

Chemical weapons

Binary weapons in trouble

Washington

A GENERAL Accounting Office (GAO) report has given a black eye to Bigeye, the binary chemical weapon the US Department of Defense (DoD) says will give the chemical weapons arsenal a deep-strike capability now said to be lacking. But in spite of the doubts raised by the GAO report, DoD is proceeding with operational tests of Bigeye, and hopes soon to begin initial production at a low rate.

The GAO report focuses on DoD's tests of Bigeye performed since 1982. The Bigeye bomb consists of two non-lethal chemicals carried separately. When mixed, these agents form the persistent lethal nerve agent VX. Originally, DoD planned that high-flying aircraft would drop the bomb after the two chemicals had combined. But lessons learned during the 1976 Yom Kippur War in the Middle East convinced DoD that this approach made planes too vulnerable to anti-aircraft missiles, so that DoD decided that the bomb would have to be carried by aircraft flying at high speed and low altitude.

This plan also has problems. The extra temperature caused by increased air friction at low altitudes raised pressure inside the bomb, causing one to explode during testing. This is why, since 1982, DoD's plans for delivering Bigeye have required mixing the two chemicals only after the bomb has left the plane, and "lofting" the bomb — tossing it upwards from the aircraft — so that the chemicals have time to mix before the bomb's contents are released. The GAO report concludes that this delivery scheme places a heavy burden on pilots and systems software.

Eleanor Chelimsky, one of the report's principal authors, said at a press conference last week that the Bigeye bomb has satisfied neither chemical purity requirements nor system reliability, and is "therefore not ready for production". Pressure build-up inside the bomb after mixing could still result in a premature release of its contents. DoD solved the pressure problem in laboratory tests with a pressure relief valve, but the valve will not be included in working models of the bomb.

Another concern is the potential of the bomb's chemical components to catch fire or "flash", destroying the nerve agent's effectiveness. Also troubling Chelimsky is the way DoD performed tests on the bomb. "DoD seems to be confused about what in fact has been tested and what the results have been", she says. According to the GAO report, DoD changed performance criteria during testing to make Bigeye look better.

DoD is quick to defend Bigeye. John E. Krings, director of DoD's office of Operational Test and Evaluation, agreed that

GAO had identified some of Bigeye's initial problems, but said the report was "not totally accurate". Krings denied that the criteria that the weapon had to meet had in any sense been eased, pointing out that all new weapons systems experience modifications in design criteria during testing. The bottom line, says Deputy Assistant to the Secretary of Defense for Chemical Matters Thomas J. Welch, is whether the bomb represents an improvement in combat effectiveness. Welch believes it does. "We understand the shortcomings of Bigeye", says Welch. "We have a handle on fixing them, and the fixes are under way." The logic of binary weapons is that they are safer to store and transport than unitary weapons. But even here Bigeye has problems. VX is formed by mixing QL (ethyl 2-(diisopropylamino) ethyl methyl-phosphonite) with rhombic sulphur. But according to sources at GAO, DoD is aware that if QL were accidentally released near a power plant burning high-sulphur coal, VX could form spontaneously.

Bigeye is just one part of a planned improvement in chemical weapons. By 1994, DoD plans to destroy all existing stocks of unitary weapons, switching over to binary weapons. Besides Bigeye, DoD plans to deploy 155-mm artillery shells carrying the non-persistent nerve agent GB, and a multiple-launch rocket system also carrying GB. But Congress has required that the North Atlantic Council, the political arm of the North Atlantic Treaty Organization (NATO), should approve the United States' "force goals" before production can proceed. Congress has also insisted that NATO's Supreme Allied Commander in Europe must establish plans for how chemical weapons will be used before production funds are released.

To gain European support, President Reagan is said to have struck a deal with West German Chancellor Helmut Kohl to remove existing stockpiles from West Germany in exchange for Kohl's support for binary weapons production. Last month, the NATO Defense Planning Committee endorsed the US plans for new chemical weapons production, a move the administration hopes will allow production to proceed. But congressional opponents argue that North Atlantic Council approval is still needed.

Even if the binary weapons plan is approved, critics worry that not having the weapons actually based in Europe will make them ineffective as a deterrent. DoD plans to airlift the bomb components separately to Europe in the event of an attack. The United States holds to the position that it will never be the first to use

chemical weapons. But critics worry that a massive influx of such weapons to Europe at a time of crisis may make it appear that the United States is abandoning that policy, prompting a Soviet first strike.

A report by the specially empanelled Chemical Warfare Review Commission to President Reagan last year concluded that the long-range capability offered by the Bigeye bomb is urgently needed if the United States is to have a credible chemical weapons deterrent. But many in Congress believe the binary bomb is just an expensive mistake. The GAO reports should provide congressional opponents with ammunition when they attempt to shoot down Bigeye.

Joseph Palca

Estonian protest

A GROUP of Estonian scientists, including members of the Estonian Academy of Sciences, has written an open letter to the West, calling for protests against Soviet plans to build a large oil terminal at Muuga near Tallinn. The terminal, which will be adjacent to the controversial grain harbour, will, the scientists say, be a major source of pollution to north Estonia and to the whole Baltic area. The oil terminal, although necessary to the All-Union plans, is not necessary to the economy of the Estonian republic. Since the plans for the terminal have not been officially announced (the scientists describe their source as a reliable leak from civil servants), they clearly hope that international criticism might induce the central planners to scrap the project quietly, and to deny the report as unfounded.

The area under threat by the proposed terminal includes lake Peipsi, the main water source for Tallinn. It is the only area of the country not already a victim of major pollution from oil-shale and phosphorite mining. (A recent study by the Estonian Academy's Institute of Economics found that the large phosphorite mine now being planned at Toolse will cause extensive seepage of pollution through the ground-water.) A particularly worrying aspect of the problem is that, since January 1986, censorship control has become so strict that it is now virtually impossible to inform the general public about environmental hazards.

The scientists, however, are not concerned only with the pollution threat posed by the oil-terminal, grave though that is. All major construction and engineering projects in Estonia are accompanied by a major influx of Russian labour, which, in its turn, means the gradual linguistic and cultural Russification of the area. If this policy continues, the scientists say, by the end of the century, a broad zone of north-eastern Estonia, comprising about 60 per cent of the population of the republic, will be effectively Russified. Vera Rich