



Marine Transportation Safety Investigation Report M18P0073

SINKING AND LOSS OF LIFE

Fishing vessel *Western Commander*
Triple Islands, Dixon Entrance, British Columbia
09 April 2018

About the investigation

The Transportation Safety Board of Canada (TSB) conducted a limited-scope, fact-gathering investigation into this occurrence to advance transportation safety through greater awareness of potential safety issues. It is not the function of the Board to assign fault or determine civil or criminal liability.

Vessel

The *Western Commander*, a wooden fishing vessel of 22.37 m in registered length and 99.69 gross tonnage, was built in 1943 in New Westminster, British Columbia. The vessel's 75-year history includes the following events:

- In 1983, the vessel had its stability assessed for seining herring. Among other things, the assessment recommended that only the 2 forward (port and starboard) fish holds be used when transporting herring and that the single aft hold not be used.
- At some point, the vessel was modified so that its deck winch and seine drum were removed and the aft fish hold was longitudinally divided into 2 holds.
- Since 2003, Fisheries and Oceans Canada had annually licensed the vessel to transport seafood and, prior to the occurrence voyage, the vessel had been frequently used to transport sea urchins.
- The vessel underwent quadrennial Transport Canada (TC) inspections. The last inspection was in 2015 and the inspection report noted that all of the identified deficiencies had been rectified.
- The current owner purchased the vessel in January 2018 and a vessel survey was done for insurance purposes.

- In February and March 2018, the vessel master and the new owner familiarized themselves with the vessel during the herring fishery. The vessel transported 2 loads of herring, distributed in all 4 holds,¹ from the fishing grounds into the Vancouver area without incident.

Crew

Under TC regulations,² the *Western Commander* was required to have a minimum safe manning document. This document sets out the minimum required manning and certification levels to safely conduct a navigational watch and carry out emergency duties. It does not take into consideration the number of crew members required for operational purposes or how operations may affect navigational watch requirements.

TC issued the *Western Commander* a minimum safe manning document on 15 January 2018 that specified a minimum complement of 3: a Fishing Master, Fourth Class and 2 deckhands. The *Marine Personnel Regulations* require 2 people in the wheelhouse on watch during hours of darkness. In practice, the *Western Commander* often operated with only 1 person on watch at night.

The master held a valid Fishing Master, Fourth Class certificate, medical certificate, and marine emergency duties (MED) certificate. The mate held a valid certificate of service as a watchkeeping mate on a fishing vessel of less than 24 m, medical certificate, and MED certificate.

Both the master and the mate had many years of fishing experience. The deckhand had worked on an urchin packer in the past.

Voyage

Over the first few days of April 2018, the master and deckhand made preparations and familiarized themselves with the *Western Commander* before departing. As they were making these preparations, the master and deckhand noticed, and reported to the owner, that water was leaking into the vessel's lazarette where the rudder shaft penetrated the hull. The water that was leaking into the lazarette was draining into the shaft tunnel,³ which contained 2 automatic electric pumps. At the time that the leak was identified, these pumps were coping with the water ingress and keeping the lazarette dry. The crew planned to monitor the water ingress during the voyage.

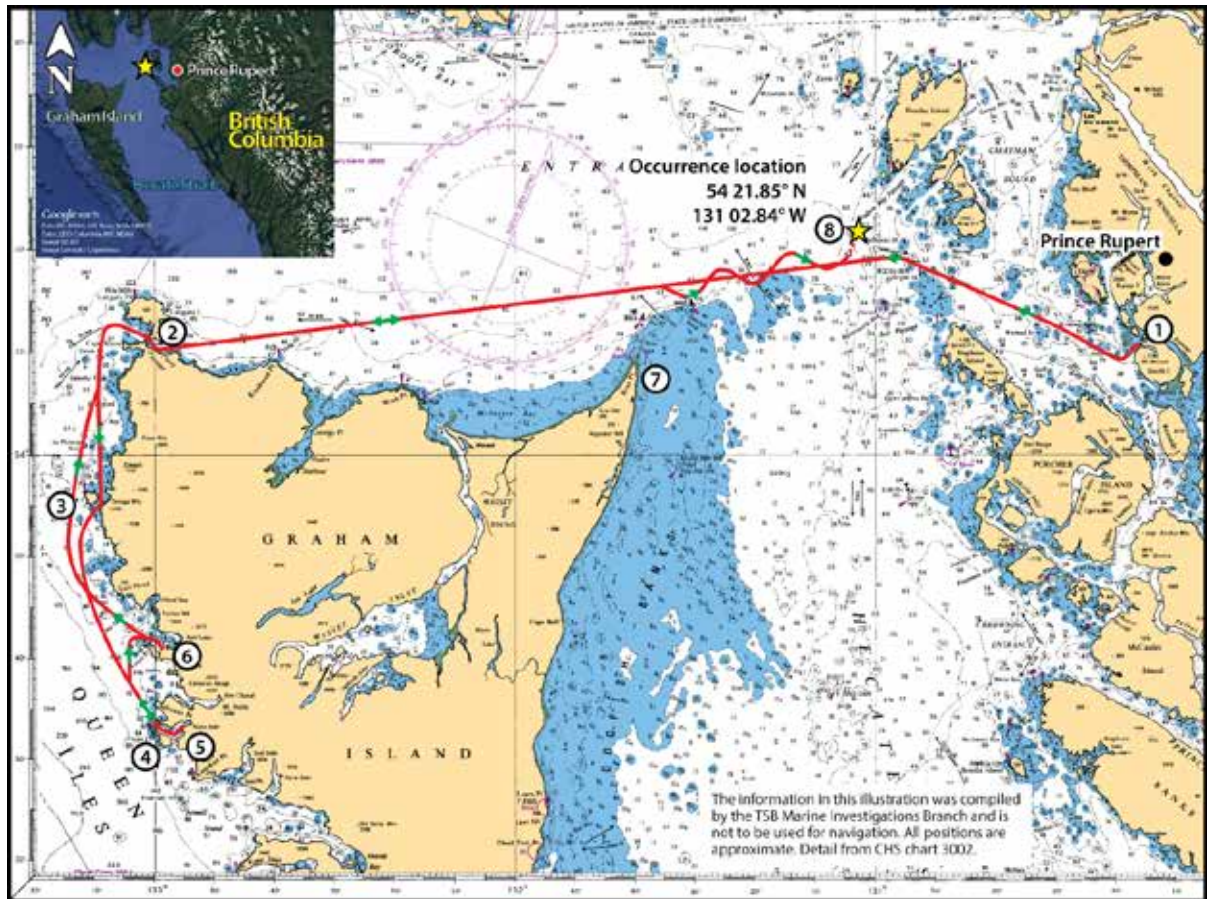
On 04 April, the *Western Commander* departed Port Edward for Nesto Inlet on the west side of Graham Island in order to load and transport sea urchins back to Port Edward (Figure 1). The crew consisted of the master, the mate, and a deckhand. This was their first voyage transporting sea urchins on the *Western Commander*.

¹ Distributing the catch over all 4 holds was not in accordance with the stability booklet.

² Transport Canada, SOR/2007-115, *Marine Personnel Regulations* (last amended 03 February 2017), paragraph 202(3)(b).

³ The shaft tunnel is a narrow compartment through which the propeller shaft of a vessel passes from the engine room bulkhead to the stern tube.

Figure 1. Area of occurrence voyage (Source: Canadian Hydrographic Service and Google Earth, with TSB annotations)



Legend:

1. Port Edward
2. Parry Passage
3. Frederick Island
4. Hippa Island
5. Nesto Inlet
6. Port Louis
7. Rose Point
8. Occurrence location

The vessel was under contract to sea urchin buyers to transport urchins for 11 different harvesters. In this particular fishery, divers harvest sea urchins from the seabed and temporarily store them on the dive vessel until they are delivered to a vessel for transport to buyers in port. The timing of harvesting, transporting, and delivering the urchins to market is critical given their perishability. To minimize delays once urchin harvesting begins, harvesters and transporting vessels communicate regularly.

A storm warning was in effect at the time of departure for the evening of 04 April and into the next morning. On 05 April, the environmental conditions deteriorated: winds increased to 40 to 50 knots and seas to 4 m. The vessel anchored in Parry Passage, a protected area at the north end of Graham Island. While at anchor, the crew filled the 2 forward fish holds with water for ballast in anticipation of the poor sea conditions to come once the voyage continued on the west side of Graham Island.

The vessel remained at anchor in Parry Passage for the rest of the day and overnight. The poor environmental conditions also delayed urchin harvesting. By the morning of 06 April, the storm warning had changed to a gale warning with 30- to 40-knot southeast winds expected to diminish into the evening and overnight and switch to northerly winds by the next morning.

The sea conditions were rough, with 3 m to 4 m waves, as the *Western Commander* continued the voyage to relocate closer to the harvesters. The master, concerned about damaging the vessel with the additional weight of the water in the forward holds and the adverse sea conditions, reduced the vessel's speed to 2 to 3 knots.

A few hours into the voyage, an alarm sounded, indicating water in the lazarette. The vessel was sheltered from the weather behind Frederick Island while the crew pumped dry the lazarette using the engine room hydraulic pump. The voyage then continued and, just prior to the vessel arriving in the Hippa Island / Nesto Inlet area, the vessel's 2 forward holds were pumped dry. Before setting anchor for the evening, the master inspected the lazarette and noticed that the water leak from the rudder shaft had increased.

At some point over the next 2 days, the vessel made bottom contact. The crew did not notice any additional locations of water ingress immediately following the bottom contact.

On 07 April, given the favourable extended weather forecast, the divers reported that harvesting had begun in the waters near Hippa Island, Port Louis, and Nesto Inlet. Later that day, the *Western Commander* began to load bags of sea urchins from the harvesters. By the end of the day, the vessel was partially loaded. The master noticed that the water leak from the rudder shaft had increased again, and the lazarette needed to be pumped every 4 hours to stay dry.

The next day, the *Western Commander* had relocated to the Port Louis area, where the remaining bags of urchins were loaded. The bags were loaded into the 2 forward fish holds and the port aft fish hold. Some of the remaining bags were too large to fit into the starboard aft fish hold and were stacked on the aft deck and the fish hold hatch covers, secured, and covered with a tarp, resulting in an unevenly distributed load that caused a port list. The vessel's boom was repositioned off-centre to starboard to counteract the port list.

Once loading was completed late that evening, the vessel immediately departed for Port Edward. At this time, the lazarette needed pumping every 2 hours, and it was taking approximately 1 hour to pump it dry. The southeast winds were forecast to increase, and a gale warning was issued for the next afternoon.

As the vessel proceeded toward Parry Passage, the southeast winds were light, which made for moderate sea conditions until the vessel arrived at Rose Point, where the winds were southeast 20 to 30 knots and the sea conditions were confused and broadside to the vessel's course. The master chose to travel a more favourable course, zigzagging across Hecate Strait to reduce the effects of the broadside swell on the vessel.

Around 0900⁴ on 09 April, the mate, who was on watch, noticed that the vessel was not fully returning upright when it was heeled over by the swell. Water was coming over the port railing and remaining on deck, and the vessel developed a port list. At some point, water had entered the port forward fish

⁴ All times are Pacific Daylight Time (Coordinated Universal Time minus 7 hours).

hold. In an attempt to reduce the list, the master started pumping the port forward fish hold and repositioned the boom as far as possible to starboard; however, the list continued to increase.

At 0945, the master made a Mayday call and requested assistance. Shortly afterward, Marine Communication and Traffic Services (MCTS) Prince Rupert broadcast a Mayday relay, and the Canadian Coast Guard (CCG) vessels and the Royal Canadian Marine Search and Rescue 64 (RCM-SAR 64) vessel were deployed. The master and deckhand left the wheelhouse to locate and don their immersion suits and ready the life raft. The mate remained in the wheelhouse where he attempted to don his immersion suit but, at this time, he experienced a medical emergency.

At 0955, the deckhand returned to the wheelhouse and found the mate incapacitated. The master immediately reported the medical emergency to MCTS. While waiting for assistance to arrive, the deckhand attempted to comfort the mate and monitored vital signs while the master attempted to complete a number of tasks alone. These included communicating with MCTS and the vessel owner, attending to the engine room and pumping duties, monitoring other areas of the vessel for water ingress, and maintaining command of the vessel.

At 1051, the first CCG vessel, the *Cape Dauphin*, arrived on scene as the *Western Commander* continued to list to port (Figure 2). The CCG crew stabilized the mate and transferred him to the RCM-SAR 64 vessel, which evacuated him to Prince Rupert at 1120. At 1212, the RCM-SAR 64 vessel arrived in Prince Rupert and transferred the mate to emergency health services. The mate was pronounced dead on arrival at the hospital.

The CCG vessel offered additional pumps; however, the master reported that water was now entering through the galley door and going into the engine room. At this point, the master and deckhand abandoned the *Western Commander* onto the *Cape Dauphin*.

At 1215, *Western Commander* sank in position 54°21.85' N, 131°02.84' W.

Safety messages

Loading practices

During loading, each of the 11 harvesters that delivered urchins to the *Western Commander* provided bags of different sizes and shapes at various times over the 2-day period. Some of the bags delivered near the end of this period did not fit through the vessel hatches and were therefore stacked about 1 m high on the hatch covers. Stacking the bags on the hatches blocked access to the holds and the lazarette and eliminated the possibility of identifying points of water ingress or adding portable pumps to these areas. Stacking bags on top of the hatches also raised the vessel's centre of gravity and created an opportunity for the cargo to shift, which could adversely affect stability.

Figure 2. The *Western Commander* listing to port



It could not be determined how water entered the port forward fish hold or whether the loading practices adversely affected the vessel's stability to the extent that they contributed to its sinking.

The vessel had a stability booklet for catching and transporting herring, but the stability booklet did not reflect the vessel's current configuration and operation to transport herring. In this occurrence, given that the vessel was transporting sea urchins, it was not required to have a stability booklet.

Over the past 5 years, the TSB has investigated occurrences involving 21 stability-related fatalities. In most of these cases, the accidents were due in part to the fact that fishing vessel operators did not have information about their vessel's stability or the stability information was not current.

In response to one of these occurrences,⁵ the TSB issued a recommendation⁶ calling for TC to address the issue of inadequate stability information on fishing vessels. TC proposed providing owners with stability notice⁷ templates and guidelines along with instructions on how to complete them, and to renew emphasis on stability booklets during inspections. These actions should increase the likelihood that fishing vessel operators will have access to stability information that is current, reflective of the vessel and its operations, and user-friendly. The Board considers the response to this recommendation to show Satisfactory Intent.⁸

Loading and securing catch (e.g., sea urchins and herring) should be done in accordance with current vessel-specific stability information to avoid hazards such as uneven weight distribution, cargo shifts, or blocked access to critical areas of the vessel.

Managing risks

To ensure that a vessel is able to make a safe passage, it is important that vessel owners and crews have safe operating procedures that help identify and address risks. These procedures, which are required by both provincial and federal regulations, can help ensure that crews make sound decisions in any operating condition.

In this occurrence, the factors that potentially affected the vessel's safe passage included

- the rudder shaft leak,
- the adverse weather conditions,
- the lack of a damage assessment following the bottom contact, and
- an uneven load distribution.

Given a crew of 3 and the critical timelines required for transporting the sea urchins, it was difficult to maintain an adequate navigational watch and work-rest schedule, which could have affected the vessel's safe passage.

Although the master recognized and took action to reduce some risks (e.g., the potential for weather-related damage to the vessel), this occurrence highlights the need for routine use of safe operating procedures to help identify and address risk in all aspects of the operation.

⁵ TSB Marine Investigation Report M15P0286.

⁶ TSB Recommendation M16-02.

⁷ The intent of a stability notice is to provide basic and user-friendly stability information to the vessel's master and crew and guide them in decision making. The stability notice includes only the most pertinent information associated with the vessel's operation and provides information that could help avoid potential stability risks.

⁸ A Satisfactory Intent rating is assigned if the planned action, when fully implemented, will substantially reduce or eliminate the safety deficiency, and meaningful progress has been made since the recommendation was issued.

This concludes the TSB's limited-scope investigation into this occurrence. The Board authorized the release of this investigation report on 17 October 2018. It was officially released on 25 October 2018.

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