Case Study
The Collision of ANL Wyong and King Arthur on August 2018
THE COLLISION

Early in the morning of the 4th of August 2018, the UK registered container vessel ANL Wyong was stopped in the water outside Gibraltar Bay, following directions from Algeciras Pilots. Italian registered gas carrier King Arthur was making way towards a boat transfer position outside Algeciras harbor. At 06:36 ANL Wyong and King Arthur collided 4 nautical miles south-east of Europa Point.

WHAT WENT WRONG?

The collision occurred in an area of heavy shipping traffic. It was dark and there was dense fog at the time of the collision.

King Arthur’s master, who could not see ANL Wyong, but did notice the vessel Spread Eagle approaching decided to alter course to starboard intending to pass astern of ANL Wyong in order to avoid collision with ANL Wyong - which he thought was moving. But the ANL Wyong was stopped in the water. When King Arthur’s master realized that a dangerous situation was developing, full starboard rudder was applied, but it was too late. The vessels collided.

ANL Wyong’s OOW was monitoring the situation but took no action, even when it became clear that a multiple close quarters situation was developing.

See on the right map the track of the vessels which were approaching ANL Wyong.

THE REASONS FOR THE COLLISION

According to investigations carried out by both vessels’ managers, the main reasons for the collision are as follows:

**Poor visibility** at the time of the collision

**Neither bridge team realized the risk of collision in sufficient time** to take effective action to pass at a safe distance.

At the ANL Wyong, the Inexperienced OOW kept an effective lookout and was aware of the developing situation but did not act to avoid collision, as he assumed the approaching vessels would keep clear.

King Arthur’s master assessed, from AIS data, that the ANL Wyong was heading in a south-westerly direction and was underway using its engine. Soon after, he became aware of the presence of the vessel Spread Eagle heading towards and expected to pass on the port side. Given this assessment, the master decided to alter course to starboard to increase the CPA on both these vessels and to avoid passing ahead of ANL Wyong. This alteration created a serious and immediate risk of collision, primarily because, contrary to the master’s AIS-based assessment, ANL Wyong was actually stopped in the water and not making way on a south-westerly heading.

**Very high frequency (VHF) radio conversations** were a significant distraction on board King Arthur. The use of VHF radio for collision avoidance can cause confusion and error, as documented by the actual VHF transcripts recorded at the time of this incident.

**Neither vessel received warning of the risk of collision from ashore**, even though the collision occurred within a designated vessel traffic service area.

**The OOWs in both vessels based their analysis on AIS data.** As received AIS data is whatever another vessel transmits, it is subject to potential errors. This was not appropriate given the heavy traffic in the area and the critical need to have accurate relative motion data to assess CPAs and the potential risk of collision.

MARINE COLLISIONS IN CONGESTED WATERWAYS ARE A SERIOUS ISSUE

Accidental collisions result in massive expenses and risk, particularly in busy waterways where 90% of marine collisions occur. Between the years 2011-2018, 25,614 vessels were involved in marine incidents, 230 ships were lost, 7694 persons were injured and there were 696 fatalities (2).

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ORCA AI’S COLLISION AVOIDANCE SYSTEM

Orca AI’s system reduces risk for vessels and crews by providing a lookout unit for real-time visual indication of targets and by using deep learning algorithms to analyze computer vision models, in order to provide life-saving alarms and risk assessment—exactly when every second counts!

- **Vessels identified from a safe distance:** Orca AI’s system’s thermal cameras are able to recognize vessels at night and in extreme weather conditions—in sufficient time for taking an action.

- **On screen outside conditions view:** The vessel’s crew can actually see what is going on outside—on their screen.

- **Detailed info about each vessel:** The system provides, without the need for AIS information, the following for each recognized vessel: the actual distance, CPA, TCPA, COG, SOG, BCR, BCT and bearing.

- **Alarms:** The system provides a list of crucial alarms to give the OOW heads up about upcoming collisions.

- **Risk Assessment for the vessels in the vicinity:** This capability assists the OOW to decide which vessels risk him the most.
HAD ORCA AI’S SYSTEM BEEN IN USE ON THAT MORNING, THE COLLISION WOULD HAVE BEEN AVOIDED

With Orca AI’s system in place, both ships crews could have easily identified potential collision danger and would have had enough time to take the appropriate actions to avoid it. Here’s how:

- **On screen view of outside conditions:** The crews of both vessels could have seen the vessels around them on their screen, in spite of the dark and foggy conditions.

- **Correct information about ANL Wyong’s speed:** King Arthur’s master would have known that ANL Wyong was stopped at zero speed and not moving as he saw in the AIS.

- **Risk Assessment**—This capability would have warned the crews of both ANL Wyong and King Arthur that the other vessel posed a high risk.

- **Congested area alarm**—The alarm would have warned ANL Wyong’s OOW that traffic density in the area was increasing.

- **Collision Alarm**—The alarm would have warned the crews which vessel is about to collide with them and would have given them enough time to act—a much more effective tool than using the VHF radio to try and communicate.

- **Considerably more effective than a radar**—in a congested, low visibility area and especially when the radar was set to prioritize AIS information, the Orca system could have displayed more accurate data.

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**Orca AI’s intelligent collision avoidance system reduces risk and operational costs. When appropriately used and in collaboration with existing navigational equipment, the Orca AI system can contribute to a measurable and quantifiable increase in vessel operational safety.**

To learn more visit [https://www.orca-ai.io/](https://www.orca-ai.io/)