

tion, the control systems of member nations are regarded as much less elaborate than the control system of the United States. The result, say the critics, is a flow of strategic products and technology eastward.

The Department of Commerce is responsible for administering export controls through its Office of Export Administration (OEA), but policy is made in consultation with other federal agencies. Specific license applications which raise questions on strategic grounds are considered by the Interagency Operating Committee. The departments that dominate the operating committee are Commerce, State, and Defense although other agencies, including the Central Intelligence Agency, are represented.

The Pentagon role in the control system was given a firmer legislative base in the Military Procurement Act of 1974. This act bore an amendment requiring the Secretary of Defense to review virtu-

ally all applications for exports to Communist countries. Although the requirement was modified later to provide for consultation with OEA on which types of transactions needed to be reviewed, the act was widely interpreted as meaning an expansion of the Pentagon role, and, in fact, the questions it raised seem to have led to the commissioning of the Bucy report.

The view in industry is that DOD has what amounts to statutory veto power and has exercised it vigorously in cases where the strategic value of exports is in dispute. The critics say the committee's unanimity rule makes the Pentagon blackball decisive. Bureaucrats familiar with the process dispute the portrayal of DOD's reflex negativism. They say that disagreements occur in a fairly small number of cases and that when DOD recommends denial of a license, other agencies are polled and further facts in the case are sought and the matter nego-

tiated. They admit that this process leads to delays, which industry finds frustrating, but argue that faster answers would probably mean more denials.

Meaningful data on the handling of export applications for Communist countries are hard to come by, but OEA did publish figures for the first 6 months of 1975 which provide a clue. In that period the office processed 1502 applications for the U.S.S.R., Eastern Europe, the People's Republic of China, and Cuba. Of these, 53 were rejected and the rest approved. The impression among those familiar with the control system is that the rate of denials is now somewhat higher than it was in 1975.

Federal officials deny that the ups and downs of détente have had any effect on the pattern of approval and denial of licenses. Their job, they say, is to apply the law and keep their eye on the criterion of national interest. Some detached observers say, however, that the general

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### Harvard Under Fire for Mishandling Grant Money

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In the spring of 1976, a special audit of a handful of research projects at the Harvard School of Public Health (HSPH) revealed that the school had mishandled federal grant money to the tune of \$132,349.39. Harvard promptly paid the government back, but the incident raised questions about just how extensive the mishandling might be. This month, a team of federal auditors went back to Harvard to see what they can find.

And while the auditors pore over the books, lawyers will be preparing to defend the university against a suit filed by the man who blew the whistle on the fund mismanagement in the first place—a researcher named Phin Cohen who found himself out of a job (his appointment at the School of Public Health was not renewed) after going to auditors at the National Institutes of Health (NIH) to request an investigation of his own research funds which, he claimed, were being diverted by his boss to pay for other departmental expenses. Cohen's suit charges that he was let go because of the trouble he caused, not because of any failing as a scientist. Harvard denies any connection between the two events and has filed a petition for dismissal of the case, which probably will not go to

court for some time because the court dockets are jammed.

Phin Cohen accepted a job at Harvard in 1969, with the understanding that he would have to support himself from grant funds because the HSPH had no money of its own for his research. Within a year, Cohen began getting grants but there were several months at first, after an anticipated grant failed to materialize, that Cohen's research was supported by the Department of Nutrition. Department chairman Frederick Stare decided that Cohen had to pay the department back. And so, the department began charging certain "non-Cohen" costs, such as the salaries of technicians who never worked in his lab, against his grants. It was the failure to get satisfaction from authorities within Harvard University that finally led Cohen to go directly to NIH with the allegation that his funds were being mispent in violation of government regulations and, certainly, he claimed, in violation of the spirit of the peer review system. And it was the NIH auditors who discovered that whistle-blowing Cohen's allegations were essentially correct.

The question now is whether Cohen is right in alleging that it is common practice to charge such items as technicians' salaries, laboratory equipment, and general supplies to the wrong grant. NIH auditors, who have also begun bookkeeping investigations of other universities, hint that it may be. And, off the record, a num-

ber of researchers questioned by *Science* admitted that it is not uncommon to "fudge a little," so that if there is a little extra money in one grant it may be applied to another. But it is, nonetheless, illegal, and the current round of auditing is likely to provide the makings of a scandal. It is also likely that Congress will get into the act with a series of hearings that might leave a number of research institutions embarrassed, to say the least.

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### Carter Revives Dream of a Sea-Level Canal

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At his "town meeting" in Yazoo City, Mississippi, last 21 July, the President took everyone by surprise by resurrecting the idea of building a sea-level canal between the Atlantic and Pacific oceans. Replying to a question about the Panama Canal, Jimmy Carter said that "before many more years go by we might well need a new canal at sea level." The next day, he brought the idea up again. A "larger, wider, deeper," canal "might be in the interest of our national security militarily as well as economically," he said. "A new sea-level canal would not be unreasonable."

Carter's astonishing pronouncement

political atmosphere appears to have an osmotic effect and approvals seemed to come more easily during the palmier days of early détente.

Some observers see the new policy as making possible the increased export to China of high-technology equipment with military applications, such as computers and other electronics products. In general, China has sought to purchase finished high-technology goods from the United States, while the Soviet Union has been primarily interested in acquiring manufacturing technology.

Advanced technology, of course, represents only a small part of total East-West trade and is an important, but probably not dominant factor, in the overall trade relationship. There are signs that the upward trend in East-West trade has peaked, or at least paused. The most obvious damper on expansion of trade between the Soviet Union and United States was the U.S. action in 1974 mak-

ing the granting to the Soviet Union of most favored nation status and increased trade credits conditional on Soviet liberalization of its emigration policies. As a result, the Soviets in 1975 declined to put into force the 1972 Soviet-U.S. commercial agreement, and the U.S. action has generally chilled U.S.-Soviet trade relations.

Other factors, of course, have had an arresting effect on expansion of East-West trade. The main ones are inflation in the West, which has made Western goods more expensive, and the growth of the East's trading debt, which has reached about \$40 billion. Although socialist countries face serious long-term difficulties in earning hard currency necessary to finance imports from the West, their leaders' interest in U.S. advanced technology seems to persist.

In the United States, in addition to the human rights issue, there remains an underlying conflict on attitudes about tech-

nology transfer to socialist countries. In a special sense the antagonists can be called protectionists and free traders. At one extreme are protectionists who would embargo all technology as a means of waging economic warfare, since they assume that the socialist countries are dedicated to gaining dominance over Western nations. At the other pole are free traders who feel that restrictions on transfer of technology can only cause minor delays and hurt the United States more than the socialist countries. Some free traders argue that liberal policies on export of technology are advantageous to the United States because they create a dependence in the socialist countries for U.S. technology.

Needless to say, most of the serious discussion is carried on by those whose views are nearer the center of the spectrum. Bucy, for example, is regarded by many of his colleagues and competitors in industry as a protectionist. He de-

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caught many of his advisers back in Washington unawares and prompted speculation that the idea was nothing more than a negotiating ploy, part of some strategy to win support for the controversial Panama Canal treaty. The idea of a sea-level canal was thought to be only a dream that had long since been put to rest as being too costly and too environmentally risky. Contrary to the President's assessment, the proposition seemed entirely *unreasonable*.

But Carter was quite in earnest, it turns out, and the new treaty, signed ceremoniously on 7 September, contains a provision for a feasibility study by the Panamanian and U.S. governments of a future sea-level canal across Panama. Whether the project will ever go through is anybody's guess, but a reassessment of the scientific aspects of building such a canal has already begun.

On 1 August, presidential science adviser Frank Press, director of the Office of Science and Technology Policy (OSTP), wrote to National Academy of Sciences president Philip Handler, asking for a quick turnaround study that, from start to finish, would take only 8 weeks. Press wanted to know whether we know anything about the environmental consequences of building a sea-level canal that we did not know the last time the idea was raised and disposed of.

In December of 1970, the Atlantic-Pacific Interoceanic Canal Study Commis-

sion, using a report from the Academy among others, concluded that "the risk of adverse ecological consequences stemming from construction and operation of a sea-level Isthmian canal appears to be acceptable." Press said, "It seems appropriate to review our current state of knowledge of this issue."

The Academy duly appointed a committee which has met and is already preparing a report—due 30 September. And though its conclusions are not yet in, a couple of things can be said. One, according to individuals who sat through much of the 3-day meeting, is that no one can figure out how the 1970 commission came to the conclusion that the ecological consequences of a new canal "appear to be acceptable." One participant called it a "puzzlement" and added that "you sure couldn't draw that conclusion from the old Academy report."

Two, it seems almost certain that, leaving aside the enormous cost of construction, there would be strong opposition to a new canal on ecological grounds. The Academy committee, headed by Alfred M. Beeton, director of the Great Lakes Research Institute in Ann Arbor, Michigan, is likely to answer Press's "current state of knowledge" question by saying that there has not been any substantial change since 1970. Or, as one observer put it, "There is a good bit of new information about such things as the potential migration of marine organisms, but it is

mostly fine detail—nothing that would enable you to make a policy decision that says a sea-level canal would be ecologically safe." "What we need," says Beeton, "is more information about the kinds of organisms that might migrate through a sea-level canal, particularly from the Pacific, which is higher, to the Atlantic."

According to the newly signed, but yet to be ratified treaty, if a decision were to be made to go ahead with a sea-level canal, the United States has right of first refusal to build it.

Thus far, OSTP and the Council on Environmental Quality have expressed interest in a sea-level canal from an ecological point of view, but a major feasibility study would certainly encompass a number of other issues, prominent among them the need for a new canal for military purposes since many modern vessels are too large to pass through the existing one. Interestingly, Secretary of Defense Harold Brown was once, in quite another context, a supporter of a sea-level canal. In the late 1950's Brown, then a young scientist at the Livermore Laboratory, was a forceful proponent of the Atomic Energy Commission's Project Plowshare, which was calculated to turn nuclear power to peaceful pursuits—among them, using a series of nuclear explosions to dig a sea-level canal. Brown has made no pronouncements about what he thinks of the idea of a sea-level canal today.

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