March 4, 2026 MIR-26-06

Grounding of Dry Bulk Carrier *Algoma Verity*

On January 8, 2025, at 1813 local time, the dry bulk carrier *Algoma Verity* was transiting upbound on the Delaware River near Philadelphia, Pennsylvania, when it ran aground outside the channel (see figure 1 and figure 2).[1] The vessel repositioned and continued its upbound transit, outside the channel, until, at 1828, the vessel grounded again, coming to a stop. The *Algoma Verity* was refloated 3 days later. No pollution or injuries were reported. Damage to the vessel was estimated at $6.6 million.

Figure 1. *Algoma Verity* underway at unknown date. (Source: Algoma Central Corporation)

[1] (a) In this report, all times are eastern standard time, and all miles are nautical miles (1.15 statute miles). (b) Visit ntsb.gov to find additional information in the public docket for this NTSB investigation (case no. DCA25FM015). Use the CAROL Query to search investigations.

Casualty Summary

NTSB casualty category	Grounding/Stranding
Location	Delaware River near Philadelphia, Pennsylvania 39°57.42' N, 075°08.01' W
Date	January 8, 2025
Time	1813 eastern standard time (coordinated universal time –5 hrs)
Persons on board	31
Injuries	None
Property damage	$6.6 million est.
Environmental damage	None reported
Weather	Visibility 10 nm, clear, winds northwest 13 kts, gusts 22 kts, air temperature 27°F, water temperature 37°F, sunset 1653, nautical evening twilight 1756
Waterway information	River, channel width 295 ft, channel depth 40 ft, predicted current 1.6 kts flood

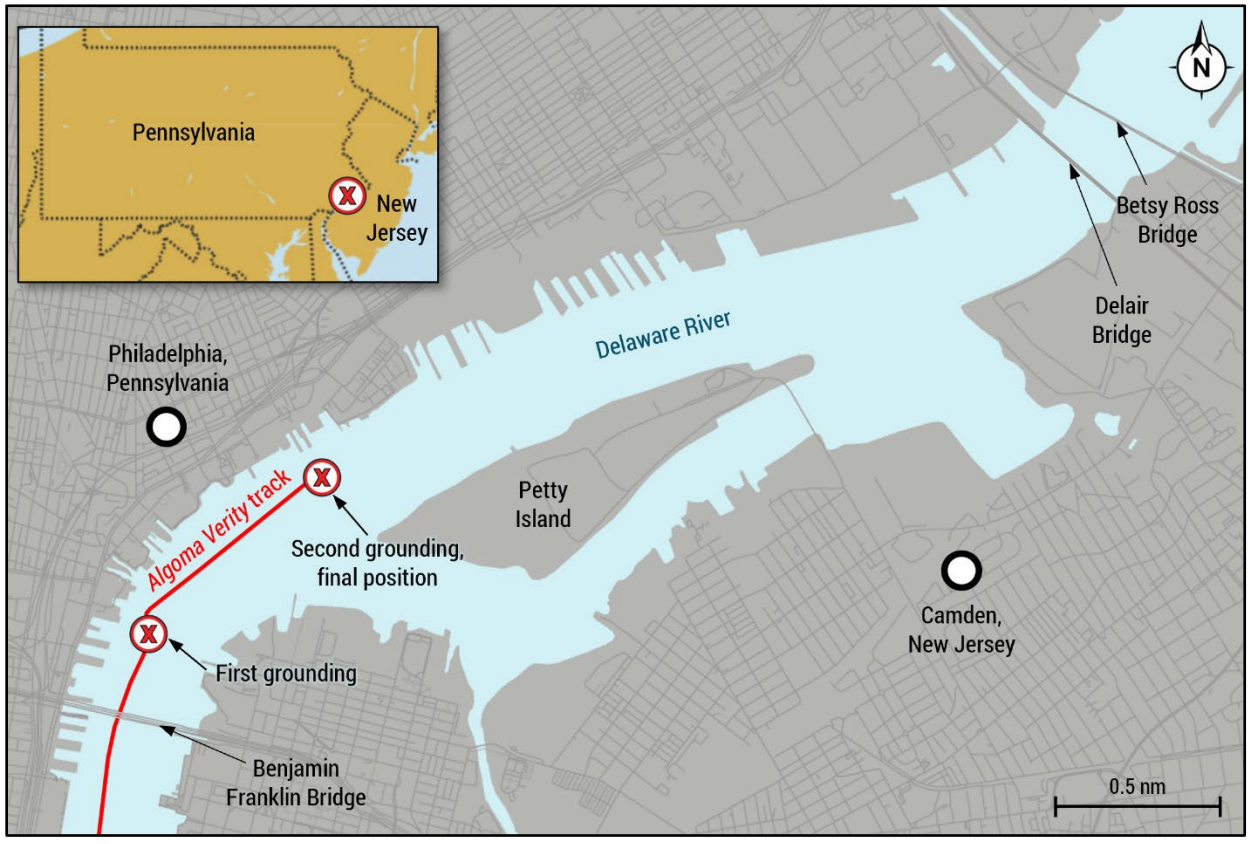

Figure 2. Locations where the *Algoma Verity* grounded, as indicated by circled *X*s. (Background source: Google Maps)

1 Factual Information

1.1 Background

The 623-foot-long, steel-hulled, dry bulk carrier *Algoma Verity* was owned and operated by Algoma Shipping Ltd., a subsidiary of the Algoma Central Corporation, which was based in St. Catharines, Ontario, Canada. The vessel had a single rudder and a single right-hand-turning propeller directly driven by a slow-speed diesel main engine rated at 8,580 hp. The *Algoma Verity* was capable of self-unloading via a system of cranes, hoppers, conveyor belts, and an unloading boom. The five hoppers were located along the vessel's port side (see figure 1 and figure 3).

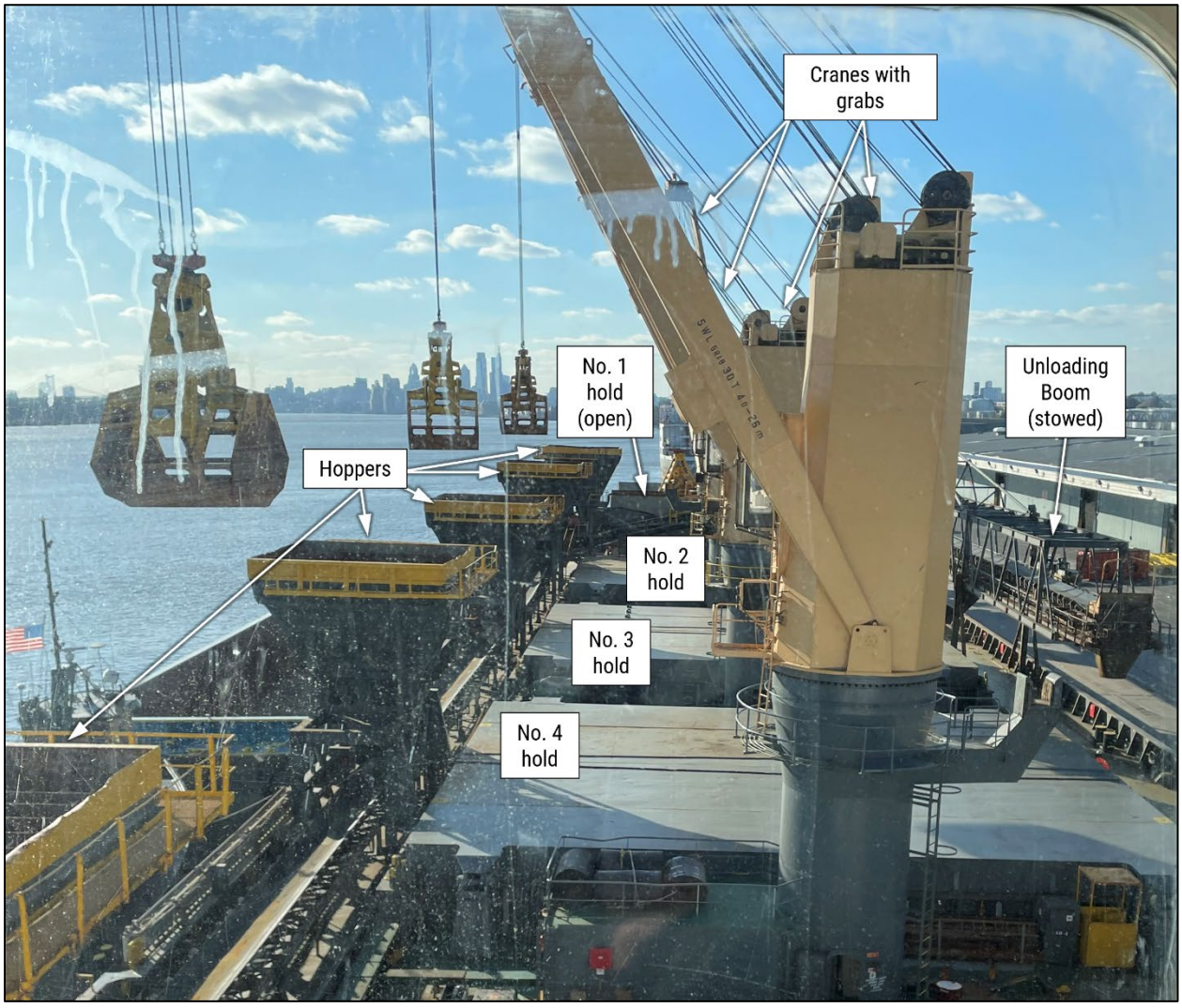

Figure 3. *Algoma Verity* cargo handling equipment, as viewed from the wheelhouse on the port side, while the vessel was pierside on January 17, 2025, following the grounding.

1.2 Event Sequence

On the afternoon of January 8, 2025, the *Algoma Verity* was anchored at the Marcus Hook anchorage, located about 12 miles downriver from Philadelphia, Pennsylvania, in the Delaware River. The vessel had anchored while awaiting tidal conditions for a slack/high-tide arrival at a terminal located about 22 miles upriver of Philadelphia. The *Algoma Verity* was laden with a cargo of salt that had originated in Great Inagua, The Bahamas. The vessel's forward and aft drafts were 38.5 feet.

At 1606, the *Algoma Verity* weighed anchor and got underway en route to the terminal with a pilot from the Pilots of the Bay and River Delaware (DelPilots) at the conn.[2] During the master/pilot exchange conducted before getting underway, the master had reported no deficiencies with the engine or rudder.[3] The pilot (hereinafter referred to as pilot 1) told investigators that the vessel was "handling like a deep [draft] ship." He stated that, whenever he turned the ship, he had to use significant rudder orders—up to 20° or more at slower speeds—to get the ship turning, and then use up to 20° opposite rudder to check, or stop, the swing.

About 1742, another DelPilots pilot (pilot 2) boarded the vessel in the vicinity of Eagle Point, New Jersey, to relieve pilot 1. During the pilot turnover, pilot 1 told pilot 2, "[The *Algoma Verity* is] steering straight … I think you'll have no problem getting up there [to the terminal]." However, pilot 1 added that the vessel needed a lot of rudder to steer it. He said, "Start [to turn] early; check [the swing] early." Pilot 2 acknowledged the advice. Pilot 1 departed the wheelhouse at 1745, proceeded to the pilot ladder, and was taken ashore by boat. Pilot 2 asked the master, "All equipment works well, right?" The master replied, "Yes." Pilot 2 told investigators that during the transit there were "not a whole lot of communications" between him and the master, but this was normal.

[2] A *pilot* is retained by the ship to provide local knowledge of the waterway, familiarity with tides and currents in the area, understanding of local procedures, and a thorough knowledge of the topography of the waterway. Under state and federal regulations, pilots are generally required for vessels engaged in international trade that are transiting the navigable waters of the United States. Pilots usually operate by issuing maneuvering instructions (such as heading, rudder angle, and speed orders) to the crew under the supervision of the master or the officer in charge of the navigation watch, or both.

[3] A *master/pilot exchange* is required at the start of pilot transits and includes discussion of the vessel's navigational equipment, any limitations of maneuverability, available engine speeds, berthing maneuvers, intended course and speed through the waterway, anticipated hazards along the route, weather conditions, composition of the bridge team and deck crew both forward and aft including bow lookout, and so on.

As pilot 2 took the vessel through the first few turns after he had taken the conn, he found the *Algoma Verity* difficult to handle. He said that the vessel "wanted to dive to port," and he had to use hard (35°) starboard rudder several times to check the swing.

Beginning about 1746, while the *Algoma Verity* was approaching the Walt Whitman Bridge, the vessel maneuvered just outside the starboard side of the channel. The master stated that he noted the ship's position, but because the water outside the channel was sufficiently deep, he did not say anything to the pilot.[4] The *Algoma Verity* reentered the channel after passing through the Walt Whitman Bridge.

Near the bridge, the tugboat *Annabelle Dorothy Moran* had met and begun escorting the *Algoma Verity*, as required by a marine advisory for vessels transiting to the upper reaches of the Delaware River. The *Algoma Verity* continued to transit upriver, and, at 1758, the vessel again exited the channel, remaining just outside to starboard as it proceeded toward the Benjamin Franklin Bridge. One minute later, pilot 2 asked the captain for "the vessel particulars," and the master referred him to the pilot card that had been prepared for pilot 1.[5]

Pilot 2 told investigators that he chose to maneuver the vessel outside the channel to starboard because, north of the Benjamin Franklin Bridge, the channel made a bend to the starboard, and he expected the flood current would push the vessel to port. The port side of the river, within the City of Philadelphia, had numerous docks and wharves that protruded out into the river, some less than 150 feet from the ship channel. The pilot stated that, as the *Algoma Verity* approached the bridge, the vessel was "in the position I wanted to be in."

At 1810, pilot 2 ordered the engine to half ahead, followed by rudder orders of starboard 10°, starboard 20°, then starboard 10° again (see figure 4; see also Appendix A for a complete timeline of the pilot's orders). Shortly thereafter, the operator of the Delair Bridge, a vertical-lift railroad bridge about 4 miles ahead of the *Algoma Verity*, radioed the vessel to report that the bridge would open after two trains crossed over it. Pilot 2 acknowledged the information. According to the pilot,

[4] Echo sounder readings were not recorded by the vessel's simplified voyage data recorder (S-VDR). Therefore, investigators could not verify depths beneath the keel during the accident voyage.

[5] A *pilot card* provides an overview of a vessel's dimensions and drafts; propulsion information and maneuvering characteristics; equipment status; and other data to help familiarize the pilot with the vessel. The pilot card is normally provided to the pilot upon embarkation and forms the basis for the master/pilot exchange.

he was considering whether he should slow the *Algoma Verity* because it was winter and the bridge could have problems opening.

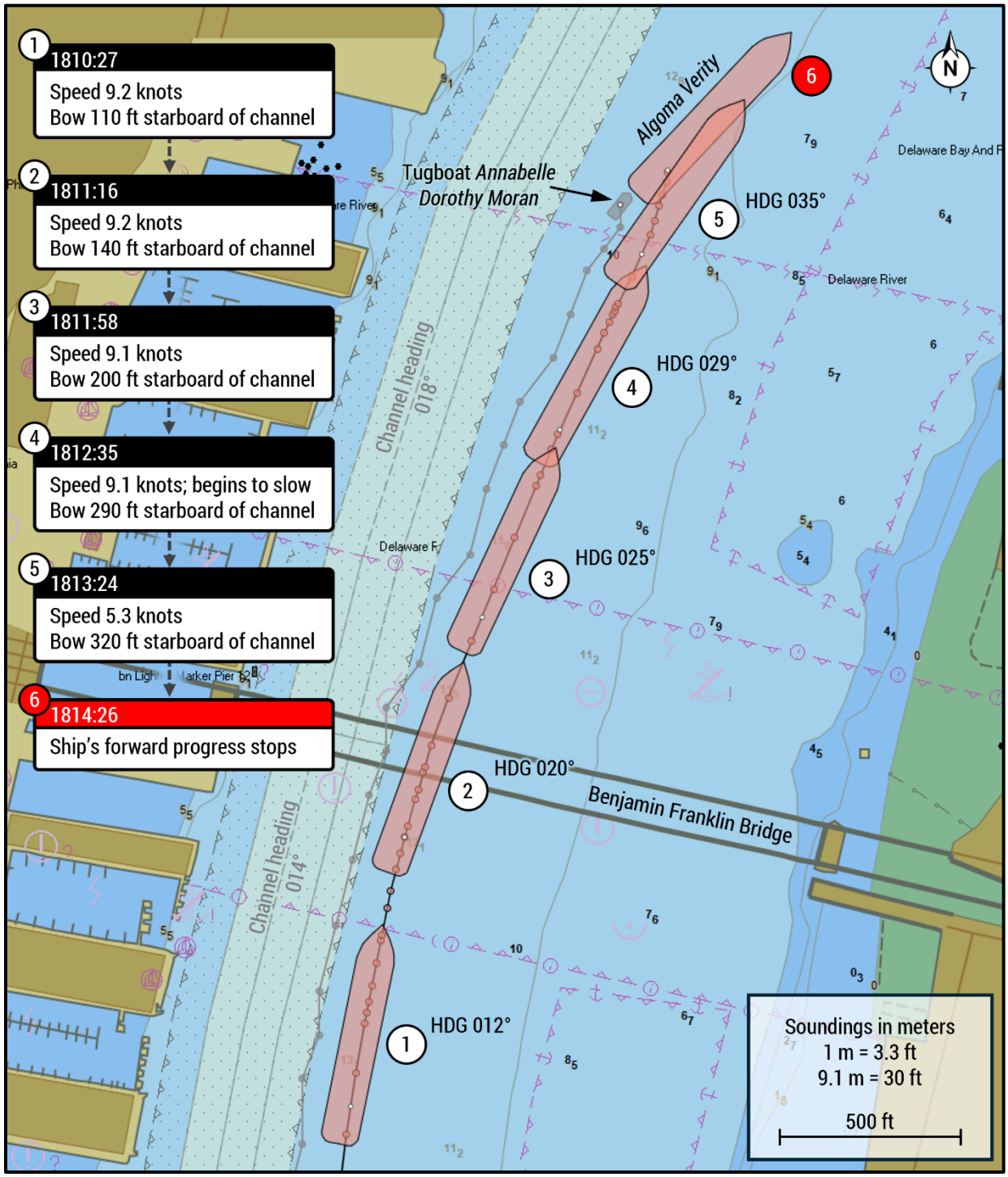

Figure 4. Vessel positions leading up to the first grounding of the *Algoma Verity*. (Background source: National Oceanic and Atmospheric Administration Electronic Navigation Chart US5PHLCE as viewed on MadeSmart automatic identification system)

At 1810:50, pilot 2 eased the rudder to starboard 10°. As the *Algoma Verity* passed under the Benjamin Franklin Bridge at a speed of about 9 knots, its bow was 140 feet to starboard of the channel (as measured from ship's centerline) and moving to starboard. At 1811:16, the pilot ordered the rudder to midships.

Between 1811:22 and 1812:21, pilot 2 issued several rudder commands, first to port 20°, then easing to port 10°, then to midships before ordering successively larger angles of starboard rudder, up to 20°. The helmsman responded as ordered. Meanwhile, the ship's heading drifted slowly to starboard, and the ship moved farther outside the channel.

At 1812:35, the *Algoma Verity*'s bow was 290 feet outside the channel when its speed began to slow. Pilot 2 said that, at the same time the ship slowed, he heard a "rumble," and the master and third officer both told investigators that they felt a "jerk." The pilot ordered the rudder to midships, then asked the master whether there was a problem with the engine. The master answered that the engine was still online.

Between 1813:16 and 1813:51, pilot 2 ordered a series of starboard rudder commands, up to hard starboard, before bringing the rudder back to midship. As the vessel continued to slow, pilot 2 stated, "We may have some problems here." The master said, "We are out of the channel," to which pilot 2 responded, "Yeah, but where it shouldn't be that bad." At 1814:26, the *Algoma Verity*'s forward progress stopped, and its stern swung abruptly to port. A few seconds later, the master said, " … aground."

About a minute later, the pilot ordered full ahead and then half ahead. Concurrently, he ordered the tugboat to push on the *Algoma Verity*'s starboard bow. The captain repeated that the vessel was out of the channel and asked the pilot to stop the engine. The pilot ordered the engine stopped.

As the tugboat pushed on the *Algoma Verity*, the bulker's bow began to move to port. The pilot ordered the rudder hard (35°) port and the engine to dead slow ahead, followed by slow ahead. The *Algoma Verity* moved laterally to port but did not re-enter the channel. About 1819:00, the tugboat stopped pushing. The pilot then briefly ordered starboard 10° rudder, before ordering the rudder to midships as the *Algoma Verity* began moving forward again at 1819:25 (see figure 5).

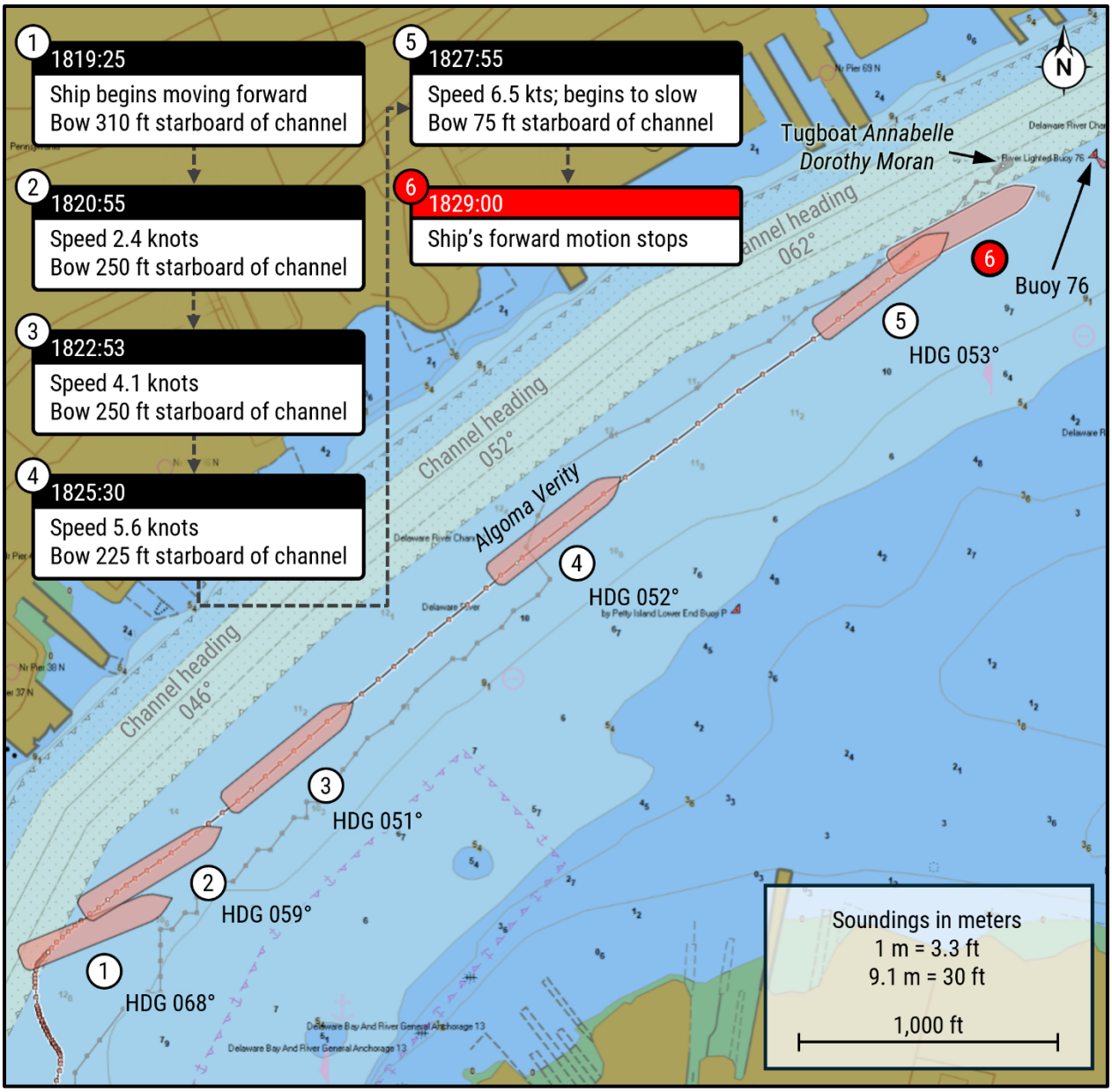

Figure 5. Vessel positions leading up to the second grounding of the *Algoma Verity*. (Background source: National Oceanic and Atmospheric Administration Electronic Navigation Chart US5PHLCE as viewed on MadeSmart automatic identification system)

Over the next 3 minutes, the pilot issued rudder orders between 10° and hard (35°) to port, bringing the rudder back to midships with short periods of hard starboard rudder in between. The ship's bow swung slowly to port as the pilot ordered the engine speed increased to half ahead.

At 1822:53, the pilot ordered the helmsman to steady the ship on its heading, which was 052°. The *Algoma Verity* was now about 250 feet outside of, and transiting roughly parallel to, the channel. The vessel's speed was about 4 knots and

accelerating. Meanwhile, the Delair Bridge operator reported that the bridge was open and contacted the *Algoma Verity* to ensure the ship had received the report. The pilot responded, "We copy … coming your way."

For the next few minutes, the pilot issued rudder orders alternating between steadying courses and hard (35°) starboard rudder, while the ship's heading varied between 051° and 053°. Meanwhile, the master began to repeatedly voice concern about the ship's position outside the channel. Each time, the pilot responded that the ship was going to return to the channel.

The ship's speed continued to accelerate, rising to 6.4 knots by 1826:56. Three seconds later, the master pointed out to the pilot that red channel buoy 76, which marked the starboard side of the channel, was "fine on the starboard bow."[6] The pilot responded, "We're going to be fine."

The master continued to express concern, telling the pilot that the ship needed to come to port, that the ship was in shallow water, and the ship was vibrating. The pilot said, "I am going to [come to port], but I'm running out of … room here." At that moment, the ship, which had reached a speed of 6.5 knots, began to slow.

According to the master, he was about to take the conn from the pilot when, at 1828:12, the crew heard the sound of what was later determined to be air escaping from bilge tank vents. The pilot issued a series of rudder and engine orders, but the vessel's heading did not change, and its speed continued to decrease. At 1829:00, the *Algoma Verity* came to a stop, hard aground.

About the same time, the pilot noticed that the ship was listing to starboard. The captain moved the engine order telegraph to stop and directed the chief officer and third officer to sound the vessel's tanks.

The chief officer and third officer found that four ballast tanks and a fuel tank on the starboard side that had been empty during the transit were flooded with water. The ship listed further to starboard and remained hard aground until it was refloated 3 days later.

[6] An object that is *fine on the [port/starboard] bow* is nearly dead ahead, at a small angle off the bow in the direction given.

1.3 Additional Information

1.3.1 Damage

Bottom shell plating along the *Algoma Verity*'s starboard-side hull was inset and ruptured during the groundings, allowing water intrusion into four out of the five previously empty starboard ballast tanks and a previously empty fuel tank (see figure 6). Structural members along the affected hull area were also damaged. The cost of repairs was estimated at $6.6 million.

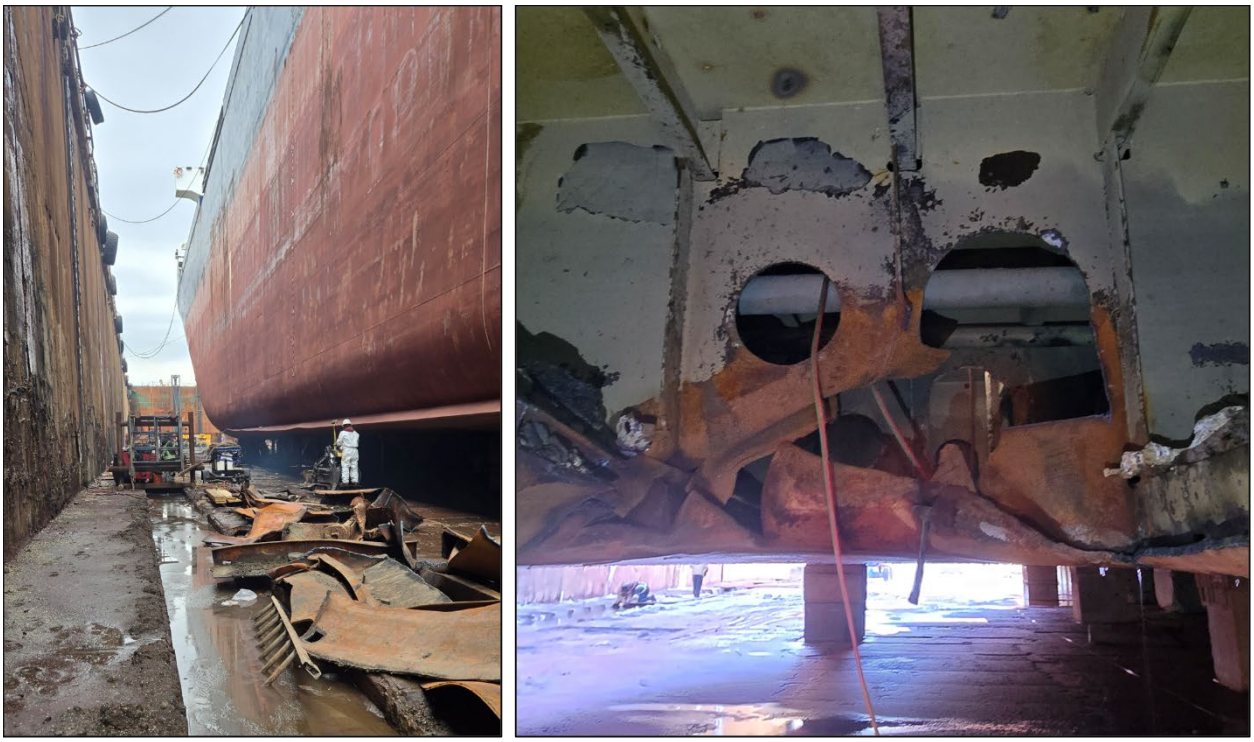

Figure 6. *Left to right*: *Algoma Verity* in drydock for repairs after the grounding, with hull plating, structural members, and other damaged components removed during repairs shown in the foreground; ruptured bottom plating and damaged structural members within the hull. (Source: Algoma Central Corporation)

1.3.2 Pilot Information

Pilot 2 had over 25 years' experience as a pilot in the Delaware River. He was qualified as a "Special Duty" pilot, which was required for piloting vessels upriver of the Delair Bridge. Pilot 2 had been a Special Duty pilot since February 2007.

According to pilot 2, and as verified by the crew of the *Algoma Verity*, he was not using his cell phone as the vessel passed under the Benjamin Franklin Bridge and maneuvered outside the channel. Postcasualty tests of the pilot for alcohol and other

drugs were negative. Pilot 2 reported that he had at least 9 hours of sleep each night in the 4 days preceding the groundings and maintained a consistent awake/sleep cycle.

1.3.3 Environmental Conditions

At 1800 on January 8, winds at the Northeast Philadelphia Airport, about 8 miles northeast of the final grounding location, were from the northwest at 13 knots, with gusts to 22 knots. Visibility was clear, and it was dark, as nautical evening twilight had just passed at 1756.

At the time of the grounding, the tide was rising in the Delaware River near Philadelphia. The predicted tidal water level at the National Oceanic and Atmospheric Administration's (NOAA) Philadelphia station, 1.5 miles downriver from the first grounding location, was 3.6 feet at 1812. The flood current in the middle of the channel where the second grounding occurred was predicted to reach a 1.6-knot maximum at 1820. Pilot 2 stated that, prior to boarding the *Algoma Verity*, he had reviewed the tide and current information on the NOAA website.

The actual recorded tidal level at 1812 was 1.7 feet. The actual current was not measured at this location of the river.[7]

1.3.4 Waterway

The Delaware River channel near Philadelphia is dredged to 40 feet. Depths of 40 feet or more may be found outside the channel on the eastern side of the river, but the water shallows quickly along a jagged bank at varying distances from the channel edge. The US Army Corps of Engineers conducts hydrographic surveys of the river on a roughly annual basis, and data from the surveys are available to the public.[8] Results from the most recent surveys conducted about 10–11 months before the *Algoma Verity* accident showed depths as shallow as 35 feet along the vessel's track at the first and second grounding locations (see figure 7). According to a Corps

[7] NOAA uses long-term data to develop predictions for tidal currents at numerous stations located throughout US waterways. Some, but not all, stations also collect actual "real-time" tidal current data (NOAA, *User Guide: Understanding NOAA Current Predictions*, Version 5). The station nearest the *Algoma Verity*'s second grounding location was not collecting real-time data at the time of the casualty.

[8] Hydrographic survey data for the Corps of Engineers' Philadelphia District are available at https://www.nap.usace.army.mil/Missions/Civil-Works/Surveys/.

of Engineers representative, the area is not prone to higher rates of shoaling or silting.

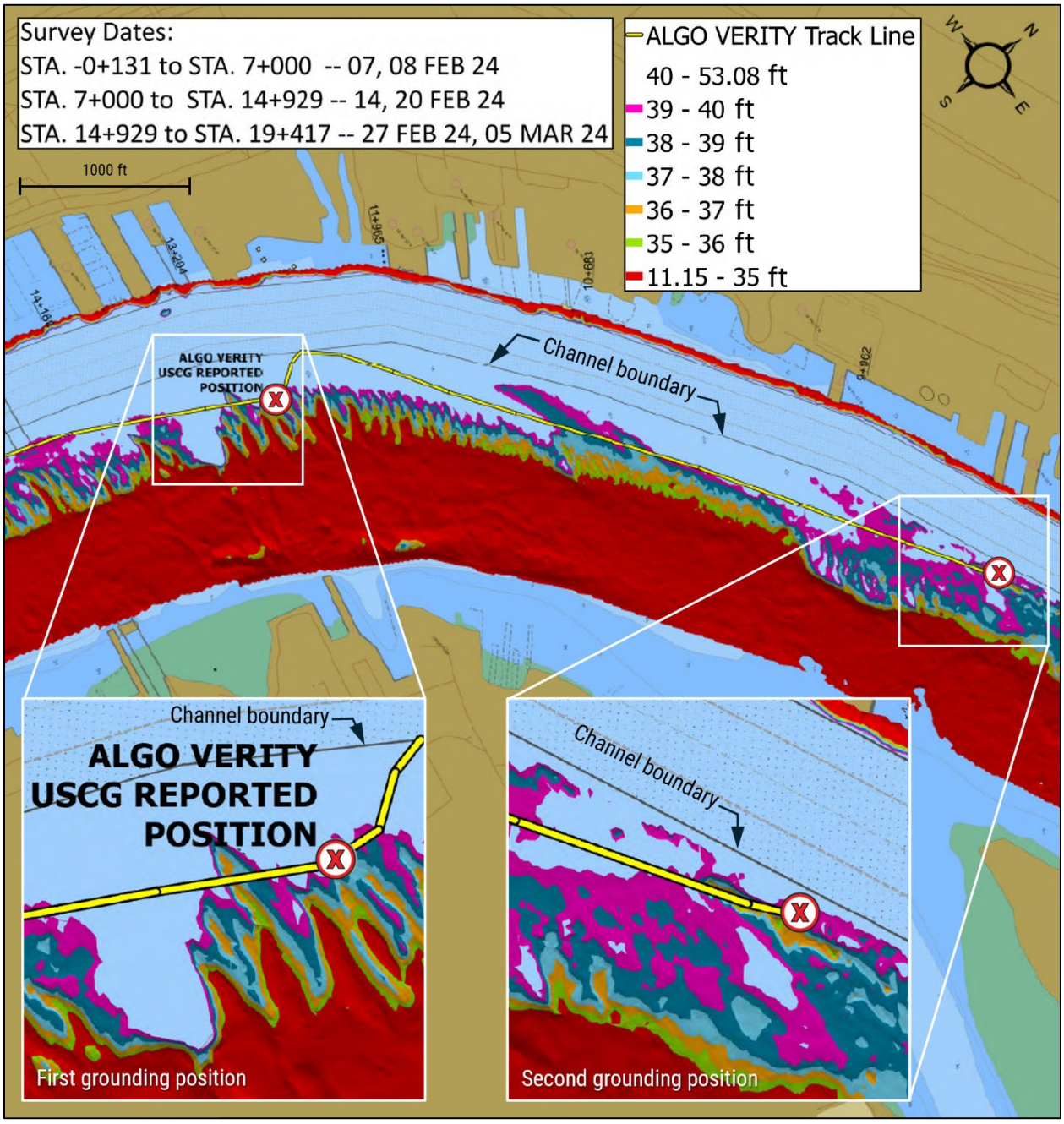

Figure 7. Corps of Engineers survey data for the first and second grounding locations. (Background source: Corps of Engineers)

2 Analysis

While transiting upbound on the Delaware River under pilotage, the dry bulk carrier *Algoma Verity* departed from the channel and ran aground. After repositioning, the vessel continued on its transit, outside the channel, until it grounded a second time, bringing the vessel to a stop.

2.1 Vessel Groundings

The *Algoma Verity*'s reported draft for the Delaware River transit was 38.5 feet. Before the first grounding, the vessel was making 9 knots and was likely squatting. Squat effect is a hydrodynamic phenomenon experienced in shallow water, generally when the waterway depth is less than twice the vessel's draft. As a ship moves through shallow water, water flow accelerates as it is forced under the bow, causing a drop in pressure between the hull and seafloor. This results in vertical sinkage of the vessel and a change in trim, either toward the bow or stern. The overall effect is to increase a vessel's draft. Therefore, the *Algoma Verity*'s actual draft as it approached the first grounding location was likely deeper than its reported draft.

As the *Algoma Verity* passed through the Benjamin Franklin Bridge before the accident, it was outside the channel on the starboard side. The vessel continued outside the channel and passed over shoal water as shallow as 35 feet at the locations of the first and second groundings, according to the most recent hydrographic surveys (taken about 10–11 months before the groundings). Information from the hydrographic surveys was available to the public and should have been accessible by pilot 2 as he planned the voyage. Even with added depth from tide water predicted at 3.6 feet, the depth would have only been 0.1 foot greater than the vessel's reported draft—and that would not account for additional draft from squat. The actual tide level was 1.7 feet.

Pilot 2 stated that the position of the ship to starboard of the channel as it transited through the Benjamin Franklin Bridge was where he wanted it to be because he expected that the tidal flood current would push the ship over toward the port side of the channel. Given the number of piers protruding from the port side of the river in this area, some within 150 feet of the channel, the pilot had reason for concern should the vessel be pushed to port.

The predicted current in the river was 1.6 knots as the *Algoma Verity* transited near Philadelphia. The actual current was not measured in this section of the river, but the actual tide level (1.7 feet) was less than half the predicted tide level (3.6 feet). Thus, the current was likely weaker than predicted. Additionally, in this section of the river, winds were directly on the *Algoma Verity*'s port side. Due to the vessel's cargo

unloading equipment, notably the hoppers and cranes, the wind would have had more effect than it would have had on a standard bulker without this equipment. Combined with northwest winds, the impact of the weaker current on the vessel's movement was likely less than the pilot expected.

As shown by the AIS data, the ship continued to transit further outside channel to starboard as it navigated the bend north of the bridge. Although pilot 2 issued port rudder orders to regain the channel, he followed these with starboard rudder orders, likely to check the port swing and counteract the vessel's tendency to "dive to port" as he expected it to do from his experience navigating the first few turns of his transit. Consequently, during the 18 minutes that the *Algoma Verity* transited from the Benjamin Franklin Bridge to the first grounding and on to the second, final grounding location, the ship's heading never appreciably moved to port, with the exception of when the tugboat was pushing on the bow.

Expectation bias occurs when a person responds in a way that is consistent with what they expect rather than what is actually occurring.[9] Pilot 2 expected the *Algoma Verity* would be pushed to port by the current, and he also expected the vessel to dive to port. Likely as a result of his expectation of these factors, pilot 2 overcompensated and maneuvered the vessel further outside the channel to starboard. After the first grounding, he continued to maneuver the vessel well to starboard of the channel even after the master warned the pilot that the vessel was in danger, until the vessel grounded again.

2.2 Bridge Resource Management

Bridge resource management (BRM) is the effective use by a vessel's bridge team (officers, crew, and pilots) of all available resources—information, equipment, and personnel—to safely operate the vessel. The concept of BRM was developed to help mariners recognize and correct operational and human errors before they lead to an accident. One of the principles of BRM is that everyone on the bridge should understand his or her responsibilities and be able to freely and professionally communicate observations about the vessel's progress to others on the bridge.

[9] Federal Aviation Administration, *Air Traffic Procedures Bulletin Issue #January 2025-1* (ATPB 2025-1), page 4.

The need for effective BRM is most acute in pilotage waters because of smaller safety margins due to factors including navigational hazards, reduced depths, tides and currents, and cultural differences between the crew and pilot.[10]

As the *Algoma Verity* was approaching the Walt Whitman Bridge, the vessel maneuvered just outside the starboard side of the channel. Although the depth of water was sufficiently deep, transiting outside the channel would not have been expected by the bridge team and should have prompted a discussion between the master and pilot. However, the master did not say anything to the pilot. When the *Algoma Verity* again maneuvered outside the channel as it approached the Benjamin Franklin Bridge, the master again did not speak up. The master did not raise concern over the vessel's position until after the first grounding, which was well outside the channel.

Given pilot 2's statement that the vessel's position to starboard of the channel as it passed through the Benjamin Franklin Bridge was where he wanted it to be, it is unknown whether he would have maneuvered the ship differently had the master communicated concerns about the ship's position earlier in the transit. However, without early communication from the master to the pilot about his concerns regarding the vessel's position outside of the channel, any possibility that his input could have influenced the pilot and changed the outcome of the accident was removed.

[10] Geoffrey W. Gill, *Maritime Error Management: Discussing and Remediating Factors Contributory to Maritime Casualties* (Schiffer Publishing, 2011).

3 Conclusions

3.1 Probable Cause

The National Transportation Safety Board determines that the probable cause of the grounding and subsequent re-grounding of the dry bulk carrier *Algoma Verity* was the pilot maneuvering the vessel outside the channel into shallow water, likely due to expectation bias that the current and the vessel's maneuvering characteristics would have more impact on the bulker's movement.

3.2 Lessons Learned

Managing Expectation Bias

Expectation bias occurs when a person responds in a way that is consistent with what they expect rather than what is actually occurring. Methods to counteract expectation bias include training that reinforces active questioning of factors in the operational environment, recognizing conflicting cues, and clear, unambiguous communication.[11] These practices are also components of effective bridge resource management.

Bridge Resource Management (Communications)

Good bridge resource management is an essential defense against human error. A critical element of bridge resource management is effective communication between the bridge watchstanders, the master, and the pilot. When a pilot and bridge team clearly and openly share necessary information, both before and throughout a maneuver or planned task, they establish a shared mental model that increases collective situational awareness. Unexpected actions or deviations from the plan should be discussed between the crew and pilot to ensure a mutual understanding of the situation and prevent unrecoverable errors.

[11] Federal Aviation Administration, 4.

Appendix A: Timeline of Events

Table A-1 shows the sequence of events, including pilot orders, beginning at 1810:27, continuing to the first grounding at 1814:26, and ending at 1829:00 (the time of the second grounding).

Table A-1. Sequence of events for two *Algoma Verity* groundings.

Time	Pilot Order	Notes
1810:27	Stbd 10	Engine half ahead; ship's speed 9 kts.
1810:39	Stbd 20	
1810:50	Stbd 10	
1810:58	--	Delair Bridge operator: "Two trains going over in 5 minutes, then I'll get it open."
1811:03	--	Pilot directs Delair Bridge operator to call back in 5 minutes when bridge is opening.
1811:16	Midships	Ship passes through bridge. Bow 140 ft stbd of channel.
1811:22	Port 20	
1811:29	Port 10	
1811:36	Midships	
1811:47	Stbd 5	
1811:52	Stbd 10	
1811:58	Stbd 20	Bow 200 ft stbd of channel.
1812:21	Stbd 10	
1812:35	--	Ship's speed begins to slow. Bow 290 ft stbd of channel. Pilot 2 hears "rumble."
1812:46	Midships	
1812:57	--	Master: "The speed is dropping."
1813:02	--	Pilot: "Is that a problem with the engine? I felt it."
1813:03	--	Master: "No. The engine's going half ahead."
1813:16	Stbd 20	
1813:24	Hard stbd	Bow 320 ft stbd of channel.
1813:38	Stbd 10	
1813:51	Midship	
1813:53	--	Pilot: "We may have some problems here."
1813:56	--	Master: "We are out of the channel."
1813:59	--	Pilot: "Yeah, but where it shouldn't be that bad."
1814:07	--	Pilot: "She's still moving."
1814:20	--	Master: "The speed is dropping off."
1814:26	--	Ship's forward progress halted.
1814:31	Port 5	
1814:40	Port 10	
1814:42	--	Master: " … aground."
1814:51	Hard port	
1815:17	--	Pilot: "Captain, let's stand by the port anchor."
1815:23	--	Pilot: "*Annabelle* [*Dorothy Moran*], I need you to come up on the starboard bow."

Time	Pilot Order	Notes
1815:30	Full ahead	
1816:03	--	Pilot: "[*Annabelle Dorothy Moran*], get in there and ring her up."
1816:03	--	*Annabelle Dorothy Moran* captain: "Full ahead."
1816:30	Half ahead	
1816:45	--	Master: " … out of the channel."
1817:17	--	Master: "Can we stop engine?"
1817:21	Stop engine	
1818:02	--	Master: "We're … way out of the channel … we are out of the channel."
1818:17	--	Pilot: "I think she's just gonna come around."
1818:27	Hard port	
1818:30	Dead slow ahead	
1818:47	Slow ahead	
1818:57	--	Pilot: "Okay, stop *Annabelle* [*Dorothy Moran*]."
1819:00	--	*Annabelle Dorothy Moran* captain: "Stopped."
1819:14	Stbd 10	
1819:25	Midships	Engine slow ahead. Bow 310 ft stbd of channel. Vessel begins moving forward.
1819:39	Port 20	
1819:50	Hard port	
1820:08	Half ahead	
1820:34	Midships	
1820:37	Hard stbd	
1820:42	--	Tug positioned off stbd side.
1820:46	Midships	Speed 2.3 kts.
1820:55	Hard port	Bow 250 ft stbd of channel.
1821:18	--	Delair bridge: "Up in less than 2 minutes."
1821:30	Midships	
1822:17	Port 10	
1822:34	Midships	
1822:37	Hard stbd	
1822:51	Midships	Speed 4 kts.
1822:52	--	Delair bridge: "Delair Railroad Bridge is now open."
1822:53	Steady	Helm steers 052. Bow 250 ft stbd of channel.
1822:58	--	Delair Bridge: "Did you copy that Algoma?"
1823:09	--	Pilot to Delair Bridge: "We copy … coming your way."
1823:37	[Steer] 051	
1824:18	Hard stbd	
1824:26	Midships	Speed 5.1 kts.
1824:30	[Steer] 051	
1824:56	Hard stbd	
1825:00	--	Master: "We're still outside the channel."
1825:02	--	Pilot "We're coming back in."
1825:04	Stbd 10	
1825:06	--	Pilot to tug: "Run astern [of the ship] and head up to that port bow."
1825:19	Midships	Bow 240 ft stbd of channel.

Time	Pilot Order	Notes
1825:20	Steady	Helm steers 052.
1825:22	[Steer] 052	
1825:53	Hard stbd	
1826:03	Midships	Speed 6.0 kts.
1826:06	Steady	Helm steers 052.
1826:21	--	Master: "We're on the right of the channel."
1826:22	--	Pilot: "We're getting back in … I had to get over here because of the air draft … there's some mud there so we'll get back in the channel."
1826:40	Hard stbd	
1826:56	Midships	Speed 6.4 kts.
1826:59	--	Master: "The buoy is fine on the starboard bow."
1827:01	Steady	Helm steers 054
1827:03	--	Master: "The buoy."
1827:04	--	Pilot: "We're going to be fine."
1827:17	[Steer] 053	
1827:39	--	Master repeatedly tells pilot the ship needs to come to port, noting shallow water and ship vibration. Pilot acknowledges and says, "I'm running out of … room here."
1827:55	--	Ship begins to slow from 6.5 kts. Bow 75 ft stbd of channel.
1828:12		Sound of rushing air.
--	Various	Various rudder and engine orders.
1829:00		Ship's forward motion stops.

Vessel Particulars

Vessel	*Algoma Verity*
NTSB Vessel Group	Cargo, Dry Bulk (Dry bulk carrier)
Owner/Operator	Algoma Shipping Ltd. (Commercial)
Flag	The Bahamas
Port of registry	Nassau
Year built	2000
Official number	N/A
IMO number	9183776
Classification society	DNV
Length (overall)	623.0 ft (189.9 m)
Breadth (max.)	105.6 ft (32.2 m)
Draft (casualty)	38.5 ft (11.7 m)
Tonnage	28,747 GT ITC
Engine power; manufacturer	11,506 hp (8,580 kW); MAN B&W 6S50MC diesel engine

NTSB investigators worked closely with our counterparts from **US Coast Guard Sector Delaware Bay** throughout this investigation.