
Registered Owner:	Umm Salal Ltd.
Managers:	United Arab Shipping Company Ltd.
Construction:	Steel
Length Overall:	365.93 m
Registered Length:	350.85 m
Gross Tonnage:	141077
Minimum Safe Manning:	15
Authorised Cargo:	Containers

**VOYAGE PARTICULARS**

Port of Departure:	Port Kelang, Malaysia
Port of Arrival:	Khor Fakkan, UAE
Type of Voyage:	International
Cargo Information:	120,640 mt of containerised cargo
Manning:	22

**MARINE OCCURRENCE INFORMATION**

Date and Time:	06 April 2017 at 1533
Classification of Occurrence:	Less Serious Marine Casualty
Location of Occurrence:	02° 51.00' N 101° 00.36' E
Place on Board	Ship / Other
Injuries / Fatalities:	None
Damage / Environmental Impact:	No environmental damage reported. Bottom shell plating sustained minor indentations
Ship Operation:	In passage
Voyage Segment:	Transit
External & Internal Environment:	Good visibility with a 0.5 m Northwesterly sea and a Westerly moderate wind.
Persons on board:	22