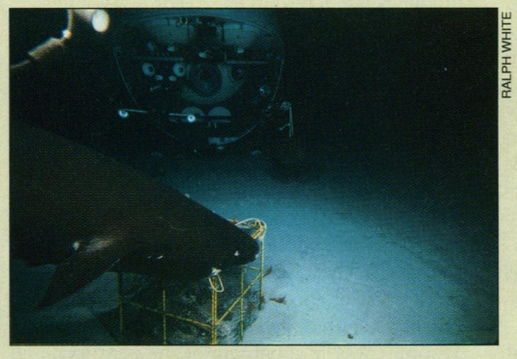
Shirshov Institute: Mixing Research and Commerce

MOSCOW—Of all the Russian earth science institutes scrambling to sell their wares to the West, few have a shop window more enticing than that of Moscow's Shirshov Institute for Oceanology. The institute boasts a research fleet of 11 surface ships and six crewed submersibles that in sheer size has no equal. And in the *Akademik Keldysh*, equipped with two subs—*Mir-1* and *Mir-2*—that can operate to a depth of 6 kilometers, it possesses a world-leading platform for deep-sea research. "Their assets, in terms of deep-ocean work, are outstanding," says geophysicist Peter Rona of the U.S. National Oceanic and Atmospheric Administration's Atlantic Oceanographic and Meteorology Laboratory in Miami.

But if the Shirshov Institute is to survive Russia's economic crisis, it must capitalize on these assets. And this fact is not lost on its staff: In 1992, they elected as their director one of Russia's few successful scientist-entrepreneurs. Leonid Savostin, an avuncular geophysicist, made his fortune through a company he founded in 1988, the Laboratory of Regional Geodynamics (LARGE), that operates a seismic survey vessel, sells data to oil companies, and prospects for minerals. Savostin's new mandate is to broker deals with Western organizations, both academic and commercial, that will earn the Shirshov Institute life-saving hard currency, in exchange for use of its research vessels. Some of the deals Savostin is seeking would draw accusations of a conflict of interest at a Western academic center, but in Russia—where whole institutes are sinking below the surface—the possibility that he will keep the Shirshov Institute afloat is protecting him from criticism.

Savostin inherited an institute in deep trouble. Its pride and joy, the *Keldysh* and the *Mirs*, had begun attracting Western scientific interest, largely thanks to the promotional efforts of Anatoly Sagalevitch, head of the Shirshov Institute's crewed submersibles laboratory. But its funding from the Russian Academy of Sciences had almost totally collapsed, and to make ends meet, two Shirshov ships had been leased out as Baltic Sea ferries. Since Savostin took over, that contract has been terminated, and he is now trying to put together a package of charter deals that will allow the institute to continue to do science. Ideally, customers would be Western academics, and both sides would benefit, Savostin argues, as many Western groups cannot afford to run a cruise alone. "For us," he adds, "it's practically impossible right now."



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Treacherous waters. The Shirshov Institute's *Mir* subs are helping to keep the institute afloat financially.

This strategy is beginning to bear fruit. Last summer, for instance, 13 University of Hamburg geophysicists sailed with a handful of Russian scientists on the Shirshov Institute's *Professor Shtokman* to conduct a seismic survey between Iceland and the Shetland Islands, obtaining excellent results at a fraction of the cost of hiring a Western vessel. "They are very experienced people… [and] very eager to work," says Jannis Makris, who led the Hamburg team.

And this August, a 35-strong British team aims to set sail on the *Keldysh* for the mid-Atlantic ridge. The goal: to study hydrothermal vents—scalding, sulfurous outpourings of water from the ocean floor—and the living communities that surround them using the two *Mirs*. The project would have been impossible without Russian involvement, says geochemist Rachel Mills of the University of Southampton. Aside from the *Mirs*, there are only three submersibles worldwide up to the task, and all were either unavailable or too expensive.

Unfortunately, scientific collaborations alone are not proving enough keep the Shirshov Institute going, so Savostin is trying to attract commercial work as well. He insists this can be done without sacrificing science. In 1991, for instance, the two *Mirs* filmed the wreck of the *Titanic* for the IMAX Corp. of Toronto, which makes domed cinema screens and the films to show on them. The shoot provided the company with its biggest grossing film to date and allowed the *Keldysh*'s crew some time for basic research. Last year, the Mexican government chartered the *Mirs* to hunt for sunken treasure in the Gulf of Mexico, while scientists on board the *Keldysh* looked for more ephemeral booty in the region's ecology, hydrology, and geology. The outcome: "No gold, but some very good scientific results," says planktonologist Mikhail Vinogradov.

But Savostin hopes that the real treasure for the Shirshov Institute will lie in the Russian Arctic. In the Soviet era, much of the region was closed to civilians. But now that the military's grip on Russia's far north is loosening, researchers are getting their first detailed look at an area thought to contain abundant reserves of oil and gas, as well as some intrinsically interesting geology and ecology. "This gives the possibility to join fundamental work with applied science for industry," says Savostin. He is pressing his government to grant the institute licenses to conduct geophysical surveys in the Arctic, which would generate information that could command a high price from oil companies.

The Shirshov Institute's money-making adventures haven't all been smooth sailing, however. Last summer, the institute organized a multinational cruise to study carbon fluxes and pollution in the Kara Sea, north of Siberia. But the 22-member U.S. party pulled out at the last minute, when it emerged that Savostin's assurances that they would be allowed by the Russian navy to sail close to nuclear dump sites were misfounded.

To Western eyes, moreover, the close association now developing between the Shirshov Institute and Savostin's company raises questions about possible conflict of interest. Savostin is quite openly talking about employing Shirshov Insitute scientists on projects that would also profit his company. For instance, he is now negotiating for a contract from Gazprom, one of Russia's state-owned gas and oil companies, under which LARGE's seismic survey ship would survey the route of a planned pipeline in the Barents Sea, and Shirshov Institute scientists would be paid as subcontractors to process the data. "I'd like to join the possibilities of my company and the intellectual abilities of this institute," says Savostin.

Most Shirshov staff seem unconcerned by this notion. Indeed, in the chaotic environment of today's Russia, strict Western mores about conflicts of interest do not seem to apply. "At least this situation may allow the institute to survive," says Alexey Zakharov, a Shirshov Institute physicist and vice chair of the trade union of the Russian Academy of Sciences' employees. And at the moment, he says, that is all that really matters.

–Peter Aldhous