National Transportation Safety Board

Marine Accident Brief

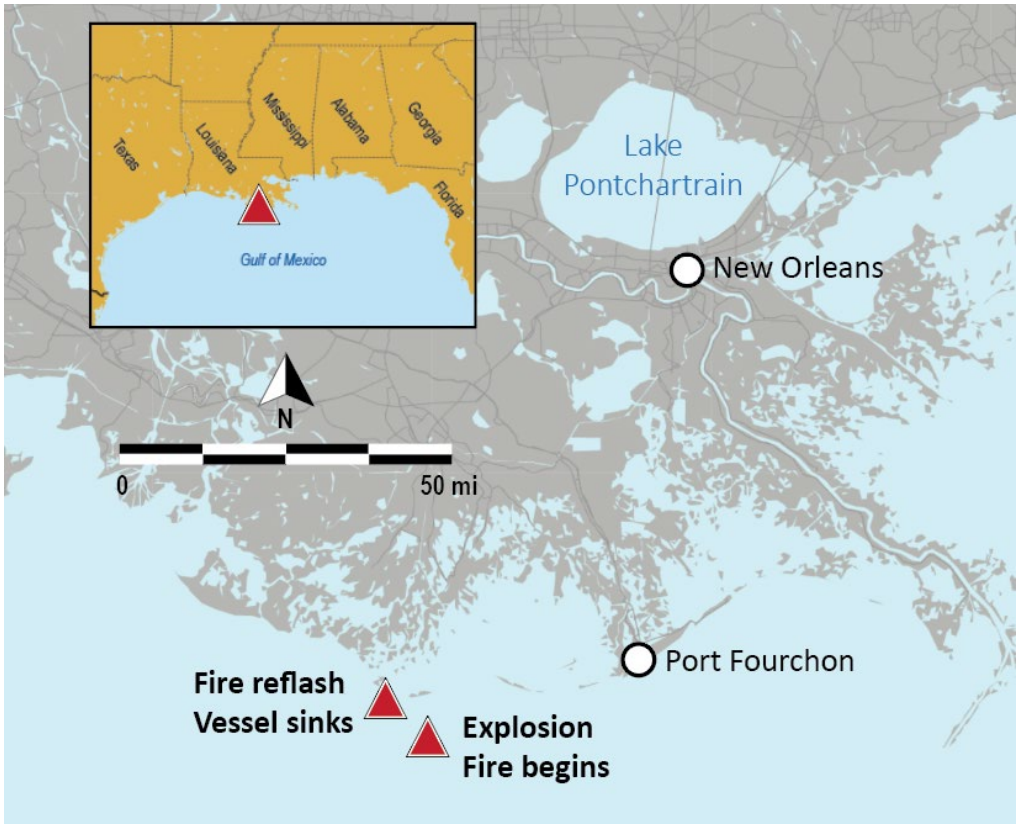
Engine Room Fire aboard Fishing Vessel *Master Dylan*

Accident type	Fire/Explosion	**No.** DCA21FM009
Vessel name	*Master Dylan*	
Location	Gulf of Mexico, about 32 miles west-southwest of Port Fourchon, Louisiana[1] 28°55.7' N, 090°48.0' W	
Date	December 1, 2020	
Time	0745 central daylight time (coordinated universal time – 6 hours)	
Injuries	None	
Property damage	$300,000 est.	
Environmental damage	None reported	
Weather	Visibility 10 miles, clear skies, winds east at 8 knots, seas east 1 foot, air temperature 52°F, water temperature 71°F, sunrise 0647	
Waterway information	Gulf of Mexico	

About 0745 on December 1, 2020, the fishing vessel *Master Dylan* was trawling for shrimp in the Gulf of Mexico when an explosion occurred in the engine room. Attempts to fight the subsequent fire from on board the vessel were unsuccessful, so the crew abandoned ship to a Good Samaritan vessel. The fire was eventually extinguished by other responding vessels, and the *Master Dylan* was taken under tow. However, during the tow, the stricken vessel ran aground, the fire re-flashed, and the vessel later sank. The vessel was a total constructive loss with an estimated value of at $300,000.

The *Master Dylan* before the accident. (Source: Marine Traffic)

[1] All miles in this report are statute miles (0.87 nautical miles).



Area of accident where the *Master Dylan* caught fire and later sank, as indicated by the red triangles. (Background source: Google Maps)

Background

The *Master Dylan* was an 85.3-foot-long, steel-hulled, single-propeller commercial fishing vessel powered by a 765-hp Caterpillar diesel engine. It was built in 1996 by Master Boat Builders in Coden, Alabama. The deckhouse included a wheelhouse, crew quarters, and access to the engine room via an internal door; the fuel oil supply valves for the main diesel engine and the generators were in the engine room. The vessel had a maximum capacity of about 29,000 gallons of diesel fuel, although investigators could not identify the amount of fuel on board for the accident voyage. The spaces within the deckhouse were separated by wooden frames covered by wood paneling. Deck gear included a boom, outriggers, winch, and nets for trawling. Below-deck compartments from forward to aft included a forepeak with dry supplies, an engine room, a fish hold, and a lazarette (which contained the rudder post and steering system).

The crew of the *Master Dylan* consisted of a captain and three deckhands. One deckhand served as the winchman, who was responsible for deploying and retrieving the net, and the other two deckhands assisted the winchman. This was the second trip on board this vessel for the captain and crew. The captain would normally navigate the boat while trawling, as well as conduct routine rounds of the engine room. The deckhands would sort, bag, and stow the shrimp while the vessel was trawling, or stand by for the net to be raised.

Accident Events

On November 29, 2020, about 1300 local time, the *Master Dylan* departed Dustin Gulf Seafood Dock in Sabine Pass, Port Arthur, Texas, and proceeded to shrimping grounds off the

Louisiana coast. Neither the captain nor the crew noted anything unusual during the initial part of the trip.

On December 1, the crew lowered the shrimping nets into the water around 0730. After the nets were deployed, the captain conducted a routine inspection of the engine room where the main engine and the starboard generator were operating. He found nothing unusual with the operating equipment and returned to the wheelhouse at approximately 0740. About 5 minutes later, the crew heard a "loud explosion" in the engine room, after which they saw fire and black smoke. The captain rushed from the wheelhouse to the engine room door in the deckhouse. Although the smoke and flame prevented him from entering the space, he tried to put out the fire by discharging a B-2 dry chemical fire extinguisher through the open engine room door, which had no effect on the intensity of the fire. The captain and crew were unable to secure the engine fuel supply valves in the engine room or secure the engine room door or any doors to the deckhouse due to the fire and smoke.

The captain determined that the fire was out of control and could not be extinguished, so he went out onto the aft deck and directed the crew to put on their lifejackets and prepare to abandon the vessel. Once everyone had a lifejacket on, the captain directed the crew to raise the nets out of the water so they would not be in the way if the crew had to deploy the liferaft alongside. The crew engaged the winch and were able to maneuver the nets as directed, while the master retrieved the emergency position indicating radio beacon (EPIRB) from the starboard side of the bridge. After the nets were secured, the crew mustered on the stern waiting to abandon the vessel, and the captain activated the EPIRB. The signal was received by the US Coast Guard Rescue Coordination Center New Orleans at 0909.

The captain of the fishing vessel *Johnny LE*, which was also engaged in shrimping about a mile away, saw the smoke, stopped shrimping operations, and proceeded to the *Master Dylan* to assist. The crew of the *Master Dylan* were going to deploy the liferaft but saw the *Johnny LE* heading towards them and decided to wait for the vessel. When the *Johnny LE* arrived on scene about 0915, the vessel's captain maneuvered the stern of the *Johnny LE* up against the stern of the *Master Dylan*, enabling the captain and three crewmembers to depart the burning vessel.

The captain of the *Master Dylan* used the *Johnny LE*'s radio to contact the *Master Dustin II*, a vessel owned by the same company, and requested that it come assist with attempts to save the burning vessel. The *Master Dustin II* arrived on scene at 1030, an hour and fifteen minutes after the radio call. The captain and crew of the *Master Dylan* transferred to the *Master Dustin II* and the vessel proceeded to the *Master Dylan*.

The offshore supply vessel *FMS Courage* captain and crew had also witnessed the smoke coming from the *Master Dylan*, and the master diverted the vessel to assist. On scene about 1040, the crew of the *FMS Courage* extinguished the fire using fire monitors and fire hoses. A Coast Guard small boat departed from Station Grand Isle to assist the *Master Dylan* at 1139.

Approximately 1140, after it looked like the fire on the *Master Dylan* was extinguished with no flames visible and only white smoke coming from inside the vessel, the *Master Dustin II* maneuvered next to the bow of the *Master Dylan*, and the crew, without boarding the vessel, attached a towline. Once the towline was secured, the *Master Dustin II* took the *Master Dylan* in tow and proceeded toward the nearest point of land.

At 1240, about an hour after beginning the tow, the *Master Dylan* grounded on a sandbar that the towing vessel had passed over. Shortly after the grounding, the fire re-flashed. No further firefighting efforts were made. The Coast Guard small boat arrived on scene at 1304 and monitored the situation. The *FMS Courage* departed shortly after the arrival of the Coast Guard small boat.

Photo taken from the Coast Guard small boat showing the *Master Dylan* aground after being towed by the *Master Dustin II*. (Source: Coast Guard)

The *Master Dustin II* released the tow but remained on scene, expecting to continue the tow of the *Master Dylan* once the fire was extinguished and the tide rose. The Coast Guard small boat departed the scene at 1413. At 1100 the next day, the *Master Dylan*, which was still smoking, rolled over onto its starboard side and sank. The *Master Dustin II* then departed the area and transited to Port Fourchon, Louisiana. The *Master Dylan* was not salvaged.

Additional Information

The main diesel engine (a 765-hp (570-kW) Caterpillar) and the two diesel generators (a 70-kW John Deere) were "rebuilt" during a scheduled maintenance period 5 months before the vessel departed Sabine Pass for the accident voyage. The extent of the overhaul and the condition of any replacement parts could not be confirmed through records. The owner of the vessel told investigators that there were no previous issues with the engines since the overhaul.

While the vessel was under way, the crew typically would switch the electrical power between the two generators every three days. On November 30, the day before the explosion, the crew switched the vessel from the port generator to the starboard generator. The crew told investigators that there were no operational problems with the main diesel engine or the two diesel generators either on the previous voyage following the maintenance or during the accident voyage.

The net winch was driven off the main diesel engine through a clutching mechanism, which controlled the direction of the winch, and therefore could only be operated when the engine was operating. The fuel oil supply valves for the main diesel engine and the generators were in the engine room. After the fire was discovered, the crew could not reach the valves due to the intensity of the fire and smoke. The vessel also had hoses within the engine room that were connected to hull fittings to main engine cooling water systems, generator cooling water systems, and salt water service systems. The crew were unable to secure the valves on the through-hull fittings after the fire.

Analysis

Because the vessel was not salvaged, the exact cause of the fire in the engine could not be determined. However, following the explosion and fire, the crew was able to retrieve the nets using the winch's clutching mechanism, which operated off the main diesel engine, so the main engine was still operating and therefore could not have been the source of the explosion.

Because investigators could not determine if electrical power was lost, they could not confirm if the fire source was a generator malfunction. However, a mechanical failure could have catastrophically damaged the operating starboard generator's engine and breached its crankcase, producing the reported explosion. The generator's lube oil simultaneously releasing would have ignited off a hot surface, starting the fire. Additionally, the engines fuel supply lines may have been damaged, and since the vessel's fuel shutoff valves were in the engine room, the crew had no way of securing the fuel supply from tanks to the diesel engines to stop fuel from feeding the fire. The wooden frames and furniture within the house, as well as the dry supplies located inside the forepeak, likewise would have provided additional fuel to sustain the fire as it spread beyond the engine room.

Investigators also assessed the cause of the vessel sinking, which occurred about 27 hours after the fire began. Because there were no further firefighting efforts after 1140 on the accident day, additional flooding must have occurred after the *Master Dylan* grounded and the fire re-flashed. The destruction of the hoses in the engine room connected to through-hull fittings, due to the long-term exposure to the heat of the fire, most likely resulted in the sinking of the vessel. As the hoses failed, water would have entered the hull, causing the vessel lose stability, roll, and sink.

Probable Cause

The National Transportation Safety Board determines that the probable cause of the engine room fire on board the *Master Dylan* was the catastrophic failure of a diesel generator. Contributing to the spread of the fire was the location of the fuel shutoff valves within the engine room, which prevented the crew from securing them.

Accessing Remote Engine Room Shutdowns

Following the initiation of an engine room fire, it is imperative to remove the source of available fuel to the fire found in the fuel oil and lube oil systems. In this accident, the vessel had no remote emergency cut-off valves outside the engine room, and thus fuel to the fire could not be stopped and the vessel was eventually consumed by the flames. Vessel designers, builders, owners, and operators are encouraged to install, regularly test, and have emergency drills that incorporate remote cut-off valves for fuel and lube oil lines.

Vessel Particulars

Vessel	*Master Dylan*
Owner/operator	Pad Marine LLC
Port of registry	Grand Chenier, Louisiana
Flag	United States
Type	Fishing vessel
Year built	1996
Official number	1046663
Classification Society	N/A
Construction	Steel
Length	85.3 ft (26 m)
Draft	12.5 ft (3.8 m)
Beam/width	29.5 ft (9 m)
Tonnage	147 GRT
Engine power; manufacturer	765 hp (570 kW); Caterpillar diesel engine
Persons on board	4

NTSB investigators worked closely with our counterparts from Coast Guard Marine Safety Unit Houma throughout this investigation.

For more details about this accident, visit www.ntsb.gov and search for NTSB accident ID DCA21FM009.

Issued: September 23, 2021