

Summary Minutes
Ad Hoc Meeting on Biological Weapons
October 18, 1985
National Academy of Sciences
Washington, D.C.

An ad hoc meeting on biological weapons, sponsored by the Committee on International Security and Arms Control of the National Academy of Sciences, met in Washington, D.C. on October 18, 1985 from 10:00 a.m. to 4:00 p.m. Those present at the meeting, chaired by Joshua Lederberg, were: William Augerson; Albert Balows; Ivan Bennett; Philip Brachman; Paul Doty; Paul Marks; Mathew Meselson; Patricia Minard; Joseph Nye; Victor Rabinowitch; Thomas Reutershan; Walter Rosenblith; John Steinbruner; and Lynn Rusten (see attachment #1).

Lederberg began the meeting with introductory remarks about the Committee on International Security and Arms Control (CISAC) and its past activities, including biannual meetings with a delegation of the Soviet Academy of Sciences on problems of international security and arms control. Lederberg explained that the topic of biological weapons was an agenda item at the last meeting of the joint CISAC committees in June in Moscow. These discussions focussed on proliferation and confidence building.

Lederberg said the Soviets were receptive to continuing a dialogue on BW and to establishing groups of experts meeting separately from the regular joint CISAC meetings. Lederberg said CISAC would be drafting a specific proposal to send to the Soviets, but wanted to first hold this meeting to help define objectives and means of further communication with the Soviets.

Turning to the substance, Lederberg said the main bilateral issues with the Soviets were confidence building, Soviet compliance with the 1972 BW Convention, and the biotechnology threat to future arms control agreements, particularly with regard to research and development. As for terrorism, Lederberg said his main concerns were the danger of clandestine attack and civilian vulnerability to attack which could be very destructive using even a low level of technology in the BW field.

Lederberg posed several questions he hoped would be addressed at the present meeting: What can usefully be accomplished in U.S. - Soviet discussions with respect to the terrorist problem? How can we maintain and strengthen compliance with the BW Convention? Lederberg noted that the BW Convention does not cover research and development.

Lederberg said that one inhibition on the use of biological weapons is the difficulty of preventing their spread to the attacker. However, if one side had the prevention technology, it might be more inclined to use these weapons.

Lederberg said the issues of mutual confidence are very grave and asked for ideas on how to translate this concern into effective measures that both

sides would accept. Lederberg said he wasn't sure there was a solution to that problem. But, he said that opening up communication between the biomedical communities on each side so there is continual communication and greater confidence could help.

Turning to the BW Convention (attachment #2), Lederberg read Article I aloud, noting that developing defenses against bugs is considered a legitimate activity for peaceful purposes. Article V lays out the procedure for cooperation and consultation. Lederberg said that there will be a review conference in 1987, and that the Sverdlovsk incident and allegations concerning the use of toxins may come up in relation to this provision on consultation and cooperation.

Doty recalled that some of the evidence on the Sverdlovsk incident came to the attention of the U.S. delegation during a BW Convention Review Conference, so the U.S. felt it had to be raised. The Soviets started then to build a public case against the charges.

Steinbruner said it was important to note that the U.S. presented the Soviets with a public case without first presenting it privately, thereby making it a public confrontation. He said it is hard to know what the response would have been if the discussion had gone through private channels. Steinbruner suggested that it might be useful, as a confidence building measure, to try to explain to the Soviets why the U.S. reacted the way it did and went public.

Lederberg said the main Soviet violation was unwillingness to explain the event. Even admitting that spores were released from a military plant doesn't necessarily mean a violation occurred.

Marks suggested dropping the issue of Sverdlovsk on the grounds that we won't get anywhere with the Soviets if we keep trying to deal with the issue head on. Instead he suggested that a groundwork for better cooperation and communication in the future be established. He said Sverdlovsk was now a political issue in the Soviet Union, not a technical one, so he recommended dropping it.

Lederberg disagreed, saying it was important. He asked how it would be possible to lay the groundwork for confidence without resolving this.

Steinbruner suggested it could be possible to lay the groundwork by seeing what's going on at Sverdlovsk now. He said we might see that there is not huge stockpiling there now. Steinbruner noted that Gorbachev is using candor as a political tool. Steinbruner suggested presenting Gorbachev with a way in which candor on the Sverdlovsk incident would be least embarrassing.

Doty remarked that any inspection of Sverdlovsk now wouldn't be informative about the incident in 1979.

Nye said that leading with Sverdlovsk would be a big mistake. He suggested instead starting with proliferation. He said the goal should be to set up an institutional framework to deal with proliferation and other issues, along the lines of the Standing Consultative Commission. Then we could look at why we failed to communicate clearly with each other on the Sverdlovsk incident. Nye said that trying to get the Soviets to publicly retract their story on Sverdlovsk is a loser.

Augerson asked what were the objectives of the National Academy of Sciences in meeting with the Soviets on security issues. He asked how these discussions would stay clear of official negotiations and discussions.

Rabinowitch explained that it is the policy of CISAC and its counterpart Soviet committee to stay clear of issues being directly negotiated, though he acknowledged that there is some occasional deviation from this policy. He added that CISAC is routinely and properly briefed by the government, and that CISAC briefs the government on its activities, particularly on its discussions with the Soviet group. Rabinowitch said it is an important outside private channel of communication of influential scientists on both sides. CISAC aims to understand, to educate itself, and to educate a wider audience - namely, the officials who make policy. CISAC does not make public statements; and its sessions are considered private.

Steinbruner added that the two governments are not dealing with the BW issue now, but that it will be an important issue for them in the future. It is important to lay the groundwork now for professional communication.

Augerson said some countries still are not signatories to the BW Convention, so this group should consider holding discussions with scientists from non-signatory states, like China. Augerson noted the many Soviet charges of U.S. activities in violation of the Convention. He recommended compiling a list of these Soviet charges in advance of a meeting with the Soviets.

Steinbruner said there are real advantages in starting with proliferation. However, one disadvantage is that bilateral issues and methods are more important to the Soviets. Therefore we should start a bilateral discussion with a bilateral definition of the issues, such as regulating U.S. and Soviet activities.

Nye said it was possible to deal with the proliferation issue in a bilateral forum. He said the issue of nuclear proliferation and suppliers was a good example of this. Nye suggested three goals: 1) increasing adherence to the Convention; 2) ideological detente; 3) quiet approach to other countries. Nye said this was a highly bilateral agenda that deals with proliferation.

Lederberg said to remember that our forum is scientific and medical, not the Politburo. He said discussions should take place at the technical level.

Steinbruner suggested telling the Soviets we want to develop mechanisms for scientific cooperation in this field.

Marks noted that the high technology of this field is not limited to the Soviet Union and the United States. He said other states could easily be brought in.

Steinbruner said the most powerful motive for the Soviets is the potential to have deep and longstanding scientific cooperation.

Marks concurred, but noted that there could be a problem with the private sector in the U.S. He indicated the private sector here might be wary of cooperating with a country that could become a world market competitor in biotechnology.

Meselson said there were arguments for avoiding a linkage between proliferation and cooperation, such as public perception. He said if you talk up the linkage, it can make cooperation sound like more of a threat. He cautioned against saying that the purpose of cooperation is to prevent the use and spread of biological weapons. He suggested instead promoting cooperation for its own sake.

Lederberg noted that all we have to offer are private discussions. He said he had received a benign "go-ahead" from people in the government to do this.

Meselson asked whether the Soviet Academy was the right group to go through for these discussions. He said he has had better discussions with non-Academy Soviets.

Lederberg said Bochkov was interested, and that he stands next to Chazov in the Soviet Physicians for the Prevention of Nuclear War.

Rabinowitch predicted that Ovchinnikov (Vice President of the Soviet Academy) will get involved once this gets going. (He is in charge of all biological facilities in the Soviet Union).

Nye said that when the Soviets want to get serious with CISAC, they'll bring in experts from outside the Academy as needed.

Steinbruner agreed and said if outside experts start appearing, this would be an indication that we were getting somewhere.

Meselson said it was important to find the right Soviet individuals and invite them directly.

Lederberg said we don't have access to the Soviet decisionmakers. One problem is that there is no internal Soviet constituency for BW arms control. Lederberg said he wanted to help create this constituency.

Nye agreed with this goal and noted that the pattern has been for things to become part of the agenda for Soviet elites after they have become important issues in the U.S.

Lederberg said our natural allies would be people involved in biomedical research in the Soviet Union who are working against these agents.

Steinbruner predicted that the BW tutorial Lederberg gave in Moscow last June would be taken seriously in the Soviet Academy and government. He said it may be a year or so before we learn what they propose to do. Steinbruner said we were on track to see if it's time to get a serious response.

Lederberg agreed with earlier comments that we shouldn't let Sverdlovsk ruin the talks. He suggested finding a different example, an alternative to Sverdlovsk, for confidence building. Lederberg said we could offer the Soviets access to what we are doing in biological research. We could find out what they want to know and whom they'd like to see to learn more. Lederberg said we needed to build a bigger constituency for BW arms control here too. He said it could be useful to discuss with the Soviets how R & D, production and compliance are monitored in this country too.

Doty said if there were an arms control agreement, Sverdlovsk could be an impediment to U.S. ratification. Something needs to be done about Sverdlovsk before the next treaty is made.

Meselson said a group like this one could show the Soviets how they could satisfy the U.S. on Sverdlovsk.

Augerson recommended caution in the desire to keep the channels of communication open. He said that appearing to participate in working this out could be sticky for this group.

Lederberg said we wouldn't go beyond any official posture.

Augerson said he was concerned about the radical difference in the openness of the two sides and how Sverdlovsk could even be resolved.

Meselson said the U.S. got out of biological weapons production unilaterally; maybe we could teach the Soviets it's in their interest too.

Brachman said he assumes the Soviets know we know what happened in Sverdlovsk. On a private level, the committee should let the Soviets know how it feels about the incident and then say that it won't discuss the issue anymore.

Meselson said he still thinks it's worth discussing with the Soviets alternative explanations for the incident. He said it could have been a batch of bad vaccines or something equally embarrassing.

Balows said there is the example of Gruinard island which was used by the British to conduct experiments with Bacillus anthracis. It is still off-limits after many years because of anthrax spores in the soil. He suggested that we could try to get samples of spores from soils around Sverdlovsk.

Lederberg noted that this would require an extreme of cooperation.

Nye said it would be a mistake to raise Sverdlovsk. He said it was like Krasnoyarsk, on which, unofficially, you get less silly, but still contradictory, responses. Nye said the U.S. signed the BW Convention because we were already out of BW production and figured if the Convention constrained the Soviets only 10% it would still be worthwhile. Nye said this turned out to be faulty reasoning. It has hurt the arms control process. He said we need mechanisms to make Article V work. We need to look back at the past with the aim of finding ways to improve the consultation procedure.

Steinbruner noted that Lederberg has already raised the issue effectively with the Soviets. It's on the record and the Soviets have the opportunity to respond. He said this takes care of the public opinion aspect. The written record is clear. We don't need to harp on it any more.

Lederberg said we've let them know we won't forget about Sverdlovsk. He said it is the only example to date of Soviet behavior in response to a questioned incident and it is an unacceptable precedent. Research and development programs are the next challenge. He asked how we could regulate research and development in any sphere, especially in mixed use technologies such as this. He asked what we could propose.

Steinbruner said there was an analogy in the fusion program. He said both governments allowed an unusual degree of cooperation. He suggested we try to establish an area of research cooperation that plays an analogous role, one not of direct military importance.

Marks noted that this research is potentially interesting commercially. He said the private sector in the U.S. might not like this cooperation, because the U.S. and the USSR might be competing in the world market.

Lederberg said the Soviet Union needs an exchange of its people to work in our labs. He noted that Japan is a major competitor of the U.S., yet there are 1500 Japanese scientists at the National Institute of Health. He suggested that one hundred Soviets here won't make that much difference.

Marks said we might not be able to get the cooperation of some people in the private sector because they think they can't deal with the Soviets, unlike the Japanese.

Steinbruner said it works both ways, meaning that the Soviet Union represents a potentially big market for U.S. companies.

Balows noted that we can learn from the Soviets too. He said they have prepared some superior vaccines, and they have successfully aerosolized vaccines.

Meselson noted that Soviet hoof and mouth vaccine is exported. Marks said the vaccine was not yet perfected, so this could be a good area of cooperation.

Brachman remarked that the Soviets excel in forecasting the spread of disease.

Meselson asked whether any countries that buy vaccines from the Soviet Union have inspectors in Soviet vaccine plants. The answer was yes.

Bennett said we should follow up on this vaccine business. He suggested it would be useful to explain that we can gain something from the Soviets, such as their advances in vaccine technology. However, Bennett noted that the Department of Defense was about to clamp down on biotechnology transfer.

Lederberg raised the issue of who would be liable for the Soviet vaccine if it were imported. Balows responded that this entire issue of liability was currently working its way through Congress.

Lederberg suggested that while cooperation in vaccine development is possible, buying vaccines from the Soviet Union is less so.

Augerson said there is much to be learned from cooperating with the Soviets. For instance, what are the agents that terrorists might use? This could lead to cooperation on vaccines against these agents.

Lederberg raised the possibility of agricultural technology cooperation. He said he was talking about fundamental research, not applied, so that competition was not so much of an issue.

Nye asked whether we could regret opening up cooperation if in ten years it looks like the Soviets have a program for biological warfare.

Lederberg said there are probably people in the military who would say yes. But he wouldn't. Lederberg said the destructiveness of the current technology is already great, and it won't increase that much in ten years.

Meselson said the key thing is intent. That is what we have to affect, unlike for other weapons. He said it is not a problem of technological breakthrough, it is a change in the attitude of mankind, that we need to prevent.

Nye asked whether there was a military argument in favor of BW. He asked if there was a doctrine for a biological weapon that was debilitating but not lethal and for which there would be a vaccine for one's own troops.

Lederberg remarked that the thing to look out for is controllability, not greater lethality. He said there was still the problem of testing the performance of weapons and their vaccines.

Steinbruner said the Soviets are doing research in BW, but they haven't developed it as a serious offensive capability. He said we want to prevent these kinds of missions from developing.

Nye said he was trying to understand the rationale for the Department of Defense putting biotechnology on the COCOM list. He asked if it was designed to hold back Soviet economic development or if it was a real national security concern.

Lederberg noted that twenty years ago there was a doctrine for the utility of BW.

Augerson said the ability to make decisions in crisis could be impaired if decisionmakers all got sick at the same time.

Nye said if he were a military planner, he would go not for greater lethality, but for fast acting viruses as an augmentation to conventional forces.

Lederberg said there are agents today that come close. But, for the superpowers, as long as they have nuclear weapons, there are only marginal advantages to adding currently available BW agents. He said it would be more advantageous for the non-nuclear powers.

After a short break for lunch, Lederberg asked Rosenblith to report on the status of the Academy negotiations with the Soviet Academy on the exchange program. Rosenblith reviewed the history of the program, its partial suspension in protest over the treatment of Sakharov, and the decision to negotiate a new agreement. Rosenblith reported on the status and details of the negotiations, which are not yet complete.

Lederberg turned the meeting back to the subject of BW, asking what would be a useful agenda for discussion with the Soviets.

Meselson suggested we not say we want to stop biological weapons production. Rather, he said we should emphasize humane concerns. He said we should not cause the Soviets to want to make the weapons. He suggested starting with broad idealistic intentions, such as not using the life sciences for hostile purposes. In the area of cooperation, Meselson suggested visits to high containment labs and notification of disease outbreaks. Meselson said the Soviets currently report outbreaks of influenza. Brachman said they report other diseases too. Meselson said a U.S. National Academy of Sciences exchange person was in Sverdlovsk a few days after the outbreak is said to have started. Since there's this precedent, Meselson suggested trying to send someone there again.

Lederberg then introduced Thomas Reutershan, Emergency Coordinator of the U.S. Public Health Service, and Albert Balows, Assistant Director for Laboratory Science at the Center for Infectious Diseases, who were invited to give a briefing on the threat of terrorist attack with biological weapons.

Reutershan introduced Balows, who would talk about the vulnerability of the U.S. to terrorist attack. Reutershan said that afterward he would talk about how the U.S. would respond to such an attack and about a new system - the National Disaster Medical System - that is being put into place.

Balows said that one mission of the Centers for Disease Control (CDC) is to investigate outbreaks of infectious diseases through epidemiologic and laboratory work leading to the control and prevention of epidemics. In 1982, the CDC was asked to be able to respond to possible incidents that might occur at the recent World Fairs in Knoxville and New Orleans and at the Olympics in Los Angeles. He said the slide show and talk he would give were an outgrowth of that assignment.

Balows said that in trying to determine what agents a terrorist might use, the CDC group looked at variables such as the stability of the agent, preutilization tests, the ability to produce or procure the agent, criteria of agent selection from the point of view of the terrorist, and the desired objective of the terrorist. The group considered different types of agents, their applicability to the criteria and methods for their delivery, and then prepared to investigate and identify the agents that most likely would be used in a given incident once the field investigations had been done.

Balows said the group created different scenarios and conducted mock exercises for dealing with different types of crises. Precautionary actions were taken at the Olympics, including regular checks of outpatient clinics for indications of increases from the norm of infectious diseases. In response to a question, Balows said the threat level in terms of numbers of people affected was open-ended.

Meselson said he wished to emphasize the uncertainties and difficulties of executing a successful attack. But he agreed that the psychological effects, such as panic, could easily be achieved. He said it was important to maintain the idea that biological weapons attack is not dependable, that it could fail.

Augerson said Meselson puts too much weight on the idea that the military or terrorists make decisions on the basis of the reliability of weapons.

Lederberg stressed the importance of discussing these issues quietly so as not to educate potential users. He said water supplies are very vulnerable.

Nye, returning to the issue of motives, said terrorists were more interested in publicity. He suggested that BW is still viewed as illegitimate, and therefore might not gain sympathy for the terrorist.

Lederberg said it was important to distinguish between the technical threat and motives. He said he thinks the technical threat is great. It is relatively easy for someone to do this.

Meselson said he thought it was conceivable but did not see it as a great threat.

Doty raised the issue that we are considering collaborating on this problem with a country that supposedly trains terrorist groups.

Steinbruner asked if this were so, why have there been no successful missions against the U.S.

Lederberg, referring to a Rand report by Brian Jenkins, said he thought BW could be very effective even for theatrics.

Marks said AIDs was a good example of a disease that has elicited an out-of-control emotional response, with small impact on public policy. He agreed that a public threat of the use of biological weapons could throw a community into panic.

Steinbruner said terrorists have an incentive to restrain what governments will do to go after them. He suggested a deterrent would be to demonstrate that the government would go all out after someone that used biological weapons. Steinbruner said the thing to worry about is people to whom it is a form of warfare, who want it to be destructive. Steinbruner said this posits a very sophisticated operation that might show some traces. If the U.S. and the Soviet Union were cooperating against it, an organization like this would have a hard time. Steinbruner said this sort of cooperation would be useful to discuss with the Soviets.

Nye said the Soviets are generally more worried about interstate terrorism, while the U.S. is more worried about terrorists. However, there is more symmetry in the case of BW because of its transportability and the chance that it could spill back into Soviet society.

Responding to Doty's earlier comment, Steinbruner said the evidence indicates that the Soviets give only standard military training to terrorist groups. They get their terrorist training from somewhere else.

Augerson said the concern is not Soviet sponsored terrorists, but someone like Iranians, whose intent is to do damage. Signatures from these activities might not be easy to discern.

Minard said there is growing attention to the importance of the second tier of suppliers. She said it was important to focus on the fundamentalist terrorist threat.

Nye delineated several types of terrorists: the classical terrorist, who wants attention; and kamikazes of two types - "disorganized" and state-supported. He said the greatest threat is that of the "free-lance" kamikaze. But the greatest threat in terms of numbers of people to be killed is the state-supported kamikaze. Nye said the Soviets have an interest in both kamikaze types because they are both too uncontrollable.

Steinbruner added that this all presupposes a discussion with the Soviets that assures us that they share our interests.

Lederberg then turned the discussion back to Reutershan, who discussed how the U.S. would respond to natural disasters and possibly to such an attack on civilian populations. Reutershan said the Centers for Disease Control is the lead agency to assess the nature of the occurrence, to work with local health officials on how to control and prevent spread of disease and how to treat people, and to supply needed anti-toxins, etc.

Reutershan said he was the director of the National Disaster Medical System, a new joint venture of the Department of Defense, the Federal Emergency Management Agency, the Veterans Administration and the U.S. Public Health Service. He said it is a plan to have available a national network of 100,000 hospital beds, civilian and medical disaster teams, and patient evacuation by air in event of a medical disaster. It is a system that relies on existing resources.

Reutershan said he was concerned about the threat of a terrorist incident and welcomed remarks or letters from this group on the new system.

Lederberg asked if managers of municipal water systems were being educated about the possibility of intentional contamination of water supplies.

Reutershan responded that there are classified discussions going on to assess and detect threats to the water supply. He said the government was very concerned about these potential situations. He added that the Army Corps of Engineers has responsibility for the safety of water supplies.

Meselson said we should suggest to the Soviets sharing information on terrorists that may be developing biological weapons.

Steinbruner suggested putting cooperation up front so the Soviets know we're not trying to pressure them with a technological advantage, as they think we are doing with the Strategic Defense Initiative.

Lederberg said a real danger was a state or regime that was declining (a Qaddafi or Castro), which could result in a breakdown of disincentives and the ability to do a lot of damage.

Augerson mentioned that Castro has charged the U.S. with using biological warfare against his regime. Castro has blamed the U.S. for some crop failures and outbreaks of disease.

Nye asked to what extent export controls could slow down biological warfare capabilities.

Meselson referred to a relevant bill in Congress - H.R. 187. He said the technology of BW was getting smaller, and therefore harder to control.

Minard said the suppliers groups on Iran and Iraq were concerned with this legislation.

Meselson, raising the issue of liability, wondered if a company that knowingly supplied even unrestricted equipment for biological weapons purposes could be fined or penalized.

Minard said this leads us back to the problem of verifying research and development.

Meselson said it should be illegal for him to go to Libya and make a biological weapon but he doesn't think it is.

Returning to the main task of the meeting, Lederberg asked each participant to give his or her views on what should be discussed with the Soviets.

Brachman said Sverdlovsk is the natural take-off point, from the perspective of prevention in the future.

Balows suggested the reestablishment of exchange scientists at all levels with the Soviets.

Minard recommended focussing on the third world. She expressed mixed feelings about scientific exchange, because she was concerned about restricted U.S. access to Soviet labs.

Steinbruner suggested the topic of the policy implications of modern biological weapons.

Nye said the goals should be to develop a constituency in the Soviet Union for biological weapons arms control, to discuss our common interests in this common threat, and to persuade the Soviets that a regular format for discussion is necessary.

Meselson said that just talking was a useful and realistic goal for now. He said we should not give up on Sverdlovsk, and that U.S. public opinion won't let it fall into history. But, he thought it should be dealt with privately. Meselson also liked the idea of scientific exchanges and said he would be interested in seeing more of their techniques in high containment work.

Doty suggested that the American group devise alternative versions of the BW Convention, setting out, for example, what an SCC-like mechanism would do. Then it could consider bringing forth the end product as an agenda item with the Soviets.

Auguerson listed as topics to discuss with the Soviets: proliferation, how to protect publics, and means of cooperation in evaluating ambiguous or apparent BW events elsewhere in the world.

Marks recommended confidence building measures and preventing proliferation to third parties.

Augerson said the Soviets have interesting knowledge to contribute in the areas of aerosol vaccines and epidemiological prediction.

Brachman agreed that it would be wise to approach the Soviets through their strengths.

Lederberg said he was sorry that Hilary Koprowski and Robert Channock could not attend the meeting. He asked everyone present to send him names for a roster of people that would be good resources on this material and perhaps who have had contacts with the Soviets. Lederberg said he would also welcome names of appropriate Soviets for these discussions.

Marks mentioned a standing committee on international affairs of the Institute of Medicine as a possible resource.

Doty suggested getting the views of recent Soviet emigres in this field.

Augerson asked if Lederberg was considering the formation of "Biologists Against Biological Weapons." Lederberg said he was thinking about it. Meselson suggested making it Biologists for rather than against something.

Minard wondered whether the Soviets believe we stopped making biological weapons at Detrick and how we could demonstrate this to them and vice versa.

Steinbruner said we should not preclude getting an arrangement of that sort.

Lederberg mentioned some of the sensitivities in communicating with Ovchinnikov, but stressed the importance of gaining his support for this bilateral dialogue on BW. He said the next step was to draft a cable to the Soviets proposing a bilateral meeting.

The meeting adjourned at 4:00 p.m.