January 31, 2025 MIR-25-07

Contact of Small Passenger Vessel *Columbia Gorge* with Pedestrian Bridge and Tribal Fishing Platforms

On January 13, 2024, about 0815 local time, the small passenger vessel *Columbia Gorge* broke away from its mooring on the south side of the Columbia River in Cascade Locks, Oregon, during high winds.[1] There was no one on board the vessel at the time. The *Columbia Gorge* drifted downriver and eventually struck the Thunder Island pedestrian bridge and three tribal fishing platforms (see Figure 1 and Figure 2). There were no injuries and no pollution was reported. Damages to the vessel, the pedestrian bridge, and adjacent fishing platforms were estimated at $430,000.[2]

Figure 1. *Columbia Gorge* moored at its dock at the Cascade Locks Marina in May 2015. (Source: KGW8)

[1] In this report, all times are Pacific standard time, and all miles are statute miles.

[2] Visit ntsb.gov to find additional information in the public docket for this NTSB investigation (case no. DCA24FM017). Use the CAROL Query to search investigations.

Casualty Summary

Casualty type	Contact
Location	Columbia River, mile 150, Cascade Locks, Oregon 45°40.11' N, 121°53.78' W
Date	January 13, 2024
Time	0816 Pacific standard time (coordinated universal time –8 hrs)
Persons on board	0
Injuries	None
Property damage	$430,000 est.
Environmental damage	None
Weather	Visibility 3 mi, overcast, winds east 20 kts, gusts 38 kts, waves east 3–4 ft, air temperature 17°F, morning twilight 0712, sunrise 0745
Waterway information	River; width 1,300 yds, depth 18 ft, current 1 kt

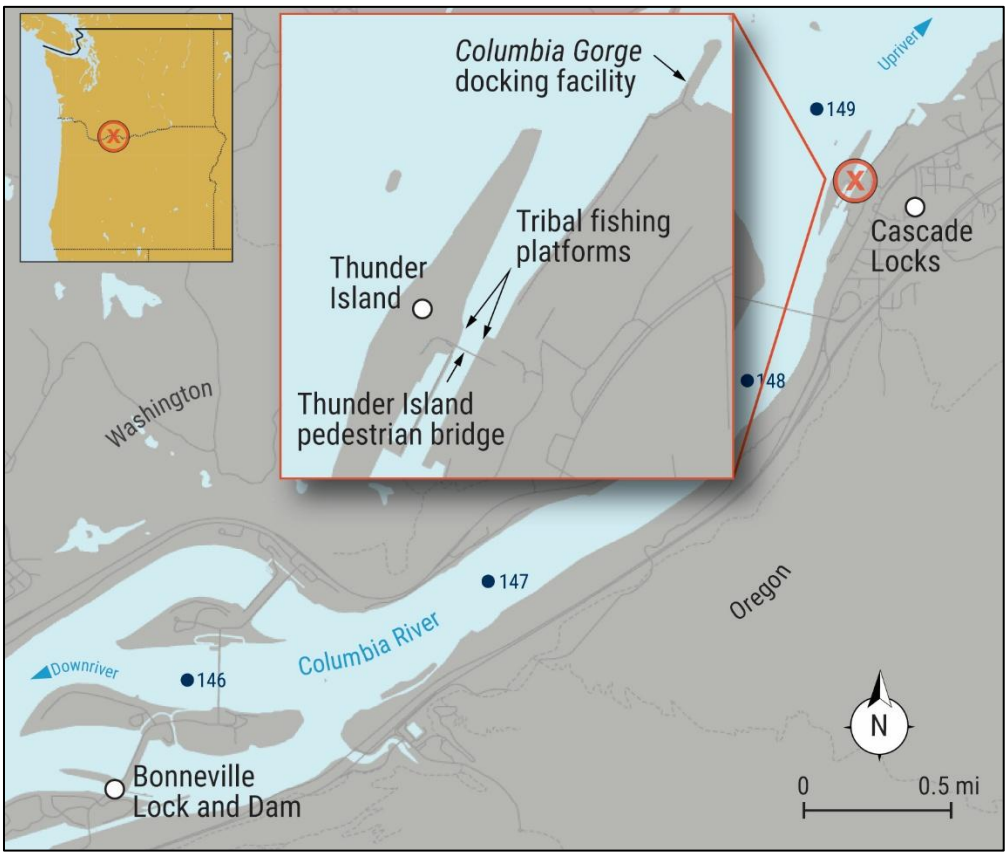

Figure 2. Area where the *Columbia Gorge* contact occurred, as indicated by a circled *X*. (Background source: Google Maps)

1 Factual Information

The 145-foot-long steel-hulled sternwheeler small passenger vessel *Columbia Gorge*, built in 1983 by Nichols Brothers boatbuilders, was owned by the Port of Cascade Locks and operated by JettyLight LLC. The vessel operated dining and expedition cruises along the Columbia River.

On January 11, 2024, crewmembers shifted the vessel from its typical mooring arrangement (port side to, with the bow facing downriver in a southwesterly direction) at its dock at mile 149.2 on the Columbia River in Cascade Locks to an upriver bow mooring (starboard side to, with the bow in a northeasterly direction) in anticipation of forecasted strong east winds, estimated to be 30–40 knots, with blizzard conditions possible. The vessel was secured against the mooring dolphins with eight nylon mooring lines and a galvanized chain (the usual mooring arrangement was six nylon mooring lines and no chain). The bow line was tight, and crewmembers estimated there was less than a foot of slack in the breast lines and the chain (see Figure 3). The vessel was uncrewed while docked, and, in the days before the breakaway, the crew checked the vessel's mooring a few times a day.

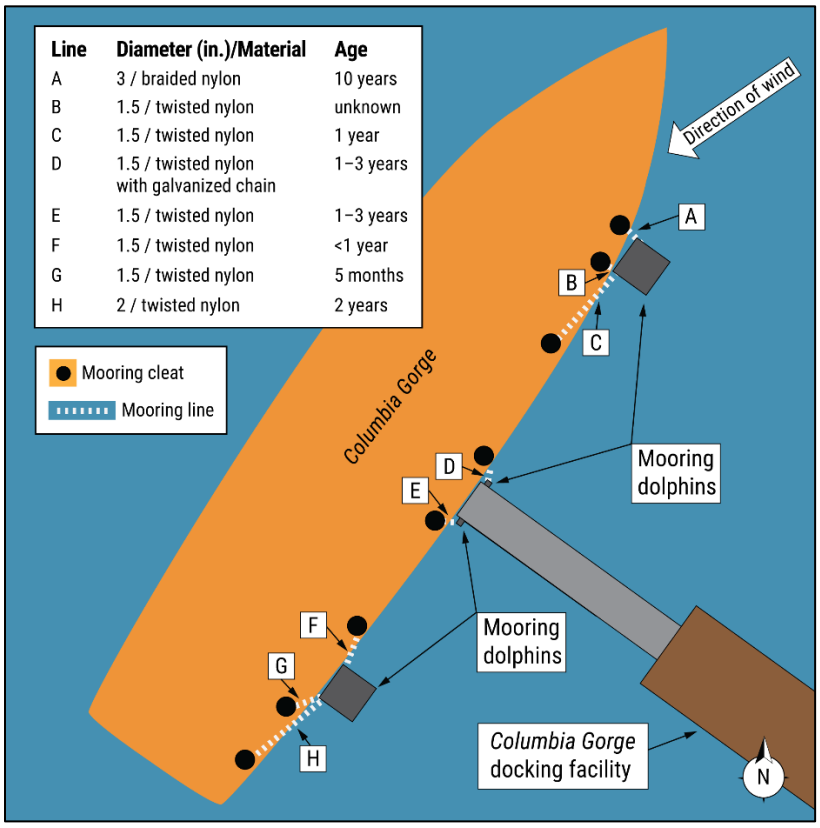

Figure 3. *Columbia Gorge* mooring arrangement on January 13, 2024, including the diameters of and materials comprising each mooring line (scale approximate).

On January 13, at 0816, a Cascade Locks resident alerted the Hood River County Sheriff's office that the *Columbia Gorge* was drifting downriver. The vessel's captain, the chief engineer, and a deckhand were notified.

About 0822, the *Columbia Gorge*'s stern struck three tribal fishing platforms and then the Thunder Island pedestrian bridge—which spanned the historic lock channel at Cascade Locks Marina and connected Thunder Island to the mainland—halting the vessel's drift (see Figure 4).[3] By 0831, the deckhand arrived at the pedestrian bridge, where he observed the vessel "banging around in the canal" at the entrance of the lock. The deckhand boarded the *Columbia Gorge* from the pedestrian bridge and started unlocking doors on the vessel, including in the engine room. About 0910, the vessel's captain arrived and boarded the vessel.

Figure 4. The stern of the *Columbia Gorge* under the Thunder Island pedestrian bridge as seen from the mainland. (Source: JettyLight LLC)

About 0920, after the captain and the deckhand examined the wheel and rudder gearboxes, checked for damage to the vessel's propulsion (sternwheel) and steering, and determined there was no hull flooding. The captain then started the vessel's engines. After waiting for the chief engineer (who was en route to the scene) for about 15 minutes, the captain decided to move the vessel without him.

The captain attempted to dock twice at the *Columbia Gorge*'s usual dock at the Cascade Locks Marina but was unable to due to the high winds and waves. The captain then turned the vessel around and proceeded downriver to its former docking facility, located above the Bonneville Lock and Dam at mile 145.6 on the Columbia River. The lock operator directed the captain to pass through the lock and tie up at the moorage

[3] After fishing sites used by local indigenous populations (Nez Perce Tribe, Confederated Tribes of the Umatilla Indian Reservation, Confederated Tribes and Bands of the Yakama Nation, and Confederated Tribes of Warm Springs) were inundated when the Bonneville Dam was built in 1933, the Federal government established designated "in lieu" fishing sites along the Columbia River in 1939. One of these in-lieu fishing sites was comprised of four wall-mounted fishing platforms (three of which were struck in this casualty) inside the historic Cascade Locks. "US Army Corps of Engineers Portland District: Columbia River Treaty Fishing Access Sites." US Army Corps of Engineers, accessed January 17, 2025.

below the dam. The chief engineer boarded the vessel at the Bonneville Dam before it passed through the lock, and, about 1030, the captain docked the *Columbia Gorge* at the designated moorage.

The *Columbia Gorge* sustained minor exterior damage, and the Thunder Island pedestrian bridge was displaced about 2 feet (see Figure 5 and Figure 6). Additionally, three of the four tribal fishing platforms mounted to the walls of the lock were damaged. One platform was destroyed, and two suffered lesser damage (see Figure 7).

The vessel's operator told investigators that he had examined the lines and chain after the casualty and found that all the mooring lines had parted and the chain had broken (see Figure 5). The vessel's operator was unable to locate documentation that identified the breaking strength of the lines and chain.

Figure 5. *Left to right*: Damage to the stern and the support columns for the upper deck of the *Columbia Gorge* (circled). The vessel in the lock with broken moorings visible (circled). (Background source: JettyLight LLC)

Figure 6. *Left to right*: Markings showing the displacement of the deck of the Thunder Island pedestrian bridge, and further damage to the deck and railing (circled). (Background source: Port of Cascade Locks Port Commission)

Figure 7. *Left to right*: The area where the destroyed fishing platform had been mounted, and damage to one of the platforms on the opposite side of the lock (circled). (Background source: Port of Cascade Locks Port Commission)

On January 16, three days after the casualty, the Port of Cascade Locks Port Commission established an internal Root Cause Analysis (RCA) Team to investigate the *Columbia Gorge* unmooring. The RCA Team identified two root causes related to the mooring arrangement: mooring line age and the lack of a "lifecycle management program," and likely insufficient slack in the galvanized chain.[4] The RCA Team determined that the mooring arrangement and size of the nylon lines used would have been "sufficient for the loads that occurred during the incident" if the lines had been new or in good condition. Their conclusion was based on the *Columbia Gorge*'s history of remaining docked during past weather events with similarly high winds. According to the RCA Team report, at the time of the *Columbia Gorge*'s unmooring and subsequent drifting, witnesses described blizzard conditions, including winds ranging from 35–80 mph, with 3–4 feet waves.

The RCA Team also found that the vessel operator had no "life cycle management program" for examining or replacing mooring lines before they would break when in use. The team's report stated that "standard 1.5 in [nylon] lines generally last about one year"; the ages of the *Columbia Gorge*'s mooring lines ranged from 5 months to 10 years, with the age of some lines either unknown or not definitively known. Additionally, the team concluded that there may not have been sufficient slack in the galvanized chain "to allow the nylon lines to flex and stretch smoothly enough to avoid breakage."

As a result of the casualty, the operating company instituted two new safety measures: mooring lines are to be replaced annually, and the vessel will be crewed and/or moved when forecasted wind gusts exceed 70 knots.

2 Analysis

During high winds and blizzard conditions, the *Columbia Gorge,* with no one aboard, broke free from its mooring at Cascade Locks on the Columbia River. The vessel drifted about 475 yards downriver into a historic lock and damaged tribal fishing platforms mounted on the lock walls before its stern became wedged beneath the Thunder Island pedestrian bridge, which spanned the lock. The crew responded quickly once notified of the breakaway and secured the vessel.

The operator took precautions prior to the onset of the predicted weather forecast, including turning the ship around from its usual port side docking to starboard so the bow would face into the weather. In addition, they increased the

[4] *Root Cause Analysis Team Report: January 13, 2024 Sternwheeler Unmooring*. (Port of Cascade Locks Port Commission Root Cause Analysis Team, March 5, 2024), 15.

number of mooring lines and ran a chain out. However, while it was moored, the winds picked up (more than twice what was forecasted), increasing the wind load (force) acting on the *Columbia Gorge*. This force, just off the starboard bow, would have strained the mooring lines and chain holding the ship to its dock. As a result, all eight mooring lines and the chain failed.

The vessel operator had no plan in place for regularly examining the vessel's mooring lines or replacing them before failure, and the ages of the *Columbia Gorge*'s mooring lines ranged from less than 1 year to 10 years, with the age of some lines either unknown or not definitively known. The Cascade Locks Port Commission RCA Team investigated the breakaway and found that the mooring arrangement and nylon lines used would have been adequate to keep the vessel moored during the adverse weather conditions the morning of the casualty if the lines had been new or in good condition. Because none of the lines were new and the vessel operator did not have a life cycle management program to regularly examine the condition of the lines, it is possible that some of the mooring lines used to secure the *Columbia Gorge* during the adverse weather event had become degraded, which led to the mooring lines breaking.

As a result of the casualty, the operating company required mooring lines to be replaced annually.

3 Conclusions

3.1 Probable Cause

The National Transportation Safety Board determines the probable cause of the contact of the small passenger vessel *Columbia Gorge* with the pedestrian bridge and tribal fishing platforms was the high winds acting on the vessel, which exceeded the mooring arrangement, leading to the vessel breaking away and drifting downriver.

3.2 Lessons Learned

Assessing Condition of Mooring Lines

Conducting regular visual assessments to verify the condition of mooring lines and identify issues or defects is a prudent practice that is useful as a part of a vessel's preventative maintenance plan. In addition to a line's age, multiple factors affect the service life of a mooring line, including mooring design and the usual line

arrangement, position of the line, mooring frequency, and environment. Lines should be examined regularly for damage or excessive wear—regardless of a line's age.

Vessel Particulars

Vessel	*Columbia Gorge*
Type	Passenger (Small passenger vessel)
Owner/Operator	JettyLight LLC (Commercial)
Flag	United States
Port of registry	Cascade Locks, Oregon
Year built	1983
Official number	661888 (US)
IMO number	N/A
Classification society	N/A
Length (overall)	145 ft (44.2 m)
Breadth (max.)	36.2 ft (11.0 m)
Draft (casualty)	6.0 ft (1.8 m)
Tonnage	92 GRT
Engine power; manufacturer	2 × 425 hp (317 kW); Cummins NTA-855-GS diesel engines

NTSB investigators worked closely with our counterparts from **Coast Guard Sector Columbia River** throughout this investigation.