National Transportation Safety Board
Office of Marine Safety
Washington, DC 20594

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SURVIVAL FACTORS AND REGULATORY

Group Chair's Factual Report

April 25, 2023

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A. INCIDENT

Location: Norfolk, Virginia
Date: June 7, 2022
Time: 1204 eastern daylight time (EDT)
1604 coordinated universal time (UTC)
Vessel: *Spirit of Norfolk*

B. SURVIVAL FACTORS AND REGULATORY GROUP

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C. SUMMARY

On June 7, 2022, about 1204 eastern daylight time, an engine room fire was reported aboard the 169-foot-long small passenger vessel *Spirit of Norfolk* while underway on the Elizabeth River near Naval Station Norfolk, Virginia. The vessel was on a 2-hour day cruise with 91 passengers, including 36 children, 7 crew, and 10 hospitality staff. The vessel lost propulsion, and the passengers and crew evacuated to a Good Samaritan vessel. The *Spirit of Norfolk* was towed to a naval pier. The fire spread throughout the vessel before being extinguished on June 11. There were no injuries or pollution reported.

D. DETAILS OF THE INVESTIGATION

The US Coast Guard was the lead federal agency in this investigation. The NTSB was notified of this casualty on June 7, 2022, and investigators were on scene June 8, 2022. While on scene, investigators interviewed the seven crewmembers and viewed *Spirit of Norfolk* firefighting efforts from Pier 4 at Naval Station Norfolk.

After returning from the scene, investigators reviewed additional documentary evidence and interviewed and reinterviewed crew, Coast Guard personnel, company personnel, Bay Diesel employees, a Scania employee, a Carter Machinery employee, the captains of Good Samaritan vessels who responded to the initial report of the fire, a marine surveyor, the Executive Director of the Marine Incident Response Team, and a few passengers.

From January 26 to February 2, 2023, the US Coast Guard conducted a formal hearing into the accident. During the hearing, US Coast Guard and NTSB investigators heard from 23 witnesses who provided testimony into pre-accident historical events, regulatory compliance, crewmember duties and qualifications, mechanical systems, emergency response, and Coast Guard oversight.

E. FACTUAL INFORMATION

1.0 Background

The 169-foot-long small passenger vessel *Spirit of Norfolk* was owned and operated by Hornblower Cruises and Events LLC. The vessel operated out of the Waterside Marina located on the Elizabeth River, in downtown Norfolk, Virginia. The vessel was used for public dining and sightseeing cruises as well as private charters for corporate events, birthday parties, weddings, or other special occasions. All cruises were conducted within the Hampton Roads area of Virginia.

2.0 Accident Narrative

2.1 Initial Events

On the morning of June 7, 2022, the captain who was also the Director of Marine Operations for City Cruises in Norfolk was conducting an orientation for a new-hire employee who was hired as a captain for City Cruises. The captain asked the new-hire if he would like to pilot the *Spirit of Norfolk* for the trip that would be leaving momentarily, and the new-hire said yes. With the new-hire at the wheel and throttles and the captain in the pilothouse, the vessel departed the dock at 1113 for a two-hour site seeing trip that included a buffet lunch for two school groups of young children. A total of 108 people were on board the vessel consisting of 36 children and 55 adults as passengers and 7 crew and 7 restaurant staff, 2 photographers, and a disc jockey. The ship's crew consisted of the captain, the pre-hire captain, 2 first mates and 3 deckhands.

At 1130 a first mate and a deckhand began their twice-an-hour round of the engine room when the vessel is underway. They did not notice anything out of the ordinary. The captain estimated that since the deckhand was being trained in how to conduct a round of the engine room, the two of them may have exited the engine room at 1140. At 1131, the *Victory Rover*, underway with passengers for a site seeing cruise, overtook the *Spirit of Norfolk* about 4.5 miles south of Pier 4 at Naval Station Norfolk. At 1159, after the buffet lunch service ended and when it was adjacent to the Norfolk Naval Base, the new-hire captain began to turn the *Spirit of Norfolk* around for its return leg of the trip. He brought the rudder to amidships and slowed the engines in order to use the engines and the inbound current to turn the vessel to port. Before the vessel began to turn, the pre-hire captain noticed that the engine controls were not responding and the port engine revolutions per minute (RPM) readout had dropped to zero. Alarms sounded. Neither captain immediately identified the alarms except for one – the controller alarm that stated, "lost connection to port main engine" and the console lights throttle lights were flashing red and green, indicating trouble. The captain directed the senior mate to check out the engines. Before hearing the report from the engine room, the captain and new-hire captain noticed smoke from the port side engine room vent being blown forward.

Using Channel 16 on the VHF radio, the captain informed Coast Guard Sector Virginia at 1203:58 of their emergency stating that they were right off Naval Base Norfolk, had 108 people on board and he believed they had a fire in the engine room.

After receiving the orders from the captain, two deckhands who were eating lunch in the galley compartment went to the engine room quick acting watertight door on the centerline of the ship, in the bulkhead separating the engine room from the Galley. The more senior deckhand opened the door slightly and peered into the engine compartment. He saw flames outboard of the port engine and grey smoke . He shut the door, faked out a fire hose and had the other deckhand grab a portable extinguisher. He decided not to fight the fire. He closed and secured the door, and he and the other deckhand went to the main deck.

From the pilot house, the captain began directing and monitoring the crew's actions communicating with them over handheld radios, shutting down the powered ventilation to the engine room and directing a deckhand to close the fuel shut-off valve to the engines, located on the main deck of the vessel, which he did. The vents were not fitted with dampers or other means for shutting off the passage of air during a fire. The restaurant manager used her handheld radio to tell all the crew to move passengers to the third deck, the upper deck – the "area of refuge" in a fire emergency, and spoke to the disc jockey, directing him to announce all passengers were to move to the third deck. The fire alarm was not sounded, and no fire announcement was made.

Almost immediately, vessels in the area responded to the scene after seeing the smoke or hearing the *Spirit of Norfolk* radio calls to the Coast Guard. The captain of the *Spirit of Norfolk* received a VHF radio call on channel 16 at 1205:36 from the captain of the *Victory Rover*, a smaller passenger vessel that was also conducting a harbor sightseeing cruise. The captain of the *Victory Rover* told the captain of the *Spirit of Norfolk* that he could come alongside and evacuate passengers. The *Spirit of Norfolk* captain told him to do it. The *Rosemary McAllister* arrived in the vicinity of the Spirit of Norfolk at 1207. At 1209, the Coast Guard began broadcasting Urgent Marine Information Broadcasts (UMIB) announcing the fire on the *Spirit of Norfolk* and requesting vessels to assist. At 1210, *CG29274*, a 29-foot Coast Guard response boat was enroute with an eta of 20 minutes from the Coast Guard station in Portsmouth, Virginia. At 1211, the captain of the *Spirit of Norfolk* used VHF channel 13 to broadcast a request for assistance from any tugboats in the area. The new-hire captain communicated with the Coast Guard and other vessels using the ship's VHF radio.

Some of the ascending smoke from the engine room vents drifted onto the open upper deck. Passengers began to cough and move about the deck to avoid the smoke. Because of the conditions, the crew directed that all persons move to the deck below, the second deck, to get them away from the smoke. Once on the second deck, the crew began distributing personal floatation devices (PFD) and directed the passengers to don them. All passengers donned the PFDs and the crew assisted as needed and ensured all passengers were wearing them. The crew then organized the passengers for evacuation. The crew directed the passengers to form a line

beginning at the main deck boarding area at the bottom of the stairwell on the port side, forward, with the line running up and out of the stairwell onto the second deck.

At 1213, the crew boat *Ohio River* arrived in the vicinity of the *Spirit of Norfolk* and the *Rosemary McAllister* crew used its fire monitor to begin spraying a water curtain over the *Spirit of Norfolk*. At 1215 the crew of the *Rosemary McAllister* passed a line to a deckhand who then placed the line around a cleat on the bow of the Spirit *of Norfolk* and began maneuvering the vessel to the center of the channel orienting the *Spirit of Norfolk's* bow into the southern wind so smoke escaping from the engine room vents, aft on the vessel, did not blow forward. The *Victory Rover* captain maneuvered and came alongside the *Spirit of Norfolk* at 1216. At 1218 the tugs *Challenger*, *Condor* and *GM McAllister* all arrived in the vicinity of the *Spirit of Norfolk*. At 1219, The *Rosemary McAllister* captain assumed lead of the Good Samaritan vessel response. The captain of the *Spirit of Norfolk* had requested that the tugboats put water into the engine room ventilation ducts. The McAllister tug *Condor* captain cooled the ship and its occupants. He used his fire monitor to put water onto the port side of the ship by the engine room and created a mist to cool the air near the Engine room. The *Challenger* sprayed water into the engine room vent on the starboard side.

As the *Victory Rover* captain positioned the vessel's starboard side on the *Spirit of Norfolk's* port side, he could not maintain contact with the *Spirit of Norfolk* - a small gap existed between the two vessels which the *Victory Rover* captain determined would have made it dangerous for passengers to leave the main deck of *Spirit of Norfolk* for the narrow space of the main deck outboard of *Victory Rover*'s rails and then to climb over the rails or for children to be handed over the rails of the *Victory Rover*. He called on the Towing Vessel *Condor* before it departed to assist the Spar Lyra, and then the crew boat *Ohio River,* to press the *Victory Rover* into the side of the *Spirit of Norfolk*. With the gap between the vessels eliminated, the two captains agreed to begin evacuating passengers. One-by-one, first the passengers and then the crew exited the *Spirit of Norfolk* superstructure through the main deck entrance. Adults climbed over the rail of the *Victory Rover*, onto its main deck and children were lifted over the rail by their parents or the crew. On the *Victory Rover*, a deckhand assisted people climbing over the rail and completed the lift of the children. At 1222, the *CG29274* arrived on scene.

During the time the *Victory Rover* was alongside the *Spirit of Norfolk*, the captain energized the electric switch on the bridge for the main fire pump and then, with a deckhand's assistance, ran a hose from aft on the main deck in order to spray water at the port side engine room vent. Before they could use the hose, the generator stopped working and the main fire pump could not pump water without electricity.

At 1232, the captain of the *Spirit of Norfolk* reported that 106 persons had been transferred to the *Victory Rover*. The captain and the new hire remained on the vessel. They swept the vessel, walking through the decks and the public spaces below the main deck, ensuring that all passengers and crew had left. At 1234, the northbound bulker *Spar Lyra* passed the Spirit of Norfolk and the Good Samaritan

vessels without incident. Just before passing the *Spirit of Norfolk*, the *Spar Lyra* suffered an electrical failure, a vessel blackout and lost steering and propulsion. The tugs *Condor*, *Fort Bragg* and *Z One* had departed the vicinity of the *Spirit of Norfolk* to assist the *Spar Lyra*. At 1238, the Naval Base Norfolk Commanding Officer gave permission for the *Spirit of Norfolk* to dock at Pier 4. At 1239, Virginia Beach *Fire Boat 1* arrived in the vicinity of the *Spirit of Norfolk*. After finishing the sweep, the captain took the fire control plans of the vessel from its storage location on the main deck at the stern and placed them outside the superstructure on the O2 deck so they would be readily visible. The captain and the pre-hire captain then boarded a Good Samaritan vessel, the *Ohio River*, a crew boat at 1240. About 5 minutes later, they transferred from the *Ohio River* to a Sea Tow small boat. On board the *Victory Rover*, the crew of the *Spirit of Norfolk* and *Victory Rover* accounted for everyone by counting the number of people transferred and asking *Spirit of Norfolk* passengers if their party or family members were present. At 1246, with no one on board, the *Spirit of Norfolk* was undertow to Pier 4 with the assistance of the *Challenger*, *GM McAllister,* and *Rosemary McAllister*. The *Rosemary McAllister*, secured to the port side of the *Spirit of Norfolk,* brought the vessel stern first to Pier 4 where it was secured, starboard side to the pier.

The *Victory Rover* took the *Spirit of Norfolk* passengers to the Town point Park in downtown Norfolk, docking at 1253. There the passengers were met by Norfolk Fire and Rescue (NFR) personnel who were ready to render medical aid, a Coast Guard chaplain and public affairs officer, and other Coast Guard personnel. NFR had sent medical units and a mass casualty bus. The Coast Guard personnel counted 106 people from the *Spirit of Norfolk*, concluding that no passengers or crew were missing. Regulations required the operators of the *Spirit of Norfolk* to know the number of passengers that were on board the vessel. There is no requirement to keep a list of names. No one was injured.

2.2 Firefighting Response

At approximately 1209, the Regional Dispatch Center of Commander, Navy Region Mid-Atlantic, received a distress call from the *Spirit of Norfolk*. In the distress call and communications immediately following, the *Spirit of Norfolk* stated that it had a fire in its engine room and was located in the Elizabeth River near Naval Station Norfolk. The Navy Regional Dispatch Center immediately dispatched Navy Federal Fire (FEDFIRE) units to Naval Station Norfolk's pier area. The Naval Station Norfolk Commanding Officer happened to be on the pier and saw the smoke coming from the *Spirit of Norfolk*. He immediately contacted base personnel telling them to assist in the response. This included opening the Waterfront Security Barrier, an anti-terrorism floating fence that blocked access to the Naval Station Norfolk piers and making Pier 4 available to moor the *Spirit of Norfolk*. Firefighters, apparatus, and SUVs arrived at pier 4 awaiting the *Spirit of Norfolk* arrival. At 1238, the Commanding Officer gave permission for the *Spirit of Norfolk* to dock at Pier 4.

Fire departments declined to participate in Coast Guard interviews and the public hearing. The Navy and City of Norfolk fire departments declined interview requests from the NTSB IIC. Fire Department information in this factual report is based on the fire departments' post-incident reports and responses to the Coast Guard and NTSB investigators' written questions.

The Norfolk Fire Battalion 3 commander arrived at Pier 4 at 1225. When he arrived, he observed Engine 11 of the Navy fire department was on the pier and had established a water supply by drafting, the process of raising water from a static source -- in this incident, the Elizabeth River. Norfolk fire Department Engine 12 arrived and established a water supply by drafting and ran 600 feet of 2.5" hose for fire attack and provided Naval Station Norfolk Fire Department's Tower 11 with water via a 3.5" hose.

In the City of Norfolk Fire Department's response to Coast Guard questions, the unified command was established at 1245. The Navy and Norfolk fire department chiefs were both wearing Incident Commander vests. In a statement provided to the Coast Guard investigators, the Navy Region Mid-Atlantic Commander wrote, "Navy FEDFIRE and their local on-scene partners formed a Unified Command (UC) to coordinate rescue and firefighting operations." In a written response to Coast Guard investigator questions, the City of Norfolk Fire Department said the Navy Regional Fire Battalion Chief was the incident commander explaining, "The Mutual Aid Agreement between Program Director, Regional Public Safety, Navy Region Mid-Atlantic, and the City of Norfolk (dated May 11, 2009) mandates that the senior officer of the party requesting assistance shall assume authority of the scene unless there is an agreement between the parties to change that presumption. Accordingly, a fire on a civilian vessel alongside a Navy pier would be the jurisdiction of Navy Regional Fire and, if Navy Regional Fire requests assistance from the City of Norfolk, the incident commander would accordingly be a Navy Regional Fire representative."

Battalion Commander 3's report said the Naval Station Norfolk fire chief created an Incident Action Plan (IAP). Upon the *Spirit of Norfolk* approaching dockside, Navy units were to lay out a line of fire hose. Navy Engine 11 would manage this line. Norfolk engine 12 was to man the 2.5" "Big Water" to back up Navy engine 11. A third engine crew would take an additional hand line aboard the vessel, but it was uncertain as to the definitive actions of where this hand line would be placed.

Upon the ship approaching the pier at about 1307, water from Norfolk Engine 12's 2.5"-line was streamed into the engine room vent on the starboard side. Battalion Commander 3 noted that despite the added water, heavy smoke continued to come from the vessel. He observed that conditions were worsening. More water was added -- Tower 11 began streaming water into the engine room vent. The Port of Virginia Marine Incident Response Team (MIRT) Executive Director estimated that each stream has the capability of flowing up to 1,000 gallons a minute[1].

[1] Investigators did not attempt to calculate the amount of firefighting water that entered the engine room compartment through the vents.

When the captain arrived at pier 4, after disembarking from the Sea Tow small boat, the Executive Director of the MIRT told him to go to the incident command post (truck). There he told them where he had placed the fire control plan and he could show them and answer any questions they had about the vessel. He then walked to the vessel with a Norfolk firefighter and showed him where the engine room access hatch was located on the starboard side. He recalls saying, "this aft-most window on the port (starboard) side, break that window and you'll see the hatch right there, there's a placard right there but the hatch is right underneath it." The location of the hatch came up again in the presence of the fire chiefs. He told them where the hatch could be accessed. The captain recalled that the chiefs discussed if they could get equipment into that location, that it may be too narrow. The Executive Director of the MIRT told investigators that he spoke to the Navy and Norfolk Fire Chiefs of the Unified Command, at their command post recommending that they retrieve the fire plan from the vessel so they can locate the engine room emergency escape hatch and that they should access the engine room through the emergency hatch on the main deck and apply foam into the engine room through the hatch. The City of Norfolk Firefighting presentation said that the fire attack plan was to board the *Spirit of Norfolk* from a horizontal apparatus ladder and then descend to the main deck and enter the structure on the after starboard side and put foam into the engine room through the engine room emergency escape hatch.

Towing vessel log sheets and post incident written statements by tug captains relate that at 1335, the captain of the *Surrie Moran* finished mooring the Spirit of Norfolk to Pier 4. At 1345, the crew of the *Fort Bragg* directed water into the vents "where smoke exits the vents" on the port side of the vessel and reported the Spirit of Norfolk draft marks "every 5-10 minutes." The crew of the *Wendy Moran* did the same. The Battalion Commander 3's report said that the shoreside and waterside streams of water into the port and starboard engine room vents appeared "to have worked for the short term" which led to a change from the initial action plan. The change was to send a reconnaissance (RECON) team on the ship to locate the hatch to the engine room located on the main deck and to retrieve the fire control plans the *Spirit of Norfolk* captain had left on the vessel for the firefighters.

The Navy Commander's statement said, "The UC also ordered a team onboard to identify all locations of the fire." The City of Norfolk's presentation said the team was to locate the fire, retrieve the vessel plans and find the access hatch to the engine room. The team was briefed that the emergency hatch was supposed to be 15 feet deep (forward) and 10 feet to the right after they entered the ship superstructure on the main deck at the stern. A four-person shoreside reconnaissance firefighting team went on the vessel. The team consisted of two members from Norfolk Engine 12 and two members from Navy Engine 4. With the main deck passenger embarkation entrance on the waterside, the RECON team boarded the vessel using a Ladder Truck ladder laid out horizontally, resting on the second deck rails at the starboard side near the stern of the *Spirit of Norfolk*. According to the City of Norfolk's presentation, the RECON team did not locate the engine room hatch and found the fire contained in the engine room. The presentation said, "When the recon team could not locate

the engine room emergency hatch, it proceeded to the engine room to assess the situation. After opening the engine room door and surveying the extent of the fire, the RECON team closed the door and disembarked from the vessel. They reported "visible conditions" on the main deck. The Battalion 3 Commander's report commented, "Conditions aboard the ship on the entertaining deck was visible conditions. Very little obscuring of surveying all areas aboard the ship." The RECON team ventured below the main deck into the Galley. The Battalion Commander 3's report said that the galley was dark, but clear for foot traffic. The team made its way aft in the galley to the engine room door in the bulkhead that separated the galley from the engine room. A member of the team opened the door and noted "rollover, pre flash over conditions," indicating that flames were spread across the overhead (ceiling) of the engine room. The engine room door was closed and secured using the handwheel locking mechanism and then the RECON team exited the galley and the vessel. Based on the RECON's team assessment, the next plan of action was to send a team on board the vessel with a hand line for placing foam into the engine room. Notes taken off a police scanner by City Cruises employees noted, "1420 – recon team is OFF Vessel."

The Coast Guard Deputy Sector Commander was present when the RECON team went on board the *Spirit of Norfolk*. Neither the Executive Director of the MIRT or the Deputy Sector Commander were part of the initial unified command. The Executive Director told investigators that he understood from his visits to the command post that the firefighting team was going to apply foam into the engine room through the emergency hatch. He passed this information to the Deputy Sector Commander. The two of them stood apart from the command post, on the pier next to the *Spirit of Norfolk* while the firefighting team went on board the vessel. The executive director said he was unaware that the recon team did not locate the emergency hatch.

Notes taken from the police scanner were that at 1437, the incident commander was "Looking to make reentry into the vessel." And at 1450, "Conditions changing; dark black smoke port side. And at 1456, "charging foam line."

Battalion Commander 3 noted that "the entry team was eagerly directed on the ship to get the foam in operation" and at the time the team went on board the vessel conditions had changed "drastically. Visibility had decreased, but was still manageable, and the entry decking was a little warmer. Entry was made downstairs, into the galley area for foam deployment. The plan was to open the engine/fire room door, open the foam nozzle and keep it open and rapidly vacate the structure."

In response to investigator written questions, the City of Norfolk replied that they did not recollect any discussions in the Unified Command addressing ramifications of opening the engine room watertight door in terms of breaking the fire boundary, risk to firefighters, spreading the entrained firewater throughout the vessel, rescue, or backdraft.

At some time after 1437, a four-person team made up of two persons from the recon team and two new members boarded the ship to put out the fire. The team made its way to the engine room door in the galley below the main deck. A member

of the team opened the door. As described by Battalion Commander 3, in his post incident report:

> With a slight quarter turn on the turn wheel, pressure from behind the door was felt. Instantly, the engine room door exploded open causing was (what) appeared to be a minor back draft/flash over inside the kitchen (galley) area where the engine room was located. Thousands of gallons of rapid water came rushing out from the fire room. This rapid water created a separation of the initial entry team. The officer of the entry team was trapped behind the door of the engine room and unable to secure (the door) because of the weight of the rapidly moving water. At the same time the water came rushing out, it went up into flames and knocking over the nozzle man. The crews, disoriented below deck tried self-extricating unaware of the condition of the other team member.

Describing what occurred, the Chief Warrant Officer who was Sector Virginia's command center representative on scene told investigators that he heard a loud explosion or a loud noise that "drew everyone's attention to the boat and then you saw it quickly snap to port", and "…you could visibly see the ship, the *Spirit of Norfolk*, shift to port hard. The lines went very taut, and you heard a loud explosion or a loud noise. I'm not sure if it was an explosion or not, but it was later explained it was a backdraft when they opened that hatch (engine room door). At that point, all the sirens, everybody was yelling get off the ship, get off the ship, because it did appear like it was going to roll at that time." The Deputy Sector Commander told investigators, "We heard a boom and the boat violently listed to port…I thought we were capsizing the boat and losing that Fire Team."

The Chesapeake Battalion Chief's comments in the Chesapeake Fire Department report read that during the MAYDAY, smoke conditions deteriorated, and the vessel began listing to port and that the vessel was continuing to be cooled by Moran tugs and Norfolk Regional Fire and Rescue Ladder 7. He said that at one point the smoke was exceptionally light and "it was believed the fire was out."

At 1458, the entry on the police scanner notes read, "vessel has serious; hard learn (lean) to port;" at 1458, the order to evacuate the vessel was given; and at 1459, a Mayday was declared. Immediately firemen radios, hand-held and in vehicles on the pier resonated with the word "Mayday" and firemen pushed their vehicle horns – alerting everyone in the vicinity to the Mayday, that firemen are at risk. With the ship listing to port, in his post-incident written statement, the *Surrie Moran* captain said he was "instructed to hold the ship to the pier due to the severe list so firefighters could get off *Spirit of Norfolk*." At 1506, the four firemen made their way off the vessel via the aerial ladder and were decontaminated because they "were saturated in diesel fuel." After Decontamination, the team was rehabbed (medical attention). Investigators have not heard of any injuries reported by the entry team.

The City Cruises General Manager told investigators, that in a conversation with the Navy Fire Chief the day after the fire began, he said, "Are you talking about during the mayday event when someone opened a door they shouldn't have

opened?" The Executive Director of the MIRT told investigators "…that it was a mistake in opening that door. Because that was not the plan from the IC. Based on everything that I see, was to go through the hatch on that main deck.

The engine room door remained open. With water no longer confined to the engine room – now flowing into the galley, the vessel listed to port. The incident command ceased all firefighting operations until a written stability assessment and a plan for the removal of (contaminated) bilge water was provided. The Deputy Sector Commander acting for the Captain of the Port ordered that no one go on board the *Spirit of Norfolk* until the Captain of the Port was satisfied that the vessel's stability was adequate – the Deputy Sector Commander did not want the vessel sinking at the Navy pier and causing pollution. The Executive Director of the MIRT said he was called to the Incident command post and heard the Norfolk Fire Chief say, "Nobody else is going to go on that vessel, all right. We're not going to put any water in it because we don't want it to sink and we're just going to cool it from the outside."

In response to a question concerning the plan to attack the fire through the engine room emergency escape hatch or through the engine room water tight door, the City of Norfolk presentation read, "(The RECON team) Having failed to locate the engine room escape hatch, the fire attack team attempted to place the foam line in the engine room via the engine room door before securing the line in place and withdrawing from the vessel.

At 1500, the crew of the *Fort Bragg* and the *Wendy Moran* were ordered to stop spraying water into the vents on the port side. The Fort Bragg was redirected to spray water on the port quarter portions of the hull for boundary cooling. The captain of the *Patricia Moran* entered in his log that his vessel sprayed water onto the port quarter of *the Spirit of Norfolk* (Boundary cooling). The MIRT Executive Director said that after the Mayday, "For the next hour, almost hour and a half, there was no smoke generation. Smoke had stopped. At 1515, the *Surrie Moran* stopped holding the *Spirit of Norfolk* against the pier, pulling away and standing by for further instructions. At 1531, the entry from the police scanner notes read, "No more water onto vessel; only cool exterior – hopefully it will extinguish itself."

At about 1600 the Coast Guard Captain of the Port for Norfolk arrived on scene at Pier 4, traveling from Coast Guard Reserve Training Center in Yorktown, Virginia where he had been participating in a presentation on emergency response, after first visiting the scene of returning Spirit of Norfolk passengers and crew at Waterside Park. Once on scene he was busy speaking with his staff, the fire chiefs, and the MIRT Executive Director.

The statement from the captain of the *Wendy Moran* said that at 1615, an order was received for towing vessels to stop spraying water so Navy firefighters could scan for temperatures on the *Spirit of Norfolk*, at 1622 vessels were told to begin spraying water again because a reflash occurred, and at 1751 vessels were again told to stop spraying "water for fireboat to obtain hull temp readings."

At approximately 1730 firefighting foam was directed into the vents on the starboard side of the vessel after the MIRT Executive Director made the recommendation to the incident commander after he noted smoke billowing from

the vents. The Chesapeake Fire Department Apparatus Report for Apparatus Number Foam 2 "B" narrative read, "Foam 2 flowed approximately 400 gallons of Class B foam" using a 2.5" hose into a vent on the starboard side of the *Spirit of Norfolk*. The fire department reports did not include specific times that the foam was deployed. The Executive Director of the MIRT told investigators that "it wasn't long after (DONJON) showed up; we started to flow foam into the vents." The DONJON salvage and firefighting expert said he arrived at 1715, after driving to the scene from North Carolina. A narrative from Apparatus E-1B said they assisted Foam 2, "We flowed foam into several openings on the starboard side of the ship in efforts to reach the engine room and lower parts of the vessel. For the following hours we periodically applied foam into the openings until instruction was given to standby. Incident Command instructed the foam team to demobilize. All personnel cleaned, repacked, and went out of service to restock. We flowed roughly 330 gallons of AR-AFFF Class B foam concentrate at 3%."

The Chesapeake Fire Department Apparatus Report for Apparatus Number BC1 B, the Battalion Commander read:

> At approximately 1600HRS CFD units were cleared – I was in my vehicle in the parking lot with Engine 2's crew, when the fire picked back up and we were requested to come back – We were then assigned to deploy foam handlines and place the foam in two open areas on the starboard side. CFD crews handled this assignment. -I had Engine 2 leave the foam assets and return to service, as we had enough of our personnel on scene. – We were then directed by the same IC to deploy foam handline and direct them into two open areas on the starboard side, which CFD crews performed. We were instructed to flow for 10 minutes and let it sit, see if the foam was having an effect. This was to keep from putting too much water on the vessel. -This was performed several rotations with differing effect, after several hours and worsening conditions foam operations were ceased, and the action plan was to let it burn. – We cleared at approximately 2000 HRS. – Approximately 300 gallons of Universal Gold was used and was relayed to [name redacted] (MIRT) for the salvage company remediation.

At 1800, the crew of the *Surrie Moran* used its forward fire monitor to provide boundary cooling to the after-port quarter of the *Spirit of Norfolk*. At 1835 the *Marci Moran* replaced the *Surrie Moran* and sprayed water from its forward fire monitor onto the port side of the *Spirit of Norfolk*. The *Marci Moran* captain noted that he saw smoke coming from three separate vents on the port side. At 1848, the *Surrie Moran* departed the scene.

At 1850, the Deputy Sector Commander finished a conversation with the salvage engineer from DONJON marine. The salvage engineer proposed that the firefighters go on board the vessel to fight the fire. He told investigators that based on his experience with vessels that the *Spirit of Norfolk* was stable. He told the Deputy Sector Commander that the vessel was not lolling, did not have a long period of roll,

and that indicated that the vessel had adequate GM. He told investigators that if the vessel was lolling, the GM would have been less than 1-foot. The Deputy Sector Commander said no, saying she wanted to see the stability of the vessel calculated and assessed. The Deputy Sector Commander told investigators that at that time, their job was to keep the vessel afloat and not risk lives. She told investigators that when the engine room door was closed, restricting firefighting water in the engine room, she was comfortable filling the engine room with water based on her own knowledge and confirmed by Sector Virginia vessel inspection personnel. However, once the water was in the galley, she had no stability information on which to decide. The salvage master told investigators that after their discussion on the pier and ahead of the 2000 Unified Command meeting, he used a formula to calculate a GM of 4.9 feet based on the draft marks and measuring the period of role of 6.5 seconds. He did not re-engage with the Deputy Sector Commander on this subject.

At 1915 the captain of the *Marci Moran* noted flames coming out of the vents on the port side and at 2012 noted steady flames coming from the vents. The crew of the *Patricia Moran* shifted from boundary cooling on the port quarter to cooling the transom.

At the 2000 meeting of the Unified Command, which now included the Coast Guard Captain of the Port, the members discussed what would happen to the vessel if they did not get inside to extinguish the fire. The Captain of the Port told investigators the unified command evaluated what would happen if they didn't access the hull of the vessel and concluded that it was likely that the fire would consume all combustibles and fuel within the vessel. Until the stability information was provided, the Unified Command agreed to maintain cooling and monitor the vessel draft and list until they obtained the stability information.

At 2115 the captain of the *Marci Moran* noted the fire had spread to the forward part of the main deck including the embarkation area on the port side, at 2116 that the two forward windows on the port side, main deck were blown out, at 2118, an explosion was heard on the 01 level and the 01 level was engulfed in flames, at 2123 the remaining windows on the main deck were blown out, at 2147, the remaining windows on the 01 level were blown out and at 2213, he noted in an explosion in the pilot house and the 02 level was engulfed in flames and all 02 level windows were blown out. The Deputy Sector Commander recalled that the windows blew out on the main deck of the *Spirit of Norfolk*. She was "standing on the pier and it just happened, and it was, it was intense, and then the fire just, just, just started blowing straight across the pier."

At 2200, the crew of the *Fort Bragg* shifted from spraying water on the port quarter portions of the hull to the stern of the vessel, boundary cooling the transom and the starboard after quarter adjacent to Pier 4. At 2359, the crew of the *Patricia Moran* shifted from boundary cooling the transom to cooling the starboard transom and the starboard side of the hull adjacent to Pier 4.

On June 8th, at 0100, the crew of the *Fort Bragg* stopped spraying water on the transom and the starboard after quarter adjacent to Pier 4, restarted boundary cooling the same area at 0130 and stopped again at 0200. The *Marci Moran* was still

on scene, spraying water onto the port side of the *Spirit of Norfolk* and did so until 1800 with the exception of a break between 0630 and 0745, when it was relieved by the *Z One*.

At 0700, the captain of the *Fort Bragg* said the "fire reflashed" and that Z One began boundary cooling on the port side of the vessel. The Sector Commander called it a "significant reflash." At 0730, the crew of the *Fort Bragg* again began boundary cooling the transom and the starboard after quarter adjacent to Pier 4. On the morning of June 8th, the sector commander was enroute to a change of command staying in touch with the deputy sector commander who was on Pier 4. He received a report that there was a significant reflash that morning and he and his travel party looked eastward from Monitor-Merrimac bridge and saw a massive plume of smoke emanating from the *Spirit of Norfolk* four miles away. The report he received was at that point the fire had taken an uncontrollable turn from the previous day's events.

On June 8, the unified command met at 0800 and learned that there was about 150,000 gallons of water onboard and that two portable fracking water tanks, to be placed on the pier, and a barge for wastewater would be arriving on June 8. The plan for the day was to start dewatering the vessel, get dewatering equipment on the vessel, continue cooling the vessel and fire fight if necessary. The UC discussed identifying decision points for entry onto the vessel, for stability - when they would or would not allow people on board. They discussed setting clear requirements for going on board the vessel to fight the fire, go or no-go criteria, and wanted to have a rescue crew in case something happened.

At 0946 the Salvor from DONJON sent an email to the Coast Guard Salvage Engineering Response Team (SERT) with stability data and diagrams in order for the SERT to approve the information to allow the dewatering of the vessel. Based on his calculations, the salvor concluded that the vessel would not capsize if the heel of the *Spirit of Norfolk* was less than 4.5 degrees; Trim less than 3 feet aft; No more than 75% capacity in the engine room and galley; or a draft of less than 11' 9' aft on the port side.

At 1030, the crew of the *Fort Bragg* shifted from spraying water on the transom and the starboard after quarter adjacent to Pier 4 to the port transom and then at 1130, shifted to boundary cooling the starboard transom. At 1400, the *Fort Bragg* was relieved by the *Surrie Moran*.

Because the boundary cooling efforts continued, water was still entering the vessel through the vent trunks and main deck windows, now no longer fitted with glass because of the effects of the fire.

The UC approved the dewatering plan at 1420 and began dewatering at 1620. Hoses were run from the frack tank, to a four-inch submersible pump in the galley and to a three-inch submersible pump placed in the engine room through the hatch on the main deck. No flames were visible on the decks when the pumps were placed. Within the hour, the first 21,000 gallon frack tank was full. Upon examination fire fighters found that the tank was half-full of water and half-full of firefighting foam. As the effluent entered the tank, the foam expanded as it aerated. The barge that was to

receive the water from the fracking tanks did not arrive until 0006 on June 9th and the tankerman required for the transfer of the wastewater had not yet arrived.

At 0230 on June 9th, a Coast Guard marine inspector, the Coast Guard representative during the night, called the Sector Commander recommending that personnel pump water to the barge even though the tankerman had not arrived because the *Spirit of Norfolk's* aft port stern was awash. The sector commander gave the go ahead. The Sector Commander was concerned with the threat that the vessel may sink that he authorized discharging water "over the top," discharging liquid into the barge through open hatches in the expansion trunks on the barge instead of through the barge cargo manifold. The effort did not go smoothly, some pumps did not operate and there were not enough hoses to speed up dewatering. Learning of the difficulty with the pumps the Naval Base Commanding Officer directed naval damage control personnel to bring drop pumps and hoses and assist in the dewatering effort. The tankerman arrived at 0400 and connected hoses to the cargo manifold. Slow progress was made dewatering the vessel, by 0600, the deck was no longer awash.

On June 9th the UC discussed how to overhaul the fire; the need to establish a safety plan because during the previous day, personnel with the responsible party salvage team were going on board the vessel without wearing respirators; what does entry onto the vessel for firefighting purposes look like; and how to make go, no go decisions. The Coast Guard Deputy Sector Commander began working on a tow plan with the City Cruises representative - A plan for moving the *Spirit of Norfolk* from the Naval Base. At 1438, the salvage master found too much debris in the galley, preventing him from making his way to the engine room door to close it. At 1445, entering through the engine room emergency escape hatch, personnel closed the engine room watertight door from inside the engine room and noted that the starboard fuel tank was open (destroyed), and the port tank was bulged. At 1600, the unified command had estimated that 191,000 gallons of water had been pumped off the *Spirit of Norfolk*.

On June 10th, at 0758 the Unified Command was briefed that the fire was still burning in the galley, likely in the area of the "galley grease drainage." Later that day, after a dive plan had been approved at 1413, the dive team began surveying the hull of the *Spirit of Norfolk* at 1450. At 1453 an overhaul of the fire from the pilothouse/upper deck, second deck and main deck had been completed. At 1600, personnel had made their way to the port fuel tank and found the sight glass was "gone", leading the unified command to conclude that no fuel remained in the port fuel tank.

At 0000 on June 11th, the unified command allowed the watertight door to be left open for ventilation and ease of access. At 0800, the salvage team reported that 250,000 gallons of liquid had been pumped from the vessel and at 0959, the unified command declared the fire "out" four days after it started. At 1025 the Coast Guard approved the plan to tow the vessel from Naval Station Norfolk to the Colonna's Shipyard in Norfolk. At 1500, the Unified Command noted that the forepeak, bow

thruster room, forward void space, steering gear room and aft void had been "cleared" and the galley and head spaces had been overhauled.

3.0 Shipboard Organization

Seventeen City Cruises employees were on board the *Spirit of Norfolk*. Marine Operations staff on board the *Spirit of Norfolk* were the captain, the new hire captain, 2 first mates, and 3 deckhands. The *Spirit of Norfolk* hospitality staff consisted of the restaurant manager, a bartender, cook, sous chef, server, 2 server assistants, two photographers and a disc jockey. The manning required by the Coast Guard Certificate of Inspection when carrying less than 300 passengers was a captain, a licensed mate or Senior Deckhand in accordance with Navigation and Vessel Inspection Circular (NVIC) 1-91 and three deckhands, including the Senior Deckhand. NVIC 1-91 defines a Senior Deckhand as one who has 30 days experience on board the vessel and 30 hours at the helm under supervision of a master or mate.

3.1 Crew Information

The captain, who held a credential as master of self-propelled vessels not including auxiliary sail of less than 100 gross register tons (GRT) upon inland waters, also served as City Cruises Director of Marine Operations for the vessels operating in Norfolk, Virginia. He began working for City Cruises as a deckhand at the age of 16 and began serving as the master on City Cruises operated vessels after obtaining his credential in 2011. He became the Director of Marine Operations in 2016. As the Director of marine operations, he oversaw the operation and maintenance of vessels.

3.2 Toxicological Testing

After the crewmembers were removed from the vessel they submitted to drug and alcohol testing.[2] All results were negative. The new-hire captain was not tested.

3.3 Injuries

No injuries were incurred by passengers or crew during the event.

[2] The Coast Guard requires toxicological testing after a serious marine incident, defined at Title 46 CFR 4.03-2 as (a) a marine casualty or accident that results in any of the following: (1) one or more deaths, (2) injury that requires medical treatment beyond first aid and renders the individual unfit to perform routine duties, (3) property damage exceeding $100,000, (4) actual or constructive total loss of an inspected vessel, or (5) actual or constructive total loss of any uninspected vessel that exceeds 100 gross tons; (b) discharge of 10,000 or more gallons of oil into US waters; or (c) release of a reportable substance into the environment of the United States. Because the Island Lady fire resulted in one death, the total loss of the vessel, and property damage exceeding $100,000, the accident qualified as a serious marine incident.

3.4 Vessel Emergency Plans

3.4.1 Fire

The City Cruises Emergency Response Plan described the action the vessels captain and crew should take when a fire occurs on the vessel.

City Cruises Emergency Response Plan

Vessel Emergencies

Fire

- Confirm the location, type and severity of the fire
- Sound the General Alarm for ten or more seconds
- Provide an announcement over the PA system as to the nature of the emergency, proper evacuation and response actions.
- Assemble firefighting team and implement action in accordance with the Station Bill
- Notify restaurant manager of situation and assistance needed
- Evacuate passengers from areas of danger to area of safe refuge
- Ready fire pump(s) and/or fire extinguishing equipment for use
- Secure ventilation systems, blowers and dampers as appropriate
- Secure fire doors, passageway doors as appropriate
- Secure non-essential electrical equipment as appropriate
- Fire team shall extinguish fire if possible, assess the situation and report status to the Captain
- If appropriate, issue PFDs to passengers and guide them to a safe area of refuge
- Sweep the area to ensure all passengers and crew have been evacuated to a safe area and accounted for
- Provide fist aid and assistance to those in need
- As soon as possible
  - Notify the U.S. Coast Guard
  - Notify emergency response/support agencies (see appendix for local responders)
  - Request the assistance of nearby vessels on VHF channel 13 and 16 if needed
- Activate the emergency call list
- Once Captain determines situation is under control:
  - Post a fire watch
  - Sound general alarm 3 times to dismiss team from station
- Follow company published incident procedures

The responsibility for carrying out the plan on the vessel rested with the captain, the senior deckhand, and the restaurant manager. The Emergency Response Plan described the roles of the three. The captain was always the person in charge of a response to a fire on board the vessel. He initiates the plan execution and carries out the plan by directing the crew. The senior deckhand coordinates and participates in actions necessary to stabilize the situation and directs the efforts of the deck and hospitality crew to man emergency stations and abate the effects of the incident. The restaurant manager was to maintain constant communication with the captain; execute and relay orders and direct the restaurant staff as needed; act as, or assign, a deck leader from restaurant staff to communicate orders; see to the passengers - keeping passengers calm, informed, and organized in groups with assistance from

restaurant service staff; and verify passengers and crew are accounted for during an evacuation.

Investigators were unable to locate a station bill that outlined the duties of the crew during a vessel fire. The captain said there was one posted on the vessel that was destroyed during the fire and he could not locate an office copy of the station bill. The regulations found in old "T" did not address station bills.

3.4.2 Abandon Ship

The City Cruises Emergency Response Plan included instructions to the captain and crew for abandoning ship. The plan said, "The decision to abandon ship is only made under extreme circumstances and all other alternatives have been exhausted. Abandon Ship is done only by the order of the captain." Instructions included having all passengers and crew don PFD's, sweeping the vessel to make sure all passengers and crew are accounted for, requesting assistance from nearby vessels and instructing the captain to "evacuate passengers to the safest platform possible." Platforms included: Another vessel or barge, a dock or pier, and ashore following an emergency grounding (stranding) of the vessel. Listed as a last resort was a water evacuation because the vessel did not carry any lifeboats, life rafts, buoyant apparatus or a rescue boat.

3.5 Regulations

3.5.1 Certification

The *Spirit of Norfolk* was certificated and inspected as a small passenger vessel per regulations at Title 46 CFR Part 175–185. The vessel's COI, valid for 5 years, was issued on February 20, 2020, after the vessel had been inspected for certification. Annual re-inspections were completed on April 21, 2021, and May 10, 2022. The vessel's last drydock and internal examinations were completed on February 21, 2022. Sector Virginia was the local Coast Guard office in charge of inspecting the *Spirit of Norfolk*.

The COI permitted the *Spirit of Norfolk* to operate on lakes, bays, and sounds, limited to Chesapeake Bay, Delaware Bay and their tributaries, including the Chesapeake and Delaware Canal, not more than one mile from shore. When no passengers were carried and not more than 20 crewmembers were on board, the vessel was permitted to transit beyond one mile from land.

The *Spirit of Norfolk's* maximum capacity was 661 persons, consisting of 600 passengers, 8 crewmembers and 53 "other persons in crew".

3.5.2 Route and Lifesaving and Fire Fighting Equipment

The *Spirit of Norfolk* was certificated for a Lakes, Bays and Sounds route limited to Chesapeake Bay, Delaware Bay and their tributaries, including the Chesapeake and Delaware Canal, no more than one mile from shore. Because of this limited route,

the vessel was not required to carry any lifeboats, life rafts or a rescue boat. The vessel was required to carry 3 ring buoys, 661 adult life preservers and 67 child life preservers. The life preservers were stored in lockers, marked with the life preserver size and quantity, forward on the main deck, forward and aft on the second deck and aft on the third deck.

The automated safety orientation aired over the *Spirit of Norfolk's* public address system mentioned that by regulation, the *Spirit of Norfolk* must inform passengers of certain safety information; where the life jackets were stored; life preserver donning instructions (simultaneously, a crew member on the dance floor put on a life preserver, following the audio script); the captain may ask you at any time to don the life preserver and direct you to a safety zone on the ship; always follow the captain's instructions; where throwable life rings were located and when to use them; ask crew members any lifesaving equipment questions or where the equipment is located; and where the life preserver donning and fire emergency egress diagrams and instructions were located.

The vessel was outfitted with one fire pump and 5-50-foot-long hoses of 1.5-inch diameter, and 10 10-pound B:C fire extinguishers. Hose stations were located in the galley, on the bulkhead separating the galley from the engine room, two on the main deck, one on the second and third decks.

3.5.3 Fire Protection Regulations

The *Spirit of Norfolk* had the firefighting equipment (fire pumps, hoses, and portable extinguishers) required by its COI. The vessel was not equipped with fixed fire suppression or detection systems in its engine room, nor (as explained below) was it required by Coast Guard regulations to have such systems.[3]

When the *Spirit of Norfolk* began operating in 1992, the Coast Guard inspected vessels of less than 100 gross tons that could carry more than six passengers (that is, small passenger vessels) according to regulations at 46 CFR subchapter T.[4] On March 11, 1996, after a lengthy rulemaking process, a complete revision to the regulations governing small passenger vessels went into effect. In its rulemaking, the Coast Guard significantly changed the organization of the regulations. Vessels carrying 150 or fewer passengers continued to be regulated by subchapter T (46 CFR Parts 175-185). New subchapter K (46 CFR Parts 114-122) was created for regulations pertaining to small passenger vessels, such as the *Spirit of Norfolk,* which were permitted to carry more than 150 passengers.

Under the revised regulations, new vessels (defined at 46 CFR 114.400 as those built after March 10, 1996) were required to be equipped with a fixed gas fire

[3] Hornblower Cruises and Events LLC has had Coast Guard–approved fixed fire suppression and detection systems installed in the vessel that was renamed and replaced the *Spirit of Norfolk*.
[4] The initial subchapter T regulations were promulgated in the *Federal Register* of October 5, 1957. Originally, subchapter T regulated vessels of 65 feet or less in length. In 1963, subchapter T was revised to include vessels (known as subchapter T-L vessels) that were more than 65 feet long and had a gross tonnage of less than 100.

extinguishing system and an approved fire detecting system for any spaces containing propulsion machinery.[5] Vessels built before the revised regulations took effect ("existing vessels") that had a hull or machinery space boundary made of combustible material such as wood or fiber-reinforced plastic (fiberglass), which the Coast Guard considered a higher risk category, were required to be retrofitted with fixed fire extinguishing and detecting systems by March 11, 1999.[6] The Coast Guard did not require retrofitting all existing vessels because "it would have a substantial cost impact on the small passenger vessel industry."[7]

Thus, existing vessels whose hulls were made of noncombustible material such as steel or aluminum, including the *Spirit of Norfolk*, were subject to the previous regulations, which required a fixed fire extinguishing system in the machinery and fuel tank spaces only if a vessel was powered by gasoline or other fuel having a flash point of 110° F or lower. Because it was constructed before the revised regulations went into effect and because its hull was steel, the new fire detection and suppression requirements did not apply to the *Spirit of Norfolk* and the vessel was not outfitted with fire detection and suppression in the engine room.

Though not required by regulations, smoke alarms were installed on decks accessible to passengers. The *Spirit of Norfolk* had a security system of cameras, smoke alarms and intrusion detection switches. At 2:25:58 p.m. on June 7, 2022, the alarm monitoring company received and acknowledged a smoke alarm on the vessel. The smoke alarms were installed on the passenger decks as part of the security system for the vessel when the vessel is docked, and no one is on board. There were no smoke detectors in the engine room.

Under Old "T" the fire protection construction of the vessel had to meet the requirements of 46 CFR 72.05. The vessel hull, structural bulkheads, decks, and the deck house were constructed of steel, meeting the requirement of 46 CFR 72.05-10(a). The hull was divided into main vertical zones meeting the requirement of 46 CFR 72.05-10(b) including the engine room. Main vertical zones are those sections, the mean length of which does not, in general, exceed 131 feet on any one deck, into which the hull, superstructure, and deckhouses are required to be divided by fire-resisting bulkheads. The forward and after bulkhead in the engine room were A-0,

[5] Title 46 CFR 118.400 (a) and (c).

[6] *Federal Register,* vol. 59, no. 9 (January 13, 1994), p. 2046.

[7] The original notice of proposed rulemaking required only existing fiberglass vessels to have fixed fire extinguishing and detecting systems. The Coast Guard stated that it had studied casualty data and determined that fires on fiberglass vessels accounted for 34 percent of machinery space fires from 1981 to 1986, although such vessels composed only 20 percent of the small passenger vessel fleet, yielding a fleet percentage to fire percentage ratio of 1.7:1 (*Federal Register*, vol. 54, no. 18 [January 30, 1989], p. 4436). Wooden vessels were originally excluded from the requirement for fixed fire extinguishing and detecting systems because their ratio was lower (1.25:1), but they were added in the supplemental notice (*Federal Register*, vol. 59, no. 9 [January 13, 1994]) because of comments received. Vessels made of steel or aluminum were found to have "much lower" ratios and were not included in the requirement.

meeting the requirement of 46 CFR 72.05-10(d).[8] The overhead (ceiling) of the engine room was A-60, meeting the requirement of 46 CFR 72.05-10(f).[9] The quick acting watertight door between the galley and the engine room was A-0, meeting the requirement of 46 CFR 72.05-25(b)(2). The engine room ventilation system met the requirements of 46 CFR 72.05-50. However, investigators noted that the engine room ducts were not fitted with manually operated dampers or other suitable means for shutting off the passage of air in the event of fire as required by 46 CFR 72.05-50(i). When the *Spirit of Norfolk* was built, it was subject to the original subchapter T hull structure requirements, including 46 *CFR* 72.05-50(i), which required that engine room ducts be fitted with manually or automatically operated dampers or other suitable means for shutting off the passage of air (in the event of fire). Existing vessels that carry more than 150 passengers, like the *Spirit of Norfolk,* are required under 46 *CFR* 177.10-5(a) to meet the structural fire protection requirements of subpart 46 *CFR* 72.05 of Subchapter H. However, 46 *CFR* 177.10-5(a) also states that, "The application of these requirements to specific vessels shall be as determined by the Officer in Charge, Marine Inspection." No record of a determination for the absence of engine room supply and exhaust duct dampers was found in the vessel file or in the Marine Information for Safety and Law Enforcement system, the electronic record keeping system used by the Coast Guard.

3.5.4 Drills and Drill Requirements and Training

The captain recalled using the *Spirit of Norfolk* as a platform in an exercise with the Marine Incident Response Team about two years before the accident. On August 7, 2018, the *Spirit of Norfolk* was used as the platform for a Port of Virginia mass rescue exercise. The captain estimated that about 150 people participated in an evacuation from the *Spirit of Norfolk* while it was underway, into small boats.

The captain told investigators that he held training three days before the fire. Participants included three or four members of the crew who were on board the vessel the day of the fire. Training included discussing how to fight an engine room fire -- Use fire extinguishers and if necessary, use fire hoses. If the compartment cannot be fought with extinguishers and hoses - close up the engine room, shutdown the powered ventilation and shut-off the fuel. That training also covered the evacuation of passengers. On that particular day, the captain led a discussion on moving handicap passengers to safety and evacuation points. The regulation in 46

[8] Class A-0 bulkhead is constructed of steel or an equivalent material and suitably stiffened, constructed to prevent the passage of smoke and flame after 60 minutes of exposure to a standard fire test.

[9] Class A-60 bulkhead is constructed of steel or an equivalent material and suitably stiffened, constructed to prevent the passage of smoke and flame after 60 minutes of exposure to a standard fire test, and when subjected to the standard fire test for 60 minutes, the average temperature on the unexposed side does not rise more than 139° C (250° F) above the original temperature, nor does the temperature at any one point, including any joint, rise more than 181° C (325° F) above the original temperature.

CFR § 185.25-10 *Drills* stated that, "The master shall conduct drills and give instructions as necessary to ensure that all crew members are familiar with their duties."

Log sheets for the month of June, June 1 -5 and 7 were on the vessel and destroyed in the fire. A copy of the vessel log for May 29, 2022, included an entry for a fire drill stating, "Tabletop review of recent suspected fire and emergency. Discussed marine-restaurant (personnel) collaboration." The accident captain was not the captain on board the vessel on May 29th.

Crew members told investigators that their firefighting training was obtained during on board firefighting drills and discussions and during annual inspections witnessed by the Coast Guard. None of the crew had attended a commercial firefighting course. The new-hire captain (ex-Coast Guard) and one of the newer deckhands (ex-Navy) had attended military shipboard firefighting training.

3.5.5 Accounting for Passengers and Crew

A count of the 108 passengers and crew was known to the *Spirit of Norfolk* captain and shoreside personnel. Because this was an existing vessel under Subchapter K, there was no regulatory requirement to keep a passenger count. However, the company's practice met the requirement of subchapter K, 46 CFR § 122.504 that prior to departing on a voyage, the passenger count must be communicated verbally or in writing, and available ashore at the vessel's normal berthing location or with a representative of the owner or managing operator of the vessel and available to the Coast Guard upon request.

4.0 Response

4.1 SAR

USCG Sector Virginia received a report of a fire onboard the M/V *Spirit of Norfolk* via CH 16 VHF at 1203. At 1209, Coast Guard Sector Virginia broadcast an urgent call (Pan, Pan) to all vessels alerting them that the Coast Guard had received a report at 1203 that there was a boat fire in the vicinity of Naval Base Norfolk, provided the coordinates and asked vessels to assist if possible.

Responding vessels included: Small Passenger Vessel *Victory Rover*, Towing Vessels *Challenger*, *Condor*, *Fort Bragg*, *GM McAllister*, *Rosemary McAllister* and *Z One,* crew boat *Ohio River*, CG29274 (a Coast Guard 29-foot response boat-small II) and Norfolk Fire Department Fireboat 1.

The Coast Guard recognized the service provided to the *Spirit of Norfolk* during the initial response and subsequent firefighting while alongside Pier 4 with Public Service Awards:

Distinguished Public Service Award:

- The crew of the *Victory Rover*
- The crew of the *Rosemary Mcallister*

Meritorious Public Service Award:

- The crew of the *Ohio River*
- The crew of the *Condor*
- The crew of the *Challenger*
- The crew of the *Z One*
- The crew of the *Fort Bragg*

Certificate of Merit:

- The crew of the *Wendy Moran*
- The crew of the *Patricia Moran*
- The crew of the *Surrie Moran*
- The crew of the *Marci Moran*
- The crew of the *Gm Mcallister*

4.2 Shoreside Fire Fighting

Equipment and personnel from Chesapeake, Hampton, Newport News, Norfolk and the Navy fire department and emergency response units responded to Pier 4.

The Navy Region Mid-Atlantic Commander submitted a two-page memo to investigators. The memo said that at approximately 1209 on June 7, 2022, their Regional Dispatch Center received a distress call from the Spirit of Norfolk and then the Regional Dispatch Center immediately dispatched Navy Federal Fire (FEDFIRE) units to Pier 4.

Norfolk Fire Department reports showed their units arriving and departing on June 7. Battalion Chief 3 arrived at 1225 and departed at 2038, on June 7th; Battalion Chief 8 arrived at 1528 and departed at 2038, on June 7th; Engine 01 arrived at 1215 and departed at 1522; Engine 02 arrived at 1238 and departed at 1312; Engine 07 arrived at 1309 and departed at 1622; Engine 12 arrived at 1218 and departed at 2015; Ladder 07 arrived at 1305 and departed at 2023; Ladder 13 arrived at 1234 and departed at 2040; and Rescue 01 arrived at 1308 and departed at 1618.

Norfolk Fire Department Fireboat 2 and its three-person crew arrived on scene at 1226 and was assigned rapid intervention team (RIT) duties in case anyone fell into the water. Fireboat 2 cleared the area later that night at 2217. Fire boat BT01 arrived at 1528, departing at 1948; Fire boat BT13 arrived at 1232 and departed at 2039. Fire boat BT01 was assigned rapid intervention team (RIT) duties in case anyone fell into the water. Fire boat BT13 was told to standby.

Newport News fireboats 1 and 2 arrived at Naval Station Norfolk at 1305. Both fireboats cleared the scene in the early evening, at 1743. Newport News also dispatched a dive team, in a truck. The dive team staged at the Leeward Marina. Fire boat 1 was told to standby and Fire boat 2 was assigned RIT duties.

In their written response to Coast Guard investigators, the Chesapeake Fire Department said they responded to a request for foam from Norfolk Fire Rescue for the *Spirit of Norfolk* Fire. They said, "Our role was solely to provide foam for suppression operations being conducted by Norfolk Fire Rescue, and Mid Atlantic Navy Regional Fire Department." Their equipment consisted of Battalion 1, Engine 1, Engine 2, Foam 1, Foam 2, and Rehab 3. Battalion 1 was dispatched at 1322:57, was on scene at 1351:57 and cleared at 2000:57. Chesapeake Fire Battalion Chief 1 had arrived ahead of the Chesapeake units and spoke with the Navy Region Mid-Atlantic Fire Chief on Pier 4 and asked him where to Chesapeake units should go. When the Chesapeake units arrived on scene at 1323 a water supply from Navy Regional Engine 12 (E12), located on the pier, astern of the vessel, was established spraying water into the air onto the vessel and a fire hose (an attack line) was being deployed across Norfolk Ladder 7's ladder, deployed horizontally onto the vessel at the stern on the starboard side. Engine 1 and Foam 2 were on Pier 4. Foam 2 with the assistance of personnel from Engine 2 was used to fight the fire. Engine 2 and Foam 1 were staged near Pier 4. Rehab 3 provided food and water.

In a written statement to investigators, the Hampton Division of Fire and Rescue said they received a cell phone call at 1220 notifying them of the fire. Hampton fire dispatched Hampton Fire Boat 2. The boat arrived on scene at 1232. After about one and a half hours Fire Boat 2 was assigned RIT duties. Fire Boat 2 departed the scene at 2010.

4.3 Command and control

Investigators did not speak with anyone who was part of the incident command structure during the first few hours of the incident. Information about the incident command activities in the first few hours was obtained from witnesses and the Norfolk Battalion Commander 3's fire report, NFIRS-1 Basic and the presentation provided by the City of Norfolk Fire Department.

In a response to a question from investigators, the City of Norfolk Fire Department presentation said that the Navy Regional Fire Battalion Chief was the incident commander once the Spirit of Norfolk was made fast to Pier 4. In the "Actions Taken" section of the Norfolk Battalion Commander 3's report, Section F, the code for Incident Command, 81-Incident Command, was not listed (List of codes https://www.responserack.com/nfirs/element/actions-taken-48/. Three codes were listed: 55-Establish Safe Area, 82-Notify other agencies and 10-Fire control of. The Norfolk Battalion Commander 3's fire report said that "Battalion 3 was the Initial Command of this incident." In a later section of the narrative, the Battalion Commander 3 said, "B3 arrived and assumed command for NFR (Norfolk fire and Rescue) and reported to the Command Post set up by Navy Regional. A unified

command was established. Fire attack strategies were established while the tugboats were pushing the vessel to the pier." In another portion of the narrative, the Battalion Commander 3 wrote in the passive voice to describe a request to change one part of the original IAP that was denied. He follows that description with the words, "Orders to follow the initial IAP were the orders. Battalion 3 was advised of all intended actions."

Witnesses interviewed by investigators could not identify who was the incident commander and some said a Norfolk and a Navy Mid-Atlantic fire chiefs were both wearing incident command vests during the first hours of the fire. Captain Moore, navy docking pilot was on the pier directing the waterside firefighting efforts by the towing vessels. He was receiving direction from the Navy Mid-Atlantic fire chief.

The first Coast Guard person on the scene was a Chief Warrant Officer. He arrived at 1230 – 1245 and introduced himself to the incident command post personnel. He could not identify who was in charge and he did not become part of the firefighting response. He did state that the person he introduced himself to and tried to talk with about the Coast Guard, was from the Naval Station Norfolk Fire Department and was wearing an IC vest. The Warrant Officer told investigators that the Naval Station Norfolk fire department person wearing the IC vest "kind of pushed me back a little bit because he didn't know who I was, like, I kind of need everyone to stand back here because they were still trying to figure out the situation." The Warrant Officer stated, "It was a little blurry at the time." He told investigators he saw two people wearing IC vests. One person from the Norfolk Fire and Rescue, and another from the Naval Station Norfolk Fire Department. He was not a part of the incident command. He observed activity on the pier and spoke with the *Spirit of Norfolk* captain who was also on the pier. At 1300 he ascertained that all personnel were accounted for and the potential threat to the environment if the ship sank by identifying there was 5300 gallons of diesel fuel on board.

The Executive Director of the Marine Incident Response Team told investigators that he received notification of the fire from McAllister towing at noon and estimated he arrived on scene at 1300 or 1315. Having assessed what he knew, he went to the Command Post and made a recommendation to use a foam line, knock down the fire and keep the fire in check to give the firefighting team time to consider future plans to put out the fire. He said that he was told, "Okay. We have the Chesapeake fire on the way" with foam. He moved back and forth between the command post and the pier near the vessel and was not knowledgeable of orders and tasks that were being given to the firefighters. He also told investigators that he was the person that showed the command post personnel the fire plan after it had been retrieved by the RECON team. He pulled the plans out of its storage tube, laid them out on the table and pointed out the access hatch on the main deck and the engine room door in the galley. He reported that two people were wearing Incident Commander vests and told investigators that in his mind, the Navy Regional Fire Chief was in charge once the vessel moored to the Pier at Naval Station Norfolk. He explained that Norfolk Fire and Rescue was in charge when the fire started because the vessel was in the city of Norfolk's fire jurisdiction. He explained that Norfolk would

have remained the lead as long as the vessel was on the water and not secured to a pier. Once the vessel was moored at Pier 4, he would expect that Navy Regional to take the lead since the vessel was then secured to their facility where they have firefighting jurisdiction. He was not a part of the incident command.

The captain of the *Spirit of Norfolk* arrived at Pier 4 about the same time the *Spirit of Norfolk* came alongside the pier. He told investigators that he spoke with fire chiefs at the incident command post and described the location of the fire control plan on the vessel and the engine room access hatch on the starboard side of the main deck. His interaction with the incident commanders was brief. He was not a part of the incident command. He observed the firefighting activity from the Pier in between answering questions from the Coast Guard investigator and other people.

The Deputy Sector Commander arrived on scene about 1330 or in another point in her testimony, about 30 minutes after firefighting apparatus arrived on scene. She became the senior Coast Guard person present. At no time during her recollection of events did she mention the RECON team going on board the vessel. The Deputy did not participate in the firefighting planning. She was not a part of the incident command. The Deputy told investigators that she had not spoken to firefighters until after the Mayday. She saw two people wearing IC vests and had assumed that the Norfolk Fire Department Chief, wearing an IC vest, was the Incident Commander. She was aware that the fire team was going on board the vessel, having learned that from the Executive Director of the Marine Incident Response Team who she said, "was standing right there when they were talking about it with all the fire chiefs. She said the Executive Director told her the plan was "to make entry with the team, take a foam line and the plan was to open the hatch and use foam on that hatch."

The Sector Commander arrived on scene at 1600. He was at the Reserve Training Center in Yorktown, Virginia when he received notification of the incident. Before arriving at Pier 4, he visited the landing site where the *Victory Rover* had transported passengers and crew from the *Spirit of Norfolk*.

The Salvage Engineer from Donjon Marine arrived at 1715 after receiving notification of the fire at 1527 and driving from North Carolina.

At 1800, representatives of the responsible party, the National Marine Team Director of Maintenance and the Regional Marine Director arrived at 1800 after driving from the Washington, DC area.

At 1850 a meeting was held at the fire department's command post. The Coast Guard Sector Commander and Deputy Sector Commanders, a representative from the port authority and the fire chiefs met. All agreed that a written plan was to be submitted before any further extinguishing efforts were to take place.

At about 2000 the Coast Guard Sector Commander called a meeting to formally establish a unified command. The unified command consisted of Hornblower (responsible party), The Commanding Officers of the Navy Base and Sector Virginia, and The Virginia Department of Environmental Quality and the Department of Emergency Management. At this meeting of the unified command, the sector commander said attendees agreed to not apply any more water in the hull

without permission of the Captain of the Port, maintain a fire watch, cool the hull exterior with water and develop a salvage response plan, have the Salvage and Environmental Response Team (SERT) provide stability assessments for the response effort, develop a plan to remove firefighting water from the vessel, and develop a plan for an underwater survey of the vessel and develop a tow plan.

4.4 Maritime Firefighting Contingency Plan

The port of Hampton Roads had a maritime firefighting contingency plan. To combat a pier-side vessel fire called for establishing an on-scene command post and following the Incident Command System. The plan stated that a fire chief or other responsible fire department official would serve as the Incident Commander, direct shipboard firefighters, and formulate tactics on how best to extinguish the fire; work closely with vessel's master, the POVMIRT representative, and the Coast Guard COTP (or representative). The plan briefly discussed vessel stability considerations saying, "The most important consideration regarding vessel stability is the control of a vessel's list." And "For questions and recommendations on vessel stability issues, several sources can be contacted: Vessel officers, USCG Strike Team, USCG Salvage Engineering Response Team (SERT), Naval Architects, and Navy Supervisor of Salvage SUPSALV." The plan did not include a discussion of shipboard firefighting tactics.

4.5 Mass Rescue Operations

The International Maritime Organization (IMO) defines a mass rescue operation (MRO) as that which "involves the need for immediate assistance to large numbers of persons in distress such that capabilities normally available to search and rescue authorities are inadequate."[10] Moreover, although these events are infrequent in the marine sector, when they occur, they are high profile events with the risk for significant loss of life. Recent examples of a maritime MRO are the fire on board the *Caribbean Fantasy* off San Juan, Puerto Rico on August 17, 2016. The vessel carried 124 crewmembers and 387 passengers, and the evacuation resulted in 5 injuries. And the stranding of the passenger vessel *Costa Concordia* off Giglio Island, Italy, on January 9, 2012. The vessel carried 3,229 passengers and 1,023 crew, and the event resulted in 32 deaths. In all MROs, the success of the response depends on immediate action, coordination, and effective communications between resources and assets from all organizations involved, including any civilian or Good Samaritan vessels that may be nearby.

In fiscal year 2002, the US Congress authorized the Coast Guard to create permanent positions within the agency to develop and maintain an MRO program. The program, now called the Passenger Vessel Safety Program, requires the Coast Guard to plan and prepare for MRO events, and includes periodic exercises incorporating the agency's many federal, state, and local emergency response

[10] IMO, *Guidance for Mass Rescue Operations*, COMSAR Circular 31 (February 2003).

partners. Personnel in Coast Guard headquarters manage the program and provide MRO planning guidance and other tools needed to prepare for a large-scale SAR.[11] Each of the Coast Guard districts has an individual passenger vessel safety specialist (PVSS) assigned to execute the elements of the program. A full-scale exercise must be conducted by each District every 5 years. There is currently no requirement which mandates participation by large passenger vessel owners or operators, regardless of flag.

On August 7, 2018, the *Spirit of Norfolk* was used as the platform for a mass rescue exercise. The purpose of the exercise held in the vicinity of Lambert's Point on the Elizabeth River was to improve coordination, communication, and response techniques among the participating agencies during a mass rescue event by simulating an evacuation of 90 passengers aboard the Spirit of Norfolk and rescue of persons in the water. Search and rescue mannequins were placed in the water for the simulation.

Participants involved in the exercise included the Coast Guard, Navy, Camp Peary Fire Department, Port of Virginia, Virginia Marine Police, Chesterfield EMS, Henrico Division of Fire, James County Police Department, Norfolk and Portsmouth Divisions of Emergency Communication and Police and Fire Departments from Chesapeake, Hampton, Newport News, Norfolk, Portsmouth, Virginia Beach and York County.

5.0 Previous Fires on Steel and Aluminum Small Passenger Vessels

The Safety Board has investigated previous engine room fires on U.S. small passenger vessels constructed of steel or aluminum[12]. About 1615 on June 12, 2006, the U.S. Coast Guard–inspected commuter ferry *Massachusetts* was enroute from Rowe's Wharf in Boston Harbor to Hingham, Massachusetts, carrying 65 passengers and 4 crewmembers, when a fire broke out in the engine room. The *Massachusetts*, built of aluminum in 1988, was exempt from the Federal requirement for fixed fire extinguishing and detection systems. The master maneuvered the vessel into shallow water south of the Long Island Bridge, anchored, and waited for firefighters. Before a fireboat from the Boston Fire Department's marine unit arrived, all the passengers safely transferred to the *Laura*, another commuter vessel in the vicinity. The fireboat extinguished the fire. The accident resulted in no serious injuries or fatalities. Damage, estimated at $800,000, was confined mostly to the engine room.[13]

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[11] Coast Guard, *Mass Rescue Operations Planning Guidance* (Washington DC: US Department of Homeland Security, 2004).

[12] This discussion considers only engine room fires that have occurred since 1996, when the Coast Guard's revised fire protection requirements for vessels regulated under subchapter K (46 CFR Part 118) and subchapter T (46 CFR Part 181) went into effect.

[13] For further information, see National Transportation Safety Board, Fire On Board U.S. Small Passenger Vessel Massachusetts, Boston Harbor, Massachusetts, June 12, 2006, Marine Accident Brief NTSB/MAB-07-01 (Washington, DC: NTSB, 2007). The report is available on the Safety Board's website at www.ntsb.gov.

The National Transportation Safety Board determined that the probable cause of the fire on board the *Massachusetts* was the ignition of diesel fuel by contact with a hot engine surface, which occurred because a fuel line attached to a fuel injector was not properly connected during engine maintenance by a contract mechanic. Contributing to the extent of the damage was the absence of a fixed fire detection and suppression system, which precluded the crew from receiving timely notification of the fire and which allowed the blaze to spread throughout the engine room.

In November 2000, a fire broke out on board the *Port Imperial Manhattan*, a commuter ferry operated by NY Waterway, while the vessel was enroute from Manhattan to Weehawken, New Jersey, with eight passengers and three crewmembers on board.[14] Like the *Massachusetts*, the *Port Imperial Manhattan*, built of aluminum in 1987, was exempt from the Federal requirement for fixed fire extinguishing and detection systems. Crewmembers attempted unsuccessfully to extinguish the fire with portable extinguishers and the fire burned out of control, causing the ferry to lose power and forcing the crew and passengers to abandon the interior spaces. All those on board were rescued by another NY Waterway passenger vessel, and the burning vessel was towed to Manhattan, where the New York City Fire Department extinguished the fire. One passenger was treated for smoke inhalation. No deaths resulted from the accident. The estimated cost of repairing the vessel was $1.2 million.

The Safety Board's investigation of the *Port Imperial Manhattan* accident determined that the fire was probably in the first, or incipient, stage for some time before entering the freeburning phase.[15] Because the vessel had no fire detection system in the engine room, the crewmembers were unaware of the fire until it was fully involved in the engine room. The Safety Board concluded that the lack of fire detection systems in the engine rooms of existing small passenger vessels in commuter and ferry service presented an unacceptable risk to passengers and crewmembers. The Safety Board also concluded that if the *Port Imperial Manhattan* had been equipped with a fixed fire suppression system, crewmembers who had been properly trained could have kept the fire confined to the engine room and extinguished it.

The Safety Board pointed out in the *Port Imperial Manhattan* report that the outcome of another fire on board a commuter ferry had demonstrated the value of a fixed fire suppression system. On September 28, 2001, a fire broke out in the engine room of the *Seastreak New York*, which was in commuter service between Highlands,

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[14] National Transportation Safety Board, *Fire on Board the Small Passenger Vessel Port Imperial Manhattan, Hudson River, New York, November 17, 2000*, Marine Accident Report NTSB/MAR-02/02 (Washington, DC: NTSB, 2002).

[15] The incipient stage of a fire begins at the moment of ignition. At that stage, the flames are localized, the fire is fuel-regulated (regulated by the configuration, mass, and geometry of the fuel), the oxygen content is within normal range, and normal ambient temperatures still exist (*National Fire Protection Association, Fire Ignition and Development, Catalog No. V-54* [Quincy, Massachusetts: NFPA, 1998]).

New Jersey, and Manhattan.[16] The engine room of the *Seastreak New York* was fitted with a carbon dioxide (CO2) fire suppression system.[17] When crewmembers discovered the fire, they activated the suppression system without having to enter the engine room and extinguished the fire before it damaged the vessel extensively. No injuries resulted from the fire, and damages amounted to an estimated $81,000. The Board's report stated, "The difference between the outcomes of these two fires was that the *Seastreak New York* was equipped with a fire suppression system to protect its engine room and the *Port Imperial Manhattan* was not."

5.1 Previous Safety Recommendation

Based on the *Massachusetts* and *Port Imperial Manhattan* investigations, The Safety Board recommended that the Coast Guard take the following action:

> Require that all small passenger vessels certificated to carry more than 49 passengers, regardless of date of build or hull material, be fitted with an approved fire detection system and a fixed fire suppression system in their engine rooms. (M-07-1)

On October 18, 2016, the Coast Guard wrote to the board saying that they determined requiring fixed fire detection and suppression systems for all passenger vessels regardless of age and construction was not justified after completing an economic analysis.

> In any rulemaking, we are required to follow the Administrative Procedures Act (APA), Executive Orders 12866, 13563, and OMB Circular A-4, and perform a cost benefit analysis of our rulemaking. This regulatory cost benefit analysis differs from the typical cost benefit analysis for a business. The Coast Guard weighs the costs and benefits on a societal level, rather than an individual or business level. Individual vessel owner losses of revenue and individual vessel repair costs do not directly translate to a societal benefit in our economic analysis, either through economic transfer or externality. Other factors such as low incident rates and lack of marine casualties limit the expected societal benefit in our economic analysis. As such, we do not believe a rulemaking on this matter can be justified or pursued per the APA at this time.
>
> The Coast Guard has already implemented regulations that address fire protection on vessels constructed after 1996 and vessels with elevated fire risk from their construction material. We consider our action on this recommendation complete and request that it be closed.

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[16] National Transportation Safety Board, *Fire on Board the Small Passenger Vessel Seastreak New York, Sandy Hook, New Jersey, September 28, 2001*, Marine Accident Report NTSB/MAR-02/04 (Washington, DC: NTSB, 2002).

[17] The *Seastreak New York* was built in 2001, after the new small passenger vessel regulations went into effect and was therefore required to have a fixed fire suppression system in its engine room.

On February 17, 2017, the NTSB replied to the Coast Guard, "Considering the risk these older vessels present to the traveling public, and because you state your action on this recommendation is complete and request that it be closed, Safety Recommendation M-07-1 is classified CLOSED--UNACCEPTABLE ACTION."

6.0 Weather

The accident occurred during daylight hours in good visibility. At 1155, about the time the fire broke out in the engine room, the Norfolk International Airport located about 8.5 miles southeast of where the *Spirit of Norfolk* was located when the fire started recorded the winds from SSE at 13 mph, with no gusts, partly cloudy conditions, and an air temperature of 82 degrees F. For June 7, 2022, Seatemperature.info recorded a Norfolk water temperature of 73.8 degrees F and wave heights of less than 1-foot.

Submitted by:

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