NATIONAL TRANSPORTATION SAFETY BOARD

Office of Marine Safety

Washington, D.C. 20594

December 4, 2018

Investigator in Charge Factual Report

A. ACCIDENT INFORMATION

Place	:	Port Richey, Florida
Date	:	January 14, 2018
Vessel	:	MV *Island Lady*
NTSB No.	:	DCA18FM010
Investigator	:	Brian Young IIC-OMS

B. ACCIDENT SUMMARY

About 1600 on the afternoon of January 14, 2018, a fire broke out in an unmanned space on the US small passenger vessel *Island Lady* near Port Richey, Florida, during a scheduled transit to a casino boat, located about 9 miles off the coast of Florida in the Gulf of Mexico. A captain, three deckhands, 11 employees, 2 pre-hire employees, and 36 passengers were aboard the vessel at the time of the fire.

The captain turned the *Island Lady* around to return to the dock after receiving a high temperature alarm on the port engine. During the return trip, smoke began filling the engine room and main deck, and the captain deliberately ran the vessel aground close to shore in shallow water to evacuate the passengers. All crewmembers, employees, and passengers evacuated the vessel by jumping into the water and wading ashore. Fifteen people were injured and transported to local hospitals. One passenger died in the hospital hours after the fire. The *Island Lady*, valued at $450,000, was declared a constructive total loss.

C. VESSEL INFORMATION

The *Island Lady* was a 72-foot boat of fiberglass (FRP) over wood construction with twin diesel engines. It was built in 1994. The propulsion plant consisted of 2 Caterpillar model 3406E turbocharged diesel engines and vessel power was provided by 2 Kubota generators. The exhaust system for the engines was a wet-type exhaust system with FRP exhaust ducts that exited out the stern of the vessel.

The vessel was owned by A.B.K. Enterprises and operated by Tropical Breeze Casino Cruz, LLC. The vessel operated out of a shoreside facility in Port Richey, Florida, located at the mouth of the Pithlachascotee River in Pasco County, Florida. The *Island Lady* served as a shuttle to transport passengers and company employees to and from a casino boat, the *Tropical Breeze I.* The casino boat operated 9 nautical miles offshore in the Gulf of Mexico.

Figure 1. *Island Lady* before the accident. (Undated photo by previous owner)

Figure 2. Satellite image of the accident area

Figure 3. Casino boat *Tropical Breeze I*.

At the time of the accident, the state of Florida did not permit land-based casino gambling other than on Native American reservations. Florida did, however, permit day-cruises offering customers the opportunity to gamble offshore.[1] On Florida's west coast, casino vessels would operate at least 9 nautical miles out into the Gulf of Mexico, beyond the Natural Resource Boundary. On Florida's east coast, casino vessels would operate in the Atlantic Ocean beyond the Three Nautical Mile Line (the outer limit of Florida's jurisdiction).[2]

The *Island Lady*, which was advertised as a "hi-speed water taxi," typically made three daily roundtrips, the transit between shore and the casino boat taking about 45 minutes. On the day of the accident, departures from Port Richey were scheduled for 1100, 1530, and 1900, and return trips were scheduled for 1730, 2100, and midnight. The *Tropical Breeze I* usually departed the dock in the morning, depending on the tide, spent the day beyond the 9-nautical-mile line, and then returned to the dock after midnight, depending on the tide, once all passengers had departed.

D. TIMELINE

On January 14, 2018, the day of the accident, the 1100 morning shuttle had been canceled due to a low passenger count.[3] Before the subsequent 1530 departure, the captain arrived at the marina where the *Island Lady* was docked (referred to as "the sticks"). This was the location where the *Island Lady* was berthed each evening and received fuel twice a week. The captain told investigators that he estimated that about 750 gallons of fuel were

[1] According to the online American Casino Guide, in 2018, two Florida casino boat operators provided offshore gambling in three locations: Tropical Breeze Casinos in Port Richey, and Victory Casino Cruises in Cape Canaveral and Jacksonville.

[2] In accordance with the Submerged Lands Act of 1953, the state waters of most coastal states extend 3 nautical miles from the coastline, as do those on Florida's east coast. For historical reasons, however, the state waters on Florida's west coast extend 3 leagues, approximately 9 nautical miles (10.376 statute miles), into the Gulf of Mexico.

[3] Deckhand 1 interview

aboard the *Island Lady* on the day of the accident.[4] He said the starboard engine started normally but that the port engine did not because of a loose wire connection on the starting batteries. He tightened the electrical connection on the battery post, and then the port engine started.[5] After checking all gauges and the sea strainer and confirming that everything seemed normal, he motored the vessel from the sticks to the passenger boarding dock about 500 feet away. Shortly thereafter, passengers and company employees were allowed to board.

About 1530, the *Island Lady* departed the dock with 36 passengers. The crew consisted of the captain and three deckhands (one senior deckhand, one deckhand [deckhand 1], one "new-hire" in-training deckhand. Eleven other employees, all employed by Tropical Breeze Casino Cruz, LLC were also on board being transported to work aboard the casino boat. Additionally, two "pre-hire" employees (a deckhand and a member of the waitstaff department) were aboard the vessel to become familiarized with operations. The senior deckhand was scheduled to transfer to and work aboard the *Tropical Breeze I* on arrival; the new-hire deckhand was assigned to tend bar aboard the *Island Lady*; and deckhand 1 was scheduled to work aboard the *Island Lady* through the rest of the evening.[6] Deckhand 1 told investigators that he made the safety announcement on the day of the accident, while the vessel was outbound.[7]

The *Island Lady* transited through the harbor at slow speed, as that section of the waterway was designated as a no-wake zone. A nearby resident's home surveillance camera, mounted on the second story and aimed toward the northwest, recorded video of the vessel (seen through an opening between two waterfront houses, as the *Island Lady* was in the final section of the waterway's "S-turn." At this time, about 15:45, no smoke was seen

[4] Investigators reviewed the fuel receipts and verified that the vessel had received 375 gallons of no. 2 diesel fuel 2 days before the fire. Typically, the vessel loaded about 300 gallons of fuel every 3–4 days.
[5] Captain interview
[6] Deckhand 1 interview
[7] Federal regulations at Title 46 CFR 185.506 require that, before getting under way on a voyage or as soon as practicable thereafter, the captain will ensure that "suitable public announcements are made informing all passengers" where emergency exits and lifejackets are located and how lifejackets should be donned.

emanating from the vessel; shortly thereafter, the *Island Lady* transited away from the camera's view for about 6 minutes.[8]

Figure 4. Closeup of the accident waterway, with overlaid labels marking key points in the vessel's transit. (Background by Google Earth)

After transiting through the S-turn, the captain increased speed and brought the *Island Lady* "up on plane." About 15 seconds after increasing speed, a high-temperature alarm activated for the port engine's jacket-water system. The captain said he looked at the closed-circuit TV for the engine room and believed he saw steam fogging up one of the engine room cameras.[9] The *Island Lady* was equipped with a fire-detection system in the

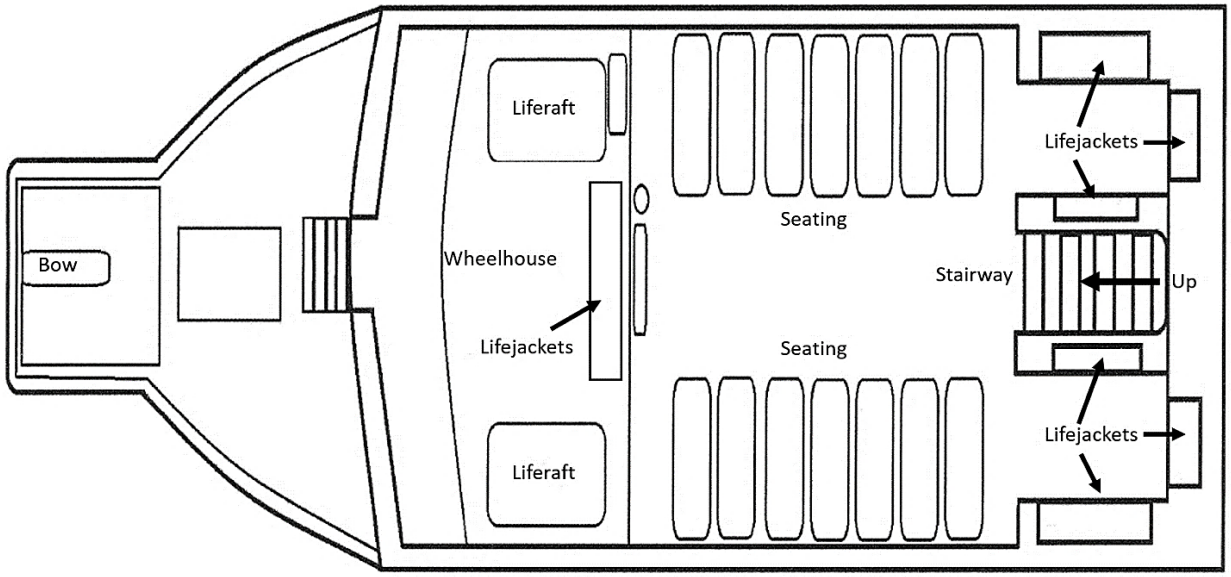
[8] Surveillance video
[9] Captain interview

engine room, with a 190°F heat sensor mounted above each of the two propulsion engines.[10] The control panel for the fire-detection system was located in the wheelhouse, to the right of the wheel, and was designed to sound a beeping signal and illuminate an indicator light when activated. The captain told investigators he could not recall hearing the fire-detection system at any time.[11]

About 15:51, the *Island Lady* reappeared in the distance of the home video surveillance footage. Light gray steam/smoke was now emanating from the stern area.[12] The captain took the port engine out of gear, shifted it to neutral, and reduced the speed to idle. He left the starboard engine in forward gear and reduced its speed to idle.[13] The home surveillance camera captured the speed reduction. The captain radioed the *Tropical Breeze I* and also telephoned a company representative (the "port captain"/owner's husband), informing them both that an engine was overheating and that he was returning the vessel to the dock.[14] The port captain, who also held a merchant mariner credential as master, told him to put the engine in reverse in case the vessel's seawater inlet was obstructed.[15]

The captain told the *Island Lady* crewmembers to get all the passengers to the top deck. He directed the senior deckhand and deckhand 1 to go below and check the engines. Deckhand 1 descended to the main deck where the two access hatches to the engine room were located (recessed in the deck).[16] The forward hatch was located in the center of the main deck, and the aft hatch was located just forward of the bar.

[10] Fire detection system schematic
[11] Captain interview
[12] Surveillance video
[13] Captain interview
[14] Captain interview
[15] Port captain/owner's husband interview
[16] Captain interview



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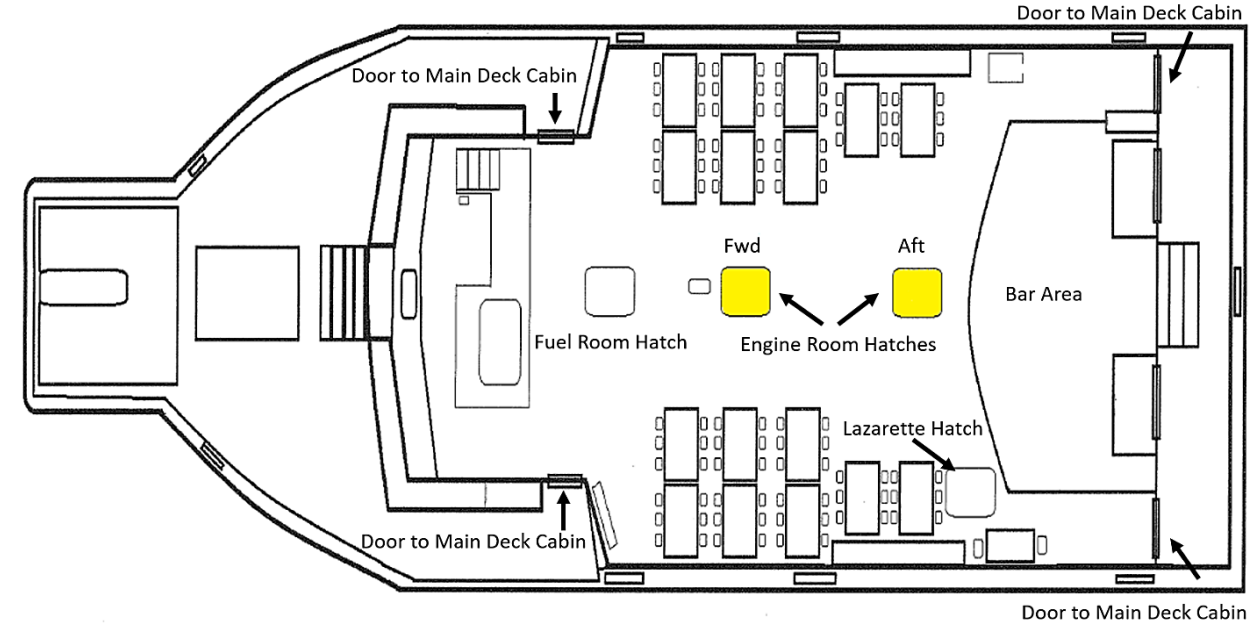

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3 Figure 5. Top: *Island Lady*'s top deck. Bottom: *Island Lady's* main deck. (Images from Tropical
4 Breeze Casino Cruz's *Employee Emergency and Safety Manual*.)
5

Deckhand 1 opened the forward hatch and saw steam or transparent smoke coming out. He shut the hatch, instructed nearby passengers to ascend to the top deck, returned to the wheelhouse, and told the captain that he believed the engine was overheating.[17]

About 15:52, the shoreside video surveillance camera recorded the vessel stopping its forward motion and slowly beginning to turn toward shore. Several people were seen assembling on the top deck.[18]

The captain assigned an employee (a casino worker) to steer the vessel while he left the wheelhouse and went below to assess the situation. He approached the forward hatch and felt it for heat with his hand before opening it slightly. He noticed steam coming out of the hatch. He instructed the new-hire deckhand to open the aft hatch to the engine room; a smaller amount of steam or white smoke rose from this hatch. The captain ordered the new-hire deckhand to open the doors leading into the main deck to air out the steam and smoke. The new-hire deckhand opened two doors.[19]

The captain then climbed down the aft hatch into the engine room. He did not see any smoke or fire but saw about a 3-foot by 3-foot area of water on the port bulkhead outboard of the port engine. In a postaccident interview, the captain said that he “figured a line just blew off or something.” He left the engine room via the forward hatch and returned to the wheelhouse. He believed that steam was filling the engine room based on the color and smell; he said there was no smell of smoke. He said he instructed the deckhands to close the engine room hatches but was not sure if they followed his order.[20]

About 15:53, the *Island Lady* was returning toward the harbor at a speed of about 8 knots.[21] The captain was using only the starboard engine for propulsion; the port engine remained in neutral, at idle speed.[22] The smoke was increasing, turning thicker and also brown/gray in color. After the vessel turned back toward the harbor and transited toward the

[17] Deckhand 1 interview
[18] Surveillance camera
[19] Captain interview
[20] Captain interview
[21] Captain interview, surveillance camera
[22] Captain interview

east, the 25–30-knot north winds blew the thick smoke across the vessel's beam, and the smoke billowed off the starboard side. As a result, the crewmembers were unable to pinpoint the precise location from where the smoke emanated. The shoreside surveillance camera captured video of the smoke billowing out and flames emanating from the port side of the stern. At this point, no other flames were visible.[23]

Figure 6. Still image from home surveillance video footage, with the stern of the *Island Lady* visible between two houses. Fire emanating from the port side of the stern is circled in yellow. (Video image provided by witness)

The captain directed the senior deckhand to retrieve a fire extinguisher and look around the engine room. He also told deckhand 1 and the new-hire deckhand to follow the senior deckhand down below with backup fire extinguishers and assist. The senior deckhand retrieved a fire extinguisher and entered the engine room via the forward hatch on the main deck. As soon as he opened the hatch, he saw steam or transparent smoke coming out. As he walked through the engine room heading aft toward the lazarette, he encountered smoke, which kept getting thicker. He tied a bandana around his face and prepared to use the fire

[23] Captain interview, deckhand 1 interview, surveillance camera

extinguisher but was overcome by the smoke. He said the smoke was becoming black, and he yelled up to the other crewmembers to get the passengers off the boat. He handed up the fire extinguisher, which was not used, and exited the engine room via the aft hatch. He told investigators that he was not sure if the hatches were closed behind him.[24]

After leaving the engine room, the senior deckhand went to the stern and saw flames near the lifejacket storage area and "a big cloud of smoke" emanating from either the "side vents or the exhaust" on the stern. He ran up to the wheelhouse and informed the captain that conditions had gotten worse and he needed to shut down the engine.[25] As soon as the captain heard this update, he turned the wheel hard over to port toward the shore and gave as much power as possible from both engines. He managed to beach the *Island Lady* in shallow water about 150 feet from shore. The captain said he was lucky to get the vessel turned around and barely up on the beach before the smoke overwhelmed the engines and caused them to shut down.[26]

Once the *Island Lady* was beached, the captain returned to the main deck, which was completely filled with black smoke. He closed the portside door to the main deck that had been opened when smoke was filling the cabin.[27]

The deckhands began assisting the passengers in moving toward the bow and preparing to jump into the water. According to witness and surveillance videos, the smoke increased after the *Island Lady* was grounded, but no flames were yet visible on deck. Many people were seen assembled on the upper deck and bow area. None of the crewmembers recalled hearing announcements on the public-address system; they believed that orders were communicated by yelling instructions.[28]

About 35 seconds after the captain grounded the vessel, the first person jumped off the bow into the water.[29] It is likely that this person was deckhand 1. He said in a postaccident

[24] Senior deckhand interview
[25] Senior deckhand interview
[26] Captain interview
[27] Captain interview
[28] Deckhand interviews, witness video
[29] Witness video

interview that, because he saw that many people were frantic, he jumped off the bow to show the others that the water depth was shallow and that the bottom was soft (several employees and passengers confirmed to investigators that the water depth by the bow was about waist-high; a bit deeper on the sides). Deckhand 1 then began helping people off the vessel. Several of them jumped off the bow as smoke increased from the starboard side of the vessel and from the upper decks in the stern area.[30] About 2.5 minutes after the grounding, a deckhand removed the passenger-loading door on the port side of the bow to make it easier for people to exit. About 3 minutes and 20 seconds after grounding, flames appeared in the after part of the main deck. Within only about 30 seconds, the fire spread and engulfed the entire main deck.[31] At 1604, dispatchers with Pasco County emergency services received the first 911 call about the accident—a resident reported a vessel on fire and people in the water.[32]

Figure 7. Passengers and crew evacuating *Island Lady*. (Photo by Christine Robson)

[30] Deckhand 1 interview
[31] Witness video
[32] 911 operator log

After jumping from the burning vessel, passengers and crew waded and/or crawled ashore. Many recalled that the bottom was extremely soft and muddy ("quicksand-like"), which made walking difficult. Once ashore, the group assembled in a residential garage, where the homeowner and neighbors supplied blankets, towels, and dry clothes.[33]

The senior deckhand and the captain conducted a sweep of the vessel to ensure that they were the last people to exit the burning vessel.[34] In postaccident interviews, crewmembers said that the event took place too quickly for lifejackets to be distributed.[35]

E. Shoreside Emergency Response

At 1604, the Pasco County emergency services dispatchers received a 911 call from a resident, notifying them of a fire on board a boat in the river and that people were in the water. Two more 911 calls were received immediately after the initial call from passengers aboard the *Island Lady*. Both passenger callers stated that they believed all of the people were off the boat. A total of nine calls were made to emergency services regarding this incident.

Two patrol officers and a detective from the Port Richey Police Department were the first responders to arrive on scene about 1615. Pasco County Fire Department units began arriving about 1619. Additional fire, medical, and police units from Pasco County—including marine and air units—were dispatched to the scene.[36] No firefighting efforts were taken, and the vessel burned itself down to the waterline. Nearby residents also assisted in getting passengers out of the water and providing them shelter. Florida Fish and Game, the Coast Guard, the Tarpon Springs Police Department, the Dunedin Police Department, and Pinellas County emergency services also responded.[37]

[33] Passenger interview
[34] Senior deckhand interview
[35] Captain interview, senior deckhand interview
[36] 911 operator log
[37] 911 operator log

G. INJURIES

Fifteen passengers were treated for various issues such as smoke inhalation, bruises, back pain, and difficulty breathing.[38] One passenger died in the hospital hours after the fire from angioedema (swelling of deeper skin layers, such as the dermis and subcutaneous tissue) due to environmental exposure to and inhalation of combustion-related matter.[39] The captain and deckhands did not seek medical attention. No first responder injuries were reported.

H. METEOROLOGICAL INFORMATION

Weather data recorded at Tampa International Airport, 26 miles from Port Richey, show that at the time of the accident, the air temperature was 61°F, with partly cloudy skies, 10-mile visibility, and winds out of the north-northeast at 11.5 mph. The sea temperature was about 64°F, according to data recorded at Clearwater, Florida, 21 miles south of Port Richey.[40]

I. DAMAGE

As a result of the fire damage, the *Island Lady*, insured for $450,000, was declared a constructive total loss.[41] Everything above the waterline was destroyed. The only remains were the two fire-damaged engines, two damaged generators, remnants of various piping systems and valves, railings around the vessel, deck chairs, and three cylindrical fuel tanks.

[38] Port Richey police dept, USCG spreadsheet
[39] Medical Examiner report
[40] Weather Underground
[41] CG-2692

Figure 8. Post-fire wreckage of *Island Lady* seen from above. (Image from Titan Marine & Environmental)

Figure 9. Looking toward the *Island Lady*'s destroyed bow.

A salvage team recovered the remnants of the *Island Lady* during February 10–15, 2018. The components were transported to a secure facility, where NTSB and Coast Guard investigators examined them in May 2018. About 98 percent of all aluminum, bronze, copper, and brass parts—which included the heat exchanger body, after-cooler housings, front gear cover, flywheel hosing, raw-water pump housings, base and valve cover, oil pan, and other smaller housings—was missing due to extreme heat.

Figure 10. Port engine at storage facility after removal from *Island Lady*.

A service technician and a service manager from Ring Power—an authorized service company for Caterpillar—disassembled the port engine. A crack was discovered between the 4th and 5th cylinder on the port engine's inboard side (**figure 11**). The crack was visible starting at the no. 5 cylinder's liner through the water passage and about 8 inches down the side of the block.

Figure 11. Close-up of crack in the block between cylinders 4 and 5 from the *Island Lady's* port engine.

J. PERSONNEL INFORMATION

A. CAPTAIN

The captain had worked on various boats since he was 15 years old. He started on mullet boats and then worked on shrimp boats for about 15 years. He then obtained his merchant mariner credential (as master of self-propelled vessels, not including auxiliary sail of less than 100 gross register tons upon near coastal waters) and started running boats professionally. He told investigators that he had been employed by Tropical Breeze Casino Cruz, for almost 2 years, during which time he served as captain on both the *Island Lady* and the *Tropical Breeze I* (he said he worked 4 days on the *Island Lady* and 3 days on the *Tropical Breeze I* each work week). The captain said he had completed basic firefighting training before obtaining his mariner credential at sea school.[42] According to timesheets provided by the company, in the days before the accident, the captain worked 8 hours on January 10, 8.5 hours on January 11, and worked 8 hours on the day before the accident.

[42] Captain interview

The captain had no reported work hours on January 12 because there were no shuttle trips that day. On the morning of the fire, the captain reported to work at 1000.

B. SENIOR DECKHAND

The senior deckhand had worked for Tropical Breeze Casino Cruz previously and, about a year before the accident, reestablished employment. He did not hold and was not required by federal regulations to hold any Coast Guard documents. He had no formal maritime training; his most recent job was as a sign-holder in front of stores, after working in a warehouse for about 4 years. He told investigators that his job duties aboard the vessels included cleaning, maintenance, handling lines, stocking supplies, and working as security. As senior deckhand, he was given on-the-job training at drills for emergency situations. He recalled that the last drill was conducted mid-December 2017, which included a fire scenario in the engine room, and that this drill was the only fire training he could recall. The senior deckhand had been scheduled to transfer to the *Tropical Breeze I* on arrival at the casino boat.[43] According to timesheets provided by the company, the senior deckhand had not worked aboard the *Island Lady* since January 6, about a week before the accident.

C. DECKHAND 1

Deckhand 1 had been rehired by Tropical Breeze Casino Cruz, LLC about a week before the accident. He had previously worked for the company for about a year before the accident, and then was not employed by Tropical Breeze Casino Cruz, LLC for about a year. Before his employment with Port Richey Casino, the deckhand worked at a grocery store, an internet security company, and a recording studio. He did not hold nor was he required by federal regulations to hold any Coast Guard documents. He stated that he had received no formal maritime training before joining the company and that he trained as a deckhand on the job. Deckhand 1 told investigators that he was unaware of the location of the fuel shutoffs and had no idea about the fixed fire-suppression system.[44] According to timesheets provided

[43] Senior deckhand interview
[44] Deckhand 1 interview

by the company, on the day of the accident, deckhand 1 reported to work at 1400. On January 10, he worked 7.5 hours; on January 8, he worked 2 hours.

D. DECKHAND (NEW-HIRE)

The new-hire deckhand had worked for Tropical Breeze Casino Cruz, LLC for about 5 and a half months. He did not hold nor was he required by federal regulations to hold any Coast Guard documents. He had no formal maritime training; his most recent job was with a cleaning company. On the day of the accident, the new-hire deckhand was tending bar when the *Island Lady* left the dock.[45] The day before the accident, he worked 7.5 hours; on January 11 he worked 5.5 hours; and on January 10 he worked 7.5 hours.

E. DECKHAND (PRE-HIRE)

The pre-hire deckhand had joined the *Island Lady* only a few minutes before departure for his first trip on the vessel. About 10 years earlier, he had worked aboard the casino boat *Royal Casino I* for about 8 months, starting as deckhand, then senior deckhand, and then working his way up to overnight engineer. He did not hold nor was he required by federal regulations to hold any Coast Guard documents. He had no formal maritime training; his most recent job was in construction.[46]

K. COMPANY-BASED TRAINING

The *Island Lady* deckhands told investigators that all their maritime training had been obtained on the job, including initial orientation where they learned about their duties and responsibilities.[47] The company also gave them a 37-page handbook titled *Employee Emergency and Safety Manual* with instructions for fire (explaining various types of fire), heavy weather operations, bomb threat, collision, and hijacking leaks and damage control, man-overboard, and abandon-ship. This manual also explained drug-testing procedures. In the event of a fire or smoke condition, the manual directed the captain to sound the vessel's alarm, activate the automatic distress device, and set the vessel on a course to limit the effect

[45] New hire deckhand interview
[46] Pre-hire deckhand interview
[47] Deckhands interviews

of the wind on the fire. Afterwards, the captain was to announce the location of the smoke/fire and direct the crew to report there, and to direct other personnel to assist the passengers to the designated muster area. The manual contained a set of instructions for engineers, but an engineer was not on board the vessel at the time of the fire, nor was one required. The manual did not instruct or guide the crew regarding responses to engine alarms or failures.

In addition, the deckhands received a 19-page handbook titled *Shuttle Procedures* that listed procedures for transferring passengers at sea. Further, the captain told investigators that the most recent crew drill was mid-December 2017, about a month before the fire, in which the senior deckhand participated. He said this drill consisted of a man-overboard exercise, a simulated fire in the engine room, and an abandon-ship exercise. He and the senior deckhand ran the fire pump for 5 minutes and charged the two firehoses. They also handled the portable fire extinguishers but did not activate them.[48] There were no records of any other drills in 2017 because the 2017drill log book was destroyed in the fire. The company provided an *Island Lady* logbook dated November 13, 2015 through December 18, 2016. This logbook recorded three fire drills (April 10, 2016, September 7, 2016, and November 5, 2016) and two man-overboard drills (June 21, 2016; November 5, 2016) in the 13 months of available records.

J. VESSEL CONSTRUCTION AND EQUIPMENT

The double-deck, single-hull *Island Lady* was built in 1994 by Lydia Yachts of Stuart Inc. in Stuart, Florida.[49] The vessel's hull was cold-molded construction, consisting of wood frames sheathed with epoxy-laminated plywood and covered with fiberglass. The vessel was originally outfitted with three engines and three propellers. About a year later, the first owner removed the center engine, a Volvo Penta TAMD61A, and its propeller shaft and replaced the remaining two engines (Detroit 8V92TI diesels) with Caterpillar 3406E engines.[50] For

[48] Captain interview

[49] The *Island Lady* was designated as a Subchapter T small passenger vessel under Title 46 CFR Part 175. This subchapter applies to vessels less than 100 gross tons that carry 150 or fewer passengers, or has overnight accommodations for 49 or fewer passengers, and that (1) carry more than six passengers, including at least one for hire**;** (2) are chartered with a crew provided or specified by the owner or the owner's representative and carry more than six passengers; (3) are chartered with no crew provided or specified by the owner or the owner's representative and carry more than 12 passengers; or (4) if a submersible vessel carries at least one passenger for hire or (5) is a ferry carrying more than six passengers. Due to the *Island Lady*'s construction date (prior to 1996), the vessel was considered an "old T" vessel.

[50] Previous owner phone call

more than 20 years, the vessel operated as a whale-watching vessel in Boothbay Harbor, Maine. A.B.K. Enterprises bought the vessel in November 2015 after having leased the vessel during one or two winter seasons (when the vessel was not used in Maine).

Vessel particulars were as follows:

Length:	72 feet
Beam:	21 feet
Draft:	4.5 feet
Gross tonnage:	65
Crew:	3 minimum (1 captain, 2 deckhands)
Passenger capacity:	149
Propulsion:	Twin 800-horsepower Caterpillar model 3406E turbocharged diesel engines, two propellers, two rudders

According to the vessel's specifications and a marine survey conducted on the hull, the *Island Lady*'s topsides were constructed of cold-molded plywood coated with epoxy fiberglass. The keel was 9 inches by 7 inches. The forward deck beams were 4.5 inches by 1.5 inches on 16-inch centers, and the longitudinal deck beams were 4.25 inches by 2.75 inches. The frames were 1.75 inches by 5.5 inches on 16-inch centers and the main deck was constructed of two layers of 0.75-inch and 0.50-inch plywood covered in fiberglass.[51]

The enclosed wheelhouse was located on the forward top deck, and behind the wheelhouse was an open deck with seating for passengers. The lower-level main deck contained the foredeck, an enclosed cabin space for passengers, bar area, and the aft deck. Four hinged doors provided egress from the enclosed passenger area, in accordance with regulations.[52]

[51] Undated marine survey provided by A.B.K.

[52] According to Title 46 CFR 177.500(a), "each space accessible to passengers or used by the crew on a regular basis must have at least two means of escape, one of which must not be a watertight door." In certain circumstances, one means of escape suffices, such as from deck areas smaller than 322 square feet (Title 46 CFR 177.500[o]).

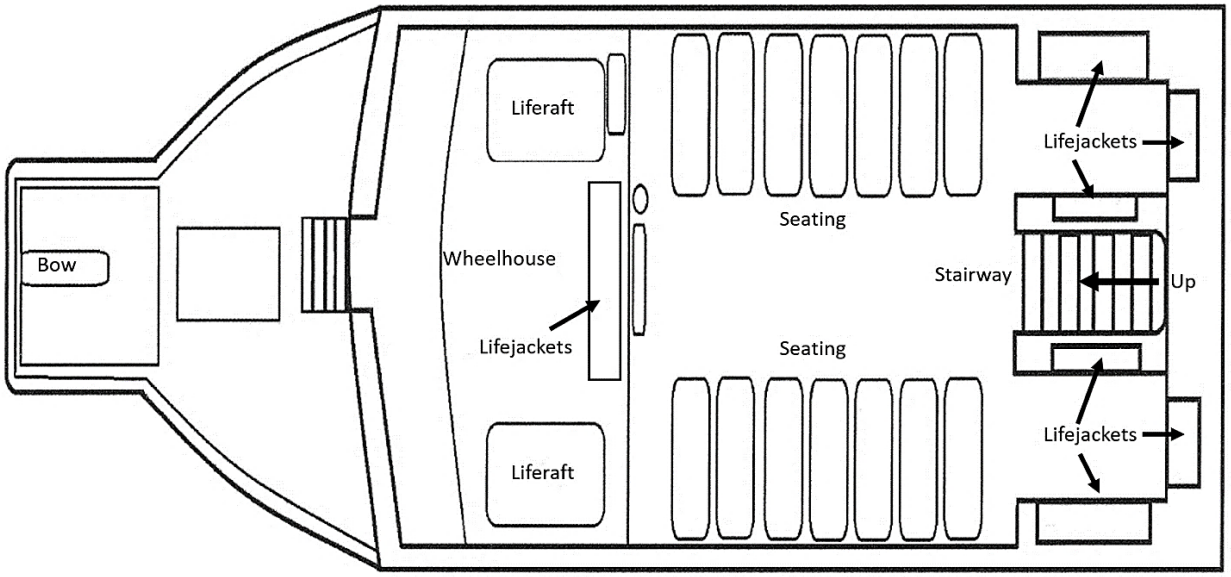


Figure 12. Drawing of the *Island Lady*'s top deck, including the wheelhouse. (Image from Port Richey Casino's *Employee Emergency and Safety Manual*)

Exits on the main deck led to the stern and bow. A stairway on the stern led to the upper deck and a vertical ladder on the bow connected the wheelhouse and the bow. Watertight bulkheads subdivided the below-deck area into compartments that contained the fuel tanks, engines, generators, water and waste tanks, fire suppression apparatus, and other equipment. The engine room had two small access hatches from the main deck, one between the generators and a larger access hatch over the engines. Each of the other below-deck compartments also had an access hatch.[53]

[53] Employee Emergency and Safety Manual

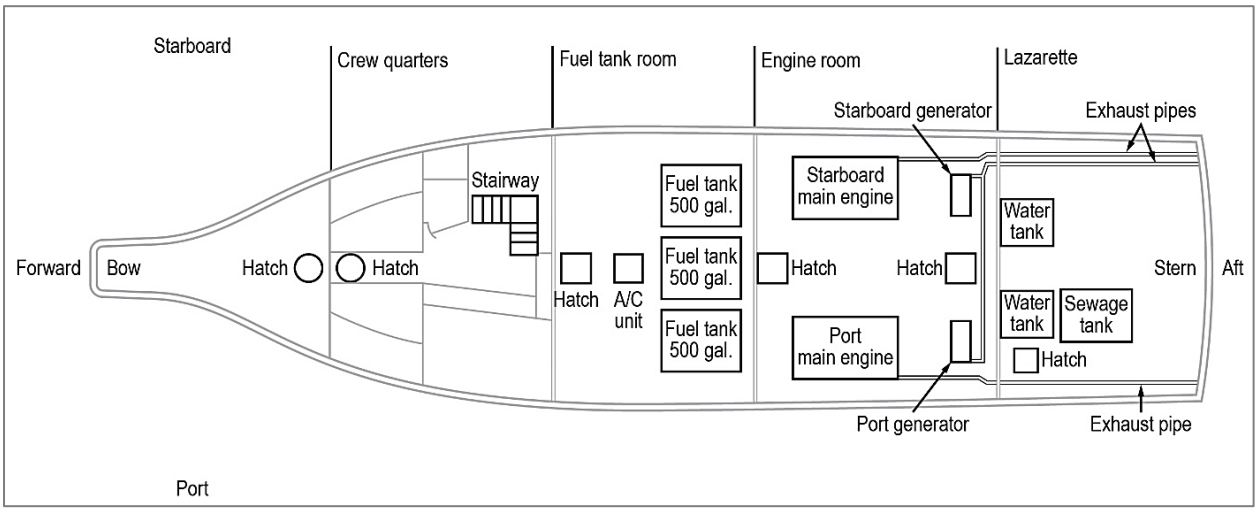


Figure 13. Layout of the *Island Lady*'s lower level.

According to the captain, the *Island Lady*'s navigation equipment included an autopilot, a 24-mile radar, global positioning system (GPS) instruments, depth-meter, fish-finder, and compass. The vessel was also equipped with two very high frequency (VHF) radios and a cellular telephone.[54]

L. PROPULSION SYSTEM

The *Island Lady* was powered by two Caterpillar 6-cylinder, 800-horsepower model 3406E diesel engines. Each engine was equipped with an aftercooler, had a single turbocharger on the forward end, and was coupled to a shaft and a four-bladed propeller by an electrohydraulic transmission system. Vessel operators controlled the engines' forward and astern speeds by moving levers on the wheelhouse console.

The Caterpillar engine manual contained a section explaining the gauges and indicators for the engines. The manual stated that a "warning" lamp alerted the operator of engine problems. The following were examples of problems: low oil pressure, high coolant temperature, low coolant level, and high inlet air temperature. The manual provided guidance to the operator for each of the alarm conditions. If the engine oil pressure gauge alarmed, the operator was advised to remove the load, reduce engine speed to low idle, and shut down

[54] Captain interview

the engine. For a high jacket-water temperature alarm, the following procedure was to be carried out: reduce load and engine speed, inspect the cooling system for leaks, and determine if the engine needed to be shut down immediately or if it could be cooled by reducing the load.

Each engine was cooled by a closed-type jacket-water system via cooling passages in the engine block. An engine-driven raw-water pump drew seawater by way of a through-hull inlet pipe. An in-line sea strainer prevented debris from entering into the pump casing. The gear-driven raw-water pump impeller was constructed of rubber that rotated at a speed proportional to the engine rpm. According to Caterpillar specifications for the 3406E engine, the nominal operating temperature of the jacket-water system was 192°F. The setpoint for the high-temperature alarm of the jacket-water system was 217°F after a 30-second delay.

Figure 11. New raw-water pump housing and rubber impeller

The raw-water pumps first discharged into an aftercooler, which cooled the intake air entering the engine from the turbocharger. From the aftercooler, seawater flowed to a heat exchanger that cooled the engine jacket-water and then flowed to the transmission cooler (also known as a reduction-gear cooler). The seawater then flowed into a spray ring in the exhaust tubing that sprayed water directly into the 8-inch-diameter exhaust tubes (wet-exhaust system).[55] A drawing of the system shows the flow of cooling water through the engine.

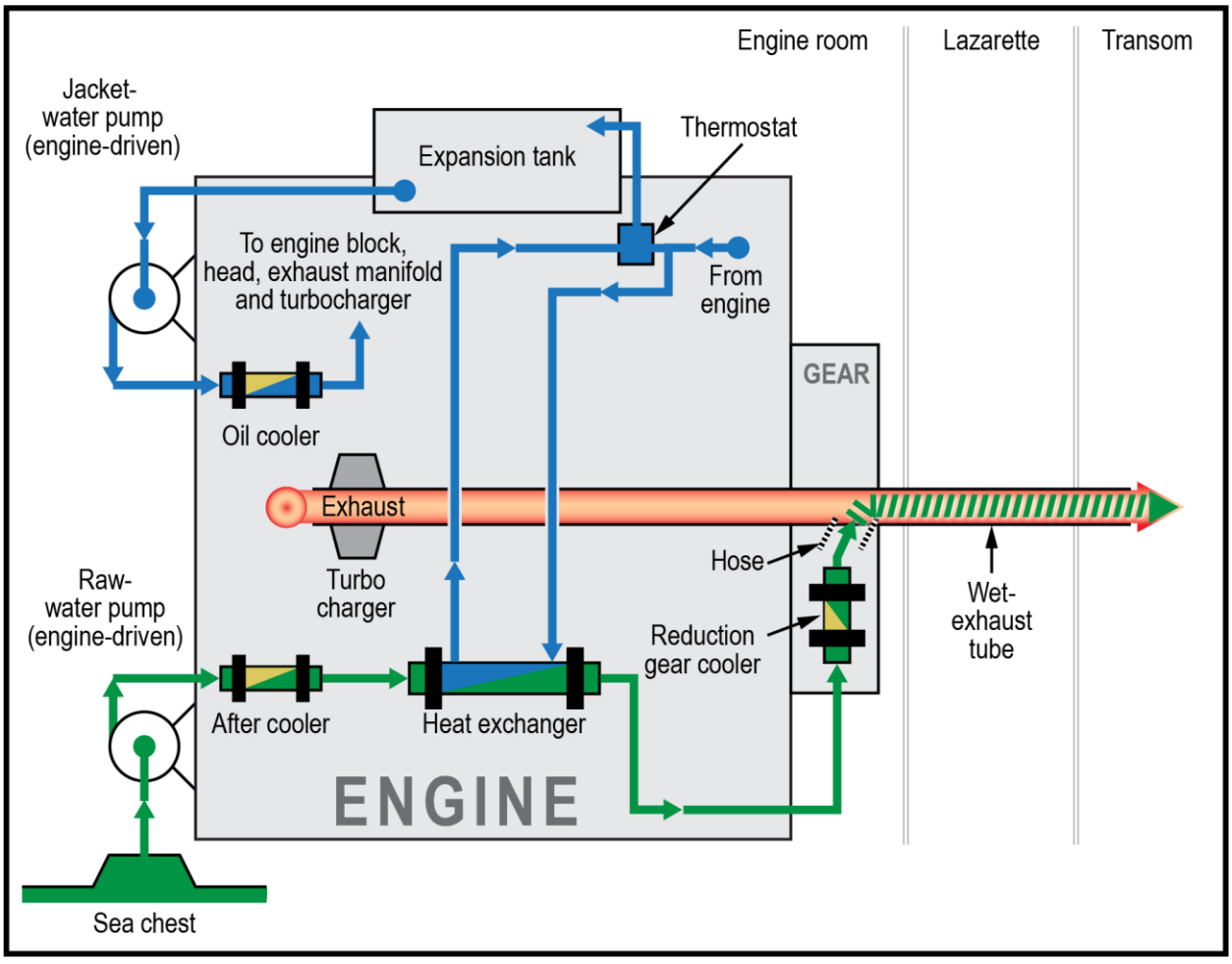


Figure 15. Diagram of the engine cooling water system.

[55] In a wet-exhaust system, water-cooled inboard engines inject cooling water into an exhaust tube; this process cools the exhaust and also muffles engine noise. The exhaust then pushes the water out of the tube and into the waterway. Because of the reduced exhaust temperatures, exhaust tubing does not have to be constructed of noncombustible material.

According to the vessel specifications obtained from the original owner, the exhaust tubing was Vernatube™ Exhaust Tubing, which was a resin-impregnated glass filament wound tubing. The manufacturer stated that it was made exclusively with a fire-retardant resin formulated for high temperature applications and exceeded values for the class of materials designated as “self-extinguishing” per ASTM –D-635, UL94V-O, and the US Navy/USCG MIL-R-21607 and MIL-R-7575.[56] The exhaust tubes were held in place by wooden supports and were in direct contact with the wooden bulkheads between the engine room and the lazarette.[57] No fire detection or suppression systems were located in the lazarette, nor were they required to be.

Figure 16. Engine exhaust pipes transiting through the lazarette space aboard a sister vessel to the *Island Lady*.

[56] Undated marine survey provided by A.B.K.
[57] Pictures from USCG and sister vessels

According to Caterpillar data, exhaust temperatures on an engine operating at full power are about 750°F, and about 450°F at idle. The maximum operational temperature for an epoxy glass fiber reinforced tube is 300°F before the polymers degrade. Investigators obtained the purchase receipt to determine the properties of the replacement tubing. The tubing was Novaflex marine hard-wall water exhaust tubing, which the manufacturer stated met standards for marine wet-exhaust applications.

The vessel's electrical power was provided by two 17-kilowatt Kubota generators. The exhaust system for the engines and the generators was wet-type, with fiberglass-enforced plastic exhaust pipes that exited out the stern of the vessel.[58] The exhaust piping transited through a compartment aft of the engine room referred to as the lazarette which also housed the steering system, marine sanitation system, and pumps. No fire-detection or fire-suppression systems were located in this space, nor were they required.[59]

a. Electrical System

Electrical power was produced by two Kubota alternating-current generators, one behind each engine. Each generator's output was rated at 17 kilowatts. The captain told investigators that, normally, the vessel needed only one generator at a time in the winter (because of reduced need for air-conditioning); on the day of the accident, the starboard generator was running. None of the crewmembers reported any electrical problems on the vessel either before or during the fire, other than the loose electrical connection on the port engine's starting battery that the captain tightened before departure.[60]

[58] In a wet-exhaust system, water-cooled inboard engines inject cooling water into an exhaust pipe; this process cools the exhaust and also muffles engine noise. The exhaust then pushes the water out of the pipe and into the waterway. Because of the reduced exhaust temperatures, exhaust piping does not have to be constructed of noncombustible material.

[59] Fire detection system drawings

[60] Captain, deckhand interviews

b. Fuel System

Fuel was delivered from the fuel tanks to the engines via piping; emergency stop valves were located in a recessed panel on the main deck. The fuel tanks were located in a separate compartment forward of the engine room. Each tank had a level indicator constructed of plastic tubing affixed to a vertical station. There were no automatic shutoff valves for isolation.[61]

In accordance with Title 46 CFR Part 182 Section 440, “tubular gauge glasses, if fitted to diesel fuel tanks, must be of heat-resistant materials, adequately protected from mechanical damage, and provided at the tank connections with devices that will automatically close in the event of rupture of the gauge or gauge lines.”

In March 2017, during a Coast Guard vessel examination of the *Island Lady*, the inspector found the fuel valves in the open position and photographed them (**figure 17**). The inspector told the crew to close the valves, and later looked for a regulation regarding the use of plastic tubing and manual valves for level indication. He was unable to find the regulation and did not document the finding on a form CG-835, Notice of Merchant Marine Inspection Requirements in accordance with 46 CFR 2.01-10.

[61] USCG pictured from vessel inspection

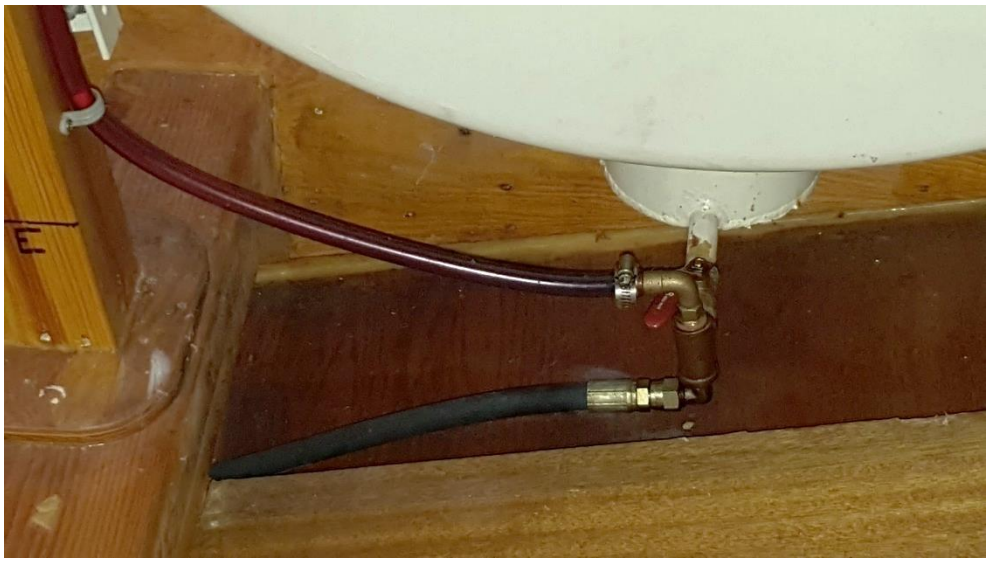


Figure 12. *Island Lady*'s fuel tank valve and plastic tubing to fuel-level indicator. (Image from Coast Guard.)

M. CERTIFICATION

The *Island Lady* was certificated and inspected as a small passenger vessel per regulations at Title 46 CFR 175–185. The vessel's COI, valid for 5 years, was issued on March 21, 2017 after the vessel had been inspected for certification. After the vessel's last drydock examination on April 3, 2017, its COI was amended to reflect the date of the examination. Marine Safety Office Tampa was the local Coast Guard office in charge of inspecting the *Island Lady*.

The COI permitted the *Island Lady* to operate in the partially protected waters off the west Florida coast between the Fenholloway River (Stake Point) to the north and Everglades City (Lopez River) to the south, not more than 20 miles from a harbor of safe refuge. The COI allowed the *Island Lady*'s passengers to transfer only to and from the *Tropical Breeze I*, using the shuttle vessel's midship portside transfer station. Transfers were not allowed when sea conditions exceeded a 2-foot wave chop or when rolling seas or sea swells exceeded 2 feet.[62]

[62] COI

The total number of persons allowed on the *Island Lady* was 152, consisting of 149 passengers and three crewmembers. The COI permitted the vessel to carry adult passengers only and required the embarkation doors to be closed while passengers were aboard.[63]

Coast Guard Inspection. The Coast Guard inspected the *Island Lady* four times during the 2-year period between November 2015 (when A.B.K. Enterprises purchased the vessel) and the accident. On November 5, 2015, a "new to zone" inspection was conducted after the vessel was relocated to Port Richey. At the time, the Coast Guard inspector stated that it was evident that the vessel had been "very well maintained" and was in "excellent condition." Four deficiencies (unrelated to the fire) were noted during this examination. On November 12, 2015, two Coast Guard officers returned to the vessel, ensured that the four deficiencies were corrected, and issued a COI and inspection decal.[64]

On February 10, 2017, the *Island Lady*'s COI expired and a new one was required. On March 16, 2017, the Coast Guard issued a "no-sail" CG-835 form (*Vessel/Facility Inspection Requirements*) because the vessel missed its annual inspection. The following day, a company official contacted the Coast Guard and scheduled the inspection. On March 21, 2017, two Coast Guard officers inspected the *Island Lady* while under way, including observing the 3-person crew conducting man-overboard, abandon-ship, and fire drills. After the inspection, the officers removed the no-sail CG-835 but noted seven deficiencies, unrelated to the fire. The crew immediately corrected three of the deficiencies, and on April 17, 2017, the owner sent photos to the Coast Guard, showing that the remaining deficiencies were corrected as well. The Coast Guard issued the new COI on March 21, 2017, stating that the vessel had completed the inspection for certification and was fit for service and the route.[65]

[63] COI
[64] USCG Activity Summary Report
[65] USCG Activity Summary Report

On April 3, 2017, Coast Guard personnel conducting a drydock exam noted three deficiencies, unrelated to the fire. Within 4 days, all deficiencies were corrected, and the inspection was concluded.[66]

Reported Incidents

During Tropical Breeze Casino Cruz's ownership of the *Island Lady*, the Coast Guard received four reports of incidents involving the vessel: In August 2016, a passenger tripped and fell while stepping over a doorway threshold and broke her hip. She was taken to the hospital and died 3 days later. In September 2017, a concerned citizen contacted the Coast Guard alleging the *Island Lady* caused a wake and forced several recreational vessels out of the channel. The Coast Guard investigated, but no enforcement action was taken. In October 2017, due to failure of a control cable that then prevented the starboard engine from disengaging from the transmission, the *Island Lady* struck a building along the banks of the Pithlachascotee River, damaging both the building and the vessel's bow. The Coast Guard issued a CG-835, which required engine repairs to be conducted before the vessel carried passengers again. The following day, a Coast Guard inspector witnessed the satisfactory engine repair and cleared the CG-835. In November 2017, the Coast Guard received a report that a crewmember fell through an open hatch to the engine room, causing injury to her forehead, legs, torso, and a toe. A week later, after her symptoms worsened, the crewmember went to the emergency room, where her toe was determined to be broken and infected. The Coast Guard referred the incident to enforcement for failure of the marine employer to notify the Coast Guard of a marine casualty.

N. WATERWAY INFORMATION

The Pithlachascotee ("Cotee") River flows for more than 20 miles through Pasco County into Miller's Bayou at the town of Port Richey and then empties westward into the Gulf of Mexico.[67] Two 90–degree turns in the channel near the river's mouth were known to local mariners as the S-turn.

[66] USCG Activity Summary Report
[67] National Oceanic and Atmospheric Administration, National Ocean Service, *United States Coast Pilot*, vol. 5 (Atlantic Coast: Gulf of Mexico, Puerto Rico, and Virgin Islands), 2004, p. 340.

An extensive shoal area lies off the mouth of the Pithlachascotee River. The Gulf of Mexico is shallow from the shoreline out to the 3-nautical-mile line (1–5 feet deep). Between there and the 9-nautical-mile limit of Florida state waters, the Gulf ranges from 6.5 to 14 feet in depth.[68] The US Coast Guard had designated two areas in the Gulf of Mexico where passengers were allowed to be transferred from shuttle boats to casino vessels. One area was referred to as the "The Peanut" and the other as the "Little Bank Area to Gulf Harbors Area"[69]

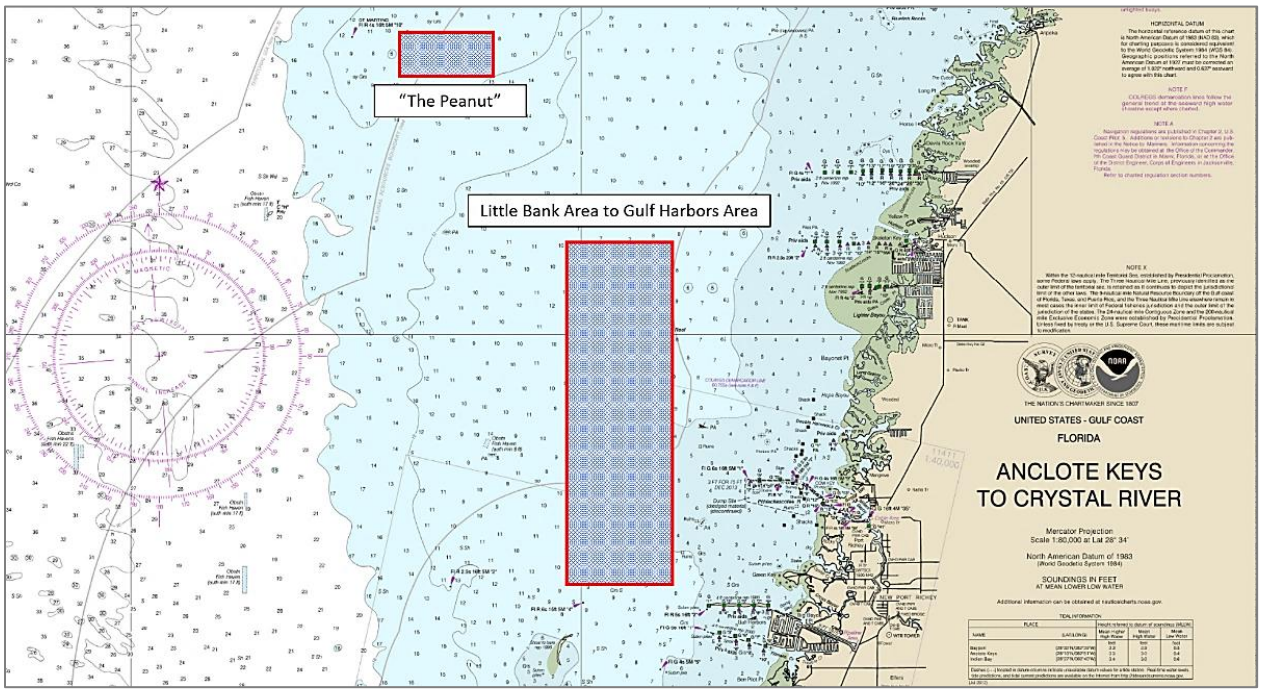


Figure18. Designated areas for transferring passengers to the *Tropical Breeze I* casino boat. (Section of NOAA chart 11409)

O. COMPANY OPERATIONS

[68] National Oceanic and Atmospheric Administration, National Ocean Service, Coast Survey, U.S. Gulf Coast, Florida, Chart 11409, *Anclote Keys to Crystal River*, 1999.

[69] COI

A.B.K. Enterprises, the owner of the *Island Lady*, began operating as "Paradise Casino" in 1995. . At a later date, the company name was changed to "SunCruz." In 2001, the operator changed again, this time to "Port Richey Casino." In 2015, when the company purchased casino boat *Tropical Breeze I*, a new company was formed—"Tropical Breeze Casino Cruz, LLC"—which was the operating company when the *Island Lady* fire occurred. At that time, the company operated two vessels: Casino boat *Tropical Breeze I* and shuttle boat *Island Lady*.

Day-to-Day Operations

At the time of the accident, the company had four boat captains on its payroll and an engineer who worked mostly on shore. The owner managed day-to-day company operations. Shoreside support consisted of an administrative assistant, an engineer, and a dockmaster. Tropical Breeze Casino Cruz offered three scheduled departures per day, 7 days a week: 1100, 1530, and 1900. Return trips were scheduled for 1730, 2100, and midnight. Customers could choose to stay for just a few hours or until the last return to shore. The captain told investigators that he worked 7 days a week; 4 days a week on the *Island Lady* and 3 days a week on the *Tropical Breeze I*.

Port Captain / Owner's Husband. The port captain told investigators that he took care of the slot machines and helped supervise general operations. He held a merchant mariner credential as captain of 100-ton vessels and had previously operated the *Island Lady* and stopped after he received complaints about erratic operation and after a collision with a pier. His responsibilities included upkeep and maintenance of vessels and oversight of vessel safety, daily operations, and personnel. He was called by the captain on the day of the fire and suggested that he put the engine in reverse to try to remove any debris from the seawater inlet.[70]

Engineer

The company engineer was off-duty on the day of the accident but had worked for Tropical Breeze Casino Cruz for about 4 and a half years. He did not hold nor was he required

[70] Port captain / Owner's husband interview

by federal regulations to hold any Coast Guard documents. He attended Marchman Technical College and studied marine service technologies. He said his studies included training on passenger vessels and that he completed a year and a half-long class on diesel engines. Initially, his job entailed working overnights on casino boat *Royal Casino I* until it was taken out of service*,* and then the *Tropical Breeze I.* He was employed as engineer and deckhand. About a year before the accident, the *Island Lady* was added to his responsibilities, which included checking fluids and performing minor repairs. He said he typically spent about 15–20 minutes daily aboard the *Island Lady*, starting the engines, replacing light bulbs, and fixing toilets, as needed. The rest of the time, he worked at the shoreside facility.[71]

Vessel Maintenance

Tropical Breeze Casino Cruz had implemented a preventive maintenance program for its vessels after receiving Safety Recommendation M-06-12 in response to the 2005 *Express Shuttle II* fire.[72] The captain and the engineer told investigators that the crew conducted maintenance checks on the *Island Lady* every morning before transits and followed a daily checklist. Investigators found a blank “engine room daily checklist’ on the company computer, which included various items to be inspected each day, including the engines, generators, fuel levels, bilges and other general inspections. A crewmember would check oil-, water-, and bilge levels, drinking water supply, and the vessel’s overall condition. Any item requiring additional maintenance was reported to the company.[73] Investigators requested completed checklists, but none were provided, as the company said they were destroyed in the fire and the company did not maintain copies in the office or on the company computer.

[71] Engineer interview

[72] An effective preventive maintenance program contains such elements as procedures for reporting maintenance and repair needs, retaining and reviewing maintenance and repair records, conducting vessel inspections and repairs according to manufacturers’ guidelines, verifying and testing repairs, and overseeing the maintenance and repair process. It also contains procedures that promote effective interaction between the personnel who operate vessels and the staff who perform vessel maintenance.

[73] Captain interview

.[74] The *Island Lady* engineer told investigators that he created a maintenance report based on the Caterpillar maintenance schedule and his experience. This report did not include Caterpillar's recommended intervals, nor was there any guidance from Tropical Breeze Casino Cruz. He estimated that the *Island Lady* operated for about 6 hours a day and said that it had recently started operating 7 days a week, an increase from 4 days a week.[75]

The required maintenance based on the Caterpillar "Operation and Maintenance Manual" stated that "fuel consumption, service hours, or calendar time, WHICH EVER OCCURS FIRST" were to be used to determine the maintenance intervals. The manual also stated that engines operating in severe conditions may require more frequent maintenance.

The Caterpillar manual identified as daily maintenance to be carried out: a walk-around inspection looking for leaks and loose connections, and checking the crankcase oil level, the coolant system level, the air cleaner condition, and the oil level in the transmission. Every 50 hours, the zinc rods were to be replaced.[76] Every 250 hours (or yearly; which ever came first), a crankcase oil sample was to be obtained and analyzed, the engine oil and filter were to be changed, the fuel filter was to be replaced, the fuel tank was to be drained of water and sediment, the cooling system was to be tested, the air cleaner was to be cleaned or replaced, belts were to be checked, adjusted or replaced, hoses and clamps were to be inspected or replaced, and the batteries were to be cleaned and checked. Also, at 250 hours or yearly, the auxiliary water pump (with a rubber impeller) was to be inspected. At 1,000 hours, the turbocharger was to be inspected. At 3,000 hours, the water temperature regulators were to be replaced, engine mounts inspected, crankshaft vibration damper inspected, valve lash and valve rotators checked and adjusted, fuel injectors checked, and engine speed/timing sensor cleaned/inspected. At 5,000 hours, the jacket

[74] Caterpillar defined severe operation as "the use of an engine that exceeds current published standards for the engine." The following factors can contribute to severe operation: environment, improper operating procedures, and improper maintenance procedures.

[75] Engineer interview

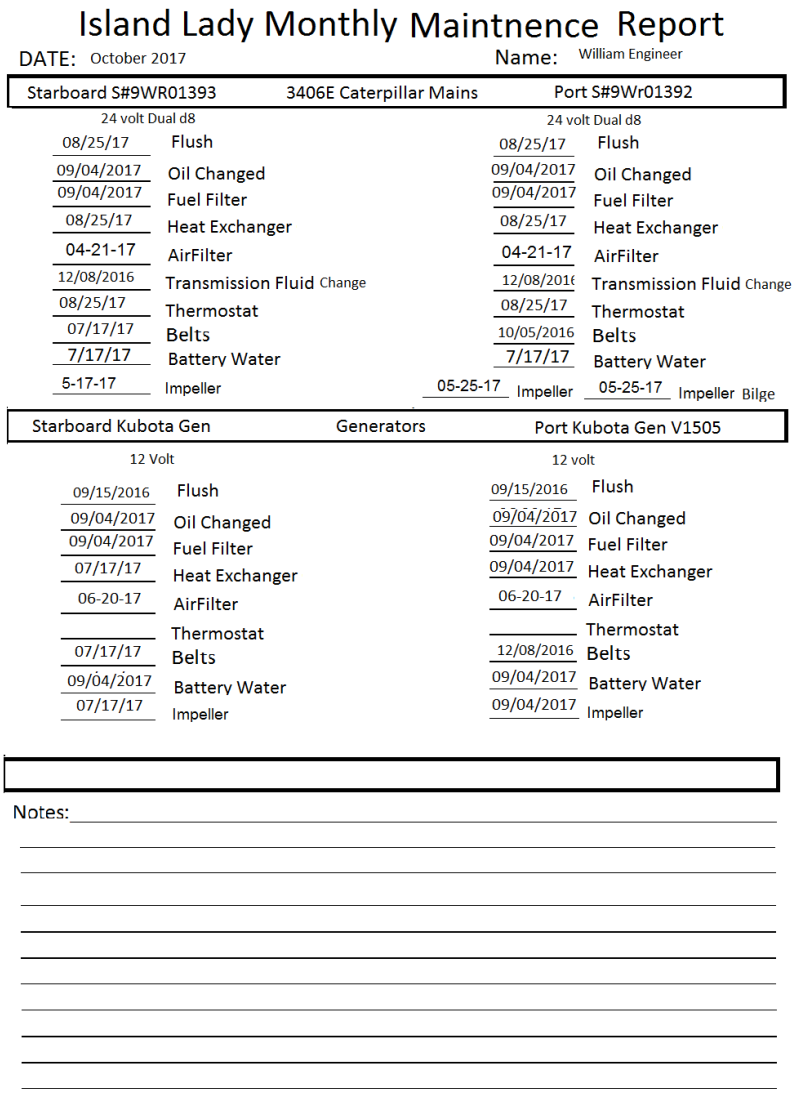
[76] Zinc rods are inserted into the engine's seawater cooling system to help prevent the corrosive action of salt (sea) water. The reaction of the zinc to the seawater causes the rods to deteriorate, instead of more critical engine cooling system parts. Rapid deterioration of the zinc rods may indicate the presence of stray electrical currents form improperly installed or grounded electrical attachments. The location and number of zinc rods depends on the individual engine and engine's attachments. Zinc rods are located in: the heat exchanger bonnet, the after-cooler lines, the raw-water heat exchanger bonnet, the raw-water pump, and the raw-water lines.

water pump and alternator were to be inspected or exchanged. The turbocharger was to be cleaned, inspected, and checked.

The Caterpillar manual also gave direction regarding overhaul considerations. Caterpillar stated that the need for overhauls are generally indicated by increased fuel consumption and reduced power. It went on to explain that factors such as conscientious preventative maintenance, fuel quality used, operating conditions, and oil analysis results are important considerations in deciding when to perform an overhaul.[77]

The Tropical Breeze Casino Cruz engineer said he changed the engine oil monthly and reported any maintenance issues to the company. He estimated that the *Island Lady* engines had about 13,000 hours on them at the time of the accident, but "hadn't thought about logging hours" and would occasionally enter the engine hours on the daily checklists. He said the *Island Lady's* engine maintenance was not based on engine hours. The engineer kept a maintenance log for both company vessels on the computer in the dock office.[78] Each month was one page and included oil and filter changes, impeller replacements, and so on. Investigators examined the *Island Lady*'s maintenance log for the year before the fire, between January 2017 and October 2017. The log's pages contained fields for manual entries of dates of service and an area for comments.

[77] Caterpillar "Operation and Maintenance Manual"
[78] Engineer interview



Island Lady Monthly Maintnence Report

DATE: October 2017 Name: William Engineer

Starboard S#9WR01393	3406E Caterpillar Mains	Port S#9Wr01392
24 volt Dual d8		24 volt Dual d8
08/25/17	Flush	08/25/17
09/04/2017	Oil Changed	09/04/2017
09/04/2017	Fuel Filter	09/04/2017
08/25/17	Heat Exchanger	08/25/17
04-21-17	AirFilter	04-21-17
12/08/2016	Transmission Fluid Change	12/08/2016
08/25/17	Thermostat	08/25/17
07/17/17	Belts	10/05/2016
7/17/17	Battery Water	7/17/17
5-17-17	Impeller	05-25-17 Impeller 05-25-17 Impeller Bilge

Starboard Kubota Gen	Generators	Port Kubota Gen V1505
12 Volt		12 volt
09/15/2016	Flush	09/15/2016
09/04/2017	Oil Changed	09/04/2017
09/04/2017	Fuel Filter	09/04/2017
07/17/17	Heat Exchanger	09/04/2017
06-20-17	AirFilter	06-20-17
	Thermostat	
07/17/17	Belts	12/08/2016
09/04/2017	Battery Water	09/04/2017
07/17/17	Impeller	09/04/2017

Notes:

Figure 19. Sample monthly maintenance report for *Island Lady*. October 2017.

According to the monthly maintenance reports, the impellers of the raw water pumps for both main engines were replaced in May 2017. Investigators obtained pictures that the engineer had taken of the pump housing and rubber impeller during the replacement. No records were available to show the number of hours or days of operation on the impellers. Investigators obtained photos, taken by the engineer in connection with the replacement, of water leaking from the pump housing (**figure 20**) and of one of the old pump housings and rubber impellers before replacement (**figure 21**). At least six of the 12 vanes were missing

from that impeller. Ring Power provided a photo (**figure 22**) of a newly installed rubber impeller inside a raw-water pump housing to show the condition of a newly installed impeller.

Figure 20. Raw-water pump and impeller from *Island Lady* during May 2017 replacement.

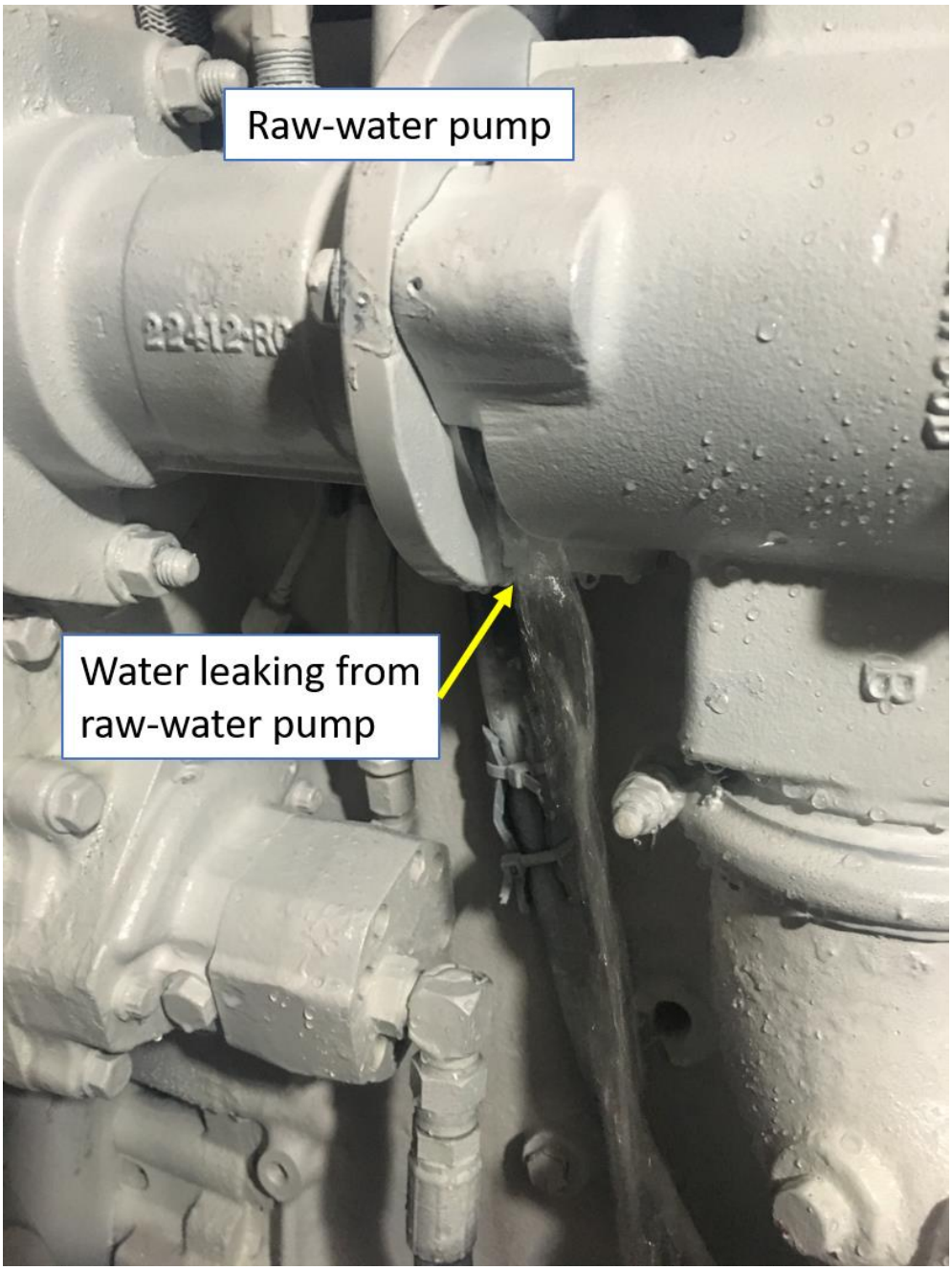


Figure 21. Water leaking from the *Island Lady's* raw-water pump before its May 2017 replacement, photographed by the engineer.

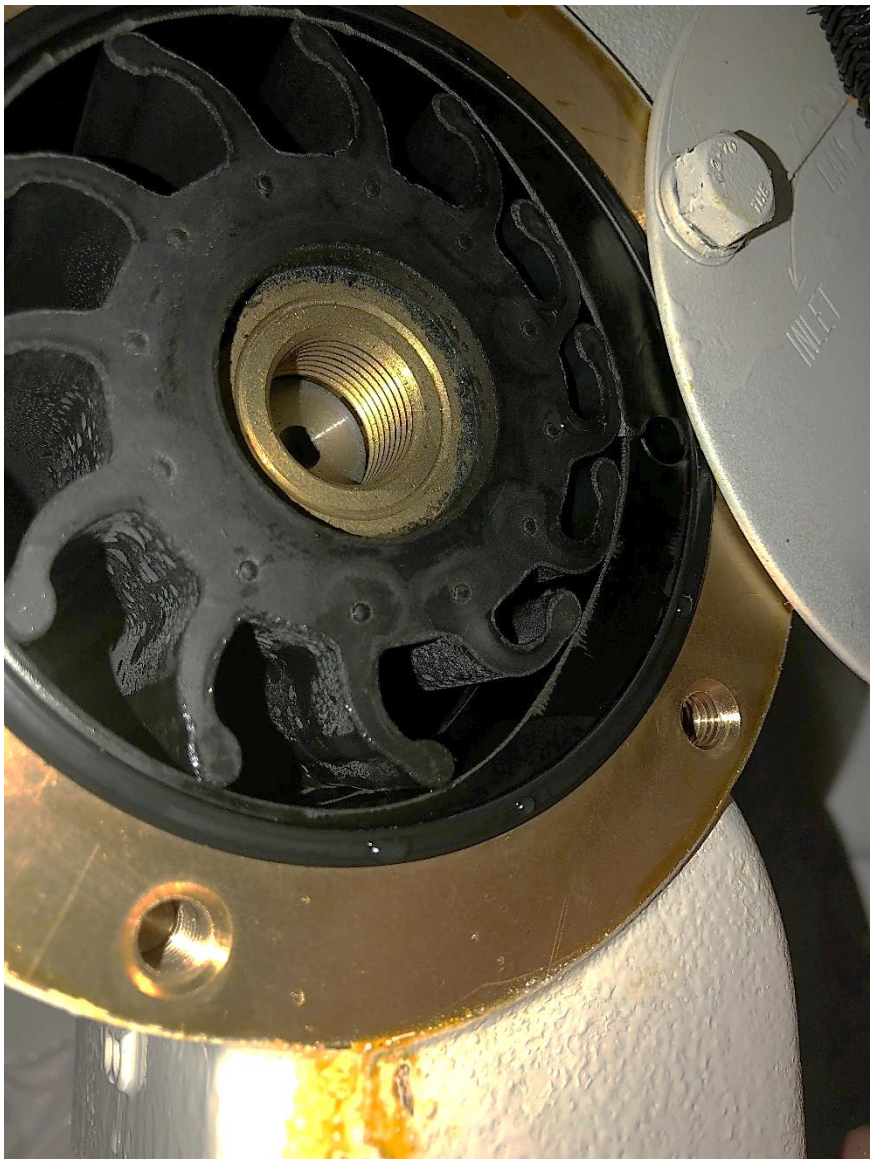


Figure 22. New raw-water pump impeller installed in its pump housing. (Photo provided by Ring Power)

According to interviews with the captain and the engineer, they would notify the owner of any maintenance that they believed required assistance from outside vendors, and the owner would decide if or when to schedule such repair work. According to the engineer's maintenance log and invoices supplied by Tropical Breeze Casino Cruz, the *Island Lady*'s starboard engine was rebuilt in March 2017 because it was producing excessive blowby, meaning that pressurized products of combustion were entering into the crankcase through

worn internal components. He also said that the starboard engine was “putting oil through the turbocharger.” The owner stated that the timing of the starboard engine overhaul was placed during a downtime in the vessel’s schedule due to its COI having expired and the vessel not being permitted to carry passengers. The port engine was not overhauled at that time.[79] According to the engineer, he and one of the company boat captains completed the work on the starboard engine. The owner told investigators that a service representative from Ring Power tested the engine afterwards. The service representative was reportedly called after hours and was paid in cash, and there was no service report.

The engineer took photographs of starboard engine components during the overhaul. Two of the six removed pistons showed signs of vertical score marks (**figure 23**). Scoring of diesel engine pistons can result from overheating, lack of lubrication, or debris ingestion. As the engine is operated with scored pistons, unburned fuel and the pressurized products of combustion are more likely to enter into the crankcase.

[79] Engineer interview

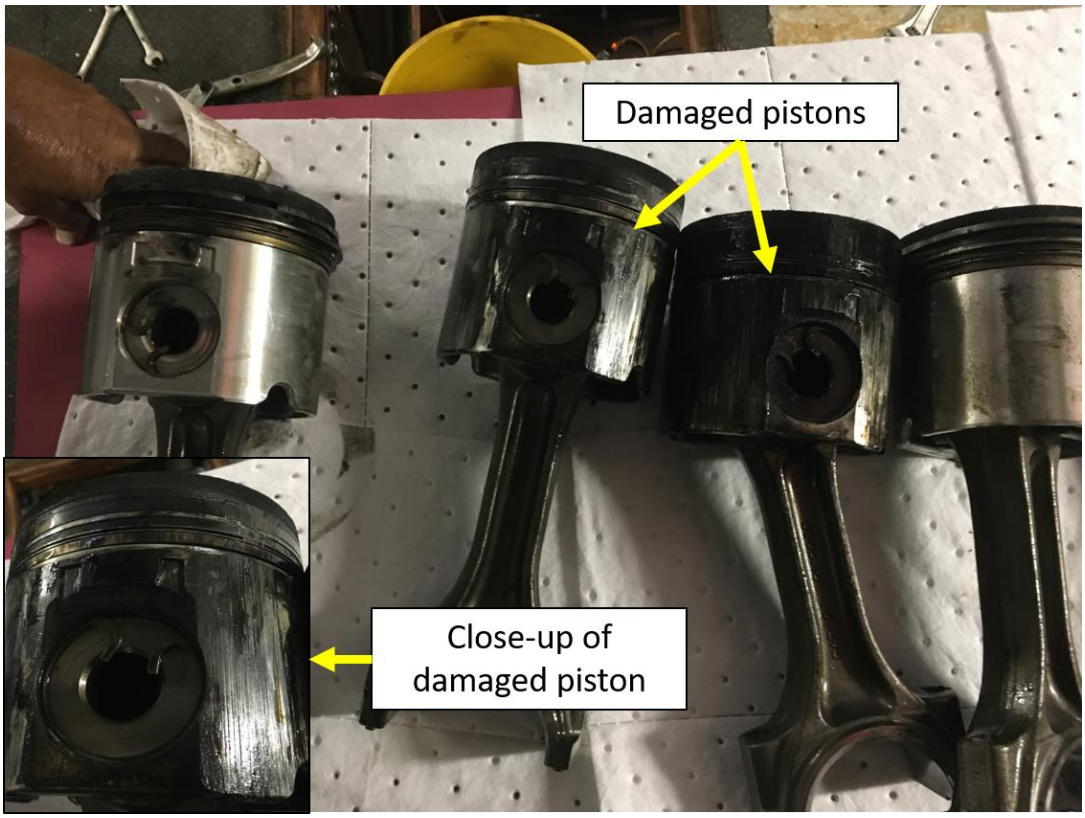


Figure 23. Removed pistons from the *Island Lady*'s starboard engine during March 2017 overhaul, photographed by the engineer.

The engineer told investigators that after the vessel was purchased, the engines were "rolling coal," meaning that they were producing black smoke. As a result, the vessel's transom was blackened (**figure 24**), and the engineer said that the company called "a bunch of people" to determine the reason for the excessive smoke, but nobody was able to provide an answer. Investigators found the results of an internet search on the company computer of "diesel fuel leaking into exhaust."

Figure 24. Stern of *Island Lady* while in drydock April 2017. (Photo by Coast Guard)

Firefighting Equipment

The Coast Guard inspection record for March 17, 2017, stated that the *Island Lady* had four portable fire extinguishers and two 1.5-inch-diameter, 50-foot-long firehoses, in addition to the fixed fire-suppression system described earlier. The inspection record stated that the vessel's fire pump had been tested.[80]

Lifesaving Equipment

The *Island Lady*'s COI required that the vessel carry lifesaving equipment for 152 persons. The equipment included 152 adult lifejackets, three life rings, and one rescue boat/platform. Two liferafts, rated for 50 people each, were installed on top of the wheelhouse. The vessel was not required to carry child lifejackets because the COI allowed adult passengers only. Lifejackets were stowed in bins or inside benches

[80] USCG Activity Summary Report

throughout the passenger spaces. On the upper deck, lifejackets were stowed in a locker behind the wheelhouse.[81]

Other Company Vessels

The company's casino boat, the *Tropical Breeze I* (**figure 3**), was built in 1991 and served as the company's casino boat starting in 2015. Between 2015 and the date of the accident, the Coast Guard attended the vessel seven times for scheduled certification, drydock inspections, and in response to passenger and crewmember concerns. The Coast Guard noted any deficiencies during the inspections; the company addressed them, and the Coast Guard subsequently cleared them.

Since 1995, Port Richey Casino/Tropical Breeze Casino Cruz had also owned other casino and shuttle boats—the *Monte Carlo*, the *Royal Casino I*, the *Royal Express*, and the *Royal Express II*—all of which had undergone Coast Guard inspections and which the company eventually retired. The company's shuttle boat *Express Shuttle II* was destroyed in a fire in 2004 (see section "Previous Fire and NTSB Safety Recommendations Involving Company Vessel").

[81] Federal regulations at Title 46 CFR 180.78 state, "lifejackets must be stored in convenient places distributed throughout accommodation spaces," and "each stowage container for lifejackets must not be capable of being locked. If practicable, the container must be designed to allow the lifejackets to float free." Further, "each lifejacket kept in a stowage container must be readily available." The Coast Guard's most recent inspection of the *Island Lady* verified the availability of lifejackets.

Brian Young
Investigator in Charge

Technical Review of Draft Factual Reports: A.B.K. Enterprises/Tropical Breeze Casino Cruz, LLC

Party Comments by email/letter dated: 9/20/2018

NTSB Draft Factual Report for Tech. Review

Page/Line	A.B.K ENTERPRISES/TROPICAL BREEZE CASINO CRUZ, LLC COMMENTS	NTSB – Disposition of Party Comments
NOTE	Port Richey Casino Inc. is the predecessor of the current vessel operator, Tropical Breeze Casino Cruz LLC. Though some employees and some documents may still refer to the operation as "Port Richey Casino," that is not technically correct.	Noted, updated throughout report
NOTE	The *Tropical Breeze*'s hull was insured for $750,000 – to the extent any paperwork reflects that figure as the value of the *Island Lady*, that is likely a clerical error.	Noted, $450,00 used throughout report based on purchase price.
1/16	About 1600 on the afternoon of January 14, 2018, a fire broke out in the lazarette of the	Corrected
1/20	Mexico. A captain, three deckhands, 11 employees, 36 passengers, and 2 pre-hires were aboard the	Updated in report; confirmed with Coast Guard.
2/11	The vessel was owned by A.B.K. Enterprises and operated by Tropical Breeze Casino Cruz, LLC	Updated
5/10	Eleven other employees, all employed by Tropical Breeze Casino Cruz, LLC, were also on board being	Updated
9/1-2	of the port engine. Batten said: "I figured that a line just blew off or something."	Updated, added to report. New sentence: In a postaccident interview, the captain said that he "figured a line just blew off or something."
14/4	As a result of the fire damage, the *Island Lady*, insured for $495,000, was declared a	Updated with $495,000
17/9	professionally. He told investigators that he had been employed by Tropical Breeze Casino Cruz, LLC for	Updated
18/2	Deckhand 1 had been rehired by Tropical Breeze Casino Cruz, LLC about a week before the	Updated
18/4	and then was not employed by Tropical Breeze Casino Cruz, LLC for about a year. Before his employment	Updated
18/12	The new-hire deckhand had worked for Tropical Breeze Casino Cruz, LLC for about five and a half	Updated
26/18	…during the 2-year period between November 2015 (when A.B.K. Enterprises purchased the	Updated

Party Comments by email/letter dated: 9/20/2018

27/15-25	DELETE (Irrelevant to fire on *Island Lady*)	Noted. Info condensed to 1 paragraph. Intent of paragraph is to show recorded vessel history and Coast Guard's attendance in addition to scheduled exams. During Tropical Breeze Casino Cruz's ownership of the *Island Lady*, the Coast Guard received four reports of incidents involving the vessel: In August 2016, a passenger tripped and fell while stepping over a doorway threshold and broke her hip. She was taken to the hospital and died 3 days later. In September 2017, a concerned citizen contacted the Coast Guard alleging the *Island Lady* caused a wake and forced several recreational vessels out of the channel. The Coast Guard investigated, but no enforcement action was taken. In October 2017, due to failure of a control cable that then prevented the starboard engine from disengaging from the transmission, the *Island Lady* struck a building along the banks of the Pithlachascotee River, damaging both the building and the vessel's bow. The Coast Guard issued a CG-835, which required engine repairs to be conducted before the vessel carried passengers again. The following day, a Coast Guard inspector witnessed the satisfactory engine repair and cleared the CG-835. In November 2017, the Coast Guard received a report that a crewmember fell through an open hatch to the engine room, causing injury to her forehead, legs, torso, and a toe. A week later, after her symptoms worsened, the crewmember went to the emergency room, where her toe was determined to be broken and infected. The Coast Guard referred the incident to enforcement for failure of the marine employer to notify the Coast Guard of a marine casualty.

Technical Review of Draft Factual Reports: A.B.K. Enterprises/Tropical Breeze Casino Cruz, LLC

Party Comments by email/letter dated: 9/20/2018

28/1-21	DELETE (Irrelevant to fire on *Island Lady*)	See above reply.
30/4	(NOTE: A.B.K. Enterprises was not the operator of the various Casino vessels/entities since 1995.) At the time of the *Island Lady* accident, Tropical Breeze Casino Cruz, LLC operated	Updated
30/11	operations. Tropical Breeze Casino Cruz, LLC offered three scheduled departure per day, 7 days a week:	Updated
30/18	credential as captain of 100-ton vessels and had previously operated the Island Lady. DELETE "but"	Deleted 'but', replaced with 'and'
30/19	DELETE (Irrelevant to fire on *Island Lady*)	Noted, info from interview about previous captain history.
30/26	Tropical Breeze Casino Cruz, LLC for about 4 and a half years. He did not hold nor was he required by	Updated
32/24	DELETE "but none of the hour meters worked," (*Island Lady* had digital hour meters in the wheelhouse, and as far as Tropical Breeze Casino Cruz LLC and A.B.K. Enterprises are aware, they were functioning. *See* Captain Interview 28:23).	Removed 'none of the hour meters worked" and replaced with "He estimated that the *Island Lady* engines had about 13,000 hours on them at the time of the accident, but "hadn't thought about logging hours" and would occasionally enter the engine hours on the daily checklists."
34/9-10	Corporation). According to the engineer's maintenance log and invoices supplied by Tropical Breeze Casino Cruz, LLC,	Updated

Party Comments by email/letter dated: 9/20/2018

35/12-21	DELETE (Irrelevant to fire on *Island Lady*)	Noted: Revised Other Company Vessel section and condensed to following paragraph: The company's casino boat, the *Tropical Breeze I* (**figure 19**), was built in 1991 and served as the company's casino boat starting in 2015. Between 2015 and the date of the accident, the Coast Guard attended the vessel seven times for scheduled certification, drydock inspections, and in response to passenger and crewmember concerns. The Coast Guard noted any deficiencies during the inspections; the company addressed them, and the Coast Guard subsequently cleared them. Since 2000, Port Richey Casino/Tropical Breeze Casino Cruz had also owned other casino and shuttle boats—the *Monte Carlo*, the *Royal Casino I*, the *Royal Express*, and the *Royal Express II*—all of which had undergone Coast Guard inspections and which the company eventually retired. The company's shuttle boat *Express Shuttle II* was destroyed in a fire in 2004 (see section "Previous Fire and NTSB Safety Recommendations Involving Company Vessel").
36/1-23	DELETE (Irrelevant to fire on *Island Lady*)	See above reply
37	DELETE (Irrelevant to fire on *Island Lady*)	See above reply

Technical Review of Draft Factual Reports: A.B.K. Enterprises/Tropical Breeze Casino Cruz, LLC

Party Comments by email/letter dated: 9/20/2018

NTSB Draft Factual Report for Tech. Review

Page/Sec.	NAME OF PARTY COMMENTS	NTSB – Disposition of Party Comments

Technical Review of Draft Factual Reports: USCG

Party Comments by email/letter dated: 04 OCT 2018

UpdaNTSB Draft Factual Report for Tech. Review

Page/Line	NAME OF PARTY COMMENTS	NTSB – Disposition of Party Comments
page 27 line 8-9	"USCG, ."The Coast Guard issued the new COI on March 21 2017, stating the vessel had completed satisfactory annual inspection and was fit for service and the route." Actually they should have completed "inspection for certification" vice "annual inspection". The distinction is explained in 46 CFR 176.404 and 46 CFR 176.500. https://www.ecfr.gov/cgi-bin/text-idx?SID=a0685f03747129b4ac43f8a3932cd39a&mc=true&node=pt46.7.176&rgn=div5#se46.7.176_1404	Updated: New sentence reads: The Coast Guard issued the new COI on March 21, 2017, stating that the vessel had completed the inspection for certification and was fit for service and the route.[1]
page 35 Lines 7-8	USCG "The vessel was not required to carry child lifejackets because children were not allowed as passengers, according to the COI." Regarding the lack of child size life jackets because the COI says adult passengers only. Actually a child size type I pfd is designed for persons less than 90 pounds not literally a child. Since the vessel removed all the "child" size life jackets, the COI should have read ADULT PASSENGERS ONLY - NO PASSENGERS LESS THAN 90 POUNDS, or A CHILD SIZE LIFE JACKET SHALL BE PROVIDED FOR ALL PASSENGERS WEIGHING LESS THAN 90 POUNDS, something similar. Regulations require child size PFDs onboard for any passenger less than 90 pounds. **§180.71 Life jackets.**	Updated: New sentence reads: The vessel was not required to carry child lifejackets because the COI allowed adult passengers only.

[1] USCG Activity Summary Report

	(a) An adult life jacket must be provided for each person carried on board a vessel. (b) In addition, a number of child size life jackets equal to at least 10% of the number of persons permitted on board must be provided, or such greater number as necessary to provide a life jacket for each person being carried that is smaller than the lower size limit of the adult life jackets provided to meet this section, except that: (1) Child-size life jackets are not required if the vessel's Certificate of Inspection is endorsed for the carriage of adults only; or (2) When all "extended size" life preservers (those with a lower size limit for persons of 1,195 millimeters (47 inches) in height or weighing 20.4 kilograms (45 pounds)) are carried on board, a minimum of only 5% additional child size devices need be carried. (c) Except as allowed by paragraph (d) of this section, each life jacket must be approved in accordance with either §160.002, §160.005, or §160.055 in subchapter Q of this chapter, or other standard specified by the Commandant, including, but not limited to, approval series 160.155 or 160.176. (d) Cork and balsa wood life jackets previously approved in accordance with §106.003, or 160.004 in subchapter Q of this section, on board an existing vessel prior to March 11, 1996, may continue to be used to meet the requirements of this section until March 11, 1999, provided the life jackets are maintained in good and serviceable condition. (e) Each life jacket carried on board the vessel must be marked in accordance with §185.604 of this chapter. [CGD 85-080, 61 FR 975, Jan. 10, 1996; 61 FR 24464, May 15, 1996, as amended by CGD 97-057, 62 FR 51050, Sept. 30, 1997;	

	62 FR 51357, Sept. 30, 1997; USCG-2015-0867, 80 FR 62470, Oct. 16, 2015] https://www.ecfr.gov/cgi-bin/text-idx?SID=4465a8b4f226948a0ec19525fc4d7167&mc=true&node=pt46.7.180&rgn=div5#se46.7.180_171 46 CFR 160.005-6 Marking. Each life preserver must have the following clearly marked in waterproof lettering on a front section: (a) In letters three-fourths inch or more in height: (1) Adult (for persons weighing over 90 pounds); or (2) Child (for persons weighing less than 90 pounds). https://www.ecfr.gov/cgi-bin/text-idx?SID=4465a8b4f226948a0ec19525fc4d7167&mc=true&node=pt46.6.160&rgn=div5#se46.6.160_1001_62	

Technical Review of Draft Factual Reports: USCG

Party Comments by email/letter dated: 04 OCT 2018

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NTSB Draft Factual Report for Tech. Review

Page/Sec.	NAME OF PARTY COMMENTS	NTSB – Disposition of Party Comments

Technical Review of Draft Factual Reports: Tropical Breeze Casino Cruz, LLC and A.B.K Enterprises, Inc.

Party Comments by email/letter dated: November 27, 2018

NTSB Draft Factual Report for Tech Review

Page/Line	A.B.K Enterprises/Tropical Breeze Casino Cruz, LLC Comments	NTSB-Disposition of Party Comments
7/4-5	DELETE "However, the captain told investigators that engine room fire-detection system never activated leading up to the fire and during the fire." ADD: The captain told investigators he could not recall the fire-detection system going off at any time. A casino employee told investigators she heard an alarm going off in the bridge.	Updated: The captain told investigators he did not recall hearing the fire detection system alarm at any time.
9/16-17	DELETE "or fire but saw about a 3-foot by 3-foot wet area on the port bulkhead outboard of the port engine." (Duplicative)	Updated: Deleted duplicated text.
19/13	*Royal Casino I* for about 8 months,	Updated to Royal Casino I.
20/12	There were no records of any other drills in 2017 because the 2017 drill log book was on the *Island Lady* and destroyed in the fire. Fn Captain Interview.	Updated to read 2017 drill log book was destroyed in the fire.
20/16	On November 5, 2015, the Coast Guard Performed a "new to zone" inspection of the *Island Lady*, which included the Coast Guard's observation and approval of underway drills by the *Island Lady*'s crew.	Noted.

23/12-24/4	DELETE (Irrelevant to the fire on the *Island Lady)*	Explains high temp alarm guidance from manufacturer.
27/5-6	DELETE "To determine specifications of the exhaust tubing installed on the Island Lady, investigators requested the receipts of exhaust tubing that was purchased in March 2017, but Tropical Breeze Casino Cruz could not provide those receipts." *See* Receipt attached.	Updated to reflect 11/27/18 receipt. New sentence reads: Investigators obtained the purchase receipt to determine the properties of the replacement tubing. The tubing was Novaflex marine hard-wall water exhaust tubing, which the manufacturer stated met standards for marine wet-exhaust applications.
27/12	"and pumps." DELETE "and hot water heater." (No hot water heater on *Island Lady).*	Updated: Removed hot water heater
28/11-16	DELETE (Irrelevant to the fire on the *Island Lady)*	Explains safety issue.
31/4-21	DELETE (Irrelevant to the fire on the *Island Lady)*	Describes incidents and Coast Guard response
31/7	and broke his hip. He was taken to the	Coast Guard report indicates female
31/14	which required the installation of a new control cable, before the vessel carried passengers again. Fn USCG Deficiency Case No. 1103477	Noted
33/9-10	and two engineers, one who worked mostly on shore.	No documentation indicating two engineers
34/4	his job entailed working overnights on casino boat *Royal Casino I,* until it	Updated