

## What Non-Proliferation Policy for the Soviet Anti-Plague System?

Sonia Ben Ouagrham-Gormley, Alexander Melikishvili,  
and Raymond A. Zilinskas

Monterey Institute of International Studies, Center for Nonproliferation Studies, Washington,  
District of Columbia, USA

---

This article analyzes the proliferation challenges posed by the Soviet AP system and discusses possible nonproliferation strategies to prevent these threats.

---

**Keywords** Soviet BW Program; BWC; Anti-Plague System; Dual Use; Biological Weapon

The Soviet anti-plague (AP) system provides an illuminating illustration of the organizational complexity of the Soviet biological warfare (BW) program, which included military facilities, ostensibly civilian research institutions and production plants, and genuinely civilian organizations primarily engaged in public health, such as the AP system. The story of the AP system also testifies to the pervasiveness of the Soviet BW program, which reached deep into the civilian research and industrial base of the Soviet Union to commandeer resources considered essential for a robust BW effort. This observation begs the question of how many other civilian institutions in the USSR were secretly involved in the Soviet BW program. That question can only be answered by further research.

In addition to revealing yet another organizational element of the Soviet BW program, this report provides insight into the decision-making process that prevailed at the time. Indeed, the AP facilities were not randomly “mobilized” to support the BW program when Soviet authorities were expanding the effort; instead they were singled out for their expertise and knowledge, which had been accumulated over several decades, to help accelerate the BW program. This historical reality raises several questions and observations.

**The first question has to do with the possible diversion and corruption of an institution dedicated to public health. Did**

**the Soviet government deliberately direct a civilian health agency to take on responsibilities related to BW that would appear to be the antithesis of its public health mission?**

Our findings suggest that, indeed, the Soviet MOD directed the AP system to work on “problems” that benefited the BW program. This conclusion is based on the historic progression of responsibilities given to the AP system. During the early years of the Soviet era, the AP institutes were focused almost entirely on the control of plague and natural plague foci. In subsequent years, the AP system was made responsible for controlling other dreaded diseases. But it was not until sometime between the early 1950s and the late 1960s that the AP system was given responsibilities related to biological defense. At that point, the civilian health agency became involved with problems that were essentially of a military nature. For the sake of comparison it is useful to note that in the United States, the Epidemiological Intelligence Service (EIS) was established in 1951 as part of the Communicable Disease Center (CDC)<sup>1</sup> to defend against biological weapons, but it quickly shed this responsibility as higher CDC officials refused to be involved with the U.S. BW program (which lasted until the end of 1969). The CDC’s policy of noninvolvement in BW defense work remained in place until the late 1990s, when the exigencies of the bioterrorism threat drew the CDC back into the biodefense field. Until this most recent case, as far as we are aware, no public health agency in any Western nation was ordered by a government to take on major responsibilities for biological defense,<sup>2</sup> and none was ordered to contribute to an offensive BW program; both appear to have occurred only in the USSR.

Does this military role constitute a corruption of the AP system? Corruption would imply that the scientific achievements

<sup>1</sup>The Communicable Disease Center was renamed the Center for Disease Control in 1970, the Centers for Disease Control in 1980, and the Centers for Disease Control and Prevention in 1992.

<sup>2</sup>Under the U.S. Biological Defense Research Program the CDC and the Food and Drug Administration, both of which are parts of the Department of Health and Human Services, performed tasks related respectively to BL4 pathogens and toxins, but this work was a very small part of these agencies’ overall work programs.

Received 23 October 2005; accepted 17 November 2005.

Address correspondence to Sonia Ben Ouagrham-Gormley, Monterey Institute of International Studies, Center for Nonproliferation Studies, 1111 19th Street NW, Washington, DC 20036. E-mail: sougrham@stimson.org

of the AP system were diverted from the public health sphere for exclusive use in the BW area, thereby depriving the Soviet population of the benefits of such research. Without a complete description of the tasks performed by the AP system in the Soviet BW program, and the resources that were allocated for those purposes, it is not possible to answer this question completely. Nevertheless, our findings indicate that throughout the entire Soviet period, including the years of its involvement in the BW program, the AP system continued to protect the nation against endemic and exotic diseases. In this respect, the AP system does not appear to have been diverted from its central public health mission. There is one exception to this rule: the Volgograd AP Station, which, after being transformed into an institute in the 1970s, worked exclusively on the Soviet BW program. Nevertheless, although the Soviet AP system generally remained true to its public health mission, it also developed new capabilities that became intertwined with those of other ostensibly civilian organizations, as well as military institutions, that were more deeply involved in the Soviet BW program. The AP system's public health and BW responsibilities seem to have run along separate but parallel tracks, so that the BW work did not adversely affect the system's public health role.

**Second, the AP system exemplifies a vexing problem in attempting to achieve effective international biological arms control; namely, how might security experts involved with strengthening international biological arms control act to adequately address the dual-use characteristics of applied microbiology?**

The AP system had a vital role in protecting the Soviet population from highly dangerous and naturally occurring infectious diseases. Efforts to do so were initiated well before the October Revolution, by scientists and government officials who understood the need for defenses against pathogens existing in natural niches. As discussed in this report, the extensive experience of the Soviet AP system gained over a long period of time preventing and coping with natural disease outbreaks should not be neglected by a world that is currently being threatened by, on the one hand, emerging and imported diseases of natural etiology and, on the other hand, the growing threat of bioterrorism and use of biological weapons.

Yet, at the same time, the Soviet AP system had important responsibilities and functions in regards to both the offensive and defensive aspects of the Soviet BW program. How would a biological arms control regime distinguish between legitimate activities that aim to protect against natural infectious diseases or deliberate biological attacks by adversaries, and the illicit development of offensive BW capabilities? The Soviet AP system has made major contributions to public health and the medical sciences, although its accomplishments in these fields have been less influential than they could have been because of excessive secrecy. Nevertheless, the Soviet AP system appears to have done a good job in protecting the USSR from exotic diseases of natural etiology. It is also clear that the AP system performed research, development, and production to help defend the USSR

against BW attack. Because research and development for defensive purposes is permitted under the BWC, the involvement of the AP system in this area was not illegal, even if it was unusual by Western practices.

The AP system, however, also provided pathogens, know-how, and information to the Soviet offensive BW program. Were these activities illegal under the 1972 Biological and Toxin Weapons Convention (BWC)? The BWC's Article 1 prohibits the development, production and stockpile of "microbial or other biological agents, or toxins whatever their origin or method of production, of types and in quantities that have no justification for prophylactic, protective or other peaceful purposes." Therefore, if AP scientists knowingly acquired or developed pathogens to be used for offensive BW purposes, they probably violated the BWC. To reach a definitive answer to this question, it is essential to determine whether AP scientists focused exclusively on research—which is not covered by the BWC—or went beyond research to become involved in the development and production of BW agents. The aborted construction of an aerosol test chamber at the Rostov AP institute suggests that this institute was very close to crossing the borderline into illegality (the construction was ultimately stopped for financial reasons.) On the other hand, if AP scientists' findings and discoveries were used by others without their knowledge or approval, the scientists cannot be held responsible for the misuse of their research.<sup>3</sup>

As noted in this report, most AP scientists and administrators were unaware of the ultimate purposes of their work. Higher officials in the MOD and government, however, certainly knew how the research findings of AP scientists were being used. Accordingly, by ordering tasks in support of *Ferment*, these officials violated the BWC. Specifically they violated Article 4, which states that

Each State Party to this Convention shall, in accordance with its constitutional processes, take any necessary measures to prohibit and prevent the development, production, stockpiling, acquisition, or retention of the agents, toxins, weapons, equipment and means of delivery specified in Article I of the Convention, within the territory of such State, under its jurisdiction or under its control anywhere.

**Third, notwithstanding the dual-use dilemma, the AP system illuminates an important distinction that ought to be made between two different models of civilian facilities that participated in the Soviet BW program.**

As noted above, the Soviet BW program was conducted at two types of facilities: (1) military microbiological facilities under the Soviet MOD, and (2) civilian institutes and plants. Among the civilian facilities, two models prevailed. The first was the Biopreparat model, in which facilities were deliberately created to work on the BW program with civilian activities serving as a cover for their military work. The second model involved

<sup>3</sup>MacLean, Douglas. 1992. Ethics and biological defense research. In Raymond A. Zilinskas, ed. *The Microbiologist and Biological Defense Research: Ethics, Politics and International Security. Annals of the New York Academy of Sciences* 666:1–249.

facilities originally established for civilian purposes, but that were assigned additional BW-related tasks. The AP system belongs in this latter category. After the Soviet Union's dissolution, Biopreparat facilities were deprived of their BW mission. As a result, their civilian cover activities lost their *raison d'être* and the institutes had difficulty surviving the transition. Conversely, in the case of the AP system, the BW appendix was easily removed without compromising the integrity and operation of the system's public health function.

This distinction is important because these two models imply the need for two different nonproliferation policies. The Biopreparat model requires a conversion policy that consists of designing a new mission for the former BW facilities (or dismantling them). In theory, because of the dual-use characteristics of microbiology, a lateral conversion leading to medical research or production, for instance, should not be arduous. In practice, however, such a lateral movement is difficult to carry out because the converting facilities must operate in a competitive environment, with stringent research and production regulations and while receiving little or no support from the federal government. The economic realities in the FSU mean that Biopreparat facilities require financial support, not only to adjust to the new market but also to continue operating during the transition. This in turn implies the development of programs to, among other things, support former BW scientists until they find new civilian activities that are sustainable. Finding peaceful and productive work for former weapons scientists is a long process that may have no definitive end point, or one that can readily be subjected to currently known methods to measure their effectiveness.

The AP model, on the other hand, requires a "re-conversion" policy. Because the AP system already has a long-term, impor-

tant mission—protecting the nation against endemic and imported diseases—such a policy would consist of helping the AP facilities to concentrate exclusively on their public health mission. This task would involve funding for equipment, material, and training to support and improve existing disease surveillance activities. Consequently, the nonproliferation policy for the AP system has a clear objective, and a definitive end, with a measurable way of determining its success. Thus, conversion of the AP system should be easier to achieve than is the case for former offensive BW facilities.

**Finally, could the dual-use capabilities present in the AP system be used directly by foreign governments or terrorist groups to develop and produce biological weapons, now or in the future?**

As noted in this report, AP facilities performed tasks for offensive and defensive aspects of the Soviet BW program. Accordingly, they employ personnel who possess BW-related knowledge and know-how, and also house collections of dangerous pathogens that could be of interest to foreign governments or non-state actors wishing to develop a BW program. The AP institutes also employ scientists who, without having been involved directly in the BW program, have nonetheless accumulated significant experience and expertise in working with dangerous pathogens that might be used for BW purposes. What is the state of the AP facilities today and how much of a BW proliferation threat do they present? Are scientists usefully employed at the AP facilities and, therefore, relatively unsusceptible to lucrative offers from would-be proliferant states or terrorist organizations seeking to acquire weapons of mass destruction? These are questions that we will seek to answer in our second report.