



Case Study 1: Collision in a Congested Waterway

Welcome to Digimar case study videos!

The case studies in these videos are based on real-world events with authentic VTS-vessel communication, including mistakes or deviations to support learning. However, for instructional purposes content has been modified, adjusted, and simulated. The names of ships and ports are anonymized.

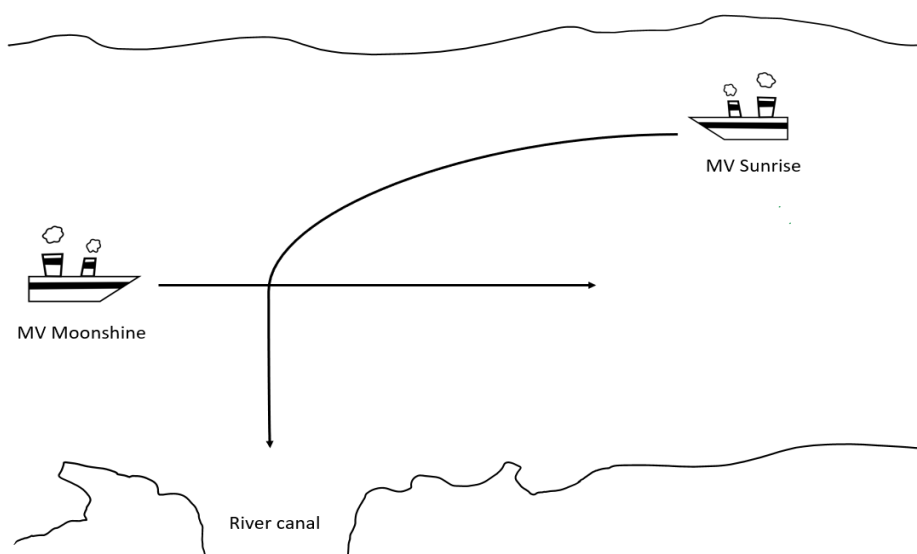
You will find suggestions for improving communication at the end of each video. Also, the key issues in maritime communication identified in the accident investigation report will be explained.

In this case study, two vessels collide in a congested waterway during night-time.

First, reflect on the following questions:

- To be effective, what must the communication between the VTS operator and vessel be like?
- Which techniques can be used by the VTS operator to close the communication loop and in this way prevent communication ambiguity?
- Which message markers can be used by the VTS operator when a potentially critical situation develops?

Let us have a look at the initial situation. Motor Vessel Sunrise is travelling westward and planning to enter a river canal on its portside. Motor Vessel Moonshine is travelling eastward with a pilot on board.





The pilot on board Motor Vessel Moonshine contacts Digimar VTS.

Motor Vessel Moonshine: Digimar VTS, this is Moonshine.

VTS centre: Moonshine, this is Digimar VTS.

Motor Vessel Moonshine: Question. What is the intention of Sunrise? Will it enter the river canal?

VTS centre: Answer. Yes, Sunrise will enter the river canal.

Motor Vessel Moonshine: Received. Question. Do we have permission to pass green-to-green with Sunrise?

VTS centre: No, do not pass green-to-green with Sunrise. Red-to-red with Sunrise.

Motor Vessel Moonshine: Received. Red-to-red with Sunrise. Out.

Meanwhile, Motor Vessel Sunrise is continuing on its course and sailing toward the river canal. She does not turn to starboard to make room for Motor Vessel Moonshine. The VTS operator offers no further advice to Motor Vessel Sunrise about the ideal course for entry into the river canal.

Digimar VTS calls Motor Vessel Sunrise.

VTS centre: Sunrise, this is Digimar VTS.

MV Sunrise: Digimar VTS, Sunrise.

VTS centre: Sunrise, this is Digimar VTS. Red-to-red with Moonshine.

MV Sunrise: Digimar VTS, again, I didn't understand.

VTS centre: Sunrise, Digimar VTS. I repeat. Red-to-red with Moonshine.

MV Sunrise: Received. I will pass red. Thank you.

There are two questions to consider at this point:

- Based on the information provided by the VTS, what should Motor Vessel Sunrise do?
- When Motor Vessel Sunrise says "I will pass red.", what do they mean?



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After this call, Motor Vessel Sunrise does not alter course. Motor Vessel Moonshine continues on the same course, at the same speed. The pilot issues a warning via VHF that the situation is critical. Motor Vessel Moonshine turns hard to starboard.

Digimar VTS calls Motor Vessel Sunrise twice.

VTS centre: Sunrise, this is Digimar VTS. Risk of collision with Moonshine. Take immediate action.

VTS centre: Sunrise, this is Digimar VTS. Risk of collision with Moonshine. Take immediate action.

Sunrise does not reply to the call. Sunrise does not take any action. Sunrise collides with Moonshine on the port side, astern of the bow.

Suggestions for improvement

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

First, there is the message of Motor Vessel Sunrise: "Received. I will pass red. Thank you."

It is ambiguous. It can mean that Motor Vessel Sunrise will pass Motor Vessel Moonshine on the port side, and only then enter the river canal. However, it can also mean that Motor Vessel Sunrise will alter course to port, which she did, putting her on a collision course with Motor Vessel Moonshine.

Therefore, the proword "say again" could be used by the VTS operator to verify Motor Vessel Sunrise's understanding of the situation, to close the communication loop, and prevent ambiguous communication.

VTS centre: Sunrise, Digimar VTS. Say again. What is your intention?

Second, the VTS operator offered no timely advice to Motor Vessel Sunrise about the ideal course for entry into the river canal. As per Resolution A.1158(32) of the International Maritime Organization from 2021, VTS needs to provide information that is timely and relevant.

Third, the message markers "warning" and "advice" or "instruction" could be used by the VTS operator to indicate increased priority.

VTS centre: Sunrise, Digimar VTS. Warning. Risk of collision with Motor Vessel Moonshine. Instruction. Take immediate action. Advice. Turn hard to starboard.



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Finally, the VTS centre may have considered, at some stage, reducing speed as a means to avoid the collision, or may have asked the pilot onboard Motor Vessel Moonshine to sound five rapid blasts on the whistle to indicate he had doubts over the intentions of Motor Vessel Sunrise.

The accident investigation found that the collision occurred also due to, among other factors:

- lack of clear and timely communication between the VTS operator, Motor Vessel Sunrise, and Motor Vessel Moonshine, and
- poor understanding of English on Motor Vessel Sunrise.

Please take a moment to reflect on the key takeaways. Thank you for watching.