

Summary Minutes
CISAC Meeting
Washington, D.C.
June 28, 1986

The Committee on International Security and Arms Control of the National Academy of Sciences met in Washington, D.C. on June 28 from 10:00 a.m. to 5:00 p.m. Present at the meeting were: Wolfgang Panofsky, chairman; Paul Doty; Alexander Flax; Richard Garwin; Alexander George; David Hamburg; Spurgeon Keeny; Joshua Lederberg; John Steinbruner; Charles Townes; Walter Rosenblith; Victor Rabinowitch and Lynn Rusten.

Panofsky reported on his participation in the Academy officers' meeting with officers of the Chinese Academy of Sciences. Panofsky said he went to reopen the idea of CISAC contact with the Chinese Academy. The result of the discussions was that the Chinese Academy is not yet ready for these discussions because it is too busy with other activities. Panofsky said that unofficially they indicated that the Academy is being restructured and cannot commit itself to activities in the security field at least until the restructuring is completed. Panofsky noted that there are other possible channels, like the Beijing Institute of Strategic Studies. He said that Zhou Guang Zhou indicated that the Chinese Academy was interested in questions such as whether the SDI would have important technical spin-offs.

Frank Press, who joined the meeting for a brief time, said he thought that there was still an opportunity down the road for CISAC to work with the Chinese Academy. He said it could result from the Chinese government turning to CAS for answers to questions like the one of spin-offs from SDI.

Press informed CISAC that the U.S. government had asked the NAS to join it in its proposal to help study the population effects of the Chernobyl accident. He said the government has suggested to the Soviets the establishment of bilateral working groups, and suggested that if the Soviets preferred U.S. involvement to be sponsored by a private institution, the NAS could play that role. Press said NAS has sent an independent telegram confirming this.

Press reported that the NAS has also been asked by the government to review the safety of eleven production reactors within DOE, some of which are uncontained and some of which use graphite as moderator. In connection with this review, he said the NAS panel would request a briefing from the Soviets on the cause of the Chernobyl accident, but failing that they would hope to read the Soviet report to the IAEA on the incident. Panofsky asked whether the NAS panel was charged with the task of establishing standards of safety. Press responded that the exact charge had not yet been worked out with DOE.

Lederberg raised the issue of whether Chernobyl had implications for CISAC's BW talks with the Soviets. Press responded that CISAC could emphasize that we could all learn from Chernobyl. Press said that the biotechnology related topics which the NAS had considered proposing to the Soviet Academy as workshop topics were not approved by COMEX, which is very sensitive about biotechnology transfer. Lederberg asked if there were any biomedical items left as possible workshop topics, and Press said he did not think so.

Panofsky commented that he would like a more formalized way of being informed about NAS activities relevant to CISAC. Press agreed and said this was the responsibility of Rabinowitch and Rusten.

Press said the NAS Council had approved two small Strategic Defense Initiative Organization-funded studies. Panofsky said the American Physical Society was doing a study which attempts to measure the gap between the existing state of technology and the level of technology needed to attack the SDI mission in its various forms. He said it looked like the conclusions would be that wide technical gaps exist for applications, that there were many technical detailed problems. A new chapter is to be added to comment not just on the component technology gaps but also on the system technology gaps. Panofsky said that, in order to get agreement by the participants and the society, it had to be a narrow directed energy weapons study, and would not comment on arms control or strategic implications.

Keeny asked how this study was different from the Fletcher report. Panofsky responded that the intent was to identify only the technical status of directed energy weapons. Townes added that one of the initial ideas was to get a report that drew conclusions about feasibility, but instead, it will be a textbook discussion of the technologies. Press said this study was important because it represented the first attempt to evaluate in a quantitative way the status of these technologies. Keeny asked whether SDIO, as one of the funders, had review privilege. Panofsky said it had privilege of security review only. Flax said the security problem was raised only by the X-ray laser part, that most of the other physics was well known.

Rabinowitch asked whether the NAS studies would be classified. Press said some aspects of the study on computers and information processing for command and control would be classified. He said most of the study on high energy power sources in space would be declassified. Flax said both would be classified but the second one would also be published in an unclassified form.

Press noted that DOD has withdrawn its support from the technology transfer study which is being chaired by Lew Allen. He said DOD complained that the panel members actively participating in the study did not constitute a balanced group. Press said this

argument was not valid because all of the panel members had agreed to read and comment on drafts of the report, even if they could not attend all meetings.

Following a discussion of technology transfer policy, there was a discussion of the Nuclear Resources Defense Council (NRDC) agreement with the Soviet Academy to exchange seismic monitoring equipment. Press said the U.S. government was unhappy about the private agreement because it had been a subject under official negotiation. Press said the NRDC went to Moscow with excellent scientific advice and negotiated an agreement on having three monitoring stations at each U.S. and Soviet site. The equipment at Semipalatinsk will be monitored by a group from the University of California at San Diego. There was then discussion about whether the Soviets chosen to monitor the U.S. site would receive visas, and whether the equipment to be placed in the Soviet Union would get export approval. Lederberg said he understood that they did get export licences for the equipment. (Footnote: export licenses are pending for more sophisticated equipment.)

Townes asked whether the results would be published. Press said they would be, and that the NRDC was planning to clarify with the Soviets that the agreement would extend beyond the end of the Soviet test moratorium in August. Keeny asked whether the equipment to be placed in the Soviet Union could be used to check measurements of U.S. test yields in order to make judgements about bias, but no one could answer this.

Panofsky then turned to the subject of CISAC seminars for the State Department. He said he had gotten positive feedback on the one on offensive uses of SDI. Townes said the ability to monitor high flying aircraft and to knock them down was new and important. Panofsky agreed that the seminar left the impression that SDI technology does add to U.S. military capability and is not limited to defense. Steinbruner and Townes agreed that speed of direct attack is unique and new.

Pief said the subject of the next seminar concerned what the U.S. could do to make up for information loss engendered by encryption. He said CISAC would not make recommendations, but rather identify cooperative measures with varying probabilities of being negotiable. Panofsky said the fundamental problem remained that the U.S. won't tell the Soviets what channels it wants them to open up. He said a technical description of cooperative measures ran the risk of telling the Soviets what we know and don't know. Steinbruner observed that the Soviets are proposing to define a new missile as one developed after a certain date, thereby eliminating the need for some of this information. There was disagreement on this point. Panofsky said the other upcoming State Department seminar topic was models of 50% cuts, to be given by May and Steinbruner.

Lederberg then gave a brief report on the BW subgroup, which had met the previous Monday to plan for its first meeting with Soviet counterparts. He recalled that the goal of the activity is confidence building and mutual reassurance about each others'

intentions since the technology is all dual use. He said the group hoped to convey to the Soviets that their secrecy is damaging to confidence building. Lederberg said an interesting wrinkle was that the BW Convention Review Conference will end a few days before this group goes to Moscow, so it will need to be briefed in a timely way on the Conference. Lederberg said he did not yet know who would be on the Soviet delegation.

A discussion of dates for the BW and regular CISAC meetings in Moscow resulted in the decision that CISAC would propose that the BW meeting take place on September 29 and 30; and that the regular CISAC meeting occur on September 30 thru October 2. Only one day of overlap will allow some people to participate in both meetings.

Rabinowitch said it was important that the non-CISAC members of the BW delegation to Moscow be formally appointed to the delegation by letter from Dr. Press. Panofsky consented.

A discussion of a date for the next CISAC meeting to prepare for the Moscow meeting resulted in tentative agreement on a one day meeting on Friday September 12 at SLAC in Palo Alto. This will be confirmed once the Moscow dates are confirmed and after CISAC members have been polled for availability.

Panofsky then turned to a discussion of agenda and initial assignments for the Moscow meeting. Panofsky said we would ask the Soviets to take the lead on item 1, "Deep Cuts in Nuclear Arsenals and Issues of Verification Technologies and Procedures." He said Mike May would have a paper to give in response. Panofsky asked whether CISAC should raise the issue of cut-off of fissionable materials. It was decided that CISAC would be prepared to respond if the Soviets raised it, but that CISAC shouldn't initiate the discussion since the official U.S. position is opposed. Panofsky said he would also ask Sagdeev for Soviet papers on verification in response to the CISAC papers delivered last time.

On item 2, "Ways to Strengthen the ABM Treaty Regime: Scientific/Technical Aspects," Panofsky said he would collaborate with Muller and Keeny to give a technical presentation of what is and is not permitted under the treaty for particular technologies, thereby giving concrete technical examples of Keeny's presentation at the last meeting. He said CISAC should push the Soviets on what they mean by permitted research in the Gorbachev proposal of June 16, 1986. Townes agreed that it was important to have them expose their views on this. Steinbruner added that someone should be prepared to give an American view of what a reasonable definition should be.

Following an interruption for a classified briefing, the discussion continued. Rosenblith said he thought sometime next fall CISAC should discuss its strategic way of operating. Panofsky responded that CISAC had that kind of meeting last year and established ground rules and new activities that it was currently implementing. Panofsky said he thought they should continue this implementation.

Panofsky said the Soviets should lead on the third agenda item, "Arms Control in Space and the Preservation of Non-Weapons Assets in Space." He said this item included ASAT bans, SDI in space and rules of the road, and that CISAC could make at least two responses, one by Garwin on ASAT and one by May on rules of the road.

Panofsky said CISAC could take the lead on item 4, "The Conventional Weapons Balance in Europe, Reductions of WTO and NATO Forces, and Confidence-Building Measures." Doty volunteered to lead, assuming he can be in Moscow at that time, by responding to Kokoshin's presentation at the last meeting. Doty referred to a study by William Kaufmann which concluded that NATO had a 20% chance of successfully defending the alliance for one month against a WTO attack in Central Europe. He said the Soviets rated their threat lower. Doty said an assessment of the balance was necessary but difficult. He said another important issue was that of emerging technologies resulting from advances in micro-electronics which made new things, like AWACS, possible. Doty said the Reagan Administration was investing a lot in this field. He asked whether this technology would be used to enhance the existing force structure, or whether a new structure would be needed. He said that while the U.S. wants the highest possible new technology, the Germans would prefer a lower technology more defensive posture.

Steinbruner said that one could take Kaufmann's number and conclude that one way for the Soviets to allay Western fears would be for them to reduce their reserve mobilization forces. Flax said there was a fifty year history to this battle of perception in which the West claimed the East had numerical superiority and tried to compensate with technological superiority, and the East in turn charged the West with seeking overall superiority. Steinbruner said the Soviets were worried about strategies like Follow-On -Forces-Attack and that the West was worried about Eastern bloc incursions into Western Europe. He suggested talking about how to deal with that, as through regulating modernization or force structure.

Doty expressed surprise that the CTB hadn't come up on the agenda. Panofsky noted that the Soviets usually raised it whether it was on the agenda or not. Steinbruner noted that, as a practical matter, there was the intermediate approach of a lower threshold and quota and this could be discussed with the Soviets. Following a full discussion of the merits and demerits of a low threshold test ban, it was decided that CISAC would not raise the CTB issue, but would respond if asked.

There was then a discussion and last-minute planning session for the meeting with European scientists which would begin later that evening. The CISAC meeting adjourned at 5:00 p.m.

Lynn Rusten