

Side effects of U.S. 'peace dividend'

The dissolution of the Soviet Union last year effectively ended the Cold War and all but banished the threat of global nuclear conflict, observes a new report by the congressional Office of Technology Assessment (OTA). "While future U.S. defense needs are still unclear, they will surely require less money and fewer people," points out OTA Director John H. Gibbons. Indeed, he notes, defense spending may soon drop to its lowest level in 40 years. Politicians often refer to this savings as the "peace dividend." Defense workers, however, may see it as anything but: OTA projects that some 2.5 million defense-related jobs will disappear during the next nine years.

In an analysis released last month, "After the Cold War," OTA points out that the cutbacks may not affect states equally or occur evenly over time. Moreover, losing 275,000 defense jobs per year—on top of the already high rates of U.S. unemployment—"could be stressful on a national scale."

The armed forces, which provide good jobs, training and advancement to high positions "hardly available to minorities elsewhere," have become "the most color-blind large institution in the United States," OTA notes. Defense spending on research has also benefited civilian industries—even spawned entirely new fields, such as semiconductors and computers. Unless other institutions step in to pick up these responsibilities, OTA argues, "the nation will be the poorer."

Finally, the new report concludes, the coming cutbacks may hit engineers especially hard. Roughly 37 percent of the nation's 342,000 defense engineering positions may evaporate within four years. Because these engineers embody the skills needed to boost U.S. commercial competitiveness, OTA says, "it is in the national interest to integrate these workers into the civilian sector as quickly and fully as possible."

Though all displaced workers benefit from the same help—such as skills assessment and retraining—blue-collar workers and engineers "may require a different mix and duration of services, since the engineer's job search is likely to take longer and range more widely." Aggravating the engineers' problems, efforts such as the federally supported Economic Dislocation and Worker Adjustment Assistance (EDWAA) program focus on blue-collar workers. Why? Often from the belief that more highly educated workers "are better able to fend for themselves—but sometimes simply from inexperience . . . with professionals," OTA reports.

The report offers recommendations for countering these problems. For instance, it argues that Congress may wish to provide EDWAA greater flexibility in its training budgets and to recommend explicitly that EDWAA finance the upgrading of skills. Congress might also look to the National Science Foundation and other federal agencies to design continuing-education programs for defense engineers. Last, OTA describes potential new tax breaks and grant programs that Congress might devise to help defense companies—especially smaller firms—make the transition to civilian products and services, thereby reducing layoffs and boosting the U.S. economy.

After the coup: Preserving 'Soviet' R&D

However bad the outlook for U.S. defense workers, it's nowhere near as dismal as the prospects facing scientists and engineers throughout the former Soviet Union (FSU), both inside and outside its defense industry. At the behest of Presidential Science Adviser D. Allan Bromley, some 120 prominent U.S. research leaders convened in Washington, D.C., on March 3 to brainstorm how they might aid their foreign colleagues. In a letter to Bromley issued last week, the trio who chaired that workshop synthesized its findings into 15 key recommendations. Because "time is of the essence," they

argued, "whenever possible, implementation [of these recommendations] should begin within the next several months."

In their letter, Frank Press, president of the National Academy of Sciences; H. Guyford Stever, commissioner of the Carnegie Commission on Science, Technology and Government; and Ashton B. Carter, director of the Center for Science and International Affairs at Harvard University, noted that:

- many of the best former Soviet research facilities "are standing idle and may soon atrophy"

- an internal and external "brain drain" is rapidly eroding the onetime communist state's human resources. "Of special concern," the letter notes: "Temptations are increasing for FSU military scientists to look abroad for opportunities."

- leaders within the former Soviet Union "will soon be making critical decisions in areas such as research priorities, intellectual property rights, and education accreditation." As a result, "there are one-time opportunities to influence these decisions," and the United States can play a leadership role among Western powers "if we act quickly."

The United States, Russia and Germany have already agreed to set up an International Center for Science and Technology in Moscow. Though the three nations have yet to set the final scope of its activities, organizers expect the new center will eventually become a clearinghouse for research projects involving groups with weapons expertise, and a matchmaker for funding sources and researchers both inside and outside the former Soviet Union. Cooperative research programs initiated through this center "would be the most effective means for achieving U.S. goals of shrinking and redirecting FSU weapons-R&D programs," the letter to Bromley states.

A weapons-science working group at the March 3 meeting urged the U.S. government to work toward prompt establishment of this new center and to award it at least \$25 million in start-up funds under the Soviet Nuclear Threat Reduction Act of 1991, a \$400 million program created by Congress last year. The letter to Bromley also recommends earmarking another \$25 million for non-weapons scientists.

Other recommendations from the March 3 meeting include: further reduction of unnecessary export controls, especially in the fields of computers and telecommunications; U.S. grants to help convert FSU non-nuclear military technologies to civilian applications; establishing a fund to help replenish and refurbish equipment, journals and books; expanded cooperation in environmental research; and immediate implementation of scientist-to-scientist collaboration with FSU colleagues under extramural federal research programs funded by the National Science Foundation, the National Institutes of Health, the Department of Energy and the Office of Naval Research.

Improving supersonic-jet emissions

The 13 supersonic aircraft flying commercially today do not pose "a major problem" to stratospheric ozone, a Jan. 29 General Accounting Office (GAO) report concludes. However, government and industry analysts project that 300 to 1,200 such jets could be in service in the next 10 to 34 years. Such large fleets could indeed pose a major threat to the stratospheric ozone in which they cruise, GAO says, unless their exhaust emissions—especially of potentially ozone-eroding nitrogen oxides (SN: 10/26/91, p.270)—fall dramatically.

NASA has pledged to focus about \$100 million of its \$284 million advanced-supersonic-aircraft research program on lowering nitrogen oxides by another 90 percent, GAO reports. However, GAO adds, the Environmental Protection Agency—concerned about the potential impact of these aircraft on stratospheric ozone—will hire a staffer "primarily to monitor NASA's research on the effect of jet emissions."