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Case study 4: Grounding on an Underwater Reef on a Calm Night

Welcome to Digimar case study videos!

The case studies in these videos are inspired by real-world events, accidents or incidents, involving communication between VTS operators and one or more vessels. The communication may have been retained in its authentic form to support learning, even when it includes mistakes or deviates from maritime communication standards.

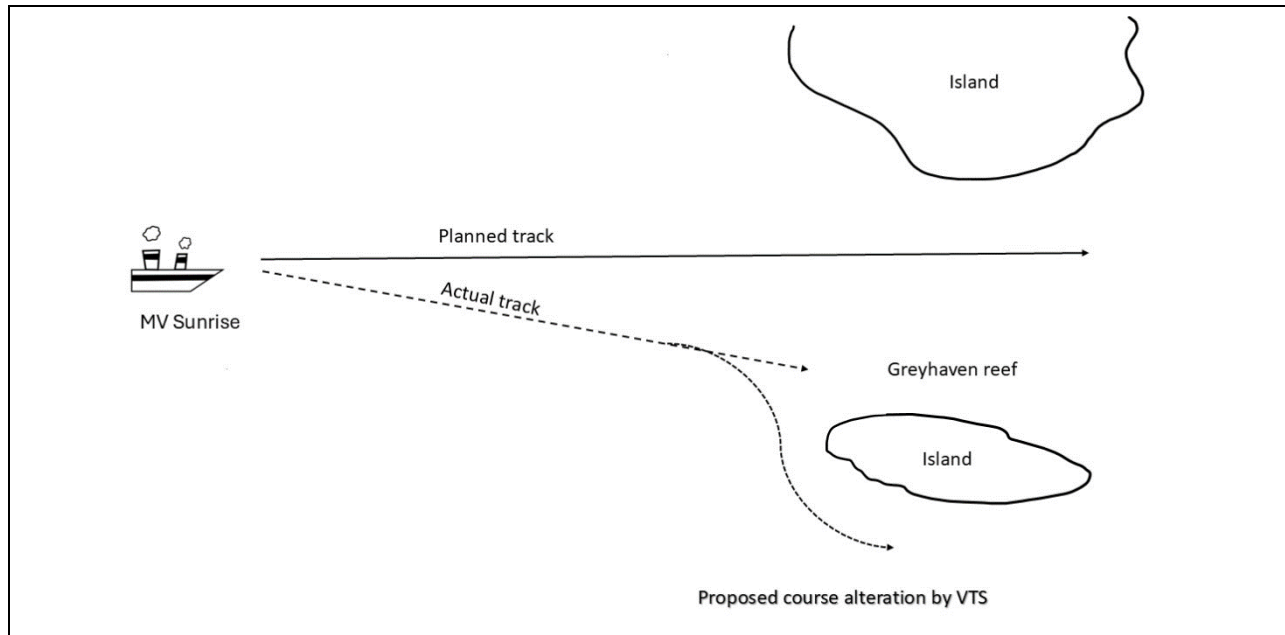
However, for instructional purposes, content has been modified, adjusted, and simulated. The names of ships and ports are anonymized. You will find suggestions for improving communication at the end of each video. Also, the key issues in maritime communication identified in the accident investigation report will be explained.

In this case study, a vessel ran aground on an underwater reef during a calm night in good visibility.

At the beginning, let us reflect on the following questions:

- Which techniques can be used by the VTS operator to warn vessels about a forthcoming danger and in this way prevent communication ambiguity?
- Which communication techniques should be used by the VTS operator to make the vessel more alert and responsive to navigational dangers?
- What tone of communication should the VTS operator use with the vessel when it is evident that the vessel is heading into danger?

Let us examine the initial situation. Motor Vessel Sunrise is eastbound and has deviated from its original course. The officer of the watch on Motor Vessel Sunrise has opted for an alternative route between two islands and decided to proceed through the passage between them. However, the tidal stream causes the vessel to drift farther south than the planned track. The crew is unaware of the shallow water above a reef located in the passage. This action places the vessel in imminent danger of grounding.



Let us listen to an audio dialogue between Motor Vessel Sunrise and Digimar VTS.

VTS centre: Sunrise, this is Digimar VTS, good morning, Sir. I can see you on AIS, are you aware you are 2 miles ahead from the Greyhaven rocks, they are 2 miles on your bow. We are worried you are on a collision course. Over.

Motor Vessel Sunrise: Ah, good morning. Yes, Sir, we are seeing what you are seeing. Indeed, we are 2 miles from the change of the course, indeed you are correct about what you see. I am sorry for that, we will alter course.

VTS Centre: Sunrise, Digimar VTS, received. Yes, confirm you will alter course to avoid the rocks, Greyhaven rocks, over.

Motor Vessel Sunrise: Digimar VTS. Roger, thank you.

Despite the warning from Digimar VTS, Motor Vessel Sunrise continues on its course, heading toward the two islands. The deck officer still intends to pass between the islands.

Digimar VTS continues to monitor the movement of Motor Vessel Sunrise but has not observed any alteration of course, so it assesses that the vessel is still heading toward danger and is in danger of grounding.

Therefore, Digimar VTS contacts Motor Vessel Sunrise again.

VTS Centre: Motor Vessel Sunrise, Motor Vessel Sunrise, Motor Vessel Sunrise, this is Digimar VTS calling on channel 16, over.



Motor Vessel Sunrise: This is Sunrise replying.

VTS Centre: Sunrise, this is Digimar VTS. Warning, you are running on to rocks, clear water to the south. I repeat, there are rocks ahead you, clear of you, there is clear water to your south, over.

Motor Vessel Sunrise: We are approaching a danger, I will change course.

Digimar VTS: Ye, Ma'am, there is clear water to the south at this time. Thank you.

Motor Vessel Sunrise: I need to change starboard, is that right?

Digimar VTS: Sunrise, for your information there are rocks 2 miles ahead of you, there are rocks 2 miles ahead. There is clear water to the south, over.

Motor Vessel Sunrise: Ah, I need to change course to the south?

Digimar VTS: Sunrise, this is VTS, there is rocks 2 miles ahead of you, 2 miles ahead of you. Clear water to the south, over.

Motor Vessel Sunrise switches to hand-steering and sets the rudder hard-a-starboard in an attempt to avoid the reef. However, she runs aground on the reef.

Suggestions for improvement

Now, let us consider what could have been done differently in terms of maritime communication.

First, the communication between Digimar VTS and the vessel should have been more formal and assertive. The VTS should have focused on warning Motor Vessel Sunrise by using more direct messages.

For example, instead of saying "Are you aware you are 2 miles ahead from the Greyhaven rocks, they are 2 miles on your bow. We are worried you are on a collision course." They could have said: "Warning: You are 2 miles ahead of the Greyhaven rocks. You are on a collision course. Alter course to starboard."

Additionally, when Motor Vessel Sunrise reports that they are approaching danger with the statement "We are approaching danger, I will change course", the VTS could have responded with "Warning: Keep clear of the rocks 2 miles ahead of you." Rather than saying "Yes, Ma'am, there is clear water to the south at this time. Thank you", as this response does not emphasize the danger that is only two miles away.

The absence of prowords such as "say again", and "read back", which the VTS could have used to check or confirm the intentions of Motor Vessel Sunrise may have hindered clarity and diminished the alertness of Motor Vessel Sunrise. Also, the use of informal language such as "thank you" and "Ma'am" might have contributed to the lower alertness of the vessel.

Therefore, in addition to the lack of communication methods that could have improved the responsiveness to imminent danger, the miscommunication also resulted from the VTS operator's failure to be more precise and give a concrete answer to the ship's question as in "I need to change starboard, is that right?"



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The accident investigation revealed that the contributing factors to the accident included:

- Motor Vessel Sunrise did not follow the recommendations given by VTS operators regarding the danger of grounding.
- VTS should have used message markers “warning” to alert MV Sunrise about the danger.
- VTS should have been more persistent in challenging the response from MV Sunrise, and intervened to ensure that the vessel changed course.

Please take a moment to reflect on the key takeaways. Thank you for choosing Digimar advanced training videos.