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Summary Minutes  
Planning Meeting on Biological Weapons  
June 23, 1986  
Rockefeller University, New York

A meeting to plan for future discussions of a subgroup of the Committee on International Security and Arms Control of the National Academy of Sciences with Soviet scientists on biological weapons took place at Rockefeller University on June 23, 1986, from 10:00 a.m. to 2:30 p.m. Present at the meeting, chaired by Joshua Lederberg, were: Ivan Bennett; Paul Marks; Alexander Rich; Theodore Woodward; Benjamin Tua and Lynn Rusten.

Lederberg began the meeting with a short review of the Committee on International Security and Arms Control's discussions with its counterpart Soviet group, and the history of the introduction of BW issues into those discussions. Lederberg explained that by stressing the problems of the potential for an all-out technology race in this area and of proliferation and third party use, he had elicited a more productive Soviet response than by focussing on the issue of Soviet non-cooperation in connection with the BW convention. He said the Soviets have become progressively more interested in the subject, leading to their agreement to hold separate BW discussions with a group of American scientists.

A discussion of probable dates for the Moscow meeting resulted in agreement that September 29 and 30 would be possible for everyone present, and that the staff should communicate this to the Soviets and confirm the dates as soon as possible. Information on visa application and travel arrangements should also be sent to the participants as soon as possible. It was tentatively agreed that everyone would arrive in Frankfurt (or maybe Geneva) on Saturday, September 27 in order to meet, and then fly together to Moscow on Sunday.

Lederberg said the purpose of this meeting was to plan for the Moscow meeting and decide what could be accomplished with the Soviets. He said he felt gloomy about our ability to have an impact on the course of events and that even with good will, it would be difficult.

Bennett asked whether the CISAC delegation should go into the meetings with the Soviets with the assumption that their programs were civilian, even though Bennett said he was reasonably certain this was not the case. He asked how they should handle the issue of Sverdlovsk.

Lederberg said that the Soviets had an out with Sverdlovsk because it could be explained as an accident that occurred in a facility engaged in activity permitted by the BW convention; but that

the Soviets had failed to offer a satisfactory explanation of the event. Lederberg said that the objective of discussing BW with the Soviets was to get Soviet scientists like Bochkov more sensitized to what was going on in this field and to create a constituency for a BW arms control regime.

Lederberg said he thought the Soviets had signed the BW Convention in part because the U.S. had renewed relations with the PRC and the Soviets did not want to feel isolated. He said the Soviets may have some anxiety about U.S. activities and that this group could suggest a more open system that would alleviate anxieties on both sides. Lederberg said that improved communication about what actually was going on was the goal, and that the carrot to accompany the confidence building measures was better access to biotechnology. He added that human rights, particularly the case of David Goldfarb, could not be ignored.

Woodward said that he had reviewed the minutes of the October 18 meeting on BW and agreed with Meselson's statement in those minutes that it would be a mistake to open the discussion with the Soviets with the Sverdlovsk issue. Woodward raised the question of whether there were existing U.S.-Soviet cooperative programs in biomedicine.

Tua responded that he did not know. He said he would say a few words about his background and then brief the group on the State Department approach to the upcoming BWC Review Conference. Tua said he was a Foreign Service Officer and had served in Moscow for two years. He said he has been working on BW for about a year. He emphasized that his remarks were not to be taken as official policy, but as personal views of someone who was involved in the policy aspects of BW issues.

Tua said he found the minutes of the October 18 meeting interesting, and noted that since then there had been a change in the environment due to the November summit. Tua recalled that the summit statement included two sentences on CW cooperation, and noted that CW and BW are linked in the common mind. Tua said the communique called for intensifying bilateral efforts to control chemical weapons and for initiating a dialogue on CW proliferation. He said there had been two rounds of U.S.-Soviet discussions on CW, and that there would be another round in July which both he and Bob Mikulak from ACDA would attend. Tua said the atmosphere at these meetings was good, and that the Soviets seemed interested in progress. He said Israelyan headed the Soviet delegation.

Lederberg asked whether the Soviet interest in non-proliferation was related to a ban on chemical weapons in Europe. He said it was logical that the Soviet position would be that part of a non-proliferation program would include pulling the chemical weapons out of Europe.

Tua noted that NATO presently had unitaries in Germany which would be taken out and replaced by the binaries. He said a speech by Israelyan on April 22 at the CD did address on-site inspection and verification in connection with the destruction and elimination of stocks and with production facilities. Tua said the big question was that of challenge inspections, which the U.S. wanted and the Soviets opposed. Tua said the Soviets may accept a compromise British or non-aligned position. Tua said there had been one meeting on non-proliferation last March in Bern and that the U.S. was keeping these talks separate from the CW control talks, emphasizing that by holding them in separate cities.

Tua said that last January the Soviets had imposed export controls on some chemical precursors. He said the U.S. is doing that with regard to Iran, Iraq and Syria. He said the Warsaw Pact countries have imposed their own controls too. In response to a question about the activities of the West European countries, Tua said the U.S. has been trying to sensitize its allies to the problem of exporting these chemicals. Tua said there would be another round of U.S.-Soviet talks on non-proliferation in September in Bern. He noted that the Soviets were careful to get credit in the CD for the things they were doing in these bilateral talks. He said the Soviets were talking much more about verification and that Gorbachev's tenure may bring profound changes in Soviet policy and society.

Turning to the BW Convention Review Conference scheduled for September 8-26, 1986, in Geneva, Tua said there had been a preparatory committee meeting held in Geneva at the end of April. He said the Soviets took the position that an East European representative should chair both the preparatory meeting and the review conference.

Rich requested that Rusten prepare a short briefing book on the BW Review Conference for the CISAC delegation to study at their meeting in Frankfurt just before entering Moscow. Tua said Rusten could probably be briefed on the conference by Bob Mikulak at ACDA and David Jones in Tua's office. There was some discussion of whether the CISAC group should stop over in Geneva instead of Frankfurt in order to be briefed by U.S. participants in the BW Review Conference.

Marks asked what would be the main issues at the Review Conference. Tua responded that the U.S. posture would be critical but constructive. He said the U.S. was concerned about Soviet activities in Southeast Asia, the Sverdlovsk incident, and Soviet facilities that have high security and from which comes no published research. Tua said the U.S. has concerns that are covered by the Convention and which the Soviet Union has not allayed. He said the U.S. will not propose verification amendments to the Convention because it takes the position that the Convention does not have verification provisions and cannot be made meaningfully verifiable. However, he said it represented an important international norm that

should be strengthened, and that the U.S. favored data exchanges and declarations of locations and identification of facilities over formal mechanisms to enhance verification.

Rich said he agreed with this view, but said the U.S. could propose confidence-building measures such as inviting the Soviets to inspect some of our facilities. Lederberg said he thought the Soviet position would be that the treaty is being observed. Rich responded that there would be no implied accusation, but merely an invitation for confidence building and a hope that the Soviets would respond in kind.

Tua recalled that several years ago the British invited the Soviets to visit one of their facilities but the Soviets did not respond. He said in 1984 the members of The Conference on Disarmament were invited to a CW dismantlement demonstration and the Romanians accepted, and that the Soviets had recently participated in a CW workshop held at a civilian Dutch facility.

Tua asked whether by focussing on the impact of technological developments on the BW Convention, one raised the risk of stimulating interest in it. Lederberg said the treaty addressed only production, that the research facilities could not be reached under it. He said the group's concern was research and development and the potential for breakout, and that the treaty did not address this.

Marks said the success of this effort would depend in part on how sensitive the Soviets were to where they stand in this competition. Lederberg said the forum would allow this group to ask why these Soviet facilities are so secure and why people from those facilities don't publish. Rich noted that the same could be said for U.S. facilities where results were not published, but where patents sometimes resulted.

Tua said the U.S. would raise the Southeast Asia issue at the Review Conference. He acknowledged that there were some differences over this with the allies. Lederberg noted that if chemical weapons have been used in Southeast Asia, then this issue did not belong at the BW Review Conference. Lederberg asked whether the U.S. would discuss the locations of suspicious facilities at the conference. Tua responded yes, and Lederberg asked for information in the open literature on suspicious Soviet facilities. Tua said there was information on this in a Shultz-Haig report from the early 1980's and in the ACDA publication on Soviet compliance. Rich noted that any information in this regard that we could convey to the Soviet delegation would be in our interest.

Woodward said the minutes of the October meeting linked confidence building measures to biomedical scientific cooperation. He said it would be useful to know of all existing U.S.-Soviet programs in this field. Bennett agreed that the group should find out about NAS, NIH and U.S. biomedical agreements with the Soviets. Marks remarked that the NAS officers meeting with the Soviets had been deferred to the fall, and that part of its agenda was to

identify topics for U.S.-Soviet scientific workshops. Rich said he would look into activities of the U.S.-USSR Joint Commission on Scientific Technology. Bennett said he would look into the NIH agreements. Rusten said she would research the Soviet Academy and NAS workshop suggestions and also U.S.-Soviet government programs. Lederberg noted that biotechnology was very high on the Soviet agenda.

Woodward pointed to the U.S.-Japan Cooperative Medical Program as an example of a program that started out in 1965 in an atmosphere of little trust but had become very successful. Bennett agreed that this program has been very successful and has managed to maintain a current scientific focus. He said it has resulted in good feelings and better understanding in addition to scientific progress. Bennett said the problem with many of the U.S.-Soviet agreements is that the subjects are picked by non-scientists and they do not take advantage of each side's strengths. He said it is important to choose subjects of mutual interest that are scientifically worthwhile, so that interest is maintained and the programs won't lapse. Bennett said the programs should be a sharing of both sides' strengths, not technical assistance programs.

Lederberg asked for ideas on what the Soviets were doing in biomedical science that would stimulate this kind of American interest. Marks said they have developed sophisticated instrumentation for surgery. Bennett said they were doing interesting work in neurophysiology. He added that now was the time to put in place a structure for confidence building in BW before the technology explosion takes place. Rich said that fostering scientific cooperation was the most important thing this group could do.

Marks asked whether any of the Soviet participants have had training in the U.S. He said that in the program with Japan, the Japanese who had U.S. training provided a useful link. Lederberg said he did not know the make up of the Soviet delegation yet, although Bochkov, who has trained in the U.S., would certainly be involved as probably would Bayev.

Rich said Bayev was an excellent person with an interesting history. He said Bayev had spent fifteen years in the Gulag working as a physician. When Bayev came out, he asked to work with Engelhart on sequencing of transfer RNA. Rich said Bayev gained fame from this work, and became a member of the Academy of Sciences of the USSR and then the Secretary of the Biochemistry Division. Rich said he is now very senior in the Academy and trusted by everyone. He has major responsibility for developing biotechnology for the Soviet Union. Rich said Bayev believes that biotechnology will have major implications for technology in the Soviet Union and that he is a problem-solver and a compromiser. Rich said Bayev tends to be reserved in large meetings, but is good in one on one discussions. Lederberg said Bayev had been quite chilly in the June 1985 CISAC meeting in Moscow, was sharp on BW and irascible about Sverdlovsk.

Bennett said the point was to build a structure where people would be able to discuss these problems after a broader dialogue has been established. Rich referred to the NRDC-Soviet Academy agreement on seismic monitoring and said that the Soviet biologists might want a similar CBM in their field.

Lederberg said the Soviets were most intent on biotechnology, and that this must be coupled with work on infectious disease and control. He said we would then have a framework with a dual purpose.

Marks said we should think through a limited number of areas where we could learn from the Soviets, and then define the programs in terms that could be implemented. Lederberg said we could propose a workshop on infectious disease and public health.

Rich said that if this group is successful in creating confidence building measures, this could make people breathe easier about biotechnology transfer. He said cooperation in epidemiology is a possibility because the Soviets keep good records and access to these would be useful. Lederberg said he was not so sure and gave as an example the Soviet report on Sverdlovsk that appeared in the Journal of Microbiology.

Marks said the Soviets keep better data on cancer now, but there are indications that they have even better data than they are publishing. He said that epidemiological data from the USSR is bound to be interesting comparatively.

Rich noted a bureaucratic problem posed by the structures of the Academy of Sciences and the Academy of Medicine of the USSR, which are not easily mixed. He said the idea was to make clear to the Soviets that progress in CBMs would lead to cooperation in areas they are interested in, and that the function of this group was to work on CBMs.

Marks said the CBMs must be related to the science, such as in epidemiology. He said that through this dialogue, we might be able to identify good projects. Lederberg said this group could talk about further steps and then pass the suggestions off to other committees to work out. Rich gave as an example the possible role the Academy may play in studying Soviet populations affected by Chernobyl.

After a lunch break, Tua asked whether advances in biotechnology were radically changing the situation. Rich said it would take decades before we could do radically new things as a result of biotechnology advances. Lederberg said that one should not take comfort from this because existing organisms were dangerous enough. Lederberg said the main danger was the more efficient production of vaccines for self protection against existing organisms. Bennett said there was also the danger of military use of toxins, which can be produced more quickly.

Lederberg said he worried about a USSR-PRC competition in BW, and said he thought that was why the USSR was staying in the BW game. Tua noted that the PRC signed the BW Convention sometime after 1980.

Lederberg asked whether this group should bring up Chernobyl with the Soviets, and everyone agreed to wait for the Soviets to raise it if they wished. Rich said a cooperative Chernobyl study would be a confidence building measure. Marks said this study would be very complicated scientifically. He said it would be hard in the Soviet Union to put in place the skills and resources necessary for a properly done study. He noted how hard this had been for Three Mile Island. Marks said they should start thinking about what they are interested in in terms of BW.

Lederberg said there were structural problems arising from the advance of microbiological science, which was that research and development was subject to potential breakout on short notice. He asked what could be done about that.

Bennett said this raised the problem of the potential for terrorism and small countries exploiting this technology. Rich said that, when talking with the Soviets, one gets a freer conversation by projecting ten or so years down the road. Rich said it would be good to tell the Soviets that their current stress on verification is good, and to get them to think about how this would be applied to BW, perhaps by using international on-site inspections. Lederberg recalled that Velikhov had introduced him to Dobrynin and they had a brief discussion about BW in May 1984. Rich said they should explore with Sagdeev the possibility of meeting with Dobrynin when in Moscow this September.

Lederberg said it was essential to discuss human rights when discussing confidence building with the Soviets. He said he would raise the issue of David Goldfarb, especially since the Soviet Academy position is to allow him to emigrate. Rich agreed it was important to reiterate to the Soviets that not letting him go was an irritant. Lederberg asked Rusten to find out whether there were other human rights cases involving Soviet biomedical people.

Woodward asked what would happen if the dialogue leads to a concensus to develop a joint biomedical program. He asked whether they should develop ideas for areas of cooperation, such as anthrax and AIDS. Lederberg said they could also discuss modalities of testing and dissemination, including aerosolization. Lederberg said it was also time the U.S. and the USSR cooperated in a third world oriented program, such as to develop a vaccine program for the third world.

Lederberg asked for a final word from everyone present. Rich said that, to summarize, the focus of the discussion with the Soviets should be on confidence building measures. He said the agenda should be to discuss what things we should have in place to prevent us from getting into trouble when these advances in biotechnology could cause trouble, things that would be of value ten years from now. Rich said

we should flesh out our menu of CBMs which could include verification and on-site inspection, joint epidemiological research studies, and more generalized CBMs, such as in the human rights area.

Marks said it was important for this group to do its homework and gather all the information it has requested. He said it was most important to enter the discussions with a flexible idea of what we will get out of it, and that we shouldn't expect a product from two days of talks. He asked whether Lederberg could communicate to the Soviets the flexibility of this American delegation's approach to the talks.

Bennett said he agreed and that it was a long term endeavor. He said just socializing and getting acquainted served a useful purpose.

Woodward quoted from Lederberg's BW tutorial: "U.S.-USSR cooperation in international medical research in infectious diseases would be an important way to bring the humanitarian scientific communities of the two countries in closer convergence, and improve mutual understanding of the objectives of microbiological research programs in each country." Woodward said he agreed with this and said it should be a long term dialogue and scientific program, and that they should also talk about proliferation.

Rusten agreed that the September meeting should be seen as the beginning of an on-going dialogue along the lines of the regular CISAC meetings on arms control. She noted that the arms control dialogue has been successful in part because of the longevity of the activity and the relationships that have developed over six years, and that this could be the beginning of a similar process in the BW/biotechnology field.

Tua noted that the timing of the September meeting was interesting, coming at the end of the BWC Review Conference. He said the prospect of a second summit could also influence the atmosphere.

Lederberg said he wanted to discuss the potential for BW proliferation and terrorist use with the Soviets. Bennett agreed that this should be mentioned as something the U.S. and the USSR need to be prepared to cope with. Rich said there was a precedent for consultation in the recent U.S.-Soviet agreement to consult on terrorist use or access to nuclear weapons technology.

The meeting adjourned at 2:30 p.m.

Lynn Rusten

#### Action Items

- 1) Rusten: Communicate with Soviets on dates (Sept. 29 & 30) and confirm with participants ASAP.



- 2) Rusten: Send visa application forms and travel information to participants ASAP, including arrangements for a European stop and meeting. Determine whether stop should be in Frankfurt or Geneva.
- 3) Rusten, Rich, Bennett, others: Research Existing U.S.-Soviet cooperative programs in biomedicine, including NAS, NIH and U.S.-USSR Joint Commission on Scientific Technology.
- 4) Rusten: Prepare a short briefing book on the BW Review Conference to bring to Frankfurt based on news clips and information gathered from Bob Mikulak at ACDA and David Jones in Tua's office. Also, arrange for briefing on this from U.S. embassy in Moscow on Monday, September 29.
- 5) Rusten: Gather information in the open literature on suspicious Soviet facilities, including Shultz-Haig report from the early 1980's, ACDA publication on Soviet Compliance, and Soviet Military Power.
- 6) Rusten: Learn status of Academy involvement in Chernobyl population study.
- 7) Rusten: Check with human rights committee to see if the Academy is aware of human rights problems involving Soviet biomedical people in addition to David Goldfarb.