Congress Approves Nuclear Weapons Buildup

Most of the Administration's proposals are financially unscathed, despite a prolonged debate and much public criticism

Despite months of rancorous debate over defense programs such as "Star Wars," antisatellite weapons, and the MX missile, the 98th Congress took only modest financial swipes at these programs before its adjournment on 12 October. Its action capped a year in which an unusually large number of scientists became directly involved in the public controversy over these proposals.

Overall, Congress scaled back the President's defense budget increase from 13 percent to 5 percent. But it approved an 11 percent growth in funding for Pentagon research and development, to a point where it encompasses roughly two-thirds of all federal R&D expenditures. In addition, Congress once again agreed to fund virtually all of the strategic weapons buildup pushed by the Reagan Administration for the last 4 years. Only one highly controversial weapons request—a proposal to make new binary chemical weapons—was rejected outright.

Here is a summary of congressional action on the topics that excited the most debate in scientific and arms control circles:

MX missile. As the centerpiece of the Administration's strategic modernization efforts, the MX quickly became the chief object of contention in congressional deliberations. According to a series of official Defense Department statements and reports, the missile has two primary rationales: first, its use will enable the Pentagon to limit damage to the United States in the event of a conflict, through the destruction of Soviet command posts, missiles, and other nuclear weapons before they can be used; and second, the threat of its use will convince the Soviets to make significant concessions during arms control negotiations and low-level political disputes (*Science*, 7 May 1982, p. 596, and 29 April 1983, p. 486).

On one side of the debate stood the President and his conservative allies, who sought funds for production of 40 new missiles, in addition to the 21 authorized last year. The President proposed that each missile, carrying ten powerful, highly accurate warheads, be deployed in silos presently housing older Minuteman missiles. On the other side of the debate stood members of various arms control groups and advocates of a nuclear weapons freeze, who said that the MX will be vulnerable to a Soviet attack on these silos, and that it will therefore be useless unless it is fired in a preemptive U.S. attack. They argued that its deployment can only add to existing incentives, on both sides, to achieve the greatest advantage by firing first in the midst of an international crisis.

In a compromise negotiated by Senate Majority Leader Howard Baker (R–Tenn.) and House Speaker Thomas O'Neill (D–Mass.), Congress decided first to limit any additional production to 21—not 40—missiles. Subsequently, it voted to put off a final decision on the proposal until next spring, when the production will have to be approved twice in each chamber. Opinions on the missile's chances then vary widely. Opponents emphasize that production can be stopped by only one out of four votes. Supporters are hoping for a repeat of 1982, when Congress also postponed an MX decision, and then acceded to Reagan's request when constituent pressures had diminished after the election. A substantial Republican victory in November would obviously smooth the missile's path.

> The Pentagon controls roughly two-thirds of federal R&D funds.

Antisatellite weapon. The Reagan Administration sought $143.2 million for advanced testing and development of a sophisticated rocket capable on short notice of striking and destroying low-level enemy satellites orbiting the earth. First, in a spending authorization bill, Congress approved the funds, but limited the Administration to two successful tests of the antisatellite weapon, or ASAT, against realistic targets. In addition, President Reagan was to certify that the United States is trying "in good faith" to negotiate the strictest possible limitations on ASAT's "consistent with the national security interests of the United States"; that testing is necessary to avert "clear and irrevocable harm to the national security"; that testing would not gravely impair the prospects for an ASAT treaty; and that testing is consistent with prohibitions on tests of space weapons capable of defending against ballistic missiles. None of these requirements was thought to appreciably constrain the ASAT program.

After substantial additional lobbying by ASAT opponents in the House of Representatives, Congress ultimately agreed to impose somewhat stiffer limitations. According to the final appropriations bill, no more than three ASAT tests may be conducted in fiscal year 1985, whether they are successful or not. In addition, no tests may occur before 1 March. Proponents hope that this will give U.S. and Soviet officials enough breathing room to begin negotiations on more permanent ASAT limitations.

Star Wars. Reagan sought an 80 percent increase in funds for research on a comprehensive defense against nuclear missiles, formally titled the Strategic Defense Initiative. After a series of acrimonious hearings that pitted well-known academic scientists against the program's managers, the House and Senate Armed Services Committees voted to scale back the increase to only 60 percent, and the House Appropriations Committee voted to scale it back to 5 percent. The Administration lobbied vigorously, however, and Congress ultimately agreed to a 40 percent increase, allocating a total of $1.4 billion.

More substantial resistance is expected next year, when the Administration intends to ask for more than $3 billion. In anticipation, Congress ordered the Pentagon henceforth to produce an extraordinarily detailed annual report on the program's activities and objectives, as well as an assessment of its impact on the treaty that now bans sophisticated missile defenses. Each report, due on 15 March, must also list potential Soviet countermeasures, and detail any objections by U.S. allies.

Comprehensive test ban treaty. Noting that the past five U.S. presidents have backed efforts to negotiate a comprehensive ban on nuclear testing, Congress recommended that such negotiations be immediately resumed. It also urged Reagan to submit the Threshold Test Ban Treaty and the Peaceful Nuclear Explosions Treaty, signed in 1974 and 1976, for Senate ratification, along with a report detailing any reservations or plans for subsequent enhancement of the provisions on verification of treaty compliance.

Air Force rocket. In a move that sharply angered managers of the space shuttle, the Pentagon requested $10 million for preliminary development of a series of new expendable rocket boosters capable of ferrying key military satellites into outer space (*Science*, 29 June, p. 1407). The purpose was to reduce the Pentagon's reliance on the shuttle, which has recently been beset by technical difficulties. Congress halved the Pentagon's request.

On many other controversial topics, Congress lacked the resolve to deny the Administration's request for funds and decided merely to seek additional information. As a result, the Pentagon has been told to supply a long list of studies by specified deadlines, including the following:*

19 January. A report on the implications of scrapping short-range nuclear weapons, weapons capable of both conventional and nuclear attack, and weapons capable of hitting the Soviet Union from Western Europe.

1 March. A report on the MX and Midgetman missiles, their basing modes, and their strategic implications. A report on the security of essential military and civilian communications. A detailed assessment of "nuclear winter" and its implications for U.S. strategic doctrine.

15 March. A report on the cost of mechanisms to verify a ban on biological and chemical weapons. A report on an "arms control method" by which sea-launched cruise missiles armed with nuclear and conventional warheads can be distinguished and counted.

1 April. An assessment of the survivability of strategic submarines and their associated communications systems. A report on the need for binary chemical weapons by a newly formed bipartisan Chemical Warfare Review Commission.

15 April. A report that specifically defines the number and type of U.S. weapons that would constitute a so-called "first-strike" capability against the Soviet Union.

1 May. An assessment of the Energy Department's inertial confinement fusion program. A comprehensive report on the design, development, testing, production, and retirement of nuclear warheads by a blue ribbon panel.

1 June. A report on the implications of deploying a new nuclear submarine, the U.S.S. *Alaska*, in apparent violation of SALT II limits on nuclear launchers.

—**R. Jeffrey Smith**

*Dates are approximate. (In some instances, Congress specified that the reports be produced no earlier than the date indicated; in others, no later.)

Saving Chimps for Research

Faced with a dwindling and perhaps endangered supply of chimpanzees for medical research, a national task force has drafted a plan to establish a stable pool of the animals for laboratory studies. The plan, which involves the formation of a permanent breeding colony, is likely to be controversial because it would require a temporary reduction in the number of chimps used in research and result in the destruction of some older animals.

Although relatively few chimpanzees are used by U.S. researchers, they are considered essential for studies of diseases such as hepatitis and AIDS (acquired immune deficiency syndrome) because they are so closely related to man. Several factors have reduced the research pool of the animals, however. International agreements signed a decade ago to protect the animals in their native but threatened habitats have prevented importation of chimpanzees from the wild. The animals already in this country, particularly the ones maintained for use by researchers, have not been adept at breeding. Moreover, because many of these animals have been used for studying hepatitis, they are suspected of being carriers for the non-A non-B form of this disease. Because so little is known about how this disease is transmitted, animals that may have been exposed must be excluded from breeding programs for fear of their contaminating other animals, including their own offspring.

To cope with these problems, an interagency task force was established in 1978 to look into chimpanzee production for biomedical use in the United States. Thomas L. Wolfle, an NIH veterinarian who served as executive director of the task force, says that the problem has grown so acute that the task force plan represents the only realistic chance to save the U.S. chimpanzee population.

The task force plan, a draft of which has just been submitted to the directors of individual NIH institutes, calls for selecting several facilities that would share in establishing components of a permanent chimpanzee colony for breeding. Altogether, the colony would need to produce about 300 animals a year, with only about 10 percent going into research use at the age of 18 months and the rest staying within the colony as prospective breeders. The facilities must be properly designed to encourage the balky animals to be adequate parents. Each potential facility also must demonstrate that its animals have a successfully established track record as parents.

The plan, which seems simple in its bare outlines, is likely to be viewed as controversial for several reasons. First, it will require new funds because it is a new federal program. It also will require—at least, early on—adjustments on the part of the researchers now using chimpanzees, who will be forced to cut back from the current use level of 50 to 60 animals per year to about 30 until the breeding colony is firmly established. And, finally, the plan calls for destroying some of the older animals that either cannot breed or that have been exposed to non-A non-B hepatitis.

The continued support of such animals is one of the costliest items in the current scheme of chimpanzee use, a reflection of the animals' longevity and the fact that it requires about $10 to $15 per day just to feed and house them. However, because the animals exposed to hepatitis can serve as a valuable "buffer" population that can be used in studying unexpected public health emergencies such as AIDS, they would not all have to be destroyed. Thus, a small group of such animals could be held in reserve for such contingencies, according to the task force plan, and they could be used instead of the offspring from the dedicated breeding colony.

According to Wolfle, it now costs about $4 million per year to maintain the nearly 1200 chimps within the biomedical community. The estimated annual costs for the new program, once established, is $1 million. "I'd dearly love not to use chimps in research. But if there were no value for chimps in research, then there would be no federal program," he says. "The only way to save them" is with a program funded through biomedical research channels. If the plan is successful, "in the long run, the costs will decrease to the investigators."—**Jeffrey L. Fox**