Marine Safety Investigation Unit

Transport Malta

SAFETY INVESTIGATION REPORT

201809/008 REPORT NO.: 17/2019 September 2020

This safety investigation has been conducted with the assistance and cooperation of the Marine Safety Authority of the People's Republic of China.

MV *ADAM ASNYK*
Collision with MV *DK IMAN*
in position 38° 35.8' N 120° 46.0' E
08 September 2018

SUMMARY

On 08 September 2018, *Adam Asnyk* was proceeding to enter the Laotieshan Channel Traffic Separation Scheme (TSS) precautionary area from the West, while she was enroute to Taicang, China. There was significant traffic in the area. The second officer was on watch, along with the third officer acting as a lookout.

Following evasive actions to avoid two fishing vessels, the second officer noticed another vessel, *DK Iman*, close by on the port side. He altered course to starboard by manual steering, while *DK Iman* altered her course to port; however, the two vessels collided and sustained damages. There were no crew injuries and no oil pollution was reported.

The understanding of the situation prevented both vessels from taking avoidance collision measures.

The Marine Safety Investigation Unit (MSIU) and the Marine Safety Authority (MSA) of the People's Republic of China agreed to cooperate, with Malta leading the safety investigation.

MV *Adam Asnyk*

FACTUAL INFORMATION

MV *Adam Asnyk*

Adam Asnyk was a 24,115 gt, Maltese registered general cargo vessel, built by COSCO Dalian Shipyard in China, in 2009. The vessel had a length overall of 199.8 m, a moulded breadth of 27.80 m and a moulded depth of 15.5 m. She had a summer deadweight of 30,346 tonnes, corresponding to a summer draught of 11.0 m. *Adam Asnyk* was owned by Kamil Norwid Shipping Company, managed by Chinese-Polish Joint Stock Shipping Co., and classed with the Polish Register of Shipping (PRS).

Propulsive power was provided by a seven cylinder Wartsila 7RT-Flex 60C, 2-stroke, single-acting, direct drive marine diesel engine, producing 16,520 kW at 114 rpm. This drove a single, fixed pitch propeller to reach a service speed of about 20 knots.

The vessel was fitted with four deck cranes, to facilitate loading and unloading of cargo. The foremost and the aftermost cranes were fitted on the centreline of the vessel, while the other two were fitted on the extreme port side.

The navigational equipment available on board included a standard magnetic compass, a gyro compass with repeaters, a compass bearing device, X-band and S-band radars, automatic radar plotting aid (ARPA[1]), which was incorporated into the S- and X-band radars, two electronic chart display and information systems (ECDIS), an AIS, a speed log, an echo sounder, and a daylight signalling lamp. The vessel was also fitted with a voyage data recorder and a bridge navigational watch alarm system. All navigational equipment was reported to have been in good order. At the time of the collision, both radar displays were connected only to the S-band radar antenna.

[1] ARPA continually monitor acquired targets for their speeds, courses and closest points of approach and assist in determining collision with other vessels.

Crew

Adam Asnyk's Minimum Safe Manning Certificate stipulated a crew of 15. At the time of the collision, there were 23 Polish, Filipino, Belarusian, and Nigerian crew members on board.

The master had a total of 36 years of experience at sea, out of which 20 years were served in the rank of a master with STCW II/2 qualifications. His Certificate of Competency was issued by the Polish Maritime Authority.

The second officer had a total of 13 years of experience at sea, out of which two years were served in the rank of a second officer with STCW II/1 qualifications. His Certificate of Competency was also issued by the Polish Maritime Authority.

The third officer, who was acting as a lookout at the time of the collision, had a total of six years of experience at sea, out of which 2.5 years were served in the rank of a third officer with STCW II/1 qualifications. Her Certificate of Competency was issued by the Polish Maritime Authority. The third officer had been instructed by the master to act as a lookout instead of a navigational watchkeeping rating.

Working arrangements and hours of rest on MV *Adam Asnyk*

The watchkeeping arrangements, while the vessel was out at sea, were scheduled as follows:

- chief officer – 0400-0800 and 1600-2000 navigational watches, with non-watchkeeping duties from 1300 to 1500;
- second officer – 0000-0400 and 1200-1600 navigational watches, with non-watchkeeping duties from 1700 to 1900;
- third officer – 0800-1200 and 2000-2400 navigational watches, with non-watchkeeping duties from 1300 to 1500;
- one able seaman was appointed to keep a watch with each OOW.

The master's working arrangements were indicated as 'unlimited', so that he may be called as necessary. The records of the hours of rest indicated that the master was working from 0800 to 1730, on the previous day, with an hour break in between *i.e.*, from 1200 to 1300. Thereafter, he was working from 1930 to 2400. He had rested for a total of nine hours prior to the collision.

The second officer was on watch from 0000 to 0600, and from 1200 to 1600, on the day prior to the accident. He had rested for a total of 14 hours prior to the collision.

The third officer was on watch from 0600 to 1200, and from 2000 to 2400 on the previous day. Records of her hours of rest also indicated that she was working between 1500 and 1600 on the same day. On the day of the collision, she was acting as a lookout on the bridge from 0000 to 0200. She had rested for a total of 11 hours prior to the collision.

MV *DK Iman*

DK Iman was a 4,562 gt general cargo, registered in the Republic of Korea. She was built in 2004 and had a length overall of 109.5 m and a moulded breadth of 17.0 m. She had a summer deadweight of 6,500 tonnes. *DK Iman* was owned and managed by Intergis Co. Ltd. and classed with the Korean Register of Shipping.

The vessel was manned by 15 crew members. The crew compliment was in excess of the minimum personnel required on board.

The master was a Korean national. At the time of the accident, an Indonesian national was on navigational watch. He was 29 years old. A 23-year-old Indonesian rating was on the helm.

A PSC inspection on18 July 2018 in Japan reported no deficiencies in the navigational and communication equipment fitted on board *DK Iman.*

Environment

At the time of the occurrence, the weather in the area was reported as fair, with a moderate breeze (Beaufort Force 4) from a North-Northeasterly direction. The visibility was reported to be eight nautical miles (nm), while the air and sea temperatures were reported as 22 °C and 18 °C respectively.

Narrative[2]

Adam Asnyk had departed from the port of Bayuquan, China, on 07 September 2018. She had general cargo in her cargo holds, and empty containers on deck, bound for the port of Taicang, China.

In the early hours of 08 September 2018, the vessel was proceeding towards the Laotieshan Channel TSS on a course of 168° and a speed of 14.4 knots over the ground. The vessel was on autopilot with the second officer on watch and the third officer acting as a lookout. At 0031, *Adam Asnyk* crossed the Laotieshan reporting point in position 38° 52.43′ N 120° 45.40′ E, heading for the TSS precautionary area[3]. Heavy traffic, including fishing vessels, was reported in the area.

DK Iman sailed from Pyeongtaek, South Korea on 06 September 2018, bound for the port of Laizhou in China. The vessel was on autopilot. Shortly after 0130 on 08 September, *DK Iman* which was by now in Laotieshan TSS precautionary area, altered her course to port. She was now on a course of 225° and her speed was 9.80 knots. At 0137, the OOW reportedly detected *Adam Asnyk* on the radar.

At around 0140, *Adam Asnyk* altered her course by about 20° to port, in order to pass clear of two fishing vessels that were about

[2] Unless otherwise specified, all times mentioned in this report are in Local Time (UTC + 8).

[3] Precautionary area is defined as a routing measure where traffic lanes cross or converge and ships must navigate with particular caution.

0.6 nm ahead of her. At around the same time, another vessel, lying about three nm off the port bow of *Adam Asnyk* was visually sighted and detected on the radar. This vessel, bearing 095°, was identified as *DK Iman*. The closest point of approach (CPA) with this vessel was 0.51 nm and the time to this CPA was about 11 minutes. The vessel's trail on the radar display indicated that she was going to pass astern of *Adam Asnyk*. Following an alteration of course to port, the CPA decreased to 0.04 nm.

At around 0144, after the fishing vessels had passed clear of *Adam Asnyk*, the second officer started to gradually alter the course of the vessel to starboard, using the autopilot and steadied her on a course of 153.5°. The new CPA and TCPA were 0.07 nm and 6.4 minutes respectively. At this point, both vessels were less than 1.6 nm from each other.

The second officer attempted to contact *DK Iman* on the VHF radio but there was no response. At 0149, *Adam Asnyk* entered the Laotieshan TSS precautionary area, with a speed of 15 knots. At 0151:26, while *Adam Asnyk* was on a course of 150°, the second officer noticed *DK Iman*, at about 0.25 nm off the port bow, heading towards *Adam Asnyk*. A few seconds later, it was noticed that *DK Iman* was altering her course to port.

The second officer instructed the third officer to use the daylight signalling lamp and warn *DK Iman* of the situation. While the third officer was doing so, the second officer, using the autopilot, altered the course of *Adam Asnyk* to starboard by about 15°.

At around 0151:44 (Figure 1), the second officer instructed the third officer to call the master to the bridge, while he switched over to manual steering and continued altering the course of the vessel to starboard. It was noticed that the course of *DK Iman* was being continuously altered to port.

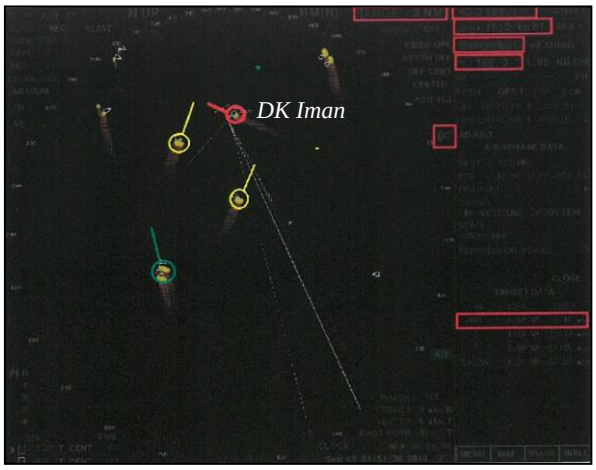

Figure 1: Radar screen shot at 0151:44

At 0152:10, as the master entered the bridge, the two vessels collided with the starboard quarter of *DK Iman* making hard contact with the port side of *Adam Asnyk*.

There were no injuries and no oil pollution were reported.

Laotieshan TSS Precautionary Area

The collision between *Adam Asnyk* and *DK Iman* occurred in Laotieshan TSS precautionary area in position 38° 35.80′ N 120° 46.00′ E. This precautionary area is the passageway for ships navigating to and from ports in Bo Hai Bay. Ships entering or leaving the ports in Bo Hai Bay meet and turn here.

In the fishing period, it is also an area of likely concentrations of fishing vessels. The navigational environment is extremely complicated and it requires the OOW to proceed at a safe speed and navigate with particular caution.

Conditions on *Adam Asnyk* prior to the collision

Prior to the collision, *Adam Asnyk* had main engine speed set above the manoeuvring range and was steering with autopilot. There was heavy traffic in the area, including some

fishing vessels. Loud music was being played on the bridge.

Both radar displays were switched on; however, they were both connected to the S-band radar antenna. One of the displays was set on a three nm range and the other set on a six nm range. Both displays were off-centred, set on a 'North up' mode, with speed on the ARPA set to speed over the ground. The length of the trails of targets was set to three minutes, while the length of the vectors of targets was set to six minutes.

Priority for target data was set to AIS and the acoustic alarms and range rings (fixed and variable) on both radar displays were switched off.

Damages sustained by *Adam Asnyk*

Adam Asnyk sustained minor damages above the waterline. The damages were located on the vessel's port side, just forward of her accommodation (Figure 2).

Damages were reported to a section of the bulwark, three container support pillars, three air vents and mooring bitts in the vicinity. In addition, the shore connection pipes for sewage and steam, and a cable for the emergency stop for the oily water separator were damaged.

Six empty containers, which were above the damaged pillars, also sustained structural damages.

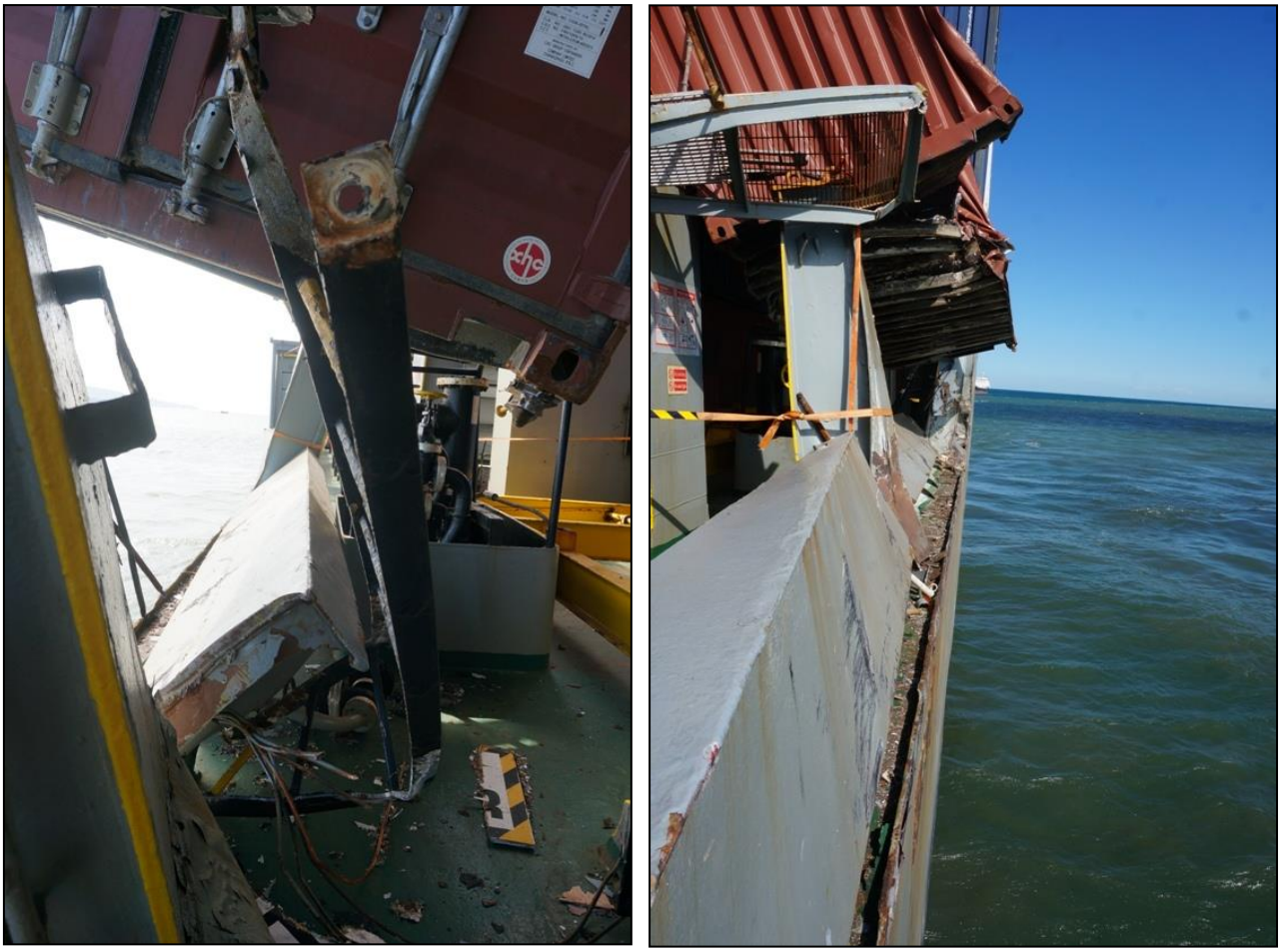

Figure 2: Damages sustained by *Adam Asnyk*

Damages sustained by *DK Iman*

As indicated in Figure 3, the vessel sustained serious structural damages to her starboard side shell plating in way of the poop deck and the engine-room. There was also damage to the railing and bulwark on the aft deck. Damages to the mooring equipment and several air vents were also noticed.

Safety investigation activities

As soon as the accident was notified to the MSIU on 10 September 2018, the MSIU made requests for the preservation and collection of information from *Adam Asnyk*.

During the preliminary assessment phase, the MSIU liaised with China MSA. China MSA investigators boarded both vessels and collected evidence. It was eventually agreed that Malta leads the safety investigation whilst the People's Republic of China and the Republic of Korea were to be considered as a substantially interested States.

Figure 3: Damages sustained by *DK Iman*

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.

Co-operation

During the course of this safety investigation, the MSIU received all the necessary assistance and cooperation from the Maritime Safety Administration of the People's Republic of China.

Fatigue, drugs and alcohol

The hours of rest and work of the second officer and third officer on board *Adam Asnyk* were in accordance with the Maritime Labour and STCW Convention requirements. Immediately following the collision, the master carried out alcohol test on both officers. The results of this test were negative. Moreover, the MSIU did not come across any evidence which would have suggested that the bridge team's behaviour influenced by fatigue, drugs and alcohol.

With respect to the bridge team of *DK Iman*, no information was available to the MSIU.

Master's standing orders

Adam Asnyk master's standing orders amongst other instructions directed the navigational officers to observe the following:

- when passing oncoming ships always give a wide berth;
- when it is oncoming ship's duty to give way and she is not doing so, then give signals (whistle, Aldis lamp, VHF) and turn away from the other ship. Whenever necessary reduce speed, stop or go astern, if any dangerous situation occurs. If needed call the master in advance;
- always follow the order and regulations, use common sense and navigate with caution.

Radio Communication in Collision Avoidance

VHF radio is commonly used at sea to clarify the vessel's identity or intentions. However, valuable time may be wasted in trying to establish radio contact, radio interference, misinterpretation and uncertainty over the meaning or delay in comprehending the message; the use of VHF radio for collision avoidance is discouraged and the application of the COLREGs is commended to ensure a safe outcome.

Look-out

Under the STCW Code, a proper look-out must be maintained at all times in compliance with Rule 5 of the COLREGs. A proper lookout includes a continuous vigilance by sight and hearing and appraising of the operating environment for any risk of collision or other dangers to navigation.

The lookout on board *Adam Asnyk* was a qualified navigational officer. However, available information on the events leading to the collision, suggested that a proper look-out on board *Adam Asnyk* was indifferently maintained. When they visually sighted *DK Iman*, again, it was too late for *Adam Asnyk* to get out of danger.

Crossing Situation

The visibility was eight miles and both *DK Iman* and *Adam Asnyk* were under power and in a crossing situation. *DK Iman* was on the port side of *Adam Asnyk*. As noted above, the vessel's trail indicated that she was going to pass astern of *Adam Asnyk*.

In the course of ensuing events, dynamics of the crossing situation changed. *Adam Asnyk*

altered her course to port for the two fishing vessels that were detected close ahead. Alteration to starboard to return back to the original course was impeded by the presence of two vessels on the starboard side. The vessel thus steadied on a course of around 150°. This slight alteration of course did not substantially alter the situation for *DK Iman*. At this moment, both vessels were about 1.6 nm apart and potentially on a collision course.

Following the accident, the MSA carried out an investigation into the collision. The OOW on board *DK Iman* reported that 15 minutes before the collision, he had detected *Adam Asnyk* on the radar. Information available to the MSIU indicated that a close quarter situation existed and there was a probability of a collision if no effective action had been taken. The MSA investigation reported that the OOW considered *Adam Asnyk* as a give-way vessel and thus no collision avoiding measures were taken by him.

Assessment of the dynamic situation

On board *Adam Asnyk*, the bridge team first became aware of the presence of *DK Iman* when she was sighted on the port side both visually and on the radar. *Adam Asnyk* had just completed a 20° turn to port from its auto-track heading of 168°, in order to pass clear of the fishing vessels. At this point, *DK Iman* and *Adam Asnyk* were on a collision course.

After the fishing vessels were cleared, *Adam Asnyk* was unable to return back to her original course beyond the heading of 150° due to the presence of two other vessels on the starboard side. As noted above, the alteration of course to starboard did not substantially alter her situation and a collision seemed imminent.

The OOW called on the VHF radio and the third officer flashed the signalling lamp but there was no response from *DK Iman*'s OOW. Thereafter, it seems that both officers were either distracted or preoccupied monitoring the two vessels on the starboard side, one of which was crossing close ahead and the other close astern. They may have overlooked to monitor the situation that was developing with *DK Iman* and their obligation to apply COLREGs Rule 34 (manoeuvring and warning signal), and Rule 17 (a)(ii) (action by stand on vessel).

Navigational watch standards

During the course of this safety investigation, the MSIU identified a number of issues concerning navigational watch.

Given the size of the vessel and dense traffic, the speed at which *Adam Asnyk* advancing in the precautionary area with crossing and converging routes was considered excessive by the safety investigation. During the watch and prior to the collision, the main engine rpm was not reduced, and the master was not called for assistance.

Moreover, the vessel was not steered by the helmsman, even though numerous ships and fishing vessels were crossing or passing very close and required frequent helm movements. Evidence available to the MSIU showed that every so often, the OOW was engaged in altering course using autopilot and when swift helm actions were needed, he had to manually steer the vessel himself.

Information also showed that the navigational equipment was not effectively used by the OOW and the lookout. Although *Adam Asnyk* radars were set on the three and six nm scale, the fixed and variable range markers were not activated. The range scales were not changed to suite the operational conditions and both radars were set to receive, and display information acquired from the AIS.

While AIS data enhances watchkeepers' spatial and situational awareness, radar target and speed log are generally selected for

ARPA because of the need for accurate information on other vessel's closest point of approach. Audible alarms on both radars / ARPA were switched off, and this may have impacted the bridge team's awareness of the risk of collision with *DK Iman*.

Moreover, loud music was being played on the bridge and in the critical period leading to the collision, the second and third officers were engaged in deep conversation unrelated to the vessel's navigation. Visual bearings were not taken to determine the risk of collision.

With respect to the OOW on board *DK Iman*, no information was made available to the MSIU. The MSIU was therefore extremely restricted in its analysis of the events on *DK Iman*. However, it was evident from the MSA investigation report that the OOW had interpreted the collision regulations differently and anticipated that *Adam Asnyk* would be taking collision avoidance actions.

CONCLUSIONS

1. *DK Iman* and *Adam Asnyk* were in a crossing situation and a risk of collision existed as defined by regulation 15 of the COLREGs;
2. *DK Iman* was on *Adam Asnyk*'s port bow and in accordance with regulation 16 of the COLREGs, *DK Iman* was required to give way;
3. No effective collision avoidance action was taken by *DK Iman* to pass clear of *Adam Asnyk*;
4. When the close quarter situation deteriorated and a collision being imminent, *Adam Asnyk* second officer did not sound a warning signal (at least five short and rapid blasts on the whistle) to clarify *DK Iman* intentions or took action which was required under regulation 17(a)(ii) of the COLREGs;
5. Considering the circumstances and conditions, *Adam Asnyk* speed in the TSS precautionary area was excessive;
6. Visual bearings were not taken to fully appraise the developing situation with *DK Iman*;
7. Use of AIS data for ARPA risked displaying potentially inaccurate information on the relative movements of other vessels;
8. Calling *DK Iman* on the VHF radio diverted the second officer's attention from the vessel's navigation;
9. Full assessment of the evolving situation may have been compromised as a result of loud music being played on the bridge and with both officers engaged in private conversations;
10. No helmsman was readily available on *Adam Asnyk* and the second officer had to either use autopilot controls or manually steer the vessel himself;
11. The OOW on *DK Iman* had interpreted the collision regulations differently and anticipated that *Adam Asnyk* would be taking collision avoidance actions.

RECOMMENDATIONS[4]

Chinese-Polish Joint Stock Co., the managers of *Adam Asnyk*, is recommended to:

17/2019_R1 Circulate this safety investigation report to all vessels within the fleet and highlight the importance of close quarter situations, identifying risks of collisions and timely actions in crossing situations;

17/2019_R2 Issue directions to its Quality and Crewing Department to conduct on board audits with the aim of observing how masters and navigating officers operate vessels, taking into account the issues identified in this safety investigation report;

17/2019_R3 Issue a Circular Letter to all vessels on the correct setting of radar controls and adjustments of range scales appropriate to the prevailing conditions, and provide guidance on the operation of automatic radar plotting aids;

17/2019_R4 Review and update the Company's SMS to include further guidance on safe speed, lookout, helmsman, use of VHF radio in collision avoidance, calling the master and conduct of safe navigation in TSS precautionary areas.

[4] Safety actions should not create a presumption of blame and/or liability.

SHIP PARTICULARS

Vessel Name:	*Adam Asnyk*	*DK Iman*
Flag:	Malta	Republic of Korea
Classification Society:	PRS	KRS
IMO Number:	9432115	9294769
Type:	General Cargo	General Cargo
Registered Owner:	Kamil Norwid Shipping Company	Intergis Co Ltd
Managers:	Chinese-Polish Joint Stock	Intergis Co Ltd
Construction:	Steel	Steel
Length Overall:	199.69 m	109.5 m
Registered Length:	190.77 m	102.0 m
Gross Tonnage:	24,115	4,562
Minimum Safe Manning:	15	12
Authorised Cargo:	General cargo	General cargo

VOYAGE PARTICULARS

Port of Departure:	Bayuquan, China	Pyeongtaek, Republic of Korea
Port of Arrival:	Taicang, China	Laizhou, China
Type of Voyage:	Coastal Voyage	International
Cargo Information:	General cargo & containers	General cargo
Manning:	23	15

MARINE OCCURRENCE INFORMATION

Date and Time:	08 September 2018 at 0153 (LT)	
Classification of Occurrence:	Serious Marine Casualty	
Location of Occurrence:	38° 35.8’ N 120° 46.0’ E	
Place on Board	Overside	Overside; engine-room
Injuries / Fatalities:	None	None
Damage / Environmental Impact:	None	None
Ship Operation:	In passage	In passage
Voyage Segment:	Transit	Unknown
External & Internal Environment:	Weather was clear with visibility of eight nautical miles. Winds from a NNE’ly direction, 13 knots and slight sea.	
Persons on board:	23	15