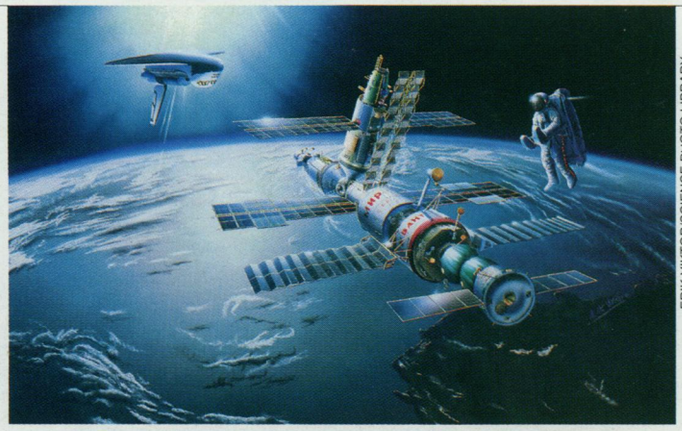
edited by RICHARD STONE

NASA Looks at Freedom-Mir Union

For months, the National Aeronautics and Space Administration (NASA) has hemmed and hawed over how cozy it should get with the Russian space industry. But NASA faces a dilemma: The scaled-down version of Space Station Freedom can't accommodate longterm studies on humans as originally envisioned. One solution might be to link the U.S. lab to Russia's space station Mir, now in orbit, which appears capable of hosting such studies. And that possibility seems one step closer, now that NASA has decided to study methods of docking the two space stations.

This won't be the first such joint work between NASA and NPO Energia, the Russian contract firm that built and operates Mir. In October 1992, NASA announced it would pay the firm $18 million to build a docking system to enable the space shuttle to dock with Mir during a mission planned for May 1995.



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Sitting on the dock of the Mir. U.S. and Russia must design a new docking system for the U.S. space station to link with Mir, shown above.

But designing a docking system for Space Station Freedom poses a greater challenge. While the shuttle is expected to withstand the 4200 pounds of force per square foot Mir's docking system imparts to the Russian shuttle, Freedom won't be able to take such roughhousing, says Guy Gardner, director of NASA's shuttle-Mir program. A more sophisticated docking system is needed for Freedom and Mir.

NPO Energia engineer Vladimir Syromiatnikov claims his firm can bring the impact force down to an acceptable 600 pounds. So NASA's paying the firm to conduct a 3-month feasibility study to prove it. Meanwhile, however, the decision to link Mir and Freedom may come sooner: By 31 August, NASA intends to present the White House with a plan for Russian and U.S. space cooperation.

DOE Cuts Red Tape to Boost Tech Transfer

With nuclear weapons research on the decline, the Department of Energy (DOE) national laboratories are touting a new mission: technology transfer. So far, however, the magnitude of the shift of DOE scientific talent to industry, in the form of joint projects called Cooperative Research and Development Agreements (CRADAs), has been disappointing—about 25 contracts per month for the entire $12 billion enterprise. But now DOE hopes to turn that around by untangling the red tape that it says snarls the CRADA process.

Last week DOE Secretary Hazel O'Leary announced bureaucratic reforms that she says will within a year shrink CRADA approval times from 32 to 16 weeks. Her changes include granting lab directors authority to approve small CRADAs, creating "modular" CRADAs that let parties pick and choose pre-approved terms, and introducing a "take-it-or-leave-it" CRADA that cannot be modified.

But some industry skeptics say that O'Leary needs to go further. The main problem, they point out, is money, not red tape—labs currently reject 9 of 10 CRADA proposals from industry due to lack of funds. A proposal to add $47 million to DOE's 1993 CRADA budget sank with the rest of President Clinton's stimulus package this spring, and O'Leary has said nothing about redirecting funds from the lab's intramural programs. "Streamlining the process," one DOE official says, "comes first."

EPA's Top Science Choice Bows Out

Say the head of the Environmental Protection Agency (EPA) asks you to take the agency's top science post. But for months you don't hear from EPA or the White House, which must nominate you to the Senate. Left twisting in the wind you ask yourself, "Is my nomination in trouble?"

If you're Bailus Walker, you don't wait to find out. More than 3 months after EPA Administrator Carol Browner announced President Clinton's intention to nominate Walker, dean of the University of Oklahoma's Health Science Center, to head EPA's Office of Research and Development, the toxicologist had finally had enough. On 22 July, Walker sent Browner a letter in which he withdrew from consideration for the post, citing a vetting process that was "inordinately long...for reasons which are still unknown to me."

Walker's withdrawal is bad news for EPA, which had promised to beef up its research portfolio and had designated Walker, a veteran of numerous government advisory panels on health research, as the person to do it. EPA officials won't comment on the aborted nomination, but a White House spokeswoman says officials now intend to scan the original candidates list, which included Walker, to find a replacement.

Research Reactors Abroad Face Shutdown

When the Department of Energy (DOE) announced last month that it would resume importing spent uranium fuel from European and Japanese research nuclear reactors after a 5-year hiatus, news reports proclaimed that a calamity had been averted. The reason: Several research reactors had threatened to shut down because storage chambers for spent fuel had reached full capacity. But just as U.S. research reactors have been dealt a blow (see p. 675), so have reactors abroad: Shipments of spent fuel may be delayed, which means some reactors may have to close after all. *Science* has learned that the Sierra Club Legal Defense Fund may sue to block a DOE plan to import an initial 550 fuel rods for storage at the Savannah River weapons plant in South Carolina.

The controversy surrounds a program launched by the Carter Administration in 1978 to combat nuclear proliferation. At the time, most research reactors were using high-enriched fuel, deemed a high risk for proliferation. Reactor operators were asked to switch to low-enriched uranium, on the understanding that DOE would both supply and dispose of spent fuel. But in 1988, facing a Sierra Club lawsuit, DOE stopped accepting spent fuel from abroad.

Most European and Japanese research reactors have since stored spent fuel on site. Over the past 5 years, however, several reactors have reached full storage capacity and may close if they can't ship out spent fuel next year.

DOE is carrying out an Environmental Impact Statement (EIS) to examine safety concerns about the program. But DOE doesn't expect to complete the EIS until June 1995; in the interim, the agency hopes to import the initial shipment of spent fuel under an Environmental Assessment, a less rigorous environmental procedure. The Sierra Club argues, however, that all shipments should await an EIS and appears ready to fight DOE's plan in court.