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## INVESTIGATION REPORT

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**Report Date:** June 27, 2022

**Report Completed By:** Calvin Self

**Date of Incident:** June 26, 2022

**Time of Incident:** 11:30

**Location of Incident:** ICWW MM 408

**Type of Incident:** Vessel Fire

**Vessel Involved:** *M/V Mary Dupre (Dupre Marine Transportation) 1450 bhp*

**Barges Involved:** *Kirby-28747*

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### **EMPLOYEE WORK HISTORY:**

**Employee Name:** Robert Atchinson

**Current Position:** Relief Captain

**Applicable Training:** Relief Captain has all required and applicable training.

**Work Rest Periods:** 12-hours on: 12-hours off

**Employee Name:** Matthew Gisclair

**Current Position:** Pilot

**Applicable Training:** Pilot has all required and applicable training.

**Work Rest Periods:** 12-hours on: 12-hours off

**Employee Name:** William Weaver

**Current Position:** Deckhand

**Applicable Training:** Deckhand has all required and applicable training.

**Work Rest Periods:** 12-hours on: 12-hours off

**Employee Name:** Shawn Hayes

**Current Position:** Deckhand

**Applicable Training:** Deckhand has all required and applicable training.

**Work Rest Periods:** 12-hours on: 12-hours off

### **DESCRIPTION OF INCIDENT:**

While eastbound at ICWW MM 408, the off-watch Pilot of the *MV Mary Dupre* was awakened by an activated smoke alarm and the smell of smoke. The Pilot alerted the officer on watch and proceeded to investigate the source of the smoke. The Pilot observed smoke coming from the wall and ceiling and removed a panel from the ceiling to further investigate. When the panel of the ceiling was

removed, the smoke began to intensify, and the Master ordered the crew to abandon the vessel. Once safely off the vessel the crew observed a fire on the second deck and the wheelhouse that was quickly spreading.

## TIMELINE

### **6/26/2022**

- 0001- The Relief Captain assumed command of the *MV Mary Dupre* from the Pilot.
- 0404- The daily inspection was performed on the vessel that includes a section on fire hazards.
- 0930- The activated smoke alarm sounded, and the Pilot responded by alerting the Relief Captain of the possible emergency and investigating to ascertain the source of the smoke.
- 0933- All crew members are made aware of the possible emergency and assist the Pilot in investigating the source of the smoke.
- 0940- Dupre Marine Transportations Port Engineer was notified of the event.
- 0950- Kirby Inland Marine was notified of the event.
- 1000- The Pilot and Deckhand removed a panel from the ceiling and wall and discovered charred smouldering wood. Smoke began to escape from the holes where the panels were.
- 1005- The Pilot and Deckhand sprayed the vessel fire extinguishers in the walls in an attempt to stop the spread of the potential fire.
- 1020- The *MV Ave Maria* arrived and took possession of the *Kirby-28747*.
- 1035- The smoke in the vessel continued to build and the Master ordered the crew to abandon vessel.
- 1055- The crew launched the skiff, and the crew safely departed the *MV Mary Dupre*.
- 1115- While in the skiff and moving away from the vessel, the crew of the *MV Mary Dupre* witnessed fire coming from the vessel.
- 1130- The crew of the *MV Mary Dupre* boarded the *MV Ave Maria*.
- 1150- The Texas General Land Office and National Response Center was notified of the event.
- 1155- ForeFront Emergency Management was notified of the event and placed on standby in the event of a spill.
- 1200- T&T Salvage was notified of the event and prepared to depart en route to the *MV Mary Dupre*.
- 1205- Dupre Marine Transportations President and Vice President arrived at the shore side office to manage the response to the emergency.
- 1220- Dupre Marine Transportations Operations Manager, Port Engineer, and Port Captain departed en route to the *MV Mary Dupre*.
- 1525- T&T Salvage arrived on scene to assist in putting out the fire and to ensure the *MV Mary Dupre* was safe to move.
- 1801- The transit plan to move the *MV Mary Dupre* to J&S Contractors was approved by the USCG.
- 1802- The crew of the *MV Mary Dupre* arrived at HCA Houston Healthcare to be examined for precautionary reasons.
- 1815- Dupre Marine Transportations Operations Manager and Port Engineer arrived on scene to oversee salvage operations.
- 1829- The *MV J&S II* arrived on scene to make up to the *MV Mary Dupre* in preparation to move the vessel to J&S Contractors.
- 1853- The *MV J&S II* departed with the *MV Mary Dupre* en route to J&S Contractors.

- 2158- The *MV J&S II* arrived at J&S Contractors with the *MV Mary Dupre* in tow.
- 2215- The crew of the *MV Mary Dupre* was released from HCA Houston Healthcare with no injuries.

## **6/27/2022**

- 0730-Dupre Marine Transportations Port Engineer and Operations Manager arrived at the *MV Mary Dupre* to begin investigating the event.
- 0830- A Marine Surveyor from Guy Matthews and Associates Marine Surveyors arrived at the *MV Mary Dupre* to assess damages.
- 0850- Marine Investigators from the USCG arrived at the *MV Mary Dupre* to begin investigating the event.
- 1100- Marine Investigators from the USCG departed the *MV Mary Dupre*.
- 1230- The crew of the *MV Mary Dupre* arrived at Dupre Marine Transportations shore side office to have a meeting with the President and Vice President.
- 1530- The Marine Surveyor from Guy Matthews and Associates Marine Surveyors departed the *MV Mary Dupre*.
- 1730- Dupre Marine Transportations Port Engineer and Operations Manager departed the *MV Mary Dupre*.

## **EVENT FACTS**

- The *MV Mary Dupre* had one barge in tow at the time of the lock allision, the loaded *Kirby-28747*.
  - The *Kirby-28747* was loaded with Pyrolysis Fuel Oil at the time of the event.
  - The *Kirby-28747* was safely dropped off to the *MV Ave Maria* without any damage.
- Dupre Marine Transportation has procedures in place that require a daily inspection of the vessel and components. This inspection includes a section specifically related to fire hazards and includes that there are no potential fire hazards such as combustible materials that are stored near a heat source and that all exhaust wrapping in cinched tightly and in good condition. This inspection was completed at 04:04 on 6/26/2022.
- The Pilots bunkroom on the *MV Mary Dupre* is located between the vessels two exhaust stacks. (See photo #1) The fire originated in the walls of this bunkroom and quickly spread.
  - The walls in this bunkroom are insulated with fire retardant and heat resistant insulation.
- The off-duty Pilot was awakened by an activated smoke alarm in his bunkroom and after waking up noticed the smell of smoke. The Pilot alerted the Relief Captain and ensured everyone on the vessel was aware of the potential emergency.
- The off-duty Pilot and both vessel Deckhands investigated the source of the smoke and eventually removed a panel from the ceiling (See photo #4). When the panel from the ceiling was removed the smoke in the vessel intensified and thwarted any ongoing efforts to eliminate the fire.
  - While the other crew members were investigating the source of the smoke, the Relief Captain was making notifications and arrangements to get the *Kirby-28747* to safety.
- When the smoke intensified to a level that was unsafe, the Master ordered the crew to abandon the *MV Mary Dupre* via the vessel skiff.
- The *MV Ave Maria*, *MV Cynthis K*, *MV Martha Renae*, and *MV Redfish* assisted in ensuring the crew of the *MV Mary Dupre* was safe and with firefighting efforts.
- T&T Salvage was dispatched to assist in firefighting efforts and to ensure the *MV Mary Dupre* was safe to move to J&S Contractors.

- T&T Salvage and the USCG cleared the *MV Mary Dupre* to be moved to J&S Contractors in Freeport TX.
- While investigating the source of the fire, a Marine Surveyor, Dupre Marine Transportations Port Engineer and Operations Manager, and marine investigators from the USCG identified a cracked muffler in the starboard exhaust stack that was allowing excessive heat to contact the metal walls of the stack. (See Photo #5)
- No injuries resulted from this event.

### **INITIAL MITIGATION**

- The crew of the *MV Mary Dupre* initiated firefighting response but was unable to continue due to heavy smoke in the vessel.
- Crews of the *MV Ave Maria*, *MV Cynthis K*, *MV Martha Renae*, and *MV Redfish* aided in extinguishing the fire by applying water to the *MV Mary Dupre*.
- T&T Salvage was dispatched to the scene to assist in firefighting duties.
- Notifications:
  - Dupre Marine Transportation
    - Port Captain-Frank Bumgarden
    - Port Engineer-Jeremy Cavalier
  - Kirby Inland Marine
    - Port Captain-Leopold Bernard
  - Texas General Land Office
  - National Response Center
  - USCG
    - [REDACTED]

### **CAUSAL FACTOR**

- Equipment Failure
  - Testing Strategy Not Effective
    - Installation Design Inadequate
      - The layout of the *MV Mary Dupre* is designed in such a way that the Pilots bunkroom is sandwiched between the two vessel exhaust stacks. These two stacks inner walls touch the outside walls of the bunkroom. The heat that is generated by the stacks and is present on these walls has no place to escape other than inside of the walls of the bunkroom. Normally, this would not be a hazard as fire retardent and heat resistant insulation was placed inside these walls to mitigate any risks that the heat may present, but in the event of a broken muffler inside of the stacks, the heat increases to a degree that the isulation is rendered ineffectual. If the design of the *MV Mary Dupre* would have accounted for this flaw and a gap would have been present between the walls of the stacks and bunkroom, the heat could have escaped and the fire prevented. (See photo #1)

### **ROOT CAUSE**

- Equipment Failure
  - Not at Fault Equipment Failure
    - While investigating the source of the fire aboard the *MV Mary Dupre*, the exhaust stacks were cut to gain a better perspective as to why the heat

increased inside of the starboard stack to a degree that would ignite a fire within the wall of the bunkroom, and it was discovered that the muffler located within the starboard exhaust stack was cracked. This crack allowed excessive heat to escape the muffler and increase the heat of the stack walls to the point where the paint started to bubble (See Photo #6). Because of the design and layout of the vessel, the excessive heat was allowed to penetrate the wall of the Pilot bunkroom and eventually cause the wood within this wall to ignite. If the muffler in the starboard exhaust stack would have not failed, the walls of the stack would have not heated to a degree that would have posed a risk.

**CORRECTIVE & PREVENTATIVE ACTIONS**

<b>Title</b>	<b>Description</b>	<b>ETF</b>
Lessons Learned	Lessons learned will be formulated and distributed to all vessels within Dupre Marine Transportations fleet via email and added to the vessel visit agenda for discussion during management vessel visits. These lessons will include: <ul style="list-style-type: none"> <li>• A description of the event.</li> <li>• How the event could have been prevented.</li> <li>• A review of Dupre Marine Transportation fire response procedures.</li> <li>• The testing of smoke detectors and the assurance that they are operational at home and on a vessel.</li> </ul>	7/26/2022
Procedural/Inspection Revision	Dupre Marine Transportation currently has no vessels that are designed with exhaust stacks butted up against a cabin and has no plans of acquiring a vessel with this design, but Dupre Marine Transportation drydocking procedures will be revised to include the inspection of mufflers within exhaust stacks in the event that such a vessel is acquired.	7/26/2022
Safety Meeting	Dupre Marine Transportation will conduct a safety meeting in the form of a Microsoft Teams Conference Call where the finding of this investigation will be shared with the fleet including but not limited to: <ul style="list-style-type: none"> <li>• The testing and replacement of batteries in smoke detectors.</li> <li>• Reporting and responding to vessel fires.</li> <li>• Masters orders to abandon the vessel</li> </ul>	6/30/2022 (Completed)

**PHOTOS**

Photo #1 General Arrangement 2<sup>nd</sup> Deck and Wheelhouse

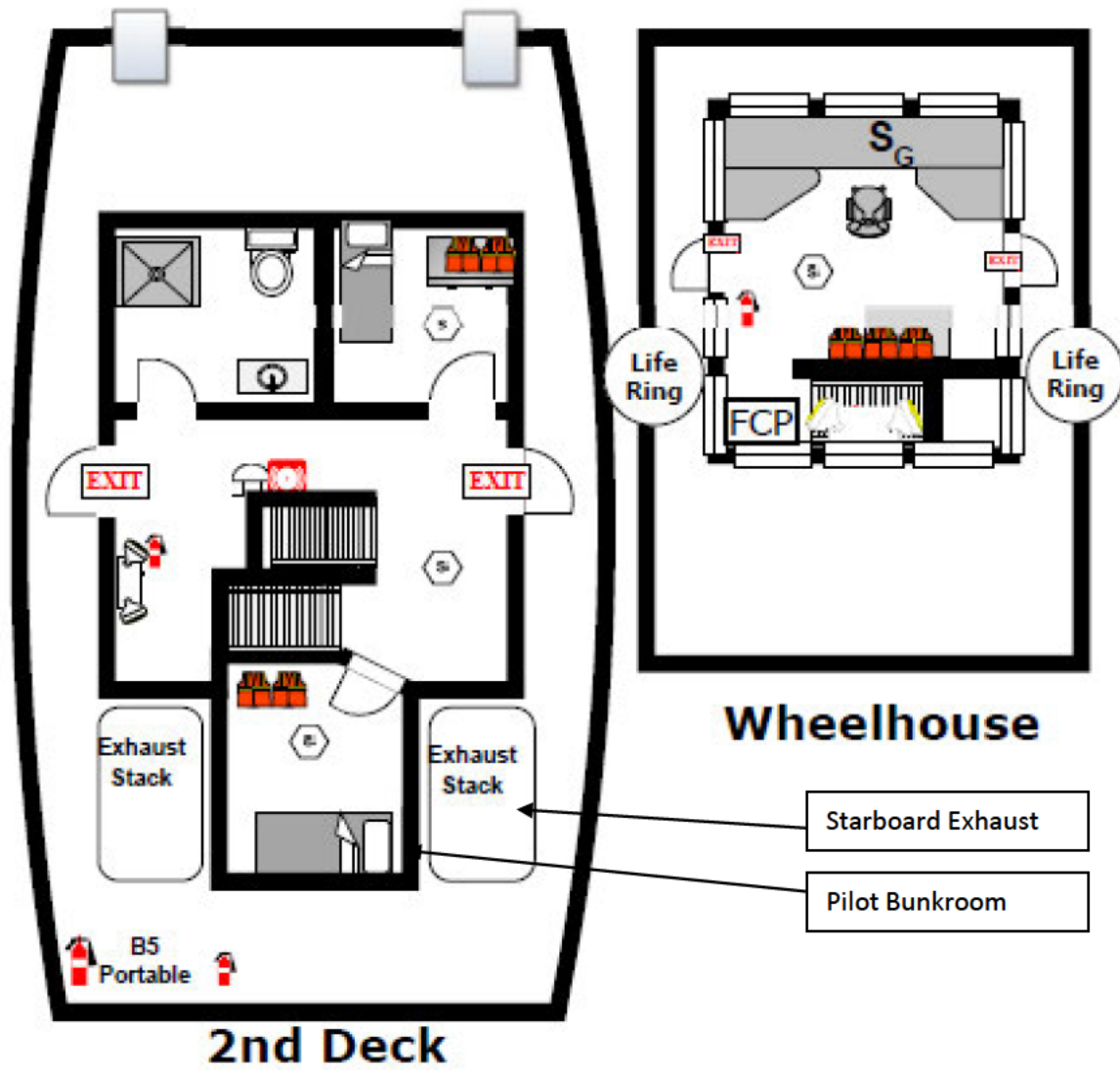


Photo #2 Firefighting Efforts



Photo #3 Vessel Fire





Photo #4 Removed Panel (Ceiling)



Photo #5 Cracked Muffler



Crack in Muffler

Photo #6 Starboard Stack



Bubbling Paint