Specialized Undersea Rescue Force on Call to Aid Submariners in Trouble

Sailors from Undersea Rescue Command (URC) and Argentines load the Submarine Rescue Chamber (SRC) onto the Norwegian construction support vessel Skandi Patagonia. Undersea Rescue Command, the U.S. Navy's only submarine rescue unit, mobilized to support the Argentine government's search and rescue efforts for the Argentine Navy diesel-electric submarine ARA San Juan. U.S. Navy / Lcdr. John Babick

Within days of an Argentine navy submarine reported missing in 2017, several hundred tons of U.S. Navy rescue equipment arrived in South America and went to sea in a hastily assembled international rescue mission.

The diesel-electric submarine ARA San Juan (S-42) had last made contact with the Argentine Navy on Nov. 15, 2017, when the captain of the 44-member crew reported the boat had taken on water while surfacing in heavy seas to get air through its snorkel. Two days later, Argentina mobilized a search-and-rescue mission with the help of the U.S. Navy and international partners.

Within a day, crews with Undersea Rescue Command (URC) at North Island Naval Air Station, California, loaded equipment cranes, a rigid-hull boat and conex boxes packed with the Submarine Rescue Diving and Recompression System (SRDRS) onto an Air Force C-5M Super Galaxy plane, one of several that transported equipment to Argentina. The rescue system included a Sibitzky remotely operated vehicle to assess the disabled sub and rescue hatch clearance, a tethered Pressurized Rescue Module ROV to carry up to 16 personnel at a time to the surface and a transfer-under-pressure capability to decompress rescued personnel.

A week later, the mission transitioned to search and recovery. One year after San Juan went missing, the seabed exploration company Ocean Infinity found its wreckage in a ravine at 3,018 feet at the edge of the continental shelf, near where international anti-nuclear proliferation monitors had first detected an underwater explosion.

URC crews, at one point in the operation, thought they had found the sub. “But it turned out not to be the San Juan. It was an old ship,” recalled Cmdr. John Babick, Submarine Squadron 11 deputy for undersea rescue, speaking at his office at Naval Base Point Loma, California. “Unfortunately, in that case, the visual verification target was not the target that they were looking for.”

The Argentine mission was URC’s first real-world operational use of the Sibitzky ROV, which came online in 2016. Most recently, in August, crews deployed the ROV for visual verification and initial survey of a Marine Corps amphibious assault vehicle that sank off California’s San Clemente Island, killing eight Marines and a Navy corpsman that were trapped inside.

URC’s unique team of undersea and rescue specialists – about 140 active-duty Sailors, Reservists and contractors – constantly train and prepare 24/7 to surge and deploy to help rescue a disabled submarine down to depths of 2,000 feet. “Our mission is primarily a humanitarian one,” said Cmdr. Josh Powers, URC’s commander. “Thankfully, we’re not called upon to respond very much, which is a good thing.

“Rescuing a submarine,” Powers said, “is a no-fail mission.”

Time is most critical. “If there is some tragedy that occurs, if asked, our job is to remain ready to go on an airplane and fly anywhere,” said Capt. Patrick Friedman, who as Submarine Squadron 11 commander is the immediate-superior-in-charge responsible for the unit. Friedman also is the first person to

leave if the call comes. “I’m the United States combined rescue forces commander. If it’s a United States-led rescue effort, I would fly immediately to the location.”

Sailors from Undersea Rescue Command (URC) and Argentines load submarine rescue equipment onto the Norwegian construction support vessel Skandi Patagonia. Undersea Rescue Command, the U.S. Navy’s only submarine rescue unit, mobilized to support the Argentine government’s search and rescue efforts for the Argentine Navy diesel-electric submarine ARA San Juan. U.S. Navy / Lcdr. John Babick

Challenges in Rescue

Submarine rescue is a complex military operation, requiring deploying search-and-rescue capabilities – from URC, Supervisor of Salvage and Diving, international military partners and contracted firms – to an airport and seaport closest to the disabled sub’s last-reported location, if known. Remote locations are harder on logistics. Then there is locating the submarine and grappling with weather and sea conditions that can hamper search-and-rescue efforts.

“It’s a big ocean, and if a DISSUB [distressed submarine] goes down, you’re really hoping that they’re able to launch a radio buoy or something to alert you to where they are – because this all starts with you have to find them first,” Babick said.

The Sibitzky usually arrives first, ahead of the rescue module. It can attach a beacon to mark location and can survey the disabled sub.

“It’s going to try to make communications, if it can, either underwater telephone or hull taps. They’re going to want to know how many survivors you have, what your atmospheres are. It’s going to want to know what the list and the trim of the boat is on the bottom,” said Babick. “It’s also going to be taking a look at the hatches, to make sure … you’re going to

use has a clean and free rescue seat to mate with." If needed, operators can use the ROV's arms to cut netting or move debris blocking a hatch.

If the sub's hull is intact and deemed survivable, the rescue module Falcon (PRM-1) swims down and mates to the boat. "If the internal pressure of the submarine is pressurized, you can take that Sailor … all the way to the surface support ship … [and] put him into a decompression chamber," Babick said.

But likely scenarios of flooding or fire mean higher internal pressures put the crew at greater risk of decompression sickness that worsens with each hour and day waiting for rescue.

"You just can't take that Sailor, him or her, straight to the surface," he said. "You do need that transfer under pressure capability to ensure that the Sailor does not suffer from a decompression sickness, the bends."

Rescue teams also have a submarine rescue chamber, a system largely unchanged since its inception in the 1930s. An SRC rescued 33 men from the sub USS Squalus (SS-192) in 1939, "and the system has been relatively unchanged since then," Babick said. It can carry up to six personnel per sortie, "so it takes time to get everyone off, and the submarine cannot be pressurized, which is the biggest limitation." The SRC operates at depths to 850 feet, pulling itself along a cable to mate to the disabled sub.

The PRM is "the most advanced capability that we have," Friedman said, noting "we're taking some steps toward the digital age. Connections to the units are via fiber optics, so we can get faster connections to be able to get more information on and off the ship or off the rescue asset." SRDRS in 2008 replaced the deep submergence rescue vehicles Avalon and Mystic, part of the DSRV program developed after the 1963 loss of USS Thresher (SSN-593).

Navy Leads The Way

The worldwide proliferation of inexpensive, small diesel-electric submarines makes undersea rescue capability even more critical. “There’s a lot of interest in submarines, especially smaller countries,” said Friedman, who participated in international sub rescue exercise Pacific Reach off Australia last year. “More than 40 countries are operating submarines — more than 400 throughout the world.”

Undersea Rescue Command has to be ready to mate with different types of subs, said Babick, so it’s important to understand particular features of those subs, such as where a hatch is located and how it opens. “If you want your submarine to have the opportunity to be rescued from the U.S., there is a NATO standard that your rescue seat has to mate to.” Otherwise, those subs might only have escape as an option if no available rescue system matches up.

“It’s important to partner with nations all over the world to make sure we lend our expertise and support in different areas of the world so that we can affect a submarine rescue,” said Powers. “If there’s a submarine on the bottom waiting to be saved, it’s going to be the news story of the day and the event that everybody’s focused on,” he added.

Exercises like Pacific Reach help identify differences and commonalities in navies’ boat and rescue capabilities. “We did a lot of work on how we cooperate with other submarine rescue systems operating together in close proximity in the waterspace above the disabled submarine and how we would conduct that command-and-control needed to have two submarine rescue vehicles in the same waterspace at the same time so, we minimize rescue vehicle sortie times and speed up how fast it takes to get all of those survivors off of the submarine,” Powers said.

“You can’t afford to have complacency toward any aspect of

this mission if you want to be successful when you're called on to respond. There's always things to learn. Every time you take the system out, you learn something new," he said. "We just had the decompression complex delivered for the first time as part of our equipment at the end of last year. We are just finishing our first operations periods at sea with that system, and we're learning a lot about how to decompress Sailors, the different scenarios we might encounter on a disabled submarine, and how we communicate internally inside and outside the decompression complex, as well as how we coordinate with assets off of our vessel for follow-on medical care."

Friedman noted that while its capabilities have been rarely used for real-world missions, URC remains ready to deploy at a moment's notice. "Our commitment to Sailors is: If you're in rescueable waters, we're coming to get you," he said. "We will do everything we can to make sure we can live up to that commitment."

This story is from the October edition of Seapower *magazine. Check out the digital version of the full magazine* ***here****.*