

F.A.S. PUBLIC INTEREST REPORT

Journal of the Federation of American Scientists (FAS)

THE MOSCOW
FORUM

Volume 40, No. 3

March 1987

HISTORIC TURNABOUT: GORBACHEV RESCUES REAGAN

Would the Reagan Administration prefer death to disarmament?

This may be the question posed by the General Secretary's extraordinary decision to offer the "zero-option" proposal one day after the Tower Commission had the President reeling on the ropes.

At first proposed by the U.S. as a kind of PR swindle that would never be accepted (because it required about 600% more dismantlement of Soviet missiles than of U.S.), Gorbachev unexpectedly urged the zero-option on Reagan at Reykjavik ("... we called the U.S. President's attention to the fact that he seemed to be abandoning his brainchild, the 'zero-option', which at one time he was offering us with such insistence, even though we had now decided to take it up").

Now, with superb timing, the "new way of thinking" in the Soviet Union is coming to Reagan's rescue. Having saved this agreement as particularly hard for

the U.S. to turn down, the Soviet Government is now firing its best shot in a determined effort to get U.S.-Soviet relations on a track of reconciliation. With the President weakened, Howard Baker in place and Mrs. Reagan fired up for arms control, something could now happen.

This President, obviously, has not taken "Care that the Laws be faithfully executed," as the Constitution requires, but has instead permitted, at the least, and encouraged at worst, the circumvention and violation of the law concerning Contra aid. The resulting investigation, which is far from over, has hurt the struggle for democracy and freedom throughout the world.

No doubt Deng Xiaoping is telling his Central Committee that Watergate and Irangate prove that even America cannot make democracy work. How many dissidents in China will be suppressed because Oliver North and President Reagan wanted the Contras

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TEN DAYS IN A CHANGING MOSCOW

We arrived on Wednesday night, February 11, and spent the evening with Andrei Sakharov—see pg. 5 for the report on the conversations held during three such evenings.

Being able to meet with Sakharov, and openly, was the first sign of the changes in Moscow. By the next morning, we were noticing others. One Muscovite told us that "people feel now that they can say anything." Problems of morality, culture, and dignity were preoccupying people. They felt that the children of the last two decades had suffered from seeing their parents saying one thing and doing another and this kind of thing had to be repaired.

The newspapers, since September, had become interesting to read. A new documentary film, "Is it easy to be young?," was stirring interest, and the movie, "Confession," about Beria and Stalin, was a smash. (But some people still did not understand it because they were not prepared for it; people's attitude toward Stalin depends entirely upon what their family had thought of him.)

People had become lazy over the last decades. And all were startled to learn that their production figures were wrong. It was "shocking." As of May 1, citizens could register to take a second job—for example, to type at home at a ruble a page for English typing or work as a handyman.

Especially exciting was the news that there would be joint Soviet-American enterprises—exciting because they would raise quality to world-class levels since they would be planning to sell abroad as well as at home. Those involved in these joint ventures would be their own financial masters.

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Vice President E.P. Velikhov signs five-year FAS-Soviet agreement on joint study for implementation of disarmament and joint visits. (See pg. 13 and pg. 16 for the text)

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funded at any cost? And Gorbachev, in the midst of struggles to persuade his Central Committee to experiment with more than one candidate in elections, is certainly going to find it harder going when he asserts that democracy is not "instability" but a higher form of discipline.

Just as the world is tied together in an arms embrace that only mutual disarmament can resolve, so also are we linked in our common human struggle for freedom. Eventually, we shall all be free together or no Nation will be free. Freedom for mankind is not at all inevitable. If every second or third President in America is going to be embroiled in legal scandal, other Nations are not going to buy this system. And, eventually, isolated, we shall lose it also.

In this context, it was stirring to be in the Soviet Union at a time when so much progress is being made toward democracy. We heard directly from the only three Soviet intellectuals we have heard of who have championed and, each in their way, tied their fates to freedom: General Secretary Gorbachev, Academician Andrei Sakharov, and dissident historian Roy A. Medvedev. And we saw, heard and felt many other signs that a long-awaited thaw is coming.

An entire generation of American strategists has grown up oblivious to the possibility that a post-war settlement might occur—so intractable has the competition seemed. But I believe that this post-war settlement is what Gorbachev is forcing us to consider. Assuming that Gorbachev remains in power, he will put America to the difficult test: are there any terms on which we would settle our quarrel with the Soviets? This is the real issue behind the zero-option.

These possibilities are so momentous as to require more Federation time and the important agreement we reached with the Velikhov Committee of Soviet Scientists (published on page 16) will also. We shall need much larger sources of funding and members are asked to write with suggestions.



Novesti Press Head Valentin Falin (see pg. 10)

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The FAS Public Interest Report (USPS 188-100) is published monthly except July and August at 307 Mass. Ave., NE, Washington, D.C. 20002. Annual subscription \$25/year. Copyright © 1986 by the Federation of American Scientists.

POSTMASTER: Send address changes to FAS, 307 Massachusetts Avenue, NE, Washington, D.C. 20002.

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Roy Medvedev

Only three people we know have interested themselves in the issue of democratizing the Soviet Union; these are Gorbachev, Sakharov and Roy Medvedev, the dissident historian. We hurried over to see Medvedev before the Forum got underway.

Roy is the twin brother of the biologist Zhores Medvedev, who is now exiled in London. Roy was expelled from the Communist party for writing a book about Stalin that was, and still is, too advanced for the Moscow line. But he stayed in Moscow writing a book a year, all published in the West, and living off the remittances.

During the Brezhnev succession period, he had written strongly in favor of Andropov rather than Chernenko, and for this, when Chernenko finally succeeded Andropov, guards were stationed at Medvedev's door to try to hold down his Western contacts. They were removed, he told us, three months into the Gorbachev period and never really slowed him down.

We were received very warmly; Roy remembered our visit in 1975 quite well. From his point of view, the most vivid changes were now taking place after a first Gorbachev year with few changes. The first signs of ideological freedom of speech had come in early spring and very quick progress had occurred since September. Restrictions on certain masterpieces were being removed—a 1930s play by Erdman, a poem by Tvardovsky, a novel by Beck and anti-Stalin writings that contradicted the Brezhnev effort to discredit Stalin. But his own book on Stalin? "Not yet."

The General Secretary has two classes of supporters: technical scientists, who know how backward the country is, and intellectuals. Intellectuals who had been very passive are now very active. There is almost no political censorship. But there is party guidance, and since the chief editors are appointed by party organs, the editors have the problem of deciding themselves what to do.

Things have reached the point where an "independent cooperative" of poets is going to publish its own magazine—unique in Soviet publishing because it would not be under control of Party organs! Detective and science fiction writers might be next.

Roy felt that liberalization was good but that democratization would be better—it was bad to rely on only one man. Was Mikhail Gorbachev adopting Roy's program for democracy? "The General Secretary isn't describing his own program and prefers to act unexpectedly as in the Sakharov case. Even a few days before Sakharov's release from Gorky, some writings about him were quite rude."

Is the military supporting Gorbachev? The young people in the military understand the need to modernize and are influential. But the older military are only "partially aware" of this need. During a funeral, a senior military man had said that even the small parts of the missiles had to be stolen from the West and he was indignant that this had to be so.

Who opposes Gorbachev? The Administration people

in the party and state bureaucracy have been corrupted by 20 years of Brezhnev. The workers are not giving the General Secretary enough support because they are not stimulated enough, but the support is growing. Brezhnev corrupted the largest part of society. Nobody worked. This cannot be changed easily.

Would a continued rebuff from America on arms control hurt Gorbachev's position? "It would not be so severe from a political point of view but it would hurt his program, while a treaty could strengthen his position. Still he won't be weakened because he can blame the U.S." (Gromyko, he thought, was spreading it around that Gorbachev could not make progress in foreign affairs.) Roy compared the arms control situation to the man who said his wife would love him more if he found a million dollars but not less if he did not.

Could Sakharov play a useful role? "Yes, but not a decisive one. Maybe he will influence the next administration in Washington but not this one. Still the high opinion of him abroad makes his point of view very important and influential."

Roy felt his own views had not changed since the time when he had signed positions with Sakharov in 1970, but that Sakharov's views had. Sakharov had become "more radical," e.g., had been against the U.S. withdrawing from Vietnam. (At another point, however, he said that Sakharov is now more conservative—which may mean the same thing—has more self-confidence, is less emotional and that he makes more sense.) Sakharov was a liberal democrat of Western type while Medvedev was an independent Marxist. Gorbachev was a democrat inside the system.

Thus Sakharov saw democracy as an issue of freedom—a way toward intellectual freedom. Gorbachev wanted to introduce democratic rules into party life with the thought that interparty democracy would help morally and, in time, economically. From Roy's point of view, the main guarantee of democracy lay in there being an opposition—either a second party or independent groups. "Gorbachev does not think quite this way."

Were there any new supporters of Roy's book, *On So-*



Roy A. Medvedev

cialist Democracy, in the Central Committee? "No, Gorbachev is more progressive than the Central Committee."

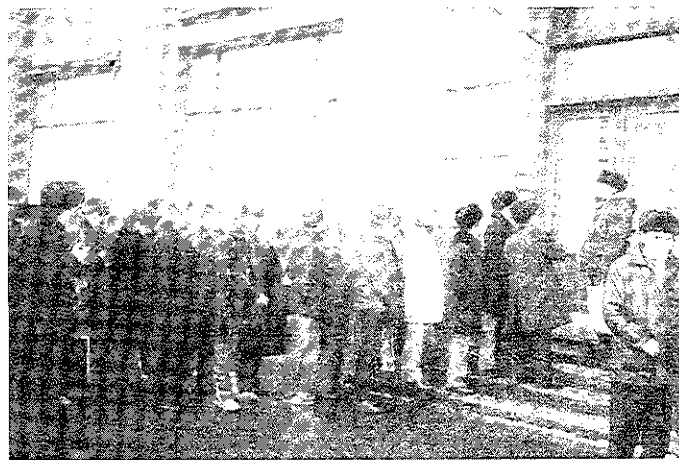
Would Gorbachev's telling Soviet society of its backwardness make it possible for him, subsequently, to open the borders—much as Khrushchev's denunciation of Stalin had made it possible to open up the prison camps? "Gorbachev may even be able to open up the border. Last summer, a decision from a Ministry was taken to simplify the proceedings for trips. The head of a department could send an engineer abroad to Eastern Europe. But contacts are not growing because the heads of departments themselves now ask for so many justifications." (Before the Revolution, Roy said, the police stations could give visas, but now, if one gave them back that right, they would be too frightened to use it. Directors who used to be "soldiers" are now told "do as you like" and are at a loss.)

Gorbachev is the son of Andropov (sort of), but Andropov was more experienced and people were more afraid of him. Gorbachev is more up to date and has a better understanding of the West. Roy expected that "almost all" political prisoners would be released soon, but that they would not be rehabilitated as the prisoners were who were released by Khrushchev—just released.

Thursday Night

Dinner in a Gorky Street cafe filled with young people sporting American buttons. I asked the doorman-manager why he kept people standing out in the cold when they could wait in line inside. He said they were smoking. I asked why they could not be allowed to stand inside if they stopped smoking and he smiled with embarrassment at this obviously reasonable suggestion and said "just tradition."

A Russian with whom we spoke gave us prices for consumer goods. It was startling to realize that refrigerators, televisions and automobiles cost as many rubles as we would pay in dollars even though the official rate would put the ruble 50% higher. In addition, people are earning far, far less. (150 rubles a month is the average wage; one could double this to take into account the non-existent taxes and low housing costs. But it would still be a very low wage. As a consequence, only 5% have automobiles and 1% have a dacha.)



Waiting to buy vodka

Friday Morning

A scientist took me aside to say that Russia needed a "cultural revolution that would overthrow the bureaucracy that wants nothing done and that is a drag on the system." He feared the media would have a large "dampening" effect on Gorbachev's ideas. "Many people," he said, "who are thought to be Gorbachev men are not." He told me a rumor that seems to have been around for awhile: Gromyko would retire and be replaced by Ligachev who would thus be kicked upstairs; Dobrynin would become Foreign Minister, Eduard Shevardnadze would run the KGB, Viktor Chebrikov would move to the Ukraine, and Vladimir Shcherbitsky would retire.

During the day a workshop on Star Wars took place—cochaired by Frank von Hippel and Andrei Kokoshin. John Pike was the star speaker. The main Soviet counterpart was the head of one of Arbatov's Departments, Alexei A. Vasiliev, for whom we have high regard. This workshop made progress in determining quantitative limits that might fill grey areas in the treaty. (See page 14 of this PIR for Pike's report.) The day before, a successful workshop was held with another 30 participants on the issue of underground nuclear testing.

At about six on Friday, Thomas Longstreth, who is in the process of shifting from Senator Kennedy's office to FAS, went to the Botkin Hospital with an attack of appendicitis. (As of March 5, he was recuperating in Great Britain.)

Saturday Morning

The Scientific Forum opened with 250 participants. The high point of the presentations was the introduction of Andrei Sakharov and an opening speech given by Frank von Hippel. Andrei Kokoshin discussed problems of stability under disarmament. Remarks by Jerome Wiesner focused on the fact that too much attention paid to first strikes detracted from the real problem—accidents. He encouraged unilateral initiatives. (Sakharov's three initiatives are not summarized but will appear in full in *Time* magazine.)

Sunday

A scientist advised that Arbatov is on the right side of things but vulnerable to attack from the right and therefore has to preserve a complicated coloration. Resistance to Gorbachev is mainly from the military. The KGB, at least those just below the top, is "o.k." because its members are appointees of Andropov who wanted reconciliation with the U.S.—which Gorbachev also wants. In this struggle with the bureaucracy, he said, human rights is as important as disarmament.

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CONVERSATIONS WITH ANDREI SAKHAROV

My wife, B.J., and I had not seen him since a day at his dacha in 1975 but he looked much the same—far better than Soviet authorities had suggested he was during the last years of the long struggle to get him back from Gorky; then Soviet officials had spread around the notion that Sakharov was no longer the man he once was, as a result of his hunger strikes.

The telephone was ringing every ten minutes as we introduced him to our FAS Fund Chairman Frank von Hippel who had played a key role in organizing the Forum and whom he had asked to meet. But Elena Bonner, as always, was coping. (The mail is another matter; fifteen or twenty letters a day soliciting help are more than she can read. Andrei says this is “not a life for someone with a six-bypass operation.” Elena responds gaily that, in Boston, they told her she was the “world’s champion” at bypass operations. Later, at the suggestion of a Soviet official who was insistent about not being quoted by name, we proposed that the letters be sent periodically to President Gromyko with a covering letter from Andrei soliciting help.)

Elena Bonner was annoyed that we had not requested a visa for her son-in-law Effrem Yankelevich on the grounds that FAS needed Effrem as an interpreter. This would have broken the ice for Effrem, who has not been back to the Soviet Union since he left a decade ago. She would “never forget” this, she said. Some discussion was necessary to reassert the FAS position (viz., we would be involved in family affairs only if the health and safety of Andrei Sakharov was involved). Even the mild-mannered Andrei wanted this explained. But it was soon forgotten in that evening and in two subsequent evenings of conversation during the ten day trip.

He was interested in certain aspects of his case: how the U.S. National Academy of Sciences (NAS) was emboldened to defend him in 1973 because the Soviets had not walked out after he was defended in a contemporaneous Pugwash Conference in Aulanko, Finland; how, in 1976, the refusenik chemist Benjamin Levich had, by giving FAS two anecdotes, caused a revolution inside NAS on its human rights practices; why Andropov failed in his effort to send Andrei to Austria; how his letter to FAS of January 13, 1984 warning of his impending hunger strike had been deliberately delayed in transmission by his stepchildren so as to avoid his being forced to carry out his threat by the attendant publicity—and only published in the *New York Times* after the strike began on May 19. (Here he quotes Antoine Boulay De La Meurthe “It was worse than a crime, it was a blunder,” but notes that Effrem makes fewer mistakes than did Tallyrand.)

Told that Soviet diplomats sometimes defend his inability to travel on the grounds that he knows too much about the Soviet defense bureaucracy, he said “They overestimate my memory capacity.”

A letter from Senator Edward M. Kennedy contained an invitation to the United States. His response to this and other such invitations is characteristic and generally unin-

terested. He is unlikely, he feels, to be let out of the Soviet Union without a major campaign and the campaign would produce only a minimal result, i.e., his visit.

He was obviously nervous about his three planned interventions at the Forum; we discussed the central issue of linkage between Star Wars and disarmament. He was pleased to see that my two-page paper was similar to his own in arguing “disarmament now.” He read the six points and looking slightly surprised said “very reasonable.” The next morning at the Forum, he was tense and surrounded by cameras.

He told the Forum that Reykjavik failed because the U.S. wanted a free hand. He explained, however, that SDI will not be effective because of space mines and other means, and because large numbers of battle stations would be needed. SDI supporters, he argued, wanted to ruin the USSR and this could be very dangerous. He did not think the U.S. would dare deploy SDI. But if so, the USSR would know how to defeat it. (Here we see the Soviet patriot who built their H-bomb to provide balance.) In any case, the breaking open of the “package” would resolve the deadlock and make agreement possible. (And here we see the mind of the arms controller.)

On Monday night, and again on the next Thursday night, he thanked us for the support on the issue of “package” (i.e. linkage); even Elena Bonner is warm in her thanks for this. (By contrast, ten years of defending Andrei in ways that were both difficult and effective had produced no such expressions from Elena; clearly both had been apprehensive about Andrei’s being isolated on this point.)

Andrei is just getting back into disarmament and he quizzes Frank about how the 90% reductions Frank wants could be achieved. Had he advocated, we then asked, percentage reductions in a letter to Pugwash in 1975 which



The Sakharovs and the Stones

Pugwash has since lost? He is not sure and his later statement to the Forum is somewhat skeptical about percentage reductions and stability. But after some mathematical reassurance at a later evening, he comes to understand the difference between shrinking the overall limits of SALT II (which permits force rearrangement under the ever lowered limits) and shrinking of the various forces directly which could, as he suspected, cause difficulties.

The best way of communicating with him is to draft very short tightly written statements in English, which he can then read; the material is too complicated for verbal interpretation. His English speaking, and Elena's, is rudimentary.

Andrei is practical. On our third evening with him, he complained that a previous American visitor had tried to persuade them of very far-reaching and, he felt, impractical things like replacing all multiple warheads with single war-headed missiles. (He feels the most realistic thing is to reduce the fixed land-based missiles and move to mobile ones.) If war occurs, he thinks, SDI will "lose its nervous system" under attack from the Soviet Union. But if "progress in disarmament takes place there will be no use for such systems." An "international campaign should be organized to persuade the Soviet Union to put aside the package."

We begin discussing suitable terminology. "Negotiating" linkage is the Soviet position—no agreement on reductions without agreement on SDI. "Action" linkage is our position—start the disarmament now and stop it only if SDI is "deployed" (his position) or a narrow interpretation of the ABM Treaty is violated (my position). Both of us, we agree, are for "conditional" disarmament which, we decide, is a better adjective than "contingent."

The phone continues to ring; Carl Sagan and Dr. Ber-



Jerome Wiesner, Andrei Sakharov, Elena Bonner and guide

nard Lown want to drop in but are told he is busy. Elena describes the guest list for the next week which reads like that of the ambassador of a major embassy and says that within a few days the next week will be filled up.

Andrei wants us to urge that the Forum be open to the press during its sessions—and not just between them; he does not realize that it was the Western members of the convening "Initiative" committee that wanted it closed.

On Monday night, after the speech by General Secretary Gorbachev and a Kremlin luncheon reception for 1500 people, we brought Jerome B. Wiesner to Andrei's apartment. Andrei was disturbed to realize from our observations that Gorbachev had been at the luncheon without his knowing it! He said he would have presented six names of dissidents he had in his pocket. (At this reception, the highest Soviet officials were milling about like congressmen at a Congressional lunch. America's leading Soviet expert, Seweryn Bialer, whispered that this could never have taken place even two months before. We had talked to Mrs. Gorbachev, President Gromyko, and Academy of Sciences President Marchuk and seen Premier Ryzhkov, Foreign Secretary Shevardnadze and Central Committee Secretary Dobrynin. But Sakharov had his own ring of admirers around him and Gorbachev, surrounded by a ring of interested persons and security, had been invisible from a distance.) Andrei concludes that the fact that he was not seated at the reception near Gorbachev confirms that they have not just overlooked "giving back my awards." (He has not lost his stipends as an Academician but the honors he had received, such as three-time winner of the Hero of the Soviet Union Award; these had been stripped from him earlier and have not yet been returned.)

It was interesting to us that none of the Soviet high officials went over to Andrei to welcome him back even though his presence was obvious. The photographers had surrounded him before the speech in the Kremlin hall. (We gathered from other conversations that the similarity in the Gorbachev and Sakharov programs—human rights, democratization, opposition to Star Wars, withdrawing from Afghanistan—could upstage the General Secretary, and anyway, Sakharov is unpopular with some officials in Soviet life whom Gorbachev has to work with and remold.)

At the reception, Andrei did talk to Armand Hammer and tried, without success he felt, to persuade Hammer that Andrei's delinkage could be the basis for that new summit that Hammer would like to see.

Discussing the Gorbachev speech, Andrei felt he heard in it an implicit threat to extend Soviet sovereignty over its air space into outer space if the ABM Treaty were violated.

Elena brought up her complaint that an earlier article of mine had suggested that Andrei learned about Soviet conditions from the Bonner family's experience in the Stalinist camps. Andrei says that, even in his secret laboratories, he saw the columns of poorly fed prisoner-workers guarded by dogs and the women separated from their children and able

to return to them only if they became, by someone or other, pregnant. His first work in this field came, he noted, three years before he met Elena.

Frank von Hippel and Andrei had a long discussion of the comprehensive test ban. Andrei has been minimizing the significance of such a ban on the grounds that not much can happen as a consequence of more tests of "second-generation" weapons and that "zero-yield" tests could do the work anyway. On the third generation weapons (X-ray laser and other possibilities) he says that "the main military tasks can be achieved now so my thesis, which may be wrong, is that nothing further could be achieved from them." Frank says that, so far, they are ineffective by a mind-boggling factor of 10 to the minus 10th. Andrei gasps and says that, then, this is just to generate money for the laboratories. But on further discussion, and on looking at parts of an FAS newsletter by former bomb designer Ted Taylor—which lists many different possibilities for third generation weapons—he seems to agree that limiting them is important and he agrees that a test ban is necessary to do it. "My arguments at the Forum, he now says, had nothing to do with the third generation which can only be developed with new tests." Some exceptions to his original thesis might involve, he thinks, "directed radiation at underground targets with highly penetrating particles."

Told that Edward Teller has been promising "miracles" in third generation weapons, Elena erupts with a torrent of support for Teller who "speaks his mind." She actually announces that everyone is political except "Teller and Sakharov" and that the importance of their speaking together is one reason why Sakharov should be let out of the country. Apparently because her contacts in America are mostly with intellectuals, many of whom detest Teller, she believes that he is as isolated in America as Sakharov was in the Soviet Union. We explain that Teller's political views are not, in fact, so uncommon in America, outside the scientific community, and that he is allied with the rich and powerful and hence cannot be compared with Sakharov. But she persists. Elena, to put it mildly, knows her own mind. (Once the famous Peter Kapitza, asking Andrei for a private meeting upstairs in Kapitza's study, was told by Elena "Andrei does not have meetings without me"—and she carried the day).

Andrei asked about the refusenik scientific seminar, still run by Victor Brailovsky, which I had addressed the evening before. He was surprised to hear that as many as 28 persons had turned out.

The big news with the refuseniks is that the Soviet Government has recently decided that only "first degree" relatives abroad (parents, children, siblings, spouses) would be a justification for a visa application. (One Soviet official advised us that he knew of a case in which a refusenik had left two wives and six children in the Soviet Union to move to Israel as the relative of a third cousin.) And the authorities are saying that applications from persons without a first-degree relative abroad will not be accepted at all hence-

forth. From the Government's point of view, it seems, this will eliminate the tendency of institutions to fire and black-list persons who apply. And it will make it unnecessary to stall on visa applications for a class of refuseniks to preclude others from applying. In other words, it represents an effort to resolve this problem once and for all. Andrei felt that the "direct relative" rule was wrong and that the refuseniks should be supported. But he did not think that their political opinions should be taken too seriously. They just wanted to leave, he felt, and not to fix things in the USSR.

Andrei Sakharov is clearly back and well. As his fellow dissident Roy Medvedev advised me, he seems "even more self-confident, less emotional and to be making even more sense." He has already been quoted in *Pravda*—an important sign of his evolving acceptance—and he seems destined to continue to play many important roles: loyal opposition inside the Soviet Union, creative and constructive critic in arms control negotiations, and human rights watchdog for all those in trouble.

—JJS



von Hippel discusses test ban with Sakharov

(Continued from page 4)

Monday at the Kremlin

Ornate, gold bas-relief and painted ceilings, Cyrillic writing and biblical scenes, filled with winter plants, the Kremlin seemed very unsocialist and unatheistic in its emphasis on Greek Orthodox symbols.

1500 shiny wooden desks were lined up, 22 abreast and about 70 rows deep in the meeting hall. Each had an earphone for translation and the desk showed such channels as Magyar, Vietnamese, Rumanian, Japanese, Hebrew, and Arabic—but not Chinese.

I noticed former President Vasily Kuznetsov, who was trained as a metallurgist in Pennsylvania in the 1920s and introduced him to Jerome Wiesner. Jerry had negotiated with Kuznetsov for the release of the RB-47 fliers after the election of Kennedy. Yevgeny Yevtushenko was sitting nearby and, on being reminded that he had entrusted one of his poems on Robert Kennedy to me to transmit to the *New York Times*, raised his hands like a prizefighter and cheered.

The master of ceremonies was none other than Evgeny P. Velikhov, who introduced one rapporteur for each forum—Frank von Hippel was to be the rapporteur for the main forum, that of science.

Velikhov noted that they tried to get all points of view, that more than 1,000 participants came from 80 countries, and urged them to sign a letter prepared by our own Ted Taylor imploring the American scientist Hegdin to stop his 6 month long hunger strike. He announced a new Human Survival Fund designed to support cooperative open science; this foundation, which seems to have been first urged on Velikhov by Gorbachev himself, was put together swiftly by Velikhov during the meeting in a series of lightning-like encounters with philanthropists, most of whom were there at the invitation of FAS.

Bernard Lown, speaking for the Physician's Forum, opened by quoting a middle-aged German woman who accosted him in the Frankfurt airport and said:

"You are an American. I want to apologize to you for the fact that, now, whenever I think of peace, I think of Gorbachev."

Frank, speaking for the Scientist's Forum, summarized the forum in a professional way and expressed the pleasure of the group at having Sakharov participate—but his reference to Andrei's Nobel Prize was dropped by the translator and, as a result, did not appear in the texts in *Pravda* and *Izvestia* the next day.

Federal Republic of Germany's Egon Bahr reported for the Forum of Political Scientists and said, "Clearly it is better to test Gorbachev than to test new bombs."

And so it went with a total of eight forums. Excerpts from Gorbachev's speech appear on page 9. His main proposal was a "ban on the deployment of any weapons in space"—a well-worn proposal that got a lot of attention a few years ago. The audience response was disappointing and Gorbachev halted and said, "I counted on more fervent applause but that will do."

Afterwards, in the corridor, I asked a high Soviet official why there was not some new initiative since so many people had come from so far, etc. He said it would be demeaning to make more initiatives since they had been rebuffed by the Reagan Administration so rudely. That, I replied, was the "old way of thinking." He blanched.

The Kremlin Reception

A gala reception ensued. My wife, B.J., talked with Mrs. Gorbachev. We both accosted President Gromyko and introduced ourselves as friends of his son Anatoly who were interested in parliamentary exchange. He joked that his son was very "objective," his way of not indicating whether Anatoly had, or had not, taken up one of our schemes with him. In the group was Academy of Sciences President Marchuk, who looks much like Cal Tech's Marvin Goldberger and who is "waiting for a thaw" before coming to America. Vice President of the Academy Frolov was in their company.

Elsewhere in the room, we saw all the other high officials looking very young indeed and very relaxed and sociable. It was remarkable.

Tuesday Morning

Moscow News, which is printed in five languages, has become truly interesting, Seweryn Bialer had told me, and provided a glimpse for the non-Russian speaker of how things were easing up.

Its Deputy Editor, Yuri Bandoura, told me how the weekly had evolved from a paper for friendship societies and the study of foreign languages to something more after 1980. He and his editor had been on the job for only six months. While there were some censorship restrictions, e.g., state secrets, the main restraint was self-censorship by editors who had stereotyped images of Europe and the United States. The demand for the paper was growing rapidly and they could not satisfy their readers with the 250,000 Russian and English issues.



New Soviet Academy President Marchuk

MIKHAIL GORBACHEV'S ADDRESS TO PARTICIPANTS IN THE INTERNATIONAL FORUM FOR A NUCLEAR-FREE WORLD, FOR SURVIVAL OF HUMANITY

. . . The question stands like this: either political mentality is geared to the requirements of the times, or civilization and life itself on Earth may perish . . .

. . . I must say that the reorganization which we have launched on such a scale and which is irreversible shows to everyone: this is where we want to direct our resources, this is where our thoughts are going, these are our actual programmes and intentions, on this we intend to spend the intellectual energy of our society.

Our main idea is to bring out the potential of socialism through activating all the people's strength. To do so we need full and free functioning of all public and state agencies, of all production collectives and creative unions, new forms of civic activity and restoration of those which were unfairly forgotten. In brief, we want a broad democratization of all society. Further democratization is also the main guarantee of the irreversible nature of the ongoing processes. We want more socialism and hence more democracy . . .

. . . Reorganization is an invitation to any social system to compete with socialism peacefully. And we will be able to prove in practice that such competition benefits universal progress and world peace. But for such competition to take place and unfold in civilized forms worthy of 21st century humanity, we must have a new outlook and overcome mentality, stereotypes and dogmas inherited from a past gone never to return.

It took time for our society and the Soviet leadership to develop an interest in the new mode of thinking. We pondered a good deal. We criticized ourselves and others and asked ourselves difficult and challenging questions before we saw things as they are and became convinced that new approaches and methods are required for resolving international problems in today's complex and contradictory world, a world at a crossroads . . .

. . . Let me just state that along with a deficit of new attitudes everyone feels a shortfall of confidence . . .

. . . Confidence needs to be built up through experience in cooperation, through knowing each other better, through solving common problems. It is wrong in principle to say that first comes confidence and then all the rest: disarmament, cooperation and joint projects. Confidence, its creation, consolidation and development comes from common endeavor. This is the rational way.

And I repeat: everyone must begin with himself. It is not the pose of a self-appointed supreme judge of the whole world but respect for others and an unbiased



General Secretary Gorbachev at Kremlin reception after speech. Mrs. Gorbachev is to his right and Former Ambassador Dobrynin is standing behind him.

and self-critical view toward one's own society that international relations need so badly now.

One of the chief results of the reconstruction drive in the Soviet Union is a general and universal confidence boost for our society. This bolsters our conviction that it is possible to establish trust in the sphere of international relations too . . .

. . . At present national sovereignty of a state extends to the atmosphere above it. And every state has the right to defend it from intrusion. Weapons in space would create a far greater threat. So the aim of the plans to deploy weapons in space is to create a new instrument of blackmail against independent states. Isn't it time to enter in international law a ban on deployment of any weapons in space? . . .

. . . There is yet another aspect to note as far as verification goes. It is common knowledge that the U.S. has numerous military bases on the territory of other countries. We would like to have an inspection access to them to be sure that there is no activity going on there that is forbidden under any eventual agreement. In this sense, there will, apparently, have to be cooperation of the states that host those bases.

Of course, it will be better still to revive the old idea of dismantling foreign bases and bringing the troops stationed there back home. We apply this to ourselves too. We have already taken the first practical steps. As you know, some of our forces are being withdrawn from the Mongolian People's Republic, upon agreement with our Mongolian friends. We have brought six regiments back from Afghanistan, and we shall pull out the whole of our military contingent within time-limits as short as possible.

We do not claim to know the ultimate truth. We readily respond to proposals made by other countries, political parties, public movements, and just individuals. The Soviet Union has supported the idea of a nuclear-free corridor for Central Europe, and nuclear-free zones for Northern Europe, the Balkans, the South Pacific and other regions.

He said there was an "ideal of a journalist but, in real life, the journalists have strayed quite far from it. Self-censorship has prevented them from playing the role they should, which is to help the society."

At lunch in the *Moscow News* cafeteria, we met Robert Meyerson, who had left the U.S. Navy as a conscientious objector and then, to explore what was happening in war and peace, had studied Russian in the U.S. and in Moscow, ending up with a job at *Moscow News* as a stylist to improve the English edition. He liked the newspaper and the editors, but his articles reflected the editor's concerns.

Thus, in a single 1500-word article of his, deletions were made in the Russian edition to prevent the readers from hearing: a) that a U.S. pro-peace person had gotten a friendly reception from the FBI after her taking the initiative to talk to the FBI; b) that some Soviet youths had burned a papier-mache missile as a non-violent protest against the arms race; and c) that a pro-Soviet American in the printing business had observed that Soviet progress and productivity were being impeded by a lack of personal computers and public xeroxing facilities.

On the other hand, *Moscow News* ran a long interview with Zbigniew Brezinski! And a recent issue carried an irate article about the treatment of religious believers desiring to register a church in a small town; the banner headline quoted the USSR Constitution guaranteeing freedom of conscience.

Wednesday at Novesti News

Asked what she wanted as a present for her superb work as a guide, and for her long hours, our assistant suggested Russian language fiction by pre-revolutionary masters—which could be secured only in a certain hard-currency shop!



Robert Meyerson with Soviet Scientific Administrator Alla Orechova

We visited next the Director of Novesti Press Agency, Valentin Falin, now a candidate member of the Central Committee and formerly the Soviet Ambassador to the German Democratic Republic. He remembered an interview when he was the columnist at *Izvestia*. We urged reciprocal visits by governmental officials.

(This is a subject on which the Federation has been working for some time. Earlier at the Forum, spotting former Ambassador Dobrynin, who is, among other things, Chairman of the Foreign Affairs Committee of one of the Houses of Parliament, we asked him how to proceed and got a good reading on what we had to do next in a fifteen-minute impromptu discussion in the aisle of the auditorium.)

Falin said that, "If people speak, they will be critical" and then, "Your side will forget about internal disagreements." According to Gorbachev, "Our aim is not to quarrel."

To the suggestion that the officials just come as tourists with the understanding that they were there to see and not to be involved in political debate, he said, "This has merit and could work." But he still thought we "must discuss the results of the implementation of the idea." So they are really cautious on this—notwithstanding the rhetoric. On the other hand, Falin said he would act on the idea of a poll of the Central Committee's travels to the West which would be presented to the General Secretary. (After all persons would be slow to accept Gorbachev's argument for reform if they had not been to the West in general and the U.S. in particular.) This, he said, he would discuss with a Politburo member.

Lunch at the Prague with Kokoshin

Sakharov had been just quoted in *Pravda* for the first time on his own—a landmark event. On the other hand, in a meeting with Frank von Hippel and Tom Cochran on an NRDC issue, Dobrynin had said the Soviets can't figure out to whom they are talking in America, "Everyone is at everyone else's throat." Meanwhile, there seems to be movement inside the Soviet bureaucracy on some of FAS's ideas. After learning all this, we had an off-the-record lunch with Andrei Kokoshin, Deputy Director of Arbatov's Institute and a key figure in our dialogue with the Scientists' Committee.

Later a Soviet intellectual said privately, "We're going through a revolution on all fronts. The Brezhnev people are counterattacking and sabotaging. We are no longer interested in Voice of America or BBC because now we know it all from Soviet sources. Before we had a minuscule amount of information. Everything that is happening here is young, vigorous and energetic." Was he reminded, we asked, of a Soviet President Kennedy? "Yes, and we worry about the same thing happening to him."

The Refusenik Seminar

We had visited the Refusenik scientific seminar in 1975; it was still meeting, Victor Brailovskiy advised us, every

two weeks to hear presentations by its members about their scientific work. But this was a special meeting set up to talk to FAS.

Brailovsky called this a "time of hope" but said that "secrecy" was the main pretext on which most members were being denied visas and that the meanings of "secrecy" seemed to be limitless.

Emigration was down to about 100 people per month from a peak of 4,000 people per month. As one example of the meaninglessness of it all, Mrs. Brailovsky stated that most of those held more than 10 years on the grounds of "secrecy" were from the Ministry of Radio-Electronics. (No real study of this has been done, however, because it would bring retaliation—even the hint that Anatoly Shcharansky might do such a study had contributed to his sentence of 12 years.)

In attendance was Naum Meiman, much in the news because of the recent visa for his wife to come to America for medical treatment. She died while in America—in his opinion because he was not with her to care for her. He said there was "not the slightest trace of new spirit" in the visa department dealings with him. He noted that he had finished his classified work 32 years before and retired in 1975. But when he married his wife in 1981, she then was considered to have acquired "secrets" by marrying him.

The dean of scientific refuseniks, Alexander Lerner, was characteristically cheerful as he had been in 1975. But he warned that the Soviet authorities are "very skillful in deceiving foreigners."

Another refusenik was obviously provoking the Academy of Sciences, whose President he had telephoned 45 times in one day—which had simply resulted in the militia having instructions to bar him from the Presidium office.

Gorbachev had apparently said, in France, that 10 years was the longest term applicable to consider someone as "having secrets." But this reference had been kept out of Soviet newspapers. He had also said that secrets were the only reason appropriate for denying a visa for emigration. In fact, the refuseniks told me, "absence of close relatives" was another, as was "state considerations" or "no reason."

A poll of those present showed 3 had appropriate scientific jobs, 9 had poor or inappropriate jobs, 6 had no job and 7 were retired. And one person with an appropriate



Refuseniks Seminar

job explained the strange coincidences that led to it; in effect, his teaching job had been given to him to legitimize inaccurate reports which had been given to the French Embassy.

Another poll showed that 13 refuseniks had the first-degree relatives which have become a condition, since January, for a visa; but eleven did not. But this, we were told, reflects the older age of the seminar participants. The older refuseniks are more likely to have first-degree relatives abroad because of earlier immigration. Asked how many would leave Russia, if allowed, they estimated that the number was somewhere between 20,000 and 400,000 and, if conditions were right, might be as high as one million. Queried what this would mean for Soviet progress, one replied, "Frankly, it isn't our problem."

An OVIR official told one meeting participant, "we value technical people" and this does seem to be the Soviet preoccupation. And for those refuseniks remaining, a sense of heightened anti-Semitism seems the rule. Science has become a "forbidden subject," one refusenik said, as a result of tightening limits on instruction of Jews who, now, might leave. According to one young person, of 400 mathematicians in a Moscow University admission class, only four or five were Jews.

Refuseniks Present At The Seminar, February 18, 1987

NAME	ADDRESS	AGE	SCIENTIFIC PROFESSION	PRESENT WORK	REASON FOR VISA DENIAL	YEARS WAITING	COMMENTS
Leonid A. Dikii	103055, Moscow, Lesnaja 35/2, Apt 21	60	Mathematics	no job	Secrecy	Since '79	
Solomon Alber	St. 1, #16, Apt 8 p/o Chernogolovka Moscow region, 147432	55	Mathematics	Engineer USSR Acad. of Sci. Inst. Chem. Phys.	Now no reasons	Since '75	Had permission in '79
Alexander Berdichevsky	Moscow 117513 Bakuleva Stp. N6, Apt 215	37	Mac. Engineer	All Union Res. Inst. Organic Synthesis of Oil Producing Ministry	Secrecy	since '83	
Ryaboy Vladislav	105215, Moscow 13 Parkovaya St. 27-2-40	51	Geophysicist	Scientist Geophysical Inst. of the Ministry of Geology	Not in the interests of the state	since '79	Has relatives in Israel & in the U.S.

Igor Uspensky	Moscow Vernadsky 125 Kv 237	47	Entomologist	out of work	state security	since '79	family of biologists
Simon Lantovsky Ezlena Matlina	Moscow 117571 St. 20 Bakinskikh Kommisarov 7, K.3, KV. 37	78	Chemist Biologist	Pensioner Pensioner	Secrecy No reason	since '77 since '82	
Mark Freidlin		49	Mathematics	Out of work	relatives in Israel not close enough	since '79	
Mark Tarshis	Moscow Kosiuskaya 24 K1 KV 137	45	Biochemist	Technical Assistant	No reason	since '79	
Benjamin Charny		49	Mathematician	No job	State Security	since '79	Seriously ill-has cancer, myocardial infarction, other health problems
Elias Pinsher	Moscow Otkretoe Shosse 2-6-102	66	Mathematics	No job	State Security	since '86	
Eugene Grechavovsky	Moscow B. Cherkisovskaj 3-6-67	39	Statistician	No professional Job	Security		
Nahum Meiman	Naber. Gorkogo 4/22 Apt 57 Moscow 113127	76	Mathematics	Forced to retire in '75	Security (finished classified work in 1955)	since '75	
Yacov Alpert	Moscow 119285 Secont Mostilmovskij Pet. 21 Apt 198	76	Physicist	Forced to retire	Secrecy (in 1980 the Pres. of Sov. Academy of Sciences removed from secrecy)	since '75	
Edward Nadgornyi	Bol. Spasskaya 32 Apt. 171, Moscow 129010	56	Physicist	Temporary Scientist	1982: State Secrets	since '81	The Soviet Academy denies that it is an obstacle to our leaving, and my director Prof. Yu Osipyan told my colleagues abroad many times that my Institute and the Academy don't hold us
Nina Nadgornyi		53	Physicist	No job	1983: No motives for reunion	since '81	
Boris Nadgornyi		28	Physicist	Technician	1987: Academy of Sciences is against their departure	since '81	
Alexander Lerner	Moscow 117333 Dm. Ulianova St. 4-2-322	73	Cybernetics Professor	Retired	State Security	since '71	
Vladimir Rosenzweig	Moscow 121099 Kalinin pr., 37/12, Apt. 50	40	Computer Science	No professional job	No motives for unification permanent refusal)	since '80	
Yuri Chernyak	Profsouznaya 85 K.1, KV. 93	92	Physicist	No job	State Security	since '76	He is now in the hospital after having a heart attack
Arnadii Leonov	Moscow 125319 Acad. Il'yushin Str. 1, Apt. 54	52	Mechanics Appl. Math	No job	Security	since '78	
Vladimir Kislik	Moscow 123458 Tallinskaya Str. 24 apt. 176	52	Physical Metallurgy	Worker	Secrecy of job he finished more than 20 years ago	since '73	In 1979 the minister of Internal Affairs announced my secrecy time was finished but I am still not permitted to leave
Victor Brailovsky Irina Brailovsky	Moscow 117526 Vernadsky 99 K.1 KV 128	51 51	Applied Mathematics	No job No job	Wife's secrecy Secrecy	since '72 since '72	Secrecy was officially given up in 1978 but this informa- tion did not reach the visa office
Leonid Brailovsky in OVIR that now my	Moscow 117526 Vernadsky 99 K.1 KV 128	26	Mathematics	Programmer	Mother's Secrecy	since '72 with parents,	In January 1987 I was told
					alone	since '79 alone	documents wouldn't even be accepted for consideration
Boris Klots	117133 UC. Akademita Vargy, 2, Apt 436	36	Applied Mathematics	Junior Scientist	Wife's secrecy	since '80	My wife has never worked being busy with 4 children
Anna Charny		26	Mathematics	Mother	Father's secrecy	since '79	
Alexander Loffe	Moscow Profsouznaya 85 K.1 KV 203	48	Mathematics	Senior Researcher	State security	since '76	In 1980 the director of my Institute told me that (as he learned from official sources) my security restrictions had been lifted
Alexander Roitburd	Moscow 117571 Pr. Vernadskii 119, Flat 156	53	Physicist	Scientist	Not in the interest of the USSR	since '78	

Meeting with Velikhov

At the Praesidium, Frank von Hippel and I discussed a draft agreement on a comprehensive study of the "Feasibility of Implementing and Maintaining Disarmament" with Evgeny Velikhov. He agreed to return it to us for signatures that evening after reviewing and discussing it with other Soviet officials. And this he did, so that by 10 p.m. that same day, the Federation had reached agreement with the Scientists Committee for Peace and Against Nuclear War on the study, which might take up to five years to complete. The parties agreed jointly to "analyze the organization of a military-industrial complex and the various way of verifying in depth the compliance of this complex with a model agreement containing quantitative and qualitative limits on nuclear weapons systems."

Of special importance, the two sides said they envisaged "visits of researchers to some relevant facilities in each country so as to provide the scientists with a concrete understanding of the problems involved and in some cases to demonstrate the political feasibility of the required verification arrangements." These would be agreed to on a case by case basis. The entire program would require, we felt, a 50% increase in FAS's overall budget and Evgeny was also thinking of how it would necessitate some expansion on his side. (See back page for the text.)

Khrushchev's Burial Place

We visited Khrushchev's burial plot surrounded by mini-monuments to many other famous Soviet personalities. There lies Ilyushin with a monument showing the planes he designed and the mathematician Petrovsky with mathematical formulas behind his bust. These monuments can cost 30,000 rubles—15 years salary at the average wage.

At a cafe disco featuring a sound box with flashing bright lights and twenty-year-olds eyeing each other, we chatted with a bright 30 year-old scientist who felt himself a philosopher. Asked questions about the meaning of life, he put his chin in his hand and reflected with the posture of a graduate student being stumped with a real poser.

In the last few years, he said, a Russian Renaissance has started and requests for volunteers to fix up old Russian historical buildings has been oversubscribed by 500%. He said that he had not thought much about America until "TV bridges permitted us to see real faces of Americans. The bridges were great for making a picture of America—to feel direct words and to see their eyes. Absence of knowledge causes distrust. On the whole we like America." Asked his goals, he said it was "restoration of the traditions of the past—to find the roots to cure the tree." He condemned party officials by referring to them as "people who try to be known to the country who have nothing inside. But there are others who think about things and are only known within their circle." —Jeremy J. Stone

SOVIET CRITIQUE OF CORRTEX

Finally, I would like to return to the question of immediate concern to the Senate: the ratification of the 150-kiloton Threshold Test Ban, and the Administration's reservation relating to additional verification requirements—specifically the on-site CORRTEX method.

Two weeks ago, I participated in an International Workshop on the Verification of Threshold Test Bans which was held in Moscow. U.S. experts were originally supposed to present the Administration's position on CORRTEX there but, at the last minute, the Administration decided not to send them. The Workshop is therefore of interest principally because it provided a first opportunity to hear a Soviet critique of the CORRTEX technique.

Basically, the position presented by the Soviet experts was that, while CORRTEX can be a relatively reliable means for a country to monitor its own test, it would not be reliable in an adversarial situation. They described various uncertainties and potential evasion methods which they felt could result in uncertainty factors for the yield estimates from CORRTEX as large as 2-3 — far larger than the uncertainty range of 1.3-1.5 that is estimated for seismic yield estimates by independent U.S. seismologists.

The Soviet CORRTEX experts acknowledged that the various uncertainties and evasion possibilities could be dealt with by detailed inspections of the geology and testing arrangements. But they felt that these inspections would have to include the inspection of the interior of the large canisters that contain the nuclear explosive and diagnostic equipment. They felt that such inspections would be unacceptably intrusive for the weapons labs.

Pending the translation of the Soviet paper, I can say little about its quantitative conclusions. Qualitatively, however, its conclusions are consistent with those that were arrived at by Professor Frederick Lamb in a review of the CORRTEX technique done for the Senate Foreign Relations Committee. Similar concerns about the potential intrusiveness of the inspections required to ensure the accuracy of the CORRTEX measurements have also been expressed by the U.S. weapons labs.

—Frank von Hippel, Chairman, FAS Fund
Senate Armed Services Committee
Testimony, Feb. 26, 1987.

ABM TREATY: NEW QUANTITATIVE LIMITS?

What follows is the excerpted text of Pike's presentation to the Forum.

The problems posed by ballistic missile defense technology, and the challenges to the Anti-Ballistic Missile Treaty of 1972 have been particularly vexing. A number of different conceptual approaches have been used to try to resolve these questions, or at least lay out a common framework for discussing possible resolution of these questions. But thus far there has not been much progress.

The difficulty in finding an answer to these problems suggests that we are asking the wrong question. We may need a new way of thinking about the ABM Treaty and about ballistic missile defense technology.

There have been a number of discussions in recent years about the broad interpretation of the ABM Treaty, a narrow interpretation of the Treaty, and a permissive interpretation of the Treaty. Proposals have been made to restrict testing of ABM technology to laboratories, and to prohibit testing in the field. Attention has also focused on defining what "component," "testing in an ABM mode," and "give a non-ABM system ABM capabilities" should mean.

All of these discussions have attempted to impose qualitative limits, expressed in words. But unfortunately, when confronted with the technological problems posed by ballistic missile defense, these words fail to capture the problem.

Perhaps we should focus not on words, but rather, on numbers. Rather than qualitative limits, we should examine quantitative limits. There may be questions about what is an ABM component or what is a "laboratory," but surely with the national technical means of verification that both the United States and the Soviet Union have developed over the last several decades, as demonstrated in the SALT II agreement for instance, it is possible to achieve agreement over specific numbers. It is possible to say whether or not a mirror is larger than two meters in diameter, with an acceptable margin of error.

We ought to start thinking about quantitative limits on ballistic missile defense, rather than simply qualitative limits.

Quantitative Limits in 1972

The Anti-Ballistic Treaty of 1972 provides precedents for approaching this problem. At the time the Treaty was signed, the greatest concern dealt with large phased array radars, such as the Thule and Fylingdale radars and the radar at Krasnoyarsk. The Treaty sought to increase the lead time and the warning time for the deployment of ABM systems by placing limits on these radars.

The Treaty contains a very specific, quantitative limit on the product of the power of the radar, multiplied by the area of the radar transmitter phase. This has provided a very unambiguous distinction for what type of radars are accountable under the ABM Treaty.

There has been no dispute over whether radar is accountable under the Treaty regime, because of this very precise, quantitative numerical limit. In the case of anti-missile radars or radars with ABM potential, the debate

has been rather over questions where we do not have such precise quantitative limits. The Treaty says that radar should be deployed at the periphery of a nation's territory and oriented outward, but does not provide unambiguous quantitative indices of what this means.

Quantitative Limits in the Future

The discussion of limits on ballistic missile defense technologies should focus on clarifying the existing limitations of the ABM Treaty by mutually agreed upon quantitative thresholds between what is permitted and what is prohibited.

There are several criteria for these thresholds. The quantitative limit clearly must be verifiable. The quantitative limit should directly constrain the performance of the device in question. The power aperture product, quantitative limit that was agreed to in 1972 does this very well.

And we should also be parsimonious in our selection of these criteria. Simply because a quantitative limit could be imagined doesn't necessarily mean that it should be agreed to. We should attempt to isolate a very small number of performance parameters and use them as indices of anti missile capabilities.

Despite the attempt to design around the quantitative limit, the Naval treaty regime in place at that time was effective in constraining even the pocket battleships. In wartime, the pocket battleships turned out to be militarily unimpressive. And the ships displaced 14,000 tons, rather than the permitted 10,000 tons.

A similar precedent is found in the discussions on the comprehensive test ban treaty. Recently, discussions have focused on lowering the threshold of the existing Threshold Test Ban Treaty and establishing a quota on the number of tests that can be conducted each year. Regardless of the technical merits of this proposal, it has the political attraction that once we start talking about lowering the threshold and establishing a quota on the number of tests, we're arguing about numbers. One side will come in with a high number and the other side with a low number; and as we've seen in the negotiations on offensive weapons — it is possible to reach a compromise.

It will undoubtedly prove difficult to agree on which parameters should be limited. And once the parameter is agreed to, one side will undoubtedly say "we want very large mirrors" and the other side will say "no, we want very small mirrors." But the give and take in the SALT I and SALT II agreements establishes a pattern for how these questions can be resolved.

Concentrating on quantitative numerical limits rather than qualitative limits can provide a basis for discussions in the Standing Consultative Commission and in the recently formed working group at the Geneva negotiations. Provided that there is the political will on both sides, and a willingness and an ability to compromise, this approach can form the basis for resolving the concerns that have been so troubling in Soviet-American and international relations over the last several years. —John E. Pike

SUMMARY WORKSHOP ON TECHNOLOGICAL ASPECTS OF THE ABM TREATY

1- In the course of the discussion the participants in the seminar agreed on the importance of maintaining the ABM Treaty regime, which makes an important contribution to strategic stability.

It was stressed that the main purpose of the Treaty is "to limit antiballistic missile systems" (Article I, paragraph 1). As noted in the preamble to the ABM Treaty, "Effective measures to limit anti-ballistic missile systems would be a substantial factor in curbing the race in strategic offensive arms and would lead to a decrease in the risk of outbreak of war involving nuclear weapons. The limitation of anti-ballistic missile systems, as well as certain agreed measures with respect to the limitation of strategic offensive arms, would contribute to the creation of more favorable conditions for further negotiations on limiting strategic arms."

2- The participants noted that the evolution of technology with potential ABM applications may endanger the ABM Treaty. Participants expressed the view that the US and Soviet governments should reach a mutual understanding of the terms of the ABM Treaty as applied to new technologies with potential ABM applications. It was generally agreed that the ABM Treaty prohibitions on development and testing contained in Article V apply to all technologies, including those "based on other physical principles." The Soviet participants specifically objected to the US Administration's "broad" interpretation of the ABM Treaty.

3- The Soviet participants suggested that devices performing the functions of the components of ABM systems enumerated in the ABM Treaty were not necessarily the only components limited by the Treaty. They suggested that the definition of "components" must include such devices as surveillance, acquisition, tracking, kill assessment and battle management systems. Some Western participants objected to the inclusion of battle management systems, noting that constraints on such systems would not be verifiable by national technical means.

4- Participants discussed issues of non-compliance with the ABM Treaty. Western participants expressed concern about Soviet activities that appear to be inconsistent with the ABM Treaty. In particular, they strongly criticized the Soviet radar installation at Krasnoyarsk and expressed concern about Soviet directed energy weapons development. Soviet participants emphasized their disagreement with these assertions and stressed their concern about a broad range of US activities, primarily those connected with the SDI program.

5- The participants discussed means of reaching a mutual understanding of the terms of the ABM Treaty, including distinctions between prohibited and permitted activities. They discussed measures that would specify quantitative limitations on technologies with potential ABM applications. Such quantitative limitations would distinguish development and testing of devices with ABM capabilities from development and testing of devices without ABM capabilities.

Specific limitations that were discussed included:

- brightness of directed energy systems;
- several characteristics of kinetic energy weapons including velocity, relative velocity, altitude of testing, and flyby distance;
- power of space-based reactors;
- apertures of mirrors for lasers and sensors.

These would be appropriate subjects for discussion at the Standing Consultative Commission (SCC) or within another high level forum convened to address such issues.

6- A concern was expressed that certain limitations on ABM-related technologies might impede scientific experiments that rely on similar technologies. It was noted that international cooperation in such projects could provide reassurance of their peaceful character.

7- All participants agreed on the utmost importance of verification. It was also noted that some restrictions on performance would pose certain challenges for verification by national technical means. Some American participants suggested that limitations on sensors might pose greater challenges than quantitative limitations on kill mechanisms. Other participants suggested, nevertheless, the importance of pursuing possible verifiable limitations on all kinds of sensors for ABM purposes.

8- Several participants expressed concern that the development and deployment of anti-tactical ballistic missiles (ATBMs) might erode the limitations of the ABM Treaty.

9- The participants also expressed concern that the development, testing, and deployment of anti-satellite weapons would be destabilizing. It was noted that the Soviet 1983 draft treaty prohibiting anti-satellite weapons remained an active proposal. Western participants noted that the Soviet draft treaty includes provisions for dismantling of ASAT systems.

* Not every participant in the workshop agreed with each point in this summary, but there is general agreement with its content. The meeting had an unofficial, scientific character.

FAS AND VELIKHOV'S COMMITTEE PLAN JOINT STUDY

18 February 1987

AGREEMENT TO CARRY OUT A JOINT SCIENTIFIC STUDY OF THE FEASIBILITY OF IMPLEMENTING AND MAINTAINING DISARMAMENT

The Federation of American Scientists (FAS), through its Federation of American Scientists Fund (FAS Fund), and the Committee of Soviet Scientists for Peace and Against the Nuclear Threat agree to renew their program of semiannual meetings for an additional period of five years and to undertake, in particular, a Joint Scientific Study of the Feasibility of Implementing and Maintaining Disarmament.

The parties will analyze the organization of a military-industrial complex and the various ways of verifying in depth the compliance of this complex with a model agreement containing quantitative and qualitative limits on nuclear weapons systems.

The two sides envisage visits of researchers to some relevant facilities in each country so as to provide the scientists with a concrete understanding of the problems involved and in some cases to demonstrate the political feasibility of the required verification arrangements. Agreement on the specifics of these visits will be arranged on a case-by-case basis.

Evgeny P. Velikhov,
Chairman
Committee of Soviet
Scientists for Peace and
Against the Nuclear
Threat

Frank von Hippel,
Chairman
Federation of American
Scientists Fund

Jeremy J. Stone, Director
Federation of American
Scientists Fund

Перевод с английского

18 октября 1987 г.

СОГЛАШЕНИЕ О ПРОВЕДЕНИИ СОВМЕСТНОЙ НАУЧНОЙ РАБОТЫ ПО ИЗУЧЕНИЮ ВОЗМОЖНОСТЕЙ ОСУЩЕСТВЛЕНИЯ И ПОДДЕРЖАНИИ ПРОЦЕССА РАЗОРУЖЕНИЯ

Федерация американских ученых (ФАУ) через Фонд Федерации американских ученых (Фонд ФАУ) и Комитет советских ученых в защиту мира, против ядерной угрозы согласились возобновить программу встреч, организуемых раз в шесть месяцев, на предстоящий пятилетний период и предпринять, в частности, совместную научную работу по изучению возможностей осуществления и поддержания процесса разоружения.

Стороны проанализируют организацию военно-промышленного комплекса и различные пути тщательной проверки соответствия этого комплекса модели соглашения, содержащей количественные и качественные ограничения на системы ядерных вооружений.

Обе стороны предусматривают посещения исследователями некоторых соответствующих учреждений в каждой стране с тем, чтобы обеспечить для ученых конкретное понимание имеющихся проблем и в некоторых случаях продемонстрировать политическую возможность достижения требуемых договоренностей относительно контроля. Согласование деталей этих посещений будет осуществляться в каждом конкретном случае.

Велихов

Е.П. Велихов, Председатель
Комитета советских ученых
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Федерации американских
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