



SAFETY INVESTIGATION REPORT

202010/002

REPORT NO.: 22/2021

October 2021

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 ALEXANDRA A **Man overboard** **in position 37° 34.58' N 023° 44.55' E** **(Saronikos Gulf), Greece**

03 October 2020

SUMMARY

On 03 October 2020, the Marine Safety Investigation Unit (MSIU) was informed that a fitter on board the Maltese registered container vessel *Alexandra A* had fallen overboard. The accident occurred in the Saronikos Gulf, shortly after leaving Piraeus, Greece.

A man overboard message was instantly transmitted on the VHF radio. The master executed a Williamson Turn, posted lookouts, and conducted a broad search of the area. An hour later, the fitter was rescued

by a sailing craft *Trois Vignes*. He was transferred on to a Hellenic Coast Guard vessel and taken ashore to Lavirion for medical check-up. He was released during the evening to re-join the vessel.

The safety investigation determined that the crew member had fallen overboard while fixing an oil leak on the ship's provision crane, located aft on the poop deck. Taking into consideration the safety actions already taken by the Company, the MSIU has issued no recommendations.



FACTUAL INFORMATION

The vessel

Alexandra A was a Maltese-registered container vessel of 10,689 gt. She was built in 2011 by Anadolu Shipyard, Turkey. The vessel's registered owners were Asterope Shipping Limited. She was managed by Arkas Shipping and Transport S.A and classed by Bureau Veritas (BV). The vessel had a length overall of 145.90 m and a deadweight of 12,529 tonnes.

Alexandra A was powered by a MAN SE 7L 58/64 internal combustion diesel engine, producing 9,800 kW at 428 rpm. The estimated speed of the vessel was 17 knots.

Crew and manning

Alexandra A had a crew complement of 16 and complied with the requirements of the Minimum Safe Manning Certificate. All crew members were Turkish nationals.

The crew member who fell overboard was a fitter. He was 46 years old and had joined the vessel on 21 May 2020. He had started his career at sea in 2009 and held an able seafarer (engine) certificate of competency (STCW regulation III/5). He had been working with the Company for six years. His designated watch duties at sea and in port were from 0800 to 1700.

The second engineer was 31 years old. He held an ocean going second engineer certificate (STCW regulation III/1), issued by the Turkish authorities. He had been working with the Company for the past eight years. He had embarked *Alexandra A* on 07 April 2020.

Environment

The weather was clear with visibility up to 10 nautical miles. A light breeze was from the South Southeast. The sea was calm. The air and sea temperatures were 23 °C and 18 °C, respectively.

Provisions crane

The provisions crane was designed to load provisions and to launch and recover of the vessel's rescue boat and / or liferaft. It was fitted aft on the poop deck, on starboard side. The crane was operated from an open control platform, fenced by fixed metal railings, and located 1.33 m above the poop deck. The joysticks mounted on the platform controlled the slewing, crane jib, and cargo winch. The platform was accessed via a fixed vertical ladder, fitted about 0.80 m from the ship's starboard guardrail (Figure 1).

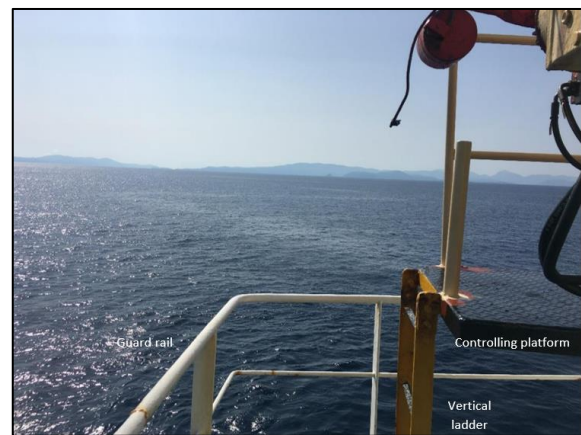


Figure 1: The provisions crane's controlling platform, fixed vertical ladder, and guard rail.

For emergency operations, the crane was equipped with twin accumulators for use with the rescue boat and / or the liferaft. The accumulators were charged with nitrogen gas (N₂), maintaining a working pressure of 230 bars in the crane's hydraulic circuit. This provided sufficient power for multiple operations.

Narrative¹

On the morning of 03 October 2020, *Alexandra A* departed Piraeus, Greece, drawing a draft of 8.20 forward and 8.55 m aft. The freeboard was about 2.80 m. She was navigating on a Southerly course, off the coast of Greece in the Saronikos Gulf. Her destination port was Alexandria, Egypt. At

¹ Unless otherwise stated, all times are ship's time (UTC + 3).

around 1030, the chief engineer held a toolbox² meeting, and assigned the fitter and second engineer to rectify an oil leakage from the provisions crane hydraulic lines. The third engineer was tasked with the maintenance of main engine lubricating oil purifier.

Once on the poop deck, the second engineer left to oversee on-going tasks in the engine-room. The fitter, who was wearing a high visibility overall, gloves, goggles, and safety shoes, enlisted an able seafarer's³ (AB) assistance and ascended the controlling platform.

The fitter discovered that the oil leaking was from the blind plug, but it had been previously welded in position and required grinding off before the leakage could be rectified.

Although a valve (with a cap) on the hydraulic line was closed, he noticed that the flexible accumulator circuit underneath had to be slightly moved to operate the angle grinder. The fitter reported that he gently moved the accumulator circuit⁴ (Figure 2). Suddenly, he heard a strong noise and hydraulic oil spurted out with an overwhelming force. The AB and cook heard the blast and noticed that the fitter had fallen overboard. The AB immediately notified the bridge. The accident occurred at 1102 and the man overboard (MOB) position 37° 34.58' N 023° 44.55' E was logged.

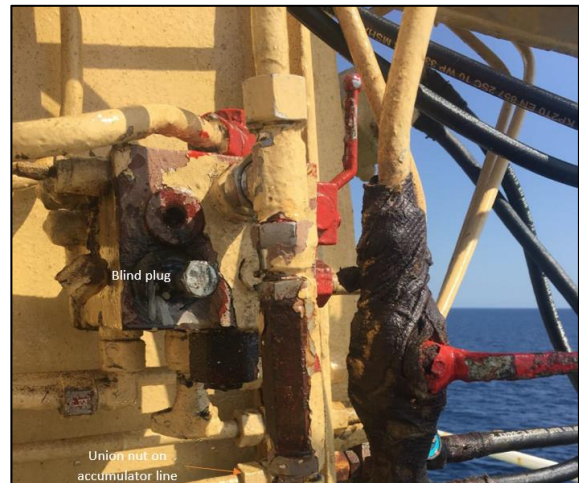


Figure 2: Photo showing blind plug and union nut on accumulator circuit.

Man overboard

The officer on watch raised the general alarm and activated the master's emergency call button. The master summoned the crew and posted lookouts around the vessel. He also activated and logged the man overboard (MOB) GPS position. He sent out a PAN PAN⁵ alert message on the VHF radio and commenced a Williamson Turn. About ten minutes later, *Alexandra A* reached the MOB position.

The master released the bridge wing lifebuoy and launched the rescue boat. Meanwhile, Olympia Radio and Piraeus JRCC were informed and called other vessels in the vicinity to participate in the search and rescue operations. At 1240, the fitter was located and rescued by a sailing craft *Trois Vignes*. He was transferred on board a Hellenic Coast Guard vessel and taken ashore to Lavrion, Greece for a medical assessment. Meanwhile, *Alexandra A* was instructed to hold her position. Following medical examination / treatment, the fitter was released from the hospital and at 2305, he re-joined the vessel.

² A toolbox meeting is an informal safety meeting that focuses on safety related to the specific job.

³ The able seafarer was taking a break on the poop deck, together with the cook.

⁴ The AB reported that the fitter was dismantling the butterfly valve union nut underneath the hydraulic pipe.

⁵ International urgency signal prefixed to a radio message which concerns the safety of either a mobile unit or a person.

ANALYSIS

Aim

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 or incidents from occurring in the future.

Probable cause of the accident

In all probability, the (loosened) union nut dislodged from its housing when the fitter moved the flexible accumulator circuit⁶. Although the system had been isolated, it was still under residual pressure, which had not been relieved. The hydraulic fluid, under considerable N₂ pressure, leaked out from system to atmospheric pressures. The fitter, very likely, startled by the sudden and unexpected outburst (not least the sound generated by the differential pressure), instinctively withdrew back, and fell over the crane's platform and the ship's guardrail.

Risk awareness

The release of the union nut was not anticipated by the crew members. Then, the fitter did not anticipate the sudden release of hydraulic pressure. Seen as a trivial task, his actions were neither supervised nor had he reported to the senior crew members his intentions. To this effect, specific control measures were not in place.

Details of the toolbox talk had not been saved in the 'Toolbox Talks Form'. Thus, the work method discussed during this meeting could not be determined. However, information made available to the MSIU suggested that the task of rectifying the oil leakage was treated as a routine job, whilst

hot work and handling of accumulator circuit had not been anticipated.

Fatigue drugs and alcohol

Records of the hours of rest for the fitter were found to be in accordance with the MLC and the STCW Convention requirements. The MSIU did not come across any evidence of alcohol or drug use on board, nor evidence of behaviour which would have suggested fatigue. Alcohol and fatigue were therefore not considered to be a contributing factor to this accident.

CONCLUSIONS

1. The cause of the accident was attributed to the fitter's reflex action when hydraulic pressure relieved inadvertently through a loosened union nut;
2. The (loosened) union nut dislodged from its housing when the fitter moved the flexible accumulator circuit;
3. The release of the union nut was not anticipated by the crew members;
4. Information available to the MSIU suggests that the task of eliminating oil leak was treated as a routine job because hot work and the handling of the accumulator circuit was not anticipated;
5. Seen as a trivial task, his actions were neither supervised nor did he report his intentions to the senior crew members.

⁶ The crane's manual stipulated that the draining of hydraulic oil and de-pressurisation of the hydraulic system is required before any maintenance work is carried out on the hydraulic or pneumatic connections.

SAFETY ACTIONS TAKEN DURING THE COURSE OF THE SAFETY INVESTIGATION⁷

During the safety investigation, the Company had taken the following safety actions:

- Lessons learned from this accident were circulated to all fleet vessels and included in the monthly safety and security meetings. The internal investigation report was incorporated in the Company's internal training programme;
- It was agreed that SMS procedures on work pressure systems had to be reviewed and revised, as necessary;
- Frequency of man overboard drills will be carried out with the participation of all personnel on board.

RECOMMENDATIONS

Taking into consideration the safety actions taken by the Company, the MSIU has issued no recommendations.

⁷ **Safety actions shall not create a presumption of blame and / or liability.**

SHIP PARTICULARS

Vessel Name:	<i>Alexandra A</i>
Flag:	Malta
Classification Society:	BV
IMO Number:	9356684
Type:	Container
Registered Owner:	Asterope Shipping Limited
Managers:	Arkas Shipping and Transport S.A.
Construction:	Steel
Length Overall:	145.90 m
Registered Length:	135.21 m
Gross Tonnage:	10,689
Minimum Safe Manning:	13
Authorised Cargo:	Containers

VOYAGE PARTICULARS

Port of Departure:	Piraeus, Greece
Port of Arrival:	Alexandria, Egypt
Type of Voyage:	International
Cargo Information:	8,210 tonnes of cargo in containers
Manning:	16

MARINE OCCURRENCE INFORMATION

Date and Time:	03 October 2020 at 1102 (LT)
Classification of Occurrence:	Less Serious Marine Casualty
Location of Occurrence:	One crew member overboard in position 37° 34.58' N 023° 44.55' E (Saronikos Gulf, Greece)
Place on Board	Poop deck
Injuries / Fatalities:	None reported
Damage / Environmental Impact:	None
Ship Operation:	In passage
Voyage Segment:	Transit
External & Internal Environment:	The weather was clear with visibility up to 10 nautical miles. The wind was South Southeast 5 knots. The sea state was calm and the air and sea temperatures were 23 °C and 18 °C respectively.
Persons on board:	16