What is submersible tourism? The Titanic expedition, explained.

How common are deep-sea expeditions like the Titan's? Where else do submersibles go?

By Natalie B. Compton

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The Titan submersible is operated by OceanGate Expeditions to explore the wreckage of the sunken Titanic off the coast of Newfoundland. (Oceangate Expeditions/Reuters)

Seeing the wreck of the Titanic firsthand is a journey.

One must board a submersible vessel about the size of a minivan built to withstand the pressure of descending nearly two and a half miles into the depths of the Atlantic Ocean. It takes about two hours to reach the sunken ship and another two to get back to the surface, plus time for exploration.

And even with a price tag of a quarter of a million dollars, there's no shortage of people with interest for such an adventure. Philippe Brown, founder of the luxury travel company <u>Brown and Hudson</u>, says there's a long wait list for the OceanGate Expeditions submersible experience at the center of the world's attention. The vessel, called the Titan, vanished Sunday in the North Atlantic with five onboard, and rescuers are scrambling as oxygen supply dwindles.

For the world's richest and most intrepid travelers, a submersible trip is not so far-fetched, says Roman Chiporukha, co-founder of Roman & Erica, a travel company for ultrawealthy clients with annual membership dues starting at \$100,000.

"These are the people who've scaled the seven peaks, they've crossed the Atlantic on their own boat," Chiporukha said. The typical vacation of the ultrawealthy, like a beach getaway on the Italian Riviera or St. Barts, "really doesn't do it for them," he added.

That description fits tycoon Hamish Harding, who is among the five people on the missing Titan. An avid adventurer who's thoroughly explored the South Pole and the Mariana Trench, Harding was also on the fifth spaceflight of Blue Origin, the private space company founded by Jeff Bezos, who owns The Washington Post. Harding and the Titan journey represent the extreme end of the submersible tourism industry, which has been growing in popularity since the 1980s. Ofer Ketter, a longtime submersibles pilot and co-founder of SubMerge, a firm that provides consulting and operations of private submersibles, says such deep-sea journeys are rare in comparison to those in more tropical locations. For example, the luxury tour operator Kensington Tours offers a \$700,000, 10-day yacht trip that includes a 600-plus-foot dive in a submersible in the Bahamas to explore the Exumas ocean floor.

Here's what else to know about the industry.

What is submersible tourism?

A submersible is a type of vessel that can travel underwater and often refers to crafts designed for research and exploration with or without people in it. They're used in a variety of industries for commercial, military and scientific purposes. "Examples are recovering lost treasure from the seafloor ... cable inspection and servicing," said Andrew Norris, a retired U.S. Coast Guard captain.

They've been used for tourism since the mid-1980s and are now found all over the world, says William Kohnen, who runs Hydrospace Group, an engineering firm that builds submersibles. You can often find them in scenic areas like Hawaii or the Caribbean, where passengers can admire colorful marine life and reefs.

"It's basically a little bus tour," Kohnen said.

Generally, the "tourist subs" can fit 20 to 60 people on board, Kohnen says, and go on hour-long excursions that are nowhere near as deep as a Titanic mission. He estimates 99 percent of them descend no more than 150 feet (about the length of two tennis courts). Ketter says in his experience, tours tend to be two to three hours on average, covering dive sites like World War II planes and shipwrecks, or to see marine life.

Brown says his clients who are interested in the extreme side of submersible tourism, like a Titanic dive, don't see themselves as tourists but rather modern-day explorers. Such trips are opportunities to push their boundaries for the sake of personal growth, or "be involved in initiatives that move mankind forward or that help it better understand the past," Brown added.



An image from the Woods Hole Oceanographic Institution shows the Titanic's bow in 1986. (AFP/Getty Images)

When did tours to the Titanic site start?

The wreck of the RMS Titanic, which sunk in 1912, was discovered in 1985 and tourists have been visiting the site for decades.

OceanGate Expeditions has been taking crews of "citizen scientists" and "crew members" there over the past two years, though the company has completed more than a dozen dives since 2010.

Ketter said he's only had a few clients ask about Titanic expeditions in his 20 years of piloting submersibles. "There [is] a lot more interest in other dive sites," he said. "People normally want to see wildlife ... things they can't see in an aquarium or at a scuba-diving depth."

How deep do crews go on dives to the wreck?

On OceanGate Expeditions' Titanic Survey Expedition, the company says they can go to a maximum depth of 12,800 feet. The Titanic wreckage is located at a depth of 12,500 feet about 370 miles south of Newfoundland, Canada.

How much does it cost to tour the Titanic?

The OceanGate Titanic expedition cost \$250,000 per person, which excludes transportation to and from St. John's, Newfoundland, where the journey starts and ends before traveling about 400 miles

to the wreck. The company's website says expeditions to the wreck last eight days.

Brown says his company has an "elevated and slightly longer version" of the OceanGate experience which costs about \$293,535 per person. The package includes "greater on-land preparation in St. John and the wider Titanic context" as well as risk mitigation exercises that begin months before the dive. Additionally, "we'd proposed dives to other more manageable wrecks elsewhere to ensure the client could deal with any unforeseen claustrophobiatype issues," Brown said.



The Titan submersible, operated by OceanGate Expeditions. (Oceangate Expeditions/Reuters)

Are tourist submersibles safe?

In a statement shared with The Washington Post, the Marine Technology Society (MTS) said the industry is "regulated in accordance with international safety standards" and has had a safety record of fifty years without incident.

Kohnen added that the Titan is a unique design and not a "classed" submersible, which "operate within well-established safety guidelines."

"The manned submersible for the Titanic expedition would not be coined a tourist submersible by current industry definitions," he said. "It is an outlier, a very special deep ocean exploration submersible."

Norris said pilots have a lot of training in safety systems, and missions are "aborted quite frequently" if conditions aren't right or there are any system failures.

"It's like Mount Everest," Chiporukha said. If the weather's bad, "you don't go up."

But as with any form of transportation, traveling by submersible comes with risk, said Ketter, who says he's logged hundreds of hours piloting submersibles and gone to depths of 1,500 feet. "We know it can be done safely," Ketter said, comparing the industry to space travel's history of successful missions, as well as failures.

Brown says clients are well aware of risks as they consider the journey. "As part of our trip design process, we undertake two detailed risk assessments specific to each experience," he said. "One

early in the planning and one immediately before the client travels." Additionally, "the client or their family office might do their own risk assessment and explore their own attitude risk and their comfort level," Brown added.

In an interview with BBC on Tuesday, former OceanGate passenger Mike Reiss said before the trip he was required to sign a "massive waiver that lists one way after another that you could die on the trip."

Ketter hopes the Titan incident doesn't define the industry, but isn't sure how it will impact the future of the trade.

"What I do know is that we have been diving submersibles with tourism and leisure clients for more than 20 years," he said.

"And we have done it safely ... we have done it in a way that thousands and more people have had life-changing experiences and memories they can never repeat in any other way."

Kyle Melnick contributed to this report.

By Natalie Compton

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