

Scientists Head for U.S.S.R. to Monitor Bomb Sites

Over the Fourth of July weekend, seven Americans traveled to Moscow to begin an unusual experiment in "citizen diplomacy." The group includes U.S. seismologists who will monitor nuclear test shocks—or the absence of them—at three sites in the Soviet Union and three in the United States. This unprecedented project is sponsored jointly by the Soviet government and the Natural Resources Defense Council (NRDC), a private environmental group headquartered in New York (*Science*, 13 June, p. 1338).



Semipalatinsk: Soviet bomb test site will be monitored by U.S. and Soviet seismologists.

"A friend said I should tell you this is a big deal," declared NRDC's executive director John Adams at a press conference jammed with photographers on 30 June. "It is a big deal," he said, explaining that the organization is trying to raise \$1.3 million to finance its end of the agreement for the first year. According to Adams, the Carnegie Corporation of New York and the John D. and Catherine T. MacArthur Foundation of Chicago have pledged support, as have several individuals and smaller philanthropies. The Soviet Union will provide travel and living expenses, both for their scientists who come to the United States and for Americans in the U.S.S.R. The Soviets also plan to buy and keep the seismic monitoring equipment, if the U.S. government permits.

The NRDC's project manager and the initiator of the exchange, Thomas Cochran, leads a team that will make preliminary site selections in the U.S.S.R. this month. The team's technical director is Charles Archambeau, professor of geophysics at the University of Colorado's Cooperative Institute for Research in Environmental Sciences. Other members include James Brune, Paul Bodin, and David Carrel of the Scripps Institute of Oceanography at La Jolla; Keith Priestley of the University of Nevada at Reno; and Bryan Tucker, a consultant in Soviet seismology.

The first task is to install some surface

seismic monitors. The Department of Commerce granted an export license for these relatively simple devices just 6 days after the application was filed. "It must be a record," Cochran said. The NRDC will set up the first monitoring station near the Semipalatinsk bomb testing area, Cochran said, because in the past it was the busiest center. However, it is not clear when or whether the U.S. team will observe any nuclear shocks, for the Soviets have extended a moratorium on bomb tests at least through 5 August.

Deciding where to place the instruments is complicated by the fact that foreigners have not been in this area before and there are no data to review. "I'd like to look at aerial photos," Bodin said, "but we don't know yet what they're going to show us."

While the surface monitors are being installed, more sensitive equipment is being ordered for use in holes to be drilled 100 to 200 kilometers from test sites near Semipalatinsk and Reno, Nevada. The NRDC has not yet sought an export license for this equipment, which may contain unique digital components. Once the sites in the Soviet Union are ready, duplicate versions will be set up in Nevada. Archambeau said that both operations, manned jointly by U.S. and Soviet scientists, should be running by the end of October. The data collected will be turned over to all interested researchers, including the U.S. Department of Defense. ■ **ELIOT MARSHALL**

Air Force Determines Potential Cause of Titan Rocket Explosion

After a 2-month investigation, the U.S. Air Force remains uncertain exactly why a \$65-million Titan 34D rocket exploded just 9 seconds after leaving a launch pad last April. But a team of investigators has formed a plausible hypothesis, involving some faulty workmanship, that might cause only a slight delay in the military space program.

According to an interim report, presented to reporters by Brigadier General Nathan Lindsay on 2 July, the accident began with an explosion of one of the rocket's 11 motor casings, which inadvertently set off a self-destruct mechanism and simultaneously ignited a large tank of liquid fuel. The cause of the explosion presently considered "most probable" is a gap between the casing's rubber insulation and its steel wall, which somehow remained undetected during numerous ultrasonic and x-ray tests conducted over a 5-year period.

Lindsay, who is a former commander of the Eastern Space and Missile Center in Cocoa Beach, Florida, explained that this gap probably allowed hot gases to erode the inside of the wall by roughly three-sixteenths of an inch, to a point where it was incapable of sustaining the normal operating pressures of 700 pounds per square inch. The resulting breakup of the missile destroyed its payload, believed to be a reconnaissance satellite costing hundreds of millions of dollars, and caused roughly \$70 million in damage to the pad itself.

Asked why the gap escaped detection, Lindsay said "that is probably a question that I'll never be able to exactly answer." But he stressed that new inspection techniques would be developed and applied to the six remaining Titan 34D's before any of them would be launched. In addition, a series of tests will be conducted with spare parts to try to replicate the accident. "That would then give us the final confidence that we have found the precise cause, and then we can proceed with the particular fixes and improvements," Lindsay said.

He predicted that these tests and repairs will take only a few months, enabling the next launch to occur "early next year." At present, he feels "confident that [the] mission areas that we rely upon space systems for [that is, communications and intelligence-gathering] are being handled well. . . . There's obviously some concern about all the contingencies that might ever happen over the next 6 to 8 months, but I feel these vehicles will be back flying in a timely manner."

Lindsay did not provide many details, but he acknowledged that the accident findings could also affect the space shuttle, which uses similar solid-fueled rockets. "There are similar bonding techniques. There are similar materials," he said. "We've made this information available" to the National Aeronautics and Space Administration, and "I would believe that they would do an exhaustive review and audit of their insulation materials." ■ **R. JEFFREY SMITH**

Health Service Unveils Fraud Policy

The Public Health Service (PHS), after 4 years of preparation, has announced a formal policy for dealing with cases of scientific fraud and misconduct.

The policy was inspired by the rash of cases of scientific misconduct that received wide publicity in the early 1980's, particularly that of Harvard researcher John Dar-see.

The centerpiece of the policy is a "PHS Alert for Misconduct in Science," to contain the names of all individuals or institutions who have been subjected to sanctions or who are currently under investigation. This is an extension of the NIH Alert file that has been in effect since 1983 at the National Institutes of Health. Information about pending investigations will be made available on a "need-to-know" basis to agency officials and national advisory councils.

NIH has defined misconduct as any "serious deviation" from established practices, such as plagiarism or falsification of data, or failure to comply with federal requirements, such as the abuse of human or animal subjects. The new policy specifies the policies and procedures to be followed by awardee institutions. If misconduct is suspected, the institution must immediately launch an "enquiry," to last no more than 30 days. If it appears that further action is warranted, the institution must then notify the "misconduct policy officer" in the relevant PHS agency and commence an "investigation." If no conclusive findings have been made within 120 days, the government may step in with its own investigation.

In the event that misdeeds are uncovered, the policy provides for three levels of sanctions, starting with a letter of reprimand and progressing through the imposition of restrictions on the awards, to suspension of award or permanent debarment.

William Raub, deputy NIH director for extramural research, has been named the PHS misconduct policy officer. The officer for NIH is Mary L. Miers. The policy has been in effect on an interim status since April. Since the Alert file must accord with the provisions of the Privacy Act, it will not take formal effect until after public comments have been received following publication in the August *Federal Register*. ■

CONSTANCE HOLDEN

British Scientists Urged to Resist U.S. Controls on Use of Supercomputers

London

The British government has advised universities and research institutes to resist pressures from American manufacturers of "high technology equipment," in particular advanced computers, to impose controls at the request of the United States government over the way that the equipment is used by research scientists.

This advice follows a major row that has blown up over the conditions the University of London Computer Center was told that it

would have to accept before it could receive a Cray 1S/2200 supercomputer. The center provides facilities for many research teams at the university, and is also a key point in a national computer network used by research scientists. In order to comply with the security guarantees that Cray is required to provide the U.S. government, the center had been asked not to share information on software derived from the use of the computer with individuals from 13 proscribed Eastern Bloc countries, as well as the People's Republic of China. It must also agree that there will be no direct linkages to computer networks in any of the proscribed countries.

In a letter to the Department of Trade and Industry, the vice-chancellor of the University of London, Brian Flowers, said that the university would have "very considerable difficulties, both in policy terms and in practical terms, in restricting access to the [London center] to certain classes of users."

Officials from the department were in Washington last week trying to negotiate a compromise with the U.S. Department of Commerce. ■ DAVID DICKSON

Justices Kill Key Part of Budget Deficit Act

The United States Supreme Court in a 7-2 decision struck down the automatic deficit reduction mechanism in the Gramm-Rudman-Hollings budget balancing act. The High Court found that a constitutional provision for the separation-of-powers between the legislative and executive branches had been violated in the law adopted by Congress last fall.

At issue was the role of the General Accounting Office's comptroller general. The balanced-budget act empowered him to estimate deficits and to order spending cuts prior to the start of any new fiscal year if Congress failed to meet set goals for wiping out annual deficits by 1991. The justices concluded that this function is an executive branch duty—not one belonging to the comptroller general, who serves Congress.

The Supreme Court ruling is not expected to ease the pressure on Congress to reduce the deficit and to contain federal spending. Congress is expected to move quickly to reaffirm the budget reductions made under Gramm-Rudman in fiscal year 1986. In addition, Congress has adopted a budget resolution for FY 1987 that holds the deficit to \$142.6 billion, slightly less than the \$144 billion target mandated in legislation. ■

MARK CRAWFORD

Scientific American Sale Announced—Then Challenged

A large West German publishing enterprise was the top bidder in an auction for the purchase of Scientific American, Inc., whose operations include *Scientific American*, *Scientific American Medicine*, a continuously updated reference text in internal medicine, and W. H. Freeman and Company, a science textbook publisher. Verlagsgruppe Georg von Holtzbrink of Stuttgart beat out six other bidders with an offer of \$52.6 million, which the Scientific American board accepted on 30 June.



Gerard Piel, chairman of the board, says that the von Holtzbrink group, which has been engaged in publishing since 1948, "really loves the magazine and will allow us to continue to maintain our high quality." von Holtzbrink has been associated *Scientific American* since 1981 when it took over advertising sales for the German-language edition of the magazine. According to a statement announcing the acquisition, "Scientific American will continue in operation under its present management as a free-standing enterprise." Jonathan Piel is currently president and editor.

An eleventh-hour challenge to the von Holtzbrink deal was also made public at the time of the acquisition announcement. "... on July 2, two days after the agreement was signed, Scientific American received a letter from the bidder who had originally offered the lowest price in the sale managed by Salomon Brothers Inc., purporting to increase its offer to \$61 million," the statement said. The last-minute counter bid was made by British publisher Robert Maxwell, chairman of Pergamon Press Ltd. and owner of the *Daily Mirror*, a London tabloid. Maxwell has made known his intentions to change the Scientific American management if his bid is successful. At this point, questions have been raised about its legality under the rules of the auction but they have not been resolved. The Scientific American board is expected to meet soon to decide how to respond. ■

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