

## Down Periscope!

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*Photo-illustration: iLexx/iStockphoto; Sea Knight: US Navy/Adam D. Wainwright*

My first experience finding a submarine in its natural habitat was west of San Diego, California, in 2002. I was copiloting a Boeing CH-46 Sea Knight (the “Phrog”) with a fellow lieutenant, Brian, off the USS Bonhomme Richard, in the pattern we fly to be ready to pick up crew members of ditched aircraft. Flying right-hand circles off the ship’s starboard side can get tedious; Brian amused himself by making left turns while staying within the prescribed 10 miles of the ship.

We were talking on the intercom with the two rescue swimmers in the back and had the cockpit and cabin windows open. Off in the distance, close to the horizon, we saw what at first appeared to be a small boat with a narrow wake. As we closed on the scene, we realized it was the periscope of a nuclear-powered submarine. (The Navy had only one conventional sub in service back then, and it was in a shipyard after a fire.)

Because I owe 90 percent of my submarine knowledge to Tom Clancy books and movies like *Das Boot* and *Crimson Tide*, when I come across a submarine in the wild it is a memorable event.

Brian was one of the squadron’s better sticks. He dropped the Phrog down and parked the big Boeing about 20 feet above the water, precisely in front of the periscope, and started flying backward. (All helicopters can fly backward and sideways. Tandem-rotor helicopters like the Phrog use “differential cyclic” to fly backward: An aft input on the cyclic reduces the lift on the

aft rotor head and increases lift on the forward head.) We were close enough to the periscope that I could see the flat glass window at the top of the mast. Brian swirled the cyclic and made some pedal input so that we made a perfect 360-degree "pedal turn" around the periscope. While we circled, I saw the window following us the entire way around. I gave a friendly wave from my side of the cockpit.

A year later, I was flying another Phrog off the USS Rainier, hauling cargo among ships in the USS Constellation Battle Group. Transiting between ships, my copilot, Jeanette, and I spotted that telltale boat-less wake. "Let's go check it out," I said to the crew as I turned the Phrog toward the periscope and started to descend, lowering the collective and pulling the cyclic back.

I needed to concentrate on the descent to make sure I didn't fixate on the periscope and fly the Phrog into the water. Suddenly I realized I was missing vital information: I had no idea how big a submarine periscope actually is. I had no idea how far above the waves it protrudes. This object was surrounded by water, with nothing near it to give it any scale.

We closed in on the periscope. I kept the descent and deceleration constant. As I descended through 75 feet above the waves, the radar altimeter alert sent a tone to my headset. I punched the pinky button on the cyclic to silence it. I continued down...slower...closer.... Suddenly the periscope was about to poke through the cockpit chin-bubble window beneath my feet. HOLY %^&\*! I jerked the cyclic to the left and yanked the collective up as the periscope passed down the right side of the helicopter. My heart skipped a beat. My leg (and other) muscles tightened and my breathing was suddenly shallow. Whoa! Did that just happen?

"Did you mean to get that close?" Jeanette asked.

"Um...uh...no." We climbed back to altitude and circled back to see the periscope, now a safe distance below.

"Hey everyone. Did you see the submarine? Cool...um...yeah...there it is...down there. Let's head back."

I pointed the Phrog toward the Rainier's radio beacon and thought about how I almost became the first pilot to have a mid-air collision with a submerged submarine.

A graduate of the U.S. Merchant Marine Academy, Todd Vorenkamp is a former naval aviator who has served as aircraft commander in a variety of helicopters. His photography website is [trvphoto.com](http://trvphoto.com).