Briefing:

Chemical Weapons Plan Hangs by One Vote

Among the controversial items on Congress's crowded agenda when it returns for a short session in early September is the perennial issue of whether to end a 17-year moratorium on the production of new chemical weapons. The matter is among the most closely contested items in the defense budget.

On 7 August, Vice President George Bush broke a tie vote in the Senate to permit the production of a new generation of binary chemical weapons. Five days later, however, the House voted 210 to 209 to delay their production for at least 1 more year. The final outcome now hangs on the deliberations of a House-Senate conference committee.

The matter was supposed to have been settled last year, when Congress said production of binary weapons could go ahead if the Administration satisfies two conditions. First, the President must certify that the plan to replace existing chemical weapons with binaries has been formally adopted by NATO. And second, no funds could be spent on production of a chemical bomb called Bigeye until the Secretary of Defense certifies that the weapon has passed certain performance tests. Opponents of binary production contend that the first condition has not been met and that the second is unlikely to be achieved.

The requirement for NATO approval was designed to stimulate a debate in Europe on chemical weapons policy. The United States currently has some aging chemical weapons stored in Germany. Binary weapons, which contain two nonlethal components that mix together to form a nerve agent when the weapon is on its way to its target, are supposed eventually to replace these stockpiles. Congress therefore reasoned that the Europeans should approve the binary weapons plans.

The anticipated European debate never happened, however. Approval of the binary plan was relegated to a NATO committee rather than its senior political body, the North Atlantic Council (*Science*, 2 May, p. 567). Moreover, the Administration has reached agreement with Germany that the existing chemical stockpiles will be removed in the early 1990's, but that the new binary weapons will be stored in the United States.

This led to charges in Congress that the Administration has deliberately evaded the requirement to seek political approval from Europe. The Administration has responded that the appropriate NATO committee approved the plan. Critics have also charged that the agreement with Germany effectively removes the deterrence value of possessing chemical weapons. They argue that storing binaries in the United States greatly reduces flexibility because it would require a massive airlift to ferry them to Europe in a time of crisis.

The arguments over the Bigeye bomb are more technical. Last year, the Defense Department completed a series of developmental tests of the bomb and defense officials have argued that the program is now ready to go into limited production. However, the test results were blasted by the General Accounting Office in a report last June (*Science*, 20 June, p. 1493), and the GAO official in charge of the evaluation, Eleanor Chelimsky, subsequently testified that "GAO believes that the bomb is not ready for production."

On 11 August, 2 days before the House vote, Donald Hicks, the undersecretary of defense for research and engineering, sent a lengthy rebuttal of the GAO report to Congress, complaining in particular that the report had not included discussion of more recent operational tests of Bigeye. However, Chelimsky had already answered this charge with a letter of her own on 5 August. She pointed out that the operational test results were not available to GAO and that in any case, the tests are not designed to settle many of the deficiencies uncovered during the earlier developmental tests.

Against this background of political and technical skirmishing, Senator Mark Hatfield (R–OR) proposed an amendment to the defense authorization bill to prohibit production of binaries until Congress has passed separate legislation declaring that the NATO approval process has been properly carried out. The amendment was rejected by a vote of 57 to 43. Next came Senator David Pryor (D–AR), who proposed an amendment to prohibit production of Bigeye unless Congress gives the go-ahead in separate legislation. That amendment was voted down by Bush's tie breaker.

The action then went to the House. Two longtime foes of binaries, Representatives Dante Fascell (D–FL) and John Porter (R–IL), offered an amendment to suspend production for 1 year and to prohibit withdrawal of existing chemical weapons from Europe unless they are replaced by binaries stationed on European soil. The amendment squeaked through by a single vote.

The Defense Department had requested $159 million for the binary weapons program in fiscal year 1987. The total cost of the program is expected to be some $2.5 billion. ■ COLIN NORMAN

Illinois Psychiatric Research Restored

Governor James Thompson of Illinois, in response to a prolonged burst of negative publicity, has reversed his decision to wipe out state funding for psychiatric research, education, and training. The reversal entails restoration of $6 million of the $18 million cut from the budget of the state mental health department.

The governor has also appointed a commission to determine whether the Illinois State Psychiatric Institute should be transferred to the University of Illinois. ISPI research director John Davis says this would be desirable to give the institute a stable environment secure from periodic attempts to vitiate its research budget. Davis thinks the outcry against the budget cuts are evidence that the public is becoming increasingly aware of the importance of research. He says, "we've won a battle, and if we can get in a stable situation we may well have won the war, or at least the campaign." ■

CONSTANCE HOLDEN

NAS Panel Says Airlines' No Smoking Sign Should Be Turned On for Good

A National Academy of Sciences panel on airliner cabin air quality has recommended a federal ban on smoking on all domestic flights. The call for a ban is categorical and the panel expects it to be controversial.

The Tobacco Institute, the cigarette manufacturers' trade association, took exception even before the report appeared, anticipating its release on 13 August with a press conference the day before. Terming the proposal entirely unjustified, the institute argued that current rules that separate smokers from nonsmokers in airline cabins are satisfactory to a large majority of passengers polled. The institute rebuttal also criticized the panel report for its lack of "actual, detailed in-air testing data establishing the need for further restrictions on smoking."

The panel acknowledges a paucity of empirical evidence on health effects of air quality in airplane cabins. In the preface to the report, the chairman of the committee, Thomas C. Chalmers of Mount Sinai Medical Center in New York, said that most members of the panel "began the study with the assumption that addicted smokers could not be deprived of their habit over long flights." Sentiment for a complete ban on smoking developed gradually as evidence of cabin contamination accumulated and the

impossibility of adequate cleansing of cabin air became evident.

"The coup de grace to smoking in airlines was the realization that diminished ventilation with outside air and increased recirculation of air, a characteristic of almost all new airliner models, will increase previous levels of toxic products of cigarette smoking in nonsmoking sections of the cabin."

In recommending the ban, the committee cites four aims: to lessen irritation and discomfort to passengers and crew, to reduce potential health hazards to cabin crew, to eliminate the possibility of fires caused by cigarettes, and to bring the cabin air quality into line with established standards for other closed environments.

Besides the smoking issue, the report, "The Airliner Cabin Environment," takes a comprehensive look at cabin air quality and safety issues including contamination and pollution from ozone, cosmic radiation, ground fumes, biologic aerosols, humidity, carbon dioxide, and dangers from onboard fires and depressurization.

Sponsor of the study was the Department of Transportation, parent agency of the Federal Aviation Administration, which regulates the airlines. Chalmers says the panel found the FAA system for dealing with air safety "phenomenal," but its concern for health issues less focused. Because of the scarcity of monitoring studies on air quality in airliner cabins, the panel decided to make comparisons of conditions in aircraft with other types of environments. Chalmers says that after looking at air-exchange rates in plane cabins, the panel concluded that conditions on airliners were inferior to those in other environments. For example, the panel says that measured values for environmental tobacco smoke in airline cabins were found to exceed a Japanese standard for indoor air quality. And ventilation standards set in the United States to avoid irritation by tobacco smoke in buildings are not met by prevailing aircraft practices.

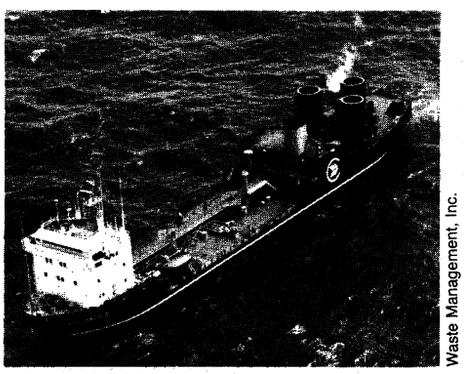
It is unusual although not unprecedented for an academy report not to cite decisive scientific evidence to support a major recommendation. In such cases, academy panels not infrequently wind up calling for more research. In this instance, the panel succeeded in convincing those manning the academy's formidable report review mechanism that the weight of evidence, incomplete as it is, justified the ban. Chalmers says that the process was a rigorous one, recalling that the review document ended up "bigger than our report." He acknowledges that "There was trepidation throughout the building. They wanted to be absolutely sure we could stand up to the criticism." ■

JOHN WALSH

OTA Enters Inflamed Debate on Ocean Incineration

Of all the ways to get rid of hazardous waste, none has engendered as much controversy as burning toxic substances at sea. Now the Office of Technology Assessment (OTA) has entered the fray with a lengthy report that has already been used by proponents and opponents of the technology to bolster their own arguments.

The report, "Ocean Incineration: Its Role in Managing Hazardous Waste," released on 15 August, comes at an opportune time because the Environmental Protection Agency is struggling to develop regulations on ocean incineration. In May, EPA rejected



Waste Management, Inc.

Vulcanus II. *Plans to use the ship to burn wastes off New Jersey drew strong protests.*

an application submitted by Chemical Waste Management, Inc., to conduct experiments on its ocean incineration ship, the Vulcanus II, off Cape May, New Jersey. The agency announced at the same time that it would not issue a permit until it had developed regulations to cover both research and commercial use of the technology. The company proposal generated enormous local opposition; nearly 3000 people attended public hearings held this spring on the proposal.

The OTA report says that burning hazardous waste at sea could be used as a stopgap measure to treat toxic liquids. It states that ocean incineration "could be a useful option, but is clearly not a panacea." Ultimately, better methods to reduce or recycle waste must be developed. Ocean incineration would only be suitable to treat 5 to 8% of all hazardous waste, but the chemicals that could be destroyed by the technology are among the most toxic. The report also notes that incineration at sea is one of the few methods available to detoxify hazardous waste that is highly chlorinated.

The report says that there are many unresolved scientific questions concerning the technology's potential risks to health and the environment. Many of these same concerns were raised last year by an EPA scientific advisory board. For example, the board recommended that EPA develop better ways to measure whether compounds have been destroyed by burning and that it should improve methods to identify what compounds are being emitted into the atmosphere after incineration.

Representative Roy Dyson (D–MD), a member of the House Committee on Merchant Marine and Fisheries, which has jurisdiction over ocean incineration, said in a statement that, based on the findings of the OTA report, "the need for ocean incineration has not been proven." But James Banks, director of environmental affairs at Waste Management, Inc., the parent company of Chemical Waste Management, repeated the report's statement that ocean incineration could be considered an interim method of treating hazardous waste. Banks said, "We're not saying that ocean incineration is the end-all and be-all. But let's go ahead and get the regulations moving. The technology is ready." ■ MARJORIE SUN

Nuclear Waste Program Hits Senate Roadblock

The effort to find a suitable place to bury highly radioactive wastes from nuclear reactors has run into serious trouble in the U.S. Senate. On 13 August, the Senate Appropriations Committee voted unanimously to gut the Department of Energy's civilian nuclear waste budget, stripping some $400 million from the $780 million requested by the Administration.

The move, spearheaded by Senator Mark Hatfield (R–OR), is designed to block exploration of three candidate sites in the western United States for at least a year. The three sites, in Washington, Nevada, and Texas, were recently selected by DOE for intensive study with a view to choosing one of them as the nation's first nuclear waste repository.

The selection process was part of a carefully crafted national plan put together by Congress 4 years ago. It involved the selection of one site in the West, followed several years later by a second site in the East. However, the plan started to unravel on 28 May when DOE announced that it is suspending the search for an eastern site, claiming that one repository will be enough for the time being. The announcement angered people in the West, and the Senate Appropriations Committee action was a direct result (*Science*, 22 August, p. 835).