CIA Details Chemical Weapons Spread

William Webster, the director of the Central Intelligence Agency (CIA), made a rare public appearance on Capitol Hill last week to outline the agency's information on the spread of chemical weapons in the Middle East. Although much of what he said has appeared in various press accounts over the past several months, it is believed to be the first time that a senior Administration official has confirmed many of the details in an on-the-record appearance.

Webster's testimony, delivered during hearings by the Senate Committee on Government Operations, emphasized that Western companies have played a crucial role in the spread of chemical weapons, not just to Libya but also to Iraq, Iran, and Syria. He provided the following details:

■ **Iraq.** Since the early 1980s, Iraq has produced "several thousand tons" of mustard gas and the nerve agents tabun and sarin. The chief chemical weapons complex is located near Samarra, 70 kilometers northwest of Baghdad. "From the program's inception, firms and individuals from Western Europe were key to the supply of chemical process equipment, chemical precursors, and technical expertise. West Europeans remained at Samarra even after it began operations," Webster testified. Iraq first used chemical agents in the war with Iraq in 1983 and 1984 and has recently used them against Kurdish civilians. In spite of the cease fire with Iran, "Iraq continues to produce and stockpile chemical weapons [and] it is expanding its chemical weapons capability."

Wide World

William Webster. *CIA chief's testimony highlights role of foreign companies.*

■ **Syria.** Syria began producing chemical warfare agents in the mid-1980s and has nerve agents in some weapons systems, Webster said. "West European firms were instrumental in supplying the required precursor chemicals and equipment. Without the provision of these key elements, Damascus would not have been able to produce chemical weapons."

■ **Iran.** Iran began to produce chemical warfare agents in the mid-1980s after numerous Iraqi chemical attacks, Webster said. It produces the blister agent mustard, blood agents such as hydrogen cyanide, and nerve agents at a facility near Teheran. Like Iraq, Iran "is continuing to expand its chemical warfare program" even after the cease fire. West European firms provided process equipment and chemical precursors.

■ **Libya.** Libya's much publicized production complex near Rabta "may be the single largest chemical warfare agent production plant in the Third World," Webster testified. It "is expected to soon begin large-scale production of mustard and nerve agents—potentially tens of tons per day." The plant was built with assistance from West German companies, and Japanese firms aided in constructing an adjacent metal fabrication plant "equipped with the precision materials to manufacture components for a variety of bombs and artillery." Although Webster said the plant is about to start operating, "Libya's ability to sustain large-scale chemical warfare production will, in large measure, depend on continued foreign assistance."

Webster's testimony is expected to give added impetus to legislation that would impose sanctions on countries that use chemical weapons and on companies that assist in their spread. ■ COLIN NORMAN

High Energy Physics Crunch Foreseen

Two National Science Foundation officials have advised a Department of Energy (DOE) scientific panel that federal support for university particle physics research is too low to ensure that an adequate number of Ph.D.'s will be produced in the 1990s to replace retiring faculty. The shortfall in trained physicists, the report asserts, could be so severe that "the scientific personnel needs of the SSC [Superconducting Super Collider] will not be met. . . ."

The warning, delivered on 6 February to DOE's High Energy Physics Advisory Panel (HEPAP), was part of an assessment of the need for expanded university participation in the field of high energy physics. The four-page analysis, prepared by David Berley and David Garelick of NSF's physics division, is critical of the foundation's lack of leadership in addressing needs.

Although NSF provides less than 10% of the funding for high energy physics, it plays a major role in training physicists through its grants program. Some 37% of the university particle physics faculty in the United States and close to one-third of the researchers and graduate students working in the field rely on agency funds.

NSF's support of particle physics has been declining in real terms since 1976, Berley and Garelick say. Foundation spending for research is slated to rise by 14% under the Reagan budget request for fiscal year 1990, but the elementary particle physics budget will be held to a 6% increase. Things might have been worse. In an appearance before the American Physical Society in January 1988, NSF director Erich Bloch suggested that the agency might have to drop its support for particle physics altogether.

Foundation support for physics might be stronger, Berley and Garelick indicate, if there were a sanctioned outside advisory group strong enough to influence policy. NSF's own Advisory Committee for Physics "has not played a large role in the planning of the division's activities," they say. Instead, NSF program officials rely on DOE's HEPAP to coordinate particle physics research. NSF, however, is not an official member and the agency's participation in HEPAP has not been approved by Bloch.

To strengthen particle physics research, Berley and Garelick recommend that NSF and DOE:

■ Increase the number of institutions performing research in high energy physics. Funding should be provided to new or expanding physics programs at universities that have not traditionally played a leading role in the field.

■ Upgrade instrumentation and research facilities at universities now active in the field.

■ Provide awards to young scientists to encourage them to pursue research work involving particle accelerators and particle detectors.

The two NSF program officers conclude that a healthy physics program at NSF is dependent on policy changes at the foundation. University researchers who rely on NSF support, they add, "should help institute the change." ■ MARK CRAWFORD