UNITED STATES COAST GUARD

Report of Investigation

into the

TOWING VESSEL MILES MADISON (O.N. 1244647), CREWMEMBER FELL OVERBOARD AND LOSS OF LIFE ON THE UPPER MISSISSIPPI RIVER IN LOCK AND DAM 27 ON SEPTEMBER 20, 2023

MISLE Activity Number: 7796025

U.S. Department of Homeland Security
United States Coast Guard

Commandant
United States Coast Guard

2703 Martin Luther King Jr. Ave. SE
Washington, DC 20593-7501
Staff Symbol: CG-INV
Phone: (202) 372-1032
E-mail: CG-INV1@uscg.mil

16732/IIA #7796025
09 April 2025

FALL OVERBOARD AND SUBSEQUENT LOSS OF LIFE INVOLVING THE INSPECTED TOWING VESSEL MILES MADISON (O.N. 1244647) IN LOCK AND DAM 27 ON THE UPPER MISSISSIPPI RIVER NEAR GRANITE CITY, ILLINOIS ON SEPTEMBER 20, 2023

ACTION BY THE COMMANDANT

The record and the report of investigation completed for this marine casualty have been reviewed by the Office of Investigations & Casualty Analysis. The record and the report, including the findings of fact, analyses, and conclusions are approved. This marine casualty investigation is closed.

[redacted]

E. B. SAMMS
Captain, U.S. Coast Guard
Chief, Office of Investigations & Casualty Analysis (CG-INV)

U.S. Department of Homeland Security

United States Coast Guard

Commander
Eighth Coast Guard District

Hale Boggs Federal Bldg.
500 Poydras Street
New Orleans, LA 70130
Staff Symbol: dp
Phone: (504) 671-2087

16732
MAR 5 2025

TOWING VESSEL MILES MADISON (O.N. 1244647), CREWMEMBER FELL OVERBOARD AND LOSS OF LIFE ON THE UPPER MISSISSIPPI RIVER IN LOCK AND DAM 27 ON SEPTEMBER 20, 2023

ENDORSEMENT BY THE COMMANDER, EIGHTH COAST GUARD DISTRICT

The record and the report of the investigation convened for the subject casualty have been reviewed. The record and the report, including the findings of fact, analysis, conclusions, and recommendations are approved. It is recommended that this marine casualty investigation be closed.

COMMENTS ON THE REPORT

1. The loss of the mariner was a tragic and preventable accident. I offer my sincere condolences to the family and friends of the mariner who lost his life.

2. The investigation and report contain valuable information which can be used to address the factors that contributed to this marine casualty and prevent similar incidents from occurring in the future.

[redacted]

A. H. MOORE, JR.
Captain, U.S. Coast Guard
Chief of Prevention
Eighth Coast Guard District
By Direction

U.S. Department of Homeland Security
United States Coast Guard

Officer in Charge, Marine Inspection
United States Coast Guard
Sector Upper Mississippi River

1222 Spruce St.
Suite 7.103 E
St. Louis, MO 63103
Staff Symbol: s
Phone: 314-269-2500
Fax: 314-269-2734

16732
November 10, 2024

TOWING VESSEL MILES MADISON (O.N. 1244647), CREWMEMBER FELL OVERBOARD AND LOSS OF LIFE ON THE UPPER MISSISSIPPI RIVER IN LOCK AND DAM 27 ON SEPTEMBER 20, 2023

ENDORSEMENT BY THE OFFICER IN CHARGE, MARINE INSPECTION

The record and the report of the investigation convened for the subject casualty have been reviewed. The record and the report, including the findings of fact, analysis, conclusions, and recommendations are approved. It is recommended that this marine casualty investigation be closed.

ENDORSEMENT ON RECOMMENDATIONS

Administrative Recommendation 1: It is recommended that no civil penalty action be taken for the potential violation identified in paragraph 6.4 of the Report of Investigation.

Administrative Recommendation 2: It is recommended this investigation be closed.

[redacted]

A. R. BENDER
Captain, U.S. Coast Guard
Officer in Charge, Marine Inspection

U.S. Department of Homeland Security
United States Coast Guard

Commander
United States Coast Guard
Sector Upper Mississippi River

1222 Spruce Street; Ste 7.103
St. Louis, MO 63103
Staff Symbol: (spi)
Phone: (314) 269-2547

16732
November 7, 2024

TOWING VESSEL MILES MADISON (O.N. 1244647), CREWMEMBER FELL OVERBOARD AND LOSS OF LIFE ON THE UPPER MISSISSIPPI RIVER IN LOCK AND DAM 27 ON SEPTEMBER 20, 2023

EXECUTIVE SUMMARY

On September 20, 2023, at approx. 0711, the Mate from the Inspected Towing Vessel (ITV) MILES MADISON fell overboard from the port bow of the lead barge in the port string (MM 65) when he was struck from behind by a bumper while departing Locks and Dam 27 (L&D 27) at mile marker 185.5 on the Upper Mississippi River (UMR). The ITV and three empty red flag barge tow entered L&D 27 heading northbound at approx. 0700 and was configured with two barges in the port string, MM 65 as the lead barge and MM 78 just aft, and a singular barge, MM 30, abreast of the MM 78 in the starboard string. One crewmember each was positioned on the outboard bow side of each of the lead barges in their respective "strings" with the Mate on the head of the port string and Deckhand #1 on the head of the starboard string barge. As the width of the lock chamber was 110 ft and the width of the two abreast after barges was approximately 108 ft, the role of the crewmembers was to utilize makeshift bumpers, fashioned from a decommissioned two-inch mooring line, to minimize contact between the lock chamber wall and the side shell of the barges. Once the entire tow was within the lock chamber, the Mate was to make off a single mooring line from the aft cleat on the port bow of the MM 65 to a "lock pin" (floating bollard) recessed in the lock wall chamber.

After lockage was complete, with the upriver lift gates lowered and the L&D sounding "one long" whistle, the Captain of the ITV radioed to the Mate to clear all lines. The Mate removed the "figure 8" knots and cleared the line from the lock pin. At some point prior to departing the lock chamber, the Mate retrieved the bumper from on deck and lassoed the pigtail eye around the horn of the forward most deck cavel (cleat); periodically tending to the bumper utilizing the handy line. As the tow proceeded north out of the lock, the port lead barge, where the Mate was stationed, passed a vertical recess which houses the upriver lower lift gate chain assembly. As the barge passed, the bumper the Mate was handling became entangled in the lift gate recess. Immediately, the Mate recognized the entanglement and attempted to dislodge the bumper several times by tugging on the handy line. During this time the tow proceeded ahead at slow speed (both ITV main diesel engines were clutched in), and the pigtail eye of the bumper continued to take tension until enough force was applied by the tow to clear the entanglement, resulting in the bumper violently dislodging and snapping back, striking the Mate in the back near his left shoulder. The impact caused the Mate to fall overboard face first into the UMR. The deckhand positioned on the starboard bow of the starboard string barge recalled hearing a loud unusual noise, radioed the Captain of the ITV via VHF of the same and communicated that he could not visually locate the Mate. The Captain responded by telling the deckhand to locate the Mate. After traversing the width of his barge and out to the head of the 300 ft long barge, he

located the Mate face down in the river unresponsive. Despite attempts to deploy ring buoys from the topside of the empty barge, which had approximately 8 feet of freeboard, the crew from the MILES MADISON were not able to render assistance.

Through VHF radio, the lock personnel requested assistance and the ITV VELDA TAYLOR, operating in a nearby fleet just north of L&D 27, responded and the crew was able to successfully recover the Mate. Once onboard, the crew of the VELDA TAYLOR removed the Mate's Type V work vest and commenced CPR for approximately five minutes with negative results. The Mate was pronounced dead due to drowning at approximately 0835.

Through its investigation, the Coast Guard determined the initiating event to be the fouling of the makeshift bumper in the lift gate recess. With limited means to dislodge the bumper and a small duration of time before the bumper's eye generated enough tension to free it from the entanglement, the bumper snapped back striking the Mate in the upper left side, fracturing his ribs and knocking him face first into the river where he subsequently drowned. Causal factors contributing to this casualty were: 1) failure of the Mate to follow company procedures for use of the bumpers during locking evolutions, 2) failure of the L&D to have any barriers, safeguards or warnings in way of the lift gate recess, 3) failure to require crewmembers to don a self-righting Type I lifejacket, 4) Failure to have railings or a fall arrest harness while working alone near the edge of a vessel, and 5) failure to don water activated signal devices with RF transmitters while working alone on deck.

U.S. Department of Homeland Security

United States Coast Guard

Commander
United States Coast Guard
Sector Upper Mississippi River

1222 Spruce Street; Ste 7.103
St. Louis, MO 63103
Staff Symbol: (spi)
Phone: (314) 269-2547

16732
April 15, 2024

TOWING VESSEL MILES MADISON (O.N. 1244647), CREWMEMBER FELL OVERBOARD AND LOSS OF LIFE ON THE UPPER MISSISSIPPI RIVER IN LOCK AND DAM 27 ON SEPTEMBER 20, 2023

INVESTIGATING OFFICER'S REPORT

1. Preliminary Statement

1.1. This marine casualty investigation was conducted, and this report was submitted in accordance with Title 46, Code of Federal Regulations (CFR), Subpart 4.07, and under the authority of Title 46, United States Code (USC) Chapter 63.

1.2. The Investigating Office designated the owner/operator of the ITV MILES MADISON as a party-in-interest in this investigation. No other individuals, organizations, or parties were designated a party-in-interest in accordance with 46 CFR Subsection 4.03-10.

1.3. The Coast Guard was the lead agency for all evidence collection activities involving this investigation. The Granite City Police Department assisted Coast Guard investigators with initial casualty scene response and contacting potential witnesses for interviews. Due to this incident involving a loss of life, the Coast Guard Investigative Service (CGIS) was notified and agreed to provide technical assistance as required. No other persons or organizations assisted in this investigation.

1.4. All times listed in this report are in Central Daylight Time using a 24-hour format and are approximate.

2. Vessels Involved in the Incident

Figure 1. Photograph of MILES MADISON underway taken June 4, 2021, provided by Vessel Finder.

Official Name:	MILES MADISON
Identification Number:	1244647 – Official Number (US)
Flag:	United States
Vessel Class/Type/Sub-Type	Inspected Towing Vessel
Build Year:	2013
Gross Tonnage:	342 GT
Length:	110 feet
Beam/Width:	32 feet
Draft/Depth:	10.25 feet
Main/Primary Propulsion: (Configuration/System Type, Ahead Horsepower)	Diesel reduction/twin screw, 3000 HP
Owner:	Magnolia Marine Transport Jackson Mississippi USA
Operator:	Magnolia Marine Transport Jackson Mississippi USA

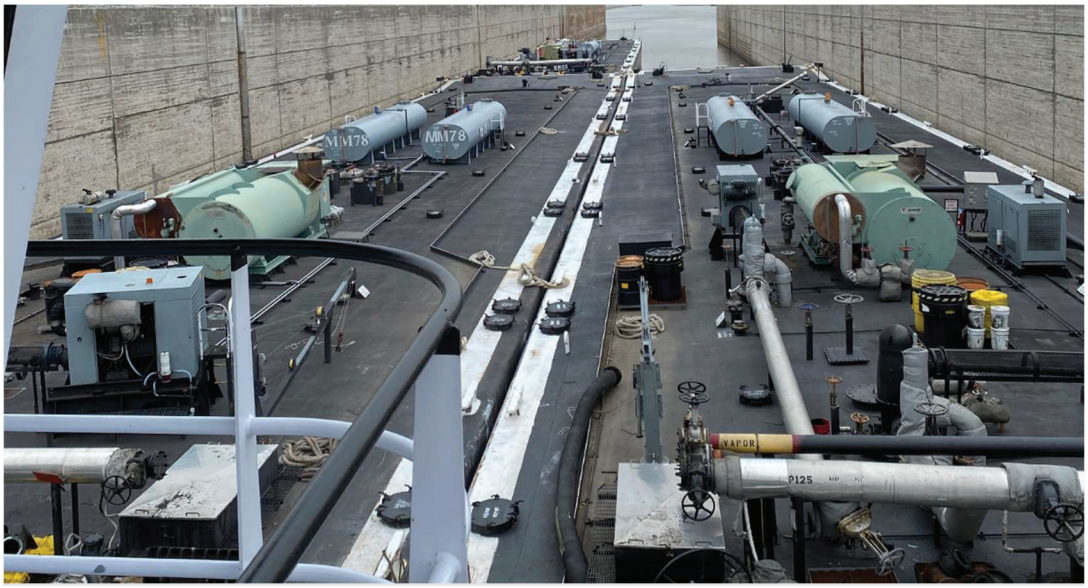

Figure 2. Photograph of MILES MADISON tow arrangement with MM 65, MM 78 and MM 30 in Locks and Dam 27 taken September 20, 2023.

Official Names:	MM 65 (Port Lead), MM 78 (Port Aft), MM 30 (Starboard)
Identification Numbers:	1197147 (MM 65), 1170126 (MM 78), 1198216 (MM 30)
Flag:	United States
Vessel Class/Type/Sub-Type	Inspected Tank Barges
Build Year:	2007 (MM 65 & MM 30); 2005 (MM 78)
Gross Tonnage:	1754 GT
Length:	297.5 feet (All barges)
Beam/Width:	54 feet (All barges)
Draft/Depth:	13 feet (All barges)
Owner:	Magnolia Marine Transport Jackson Mississippi USA
Operator:	Magnolia Marine Transport Jackson Mississippi USA

3. Deceased, Missing, and/or Injured Persons

Relationship to Vessel	Sex	Age	Status
Mate	Male	40	Deceased

4. Findings of Fact

4.1. The Incident:

4.1.1. On September 20, 2023, at 0700 hours, the ITV MILES MADISON (O.N. 1244647) was completing lockage in L&D 27 and preparing to continue north bound with its three-barge tow that was destined for the Magnolia Marine Dock in Woodriver, IL. The tow consisted of three empty red flag barges, each drafting approximately 2-3 feet, configured with two barges in the port string, MM 65 (O.N. 1197147) as the lead barge and MM 78 (O.N. 1170126) just aft, and a singular barge, MM 30 (O.N. 1198216), abreast of the MM 78 in the starboard string. Positioned on the port bow of the port lead barge (MM 65) was the Mate of the MILES MADISON and on the starboard bow of the starboard barge was Deckhand 1. The overall length of the tow was 600ft and the length of the ITV was approximately 110 feet.

4.1.2. The vessel had seven personnel onboard: all Coast Guard credentialed mariners. These made up two watch sections: a front watch (0500-1100 and 1700-2300) and an aft watch (2300-0500 and 1100-1700). The front watch (on watch at the time of the subject incident) consisted of the Master, Mate, and Deckhand 1. The aft watch consisted of the Pilot, Relief Mate, and Deckhand 2. The Engineer had two working shifts, the first from 0600-1200 and the second from 1500-2100. From 1200-1500 he was afforded downtime; however, at all times he was in an "on call" status.

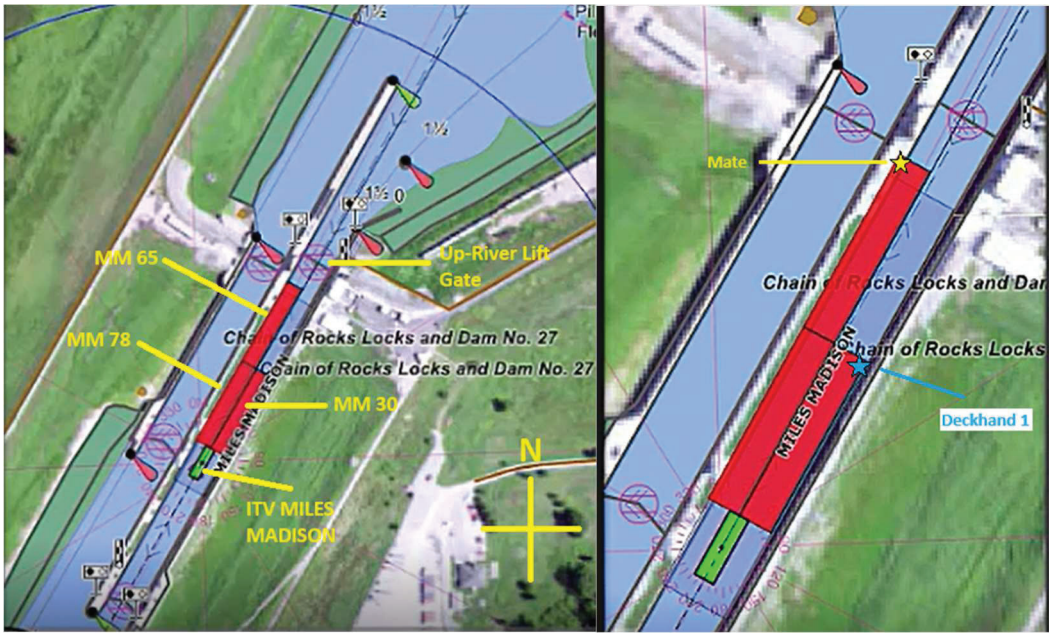

Figure 3. General arrangement of MILES MADISON and tow inside Lock and Dam 27. MILES MADISON is faced-up to the intersection of the two aft barges heading upriver. Vessels to approximate scale. Compiled from the ITV's Rosepoint data and created by the CG Investigation National Center of Expertise.

4.1.3. At 0709, the Mate initiated communication with the Master via VHF radio channel 65 to determine if the Master was ready to unmoor the tow from the lock pin (recessed floating bollard) in the lock chamber; the Master confirmed he was ready to unmoor. The Mate proceeded to take in the mooring line on the portside head of the port lead barge in the tow. The mooring line was laid inboard of the cleat and the bitter end was made off to the same. No line was used to secure the tow in the lock chamber on the starboard side.

4.1.4. The company utilized makeshift bumpers, fashioned from decommissioned 2-inch mooring lines, to minimize contact between the lock chamber wall and the side shell of the barges. The bumper is designed with an approximate 12–18-inch diameter "monkey's fist" knot with a pigtail eye (approx. 3 to 4 feet long) that is spliced back onto itself. For ease of use for crewmembers, the 2-inch pigtail eye is draped with a ½ inch diameter "handy line." The approximate weight of a makeshift bumper is 15-20 lbs.

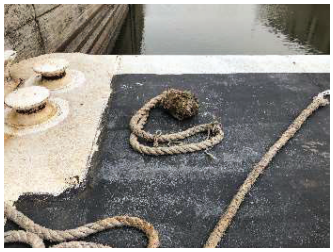

Figure 6. Makeshift bumper with pigtail eye used during the locking evolution in L&D 27 on September 20, 2023.

4.1.5. At 0710, the Mate retreated inboard on the head of the port lead barge to retrieve the makeshift bumper and proceeded back towards the mooring cleat. He then positioned the bumper down between the portside hull of the barge and the lockwall chamber, placing the pigtail eye around the horn of the cleat while still tending to the bumper using the ½ inch handy line. The Master clutched in the ITV's main diesel engine and proceeded ahead slowly northbound out of the lock chamber.

4.1.6. Over the next minute, the Mate reported the head of the tow's distance from the up-river lift gate twice via VHF radio as they approached the end of L&D 27.

4.1.7. At the time of the incident, L&D 27 did not have any barriers, safeguards, or warnings in way of the recesses that house the appurtenances that are responsible for lowering and raising both the downriver and up-river lift gates. Theses appurtenances include, but are not limited to, the gate chain.

4.1.8. At 0711:25 the Mate recognized that the bumper was hung up in the lock gate recess along the lock wall. He attempted to dislodge the bumper from its entanglement in the lock gate recess utilizing the ½ inch handy line as the tow proceeded out of the lock chamber. While the Mate was doing this, he was working in the "snapback zone" of the bumper's pigtail eye as it continued to take tension. The tow proceeded northbound out of the lock chamber traveling at a speed of just below 1.5 knots.

4.1.9. At 0711:33, the bumper was violently freed from the entanglement in the lock gate recess and snapped back, striking the Mate in the left shoulder region of his body. The impact from the bumper caused the Mate to break several ribs and fall overboard, face first into the UMR. The Master was unaware of the incident and subsequent man overboard and he continued northbound reaching a top speed of 1.8 knots.

4.1.10. At approximately 0712, Deckhand 1 looked back towards the pilothouse of the ITV and to the Mate's duty station on the portside head of the port lead barge. Deckhand 1 radioed the Master via VHF asking if he saw "(The Mate) out there?" The Master replied asking for more information from Deckhand 1 on the radio and started backing down on the ITV's main diesel engines to stop the momentum of the tow.

4.1.11. Deckhand 1 left his duty station on the starboard bow of the starboard barge and headed to the Mate's duty station on the portside bow of the port lead barge (MM 65). When he arrived along the portside of the MM 65, he proceeded to try and locate the Mate between the side of the barge and the lock wall. During this time the Master conducted a callout on the VHF radio to the Mate asking "(Mate) where you at?" The radio call went unanswered.

4.1.12. At some point after the callout, the Master sounded the ITV's general alarm to alert crew members onboard that there was an emergency.

4.1.13. At 0712:19, the forward momentum of the tow had stopped, and the Master was backing the tow down into the lock chamber at L&D 27. Deckhand 1 continued to attempt to locate the Mate and exchanged VHF radio calls with the Master. This continued over the next minute.

4.1.14. At 0713 the Master conducted a callout on the port VHF radio (channel 12) to let L&D 27 personnel know that he believed the tow suffered a man overboard in the lock. L&D 27 personnel acknowledged the call. The Master also directed Deckhand 1 via VHF radio to go check for the Mate in the water on the head of the port lead barge (MM 65).

4.1.15. At 0713:35 Deckhand 1 discovered the Mate in the river facedown and unresponsive. Deckhand 1 notified the Master of his findings via VHF radio.

4.1.16. The freeboard of the MM 65 to the waterline was approximately 8 feet.

4.1.17. Over the next minute, the Master and Deckhand 1 exchanged radio calls where the Master directed Deckhand 1 to render assistance.

4.1.18. At 0714:38, L&D 27 personnel deployed a ring life buoy from the west side of the lock chamber down to the Mate. The Mate was unresponsive to retrieving the ring life buoy. Additionally, the Master had completed backing the tow down into the lock chamber and was holding station.

4.1.19. At 0716:01, the ITV's Engineer arrived on the head of the port lead barge (MM 65). While he was enroute, he retrieved a ring life buoy from the amidships storage location on the MM 65. Once there, he tossed the ring buoy to the Mate's location in the river. The Mate was unresponsive to retrieving the ring life buoy.

4.1.20. Approximately 30 seconds later, the Relief Mate arrived on the head of the MM 65 having retrieved a ring life buoy from the amidships storage location on the starboard barge, the MM 30. He did not deploy his ring life buoy.

4.1.21. At 0717:30, Deckhand 2 arrived on the head of the port lead barge (MM 65). The crewmembers made off the mooring line on the MM 65 to the lock pin in the chamber at L&D 27.

4.1.22. At approximately 0720, the Master of the ITV VELDA TAYLOR received a call via VHF radio from personnel at L&D 27 requesting assistance with retrieving the Mate from the MILES MADISON from the river.

4.1.23. At 0728, the Master navigated the VELDA TAYLOR down into the L&D 27 chamber and the crew retrieved the MILES MADISON's Mate from the river. VELDA TAYLOR's Deckhands 1 and 2 performed first aid and cardiopulmonary resuscitation (CPR) for several minutes on the Mate with negative results.

4.1.24. At approximately 1030, the Master submitted to mandatory testing for alcohol use in accordance with 46 CFR Subpart 4.06 utilizing onboard testing swabs. Test results did not detect alcohol.

4.1.25. Between 1730 and 1800, the Master, Engineer, and Deckhand 1 were subject to mandatory chemical testing for evidence of drug and alcohol use in accordance with 46 CFR Subpart 4.06. Test results did not detect drugs or alcohol.

4.1.26. On September 22, 2023, a coroner conducted an examination of the Mate and pronounced him deceased on September 20, 2023, at 0835 with the cause of death determined to be drowning.

4.2. Additional/Supporting Information:

4.2.1. *Magnolia Marine Transport Co Operations and Policies.*

4.2.1.1. On September 20, 2023, the MILES MADISON was an ITV owned and operated by Magnolia Marine Transport Co. The Certificate of Inspection required a minimum of four crewmembers including one licensed Master, one licensed Mate (Pilot), and two Deckhands for 24-hour operation. The MILES MADISON was authorized to operate on a Rivers route and utilization of third-party oversight for compliance with Subchapter M. The MILES MADISON utilized the Vessel Operations Procedures Manual (VOPM) to comply with Towing Safety Management System (TSMS) requirements within Subchapter M.

4.2.1.2. The Vessel Operation During Lockages (MVP-OP-006.01) portion of the VOPM applicable to the MILES MADISON directed crewmembers to man the head of the tow with bumpers in hand for use along the concrete walls while conducting lockage operations.

4.2.1.3. The Fall Overboard Prevention Program (MVP-DP-041.04) portion of the VOPM applicable to the MILES MADISON addressed the launching of a skiff for man overboard; however, the policy does not address issues where the skiff is unusable or inaccessible. Crewmembers appropriately rendered assistance by means of ring life buoys, but due to the Mate being unconscious and the approximate 8 feet of freeboard from the barge, it made lifesaving efforts impractical.

4.2.2. *Lock and Dam 27 Operations and Policies.*

4.2.2.1. L&D 27 had lock operation booths located at both the upper and lower lock gates. The Lock House is located nearest the upriver operation booth on the opposite side of the lock chamber. On September 20, 2023, the air draft from the top of the lock wall chambers was in excess of 30 feet due to river water levels. Despite the flooding of the lock chamber as the MILES MADISON was heading northbound, the angle for viewing on-deck activity on the barges by any of the lock operators was obscured due to the sharp angle of the lock operation booths and steep air draft in the lock chamber.

4.2.2.2. The lock chamber at L&D 27 had several recesses along the lock chamber walls that pose potential snag hazards to deck gear such as mooring lines. The opportunity for entanglement is even greater in way of the downriver and upriver gates as these house the appurtenances, which include but are not limited to, the gate chain. At the time of the incident, L&D 27 did not have any barriers, safeguards or warnings in way of the recesses that are responsible for lowering and raising both gates.

4.2.2.3. L&D 27 had emergency procedures and shutdown for man overboard evolutions. However, these procedures were limited to sound signals and specific to falls overboard between vessels and the lock wall. Additionally, the emergency shutdown only de-energized electrical equipment in the lock; it did not have the capability to close valves used to raise/lower the water within the lock chamber.

4.2.3. *Mate's Experience and Health.*

4.2.3.1. The Mate held a Coast Guard Merchant Mariner Credential (MMC) since July 2012 and had been employed with Magnolia Marine Transport Co. on company vessels as a deckhand since February 2011. He was promoted to the position of Mate within the company in March 2017 and served on the ITV MILES MADISON in that capacity since September 2019. Most recently, in January 2023, he received an Apprentice Mate (Steersman) endorsement on his MMC. The Mate onboard was overall in charge of the deck crew, was the most experienced individual on deck, and was regarded by the Master as his "righthand man". While the entire deck crew respected him and looked up to him as their leader, they did question some on deck practices, specifically the lassoing of the bumpers on the cleat, when that was a clear deviation from the training that Magnolia Marine Transport Co. promoted.

4.2.3.2. In July 2022, the Mate applied to the Coast Guard National Maritime Center (NMC) for recertification of his expiring medical certificate. In August 2022 the NMC Medical Division renewed the Mate's medical certificate for a period of validity from August 23, 2022 to August 23, 2027 for National use. In November 2022, the Mate was prescribed [redacted] for treatment for an [redacted] and continued taking this prescription up until the morning of September 20, 2023. Side effects from taking [redacted] can include, but are not limited to, dizziness, drowsiness, fatigue, and inability to sleep. Despite Magnolia Marine Transport Co. having company policy that requires internal self-reporting of current prescription medications marine employees are utilizing, there is no documented evidence that the Mate reported it to the proper company representative.

4.2.4. *Weather Conditions at the Time of Incident.* Weather conditions were mostly cloudy, visibility was 10 nautical miles, air temp was 67°F, water temp was 73°F, and winds were out of the East/Southeast at 6 knots. Sunrise was at 0647.

4.2.5. *Vessel Conditions at the Time of Incident*.

4.2.5.1. The overall distance from the Pilothouse to the head of the port lead barge was over 600 feet. This distance made visual contact for the Master with on deck workers challenging as shown in Figure 4. This is aggravated when considering on-deck obstructions such tanks, boilers, etc. that can obstruct crewmembers transiting the deck.

Figure 4. Photo taken from the Pilothouse of the ITV MILES MADISON looking forward out to the head of the tow. MILES MADISON is faced-up to the intersection of the 2 aft barges heading upriver.

4.2.5.2. At the time of the incident, L&D 27 did not have any barriers, safeguards or warnings in way of the recesses that house the appurtenances that are responsible for lowering and raising both the downriver and upriver gates. These appurtenances include, but are not limited to, the gate chain. Figure 5 depicts the upriver gate as seen from the top of the eastside lock chamber wall looking across to the west (the area where the entanglement of the bumper occurred). The steep angle of visibility from the Upriver Lock Operation Booth to the port bow of the MM 65 created a blind spot to any emergency or danger that may be occurring in the lock chamber below.

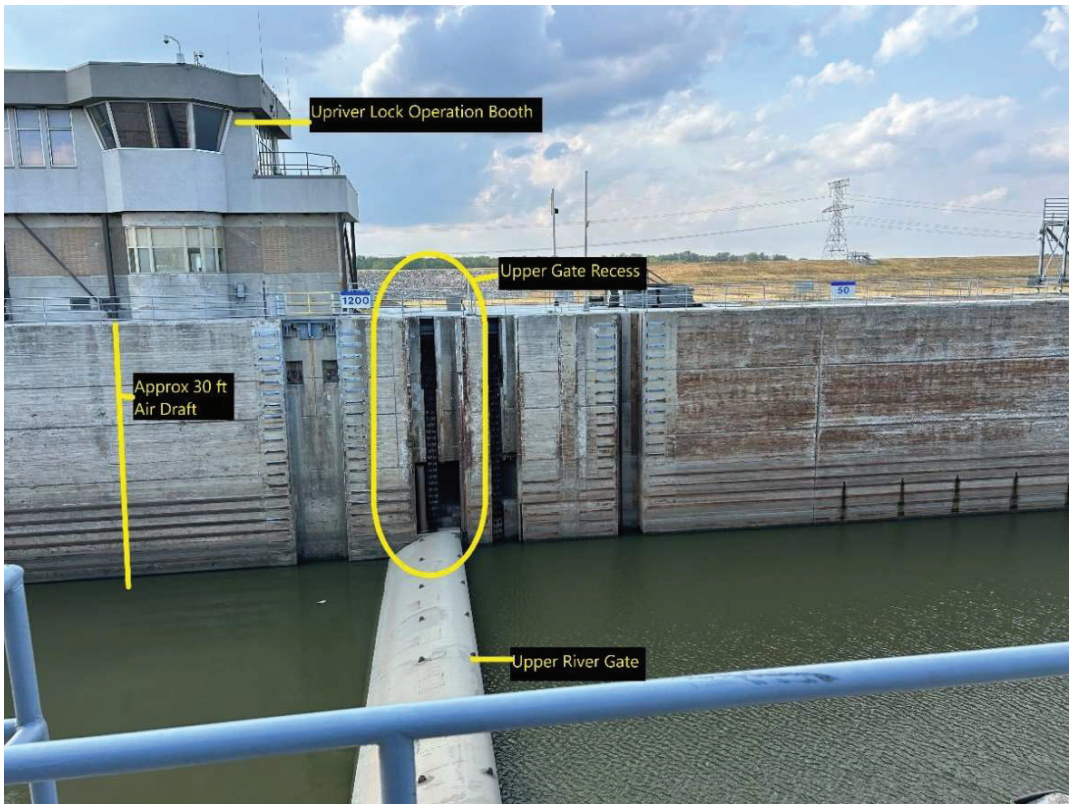

Figure 5. Photo taken from the top of the eastern chamber wall looking across to the west lock chamber wall. River conditions at the time of the incident afforded approximately 30 ft of air draft from the river level to the top of the chamber

5. Analysis

5.1. **Failure of the Mate to follow company procedures for use of the bumpers during locking evolutions.** Despite the Mate's extensive experience and longevity with the company, he intentionally lassoed the pigtail eye of the bumper around the horn of the cleat prior to departing L&D 27. While Company Policy does not explicitly state not to use the cleats for bumper work, it does direct crewmembers on deck to handle bumpers by hand for use between the vessel and concrete walls. Although the Mate had been trained and charged

with training others in his stead, he still developed a habit of utilizing the cleats with the bumpers. Unfortunately, in the short period of time that the bumper became entangled in the lock gate recess, the pigtail eye took heavy strain due to the forward momentum of the tow and the bumper was violently freed from its obstruction. Had the Mate handled the bumper by hand and discarded the pigtail once it became entangled, the pigtail eye would never have taken strain and knocked the Mate into the river where he subsequently drowned.

5.2. **Failure of the L&D to have any barriers, safeguards or warnings in way of the lift gate recess.** L&D 27 does not have any barriers, safeguards or warnings in way of the recesses that house the appurtenances that are responsible for lowering and raising both the downriver and upriver gates. Although there have been no reported fouling incidents or near miss situations, the opportunity certainly exists. Implementing barriers and safeguards across these high-risk snag areas due to the extreme water level fluctuations of the UMR pose an engineering challenge. Additionally, adding any guard could potentially erode the width of the lock chamber and potentially affect tow configurations and lock traffic. Signage or markings would alert towing vessel crewmembers of potential fouling areas with limited impact on vessel traffic.

5.3. **Failure to require crewmembers to don a self-righting Type I lifejacket.** The Mate was wearing a Type V workvest at the time of death. The force of the blow from being struck by the bumper not only fractured his ribs, but it also knocked him, face first, off of the head of the barge into the UMR. Perhaps from the initial shock of impact or due to his injury, the Mate was unable to right himself and his lifejacket did not have self-righting capability. As a result, the Mate landed face down in the river and did not flip over. Had the Mate been wearing a Type I personal floatation device (PFD), the PFD could have potentially turned the Mate to a face-up position with no assistance from the wearer and prevented him from drowning.

5.4. **Failure to have railings or a fall arrest harness while working alone near the edge of a vessel.** None of the three barges in tow were outfitted with railings or the like to prevent an individual from falling overboard. Perhaps the incorporation of temporary railings in the immediate work area or a fall arrest device worn by the Mate could have prevented him from falling overboard once struck by the bumper.

5.5. **Failure to don water activated signal devices with radio frequency (RF) transmitters while working alone on deck.** The Captain's line of sight (LOS) to the Mate was unobstructed so long as the Mate remained at the cleat on the barge deck. When crewmembers are standing by or performing other tasks, the LOS from the pilothouse to the crewmember could be obstructed due to the various appurtenances on deck (i.e. fuel tanks, boilers, etc); this is especially true the more barges you have in any particular string. The Master and the Mate were communicating on a regular cycle (approx. every 20 seconds); however, it was during that momentary break in communication when the incident occurred, and the Master was unaware the Mate had fallen overboard. The curious noise heard by Deckhand 1 on the starboard barge and his VHF call to the Master are what initiated the emergency response. Perhaps if the Mate was outfitted with a water activated signaling device with an RF transmitter, the Master would have been alerted to a man overboard and a response could have initiated before drowning.

5.6. **Failure to have a means for man overboard recovery for barge draft condition and operating environment.** The crew normally relies on the launching of a skiff for a man overboard; however, the procedures do not address issues where the skiff is unusable or inaccessible. Additionally, the approximate 8 feet of freeboard from the barge made lifesaving efforts impractical using ring buoys particularly due to the Mate being unconscious. Exploring and developing recovery methods and procedures, outside of the rescue skiff, when crewmembers are faced with these recovery barriers could aid in the prevention of a man overboard drowning.

6. Conclusions

6.1. Determination of Cause:

6.1.1. The initiating event for this casualty occurred when the bumper, which was lassoed around the horn of the cleat, became hung up in the lock gate recess along the lock wall as the tow proceeded out of the lock chamber. The pigtail eye continued building heavy strain due to the forward momentum of the tow while the bumper was entangled. Causal factors leading to this event were:

6.1.1.1. Failure of the Mate to follow company procedures for use of the bumpers during locking evolutions.

6.1.1.2. Failure of the L&D to have any barriers, safeguards or warnings in way of the lift gate recess.

6.1.2. The subsequent event was the bumper, violently being freed from its entanglement in the lock gate recess, snapping back and striking the Mate in the left shoulder region of his body. The impact caused the Mate to break several ribs and fall overboard, face first into the UMR. Causal factors leading to this event were:

6.1.2.1. Failure to have railings or a fall arrest harness while working alone near the edge of a vessel.

6.1.2.2. Failure to don water activated signal devices with RF transmitters while working alone on deck.

6.1.2.3. Failure to have a means for man overboard recovery for barge draft condition and operating environment.

6.1.3. Once the Mate fell into the river, he landed face first and ingested a large amount of water rendering him unconscious and he subsequently drowned. Causal factors leading to this event were:

6.1.3.1. Failure to require crewmembers to don a self-righting Type I lifejacket.

6.2. Evidence of Act(s) or Violation(s) of Law by Any Coast Guard Credentialed Mariner Subject to Action Under 46 USC Chapter 77: There were no potential acts of misconduct, incompetence, negligence, unskillfulness, or violations of law by a credentialed mariner identified as part of this investigation.

6.3. Evidence of Act(s) or Violation(s) of Law by U.S. Coast Guard Personnel, or any other person: There were no potential acts of misconduct, incompetence, negligence, unskillfulness, or violations of law by Coast Guard employees or any other person that contributed to this casualty.

6.4. Evidence of Act(s) Subject to Civil Penalty: The marine employer failed to conduct alcohol testing within the specified time frames as required by 46 CFR 4.06. No other evidence of potential acts warranting civil penalty were identified.

6.5. Evidence of Criminal Act(s): This investigation did not identify potential violations of criminal law.

6.6. Need for New or Amended U.S. Law or Regulation: This investigation identified no potential matters needing new or amended U.S. law or regulation.

6.7. Unsafe Actions or Conditions that Were Not Causal Factors.

6.7.1. **Failure of the Mate to report the use of prescription medication as per company policy.** Magnolia Marine Transport had a company policy in place that required employees to self-report the use of prescription medication to their Supervisor who would in turn consult with the company Claims Manager to determine the affects the medication would have on the performance of duty. This policy has been in place since 1997 and was most recently revised in July of 2022. The Mate had been taking the prescribed medicine for approximately 10 months prior to the incident. During this time, he did not report any side effects or impairments to the prescribing physician during his routine follow up appointments. Evidence does not suggest that the Mate's prescription had an effect on him while performing his responsibilities, however, the Mate should have reported the prescription in accordance with the existing company policy

7. Actions Taken Since the Incident

7.1. Since the incident, Magnolia Marine Transport has conducted an inventory of all in-service bumpers fleetwide and taken action to remove or reduce in diameter the pigtail loop so that the bumper is not allowed to be placed over or lassoed around any deck fitting on any of the company barges. This ensures that the on-deck crewmembers handle all bumpers by means of the ½ inch "handy lines" consistent with guidance outlined in Magnolia Marine Transport's VOPM, Vessel Operation During Lockages (MVP-OP-006.01).

7.2. Remedial training in accordance with Magnolia Marine Transport's VOPM, Vessel Operation During Lockages (MVP-OP-006.01) has been conducted with all personnel in the marine fleet on the safe and proper use of bumpers during lockages and while docking. Further emphasizing the dangers posed with lassoing bumpers around potential areas of entanglement and snapback.

8. Recommendations

8.1. Safety Recommendation: There were no proposed actions to add new or amend existing U.S. laws or regulations, international requirements, industry standards, or U.S. Coast Guard policies and procedures as part of this investigation.

8.2. Administrative Recommendations:

8.2.1. Recommend no civil penalty action for the potential violation identified in paragraph 6.4 above.

8.2.2. Recommend this investigation be closed.

CWO4, U.S. Coast Guard
Investigating Officer