

# No time to run? Tsunami pod aims to save lives—at a price

February 17 2017, by Sandi Doughton, The Seattle Times

---



The Survival Capsule

When Jeanne Johnson lived in New Orleans, she figured out how to

weather hurricanes. When the family moved to Kansas City, she taught her kids to take cover from tornadoes. So when Johnson recent bought a house on Washington state's Long Beach Peninsula - about 110 miles southwest of Seattle - she set out to improve her odds of surviving a Cascadia megaquake and tsunami.

Running for high ground before the wave hits isn't an option from her property. Nor are there any tall, sturdy buildings nearby. Instead, Johnson is betting her life on a new, high-tech solution: a tsunami survival capsule manufactured by a fledgling company near Seattle.

The neon-orange sphere is meant to protect its occupants from drowning or being crushed by debris as towering surges batter the coast. It's made of aircraft-grade aluminum, with a watertight marine door. Tiny porthole windows are equipped with bulletproof glass. There's a ceramic thermal lining, a GPS beacon and air canisters.

As the company's first customer, Johnson has been experimenting with the quickest way to climb in, batten the hatch and buckle up for a ride she's not eager to take.

"It's going to be terrible," said the 55-year-old Microsoft employee. "But it's better than the alternative."

The pod is the brainchild of aerospace engineer Julian Sharpe, founder of Survival Capsule LLC. He got the idea after the 2004 Indian Ocean quake and tsunami, which swept more than 200,000 people to their deaths. Sharpe and his family were staying at a waterfront hotel in Cannon Beach, Ore., and he wondered how they could get to safety if a similar disaster struck the Pacific Northwest.

"Our kids were very little. We had two huskies. How could we evacuate in time?" he said.

After the 2011 Japanese quake and tsunami, which killed 16,000 people in the world's most disaster-ready nation, Sharpe and his colleagues started work in earnest on their escape pod.

In his day job, Sharpe runs a small company that specializes in structural analysis and stress testing of airplane components. He applied those methods to the design of capsules of various sizes strong enough to withstand a ferocious battering during a tsunami.

His team used computer modeling to simulate the forces the pods are likely to encounter from rushing water or being slammed into walls and buried by debris. They subjected a capsule to 40,000 pounds of pressure to ensure its door wouldn't buckle and leak. In a stunt for a film crew, they wired a pod with sensors and sent it over a 200-foot-tall waterfall with no serious damage.

The design was awarded a U.S. patent. "I would use this for my family," Sharpe said.

In such a new market, though, no standards or regulations exist to ensure the safety of such devices. At least one Japanese company offers fiberglass tsunami pods that Sharpe believes could be easily damaged.

Chuck Wallace, emergency management director for Grays Harbor County on the Washington coast, is skeptical of the whole approach.

"What if you get stuck under debris, or something tears it and it leaks?" asked Wallace, a Navy veteran who served on submarines. If a pod gets washed out to sea, it's unlikely the Coast Guard or anyone else will be on hand to rescue the occupant. "You're just not going to convince me they're safe."

While heading for high ground is the best way to escape a tsunami,

escape pods offer an alternative for those who would never be able to make it, said Eddie Bernard, former director of the National Oceanic and Atmospheric Administration's Pacific Marine Environmental Laboratory in Seattle.

"What about the elderly, the disabled?" asked Bernard, a tsunami expert who is collaborating with Sharpe. "We need to be thinking about all the tools available to save lives."

With little high ground, the 25-mile sandspit that comprises the Long Beach Peninsula is one of the most vulnerable spots on the Northwest coast. The city of Long Beach got federal funding to help design and build an armored hill, or berm, where 800 people could take refuge. But officials found out this month that the 32-foot-tall structure they proposed may not be high enough to meet new, tsunami-safe construction standards.

Even if the berm were built, it would be too far away for Johnson to reach along roads likely to be left impassable by the quake. The first waves are expected to roll ashore 20 minutes or less after the ground shaking stops.

"I could go up on this little hill by my house," she said. "But all that's going to do is give you a better vantage point on your death."

Johnson took out a loan to buy her 4.5-foot-diameter, two-person pod for \$13,500. When a four-person version is available, she intends to trade up for an extra \$4,000. "I want to have room, in case my kids come to visit," she said.

She plans to anchor the pod on a long steel tether designed to hold it in place. She's stocking the capsule with water, a 40-day supply of dehydrated food, warm clothing and an emergency radio.

Sharpe says he's got a list of about 400 potential customers around the world, including a luxury hotel in the Maldives. But he's focused mainly on building a market in Japan, where preparedness is paramount. One coastal prefecture is mulling the idea of offering subsidies to help vulnerable residents purchase survival pods, and a leading Japanese [tsunami](#) expert recently endorsed Survival Capsule's design.

"What we're trying to do is increase people's chances of survival," Sharpe said. "If you have no other means of escape this is a very viable option."

Johnson says having the pod gives her the freedom to enjoy her new home without fear. She works remotely and is glad to be free of the bustle and gridlock in Bellevue, a city closer to Seattle where she used to live.

"I can hear the ocean in my windows," she said. "I can walk on the beach with my dog."

The offshore fault called the Cascadia Subduction Zone has unleashed at least 40 major quakes and tsunamis over the past 10,000 years - most recently in the year 1700. It's impossible to know when the next one will strike, and Johnson says she doesn't obsess about it.

"If you think about tsunamis all the time, you shouldn't live here," she said. "I bought that capsule to give me peace of mind, so I can sleep at night and not worry."

©2017 The Seattle Times

Distributed by Tribune Content Agency, LLC.

Citation: No time to run? Tsunami pod aims to save lives—at a price (2017, February 17)  
retrieved 3 May 2024 from <https://phys.org/news/2017-02-tsunami-pod-aims-livesat-price.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.