

DEFENDING AGAINST BIODEFENCE: THE NEED FOR LIMITS

By Barbara Hatch Rosenberg

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Introduction: Biodefence and the BWC

The Biological Weapons Convention (BWC) of 1972 is a disarmament treaty, not an arms control treaty. When it was negotiated, the Geneva Protocol of 1925, which prohibits the use of biological weapons (BW), was already in force and considered a part of international law. But the negotiators of the BWC wanted to “exclude completely the possibility” of biological agents and toxins being used as weapons by abolishing the weapons themselves.

Since the BWC came into force in 1975, biotechnology has progressed rapidly, its military potential has not gone unnoticed, and suspicions have multiplied. Anxious to increase transparency and ensure compliance with the Convention, the states parties in 1986 adopted an annual information exchange as a Confidence-Building Measure (CBM). The ineffectiveness of this “politically-binding” measure led the parties in 1991 to initiate the process of developing a legally-binding Protocol to monitor compliance. Ten years later this process became stalemated over the implacable opposition of the Bush administration to any legally-binding instrument.¹

Considering that the BWC has no verification provisions and that two of its parties (the USSR and Iraq) are known to have violated the treaty, a strong monitoring regime with on-site provisions is obviously much needed. Beyond that, openness is essential in all activities with dual potential. Even in the absence of international monitoring, states parties can demonstrate their good faith through transparency and strict interpretation of the Convention’s prohibitions.

The Convention permits the use of biological agents of appropriate types and quantities for “prophylactic, protective and other peaceful purposes.” This is construed to include the development of defences. There is no such escape clause for “weapons, equipment or means of delivery designed to use such agents or toxins for hostile purposes or in armed conflict.” These are categorically banned. As the Soviet defector Ken Alibek has pointed out, when you “start modeling or mimicking actual weapons, you come into very sensitive areas” that can imply offensive preparations, especially if the details are kept secret.²

US Biodefence Programmes: from Relative Openness to Secrecy

In the past, the United States has understood the need for transparency and limits in its biodefence programme. A Programmatic Environmental Impact Statement (PEIS) covering biological research, development, testing and evaluation conducted by the Department of Defense (DoD), finalised in 1989, stated that the programme “does not include the development of any weapons, even defensive ones, nor does it attempt to develop new pathogenic organisms for any use. All work conducted under the BDRP is unclassified. However, results may be classified if they impinge on national security by specifying US military deficiencies, vulnerabilities or significant breakthroughs in technology.”

All government facilities and contractors involved in the DoD programme, and their projects, were listed in the PEIS. At that time, an annual list of biodefence experiments utilising genetic engineering was publicly available. Sometime during the 1990’s, the situation in the United States changed from a policy of relative openness to secrecy, precipitated perhaps by the Gulf War and the findings of the UN Special Commission (UNSCOM) in Iraq, the disclosures of Soviet defectors, and the attempted biological attacks by Aum Shinrikyo in Japan.

Throughout the Protocol negotiations, the US delegation worked to weaken disclosure requirements and finally, at the last AHG negotiating session in July, 2001, the United States stood alone in rejecting the minimal Chairman’s draft and any further negotiations. Two weeks before his rejection statement, Ambassador Donald Mahley, Chief Negotiator for the US, admitted under questioning before the House Subcommittee on National

Security, Veterans Affairs and International Relations that a number of US government agencies conduct biological activities that raise “ambiguities” regarding their purpose; therefore, to protect their interests, the agencies refused to accept many of the monitoring measures proposed for the Protocol. Ambassador Mahley reportedly concurred with the US decision after being shown what was going on at Battelle Memorial Institute (a defence contractor) under *Project Jefferson*, a secret, multi-agency, multi-site and multi-contractor biodefence undertaking containing many sub-projects.

The kinds of agency activities that prompted Mahley’s testimony and the hardline US opposition to a Protocol were illuminated by a *New York Times* article on September 4, 2001, exposing three secret biodefence projects that push up against the permissible limits of the BWC.³ Government officials knew about the article as early as May, but it was not published until after the United States had rejected the Protocol. US allies have privately said that their consternation would have been overt, had their anger not been overshadowed by sympathy on September 11.

The secret projects detailed in the *Times* report were: construction from off-the-shelf materials of a plant for production of microbial anthrax simulants, known as *Project Bacchus* and conducted by the Defense Threat Reduction Agency (DTRA); a Defense Intelligence Agency (DIA) plan to genetically engineer a vaccine-resistant strain of anthrax developed by the Russians; and a Central Intelligence Agency (CIA) project, called *Clear Vision*, to construct and test a Soviet-model biological bomblet.

Tip of the Iceberg?

The most obvious question raised by these revelations, disturbing enough in their own right, is whether they represent just the tip of an iceberg. According to a knowledgeable source, all three projects had predecessors that have not yet come to light, most notably a DoD bomblet project run in the late 1990’s at the Army’s Edgewood Arsenal in Maryland.

According to the source, hundreds of bomblets were made in the course of the Edgewood project. It may not be coincidental that Edgewood is also involved in a collaborative project involving aerosol dissemination of biological agents and simulants with Sandia National Laboratory in New Mexico. That project, operated under the authority of the Department of Energy (DOE), has maintained a low profile, but a brief description can be found in the Appendix to the FY 2000 Annual Report of the DOE Chemical and Biological National Security Program. Perhaps significantly, it has not been possible to find any mention of the project in FY 2000 reports covering Edgewood, a DoD facility. The project develops models to predict agent distribution and potency as a function of the dispersal method, variations in the source over time, the agent type, the amount of agent and its state (dry or wet), size distribution, environmental conditions, etc. – data that appear to have considerably greater offensive than defensive potential. Infectious agents as well as simulants are to be used. According to details provided in the DOE report cited above, the work is carried out by Sandia at an undisclosed aerosol facility and at Edgewood in its two large aerosol facilities, one of 70 cubic meters for spray dispersion testing, and one of 155 cubic meters for explosive testing.

There is no record of concerns about the legality of the DOE aerosol project or the Edgewood bomblets, but questions about the CIA’s *Clear Vision* bomblet programme arose from different sources on three occasions between mid-1999 and early 2001, the duration of the project. The questions were never fully resolved, but the work went ahead after CIA lawyers held that the project was legal under the BWC.⁴ CIA officials appeared to be covering all eventualities, however, by saying that the bomblets lacked explosive fuses and therefore were not functional arms. According to *Germs*, a book by the *New York Times* reporters who uncovered the project, the bomblets were filled with simulant and tested both for the way they would fall after release from a warhead and for their dissemination characteristics. To test dissemination of the BW agent simulant, the bomblet must have been detonated, if not via its own fuse, then by some external means. Again, it is hard to see how this work would affect the defensive response to a bomblet attack, which ought to assume the worst.

In addition to the construction and testing of delivery systems, we now know, as a result of the investigation launched in the wake of the anthrax letter attacks in the United States following 9/11, that the US has been

secretly “weaponising” anthrax, i.e., preparing it in a readily aerosolizable and highly infectious form, for many years. It had been assumed that this activity had ceased by 1972 after President Nixon ordered all BW agent stocks destroyed.

At a hearing on the “Global Spread of Chemical and Biological Weapons” before the Senate Committee on Governmental Affairs in May 1989, Colonel David Huxsoll, Commander, US Army Medical Research Institute for Infectious Diseases, testified: “To create a weapon...the issues of stability, dissemination and weapons delivery systems would have to be addressed. These activities are clearly prohibited by the Biological Weapons Convention.”

None of these questionable US activities has been declared in the US annual CBM reports. It appears to have been conveniently assumed that only activities conducted under the official DoD biodefence programme need be declared, although other DOD units – DIA, DTRA – and other agencies – CIA, DOE – have increasingly taken on biodefence functions. It is startling to find, in the Assessment Report of a meeting of US and UK defence officials, that “in the US these [relevant treaties, including the BWC] do not apply to the Department of Justice (DOJ) or Department of Energy”. Therefore, the Report lists as one of the Recommended Actions for the US: “If there are promising technologies that DoD is prohibited from pursuing, set up MOA [memoranda of agreement] with DOJ or DOE.” The US delegation to this event – the Non-Lethal Weapons Urban Operations Executive Seminar, held in London on November 30, 2000 – was led by four US Marine Corps Generals, including one who was Staff Judge Advocate to the Commandant of the Marine Corps.

Conclusion: Counterproductive Secrecy vs. Beneficial Transparency

Most of these secret projects, carried out for “threat assessment,” were not known to the most senior US officials. Yet these are not matters for decision by technicians; they cast a shadow on US integrity and encourage other countries to follow suit. They degrade the BWC and endanger the norm against BW. The United States has already experienced the first fruits of its threat assessment fixation: the anthrax attacks, which were almost certainly generated by someone inside the biodefence establishment.

Secrecy is particularly corrosive, especially when combined with rejection of international monitoring. Suspicions would be largely dispelled if threat assessment projects were openly declared and subject to international inspection. There would be no need to disclose project results that impinge on national security. After the *New York Times*’ revelation of US secret activities, the Pentagon declared that no critical information obtained through the programmes had been lost.

It would be circular to argue that, without any assurance of compliance with the BWC, threat assessment is necessary for national protection. It was the insistence on threat assessment that killed compliance monitoring – and not just the last, weak, version of the Protocol, but also the strong measures initially proposed. Threat assessment has replaced threat deterrence, and the outcome may be a covert international arms race to stay at the cutting edge of BW development, using defence as a cover.

Nonetheless, would defence be enhanced by detailed study of threats – e.g., by creating new, genetically-engineered pathogens and testing their effectiveness when delivered by various mechanisms? A candid debate on this question should start with the recognition that there is, unfortunately, no way to protect civilian populations, the most likely target, from a BW attack. Indeed, this grim realisation lies at the heart of the *raison d’être* of the BWC: the only truly effective protection against BW is the elimination of the weapons themselves. Short of this fundamental solution, the best that can be done is to limit the damage through detection, diagnosis, public health measures, decontamination, and so forth – standard defence measures that are unquestionably both permissible and advisable. If newly-developed pathogens were used in an attack, the possibilities are too numerous to make prior preparations based on guesswork of any more value than generic measures and worst-case assumptions.

The development of offensive capabilities for threat assessment purposes is increasingly undermining the very meaning of the BWC. Although all the examples here come from US biodefence activities – some of which

have become known through investigative activities – there is no reason to suppose that the same kinds of secret activities are not occurring in other states parties with less-open societies but similar military interests. For this reason, in November last year a group of non-governmental organisations drafted recommendations for a code of conduct for biodefence programmes and distributed them to the states parties attending the resumed session of the Fifth Review Conference of the BWC in Geneva. The document is reproduced below, with a few additional comments in bolded italics.

While such a code of conduct cannot, and is not intended to, supplant efforts to provide the BWC with an effective means of verifying compliance, it is clear from the above analysis that urgent steps need to be taken to hold the line between prudent, authentically defensive research and projects with potentially offensive and more sinister applications. If that line is not held, the prospects for successfully revisiting a BWC Protocol will be at best further complicated, and perhaps gravely diminished.

Notes and References

1. For details on the position of the Bush administration, and its drastic impact on efforts to strengthen the BWC, see Jenni Rissanen, “Left in Limbo: BWC Review Conference Suspended on Edge of Collapse”, *Disarmament Diplomacy* No. 62, January/February 2002, pp. 18-44, and Marie Isabelle Chevrier, “Waiting for Godot or Saving the Show? The BWC Review Conference Reaches Modest Agreement”, *Disarmament Diplomacy* No. 68, December 2002/January 2003, pp. 11-16.
2. Columbus (OH) Dispatch, 5 September 2001.
3. “US Germ Warfare Research Pushes Treaty Limits”, Judith Miller, Stephen Engelberg & William J. Broad, *New York Times*, September 4, 2001.
4. Judith Miller, Stephen Engleberg & William J. Broad. *Germs: Biological Weapons and America’s Secret War*, Simon & Schuster, September 2001.

Dr. Barbara Hatch Rosenberg is Chair of the Federation of American Scientists’ (FAS) Working Group on Biological Weapons, and Director of the Federation’s Chemical & Biological Arms Control Program (www.fas.org/bwc).

APPENDIX: DRAFT RECOMMENDATIONS FOR A CODE OF CONDUCT FOR BIODEFENCE PROGRAMMES

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Sponsors: Federation of American Scientists (FAS) Working Group on BW; Stockholm International Peace Research Institute (SIPRI); The Verification Research, Training and Information Centre (VERTIC); International Network of Engineers and Scientists for Global Responsibility (INES); Acronym Institute for Disarmament Diplomacy; Sunshine Project; Pax Christi International; Physicians for Social Responsibility (PSR); 20/20 Vision.

Biodefence is vital for protection against biological warfare and for deterrence. However, biodefence programmes that blur the distinction between offensive and defensive activities could provoke the very danger they are intended to combat. The goal of the Biological and Toxin Weapons Convention – to eliminate biological and toxin weapons and exclude the possibility of their use – would be nullified if “protective purposes” in Article I were to be misconstrued as permitting threat assessment involving the conduct of almost any potentially offensive activity short of large-scale stockpiling. Thus, there is an urgent need to ensure that, in conducting their biodefence programmes, states parties reject this interpretation as inconsistent with the letter and spirit of the Convention.

To initiate a debate among states parties and non-governmental organisations on this imperative, a group of NGOs has taken a first step by drafting recommendations for a Code of Conduct that could be useful in judging the good faith of states parties to the Convention in the conduct of their biodefence programmes. Observation of such a Code would contribute to confidence in the effectiveness of the Convention.

The following understandings are recommended for inclusion in a Code of Conduct:

- a) The development, production, stockpiling, acquisition or retention of *all* microbial or other biological agents or toxins of types and in quantities that have no justification for prophylactic, protective or other peaceful

purposes are prohibited by the Biological and Toxin Weapons Convention. This prohibition covers biological agents and toxins that are capable of causing temporary or permanent damage, harm or death to humans, animals, plants, materials of any kind or the environment. Work with *any* agents of these kinds is permissible only for protective or other peaceful purposes, and should be conducted only within the restrictions specified in the following points.

This understanding is based on Article I of the BWC, the Final Declarations of the BWC Review Conferences and on the understanding expressed in the US legislation implementing the BWC.

b) The Biological and Toxin Weapons Convention contains no exemption for law enforcement, riot control or similar purposes. The development, production, stockpiling, acquisition or retention of microbial or other biological agents or toxins¹ for these purposes, which are hostile, not peaceful, is therefore not permissible.

No use of a weapon can be defined as a peaceful purpose. Weapons are only used in conflicts, and every conflict involves a confrontation of two views. Regardless of the nature of the goal sought by one participant – e.g., subduing terrorists (the Russian view) or achieving regional independence (the Chechen view) – his opponent will surely consider the use of a weapon by the other side to be a hostile act. The BWC does not take sides.

c) The design, construction or possession, for *any* purpose, of delivery mechanisms designed to use biological agents or toxins for hostile purposes or in armed conflict is prohibited by the Biological and Toxin Weapons Convention.² There is no exemption for protective purposes. The Convention's stated goal is to preclude the use of biological weapons under any circumstance; therefore it is not permissible, even for defensive purposes, to construct delivery mechanisms designed for (i.e., having a design that is appropriate for) hostile use, whether or not hostile use is intended at the time of construction.

When the Convention prohibits delivery systems "designed to use" biological agents for hostile purposes, it cannot possibly mean "intended to use" such agents for hostile purposes. The fundamental reasoning behind the BWC's prohibitions is that a state involved in hostilities might resort, under pressure, to the use of BW if it possessed them, even though the BW were not acquired for that purpose and their use is prohibited by the Geneva Protocol. Because biological agents are dual-use and most delivery systems for hostile use are not, means of delivery are critical elements in making an operational weapon, and they are therefore categorically banned.

d) Secrecy in biodefence programmes³ raises suspicions and could promote a race for offensive capabilities under cover of defence. Whereas the *results* of defence activities may need to be kept confidential, secrecy concerning the *types or locations* of defence activities undermines the Convention and should be disavowed.

e) Construction of novel (i.e., not previously-existing) biological agents (including single-gene changes) for threat assessment is incompatible with the spirit and intent of the Convention, and should be disavowed.

The vast multiplicity of possibilities makes anticipation of unknown BW agents in order to protect against them an unlikely scenario. Furthermore, if many countries engaged in engineering a variety of new and dangerous agents for threat assessment, the ultimate consequences would likely be disastrous, even if the agents were never used as weapons. The accidental escape of anthrax from a Soviet military facility in Sverdlovsk in 1979, killing roughly one hundred civilians outside the facility, was not unique. A number of less serious accidents with human pathogens have been documented in the former US and Soviet BW programmes, and other laboratory -confined organisms (e.g., the gypsy moth, imported for experimental purposes in the US) periodically escape.

f) Weaponisation⁴ of active biological agents (defined in Note i) for defensive purposes also violates the spirit of the Convention and should be disavowed. Aerosolisation or other dissemination of active biological agents should be performed only in fully-contained bench-scale environments and only for purposes of detection, prophylaxis or medical treatment.

For the purposes mentioned, bench-scale work with liquid sprays is generally adequate. The US Army Medical Research Institute for Infectious Diseases at Fort Detrick and the UK's Centre for Applied Microbiology and Research at Porton Down claim to use no other procedure. If there should be an

exceptional, legitimate situation requiring weaponised agent in a form amenable to stockpiling, that work should also be confined to bench-scale and should be declared in the annual CBM report under the BWC.

Notes

1. “**Biological Agents**” is used here to denote both microbial and other biological agents and toxins that could be used to cause harm; “**toxins**” include all physiologically-active compounds, whatever their origin or method of production, including substances found in living organisms, their analogs and synthetic substances that act through the same mechanisms as naturally-occurring substances.

This definition of “toxin” is based on the understandings in the Final Declarations of the BWC Review Conferences, on past usage in the US biodefence programme, and on generally accepted usage among diplomats and scientists in the field.

2. Cf. Colonel David Huxsoll, Commander, US Army Medical Research Institute for Infectious Diseases, in May, 1989 testimony before the Senate Committee on Governmental Affairs at a hearing on Global Spread of Chemical and Biological Weapons: “To create a weapon...the issues of stability, dissemination and weapons delivery systems would have to be addressed. These activities are clearly prohibited by the Biological Weapons Convention.”

3. “**Biodefence Program**” and similar terms mean, both here and in other contexts including the BWC Confidence Building Measures, *all government and private activities related to defence against biological weapons, regardless of the names of the programs or the agencies that conduct the activities.*

This important understanding is essential to prevent subterfuge.

4. “**Weaponisation**” is defined as preparing and treating a biological agent to enhance its effectiveness as a weapon, and/or inserting a biological agent into any type of delivery system suitable for hostile use.