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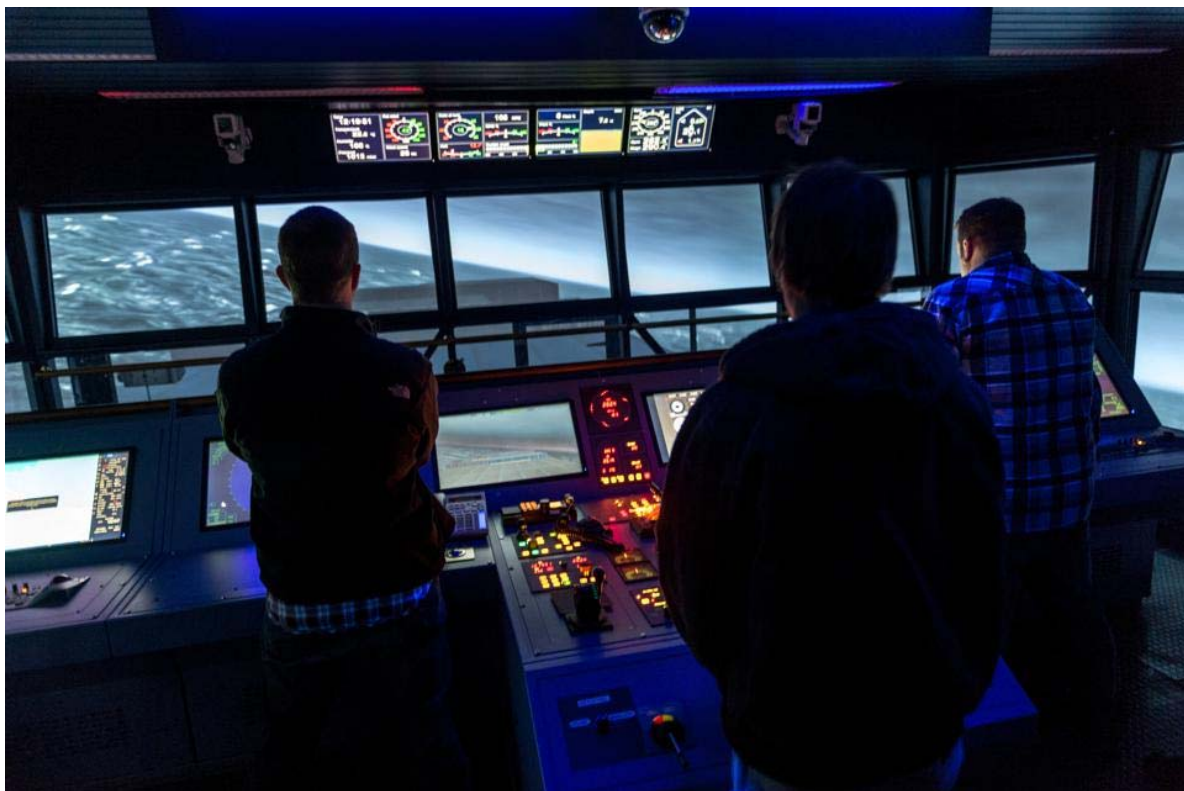
# Did A Comms Blackout Lead Mauritius Oil Spill Ship To Search For Emergency Phone Signal?



**Nishan Degnarain** Contributor

Manufacturing

*I cover innovation within the green/blue industrial revolution.*



With no way to communicate to Tokyo, the *Wakashio's* last resort option would have been to come close ... [+] THE WASHINGTON POST VIA GETTY IMAGES

Cookies on Forbes

New analysis by U.K.-based geospatial intelligence company, [Geollect](#), is revealing more about the circumstances surrounding the grounding and oil spill by the large Japanese Bulk Carrier, The *Wakashio*, on the Indian

Island of Mauritius this summer.

On Friday, the CEO of **Japanese shipping giant, MOL**, had reported that the *Wakashio* had been searching for an emergency phone signal. However, the circumstances behind this have not been disclosed.

Ahead of the grounding, **serious communication system failures** had already been discovered on the *Wakashio*. In particular:

- The Emergency Radio Frequency that the Mauritius Coastguard reportedly used to reach the incoming vessel (a radio channel called **VHF**) was **not picked up or responded to** by the *Wakashio*. This has become a major talking point in Mauritius' parliament.



All ships should be equipped with fully functioning VHF Radios for emergency communication close to ... [+] GETTY IMAGES

- The *Wakashio's* **'Black Box' Voyage Data Recorder** appears not to have recorded any audio in the vessel's final 48 hours. Was this indicative of the broad communications blackout faced by the *Wakashio*?

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- The **on-board satellite internet communication system** appears



not to have been working effectively (MOL only realized the *Wakashio* was grounded **four and a half hours after the event**, as confirmed by a statement from a MOL spokesperson to Forbes on **September 27**).



Was the *Wakashio*'s communication technologies experiencing a blackout, that forced the vessel to ... [+] GETTY

- The *Wakashio* Captain's Noon Reports have not been released, implying that the operator was not in contact with the vessel on a daily basis, and raising questions how the vessel was being monitored from shore.

The communications blackout is raising questions whether the *Wakashio* had been instructed to head toward Mauritius to try make emergency phone contact and seek urgent guidance over engine difficulties the large bulk carrier could have been facing in the middle of the Indian Ocean.

## Navigation difficulties due to engine troubles?



Satellite analysis by Windward reveals that if the *Wakashio* hadn't made the 13 degree turn toward ... [+] WINDWARD

The *Wakashio's* navigation challenges could have been exacerbated by engine troubles that would have made the bulk carrier difficult to control. These engine difficulties are now being revealed through the new satellite analysis by [Geollect](#). With a breakdown in the ship's communications systems in the middle of the ocean, the *Wakashio* would have had no choice (or was instructed) to divert to Mauritius to share more details about the engine difficulties it was facing, and receive guidance on how to resolve it.

The *Wakashio* was just starting out on a journey half way across the world (from Singapore to Brazil) that would have kept it at sea for weeks on end. Having no working communications systems on board would have been very serious indeed.



The *Wakashio* made an unscheduled turn mid-way through the Indian Ocean on July 21, that put it on ... [+] FILE PHOTO FROM NAGASHIKI SHIPPING CO LTD

The incident in Mauritius this summer was highly unusual and abnormal. For context, Mauritius is an 8 million year old former volcanic island. The *Wakashio* is one of the largest ships in the world (as large as a U.S. aircraft carrier). With the modern sophistication of today's anti-collision technologies for ships, there was no way such a large ship should have collided with a large, stationary island in relatively calm weather. Something had been going badly wrong for four days on board. And it was [not a birthday party](#).

## Wakashio experiencing engine problems



A [special report in Forbes](#) earlier this week revealed that the *Wakashio* was carrying a particularly troublesome batch of contaminated fuel. This fuel - called [Very Low Sulfur Fuel Oil](#) (or

Cookies on Forbes

Was the *Wakashio* experiencing engine failure due to a batch of contaminated ship fuel? AFP VIA GETTY IMAGES

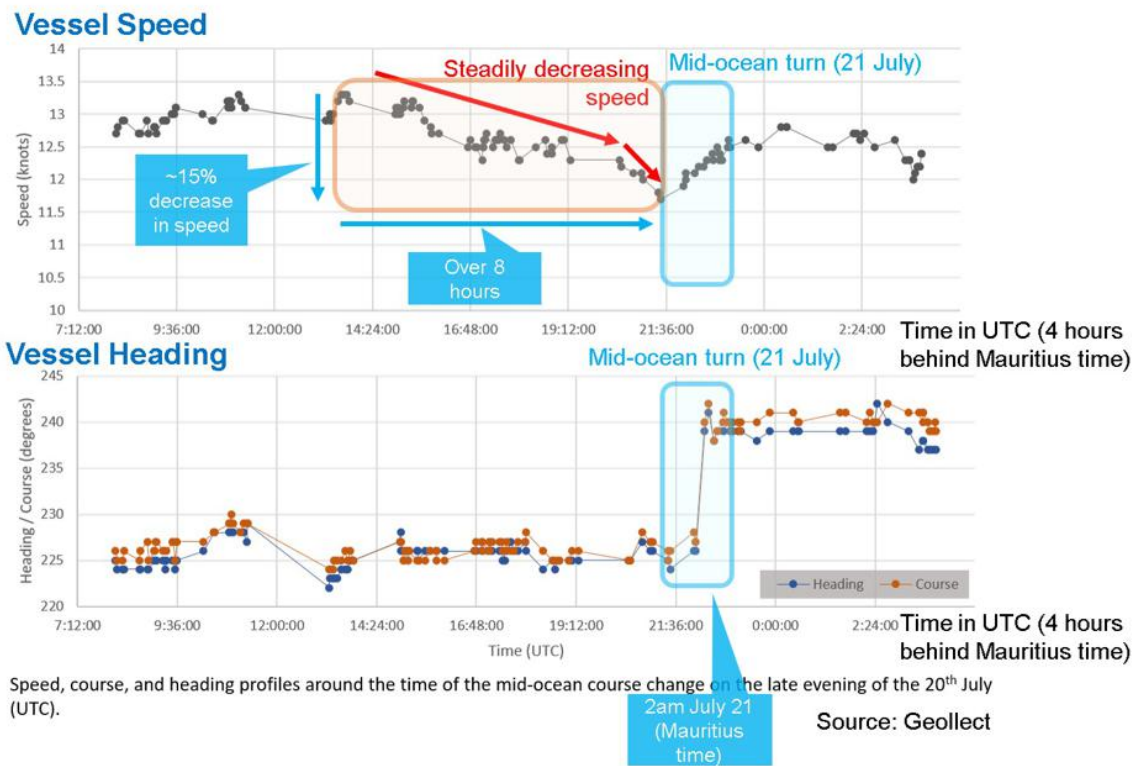
VLSFO) - has been identified in a series of confidential industry reports to be causing ship failures around the world.

Now U.K. based satellite analytics company, **Geollect**, was able to use their proprietary analysis tools and conduct a diagnostic of the engine speed of the *Wakashio*, just prior to it turning and heading toward Mauritius on 21 July.

It reveals the *Wakashio's* engines appeared to be experiencing difficulties consistent with having faulty VLSFO fuel on board.

## Wakashio's engines slowed down 15% over 8 hours prior to turn

Satellite analysis of *Wakashio's* speed, course and heading 20-21 July 2020



Cookies on Forbes

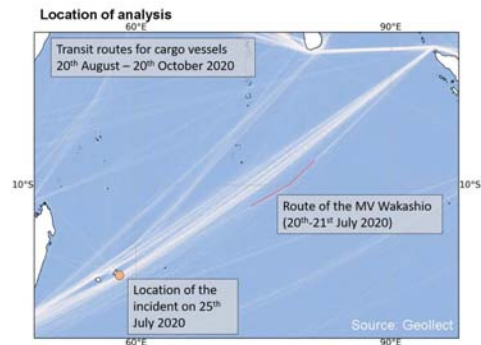
The *Wakashio* was experiencing steadily decreasing speed for 8 hours just prior to the dramatic turn ... [+]

The **Geollect** analysis (shown above) reveals that the *Wakashio's* engines

had systematically slowed down by around 15% over the course of 8 hours. It was in the hour prior to the turn that the vessel experienced an even sharper slowdown (seen by red arrows in the top chart), when the *Wakashio* made the significant course adjustment (seen in the bottom chart). This could have been an indication that something more serious was about to occur with the ship's engines.

It was this change in course on **21 July at 2am Mauritius time**, that put the *Wakashio* on a collision course for Mauritius.

The combination of a faulty engine, a faulty communications system as well as a faulty navigation system (which the **Panama Authorities have already identified in September**), would have made these three factors a deadly combination as the giant bulk carrier headed toward the tropical tourist island.



Location of analysis by Geollect, indicating an emergency change of direction to head toward ... [+] GEOLLECT

## Geollect's capabilities



Co-founder and COO of Geollect, Richard Gwilliam, has deep experience in geospatial intelligence, ... [+]

GEOLLECT

Co-founder and COO of Geollect, **Richard Gwilliam**, describes the U.K. technology company's mission. "As the U.K. leader in geospatial intelligence technologies. Our mission is to empower clients to make faster, more accurate and informed decisions. We are creating a paradigm shift in the way clients approach complex operational problems with creative, technological

interventions, which deliver enduring meaning and value. We deliver answers and bring clarity to what should be trusted. We call this: The Internet of Where, Know where, know first, know more.”

Geollect was able to develop unique insight into the final journey of the *Wakashio*, due to its highly advanced capabilities. Gwilliam goes on to describe this.

“Geollect is comprised of experienced professionals, formerly of the U.K. and U.S. Intelligence Communities, and academics with advanced geospatial data and intelligence analytic capabilities, creating a potent blend of tech-intelligence authority. We employ an intelligence-led approach to data science and take a data science approach to intelligence collection, resulting in a higher degree of clarity and confidence in real-time decision management.



Geollect is the U.K.'s leader in geospatial intelligence technologies, currently working on projects ... [+] GEOLLECT



Satellite analysis and machine learning are opening up new insights into the root cause of maritime ... [+] GETTY

The rapid advancement of technology has led to an overwhelming volume, veracity, variety, and velocity of data requiring analysis.

Outdated trend analysis involving historic statistics to map future challenges leave organizations ill-prepared to recognize and deal with emerging risks. Geollect transforms historical and live data into action, so our clients know what is happening today and are prepared for tomorrow.”

Geollect was able to collate data from various satellite and land-based sources to develop these new and additional insights into the *Wakashio's*

final movements and performance.

## Questions about the *Wakashio*'s fuel



The *Wakashio* had fueled in Singapore Port just prior to heading toward Mauritius GETTY

At the center of the *Wakashio* puzzle is what damage was the fuel causing to the engine. It had last refueled in [Singapore on July 14](#), before heading on its journey to Brazil.

The *Wakashio* was in the middle of the Indian Ocean when it suddenly changed course on July 21. This change in direction has remained a mystery and was not explained by MOL in their statement last week. At that moment, Mauritius was the closest land to the *Wakashio*, and only an emergency would have diverted the large bulk carrier from its agreed path around South Africa and toward Brazil. Experiencing an emergency on board, the island of Mauritius would have been the only way to communicate to Tokyo in the event of a communications blackout.

An emergency mobile connection would have perhaps been the only way for the *Wakashio* to make contact with Tokyo if all other communication systems were down.

Something else then went clearly wrong as the vessel ploughed into Mauritius' reefs at cruising speed.

Engineers have already identified at least four possible explanations for how the faulty fuel could have caused the



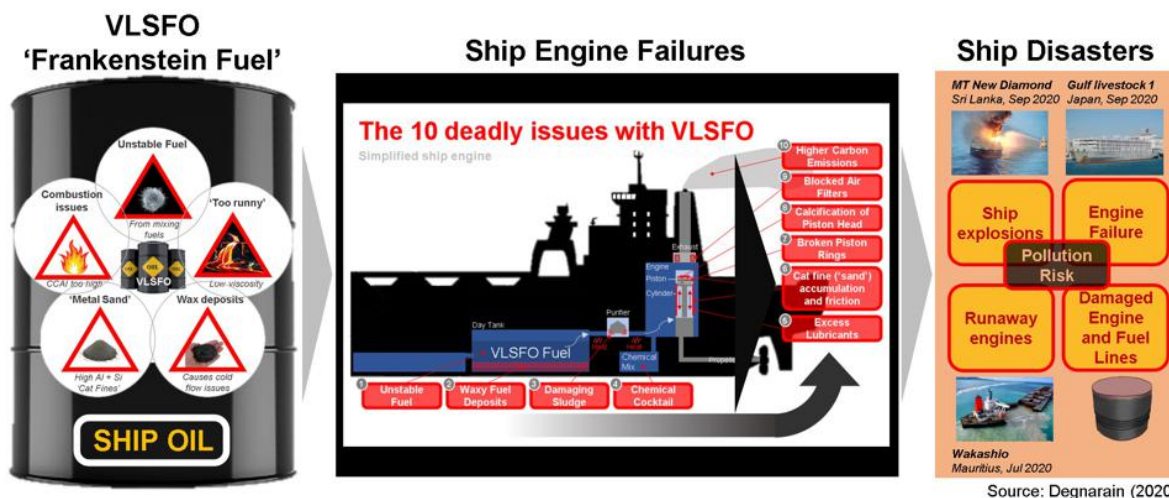


slow down in the *Wakashio's* engines over the course of July 20 and 21, and would have led to the decision to turn toward Mauritius to make the emergency phone connection.

The type of fuel used by the *Wakashio* (VLSFO) has been found to cause serious engine failure in ... [+]

GLASBRUCH

These include risks with **clogged air filters** and **malfunctioning fuel injectors**, all of which could lead to the slow but noticeable degradation of speed. Issues linked to the **lubricants** being used (which increases due to the VLSFO fuel being used to power the ship), as well as the risk of a **'runaway engine'** could have made the *Wakashio* unstoppable as it headed toward Mauritius, unable to slow down or be diverted to a safe location.



The faulty VLSFO fuel has been causing shipping disasters around the world DEGNARAIN

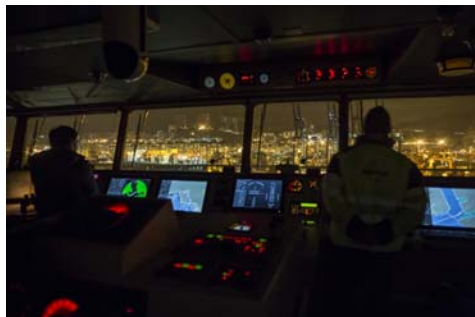
These are all issues that have been identified and associated with the faulty low sulfur fuel, batches of which were being mixed with aircraft fuel and which had been identified to cause shipping disasters around the world.

Had the *Wakashio's* engineers not been able to fix the engine problems in the middle of the ocean due to the VLSFO 'Frankenstein Fuels' that were being used and mixed, then the Captain and crew may have had little choice but to find the closest available point of land to attempt to save the

crew and the ship.

Unfortunately, in this case that appeared to have been Mauritius.

## Errors with *Wakashio's* maps also to blame



Were maps in the ship's mapping software to blame for the grounding? Until now, MOL has not ... [+] IN

PICTURES VIA GETTY IMAGES

Upon approaching Mauritius, another series of flaws clearly occurred. The Panama Maritime Authorities (where the vessel is registered) have already reported that there were **serious defects with the *Wakashio's* electronic map systems.**

MOL has not confirmed whether one of its subsidiary companies was the **provider of the mapping hardware, software and maps** used on board the *Wakashio*. Neither has MOL confirmed whether the crew were trained in this particular version of the mapping software that was on board. Whereas cell phones currently have two dominant players providing operating systems (Apple's iOS and Google's Android), electronic chart systems have up to 40 providers and proprietary software, each requiring additional training to learn the full capabilities of each system.

## *Wakashio's* Captain in court this week



Sunil Kumar Nandeshwar (L), the captain of the *Wakashio* and his Deputy Hitihamillage Subodha ... [+] L'EXPRESS

MAURICE/AFP VIA GETTY IMAGES

The **Captain of the *Wakashio*** and his number two were in court on **Tuesday 22 December**. Mauritius Director of Public Prosecutions changed the charges from violation of **Safe Passage to violation of Innocent Passage.**

This is a small but subtle difference in how the U.N. Law of the Sea is interpreted and applied in Mauritius. The court hearings are likely to continue into the New Year. The current court hearings cover just the provisional charges against the actions of the Captain and First Officer.

Several larger investigations are currently taking place into the root cause of the incident. The Panama Maritime Authorities (where the vessel is registered to) is obligated to submit an official accident report to the U.N. Shipping Regulator, the IMO. Mauritius is also conducting a separate set of hearings under a local judge, who will be convening witnesses in the New Year.

Despite several **important operational questions** being put to MOL by Forbes to understand the root cause and prevent such an incident from happening again, there has not been any response from the Japanese shipping giant.



There has been large social protests in Mauritius to protest at how the oil spill response has been ... [+] AFP VIA GETTY IMAGES

## Complex insurance case

The **insurance case** for the *Wakashio* is likely to be highly complex, given that it was not just the question of how the *Wakashio* ended up on Mauritius' reefs that will be explored, but the myriad of decisions that led to the 12 day delay to remove the *Wakashio* from Mauritius' coral reefs, major errors with the salvage operation that led to the vessel snapping in two, and the opaque and more damaging impact the clean up operations appears to have had in Mauritius.

2020 is unlikely to be the last year that the world hears of the *Wakashio*.



**Nishan Degnarain**

I am a Development Economist focused on Innovation, Sustainability, and Ethical Economic Growth. I currently work with leading Silicon Valley technology companies on... **Read More**

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