Fighting the Bends in the Indian Ocean

A scientific cruise to the Seychelles ended in a dramatic international effort, involving an American biologist and the U.S. Navy, to rescue two Soviet researchers

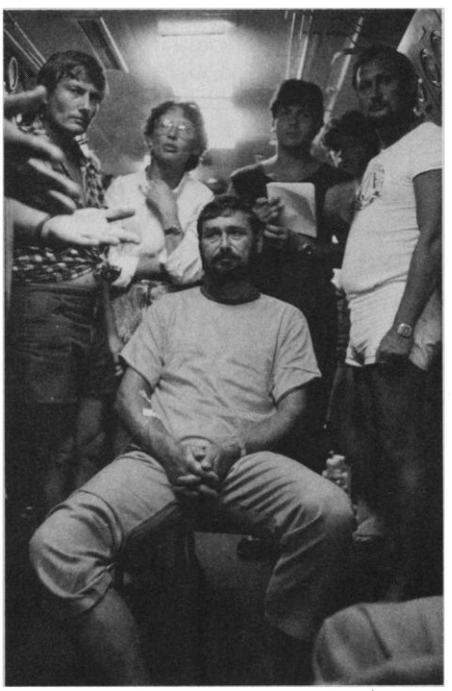
BIOLOGIST PHILIP DUSTAN got more excitement than he bargained for when he set sail on a Soviet scientific expedition to the Seychelles earlier this year. A physiologist at South Carolina's College of Charleston, Dustan joined the cruise to examine coral and phytoplankton, but he unexpectedly found himself skippering a global attempt to save the lives of two Soviet scientists on board and, in the process, testing the waters of glasnost.

The trip was launched when the Seychelles government invited the Soviet Academy of Sciences to survey its algal and coral resources. Eduard Titlyanov of the Soviet Institute of Marine Biology in Vladivostok wrote to Dustan and a handful of other Americans, inviting them to become the first U.S. scientists to sail on the academy's ship, the *Academician Alexander Nesmeyanov*, which is larger than any U.S. research vessel. Also on board for part of the expedition were Andrew Benson of Scripps Institution of Oceanography, a long-time friend of Titlyanov, and four other American scientists.

On the morning before Valentine's Day, with the ship anchored in the Indian Ocean off the Seychelles, Soviet scientists Yuri Latypov and Nikolay Latyshev made three deep dives in quick succession—too quick, unfortunately. Latypov became unconscious almost immediately upon surfacing. Within hours, both divers became incapacitated by the bends, which occurs when a diver surfaces too quickly and nitrogen bubbles form in the blood vessels.

The Soviets put the two men in the ship's hyperbaric chamber and tried three different protocols to stabilize them. They followed prescribed diving tables to vary the pressure and rates of decompression. If the pressure is decreased too quickly, more nitrogen bubbles would form in the bloodstream, but if the decompression is too slow, the lungs can be damaged.

Moscow authorities told Titlyanov and his crew that they were proceeding properly. At first, both divers seemed to recover. But then they lapsed back into the bends. After the third attempt, now several hours after the last dive, Latypov was in critical condition, drifting in and out of consciousness, his legs paralyzed.



Lucky to be alive. *Yuri Latypov emerges after 100 hours in a hyperbaric chamber, thanks to instructions relayed from Florida.*

Until this time, the Soviets were handling the crisis themselves. By mid-evening, Dustan, who was the chief U.S. scientist aboard, asked the Soviets for permission to phone the U.S. embassy on the small Seychelles island of Mahe (population 50,000), where the ship was now docked. Within 90 minutes, embassy staffer Andrew Anderson, himself a diver, had set up a conference call with two U.S. teams of experts: the Navy Experimental Diving Unit in Panama City, Florida, which is a medical consulting team on call to assist in civilian and military diving accidents, and other medical staff at a military base in the Indian Ocean.

The U.S. teams were prepared to help, but top American officials said they first needed an official diplomatic request from the Soviet Union to proceed. The Soviet scientists, however, were reluctant to ask their superiors back home to authorize outside help because, apparently, they feared losing face. "I had to convince the Soviets to do this," Dustan said. "I told them life was precious." They gave the go-ahead. The Soviet ambassador to the Seychelles called his U.S. counterpart and "the race was on" to save the divers, says John Sterba, the doctor on duty at the Navy diving unit in Florida.

The local phone company manager was rousted from bed to wire a phone to the ship. The U.S. Air Force reoriented a satellite to improve the phone connection between Sterba and Dustan. A U.S. P3 transport took off from a nearby military base with special respiratory equipment and medical-grade oxygen, which, for some unexplained reason, the Soviets did not have aboard ship.

Sterba quickly discovered that the Soviets had been relying on seriously outdated decompression tables—ones used by the British during World War II. Sterba thought Latypov might not pull through. The divers were compressed again under a new regimen. Sterba instructed Dustan; Dustan informed the Russian interpreter; and the interpreter relayed the directions to the crew.

By now it was early afternoon on Valentine's Day. Dustan raced off to the airport to meet the transport with expert divers and medical equipment aboard. "I'll never forget the P3 flying in," Dustan said. "It was like calling John Wayne and the cavalry."

For the next 36 hours, it was touch and go. But in the end, both divers walked out of the chamber alive, although neither will be able to dive again. They had been in the chamber for nearly 100 hours; the normal course of treatment takes 5 hours. They were flown back to the Soviet Union, where they reportedly have recovered fairly well. "The cooperation between the Soviet and the U.S. divers was outstanding," said Sterba. "It was neat."

So neat that Titlyanov contacted Dustan and his old friend Benson of Scripps to ask that the Americans spread the word among U.S. and other scientists that the Soviet Institute welcomes more scientific collaboration aboard the *Nesmeyanov*. Not that anyone would want to guarantee so much excitement on future cruises.

The two Soviet scientists were deeply moved by Dustan's efforts to save their lives. In a note in somewhat fractured English, the retired divers presented their biologist comrade with a note before they flew back to the Soviet Union: "With deep gratitude to our dear friend, for whom 'impossible' was only a challenge, who started the saving and made his best and admired us—with love forever." ■ MARJORIE SUN