

National Transportation Safety Board

Office of Marine Safety
Washington, D.C. 20594

Group Chairman's Factual Report

Survival Factors Group

Conception

DCA19MM047

September 4, 2020

1. Accident Information

Vessel: *Conception*
Accident Number: DCA19MM047
Date: September 2, 2019
Time: 0314 Pacific daylight time (coordinated universal time – 7)
Location: Off Channel Islands; 26 nautical miles offshore of Ventura, California.
Accident type: Fire/explosion
Fatalities: 34
Injuries: 1 serious, 1 minor

2. Survival Factors Group

Chairman: Marcel L. Muise, Survival Factors Group Chairman
Office of Marine Safety
National Transportation Safety Board
Member: Jim Gillette
Investigations Center of Expertise
US Coast Guard
Member: Captain Jay Snodgrass
Santa Barbara County Fire Department

3. Summary

On Monday, September 2, 2019, about 0314 Pacific daylight time, US Coast Guard Sector Los Angeles (LA)/Long Beach received a distress call from the 75-foot small passenger vessel *Conception*. The vessel was anchored in Platts Harbor on the north side of Santa Cruz Island, 21.5 nautical miles south-southwest of Santa Barbara, California, when it caught fire. The *Conception* was carrying 39 persons, 6 of whom were crew.

The wood and fiberglass vessel had three levels: the upper deck, which included the wheelhouse, two crew staterooms, and a sun deck; the main deck, which included a salon with a

1 galley and a large exterior deck; and the lower deck within the hull, which included passenger
2 berthing (bunkroom), a shower room, an engine room, and a lazarette.



3
4 **Figure 1. Pre-accident photograph of the *Conception* (Source: www.seawayboats.com)**

5 At the time the fire started, 5 crewmembers were asleep in their bunks in the wheelhouse
6 and in the crew staterooms on the upper deck, and 1 crewmember and all 33 passengers were
7 asleep in the bunkroom. A crewmember sleeping in an upper deck stateroom was awakened by a
8 noise and got up to investigate. He saw a fire at the aft end of the sun deck, rising up from the
9 salon compartment below. The crewmember alerted the four other crewmembers sleeping on that
10 deck. As crewmembers awoke, the captain radioed a quick distress message to the Coast Guard
11 before evacuating the smoke-filled wheelhouse.

12 Unable to use the aft ladder, which was on fire, the crewmembers jumped down to the
13 main deck (one crewmember broke his leg when he jumped) and tried to access the salon to
14 reach the passengers below. The salon was fully engulfed by fire at the aft end and by thick
15 smoke in the forward end. Unable to open a window at the forward end of the salon and
16 overwhelmed by smoke from the fire, the crew jumped overboard.

Two crewmembers swam to the stern and re-boarded the vessel. Access to the salon through the aft corridor was blocked by fire, so, along with the captain who had also swum to the stern, they launched a small skiff and picked up the remaining two crewmembers in the water. They transferred to a recreational vessel anchored nearby where the captain continued to radio for help, while two crewmembers returned to the waters around the burning *Conception* to search for possible survivors. No survivors were found.

About 78 minutes after the initial distress call, Coast Guard and other first responder boats arrived on scene to extinguish the fire and search for survivors. Helicopters also aided in search efforts. The vessel burned to the waterline and, just after daybreak, sank in about 60 feet of water. Thirty-three passengers and one crewmember died.

4. Details of the Investigation

4.1. Injuries

Table 1: Table of injuries.

Type of injury ¹	Crew	Passengers	Total
Fatal	1	33	34
Serious	1	0	1
Minor	1	0	1
None	3	0	3
Total	6	33	39

4.2. Investigation

While initially on scene, the Survival Factors Group joined the Operations and Engineering Groups in interviewing the owner and three of the surviving crew of the *Conception*, after which the Coast Guard, Santa Barbara Sheriff's Office and Santa Barbara County Fire Department

¹ Title 49 *Code of Federal Regulations (CFR)* Section 830.2 defines a fatal injury as any injury that results in death within 30 days of an accident. It defines serious injury as that which requires hospitalization for more than 48 hours, commencing within 7 days from the date the injury was received; results in a fracture of any bone (except simple fractures of fingers, toes, or nose); causes severe hemorrhages, nerve, muscle, or tendon damage; involves any internal organ; or involves second- or third- degree burns, or any burn affecting more than 5 percent of the body surface.

1 representatives recused themselves from further NTSB investigation in order to support the US
2 Attorney's parallel criminal investigation. The Group subsequently interviewed first responders,
3 including a Ventura County Fire Department Captain and two Battalion Chiefs, Coast Guard
4 Station Channel Harbor Islands coxswains and staff, and Channel Islands Harbor Patrol. Although
5 the captain of the *Conception*, voluntarily made himself available for interview on two occasions,
6 the office of the US Attorney prohibited NTSB investigators from interviewing him.

7 *Conception's* captain had many years of experience on the same vessel and interviews
8 indicated he was intimately familiar with the vessel's history, operations, and maintenance. The
9 owner and surviving crewmembers therefore referred many of investigators' questions to the
10 captain, which remain unanswered due to not being able to interview him. Investigators were also
11 unable to examine smoke and heat detectors, firefighting and lifesaving equipment, which was
12 largely consumed in the fire.

13 The Survival Factors Group later visited two remaining vessels in the Truth Aquatics fleet
14 to inspect construction material, general arrangement, firefighting and lifesaving equipment, and
15 escape and egress arrangements. The wreckage of the *Conception* was examined, once recovered,
16 along with equipment and debris recovered from the sea floor.

17 The Group also joined the Operations and Engineering Groups to interview the Assistant
18 Chief of Inspections, Sector Los Angeles/Long Beach, survivors of the dive boat *Red Sea*
19 *Aggressor 1* fire, and several staff assigned to Coast Guard Headquarters.²

20 NTSB investigators later reviewed transcripts of crew interviews completed by law
21 enforcement along with Truth Aquatics documents shared by the FBI.

22 **4.3. Background**

23 **4.3.1. General**

24 The *Conception* was a 75-foot, monohull, commercial dive boat built for Truth Aquatics
25 in 1981 by Seaway Boat Company of Long Beach, California. Constructed of fiberglass over
26 plywood, the vessel included three decks. The upper deck included the wheelhouse and berthing

² The *Red Sea Aggressor 1* was a live-aboard recreational diving passenger vessel that caught fire, burned, and sank in the early morning hours, of November 1, 2019, off the coast of Port Ghalib, Masra Alam, Egypt. Of the 19 passengers and 12 crew on board, 1 United States citizen died and was never found.

for captain and crew, along with a weather deck where lifesaving equipment was stowed. A single interior space was located on the main deck with a small galley forward and a dining and recreation area aft. The weather deck aft of the salon had toilet and shower facilities, access to the engine room and lazarette below, and a dive platform and skiff storage on the transom. The only access to the upper deck was via stairs from the main deck outside, which descended to the starboard side main deck. A bunkroom and separate shower area were on the lower deck and were accessed from the salon via separate spiral stairs at the forward section of the salon. There was an emergency escape hatch that provided for an egress route from the aft bunkroom to the aft area of the salon. The vessel was inspected by the Coast Guard as an “existing vessel” under 46 *Code of Federal Regulations (CFR)* Subchapter T.³

Investigators found that there was one other similar vessel built at the same shipyard, the *Champ*, that was homeported in San Diego and operated in the sport fishing industry. The *Champ* was lost in Mexico in July 2002. Truth Aquatics operated two other vessels, the slightly larger and newer *Vision*, and the smaller *Truth*, that worked the same routes and service as the *Conception*. The *Vision* was designed based on the *Conception*, and was similar in its overall layout and design, but was about 5 feet longer and about a foot wider and had some design differences from the *Conception*.

4.3.2.Vessel particulars

Table 2: Vessel Particulars

Vessel Name	<i>Conception</i>
Owner/Operator	Fritzler Family Trust DTD 7/27/92 / Truth Aquatics Inc.
Port of registry	Santa Barbara, California
Flag	United States
Official number	638133
Classification society	None

³ Existing vessels per 46 *CFR* Subchapter T, were those small passenger vessels that, in general, were built before 1996. The subchapter was substantially revised in 1996. Existing vessels could comply with some parts of the older regulations.

Draft	4 feet (1.2 m)
Length	75 feet (22.9 m)
Beam	26 feet (7.9 m)
Gross/Net tonnage	97 / 66
Engine power and type	2 x 550 hp Detroit Diesel 92 series V-8. 1100 hp (820.3 kW)
Service speed	10 knots
Damage cost	\$1,400,000

4.3.3. Agencies having jurisdiction

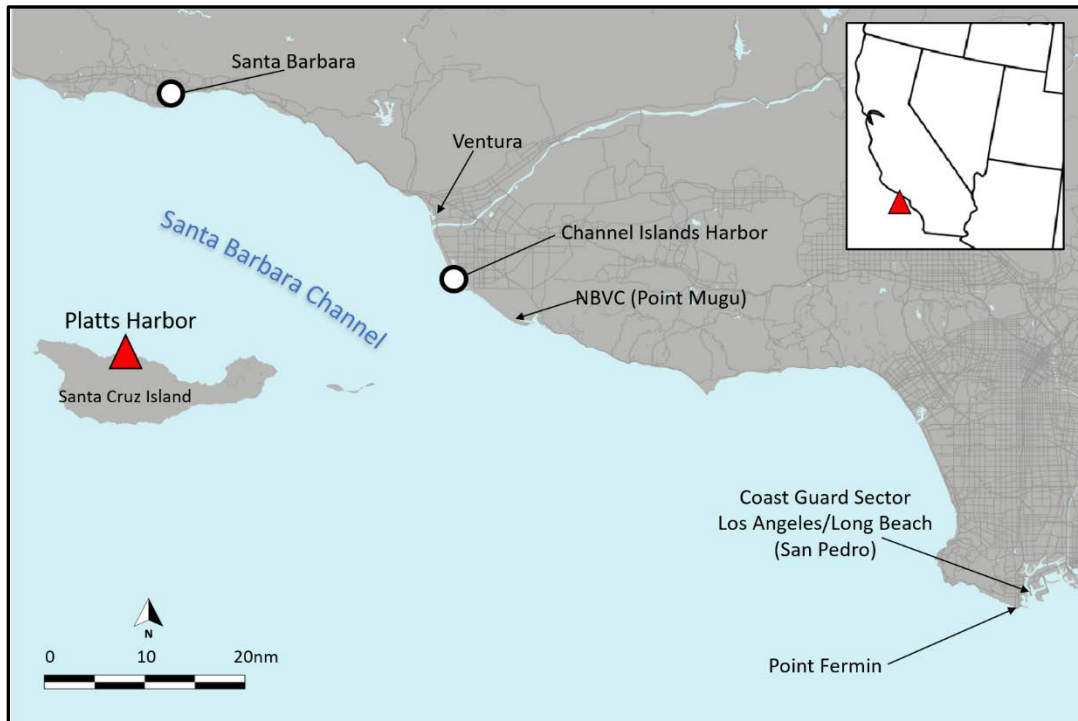


Figure 2: The vicinity of the accident site in relation to emergency response assets. The red triangle marks the site of the *Conception* fire. (Background: Google)

US Coast Guard: The Commanding Officer of Coast Guard Sector Los Angeles/Long Beach serves as, inter alia, the Officer in Charge, Marine Inspection (OCMI), and Captain of the

1 Port (COTP) in the sector’s respective zones, which include Santa Cruz Island.⁴ The Sector
2 Command Center (SCC), located in San Pedro, maintains command, control, and communications
3 for Coast Guard operations in the area.

4 In Santa Barbara and the surrounding area, prevention missions, including marine
5 inspection, were carried out by Marine Safety Detachment (MSD) Santa Barbara. Coast Guard
6 Station Channel Islands Harbor provided search and rescue service to the area, as did helicopters
7 from Air Stations San Diego and San Francisco, and larger cutters assigned to the Sector. In this
8 case, an HH-65 Dolphin forward deployed to Point Mugu, an MH-60 Jayhawk from San Diego,
9 two Station Channel Islands Harbor small boats, and the cutter *Narwhal* initially responded to the
10 distress. Additional Coast Guard assets were available as needed.

11 The Coast Guard has responsibility as Search and Rescue (SAR) Mission Control (SMC)
12 but has no statutory responsibility to fight marine fires. The Sector maintains the Area Contingency
13 Plan, “a comprehensive environmental protection plan to mitigate or prevent a substantial threat
14 of a discharge from a vessel, offshore facility, or onshore facility with a Captain of the Port Zone.”⁵
15 Section 8000 of the plan includes firefighting topics. Per this plan and Coast Guard policy,
16 responsibility for advanced firefighting rests with local authorities, and the Coast Guard maintains
17 an assist-as-needed posture.

18 The Coast Guard, jointly with industry, operates the Marine Exchange Vessel Traffic
19 Service (VTS) Los Angeles/Long Beach.⁶ The VTS Area extends in a 25-nautical-mile radius from
20 Point Fermin. The accident site was outside of the VTS area but within range of ground-based
21 vessel traffic radar and automatic identification system (AIS) reception.

22 **Ventura County Fire Department (VCFD):** The Channel Islands, including Santa Cruz
23 Island, are a part of Santa Barbara County. Coast Guard Station Channel Island Harbor, however,
24 is in Ventura County. Therefore, Ventura County Fire Department responded to the *Conception*
25 accident. The Coast Guard has memoranda of understanding with several county and municipal
26 agencies, including with the VCFD, most recently renewed in 2015. The Coast Guard Station is

⁴ 33 *CFR* Parts 3.55-10 define the OCMI and COTP Los Angeles/Long Beach Zones.

⁵ US Coast Guard, Los Angeles/Long Beach 2014 Area Contingency Plan, Section 8130.10.

⁶ The VTS is a public/private partnership between the Coast Guard and the Marine Exchange of Southern California.

1 located within VCFD Engine 53's first due area, and thus was first to respond to the fire.⁷ Engine
2 53 is staffed with at least one paramedic and advanced life support equipment. VCFD staff told
3 investigators that they had familiarization training on the Coast Guard boats and had recently
4 participated in an oil platform fire tabletop exercise together. Engines 54 and 26 were also later
5 dispatched to the fire. VCFD Battalion Chiefs 15 and 22 both responded to the Incident Command
6 Post (ICP), as the assigned engine companies were from different battalions.

7 **Channel Islands Harbor Patrol:** The Channel Islands Harbor Patrol operates several
8 vessels in Channel Island Harbor and one mile either side and offshore of the harbor entrance.
9 They also respond anywhere in Ventura County when VCFD personnel are on board. One of their
10 vessels, *Boat 15*, is a 32-foot fire boat jointly operated by the VCFD.⁸ The fire boat is equipped
11 with a 1500-gallon-per-minute fire pump, foam, 3 discharges for handlines, and basic life support
12 equipment.

13 **Other response agencies and organizations:** Santa Barbara Harbor Patrol's *Boat 3*
14 responded from Santa Barbara and was one of two fire boats that actively fought the fire on scene.
15 Ventura City Harbor Patrol's *Boat 1* ferried foam to the scene. TowBoatUS Ventura, which
16 provides commercial assistance to boaters and mariners in the area, operated the *Retriever II*, a 30-
17 foot rigid hull inflatable boat that responded early in the accident. Ventura County Air Squad was
18 unable to respond over water due to only having a single engine aircraft available.

19 4.4. Accident narrative

20 The NTSB Operations Group Chair's Factual Report contains the accident narrative for the
21 time leading up to the abandonment of the vessel.

22 4.4.1. The abandonment

23 The *Conception*'s captain made a distress call on VHF Channel 16 from the wheelhouse
24 of the *Conception* before departing the vessel. While gasping for air in the smoke-filled
25 wheelhouse, he was able to very quickly transmit the vessel's name, the number of persons on
26 board, and the vessel's geographic position before being forced to abandon; he did not state that

⁷ "First-due response area is a geographical area in proximity to a fire or rescue facility and normally served by the personnel and apparatus from that facility in the event of a fire or other emergency." (44 CFR Part 152.2)

⁸ Channel Islands Harbor Patrol *Boat 15* was formerly named *Boat 5*. AIS data and some interviews referred to it as *Boat 5*.

1 there was a fire, nor did he provide any coordinates. He jumped into the water from the starboard
2 bridge wing when the wheelhouse was engulfed in smoke. The second captain, who was on the
3 main deck, jumped overboard to assist the captain, as it appeared to him that the captain was on
4 fire before landing in the water.⁹ After checking on the captain, the second captain then swam for
5 the stern. According to the deckhand, the captain then told the remaining three crew on the bow to
6 jump as well. The deckhand and second galleyhand assisted the first galleyhand (with the fractured
7 tibia) to the port side bow gate and into the water. The second galleyhand followed, then the
8 deckhand. The first galleyhand indicated that he entered the water last, after the second galleyhand
9 who encouraged him to jump.

10 Knowing that he could not reach the fire stations on either side of the salon because of the
11 smoke and fire blocking his way, and unable to access the galley via the windows, the deckhand
12 swam to the stern and boarded the *Conception*. The second captain had also boarded the
13 *Conception* over the stern and found that the vessel still had power, but the salon was fully
14 engulfed, precluding any kind of entry. He found the engine room with the lights on and full of
15 smoke. He then lowered the swim step with the skiff, which required main electrical power to do
16 so.

⁹ Second captain is the term used by Truth Aquatics and *Conception* crew in lieu of mate. The vessel was required to have a master and a licensed mate although there is no mate's license for vessels of this size. *Conception's* second captain held a Merchant Mariner Credential as Master, Limited to Vessel less than 100 gross registered tons.



Figure 3: The *Conception*'s skiff cradled on the stern swim step. (Source: Ralph A. Clevenger photography and video)

The deckhand used a knife, kept near the stern, to cut the line securing the bow of the skiff. While the captain boarded the skiff and the second captain worked to start the outboard motor, the deckhand returned to the engine room hatch opening in an attempt to start the fire pump. He found the engine room full of white/grey smoke, and realizing the fire stations were inaccessible, he elected not to enter the cramped engine room. The first galleyhand had broken his left tibia in the jump from the upper to the main deck. The second galleyhand suspected he had twisted an ankle in the jump. Since the two galleyhands (without lifejackets), one of which had a serious leg injury, had yet to be rescued from the water, the deckhand joined the others in the skiff as ordered by the captain. The stern line was still attached as the three crewmembers attempted to pull away from the *Conception*, requiring the deckhand to re-board the burning vessel to retrieve the knife. He cut the stern line, which then got wrapped in the outboard motor propeller. The crew paddled the skiff away from the vessel as the deckhand cleared the line, twice, from the propeller.

The skiff picked up the two galley hands from the water and proceeded to a nearby anchored recreational vessel, the *Grape Escape*.¹⁰ They banged on the transom and the door until the owners awoke. The *Grape Escape* owners described their first sight of the *Conception* as “completely on fire from one end to the other. It was already completely engulfed. There wasn’t a spot on that boat that wasn’t on fire.” *Grape Escape* owners stabilized the injured galleyhands and informed the Coast Guard by VHF of the situation and their position.

4.4.2. Emergency response

The SCC received the initial distress call by VHF at 0314:23. In his haste, and while enveloped in smoke, the captain of the *Conception* was only able to communicate the vessel’s name, the vessel’s general location at “Platts Harbor, north side Santa Cruz,” that there were 39 people on board, and that he could not breathe. The SCC made repeated call outs, which went unanswered after the crew abandoned the vessel. The *Conception*’s AIS last transmitted the vessel’s position of 34° 02.962’N 119° 44.062’W at 0316:34.

Using the VHF radio direction finder, the SCC was able to estimate the vessel’s position and issue an Urgent Marine Information Broadcast (UMIB) at 0322:54, which was answered by a Good Samaritan vessel and TowBoatUS.¹¹ The Truth Aquatics vessel *Vision* was en route to Cortez Bank from San Clemente Island, approximately 90 nautical miles south-southeast and stated that they could hear the Coast Guard but no one else.

Table 3: Initial VHF distress communications between the captain of the *Conception* and Coast Guard Sector LA/Long Beach.

Time (PDT)	Originator	Message
03:14:23	<i>Conception</i>	Mayday, mayday, mayday! <i>Conception</i> . Platts Harbor, north side Santa Cruz. Help.
03:14:34	Coast Guard	Vessel under distress, this is Coast Guard Sector Los Angeles on Channel one six. What is your position and number of persons on board? Over.

¹⁰ The *Grape Escape* was a US-flagged, 60-foot, Hatteras sport fishing vessel, O.N. 1085964.

¹¹ An Urgent Marine Information Broadcast (UMIB) is a request for assistance from any available mariners. It is broadcasted on VHF Channel 16 and by NAVTEX.

03:14:42	Conception	[unintelligible] Thirty nine POB. I can't breathe. Three nine POB. Platts.
03:14:54	Coast Guard	Vessel in distress, Coast Guard Sector Los Angeles. Roger. You have 29 persons on board and you can't breathe. What is your current GPS position? Over.
03:15:20	Coast Guard	Vessel in distress, Coast Guard Sector Los Angeles on Channel one six. What is your GPS position? Over
03:16:06	Coast Guard	Vessel in distress, Coast Guard Sector Los Angeles on Channel one six.

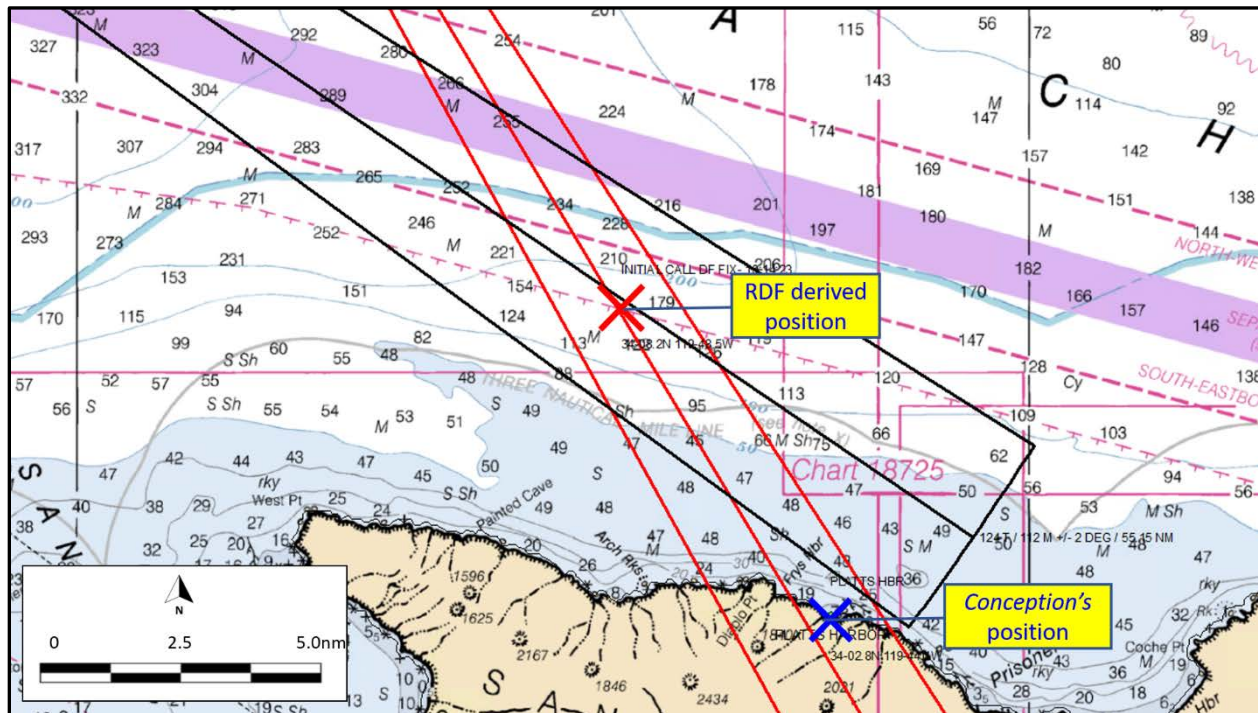


Figure 4: A screen shot of the accident site from the Coast Guard's Rescue 21 system. Lines of position with 2° margins of error from VHF direction finders at Bald Mountain (red) and Honda

Ridge (blue). The red X marks the Rescue-21-derived position, and the blue X marks the actual position of the *Conception*. (Source: Coast Guard, annotated by NTSB)

The SCC then called Coast Guard Station Channel Islands Harbor by telephone at 0323 and requested that they proceed to the scene for a medical emergency.¹² While the crew prepared to get under way, the Station’s Officer of the Day (OOD) called the Ventura Fire Department dispatch by radio on VCFD’s dispatch frequency and specifically requested Medic Engine 53, the closest to them, to respond to the station and get under way with them. The SCC then called Air Station San Francisco at 0324 and requested a helicopter, which was forward deployed at Point Mugu. The SCC also directed the *Narwhal*, which was five hours away, about 6.5 miles southeast of Long Beach and already underway, to proceed to the accident location.¹³

At 0329:30 the captain of the *Grape Escape* radioed the Coast Guard with their position notifying them of the fire and the people believed to be on board. The second captain then got on the radio and reported to the Coast Guard that there were “33” people trapped in the bunkroom that they were not able to evacuate.¹⁴ This was the first notification to the Coast Guard that the nature of the distress was a fire. The *Conception* captain then explained the situation in more detail to the SCC.

The *Conception* skiff, with the second captain and deckhand, commenced searching for survivors, not knowing if anyone had escaped the fire. They circled the burning vessel and searched along the shore without sighting or hearing anyone or any alarms. They later made additional searches with better flashlights at the SCC’s request, also without success.

Table 4: VHF communications between Coast Guard Sector LA/Long Beach and the *Grape Escape*.

Time (PDT)	Originator	Message
03:29:30	<i>Grape Escape</i>	Pan-Pan, Pan-Pan, Coast Guard, Coast Guard.

¹² Unless otherwise noted, “Station” in this report refers to Coast Guard Station Channel Islands Harbor.

¹³ *USCGC Narwhal* (WPB87335) was an 87-foot patrol boat homeported in Corona Del Mar, California.

¹⁴ The SCC watchstander misheard the *Conception* captain say the passengers were “locked” below deck when they were actually “blocked” by fire. The second captain mistakenly omitted the missing crewmember in his initial report by radio, stating there were “33 souls” still aboard.

Time (PDT)	Originator	Message
03:29:35	Coast Guard	Vessel <i>Conception</i> , Coast Guard Sector Los Angeles on Channel one six. Over.
03:29:39	<i>Grape Escape</i>	This is a -- actually it's a mayday. I have a commercial boat on fire. It's on Santa Cruz Island at ah --
03:29:57	Coast Guard	Vessel hailing Coast Guard Sector Los Angeles, come back or say again your last. Couldn't understand it. Over.
03:30:05	<i>Grape Escape</i>	We're at Platts Harbor on Santa Cruz Island.
03:30:12	Coast Guard	Say again the harbor name. Over.
03:30:17	<i>Grape Escape</i>	Platts Harbor. Platts Harbor.
03:30:20	Coast Guard	Roger, Captain. What is the, what is the emergency? Over.
03:30:30	Coast Guard	Vessel <i>Conception</i> , Coast Guard Los Angeles. What is the emergency? Over.
03:30:35	<i>Grape Escape</i>	Hang on just a second.
03:30:40	<i>Conception</i> Second Captain on <i>Grape Escape</i>	Hello. This is crew of <i>Conception</i> . Our boat is on fire. We are on a neighboring vessel. We have 33 souls on board down below trapped in the bunkroom. We cannot evacuate them off the vessel.
03:30:57	Coast Guard	Vessel reporting a vessel on fire. Roger, Captain. Your vessel is on fire; is that correct?
03:31:07	<i>Conception</i> Second Captain	The vessel's on fire, the vessel's name is <i>Conception</i> .
03:31:10	Coast Guard	Roger. Are you on board the <i>Conception</i> ?
03:31:13	<i>Conception</i> Second Captain	We're on board a neighboring vessel. We abandoned ship.
03:31:19	Coast Guard	Roger. And there's 33 people on board the vessel that's on fire; they can't get off?
03:31:24	<i>Conception</i> Second Captain	That is correct.

Time (PDT)	Originator	Message
03:31:27	Coast Guard	Roger. Are they locked inside the boat?
03:31:32	<i>Conception</i> Second Captain	That's correct, sir.
03:31:37	Coast Guard	Roger. Can you get back on board and unlock the boat or unlock the doors so they can get off?
03:31:43	<i>Conception</i> Second Captain	Every escape path was on fire.
03:31:48	Coast Guard	Roger. You don't have any firefighting gear at all? No fire extinguishers or anything?
03:32:05	<i>Conception</i> Captain	[The captain relieved the second captain on the radio.] Coast Guard Sector LA, we could not get to the bunkroom. The fire absorbed the wheelhouse and --
03:32:26	Coast Guard	Roger, that. Is this the captain of the <i>Conception</i>
03:32:30	<i>Conception</i> Captain	Yes. My name is Jerry Boylan, B-o-y-l-a-n. I got one mayday out. Smoke, in the wheelhouse there was flames at the back door and the side door. We had to jump from the wheelhouse off the boat.
03:32:59	Coast Guard	Roger. Was that all the crew that jumped off?
03:33:04	<i>Conception</i> Captain	Five of the crew from the wheelhouse jumped out. One crew is down in the bunkroom. Thirty-four people still on board, okay?
03:33:22	Coast Guard	Roger. Is the vessel fully engulfed right now?
03:33:26	<i>Conception</i> Captain	To the deck. Fully engulfed to the deck.

1 The radio conversation continued until 0335 when the SCC broadcast a third UMIB with
2 the updated situation, name, and position. The SCC also requested assistance from Santa Barbara
3 Harbor Patrol at 0339. The Station crew overheard the radio conversation between *Grape Escape*
4 and the SCC and decided to immediately launch the 45-foot Response Boat-Medium (RB-M),
5 CG 45643, rather than wait for the VCFD engine crew. The CG 45643 got underway at 0342.

1 Engine 53 arrived at the station at 0346 and, once briefed at the station, joined the second RB-M,
2 CG 45739, and both were underway at 0349.¹⁵ The engine company captain updated VCFD and
3 requested an additional engine company respond aboard Channel Island Harbor Patrol *Boat 15*.

4 Channel Islands Harbor Patrol, located in Channel Islands Harbor, had overheard the Coast
5 Guard radio traffic on both VHF and the VCFD frequencies. They anticipated being dispatched,
6 retrieved the *Conception*'s AIS position from an online source, and immediately prepared *Boat 15*
7 to respond once an engine company arrived. *Boat 15* was underway with the crew of Engine 54 at
8 0404. Ventura City Harbor Patrol *Boat 1* later also got underway, with Engine 26, at 0456.

9 The SCC made internal notifications and requested air assets for search and rescue. They
10 directed the *Conception* crew to search the waters for passengers that may have abandoned the
11 vessel, which they complied with. VCFD concurrently dispatched two battalion chiefs, an
12 additional engine company, and requested air assets and mutual aid from Santa Barbara and
13 Ventura City.

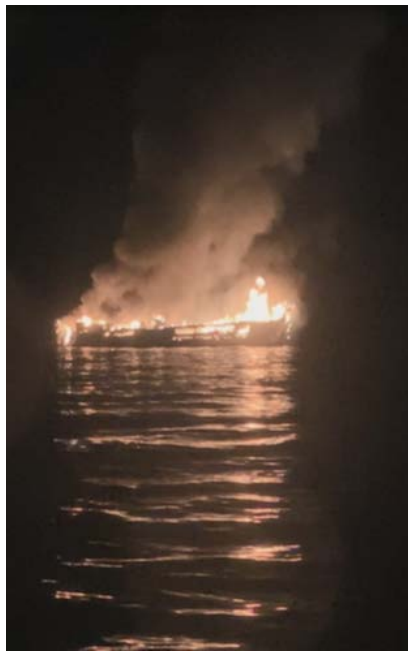


Figure 5: *Conception* as seen on arrival by *Boat 15*. (Source: VCFD)

Multiple agencies responded to the Coast Guard Channel Islands Station, where an Incident Command Post (ICP) was set up. A VCFD Battalion Chief normally responds to the station when VCFD personnel embark Coast Guard boats. In this case, Battalion Chief 22 joined the Coast Guard Officer in Charge in forming a Unified Command. Communications were established between search and rescue units (SRU), the ICP, the SCC, Good Samaritan vessels, and VCFD dispatch through a mix of Coast Guard, marine, and VCFD frequencies. The owner of the *Conception* also reported to the ICP.

Accountability: Prior to arrival on scene, responders were aware of the number of people missing as reported by the *Conception*'s captain. At the ICP, there was brief confusion over

¹⁵ Investigators were able to obtain AIS data for the two 45-foot small boats and the *Narwhal*, although during the response their AIS units were in law enforcement mode, and not transmitting to other vessels.

1 passenger names on the vessel's manifest, since the vessel had a late addition before it departed
2 Santa Barbara Harbor on August 31 who was not on the manifest. The owner was able to resolve
3 the discrepancy when he arrived at the ICP.

4 The passenger manifest, although it satisfied regulatory requirements, provided only the
5 names of each passenger. It did not identify each passenger's gender, nationality, and age. No
6 emergency contact information was required to be given by any of the passengers.

7 CG 45643 was the first SRU to arrive on scene at 0427 and started searching for survivors.
8 They found the *Conception* completely engulfed in flames. CG 45739, with Engine 53 embarked,
9 arrived on scene immediately after and assumed the role of On Scene Coordinator (OSC).¹⁶
10 CG 45739 transferred two firefighters (a paramedic and an EMT) to the *Grape Escape* to assess
11 the injured *Conception* crewmembers and then began searching the area for any other survivors.

12 The RB-M was equipped with a P-6 portable dewatering pump capable of 250 gallons per
13 minute that could also be used for firefighting, though the Engine 53 captain and RB-M coxswains
14 determined it would not be effective for this response. The RB-M was not equipped with a deck
15 gun or fire monitor. Since *Boat 15* was en route with more pump capacity and the firefighting foam
16 required to fight a conflagration of this size, the RB-Ms searched for survivors in the water,
17 deeming it a higher priority after determining that there were no survivors in the wreck given the
18 mass conflagration.

19 The CG 6540, an HH-65 Dolphin helicopter from Naval Air Station Point Mugu, was the
20 first air asset on scene, arriving about the same time as CG 45739.¹⁷ The Engine 53 crew deemed
21 it safer to leave the injured crewmembers on the *Grape Escape* rather than transfer to the helicopter
22 due to the risk of entanglement with the rescue litter and the sport fishing vessel's rigging.

23 The CG 6014, an MH-60 Jayhawk helicopter from Coast Guard Station San Diego, later
24 relieved the HH-65 on scene at 0940. The two RB-Ms, the *Conception* skiff, other small boats,
25 and Coast Guard helicopters searched the area and the shoreline for survivors and found none.

¹⁶ The on-scene coordinator (OSC) is the designated vessel or aircraft assigned to coordinate the activities of all participating search units.

¹⁷ Coast Guard Air Station San Francisco had forward deployed air assets at Naval Base Ventura County at Point Mugu.

1 *Boat 15*, with Engine Company 54 embarked, arrived on scene, followed by *Boat 3*, and
2 commenced fire suppression efforts, first with fire monitors and then with handlines. The
3 *Retriever II* arrived on scene at 0502 and shortly after began towing the burning wreck away from
4 the shallow water with a grappling hook to a location where the fire boats could better reach it.
5 The fire was first reported extinguished at 0508 but re-flashed several times in the area of the fuel
6 tanks and on the bow. Burned out through-hull penetrations eventually submerged, where the main
7 engine exhausts had been, and the vessel sank stern first in position 34° 02.9' N 119° 44.3' W at
8 0654, approximately 20 yards from shore, in 61 feet of water. First responders were not able to
9 safely board the vessel before it sank. Underwater recovery divers later found the wreckage, lying
10 on the seafloor in an upside-down position.



11
12 **Figure 6: *Conception* as seen from CG 6014 at 0651 (left) and at 0659 after sinking (right). (Source:**
13 **Coast Guard)**

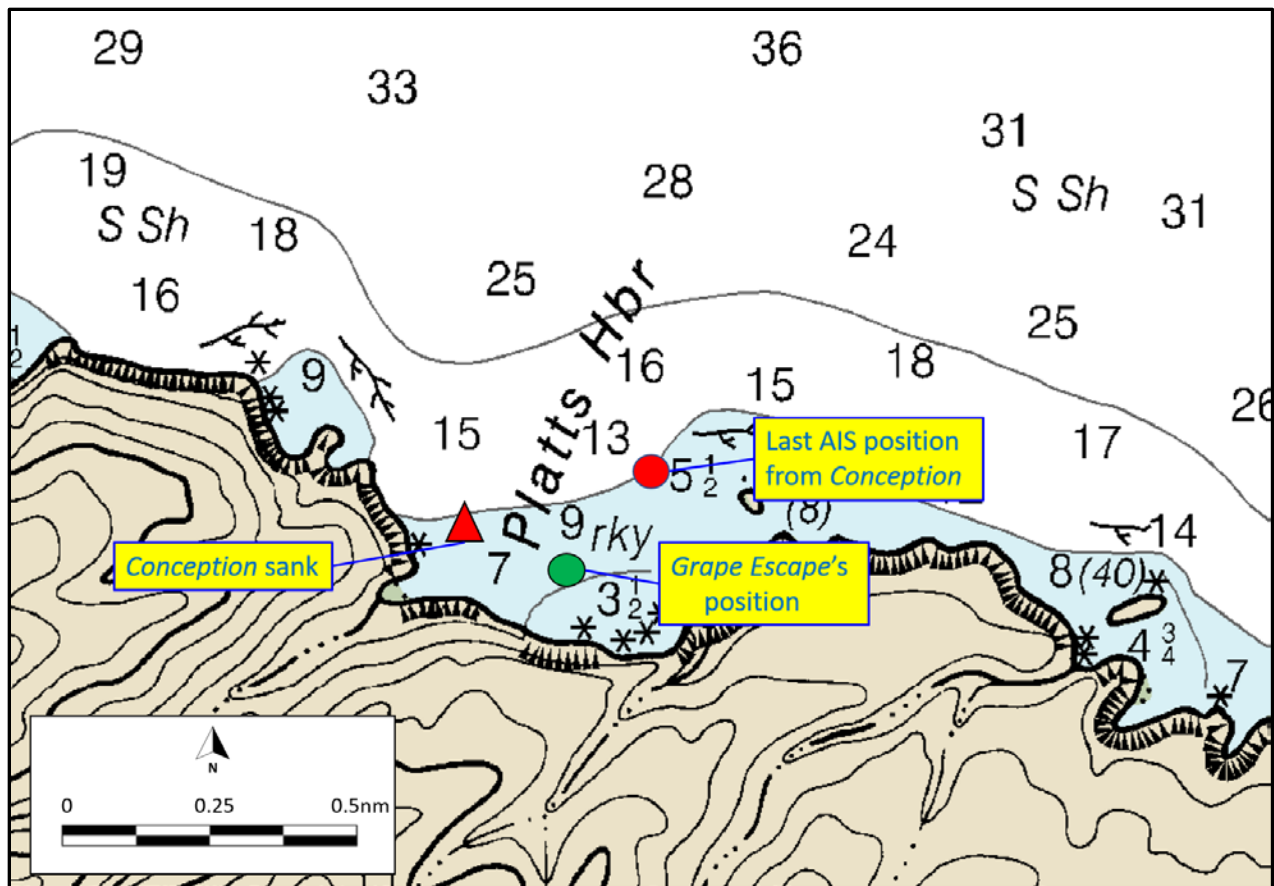


Figure 7: An extract of Chart 18728 in the vicinity of Platts Harbor showing *Conception*'s last AIS position, the position of the anchored *Grape Escape*, and the position of the *Conception* sinking. Soundings are in fathoms. (Background source: NOAA; annotated by NTSB)

The *Grape Escape* departed the accident site at 0516 to transport the surviving *Conception* crew to Coast Guard Station Channel Islands, arriving at about 0735. The injured first galleyhand was then transported by VCFD Medic 664 from the station to St. John's Pleasant Valley Hospital in Camarillo. The *Conception* captain stayed on scene aboard CG 45739 until they returned to the Station. CG 45643 assumed OSC at 0743, and at 0804, the first human remains were recovered. Four victims were recovered on the surface in shallow water by the *Retriever II* and transported by CG 45643 to Santa Barbara Harbor, where the remains were transferred to the Santa Barbara County coroner office. The second galleyhand later sought medical treatment for what was diagnosed as a bruised right foot at MedCenter in Santa Barbara.

Narwhal arrived on scene at 0841 and assumed the role of OSC. Air and surface search and rescue efforts continued thereafter for 25 hours until suspended by the Sector Commander at 0938 on September 3. No first responder injuries or equipment damage was reported.

Conception and *Grape Escape* crews and first responders all described the on-scene weather as clear, with light-to-no wind, excellent visibility, and slight swell. There were patches of heavy fog in the Santa Barbara Channel, between Santa Cruz Island and the mainland. The closest weather buoy, 13 miles northwest of the site, recorded an air temperature of 64°F and a 6-knot wind from 210°. The SCC logged air and sea temperatures as 58°F and 68°F, respectively. On arrival, the RB-Ms reported northwest seas 2-feet or less, light west wind, and 10-mile visibility.¹⁸

Table 5: Summary of resources assigned in the initial response.

Name/hull/tail number	Type and affiliation	Role	Time on scene
<i>CG 45643</i>	Response Boat-Medium – Coast Guard Station Channel Islands Harbor	First SRU on scene	0432
<i>CG 6540</i>	HH-65 helicopter – Coast Guard Air Station San Francisco (forward deployed to NBVC Point Mugu)	SAR, medical response, and first OSC	0432
<i>CG 45739</i>	Response Boat-Medium – Coast Guard Station Channel Islands Harbor VCFD Engine 53 embarked.	SAR, OSC	0432
<i>Boat 15</i>	Fire boat – Channel Islands Harbor Patrol and Ventura County Fire Department. Engine 54 embarked (also called <i>Boat 5</i> by some witnesses and in AIS data)	Fire suppression	0455
<i>Retriever II</i>	Commercial towing vessel – TowBoatUS Ventura Harbor	Towing support	0502
<i>Boat 3</i>	Santa Barbara Harbor patrol	Fire suppression	0518

¹⁸ The NTSB Meteorology Factual Report dated November 7, 2019, contains additional metocean information.

Boat 1	Patrol boat - Ventura City Harbor with VCFD Engine 26 embarked	Ferried foam to the scene	N/A - mechanical failure
USCGC Narwhal (WPB 87335)	Coast Guard Patrol Boat homeported in Corona del Mar.	Assumed OSC on arrival	0841
CG 6014	MH-60 helicopter - Coast Guard Air Station San Diego	SAR	0940

4.4.3.Post-SAR

The ICP was moved from Coast Guard Station Channel Islands to VCFD Station 50 about 1330 on September 2, once the initial response was completed. Given that the accident occurred in Santa Barbara County, the ICP was again relocated, on September 3, to the Santa Barbara County Fire Department headquarters. Over nine days, divers from several local law enforcement agencies and the Federal Bureau of Investigation (FBI) dove on the wreck, which was overturned on the sea floor. They recovered all but one of the remaining victims, most of whom were found in the berthing area or nearby on the seafloor. The last victim was recovered on the surface on September 11. The ICP was stood down on September 13.

Evidence was recovered from the accident site, including equipment and small parts of the hull, and was brought ashore, where it was x-rayed, photographed, and catalogued by the FBI Evidence Recovery Team. The wreckage was recovered on September 12 and transported by barge to the US Naval Base Ventura County in Port Hueneme on September 13. The Coast Guard, Bureau of Alcohol, Tobacco and Firearms (ATF), FBI, and SBFD inspected the wreck over 13 days. All debris and personal effects recovered from the seafloor were also brought to the wreckage site for examination.

On September 24 and 25, the NTSB was permitted by the FBI, under the direction of the office of the US attorney, to access and examine the wreckage and debris recovered. Investigators found the hull below the gunwale largely intact except for either side of the berthing area, where it burned to the waterline. The interior of the vessel suffered fire damage throughout, with the main deck and above being completely consumed.¹⁹

¹⁹ See NTSB Fire Investigation Factual Report.

4.5. Additional information

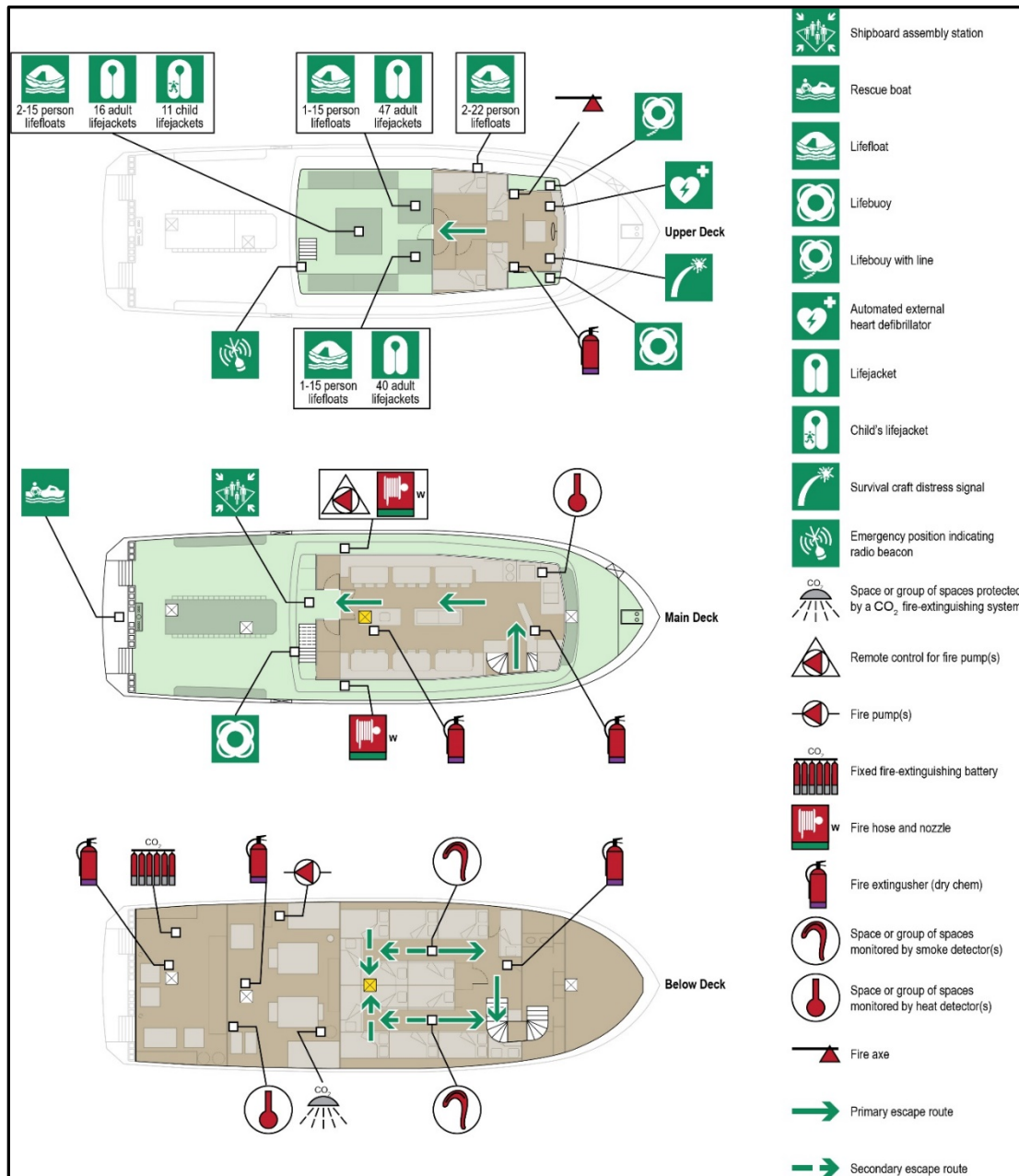


Figure 8: Fire, lifesaving appliance and evacuation plan for the *Conception*.

4.5.1. Lifesaving

Distress call: The *Conception* was equipped with an ICOM IC-M506 VHF radio capable of VHF Digital Selective Calling (DSC) if programmed with the vessel's Maritime Mobile Service Identity (MMSI).²⁰ Additionally, the radio was capable of receiving the position information from an integrated receiver and GPS antenna. It is unknown whether the radio was programmed with the MMSI. In addition to distress



Figure 9: Conception's VHF radio located overhead in the wheelhouse. The VHF-DSC distress button in the lower left is color-coded red. (Source: B. Priddin)

communications by voice, by pushing and holding the red distress button on the front panel of the radio for three seconds, a VHF-DSC call would communicate the nature of the distress (default to undesignated distress, if the user did not input this) and the latest position of the vessel, and would have continued to transmit distress messages every 3.5 to 4.5 seconds until the call was acknowledged. Due to the nature of the criminal investigation, investigators were not permitted to interview the captain to determine if he initiated a VHF-DSC distress call. The Coast Guard, however, did not receive a VHF-DSC distress call from the *Conception*, nor did any other vessels contacted by investigators.

The *Conception* had a Category I float-free Emergency Position Indicating Radio Beacon (EPIRB), which was mounted on the upper deck bulwark on the starboard side, near the top of

²⁰ DSC allows mariners to instantly send an automatically formatted distress alert. DSC also allows mariners to initiate or receive distress, urgency, safety, and routine radiotelephone calls to or from any similarly equipped vessel or shore station, allowing you to "direct dial" and "ring" other radios, or allow others to "ring" you. (Coast Guard Navigation Center, April 2020)

1 stairs to the main deck. The surviving crew of the *Conception* did not retrieve or manually activate
2 the EPIRB, and there were no signals received by the Coast Guard.

3 **Primary lifesaving appliances:** Investigators were not able to examine the *Conception*'s
4 lifesaving equipment; only pieces survived the fire. The largest piece recovered was a corner of a
5 lifefloat. According to the owner, the *Conception* was outfitted similarly to *Vision*. All lifesaving
6 appliances were located either on the upper deck or on top of the wheelhouse. Primary lifesaving
7 appliances aboard the *Conception* included 6 various-sized lifefloats, with an aggregate capacity
8 of 104, or 100 percent of the people allowed on board. On small passenger vessels operating in
9 warm water, primary lifesaving may include lifefloats.²¹ Nine lifesaving inspection deficiencies
10 were documented by the Coast Guard in the previous ten years, including lifefloat, lifejacket, and
11 life ring issues, all of which were resolved by the owner and captain to the satisfaction of the Coast
12 Guard inspector.

13 Type I offshore lifejackets for 103 adults and 11 children were on board, in addition to
14 Type III work vests stored separately. The vessel was equipped with two different models of
15 lifejackets, and instructions for both were posted in both the salon and each individual bunk. The
16 safety briefing given to passengers did not include a demonstration of putting on the lifejackets.
17 All lifejackets were stowed on the upper deck in boxes with float free covers. According to the
18 station bill on the *Conception*, the second captain was responsible to ensure passengers donned
19 their lifejackets in an emergency.

20 The lifefloats and lifejackets were all stored in plywood boxes on the upper deck, with
21 plywood covers designed to float off. The crew did not have time to retrieve any lifesaving
22 equipment before abandoning ship, and all equipment was consumed in the fire. Investigators
23 recovered only one small piece of a burnt lifefloat.

24 The *Conception* had flares that were reported to be located in the wheelhouse, none of
25 which were used in the accident.

²¹ 46 *CFR* Part 180 defines warm water as areas where the “monthly mean low temperature of the water is >15 °C (59 °F).”

Table 6: Summary of installed lifesaving equipment.

Equipment	Size	Make/Model	USCG Approval No.	Quantity
Lifefloat	15 persons	Jim Buoy 1215*	160.027/77/2*	4
	22 persons			2
Offshore lifejacket (Type I)	Adult	Kent Sporting Goods*	160.055/184/0	103 adult
	Child		160.055/180/0	11 child
Life ring*	3	Jim Buoy 24 inch*	160.050/106/1 160.050/107	3
EPIRB	1	ACR RLB-38/N2874	N/A	1

*Installed on *Vision*

Skiff: The *Conception*'s skiff was a 16-foot Caribe rigid-hull inflatable equipped with a 40-hp Honda 4-stroke outboard engine and was primarily used to support diving operations, but also for the retrieval of persons overboard. The skiff was also the designated rescue boat per 46 *CFR* Part 180.10-35 (Old T) and 180.210 (New T). It was stowed at the stern and was launched via a hydraulically powered launch platform, which required the vessel's main electrical power to lower the platform.



Figure 10: Postaccident photo of the skiff from the *Conception*. Note the cut line at the bow

4.5.2.Fire protection

The *Conception* had to meet the fire equipment carriage requirements of 46 *CFR* Part 181. There was no additional fire equipment on board in excess of the requirements. The vessel was inspected annually by Coast Guard marine inspectors and underwent biennial hull (drydock) and internal structural exams. The Coast Guard documented 31 deficiencies over the previous 10 years, 4 of which were fire-protection-related, including the fire pump, galley heat detector, hose, and wheelhouse extinguisher, all of which were rectified to the Coast Guard's satisfaction.

Kangkildes Fire Protection completed a third-party inspection of the engine room fixed fire-fighting system and extinguishers in February and noted no outstanding deficiencies.

Fire pumps: An electrical fire pump in the engine room fed fire stations on the main deck on either side, outboard of the salon. The fire pump could be started locally or at the port fire station and could also be used as a bilge pump. The fire pump discharge could also be directed overboard and was routinely tested, according to the deckhand and second captain. On the accident voyage, the sewage holding tank had overflowed into the port bilge, and the deckhand had attempted to use the bilge pump, driven off the starboard engine, to clean up. The impeller failed on the bilge pump, and the deckhand then lined up the fire pump to finish cleaning. He told investigators that he lined up the fire pump, ready for emergency use, before leaving the engine room. The fire hoses were tested annually during Coast Guard inspections.

Fire Detection: The bunkroom area contained two independent modular smoke detectors, installed in the overhead, on the port and starboard pathways between the bunks. Investigators were informed by the vessel owner that the smoke detectors in the bunkroom were hardwired into the vessel's electrical system with a 9-volt battery backup. The smoke detectors were not interconnected to other alarms or a centralized system in the wheelhouse. Based on past photos and video, the smoke detectors appeared to be common consumer-type home detectors. The smoke detectors in the bunk room were the only ones installed and required to be on board. Heat detectors were installed in the engine room and galley. The galley detector was not connected to the range

1 hood fan or any damper, and there was no galley fixed fire-extinguishing system.²² In the engine
2 room, the heat detector, if activated, would initiate the carbon dioxide (CO₂) system for the engine
3 room, but none of the other detectors were interconnected.

4 The captain of the *Vision*, a similar vessel, stated that he could not hear the berthing area
5 and lazarette detectors from the bridge while underway and that one could faintly hear the lazarette
6 detector with just a generator running. The owner was aware that the berthing area smoke detectors
7 functioned properly less than a month before the accident voyage, when a contractor was soldering
8 on the air conditioning unit, which activated them. The owner told investigators that after the
9 activation, the captain of the *Conception* told him that he “unplugged” the smoke detectors while
10 the soldering was ongoing and when the work was completed, the smoke detectors were plugged
11 back in, “fresh” batteries were added, and they were tested. There were no requirements related
12 to the testing and inspection of smoke detectors. When asked whether if there was any inspection
13 or testing of the smoke detectors on the *Conception*, the owner stated the captain was responsible
14 for any testing and inspection.

15 At the time of the accident, the second galleyhand that awoke the rest of the crew after
16 discovering the fire stated that he did not hear any alarms, nor did he smell smoke from his bunk
17 aft of the wheelhouse. The deckhand, whose bunk was in the wheelhouse, said that he heard a faint
18 alarm when he was awakened. He did not recognize the alarm and described it as “... coming from
19 the dash [in the wheelhouse]... barely a little chirp.” He further noted that when he looked, he did
20 not notice anything flashing on the console in the wheelhouse.

21 **Public address and internal communications:** The *Conception* was fitted with a fixed
22 installation Standard Communications Corporation LH10 loudhailer public address (PA) system
23 that could be used as an alarm from the wheelhouse, with speakers on the bow, stern, and in the
24 bunkroom. According to the owner’s manual, the system had three modes: hail/listen back,
25 intercom, and automatic signaling. By the push of a button on the control unit in the wheelhouse,
26 regulations required the fixed PA system to be audible during normal operating conditions in

²² One large interior space was located on the Main Deck. “Galley” in this report refers to the food preparation area forward. “Salon” refers to the aft part where tables were installed. Some of the crew refer to the whole space as the Galley.

1 passenger accommodation spaces and all other spaces normally manned by crew members.
2 Although there was a speaker for the PA system in the bunkroom, it was reported to have been
3 disconnected so that there would be no interruptions from routine announcements to passengers
4 who were sleeping in the bunkroom. There were no pre-accident records from the Coast Guard
5 showing the PA system on board the *Conception* was checked during inspections or any
6 deficiencies noted.

7 After the accident on the *Conception*, the Coast Guard, in a concentrated inspection
8 campaign, found that the PA speaker on the *Vision* was inoperable, and issued a deficiency to have
9 the speaker repaired or renewed.

10 The *Conception* was not required to have any means of two-way communication between
11 the bunkroom and the wheelhouse control station or crew berthing. Although a crew member
12 occupied a bunk in the bunkroom, she did not have a means to communicate with the crew above,
13 either by intercom, phone, radio, or sound-powered device.

14 **Extinguishers:** In total, there were six fire extinguishers on board the *Conception*.
15 According to the Certificate of Inspection (COI) issued by the Coast Guard, five of them were type
16 B-II (10-pound dry chemical) and one was type B-I (2-pound dry chemical). On the main deck,
17 fire extinguishers were mounted in the galley by the coffee pot and the port aft salon. In the
18 bunkroom, there was a fire extinguisher mounted on a bulkhead across from the main stairs by the
19 changing room. There was one fire extinguisher in the engine room, one in the lazarette, and one
20 in the wheelhouse dash at the console. One of the February 2017 Coast Guard inspection
21 deficiencies was to replace the extinguisher in the wheelhouse. The deficiency was cleared after
22 the vessel owner replaced it.

23 **Fixed system:** 46 CFR Part 181 was changed on January 10, 1996 to include more fixed
24 fire-extinguishing requirements for a number of spaces, including most engine rooms. Existing
25 wooden vessel such as *Conception* had until March 1999 to comply with the new regulations.

1 *Conception*'s engine room was equipped with an approved CO₂ system.²³ The CO₂ bottles for this
2 system were located in the lazarette.

3 The regulations also require a grease extraction hood and a dry or wet chemical
4 extinguishing system. The *Conception*'s galley had a flat griddle for which regulations prescribed
5 a fixed fire-extinguishing system. The Coast Guard granted a waiver for the system in 2000 due to
6 the short 14-inch ducting that led directly outside. The waiver was contingent on the company
7 providing an additional B-II extinguisher in the galley, installing fire detection, and implementing
8 a maintenance program "to ensure the existing galley and ventilation equipment is kept free from
9 any build-up of grease." The second galleyhand told investigators it was his duty to clean the
10 grease trap. According to the owner, the captains for each vessel in the fleet were responsible for
11 all maintenance on board the vessel and all maintenance records were kept on each vessel.
12 Although the captain of the *Conception* voluntarily made himself available to be interviewed,
13 NTSB investigators were prohibited from interviewing him on scene due to a parallel criminal
14 investigation, thus, the maintenance program for the galley ventilation and ducting on the
15 *Conception* is unknown.

16 **Other firefighting:** A single fire axe, as required by regulations, was stowed on the aft
17 bulkhead of the wheelhouse. The deckhand stated that he was about to ask the captain for it to
18 access the galley through the bow windows when the wheelhouse was engulfed in smoke, but the
19 captain jumped from the wheelhouse into the water before he was able to ask.

20 **4.5.3.Escape and egress from accommodation spaces**

21 Two accommodation spaces were located below the main deck salon: a berthing area,
22 known as the bunkroom, and a shower room (washroom) forward of the berthing area, separated
23 by an athwartship wooden bulkhead.²⁴ Both spaces were accessed by separate spiral stairways
24 from the main deck salon above. The berthing area aboard was configured in a horseshoe shape,
25 with bunks either side of two fore and aft aisles. On the outer side of each aisle were three sets of

²³ The NTSB Engineering Group Chair's Factual Report contains additional information regarding the fixed fire-extinguishing system.

²⁴ 46 *CFR* 175.400 – Accommodation space (applicable to *Conception*) – means a space used as a (1) public space, (3) dining room or mess room, (4) lounge or café, (6) overnight accommodation space, and (9) washroom or toilet space.

1 two-high double bunks. At the inner (centerline) side of each aisle there were two sets of three-
2 high single bunks. Two sets of three-high single bunks were arranged athwartship along the aft
3 bulkhead, with one two-high bunk along the forward bulkhead on the portside (the top being
4 reserved for a crew member) and one double bunk underneath the forward stairway on the
5 starboard side. Each of the bunks had a privacy curtain that could be pulled fully across the aisle-
6 accessible side of the bunks. The privacy curtains were normally closed by passengers when they
7 were occupying the bunks. It was also common to keep them closed by passengers when not
8 occupied.

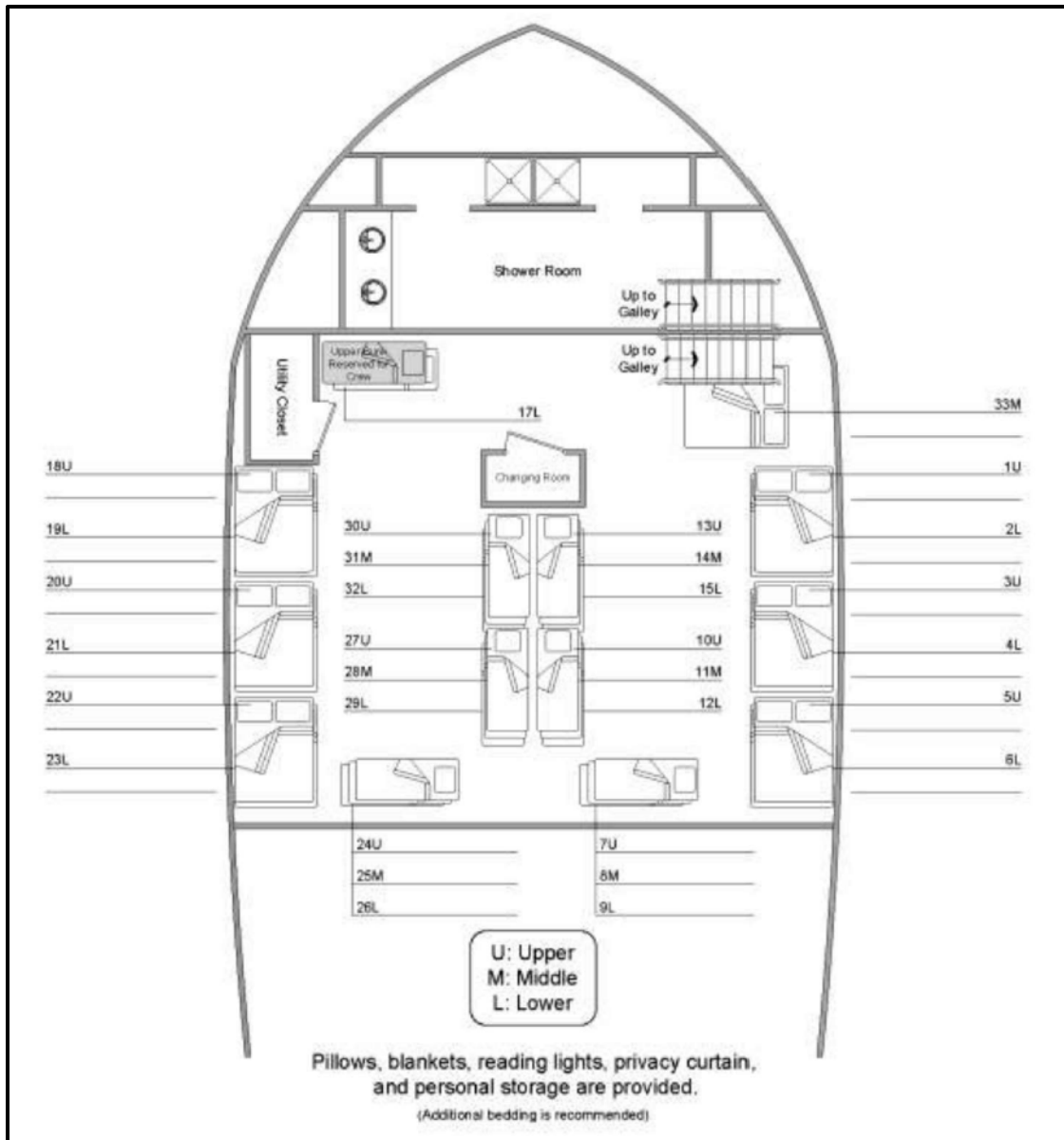


Figure 11: *Conception* bunkroom arrangement. (Source: Truth Aquatics)

An escape hatch was installed on the centerline at the aft end of the bunk room that led to the aft end of the salon and was original to the vessel. In all available historic documentation and inspection history of the *Conception*, no discrepancies or modifications were found related to the emergency escape hatch. The hatch was accessible from either aisle by climbing a wooden ladder, located in the corner where the aftermost middle and aft athwartship tiers of bunks were, through a privacy curtain (if not opened) onto the top bunk, crawling to the centerline over bedding and personal effects, and pushing the plywood escape hatch out of the way. The escaping passenger

1 would then enter what was essentially a three-sided plywood box without handholds, assisting
2 hardware or lighting and would have to climb out of it before heading aft within the salon. On the
3 similar vessel, the *Vision*, which according to the owner had a similar escape hatch layout and
4 dimensions, the plywood hatch measured about 22 inches by 22 inches and was marked by plastic
5 engraved unlit signage next to the bunks.²⁵ The escape exited below an island counter with three
6 sides enclosed by plywood and a 6-inch coaming around the escape hatch above the main deck of
7 the salon. About six feet of empty deck space in the salon separated the hatch, which opened
8 underneath a wooden countertop, from the passageway that led to the weather deck. The second
9 captain stated that when he first boarded the vessel at the stern from the water, “he could see the
10 aft escape was fully engulfed in flames.”

11 Upon examination of the wreckage, investigators found silhouette evidence markings
12 consistent with the outline of persons or objects of non-uniform shape (e.g. duffel bags) in the
13 bunk room at the bottom of the main stairs leading to the salon, on the port side forward outboard
14 lower double bunk and adjacent vertical and horizontal bunk frames at bunks 17L and 19L. The
15 mattresses and personal effects from 17L and 19L were also mostly unburned. The mattress for
16 19L had an observable silhouette and traces of human tissue on it, as did the air conditioning intake
17 louver at the bottom of the main stairs. Personnel effects, including paper documents, recovered
18 from the crewmember assigned to bunk 17L were almost entirely unburned.

²⁵ Measurements are based on the similar vessel *Vision*, which according to the vessel owner had no design modifications made to the escape hatch from the previous Coast Guard approvals of the escape hatch on the *Conception*.



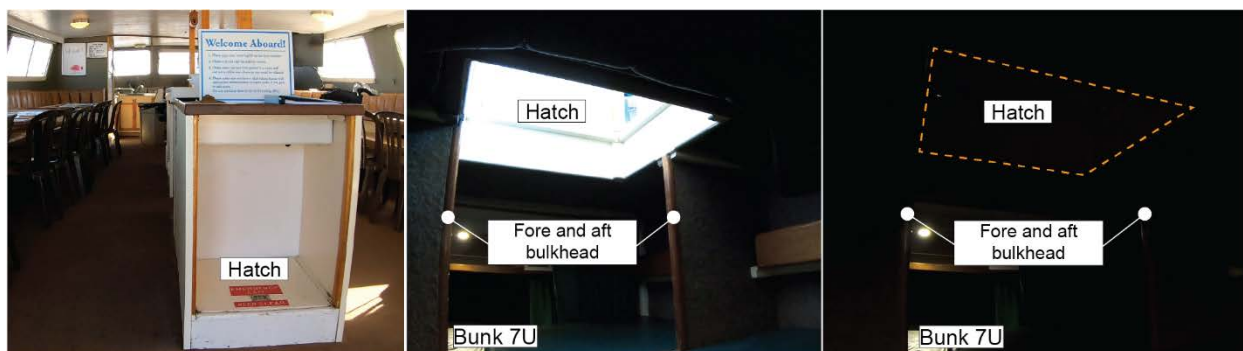
Figure 12: Postaccident photo of the bunkroom looking from the starboard aisle forward and to port.

Investigators measured the dimensions of the remaining unburnt bunkroom in the wreckage. The area of the bunkroom was about 540 square feet (50 square meters). The bottom step of the spiral stairs survived and measured approximately 36 inches wide. The port aisle, between bunks 19 and 32, was approximately 30 inches. The starboard aisle, between bunks 2 and 15, measured approximately 32 inches.

The *Conception* was an “existing vessel” as defined in Coast Guard regulations. As such, the vessel was required to meet the older standards, commonly referred to as “Old T,” for escape routes and emergency egress found in 46 *CFR* Part 177.15. Even as applied to New T regulations, the means of escape met the intent of Subpart E where neither passed through a watertight door and they were at opposite ends of the bunkroom so as to minimize the possibility of one incident blocking both escapes. New T, however, requires the means of escape to be sufficient for rapid evacuation in an emergency for the number of persons served. Investigators were unable to find a quantitative definition of the word “rapid.” Although there was no specific minimum dimension guidance in either Old or New T regarding means of escape, New T states the dimensions of the means of escape must be such as to allow for easy movement of persons wearing lifejackets and that there must be no protrusions that could cause injury, ensnare clothing, or damage lifejackets.

1 Old T regulations for means of escape also applied to crew quarters, thus requiring not less
2 than two avenues of escape so that if one is not available, the other may be. For the five crew in
3 the accommodation, all, except the captain who was the last to leave the wheelhouse, exited
4 through the wheelhouse wing doors and lowered themselves to the main deck below. Two of the
5 four crew were injured, with one being serious. The *Conception* was not fitted with any device
6 such as a ladder, net, or ropes for crew to evacuate via the wheelhouse wing exits to the deck
7 below.

8 All bunks had assigned occupants, except for numbers 7, 9, 24, and 26 (these were the top
9 and bottom bunks of the three-tiers high bunks running athwartships on the aft bulkhead). The
10 deckhand told investigators that passengers on the accident voyage kept to the posted sleeping
11 arrangements. The top bunks nearest the emergency escape hatch were occupied by the two
12 youngest female passengers, aged 16 and 17. According to the deckhand, luggage was stowed
13 below some of the bunks and above them, in a designated area. The deckhand stated, when asked
14 by investigators, that the aisles between the bunks were clear of any luggage all the time. Some
15 passengers did keep personal items and effects with them in their bunk spaces, such as purses and
16 backpacks.



17
18 **Figure 13: The *Conception* berthing area escape hatch from above in the salon (left) and from the**
19 **port side, below deck with the hatch open (middle), and with the hatch closed (right). (Source: Ralph**
20 **A. Clevenger photography and video)**

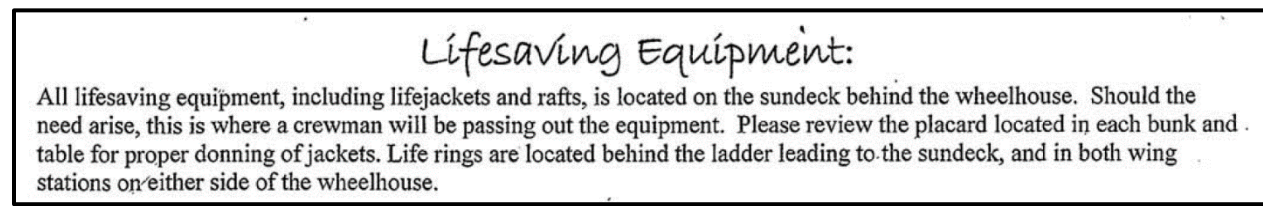
21 There were three sliding windows on each side of the *Conception* in the main salon. Each
22 of the windows slid open in an aft direction. On the forward bulkhead of the galley were three
23 windows, of which only the center one could be opened from the inside by turning a hand screw
24 and pushing the window outward at the bottom since it was hinged at the top. If closed, none of
25 the windows could be opened from the outer decks. The forwardmost of the three sliding side

1 windows in the salon on the port side was labeled as a means of escape. Should passengers exiting
2 the bunkroom via the main stairway not be able to utilize the pathway through the salon through
3 the aft main doors, a person could climb over the seating on that side, slide the window open, if
4 not already open, and exit to the main deck. The starboard side middle window was similarly
5 labelled. None of the windows were designated as emergency escape routes during the
6 construction of the vessel. The owner stated that he had put the emergency escape labels on the
7 windows as an extra measure to help passengers identify additional escape routes. During the fire,
8 the deckhand and second galleyhand attempted to open the forward center window but were
9 unsuccessful, as it was latched from the inside. They stated that at the time of the abandonment,
10 the windows were black with heavy smoke visible through the glass.

11 4.5.4.Operations

12 Safety orientations on small passenger vessels are required by 46 *CFR* Part 185.506. The
13 regulation requires that “before getting under way on a voyage or as soon as practicable thereafter,”
14 passengers should have the opportunity to become acquainted with stowage and location of life
15 preservers, proper methods of donning and adjusting life preservers, the type and location of all
16 lifesaving devices carried on the vessel, and the location and contents of the “emergency checkoff
17 list.” The practice on the *Conception* was to complete this orientation on the first morning after
18 getting under way. A laminated checklist was used for the orientation. Law enforcement
19 investigators located several sample typed-up versions of the orientation. All of the versions
20 included donning lifejackets and either diving or hiking safety. On the accident voyage, passengers
21 boarded the vessel the evening/night before the *Conception* got underway on August 30. Once on
22 board and situated, they got in their assigned bunks and went to sleep. The *Conception* got
23 underway from the Sea Landing dock at about 0404. That morning, after the *Conception* anchored
24 at their initial diving site, during breakfast, the first deckhand completed the safety orientation. He
25 stated he briefed passengers on the location of lifejackets, extinguishers, and escape routes. The
26 muster (assembly point) area was located just aft of the salon on the main deck. There was a large
27 sign located immediately aft of the salon doors on the port side aft of the toilet entrance posted on
28 the bulkhead identifying that area as the assembly point. The captain of the *Vision* stated that he
29 did the orientation next to the escape hatch and pointed it out to everyone, and that children would
30 occasionally play, climbing through it. Safety-related material available to passengers prior to the

1 *Conception* getting under way were the lifejacket donning instructions, posted in the salon and in
2 each bunk, and a single page “welcome aboard” form that asked passengers to “take a few minutes
3 and read the following” and that the form “will serve as your pre-departure safety briefing.” The
4 one-page form included safety orientation related information required by regulation, with the text
5 shown in Figure 13. The remainder of the single page form discussed non-safety-related material
6 such as breakfast, lunch, and dinner times, and bunkroom, shower room, drying room (lazarette),
7 and kayak rack rules and considerations.



9 **Figure 14: Truth Aquatics “welcome aboard” information specific to pre-departure safety briefing.**

10 *Conception* passengers on previous voyages told investigators that their safety orientation
11 was done after the first night and did not include the location of the emergency escape.

12 Truth Aquatics was in process of finalizing and implementing a vessel and safety
13 orientation video that was intended to be shown on board both the *Vision* and *Conception*, which
14 were similar in layout. The video had been completed by the company tasked with production but
15 was not yet in place on board each vessel. The safety orientation video showed how to don a
16 lifejacket, the locations of the assembly station and of lifesaving appliances, instructions for a man
17 overboard, and the locations of the emergency exit from the bunk room and galley/salon.

18 A roving watch was required by 46 *United States Code (USC)* Section 8102 and by 46 *CFR*
19 Part 185.410. The *Conception*’s COI also included a specific endorsement, stating that “A member
20 of the vessel’s crew shall be designated by the master as a roving patrol at all times, whether or
21 not the vessel is underway, when the passenger’s [sic] bunks are occupied.” Notwithstanding these
22 requirements, the practice on the *Conception* was for all hands to sleep at night. One deckhand
23 was assigned a bunk in the berthing area with the passengers. An anchor alarm, built into the GPS,
24 was set in the wheelhouse, where the other deckhand and second captain slept. The deckhand, a
25 *Vision* captain, and a former cook who worked for Truth Aquatics for two years stated that the
26 whole crew always slept at night. When former and current Truth Aquatics crew members were

asked about a roving watch, they either did not recall a roving watch being set at night or they declined to comment.

4.5.5. Training and pre-incident planning

The owner stated that the crew, including galley staff, conducted regular drills, including fire drills. A former first galleyhand stated that the crew did annual CPR, first aid, and fire extinguishers training, and had to know how to muster the passengers. New crew also drilled with fire hoses. Conflicting information from the second captain, first galleyhand, and second galleyhand indicated that they had not participated in any fire drills and had no training other than being shown where the extinguishers were. These crew members had been on the vessel for several trips and days without these familiarization procedures.

The deckhand, who had been with the vessel for 10 months, stated that the captain had shown him all of the fire and lifesaving equipment but had never deployed a fire hose on board. He described the drill for the Coast Guard inspection as an engine room scenario where they broke out extinguishers and closed the ventilation (the engine room had a fixed CO₂ system). He had not practiced launching the lifefloats.

Regulations require that the owner, master, or managing operator instruct each crew member upon being employed and prior to getting underway for the first time on a particular vessel and at least once every three months, as to the duties that crew member is expected to perform in an emergency including, but not limited to the instructions on the instruction placard and station bill.

Regulations further required crew training be logged or otherwise documented for review by the Coast Guard upon request. Truth Aquatics stated the logs for the *Conception* were on board at the time of the fire, and that they had been checked during all Coast Guard annual inspections for compliance. Although not required by regulation, there were no records kept ashore related to crew certificates, training, or licenses.

4.5.6 Station Bill

As per regulations, the *Conception* had a station bill that outlined instructions to the crew in case of the following emergency situations: man overboard, fire at sea, and rough weather or crossing hazardous bars. Each instruction was based on the recommended emergency

instructions format found in 46 *CFR* 185.512. Although the station bill for the *Conception* was not found in the wreckage, it was the same as the two other vessels in the Truth Aquatics fleet, the *Vision* and *Truth*.

Specific to onboard fires, the station bill required the second captain to cut off air supply to the fire and close hatches, ports, doors, and ventilation dampers, while the first deckhand was to use portable fire extinguishers to extinguish the fire. The second deckhand was tasked to shut off the fuel supply and ventilation to the engine room and discharge the system for any fire in the machinery space. The captain's task was to minimize the effect of wind on the fire and to immediately notify the Coast Guard and other boats in the vicinity if the fire was unable to be controlled. The second captain was also responsible for moving passengers away from the fire, have them don life preservers, and, if necessary, have them prepare to abandon ship. There were no specific emergency duties assigned to the first or second galleyhands. Additional procedures were discussed in Truth Aquatics Loss Control Program, provided to each employee.

FIRE AT SEA

1. 2nd Captain will cut off air supply to fire, close hatches, ports doors, and ventilators etc.
2. 1st Deck will immediately use portable fire extinguishers at base of flames for flammable liquid or grease fires or water for fires in ordinary combustible materials.
3. 2nd Deck will shut off fuel supply and ventilation and discharge fixed CO2 if installed if fire is in machinery spaces.
4. Master will maneuver vessel to minimize effect of wind on fire and immediately notify Coast Guard and other boats in vicinity if fire is unable to control.
5. 2nd Captain will move passengers away from fire, have them put on life preservers, and if necessary, prepare to abandon ship.

Figure 14: Fire at sea emergency instructions/station bill from the *Vision*.

None of the crew members on the *Conception* at the time of the accident were aware of any posted station bill, even though it was required to be posted by regulation. The first galley hand was unfamiliar with the concept of a station bill when asked by investigators. The second

1 captain understood that his role in a fire emergency was to start the fire pump and/or launch the
2 skiff.

3 Regulations required the master to conduct sufficient drills and give sufficient instructions
4 to make sure all crew members were familiar with their duties during emergencies that necessitate
5 abandoning ship or recovery of persons in the water. The regulations also required the summoning
6 of passengers on a vessel on an overnight voyage to muster stations or embarkation stations and
7 ensuring they understood how the order to abandon ship would be given. Although a safety briefing
8 was given the morning the *Conception* arrived at its first dive location on August 31, this briefing
9 was held in the salon, which was neither a muster station nor embarkation station.

10 The regulations also required the master to conduct sufficient fire drills to make sure each
11 crew member was familiar with his or her duties in case of a fire, and which were required to be
12 logged. Specifics of the date of the drill and training and a general description of the drill scenario
13 and training topics were required to be recorded. There was no requirement to record crew
14 members in attendance for the drill or training.

15 Coast Guard and VCFD staff all stated that they had conducted productive training
16 together, most recently in a tabletop oil platform scenario with more exercises scheduled.²⁶ The
17 *Conception* owner was not aware of any fire department or emergency management pre-planning
18 specific for passenger vessels, nor had the company participated in any mass casualty exercises.

19 4.6 Post casualty Coast Guard Actions

20 Shortly after the fire on the *Conception*, the Coast Guard issued a Marine Safety
21 Information Bulletin (MSIB) addressing passenger vessel compliance and operational readiness
22 for small passenger vessels, MSIB 008-19. The MSIB recommended owners, operators, and
23 masters of passenger vessels complete a review of the overall condition of the passenger
24 accommodation spaces for unsafe practices and other hazardous arrangements.

25 Following a series of concentrated inspections on all passenger vessels operated under the
26 regulations of Subchapter T, the Coast Guard identified issues related to bunks on board in which

²⁶ Santa Barbara Channel was also the site of the Alaska Airlines flight 261 crash on January 31, 2000. See <https://www.nts.gov/investigations/AccidentReports/Pages/AAR0201.aspx>.

1 two people can be assigned. Specific to the *Vision*, on October 2, 2019, the Coast Guard issued a
2 deficiency stating the double bunks on board do not allow for free and unobstructed escape for
3 the inside occupant and that all double bunks may only be occupied by one person; thus the
4 Coast Guard reduced overnight capacity on the *Vision* to 33 persons. Throughout the inspection
5 history of the *Vision* and *Conception* made available to investigators, such a problem had not
6 been identified until after the accident.

7 After the accident on the *Conception*, the Coast Guard initiated a Concentrated Inspection
8 Campaign (CIC) for all Subchapter T inspected passenger vessels with overnight
9 accommodation for passengers. On October 2 and November 1, 2019, the Coast Guard inspected
10 the *Vision*. From the inspection, there were a total of 11 deficiencies related to fire safety, 20
11 electrical, 1 means of escape, 4 lifesaving appliance, 1 navigational, 2 alarm, 1 emergency, and 1
12 machinery: a total of 40 deficiencies. By comparison, during the last annual inspection carried
13 out on April of 2019, there were no deficiencies noted by the attending Coast Guard marine
14 inspector.

15 Among the deficiencies documented aboard *Vision*, which was arranged and outfitted
16 similarly to *Conception*, was a requirement to provide a means of escape from the shower room
17 that leads to an area that does not contain any source of fire, such as a galley stove. The Coast
18 Guard also issued a no-sail deficiency for the grease extraction hood, which was missing a heat
19 detector (removed and taken as evidence by federal law enforcement during a search warrant
20 served at the Truth Aquatics office and the *Truth* and *Vision* on September 8, 9 and 10 2019),
21 had a build-up of grease, and was missing a maintenance plan.

22 After the fire on the *Conception*, Truth Aquatics modified the bunkroom egress on the
23 similar vessel *Vision*. A closet near the port forward end of the space was converted to a
24 passageway and ladders added, leading to watertight hatches, flush with the main deck exterior
25 outside of the galley, both port and starboard.



Figure 16: Modifications made to the *Vision*, after the accident on the *Conception*. Left: Ladders at the forward end on each side of the bunkroom lead directly to the weather deck. Right: Flush mounted watertight hatches were installed in the deck, outboard of the galley. (Source: Truth Aquatics)

Because the Coast Guard considered this to be a major modification as per regulations, the emergency escapes fell under New T regulations, even though the *Vision* was considered an existing vessel. New T regulations are more specific regarding emergency exit pathways, and as such the owner of the *Vision* was required to submit the plans to the Coast Guard for approval which, at the time of publication of this report, were still under review and have yet to be approved by the OCMI.

4.7 Medical and pathological information

4.7.1 Medical

Medical equipment, including a first aid kit, oxygen, and an AED, were stowed under the wheelhouse console. None of this equipment was retrieved or used in the accident. The first galleyhand suffered a closed fracture of the left tibia. He was transported by Ventura County Fire Department Medic 664 from Coast Guard Station Channel Islands Harbor to St. John's Pleasant Valley Hospital, in Camarillo. He was treated and released on September 6.

1 The second galleyhand bruised his right foot when jumping from the top deck, only
2 realizing it when he boarded the *Grape Escape*. He was treated at MedCenter of Santa Barbara on
3 September 2 and released the same day.

4 4.7.1 Pathological

5 Passenger ages ranged from 16 to 62 years, with a median age of 41 years old. There were
6 13 male and 20 female passengers lost (two were female minors under the age of 18 years). The
7 female crewmember who perished was 26 years of age. Four victims were recovered from the
8 surface by the Coast Guard. Federal and local law enforcement divers recovered 29 victims from
9 the wreckage and seafloor. The precise location and water depth for each was not documented.
10 The last remaining victim was recovered on September 11.

11 The Santa Barbara Sheriff's Office (SBSO) Coroner's Bureau conducted an examination
12 of the victims recovered for which a coroner's report was completed for each of the 34 victims.
13 The Sheriff-Coroner conducted external autopsies on each of the decedents but elected not to
14 conduct internal examinations on the decedents. However, the Sheriff-Coroner did conduct trachea
15 examination, searching for soot, on 16 of the decedents. The Santa Barbara Coroner's Bureau
16 stated autopsies were not done due to the totality of the circumstances surrounding the
17 investigation where, the cause of death was easily determined by a body examination and
18 toxicology tests, and the fact that there were witnesses to the event.

19 Investigators reviewed the 34 coroner reports and found that the cause of death in every
20 case was documented as smoke inhalation. Additionally, in two cases carbon monoxide was found
21 to be contributory. The reports documented that tracheal exams were done on 11 victims though
22 the results were only recorded for four of the cases, which included three with soot and one with
23 foam found in the trachea.²⁷ CO is a product of incomplete combustion and is a central nervous
24 system depressant. CO also binds readily with hemoglobin and displaces oxygen in the blood.
25 Toxicology testing on the *Conception* victims indicated CO saturation levels of between 39 and
26 75 percent with a median 62 percent.²⁸ According to National Fire Protection Association (NFPA)

²⁷ Foam or froth in the upper airway is an indication of pulmonary edema, itself indicative that the individual was breathing smoke.

²⁸ The highest levels were reported as greater than 75 percent.

1 guidance, CO levels of 40 percent or higher indicates victims “likely to have died from CO alone
2 or in combination with other factors...or may simply have been incapacitated sufficiently by CO
3 poisoning to be unable the flee the fire.”²⁹

4 Hydrogen cyanide (HCN) is a product of combustion with plastic fuels and interior finishes.
5 NFPA guidance considers levels between 2.0 and 2.5 µg/ml to be incapacitating and above 3.0 to
6 be lethal.³⁰ None of the 34 coroner reports found hydrogen cyanide blood toxicology
7 concentrations to be above 2 µg/ml.

8 External examinations conducted by the Sheriff-Coroner, as confirmed by divers’ video,
9 documented 27 decedents as being fully or partially clothed. The coroner reports documented that
10 14 people were wearing some sort of footwear and including the female crew member who had
11 sandals on both of her feet. One female passenger was wearing a jacket. Three other cadaver bags
12 included footwear, though not worn at the time of arrival ashore, and one contained a backpack.
13 *Conception’s* bunkroom was outfitted with 13 double bunks, 5 of which were occupied by two
14 people. Of those 10 victims, four had footwear on, or with them, one of which had a hiking boot
15 on one foot and sandal on another. This same victim was holding a mobile phone. A sandal was
16 recovered with the wreckage which had a silhouette impression of a burned foot in it”, without
17 further analysis.

18 Of all the victims, not one was found with any type of smart or dive computer watch on
19 them.

²⁹ National Fire Protection Association. *NFPA 921 Guide for Fire and Explosion Investigation*, 2017. Quincy, Massachusetts, 2016, page 263.

³⁰ Ibid, page 264.