



**KOMITE NASIONAL KESELAMATAN TRANSPORTASI
REPUBLIK INDONESIA**

FINAL

KNKT.19.01.02.03

Marine Casualty Investigation Report

MAIN ENGINE FAILURE OF

***OCEAN PRINCESS* (IMO 8601496)**

AT ALOR ISLAND, NUSA TENGGARA TIMUR

REPUBLIC OF INDONESIA

29 DECEMBER 2018

2021

KOMITE NASIONAL KESELAMATAN TRANSPORTASI

Ocean Princess, Alor Island, Nusa Tenggara Timur, 29 December 2018

FOREWORD

Praise to be given to the Almighty God with the completion of the Final Report on the investigation into the main engine failure of *Ocean Princess* on 29 December 2018 at Alor Island, Nusa Tenggara Timur.

The completion of this Final Report of Marine Accident Investigation was mandated by Indonesian Shipping Act No. 17 Year of 2008 Articles 256 and 257 as well as Government Regulation of Transport Accident Investigations No. 62 Year of 2013 Article 39 paragraph 2 Letter c which states that "*The report of transport accident as referred to the verse (1) consists of the final report*".

The report is the final output of the entire investigation process which covers fact information, analysis of causal factors that most likely contributed to the accidents, recommendations for prevention and improvement, and an appendix of other supporting documents. The report discussed the marine accident issues about what, how, and why the accident occurred and findings about the causes of the accident along with the recommendations of shipping safety to the parties aimed to minimize or prevent recurrence by the same factors in the future. The final report is issued or publicly published after requesting a response and/or feedback from regulators, operators, manufacturers of transportation facilities and other related parties.

Last but not least, the Final Report of the Marine Accident Investigation was made so that interested parties could learn and take lessons from the accident.

Jakarta, 26 February 2021

**KOMITE NASIONAL
KESELAMATAN TRANSPORTASI**

CHAIRMAN



Dr. Ir. SOERJANTO TJAHJONO

The report is based on the investigation carried out by the KNKT in accordance with IMO Resolution MSC. 255 (84) and Indonesian Shipping Act (UU No.17/2008).

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When the KNKT makes recommendations as a result of its investigations or research, safety is its primary consideration.

However, the KNKT fully recognizes that the implementation of recommendations arising from its investigations will in some cases incur a cost to the industry.

Readers should note that the information in KNKT reports and recommendations is provided to promote transport safety. In no case it is intended to imply blame or liability.

The report is issued by the **Komite Nasional Keselamatan Transportasi (KNKT)**, Gedung Perhubungan Lantai 3, Kementerian Perhubungan, Jln. Medan Merdeka Timur No. 5, Jakarta 10110, Indonesia, on 2021.

ISBN:

FACTUAL INFORMATION

THE INCIDENT

On 28 December 2018 at about 18.24 LT¹, the *Ocean Princess* departed from Pertamina Port of Dili, Timor Leste and was bound for Singapore. At that time, the ship sailed under ballast condition with a fore draft of 0.6 m and aft draft of 3.6 m. The ship's ballast tank contained 240 tons. She sailed at a speed of 6.5 knots, with her direction towards 272°.

On the morning of 29 December 2018, the ship was passing the Flores Sea in the northern Alor Island, Nusa Tenggara Timur, Republic of Indonesia. The sea condition was moderate, the sky was cloudy and the wind at a speed of 3 *Beaufort* scale from the west. The sea current towards the south.



Figure 1: Ocean Princess route; insert: location of grounding (Source: google earth)

At about 04.00 LT, The Chief Officer (C/O) and the helmsman were ready for duty on the bridge. Meanwhile, the 2nd Engineer (2nd/E) and Oiler were ready for watchkeeping duty 04.00--08.00 in the engine room. They were taking over watch duty from the 3rd Engineer and the oiler on duty 00.00--04.00. The port and starboard main engine (M/E) were running at a normal condition with the starboard and port main engine (M/E) at a speed of 410 rpm. After checking the machinery conditions, 2nd/E and the Oiler on duty went to the engine control room (ECR). The lubricating oil (LO) pressure of port and starboard M/E was about 3.0 kg/cm² on each engine, and the LO piston cool (LOPC) pressure port and starboard M/E was about 1.5 and 1.6 kg/cm². The temperature of the LO of M/E at the cooler recorded was about 68 °C and the temperature out was about 66 °C. Auxiliary Engine no.1 was still running to support the ship's electricity.

At about 07.20 LT, suddenly the M/E's rpm decreased from 410 to 300 rpm. The 2nd/E noted this situation and rushed to the starboard M/E to check the condition. On the bridge, the C/O also acknowledged this circumstance. Later on, the C/O saw the engine rpm on the bridge console steady at 250 rpm. The C/O rang the crew in the E/R, but he had no response. The C/O then rang the chief engineer (C/E) in his cabin to get more information. As the C/E did not know the situation, then he went to the E/R to figure it out.

In the E/R, 2nd/E was checking the LO and Fuel Oil (FO) pressure and found it in good order. Shortly after, the C/E arrived at the ECR. Suddenly the alarm 'LO Piston Cooling Low Press' rang on the ECR

¹ Central Indonesian time (UTC+ 08:00).

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panel. 2nd/E also head to the ECR. Realized the LO alarm was on, the 2nd/E rushed to the starboard M/E and looked for the cause of the alarm. On the bridge, the C/O rang the Master in his cabin. Shortly after, the Master arrived on the bridge. The engine's rpm indicator was slowly decreasing.

At about 07.30 LT, the alarm of 'LO Press Trip M/E' was on and the starboard M/E suddenly stopped. Shortly after, the port M/E also stopped, while the Auxiliary Engine no. 1 was still operating. The indicator for 'Engine Trouble' and 'Safety Trip' on the bridge console lighted on. 2nd/E then turned on the LO Stand-by Pump. Both the C/E and the 2nd/E attempted to restart the starboard M/E but were unsuccessful. After several attempts to start the starboard M/E and looked for the cause of the LO Piston Cooling Low Press (LOPC LP) alarm, the C/E decided to replace the LO filter and cleaned the FO filter. The C/E also checked the flow of oil to the Pressure Switch LO starboard M/E safety device.

After several attempts to find the cause of the shutdown of the starboard M/E, the C/E together with the 2nd/E tried to reset the alarm LO Press Trip (LOLP TR) and LOPC LP by moving the starboard M/E start handle to the 'STOP' position but the two-alarm indicator lights remained on. C/E then reported the situation in the engine room to the Master. At that time the ship was in a drifting condition to the southeast, heading for Alor Island.

At about 10.00 LT, the Master contacted the ship management in Singapore to report the situation on the ship. Following the advice of management, the C/E opened the starboard M/E crankcase door and then ran the LO stand-by pump to check the LOPC system. Later the C/E inspected the lubricating oil system but found no leak on the pipes.

At about 11.00 LT, the Master realized the ship continued drifting towards the shore. The Master ordered the anchor party to get ready. The C/O with Boatswain and Ordinary Seaman (OS) headed for the forecabin deck. The master ordered to stand-by starboard anchor 1 shackle in water. In the engine room, the C/E also ordered the engine crew to add 300 litres of LO to M/E sump tank.

At about 12.30 LT, the master ordered to let go starboard anchor 5 shackles in water. At that time, the sea waves were getting higher whilst the ship was approaching the beach. The starboard anchor looked hanging upright. In the engine room, the engine room party's effort was supported by Headquarter (HQ) remote assistance to turn Starboard M/E on, but still without any success. The ship was still un-maneuvrable and drifted towards the shoal reef.

At around 12.40 LT, *Ocean Princess* ran aground on the rocky reef of Aimoli Beach of Alor Island. Realized that the ship ran aground, the Master ordered the crew to inspect the all tanks and the depth around the ship. The Master had requested assistance through Channel 16 but no one responded.

At about 16.10 LT, after receiving reports from local communities, Harbour Master of Kalabahi, Local Search and Rescue Agency of Alor and several other authorities arrived and boarded the *Ocean Princess*.

On 30 December 2018, an attempt was made to restart the starboard M/E. The engine crew pulled out the timer relay inside the panel in the ECR and removed the power cable in the pressure switch (PS) LOPC LP and LOLP TR at the starboard M/E side. The engine crew then tried to start the starboard M/E by manually pressing the engine's fuel rack, but still unsuccessful.

On 31 December 2018, tugboat *KJ 02* from Kupang port arrived to assist the *Ocean Princess* as requested by the ship's management.

Efforts to start the starboard M/E were continued. The engine crew reset the M/E stop handle, lubricated the fuel rack, drained air from the emergency stop solenoid valve, re-install the timer relay and power cable in the PS LOPC LP and the LOLP TR. The LOPC LP and the LOLP TR indicator lights on the ECR panel were off. At around 10.10 LT, the starboard M/E was successfully started. At 13.40 LT, after running more than three hours, the starboard M/E then turned off by itself.

On 2 January 2019 at 10.50 LT, the tanker *Ocean Leader* attempted to tow the *Ocean Princess*, but was unsuccessful. The *Ocean Leader's* effort was stopped due to bad weather and the safety of the crew.



Figure 2: Ocean Princess

On 9 January 2019, the ship management representative inspected the grounding situation of *Ocean Princess*. When the inspection was carried out, it was known that *Ocean Princess*'s starboard anchor had broken up.

Around 23.05 LT, tug boat *Sea Oscar* arrived in Alor waters to evacuate the *Ocean Princess*.

On January 10, 2019, at 03.02 LT, *Ocean Princess* managed to escape from aground after being towed by *Sea Oscar*.

DAMAGE TO THE SHIP

There was no leak on the ship when it ran aground. She had a minor scratch due to contact with the coral due to the grounding.

DAMAGE TO THE ENVIRONMENT

A damage survey was conducted by local marine and fisheries authorities. No pollution was found due to the grounding.

The location of the ship keel whilst she was grounding which was a coral reef area had been damaged.

SHIP PARTICULAR

General information

Ocean Princess IMO 8601496 was a single hull tanker registered in the Cook Islands. The ship was built with steel construction in 1985 by Zosen Hitachi Dock Dockyard Pte. Ltd. Singapore and classed with the Sing Lloyd with S1 class notation (Tanker Oil F <60 °C (ESP)). It has an overall length of 90 m, a moulded breadth of 14.6 m and a depth of 6.5 m. The ship had a gross tonnage of 1,976.63 and a net tonnage of 1,456. Her summer draft was 5.3 m and had a deadweight of 4,135 tonnes. At the time of the accident, the vessel was operated by Daichi Shipmanagement Singapore. The *Ocean Princess* had a total of 5 cargo tanks. All of the cargo tanks were located forward of the accommodation superstructure. She had two anchors with a chain length of 8 shackles with a diameter of 38 mm.

Machinery and Propulsion

Ocean Princess' propulsion was provided by two medium-speed marine diesel engines that drove a fixed propeller with 4 aluminium brass blades through a reduction gearbox. Two Daihatsu diesel engines 6DSM-28FS four-stroke single-acting, turbocharged, which produced 2 x 1,600 HP MCR at 720 Rpm with air pressure starting system. Each engine was equipped with a lubricating oil pump. There was also an LO standby pump in the engine room which was manually operated when the M/E was operated at a low speed.

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The ship also had two auxiliary diesel-driven generators. Each generator was powered by a Yanmar 6LAAL-DTN 300 PS 1200 rpm diesel engine.

To power the propeller, both M/Es could also be utilized to drive three cargo pumps which used to be connected to a reduction gear on the M/E fore side.

The main engine consumed marine diesel oil (MDO). Although there was an FO purifier in the engine room, it had not been operated for a long time. Filtering the fuel before entering the M/E fuel system relied on the FO filter on each engine.

The main engine controls were situated in the middle of the control console in the forward starboard part of the bridge. When both M/Es were started, the engine control could be shifted from the engine room (E/R) to the wheelhouse (W/H) or cargo control room (CCR) by pressing the push button on the control panel in the engine room. The duty officer on the bridge or in the cargo control room then would receive the shifting of control by pressing the shift button on the control console on the bridge or cargo control room.

Safety System of Lubricating Oil System M/E

The safety device system on the M/E LO system depended on oil pressure which was measured by a Pressure Switch (PS) mounted on the side of the engine. There were four PSs installed in each M/E for alarm: LO Low Press (LO LP), Cool Piston LO Low Press (LOPC LP), LO Rocker Arm Low Press (LORA LP) and LO Low Press Trip (LOLP TR). The normal working pressure for M/E LO system was 2.5—4 kg/cm², meanwhile the standard pressure for lubricating oil piston cooling was 2—3 kg/cm².

The PS installed on the M/E, made by Daihatsu Diesel MFG Co. Ltd., used a diaphragm to press the OMRON V-15-1A limit switch that activated the M/E indicator and the alarm safety device. There were three terminal control switches on PS. The Normally Close-'NC Switch' was at terminal A and the Normally Open-'NO Switch' was at terminal B, while terminal C was for input power. Oil pressure from the system would press the diaphragm and press the limit switch plunger pin.

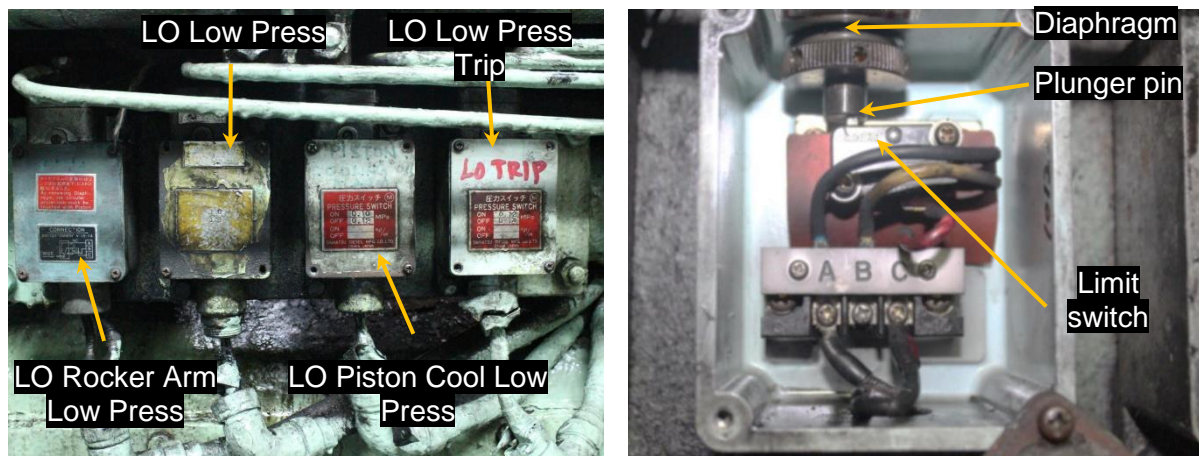


Figure 3: *LO System safety device of starboard M/E (left) and internal pressure switch of LO Piston Cool Lo Press (right)*

At the time of investigation, the PS LOPC LP used Normally Open-'NO' by using a cable in A and C terminals. The condition of PS LOPC LP and LOLP TR without running the LO Stand-by M / E (no pressure) pump shows that the diaphragm PS LOPC LP slightly dropped and slightly pressed the plunger pin compared to the diaphragm PS LOLP TR which only touched the end of the pin. Meanwhile, the diaphragm in PS LORA LP was stuck.

Based on the Daihatsu manual book and information on the pressure set on the PS cover, it was known that the pressure set value for PS LOPC LP was 0.10 MPa² in ON and 0.12 MPa in OFF. Following is the limit safety device LO M/E alarm and trip:

² 1 MPa (Megapascal) equals 10 kg/cm²

Table 1: M/E LO alarm and trip limit

Conditions	Pressure	Alarm	Trip
Engine Lub Oil	1.6 kg/cm ²	ON	
<u>Piston Cool Lub Oil</u>	<u>1.0 kg/cm²</u>	<u>ON</u>	
Engine Lub Oil Trip	1.2 kg/cm ²		ON
Reduction gear Lub Oil	1.5 kg/cm ²	ON	

The main engine could stop automatically when the LOLP TR alarm was active and triggered an alarm on the ECR and alarm in the wheelhouse console. The LOLP TR will activate the solenoid valve on the fuel oil shutting-down device. The air pressure control was removed from the fuel oil shutting down device, and the fuel rod was driven by a spring inside the device to stop the fuel supply to the engine. To reset the active LO LP alarm was by manually pushing the fuel handle to the "STOP" position, afterwards the engine will be reset automatically.

Navigational and Communication Equipment

The *Ocean Princess* navigation bridge was equipped with navigational and communication equipment that includes ARPA Radar, GPS, AIS, VHF radio, and NAVTEX.

Voyage Plan

The *Ocean Princess'* passage plan was set in Voy. No 12L/18 from Dili East Timor to Singapore on 28 December 2018. The voyage plan from Dili to Singapore passes through Indonesian waters namely the Flores Sea, the Java Sea, the Durian Strait to Singapore.

THE CREW

At the time of the incident, *Ocean Princess* was manned by multinational crew members consisting of a master, 6 officers and 12 ratings. All the officers were Indonesian, while ratings consisted of mixed (Indonesian, Burmese and Chinese).

The master of *Ocean Princess* held deck officer class-I navigational certificate of competency issued in 2011. He had experience as a master for 15 years. He joined the Daichi Shipmanagement in 2013 and was directly assigned on the *Ocean Princess* as the master.

The C/E held engine officer class-I engineer certificate of competency issued in 2010. He had experience as chief engineer for 6 years and as 2nd Engineer for 7 years. He joined the Daichi Shipmanagement in March 2018 and was directly assigned on board the *Ocean Princess* as chief engineer. In addition, he had the experience of 6 years working on tanker ships.

The 2nd/E held engine officer class-II engineer certificate of competency issued in 2009. He had extensive 10 years seagoing experience as 2nd Engineer and another 2 years as chief engineer. He also had experience in tankers for 20 years. He joined the Daichi Shipmanagement in 2015 and was assigned on board *Ocean Princess* as 2nd Engineer.

ENVIRONMENT

Weather

At the time of the incident, the wind was from the west at a scale of 3 Beaufort, moderate wave conditions and cloudy skies with visibility 7.

Pantar Strait Conservation Area and the Surrounding Sea

The location of the *Ocean Princess* stranded was right in the Pantar Strait conservation area that has been set by the Minister of Maritime Affairs and Fisheries through the Indonesian Minister of Maritime Affairs and Fisheries Decree number 35 of 2015 on the Conservation Area of the Pantar Strait and the Surrounding Sea in Alor Regency, Province of Nusa Tenggara Timur. The total area of the conservation waters was 276,693.38 hectares. The depth of the coastal sea was about 15 meters, while north of the grounded position was between 600—1000 meters.

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Based on the ministerial regulation above, the green colour on the map in Figure 3 was a tourism area, while blue was a sustainable fisheries area. The location of the grounding *Ocean Princess* was covered by live soft coral reefs.

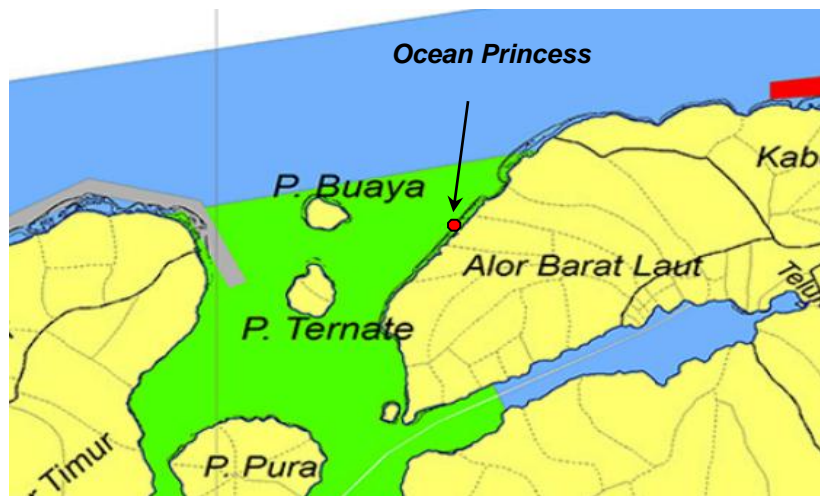


Figure 3: Conservation area and the grounding location

PROCEDURE FOR SINGLE OPERATION OF THE MAIN ENGINE

The manual book of operating gear reduction gear mentioned the Operating One Side Engine with the following explanation:

“The engine in twin engine-one shaft system are usually run in parallel. However, while one engine is under overhaul inspection or repair, or when cruising at low speed for many hours, one side engine operation is taken to save fuel.

For one side engine operation, shift the Main/Auxiliary change over switch or the operation air changeover valve to the auxiliary operation position. The oil pressure release valve is made “OFF”, the clutch is disengaged and the rest engine is cut off from other engine and from the output shaft.

When checking and servicing the rest engine during one side engine operation, be sure to lock the handle of oil pressure release valve at OFF position so that the engine would not be rotated adversely even if the main/auxiliary changeover switch is mistakenly set to the main engine operation position and the clutch is engaged thereby. Especially when the oil pressure clutch is in poor function and should there be a fear of drag of rotation, avoid as much as possible releasing the rest engine. If it is imperative, be sure to give a positive stop to the engine by inserting the turning bar into the fly wheel and fix its end by the beam of the ship.

During one side engine operation, the load of the engine tends to increase. Avoid turning the control handle further than HALF. Pay attention to excessive rise in exhaust temperature and surging of the turbocharger. (This could be prevented to some extent by opening the drain-cock of the intake pipe). In this case the pump capacity becomes half which result in insufficient lubrication at idling. Use the stand-by pump.”

Based on the information from the crew, the *Ocean Princess* once operated with one side engine along time ago. The Port M/E was used to rotate the propeller while starboard M/E was used to run cargo pumps for tank cleaning.

Additional Information from the crew, said that the starboard M/E was always used to run cargo pumps, rather than the Port side M/E during cargo discharging in the last two years.

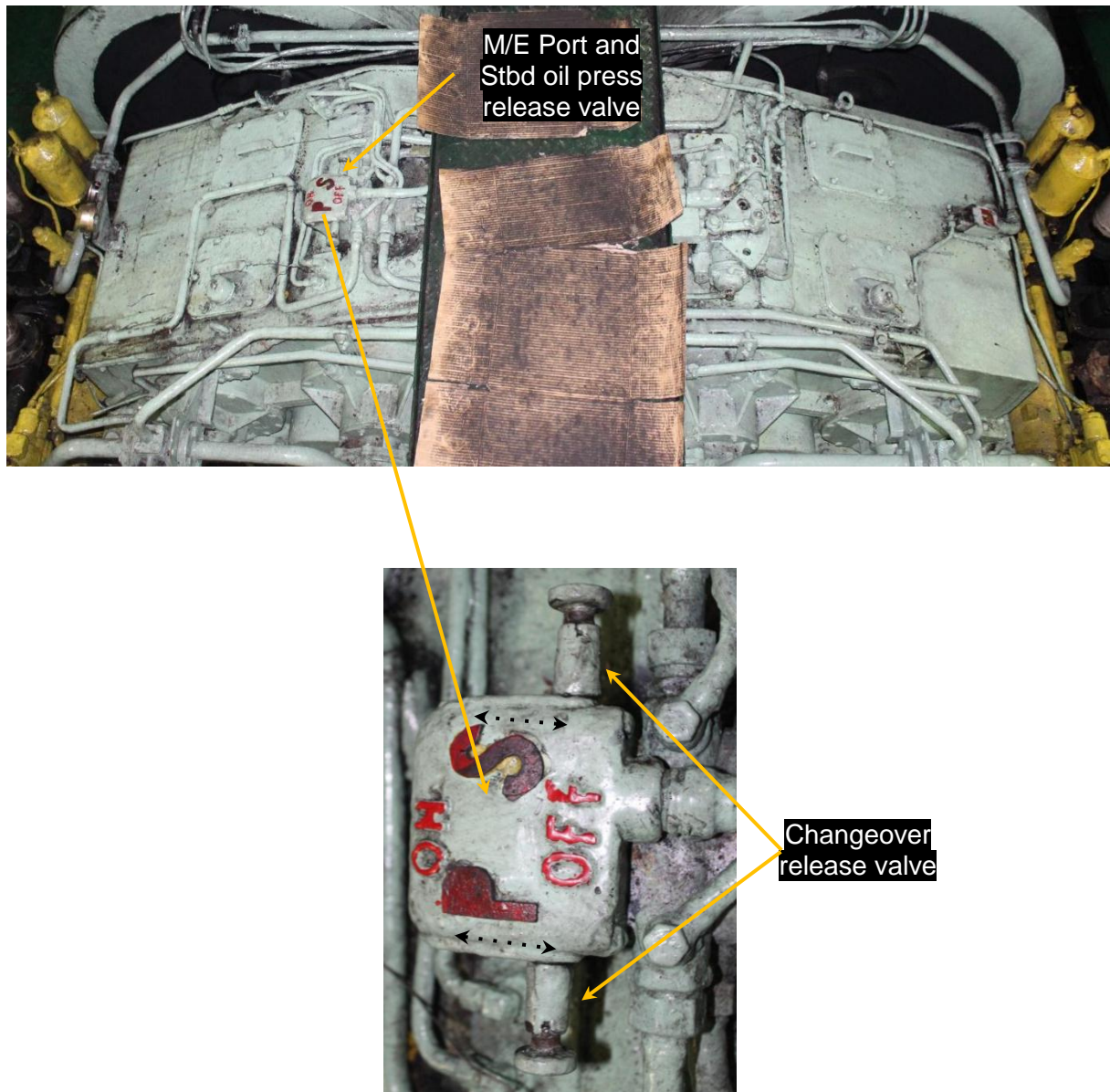


Figure 4: Gear reduction oil pressure release valve changeover

MAIN ENGINE FAILURE PROCEDURE

The Daichi Shipmanagement provided guidance of the Failure on M/E occurred in Regulation No. DS-TK-8-8 Revision 9 dated 01.04.11. In the procedure mentioned as follows:

1. *Immediately inform the Masters and the Engine Room.*
2. *Change steering from auto to manual*
3. *Broadcast security message*
4. *Exhibit the possibility of anchoring*
5. *Master to immediate informs Technical Superintendent in charge by telephone once the situation is under control and to follow up with a detailed incident report.*

The Engine Failure procedure was also one of the guidelines when the 2nd Officer made the *Ocean Princess* passage plan.

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At the control panel in the ECR, there was a guidance on how to restart the M/E from a failure condition. The guidance stated as follows:

A. *Find out the cause of M/E failure. Ensures:*

1. *Main bearing and crank pin bearing is good condition.*
2. *Reduction gear are good condition*
3. *Turbocharger are good condition*
4. *Fuel whether the fuel enough*
5. *Exhaust and inlet valve are good condition*
6. *Turning the flywheel to ensure piston and piston rings is in good condition.*

B. *After check all above items is in normal conditions then ensures:*

1. *Fuel rack handle is in start position*
2. *Lub. oil are top up*
3. *Fresh water expansion tank are top up and all valves is open*
4. *Fuel oil tank are top up and all valves is open*
5. *Air starting bottles are top up and all valves is open*

C. *Start the engine*

D. *After engine running check and listen to every parts of mechanical movement whether the sound normal or not.*

Based on the annual drill log on board, the Main Engine Failure and Blackout exercises were carried out by the crew every 3 months. The last exercise conducted on board *Ocean Princess* was on 20 November 2018.

ANALYSIS

On its voyage, *Ocean Princess* experienced an engine failure in the northern waters of Alor Island and finally ran aground on the reef. Two days after the incident, the crew successfully started the Starboard M/E following several attempts by resetting the safety device repeatedly, changing the LO filter, cleaning the FO filter, removing and installing the timer relay and the PS wire. In this incident, the KNKT could not determine why the *Ocean Princess* rpm decreased suddenly. The possibility is that the supply of fuel to the engine was disrupted or there was some air in the Starboard M/E fuel system.

When the engine speed dropped, the LO pump rotation would automatically decrease and then the LO pressure would also decreased. The LOPC LP PS read the LO pressure below the set value. This condition activated the LOPC LP and in a few minutes LOLP TR was also active and directly activated the solenoid valve to cut off the fuel supply.

UNDERSTANDING THE OPERATIONAL OF MAIN ENGINE AND SAFETY SYSTEM

When the Starboard M/E stopped due to the safety device was active, the Port M/E automatically also stopped due to overloading. Right after the engines stopped, the engine crew attempted to restart the Starboard M/E until the ship finally ran aground. There was still about four hours since the engine stopped until the ship run aground. That time was sufficient to restart the Port M/E and the ship could operate with one engine. However, at that time none of the crew members were aware of doing so. As well as from shore management, no one advised to run the ship with a single engine.

When the Starboard M/E safety device was activated, the crew tried to reset the safety device repeatedly, but was not successful. Even when the LO Stand-by pump started after the incident and the engine handle was shifted to the 'STOP' position for reset several times, the indicator the LOPC LP and LOLP TR lamp remained ON. The probable cause of this was because the sequence steps to

reset the alarm and the condition of the safety device was incorrect. Just right after the incident, the engine crew did not reset the entire valve safety trip. While in the next attempt, the timer relay and PS cable were removed. On 31 December 2018, after the relay timer and cable PS were installed and the solenoid valve was reset, the Starboard M/E was successfully restarted. The drill record of Main Engine Failure and Blackout that were routinely performed showed inconsistency with the crew's action when the main engine failure occurred.

A safety device system or control system that relied on electrical and automation was a complex system that was sometimes difficult for a crew who was not familiar with such systems. Especially if there were no electricians who understand electrical or electronic issues on board. In such case, the shore management support was needed when the crew must deal with the complex technology on board.

PROCEDURE TO RUN ONE SIDE ENGINE AND TESTING SAFETY DEVICE

In the event of the main engine failure, the engine crew followed the procedures available on the ECR. Despite the procedure for restarting M/E was displayed on the ECR panel, it did not explain how to run one engine. Therefore, no one understood the procedure to run with one engine. Moreover, no engine crew had experience in operating one engine.

At that time, the crew made various efforts to return the system to the normal condition since resetting the LOPC LP alarm by moving the handle to 'STOP' was unsuccessful. According to the crew statement, this incident was the first-time safety device M/E could not be reset. The condition of the diaphragm in PS was not normal, the diaphragm slightly dropped and touched the plunger pin limit switch, although there was no LO pressure. There was no record of when the PS was examined and tested for the last time. There was also no guidance of M/E LO safety device test procedure available on board that could be a guide for the crew when carrying out a safety device testing.

CONCLUSIONS

FINDINGS

1. The Port M/E was not utilized to restart for one engine operation right after the Starboard M/E failure.
2. The engine crew was not familiar with one engine operation and the safety device system.
3. There was no clear procedure on board *Ocean Princess* as a guidance for the crew to run one engine.
4. The lack of understanding of the reset sequence led to a delay reset for the main engine safety device.
5. There was no detailed guidance for testing and resetting the LO safety device of M/E.
6. The annual drill log shows that the drill of main engine failure and blackout procedures was performed on board every three months.
7. The vessel was grounding at Pantar Straits which is classified as a conservation area.

CONTRIBUTING FACTORS

1. Inadequate knowledge and procedures of one engine operation.
2. Lacking in sufficient detailed procedure of resetting the LO safety device system.
3. Inadequate guidance of LO safety device system testing.

SAFETY RECOMMENDATIONS

Following analysis and findings, KNKT recommends the followings recommendations to prevent a re-occurrence.

According to the Indonesian Government Regulation number 62 year 2013 on Transport Accident Investigation, Article 47 the involved parties shall respond to the recommendation/s as mentioned in the investigation report and report the safety action taken to the chairman of KNKT.

DAICHI SHIPMANAGEMENT

1. To ensure the crew members are familiar with one engine operation and engine safety device system.
2. To review and revise the main engine operation procedure, especially the procedure for one engine operation.
3. To provide the safety device test procedure on board and maintain a regular test for the LO safety device system.

Until the final report is issued, the KNKT had not received safety actions yet following the recommendations.

Status: Open

SOURCE OF INFORMATION

Harbour Master and Port Authority of Kalabahi;

Daichi Ship Management Pte. Ltd.;

Crews of *Ocean Princess*.

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ISBN
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