

# 10 Things Canada Does Best

## #2 Exploring the Depths

VANCOUVER -- Phil Nuytten got to the top of his profession by trying to go to the bottom.

Sitting in his cramped office in North Vancouver surrounded by his deep-sea inventions, Mr. Nuytten, an engineer, businessman, diver and marine archeologist, says today he would think nothing of going to 1,000 feet in a futuristic hard suit he invented, known as the Exosuit, or going to 3,000 feet in the Deep Diver, a submarine he builds that with all its slopes and curves looks like it belongs in a space movie.

"It's routine now," he says, mentioning a diver who recently spent more than 10 hours in an Exosuit, working at 1,000 feet. The diver was so unfazed by the experience his first question was if they could race into town to catch a movie.

"No one else in the world had ever worked in a conventional system like this, for that long, at that depth, and his biggest concern in life was that he would miss this movie. That's the first time it was brought home to me how important a piece of equipment this is and how much it's changed our idea of this kind of deep work," said Mr. Nuytten, 57, who wears hearing aids in both ears because of vestibular bends.

Mr. Nuytten's hard suits -- the Newtsuit and the Exosuit, which allow divers to work at extreme depths without experiencing the decompression illness known as the bends -- and his deep-diving submersibles have earned him international acclaim.

Jim Delgado, director of the Vancouver Maritime Museum, describes him as "Canada's foremost undersea adventurer, inventor and explorer."

Dr. Nuytten's companies are consulted by governments and agencies from around the world. Among his clients are NASA and the National Geographic Society, which is currently funding a \$5-million Sustainable Seas Expedition project exploring the marine world. That project is using his Deep Worker submarines, which can go to 2,000 feet.

He received the Order of British Columbia, for putting B.C. on the map as a centre of undersea technology and in 2001, in Paris, he was given the Jules Verne Award at the Musée Oceanographique to honour his work.

Mr. Nuytten, a Métis who was born in Vancouver has a colourful history that includes apprenticing as a totem carver at age 12. He continues that craft and has become a native advocate. He said his fascination with the depths began as a teenager, in the early 1950s.

By the time he was 13 he was snorkelling in the sea off Whytecliff Park in West Vancouver. He recalls holding his breath, fighting against the buoyancy of his dry suit and struggling to dive to 30 feet. There, for a few brief seconds with his lungs burning, he would peer over a reef that angled off into deep water, where he could catch a glimpse of fantastical creatures on a series of ledges descending in the blackness below.

"That reef sort of represents to me a microcosm of what my life is all about, I suppose, because it was all about getting to the next ledge," said Mr. Nuytten.

"At 70 feet there's a huge valley that's covered with big white anemones, they look like big fluffy clouds, absolutely gorgeous . . . the next ledge is down around 100 feet and I could see these whitish-yellow things which they [later] found out were cloud sponges, big sponges, growing there . . . so I wanted to go down there.

"Well the problem was I couldn't hold my breath that long and I couldn't go that deep with a dry suit."

The desperate teenager then did what would later turn into a career trait. He improvised and invented a way to go deeper.

"I built a re-breather to go there and that was a problem because re-breathers won't allow you to go that deep because these are pure oxygen breathers, no mix . . . the maximum safe depth for an oxygen re-breather is 33 feet. I wanted to go to 100."

He innovated, modified and took some risks, experimenting with altering his breathing outfit, something he admits now was dangerous. ". . . but that got me to 100 feet and then I wanted to go to the next ledge which is 130-140 feet. . . . I always wanted to go to the bottom so I just kept going progressively deeper."

Using increasingly sophisticated technology he eventually made it to 300 feet. While Mr. Nuytten was pushing the limits at Whytecliff Park his reputation and his business were both growing. He advanced from making conventional diving gear to experimenting with deep-diving submarines.

Contract work took him to oil fields, submarine construction sites, and sunken wrecks around the world.

And while his innovative equipment helped divers patch a damaged oil rig, it also took them to adventures searching for sunken treasure ships in the Caribbean.

One day he went back to Whytecliff Park in one of his first submarines, the Sea Otter, and plunged to 700 feet.

It still wasn't deep enough. Now the equipment he makes, through his company Nuytco Research Ltd., can go to amazing depths because the unique design sends the diver down in a protected atmosphere that never changes.

Mr. Nuytten said he has gone at least 3,000 feet down.

"But it makes very little difference because you are at one atmosphere all the time. It's very anticlimactic. The first time you go to 1,000 feet you think, huh, there I am, it doesn't feel any different," he said.

"Whereas if you go from 100 feet to 300 feet in scuba gear, my God, it's like going to a different planet. Everything is different. You are so aware of the gas you breath and the depth and the sound of the bubbles and everything is markedly different."