



Case Study 5: Collision in Foggy Conditions

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.

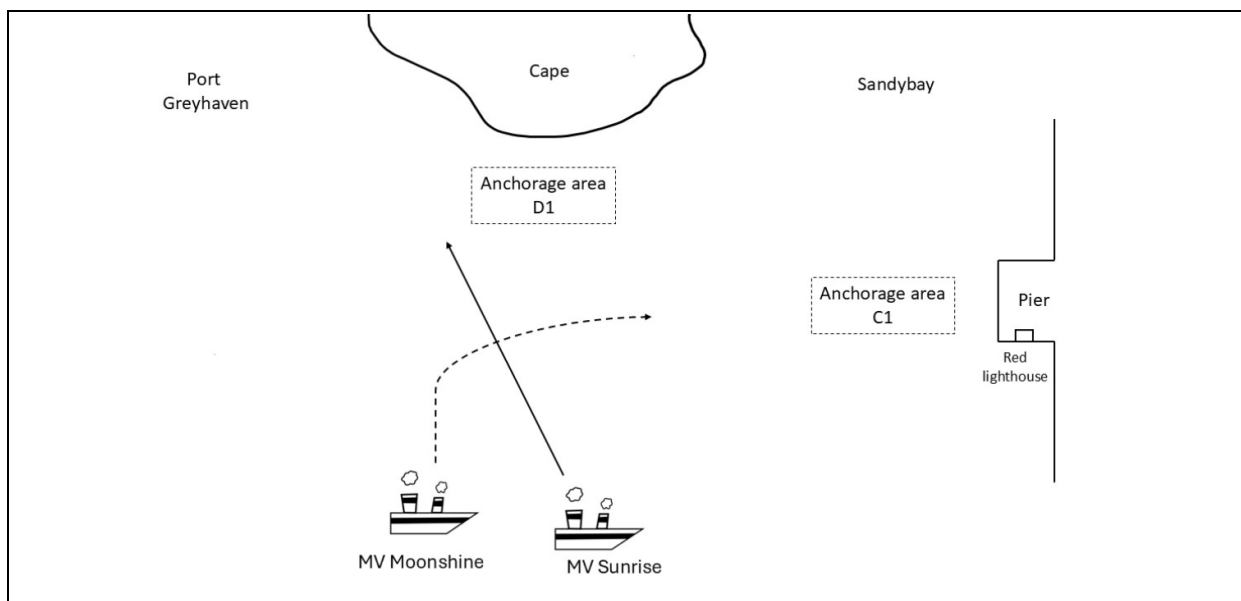
However, for instructional purposes, content has been modified, adjusted, and simulated. The names of ships and ports are anonymized. You will find suggestions for improving communication at the end of each video. Also, the key issues in maritime communication identified in the accident investigation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

In this case study, two vessels will collide in foggy conditions.

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

- How should anchorage areas and positions be identified?
- Which techniques can be used by the VTS operator to close the communication loop and thus prevent communication ambiguity?

Let us now examine the initial situation. Motor Vessel Sunrise is proceeding north to Port Greyhaven. Motor Vessel Moonshine is proceeding north toward the anchorage area where she is planning to drop anchor. The weather is foggy and visibility reduced. The AIS of Motor Vessel Moonshine is not operational.





The VTS operator contacts Motor Vessel Moonshine to ask about her anchoring intentions.

Digimar VTS: Motor Vessel Moonshine, this is Digimar VTS. Over.

Motor Vessel Moonshine: Digimar, Motor Vessel Moonshine. Over.

Digimar VTS: So will you be anchoring in the area near the pier with a red lighthouse on top?

Motor Vessel Moonshine: I think we will be anchoring at the anchorage near the cape.

Digimar VTS: Because of your draft you are obliged to anchor near the pier. Over.

Motor Vessel Moonshine: Do we have to pass through the traffic route if we are going to Sandybay?

Digimar VTS: There is an obligation to anchor near the pier. Over.

Motor Vessel Moonshine: Okay.

Is it clear where Motor Vessel Moonshine will anchor? In anchorage area Delta 1 near the cape, or anchorage area Charlie 1 near the pier with a red lighthouse on top?

Motor Vessel Sunrise thinks that the speed difference between the two vessels is sufficient and they will be able to safely overtake Motor Vessel Moonshine on the starboard side. Motor Vessel Sunrise does not inform Motor Vessel Moonshine of her intention to alter her course to starboard. Both vessels are still proceeding north on the same course. Soon Motor Vessel Moonshine starts altering course to starboard, north-eastward, toward anchorage area C1 near the pier.

The VTS operator calls Motor Vessel Sunrise.

Digimar VTS: Motor Vessel Sunrise, this is Digimar VTS. Over.

Motor Vessel Sunrise: Digimar VTS, this is Motor Vessel Sunrise. Over.

Digimar VTS: Information. Now, there is a vessel navigating on your port bow on the same course without an operational AIS, called Moonshine. According to the information from the vessel, she said she is going to anchorage Delta 1, but now she is proceeding north-eastward. Pay attention to the movement of this vessel. If necessary, please make contact and navigate safely.

Motor Vessel Sunrise: Understood. Thank you.

Motor Vessel Sunrise calls Motor Vessel Moonshine to ask her about her intentions.

Motor Vessel Sunrise: Motor Vessel Moonshine, what is your intention? Are you turning to starboard?

They receive no response.

Motor Vessel Moonshine continues to turn to starboard. Motor Vessel Sunrise sets the helm hard to starboard, and blows one long blast of the whistle. The starboard bow of Motor Vessel Moonshine



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collides with the bow of Motor Vessel Sunrise. There is severe damage to the hulls of both vessels but no injuries nor any environmental damage.

Suggestions for improvement

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

First, the phonetic alphabet should be used when stating call signs, positions, place names, and similar information, in this case anchorage areas Delta 1 (near the cape) and Charlie 1 (near the pier with a red lighthouse on top).

Additionally, unnecessary words should be avoided to keep messages short and clear. For example, “Because of your draft, you are obliged to anchor near the pier. Over.” can be simplified to “Advice: Anchor in anchorage area Charlie 1. Over.” In this way, the anchorage area is clearly defined, and the message is short and simple.

When Motor Vessel Moonshine asks for clarification with “Do we have to pass through the traffic route if we are going to Sandybay?”, instead of responding “There is an obligation to anchor near the pier. Over.” the VTS operator could have said “I repeat: Anchor in anchorage area Charlie 1. Over.” This revision also ensures a clear distinction between the two anchorage areas.

Another factor is that the VTS operator clearly did not know to which anchorage area Motor Vessel Sunrise was going. In the communication with Motor Vessel Moonshine she said: “According to the information from the vessel, she said she is going to anchorage Delta 1, but now she is proceeding north-eastward.” However, Motor Vessel Sunrise in fact was proceeding toward anchorage area Charlie 1.

Therefore, the miscommunication also resulted from the VTS operator’s failure to use closed-loop communication to verify Motor Vessel Sunrise’s intentions. When the VTS operator said “There is an obligation to anchor near the pier. Over.” the vessel’s response was simply, “Okay.” And the VTS operator still assumed Motor Vessel Sunrise would anchor in anchorage area Delta 1 (near the cape).

Motor Vessel Sunrise did not close the communication loop by repeating the received information, as in: “Received. I will anchor near the pier in anchorage area Charlie 1.” Likewise, the VTS operator did not request a readback, which could have been phrased as: “Anchor in anchorage area Charlie 1. Read back.”

Such clear and unambiguous communication is even more important if a vessel’s critical equipment is not operational, in this case the AIS of Motor Vessel Sunrise.

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

- Motor Vessel Moonshine did not inform Motor Vessel Sunrise of its intention to overtake on the starboard side.
- Motor Vessel Sunrise, after receiving the VTS operator’s instruction to anchor “near the pier,” mistakenly believed it needed to alter course immediately and turn to starboard.



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- Motor Vessel Sunrise communicated an anchorage location different from the scheduled one, while the VTS operator failed to verify whether any ambiguity had occurred in the communication.
- Motor Vessel Sunrise did not hear the exchange between the VTS operator and Motor Vessel Moonshine, in which the VTS operator stated that Motor Vessel Sunrise had reported she was proceeding to anchorage area Delta 1.

Key takeaways

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