



Stanley (right) baits his submarine *Idabel* with a pig's head to attract six-gill sharks.



Karl Stanley is a stubborn, unconventional big talker with some powerful enemies. He's also a fearless mad genius who's reinvented DIY exploration in his homemade submarine. Ready to climb aboard?

BY THAYER WALKER

# Off the Deep End

Photographs by Sye Williams

# Karl Stanley's homemade submarine has sprung a leak. It's a discovery both fortuitous and disconcerting.

Fortuitous because I notice it as we bob on the surface of the placid Caribbean Sea, just a few hundred feet off the Honduran island of Roatán. Disconcerting because it's 8:30 P.M. and we're about to spend the night 1,600 feet down searching for the six-gill shark, an enigmatic 15-foot, 1,300-pound predator that patrols these depths.

"That's just the O-ring," Stanley reassures me as water wells up in the window and drips to the floor. Apparently the rubber washer meant to seal the window separating us from watery doom is feeling a touch rebellious. "It doesn't have enough compression on it. Hopefully it will fix itself under pressure." Stanley is a problem solver, and he casually throws me a towel to wipe up the moisture, more concerned about the corrosive properties of saltwater than the possibility of a catastrophic breach.

The words *homemade* and *submarine* aren't commonly paired, but Stanley, a 34-year-old self-taught engineer, has built two DIY subs, safely logging more than 1,000 dives. Still, sitting in *Idabel*, the cramped three-person craft he built on a shoestring, I can't help but recall that a faulty O-ring caused the space shuttle *Challenger*, with its NASA Ph.D.'s and multi-billion-dollar budget, to blow up. Stanley turns a handle, filling the ballast tanks with water, and we begin to sink into unexplored darkness.

Our slow descent accelerates into free fall, and bioluminescent plankton bounce off the submarine, exploding in a blizzard of light. At 100 feet the leak seals, as Stanley predicted, and I feel better about the prospect of finding one of the sharks, which we hope will be attracted by our gruesome hood ornament, a pig's head tied to the front of the submarine.

We plummet through the photic zone, the fertile band of water shallow enough for the sun's rays to power photosynthesis. To my right sits a very squished Martyna Mierzejewska, a 30-year-old Polish-Canadian dive instructor who plunked down \$500 for the privilege of role-playing a canned sardine. Stanley, tall and thin like the coconut trees that line the beach near his home, on Roatán's Half Moon Bay, stands in the turret of the

L-shaped submarine, driving; he's been taking paying customers down in his homemade subs for a decade. At 660 feet, we leave the photic zone, crossing the ocean's Mason-Dixon line toward the deep sea, the largest ecosystem on the planet—where life is shackled by a dearth of sunlight. Stanley celebrates crossing the invisible boundary with a game of interspecies Morse code, flashing the sub's lights to stimulate the glowing plankton, which respond by burning brighter.

At 1,600 feet, the deep sea's processes complement one another nicely, acting as both trash compactor and refrigerator. More than 700 pounds per square inch—nearly 50 times the pressure at sea level—squeezes the little yellow submarine, and the water temperature has dropped from the low eighties to the low forties. This is the netherworld that Stanley affectionately refers to as "my zone."

"If you add up the man-hours spent between one and two thousand feet," he boasts, with equal parts honesty and self-aggrandizement, "I'm dominating that category. If I haven't been there before, no one in the history of humankind ever has."

Stanley is an explorer, not a diplomat, and the audacity that serves him so well in the deep can alienate others on land. "Karl has a very scientific mind," says his friend Jeff Thekan, 55, who sells real estate on Roatán. "He only sees things in black and white. There's no gray, and that can get him into trouble." Stanley is feuding with his neighbor on the island, and the vice mayor wants him deported. After nine years on Roatán, his position has become so precarious that he spent a week in Dominica last November scouting a move. "He's pissed off the wrong people," says another friend, 25-year-old American expat Kristen Davis. "I wouldn't say he is well liked around here, but few pioneers are."

Meanwhile life at 1,600 feet continues untouched by politics, and we proceed with our shark hunt. Six-gills have weak jaws, which requires them to tear off their prey's flesh by thrashing around. Stanley knows the technique well—six-gills have spun his submarine 180 degrees while violently ripping off pork

chunks. He has seen them dozens of times, and they generally take anywhere from 30 minutes to five hours to appear, so we wait. And wait. And wait.

Submarines are not roomy vehicles. With no bathroom on board save emergency sanitary bags, a sub dive is an exercise in bladder control. Tourists typically spend three and a half hours in the sub, but Stanley has repeatedly overnighted at depth. *Idabel* carries enough life support and air-cleaning carbon-dioxide scrubbers to keep us alive for three days, but without an abyss-to-surface communication system, it's improbable we'll ever be found if we run into trouble.

For eight hours we smush together, a tangle of knees and elbows and hip bones, a claustrophobe's nightmare. Finally, at 5 A.M., Stanley says, "We can't stay down here forever." As we head for the surface, I ask him why our normally curious quarry was so elusive. He thinks it might be the two-day-old pig's head. "It's so coagulated that it has stopped bleeding, but it isn't old enough to really stink yet," he says. He pauses, then offers a submission to the Understatement of the Year contest. "I mean, this isn't an exact science."

AT THE AGE OF NINE, when most kids are just catching on to the lick-the-frozen-flagpole trick, Karl Stanley decided he wanted to build a submarine. The quest began in his Ridgewood, New Jersey, elementary school, with a reading-comprehension exercise about a group of kids who built a sub to find, fittingly enough, an underwater monster. "When I read about how much of the world is underwater and how little of it we've seen," Stanley says, "I wanted to see what nobody else had."

Stanley's penchant for exploration is matched by his disdain for authority, and both of these manifested at an early age. As a teenager, he snuck out of his home to raft the nearby Saddle River, leaving a Post-it note on the phone that read, "I left to go see the world—be back tonight." At 14, feeling confined by his parents, he ran away to a family friend's house; when he refused to return home, his parents hired private detectives to drag him to a reform school in Maine. He was expelled 13 days later, after an unsuccessful escape and a shower strike. Then he was packed off to a mental hospital in New Jersey, where, after six weeks and another escape attempt, a panel of doctors proclaimed him fit to leave, though a few diagnosed him with what Stanley remembers as "defiance-of-authority syndrome." "Jacques Cousteau got kicked out of high school for breaking 17 windows," Stanley says.

He went home to Ridgewood and focused his prodigious energies on building a submarine. The 15-year-old read everything he could on the subject and canvassed the submarine



Topping 15 feet, the six-gill shark is one of the ocean's largest predators.

community for advice. Still, he managed to find trouble. After high school graduation, Stanley was arrested for attempting to detonate remote-triggered fireworks from the roof of a police station on July 4. At 18, he went to Florida's Eckerd College to study marine biology but discovered only "boring classes with lots of math and no job prospects." The self-taught engineer, it's worth mentioning, is not fond of math. He studied history instead, a subject that appeals to his inquisitive side. "I don't think you have to have an education in anything to be an explorer," Stanley proclaims. "You just have to be curious enough to want to know. What did Christopher Columbus have a degree in?"

His senior year, Stanley towed his partially built sub to Florida, and with money he'd earned from selling used college textbooks out of his dorm room, he completed his first submarine for \$20,000. The week after graduation, in 1997, off the coast of St. Petersburg, he took his Controlled by Buoyancy Underwater

Glider (CBUG) on its first dive, to a depth of 15 feet. The next year, at a Florida diving trade show, he met a Roatán resort owner looking for a unique attraction; Stanley moved to Honduras and opened a submarine tourist operation where, for \$185 a pop, he would take customers in CBUG to depths of 725 feet.

Tempted by the unknown, Stanley went back to the drawing board in 2002 to construct *Idabel*, named after the Oklahoma town where he built it. (An *Idabel*-based tire manufacturer named Buck Hill had met Stanley while vacationing on Roatán and offered to help him.) It took two years to build the submarine, which Stanley designed to explore Roatán's waters to a depth of 3,000 feet.

Roatán has a history of maverick seafarers. During the colonial era, the 33-mile-long, banana-shaped island of secluded bays and treacherous reefs offered the ideal pirate haven. Stanley calls Roatán's location, which sits on a buckle of basalt above the 25,216-foot-deep Cayman Trench, "perfect. You can

stand on the shore and throw a ball into water half a mile deep!"

Like the buccaneers of yore, Stanley flouts the protocol that governs much of the nautical world. "His submarine would never pass certification, not even close," says Robert Wicklund, managing partner of Florida-based Deep Sea Adventures, a company that specializes in submersible operations. In the United States, the American Bureau of Shipping typically certifies commercial seacraft (including submarines) that meet certain design and maintenance standards. "Karl is very thrifty and makes things work on a small budget," Wicklund says. "But he's too much of a risk taker for most of us in the business. The thing is working, but I wouldn't go down in it." Stanley says building the sub for certification would've doubled the cost of the \$200,000 *Idabel*, an expense he couldn't afford.

Stanley's been working on Roatán illegally, charging tourists as much as \$1,500 for a

Stanley lowering *Idabel* into Roatán's Half Moon Bay.



shark dive. He has collected rare seashells with his submarine, selling them for thousands of dollars apiece, and sunk a 110-foot ship at 1,400 feet to serve as a sharking base, all without permits. As his Honduran lawyer, Raúl Barrientos, puts it, "he has a lot of problems."

The renegade submariner has made some powerful enemies. He's quarreling with his Honduran neighbor, Rene Zeron, over the boat dock where Stanley keeps his submarine. Their relationship bottomed out in 2004, when Stanley, in a dispute over dock access, made injudicious use of a sledgehammer on Zeron's gate. "He's intractable," says the 64-year-old local, who rents waterfront cabanas to tourists. Though Zeron has no desire to take the law into his own hands, he says that Stanley's behavior would not sit well in the rest of Honduras, where violence is more common. "If he were on the mainland," Zeron says, chopping his arm across

**"I DON'T THINK YOU HAVE to have an education in anything to be an explorer," STANLEY PROCLAIMS. "What did Columbus have a degree in?"**

his chest like an ax, "he'd be dead."

Stanley claims that last year, when he inquired about extending his side of the dock, the municipality told him it wasn't issuing any more permits. Weeks later, Zeron extended his dock, where the vice mayor, Delzie Rosales, now moors her fishing yacht. A not-so-pleasant confrontation ensued between Stanley and Rosales. "Karl is running a business illegally," says Rosales, who thinks Stanley should be deported. "If I was the mayor, it would be a different story."

As for Stanley, he says, "I needed to get all my paperwork done somehow, and this is as good a reason as any." He's quick to point out that until now, the government has condoned his presence—and that of the thousands of other working expats who support the island's \$14 million tourism industry. Yet Stanley has a much higher profile than the

average dive instructor and has been ordered not to work by the government. Instead he's turned to philanthropy; he's still taking clients down in *Idabel* but requests that they donate the fare to the Sol International Foundation, a local nonprofit that runs after-school programs. "He's very interested in the island growing educationally," says Sol president Dave Elmore. Stanley's doing charitable work while burning his adversaries, and it's difficult to tell which he finds more gratifying.

ONE MORNING, as we drive away from the island's dump after an unsuccessful search for dead things to bait the submarine with, I ask Stanley if he considers himself a genius.

"I'm not a genius," he replies, deftly steering his truck through a field of potholes. "I can't even solve the Rubik's Cube. The two things I have in my favor are being stubborn and not doing things in a conventional way. Most people have the potential to do more but are afraid to break out of the tried-and-true method."

The evening after our dump forage, we wait out Tropical Storm Olga in Stanley's studio apartment, an *Animal House* bachelor pad with Captain Nemo-inspired decor, in hopes of going on a night dive. Stanley kills time by searching for the coordinates of a nearby 300-foot cargo ship he believes the U.S. Navy scuttled at 2,600 feet. A fruitless rummage through a book-

shelf stacked with titles like *Barefoot Pirate* and *Encyclopedia of Aquatic Life* yields nothing but frustration, so he turns to a tried-and-true childhood method—he calls his parents.

"It's a Navy ship log in a plastic folder," Stanley tells his mother, Viola, over Skype. "I think it's under my bed."

Another call comes in. "Mom, I have to go. It's my lawyer."

Stanley invites Barrientos over with the brevity of a client on the clock and then checks out the weather on the Internet. There will be no diving this night. Stanley throws on a Jacques Cousteau DVD as Barrientos arrives. They walk outside and quietly confer. Stanley's papers won't come quickly. He's formed a Honduran corporation and applied for a business license, a process that at best will take months to complete. Until then, he can't work. He **continued on page 124**



For more on Stanley and the deep sea, check out the film trailer of *A View from Below* at [outsideonline.com/viewfrombelow](http://outsideonline.com/viewfrombelow)

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A FEW DAYS AFTER OLGA PASSES, Stanley navigates *Idabel*, carrying Mierzejewska (who's back for another dive) and me, through the narrow channel to the buoy marking the *End of the Line*, the ship Stanley sank at 1,400 feet. Water rushes into the open ballast tanks, and we descend.

Stanley doesn't have a GPS (he navigates only with landmarks and a compass), so we follow a buoy line down. The *End of the Line* is dark, empty, and quiet, a graveyard at midnight, and after circling the rusty heap for a few minutes we waltz off to a colony of coral at 1,250 feet. We buzz some gorgonian sea fans crawling with starfish and a porcupiney crustacean, and the strangest safari of my life continues.

Verticality defines the seascape on the edge of the Cayman Trench. Five-story boulders teeter on the cliff walls around us, evidence that the island is crumbling from below, shedding apartment-building-size chunks of limestone and basalt like a glacier calving icebergs.

At 1,750 feet, Stanley abandons the wall, his primary navigational tool, and steers into emptiness. He's heading for really deep water, where he can avoid what he calls the "ultimate sub booby trap"—a nest of 12 steel lobster traps tied together with floating lines, which sits at around 1,800 feet. If *Idabel* snags on that, we may never see the surface again.

The submarine gets colder with each descending foot, and we pile on layers of clothing. At 2,070 feet, Stanley blows air into the ballast tanks to slow our descent. "No reason to barrel 100 miles per hour into oblivion," he says. "We'll go slowly." We pass Stanley's maximum test depth, 2,220 feet, a boundary acknowledged only with tense silence.

Stanley gets jumpy, his nervousness bordering on fear. "What was that noise?!" he cries when I flick on my camera. Minutes later, when Mierzejewska rummages through her bag, he repeats the shrill inquiry. After two hours of slow descent, nearly half a mile deep, it's not the most comforting time to see the first chink in Stanley's normally impenetrable armor of confidence.

Life at 2,400 feet is a freak show. A siphonophore jellyfish floats by with hundreds of red tentacles glowing like a medley of fireworks, a behavior meant to attract prey. The sub's nine lights illuminate a red-and-yellow-spotted anglerfish resting in the muck, startled that the lure dangling from its forehead would draw a creature as strange as *Idabel*. Every five minutes we see another tribute to nature's sense of humor, and finally we bump into a flapjack devilfish, a fleshy orange Creamsicle of an octopus with Dumbo ears. It floats in the water column, arms and web extended like a gelatinous balloon, conserving energy in the food-starved environment by riding the bottom currents.

"I've spent plenty of time at 2,000 feet," Stanley spouts as we rest on a ledge, "and I'm amazed at how much of a difference 400 feet makes in terms of the animal life. Half of the things we are seeing right now I've never seen before. Who knows what we'll see in the next hour?"

Unfortunately, our trip is cut short after three and a half hours when one of *Idabel*'s motors breaks. The sub has five others, so the failure is more disappointing than dangerous, but no one's interested in discovering the next casualty. Stanley blows air into the ballast tanks and we streak through the water column inside a giant cannonball. Our world transforms from dark to light, a sunrise time-lapse in real time, and we safely punch through the surface and into a spotless blue afternoon. *Idabel* limps to shore, where Stanley promptly takes the broken motor apart and begins to solve yet another problem. ●

CORRESPONDENT THAYER WALKER WROTE ABOUT STRANDING HIMSELF ON A DESERT ISLAND IN JULY 2007.

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returns distraught and sighs, "I gotta pay my lawyer." Outside, strong winds send waves slapping against the dock, where *Idabel* hangs safely on a winch, and we hope the storm soon passes.

Stanley's hesitant to dive in bad conditions, because he's done it before. He once had to crowbar CBUG off the rocks after rough surf washed it ashore with him and a passenger inside; he's flipped it upside down (again in rough seas); gotten wedged into a cave (the guy likes to explore); and even had it snagged on a rope at 230 feet, unable to surface (his worst nightmare). One close call in *Idabel* came at 1,960 feet, when Stanley, along with Aaron Etches, a Roatán local, and Aaron's pregnant wife, Christine, experienced a forgiving preview of "God's thunderclap"—in which an object that plummets below its maximum depth suffers roughly the same plight as a mosquito being squashed between clapping hands. Because of a design flaw (which Stanley says he's fixed), the smaller of the sub's two passenger windows cracked at a depth far shallower than the 3,000 feet to which Stanley had designed *Idabel* to go.

"That's going to be expensive!" Stanley cried, flashing his acute sense of humor and frugal disposition just before water began spraying in. They made it to the surface safely, but the experience still haunts Etches, a 33-year-old rough-and-tumble bar owner. "I have nightmares about that sub," he says.

After hearing this story, I reconcile my misgivings about going down again with a numbers game of questionable logic. Stanley's never been to 2,400 feet, but after overhauling *Idabel* last fall, he's ready to explore a new maximum depth. In conventional submarines this type of testing is done in a compression chamber without passengers, but Stanley has made a career out of being a guinea pig, and after 1,080 dives, he's still alive. He might be audacious, but he's not suicidal. The Kool-Aid tastes better when we're both drinking it.