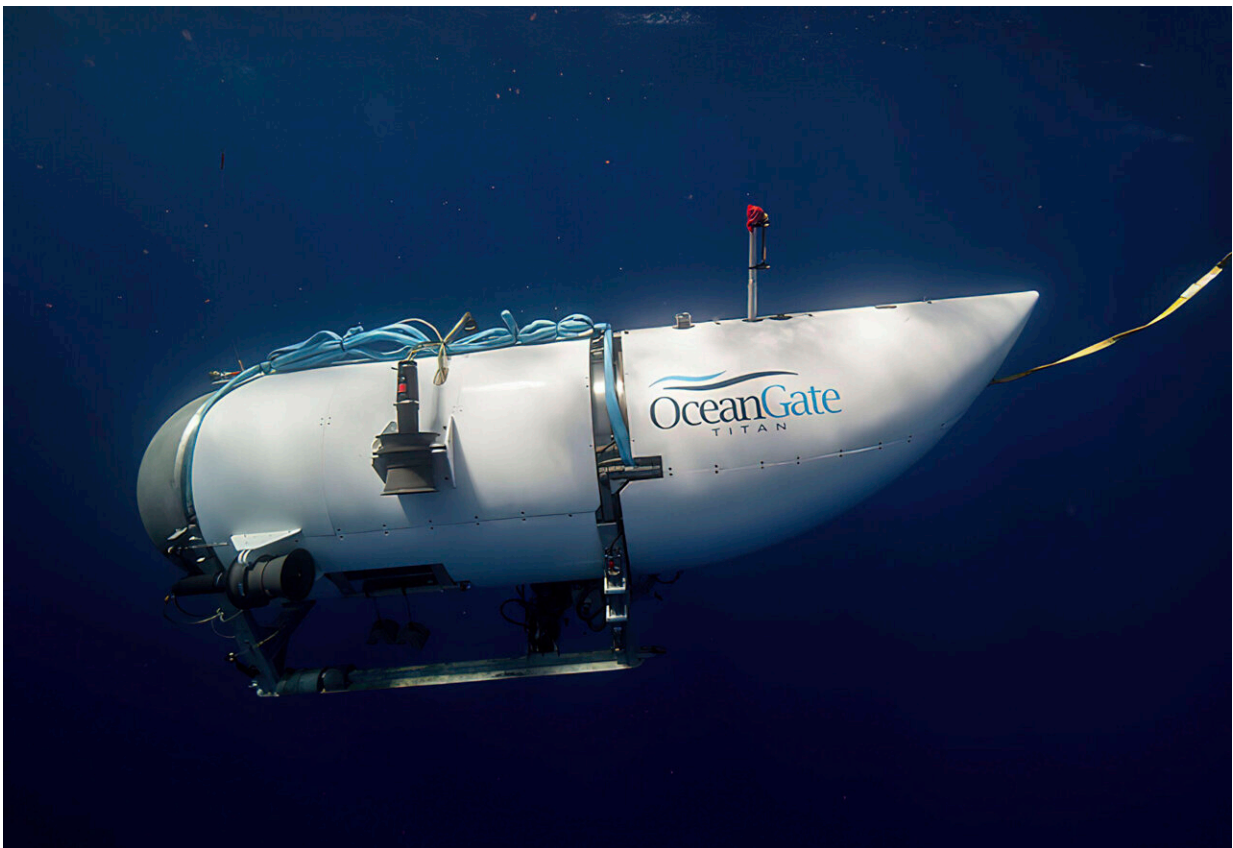


After 5 killed on Titanic-bound submersible, authorities are trying to figure out how it imploded

June 23 2023, by Patrick Whittle



This photo provided by OceanGate Expeditions shows a submersible vessel named Titan used to visit the wreckage site of the Titanic. In a race against the clock on the high seas, an expanding international armada of ships and airplanes searched Tuesday, June 20, 2023, for the submersible that vanished in the North Atlantic while taking five people down to the wreck of the Titanic. Credit: OceanGate Expeditions via AP

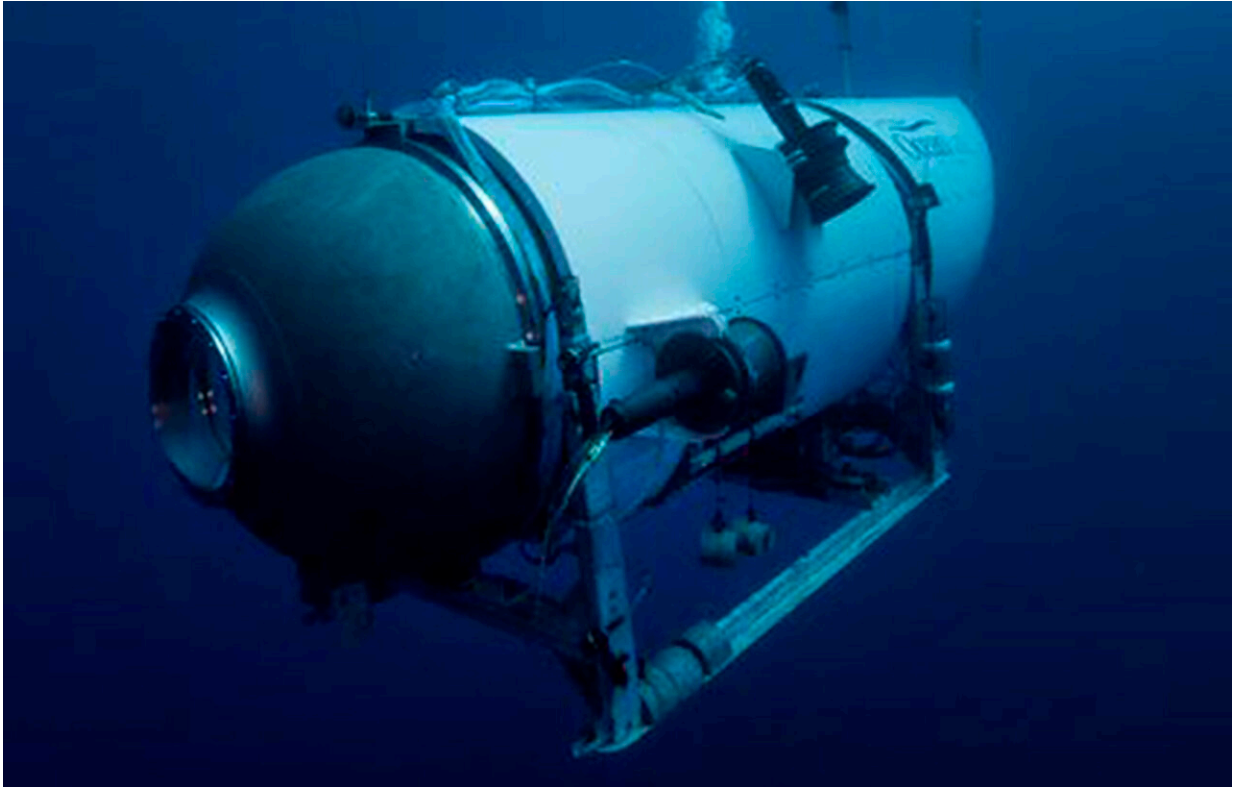
Authorities turned their focus to determining why a submersible carrying people to the wreck of the Titanic [imploded deep in the North Atlantic](#), as tributes poured in for the five aboard who were killed.

The announcement that no one survived Thursday brought a tragic end to a five-day saga that included an urgent around-the-clock search for the vessel known as the Titan.

The investigation into what happened was already underway and would continue in the area around Titanic where debris from the submersible was found, said Rear Adm. John Mauger, of the First Coast Guard District.

"I know there are also a lot of questions about how, why and when did this happen. Those are questions we will collect as much information as we can about now," Mauger said, adding that it was a "complex case" that happened in a remote part of the ocean and involved people from several different countries.

The first [hint of a timeline](#) came Thursday evening when a senior U.S. Navy official said that after the Titan was reported missing Sunday, the Navy went back and analyzed its [acoustic data](#) and found an "anomaly" that was consistent with an implosion or explosion in the general vicinity of where the vessel was operating when communications were lost. The official spoke on condition of anonymity to discuss a sensitive acoustic detection system.



This undated image provided by OceanGate Expeditions in June 2021 shows the company's Titan submersible. Rescuers are racing against time to find the missing submersible carrying five people, who were reported overdue Sunday night. Credit: OceanGate Expeditions via AP, File

Those killed were Stockton Rush, the CEO of OceanGate Expeditions, the company that owned and operated the submersible; two members of a prominent Pakistani family, Shahzada Dawood and his son Suleman Dawood; British adventurer Hamish Harding; and Titanic expert Paul-Henri Nargeolet.

The Titan launched at 6 a.m. Sunday, and was reported overdue Sunday afternoon about 435 miles (700 kilometers) south of St. John's, Newfoundland. Rescuers rushed ships, planes and other equipment to the

site of the disappearance.

Any sliver of hope that remained for finding the crew alive was wiped away early Thursday, when the submersible's 96-hour supply of air was expected to run out and the Coast Guard announced that debris had been found roughly 1,600 feet (488 meters) from the Titanic.

"The debris is consistent with the catastrophic loss of the pressure chamber," Mauger said.



OceanGate CEO Stockton Rush emerges from the hatch atop the OceanGate submarine Cyclops 1 in the San Juan Islands, Wash., on Sept. 12, 2018. Rescuers are racing against time to find the missing submersible carrying five people, who were reported overdue Sunday night, June 18, 2023. Credit: Alan Berner/The Seattle Times via AP, File

The Coast Guard said Thursday that the [sounds detected during the search](#)—that had given rescuers some hope that maybe the people were

alive—were likely generated by something other than the Titan.

The Navy official who spoke of the "anomaly" heard Sunday said the Navy passed on the information to the Coast Guard, which continued its search because the data was not considered definitive.

Tributes to and praise for the searchers who tried to save them poured in from across the globe.

Harding's family said in a statement: "He was one of a kind and we adored him... What he achieved in his lifetime was truly remarkable and if we can take any small consolation from this tragedy, it's that we lost him doing what he loved."

In a statement beginning with a Quranic verse, the Dawood family thanked rescuers: "Their untiring efforts were a source of strength for us during this time, We are also indebted to our friends, family, colleagues and well-wishers from all over the world who stood by us during our need."



U.S. Coast Guard Rear Adm. John Mauger, commander of the First Coast Guard District, talks to the media, Thursday, June 22, 2023, at Coast Guard Base Boston, in Boston. The missing submersible Titan imploded near the wreckage of the Titanic, killing all five people on board, according to the U.S. Coast Guard. Credit: AP Photo/Steven Senne

A longtime friend and colleague of Nargeolet told French media that when contact was lost Sunday, he quickly feared the worst.

"Unfortunately, I thought straight away of an implosion," diver and retired underwater filmographer Christian Pétron said Friday to broadcaster France-Info. At the depths in which the submersible was operating, the pressure is intense and unforgiving, he noted.

"Obviously, the slightest problem with the hull and its implosion is immediate," Pétron said.

Director James Cameron, who has made multiple dives to the wreckage of the Titanic, told the BBC that he knew an "extreme catastrophic event" had happened as soon as he heard the submersible had lost navigation and communications at the same time.

"For me, there was no doubt," Cameron said. "There was no search. When they finally got an ROV (remotely operated vehicle) down there that could make the depth, they found it within hours. Probably within minutes."



In this satellite image provided by Maxar Technologies, from top to bottom, the vessels Horizon Arctic, Deep Energy and Skandi Vinland search for the missing

submersible Titan, Thursday, June 22, 2023 in the Atlantic Ocean. Credit: Satellite image ©2023 Maxar Technologies via AP

He said briefings about 96 hours of oxygen supply and banging noises were a "prolonged and nightmarish charade" that gave the crew members' families false hope.

At least 46 people successfully traveled on OceanGate's submersible to the Titanic wreck site in 2021 and 2022, according to letters the company filed with a U.S. District Court in Norfolk, Virginia, that oversees matters involving the Titanic shipwreck. But questions about the submersible's safety were raised by both by a former company employee and former passengers.

David Lochridge, OceanGate's former director of marine operations, argued in 2018 that the method the company devised for ensuring the soundness of the hull—relying on acoustic monitoring that could detect cracks and pops as the hull strained under pressure—was inadequate and could "subject passengers to potential extreme danger in an experimental submersible."



Submersible pilot Randy Holt, right, communicates with the support boat as he and Stockton Rush, left, CEO and Co-Founder of OceanGate, dive in the company's submersible, "Antipodes," about three miles off the coast of Fort Lauderdale, Fla., June 28, 2013. Rescuers are racing against time to find the missing submersible carrying five people, who were reported overdue Sunday night, June 18, 2023. Credit: AP Photo/Wilfredo Lee, File



CORRECTS SPELLING OF THE NAME TO HENRI, INSTEAD OF HENRY
 This photo combo shows from left, Shahzada Dawood, Suleman Dawood, Paul-Henri Nargeolet, Stockton Rush, and Hamish Harding are facing critical danger aboard a small submersible that went missing in the Atlantic Ocean. The missing submersible Titan imploded near the wreckage of the Titanic, killing all five people on board, the U.S. Coast Guard announced Thursday, June 22, 2023.
 Credit: AP Photo/File



In this image released by Action Aviation, the submersible Titan is prepared for a dive into a remote area of the Atlantic Ocean on an expedition to the Titanic on Sunday, June 18, 2023. Rescuers are racing against time to find the missing

submersible carrying five people, who were reported overdue Sunday night.
Credit: Action Aviation via AP, File



The logo for an OceanGate Expeditions 2019 Titanic expedition is seen on a marine industrial warehouse office door in Everett, Wash., Tuesday, June 20, 2023. Rescuers are racing against time to find the missing submersible carrying five people, who were reported overdue Sunday night. Credit: AP Photo/Ed Komenda, File



The U.S. Coast Guard Cutter Warren Deyampert is docked as a member of the Coast Guard walks past, Tuesday, June 20, 2023, at Coast Guard Base Boston, in Boston. Rescuers are racing against time to find the missing submersible carrying five people, who were reported overdue Sunday night, June 18, 2023. Credit: AP Photo/Steven Senne, File



This 2004 photo provided by the Institute for Exploration, Center for Archaeological Oceanography/University of Rhode Island/NOAA Office of Ocean Exploration, shows the remains of a coat and boots in the mud on the sea bed near the Titanic's stern. Rescuers are racing against time to find the missing submersible carrying five people, who were reported overdue Sunday night, June 18, 2023. Credit: Institute for Exploration, Center for Archaeological Oceanography/University of Rhode Island/NOAA Office of Ocean Exploration, File



U.S. Coast Guard Capt. Jamie Frederick, right, faces reporters as Royal Navy Lt Cdr Rich Kantharia, left, looks on during a news conference, Wednesday, June 21, 2023, at Coast Guard Base Boston, in Boston. The U.S. Coast Guard says sounds and banging noises have been heard from the search area for Titanic submersible. Credit: AP Photo/Steven Senne



U.S. Coast Guard Capt. Jamie Frederick, left, faces reporters as Carl Hartsfield, director and senior program manager Oceanographic Systems Laboratory, center, and Paul Hankins, U.S. Navy civilian contractor, supervisor of salvage, right, look on during a news conference, Wednesday, June 21, 2023, at Coast Guard Base Boston, in Boston. The U.S. Coast Guard says sounds and banging noises have been heard from the search area for Titanic submersible. Credit: AP Photo/Steven Senne



A 2019 Titanic survey expedition sticker is seen on the garage door at the OceanGate offices Thursday, June 22, 2023, in Everett, Wash. The U.S. Coast Guard said Thursday that the missing submersible Titan imploded near the Titanic shipwreck site, killing everyone on board. Credit: AP Photo/Lindsey Wasson



A sign stating there is no public access to the OceanGate offices is seen Thursday, June 22, 2023, in Everett, Wash. The U.S. Coast Guard said Thursday that the missing submersible Titan imploded near the Titanic shipwreck site, killing everyone on board. Credit: AP Photo/Lindsey Wasson



A boat with the OceanGate logo is parked on a lot near the OceanGate offices Thursday, June 22, 2023, in Everett, Wash. The U.S. Coast Guard said Thursday that the missing submersible Titan imploded near the Titanic shipwreck site, killing everyone on board. Credit: AP Photo/Lindsey Wasson



Equipment with the OceanGate logo is parked on a lot near the OceanGate offices Thursday, June 22, 2023, in Everett, Wash. The U.S. Coast Guard said Thursday that the missing submersible Titan imploded near the Titanic shipwreck site, killing everyone on board. Credit: AP Photo/Lindsey Wasson



A boat with the OceanGate logo is parked on a lot near the OceanGate offices Thursday, June 22, 2023, in Everett, Wash. The U.S. Coast Guard said Thursday that the missing submersible Titan imploded near the Titanic shipwreck site, killing everyone on board. Credit: AP Photo/Lindsey Wasson



In this satellite image provided by Maxar Technologies, from top to bottom, the vessels L'Atalante, Horizon Arctic, Deep Energy, and Skandi Vinland search for the missing submersible Titan, Thursday June 22, 2023 in the Atlantic Ocean.
Credit: Satellite image ©2023 Maxar Technologies via AP



U.S. Coast Guard Capt. Jamie Frederick, center at microphone, faces reporters during a news conference, Wednesday, June 21, 2023, at Coast Guard Base Boston, in Boston. The U.S. Coast Guard says sounds and banging noises have been heard from the search area for Titanic submersible. Credit: AP Photo/Steven Senne



U.S. Coast Guard Rear Adm. John Mauger, commander of the First Coast Guard District, center at microphone, talks to the media Thursday, June 22, 2023, at Coast Guard Base Boston, in Boston. The U.S. Coast Guard says the missing submersible imploded near the wreckage of the Titanic, killing all five people on board. Coast Guard officials said during the news conference that they've notified the families of the crew of the Titan, which has been missing for several days. Credit: AP Photo/Steven Senne

OceanGate disagreed. Lochridge "is not an engineer and was not hired or asked to perform engineering services on the Titan," it said, and it noted he was fired after refusing to accept assurances from the company's lead engineer that the acoustic monitoring and testing protocol was, in fact, better suited to detect flaws than a method Lochridge proposed.

One of the [company](#)'s first customers likened a dive he made to the site two years ago to a suicide mission.

"Imagine a metal tube a few meters long with a sheet of metal for a floor. You can't stand. You can't kneel. Everyone is sitting close to or on top of each other," said Arthur Loibl, a retired businessman and adventurer from Germany. "You can't be claustrophobic."

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