

I wonder if it is Mr. Davis' opinion that a really detailed, effective inspection system can be instituted in that length of time?

MR. DAVIS: You consider that technically it is possible to set up the inspection and control in that time and your question is if a political understanding can be reached in that time?

DR. BENEDICT: Yes.

MR. DAVIS: I would hazard an opinion only this way: I think we have a better chance now than we had at the end of the first World War twenty-five years ago. We in the United States, I believe, are farther along towards accepting as a people - at least I think this is true of a majority of the United States - the desirability of the idea that our genuine interest is identified in a large measure with the general interest in the world. I am reassured also by what Dr. Lubin has said. An observation of the Russian delegation at the Geneva Conference on armaments would make me think if they are disposed to agree, if the controlling group is disposed to agree and feel assurance enough to agree, you could get inspection control applied satisfactorily and jointly in the Soviet Union, perhaps more easily than in any other country. The difficulty might come in the argument with some of the other countries which so far have not been so directly involved in the debate today, but which might have other economic and political and social questions in their thought in regard to the working of such a system, and what its operations and purposes would be.

The one chance of getting the set-up and getting it under way within the two or three year limit which you indicate would be to start without delay in the January meetings to get an atomic energy commission set up under the United Nations, and as quickly as possible to propose some means by which that could be extended prospectively to include at least some of the countries that were not belligerents in this war, and to enlist what support can be rallied on that side. As proposed, the Atomic Energy Commission of the United

States would not provide for that unless technical experts are associated with it.

One thing I wanted to do was to put before you both as physical and political scientists the consideration of the fact that other than United Nations are involved in this if you want to make the system work.

CHAIRMAN EICHELBERGER: You probably saw Sumner Welles' article the day before yesterday, advocating the Commission of four neutrals, two of which, Sweden and Portugal, you have spoken of, as being involved in that problem. I think that that was probably in back of his mind when he made that suggestion. We now take in at least four of the neutrals.

DR. ADLER: I would like to ask Mr. Davis if he found out anything about the opinion of the people in various countries concerning international control of atomic energy? In this country there is a good deal of divided opinion. What about it in the other countries of the world?

MR. DAVIS: Take the British. I had the opportunity only to make what you call scientifically a small sampling. I would not base too much on that. I talked to a few friends in England and in France -- those were the only two countries I visited -- and with a few friends from other countries. I did find the feeling among English friends that you not only could get a fairly large measure of support for action in this field in the United Kingdom, but also that you could look for a degree of cooperation between their central government authorities and their local authorities under the different system of the United Kingdom in putting such a system into effect. I believe from past experience and from past acquaintance that the same might be true in France; but I submit with that that it is much harder just now to know exactly what the public sentiment is in France than it was in earlier years, because France has been through such a shattering experience of division in the five occupied zones, and of separation of the population -- not only in the resistance groups, but also in prisoners of war, in peoples deported to concentration

camps, and forced labor - that the state of public thinking in France is much more confused just now and is likely to be for some time than it was in past years. However, it is shaping up very much more rapidly than you would expect after an experience of that kind. Nevertheless, the French records are on the side of this kind of international experiment and this kind of security. The French were its chief advocates in the conference on armaments at Geneva. Presumably, with a reasonable understanding on other matters related to it, you could expect a majority support there.

I should not look for great resistance on the part of other continental European nations inside the United Nations system. You might begin to meet your harder stone walls when you get to countries which were not involved in this war, depending upon the particular attitudes inside those countries. The problem is not new. It only raises to the nth power the problem which we had in the conference in Washington and finally in the conference on armaments in Geneva, that governments never know what they want to do about armaments until they have agreed what to do about policy, because you don't know what you want in armaments until you know what you may have to do with them. All of this in the end will prove to rest to a considerable measure on the political understanding and confidence which may be reached.

CHAIRMAN EICHELBERGER: Dr. King of Great Britain is here and I wonder if he will speak.

DR. ALEXANDER KING: As someone just returned from Europe and who has had the opportunity of talking not only to scientists and others in Great Britain, but to a number of European scientists, I would like to say how very close my general opinion is to that expressed by Mr. Davis. I think he has expressed the position extremely accurately.

In these countries I don't think that there is any direct physical fear of the United States' possession of the atomic bomb, but there is a very great deal of fear, first of all, about what Mr. Davis has described as



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American economic imperialism, and secondly, as to the political repercussion, chiefly in Russia, of the American possession of the bomb, and finally, on the necessity of getting something done very quickly, presumably as the result of an American gesture while you are still in a position to say, "Here, we are. We have the bomb and we are taking the moral lead, just as we have the physical lead."

I would like to say too, that there has recently been a meeting of scientists in London from all the various European countries, including Dutch, French, Norwegian, Danish, Belgian, and I think Czech scientists, and the opinions which were expressed at that meeting could I think very easily have been expressed in this room today. I don't think there is any divergence of opinion of the scientists of either the British Commonwealth and the powers which are members of the United Nations, and those held by the scientists in this country. In Great Britain, of course, there has not been an uprising of the scientists the way there has been here because we have had no May-Johnson Bill to stimulate us into rather heated and vigorous action.

But I would like to say that as far as my observation goes, the British scientists and the British man on the street were 100 percent behind the idea of international control, even if it entailed some shedding of national sovereignty.

I have recently had a letter from the Director of Scientific Research in New Zealand in which he expresses the opinion of his Council, which has been agreed to by the Prime Minister of that country. That is again typical of all of these countries, namely, that international control is absolutely inevitable and will be willingly accepted by such countries because they see no other alternative whatsoever.

CHAIRMAN EICHELBERGER: Dr. King, I would like to ask a question. There was a dispatch in one of our papers a few weeks ago that the Dutch carried on experiments without the Germans knowing about it and they said they

would have had bombs manufactured within a year. Did you gather anything of that sort?

DR. KING: Speaking to one of the Dutch scientists, who was not in Holland during the occupation but who was in constant contact with scientists there, I got the general opinion that that was not true. Certain experiments had been undertaken but they had not reached any final conclusion and were on a very small scale. I don't think that one can place too much credence on that statement.

DR. STEWART MUDD: I would like to emphasize two remarks selected out of all those heard, to point most clearly to a workable and salutary way in the future. One of those is the remark just made by Dr. King when he said you had to think in terms of international controls with the surrender of some part of national sovereignty.

The other was what Dr. Fellows said in conclusion when considering the purely technical side of the inspection problem, which was that we must learn to live in a world which contains more or less fissionable material.

I would like to point out that we have to learn to live in a world which in addition to fissionable material also contains extremely destructive pathogenic material. I don't know whether you read the dispatch on bacteriological and other almost equally destructive means of warfare; and so it seems to me, important as the discussion is concerning the difficulties and uncertainties of control on a purely technical basis, that the way in the future is to think of blueprints of the way in which we can live in a world with fissionable material, bacteria, and uncertain and often malicious human beings. Along these lines we are likely to find a way out of our difficulties, and not really on any narrow technical lines alone, however important and essential those may be.

I submit that a strengthening of the United Nations Organization in the direction of a definite federal constitution with some surrender of

national sovereignty may be the lines along which this problem will receive a realistic solution, and that nothing short of that will really give it to us.

MAJOR ELIOT: What do you think, Dr. Lubin, would be the effect on the Russians if we invited their representatives to witness the atomic experiments which the Army Air Forces and the Navy are going to hold in the Pacific on the effect of the atomic bomb on floating structures?

DR. LUBIN: It would definitely help the situation. It would eliminate some of that fear which they have now.

I want to mention one other thing. There was nothing of any significance in the Soviet press about the atomic bomb the day it fell - just a squib. Certain people in the government - people who normally would not be on top - learned about it from an eight-page single spaced mimeographed sheet which was put out by our Embassy. The State Department sent that out while I was there, and that was within three weeks of the dropping of the bomb. There was not a single word of discussion in the Soviet Press about the atomic bomb. They knew about it in the higher government circles, but what they knew they got through the American newspapers and radio.

MAJOR ELIOT: Did they seem interested in it?

DR. LUBIN: Very much. The man in the street knew nothing about it.

DR. KING: A friend who was present at a meeting of the Academy of Sciences in Moscow told me that immediately after the bomb fell, the proceedings began by the President of the Academy offering his most sincere congratulations to the scientists and technologists of the United States, Great Britain and Canada on their splendid technical achievement!

PROFESSOR HOGNESS: I should like to ask Dr. Lubin whether he thinks we could have an effective agreement on control, or whether Russia would agree to effective controls, unless we put Russia on a par with the United States and Great Britain with regard to the technical know-how, the manufacture?



DR. LUBIN: I cannot answer that question. My opinion would not be worth any more than your own. My own feeling is that they might agree to it if they were once convinced that this control was a serious thing, and that the United States and Great Britain would stick to it as much as they would, but that is only a guess.

MR. LYLE W. BREWER: It has been suggested several times today that we should cut down on all manufacturing, shut down all the plutonium plants. In your opinion, Dr. Lubin, would such a step help importantly to alleviate Russian suspicion?

DR. LUBIN: If we stopped everything it would greatly improve understanding.

CHAIRMAN EICHELBERGER: I would like to ask Major Eliot a question. He spoke of public opinion not being informed as to what it wanted. Our recommendation on the Council of the Security Commission would be better if the objectives were formulated in advance. What would you advocate?

MAJOR ELIOT: I don't think you can formulate the objectives any better than they were formulated in the communique to which our representatives agreed. What you have to do is to spell out the objectives so the public understands what they mean, not only in application to other countries but in application to our own - that we want to do such-and-such things. That would mean that a commission would have to come into this country, largely composed of foreigners and inspect this, that and the other thing, to assure themselves of what we are doing, and that everything is on the up-and-up.

CHAIRMAN EICHELBERGER: Are you in favor of saying that we should make no more bombs pending this commission?

MAJOR ELIOT: I don't know what we need for experimental purposes. I would be in favor of setting a limit and saying what that limit was - saying that we have so-and-so many bombs which we are going to use for experimental purposes and everybody is invited to see them and to see them go off; that

we have certain others which we are going to keep in store or are going to put in specific places and hold ' at the call of the Security Council in case they are needed. But we could not anticipate any immediate need for them. Nobody else has any. We would keep a supply on hand for police purposes.

DR. RABINOWITCH: It seems to me, as I mentioned in the morning, that it might be tremendously important for the technical achievement of controls if there should not be the lapse of a year or two before the actual question of controls comes up. Perhaps if we could persuade the other side that we have no stocks of bombs, no secret stocks of ore or uranium in some way without their just taking our word for it, we might accomplish something. From this point of view it might be very important if something could be done immediately in order to secure some kind of a control over our production of bombs and ore.

CHAIRMAN EICHELBERGER: International or domestic?

DR. RABINOWITCH: That is the question. Is there a way in which (a) the American public opinion will so support, and (b) the Russians might consider, the exchange of information for the administration of our own production of uranium and uranium ore and metal and bombs that there would be no revelation of secrets? Can there be some kind of a bookkeeping established, some organization which would account for what is actually done and what has been accumulated in stock? Such a plan might have a chance of being accepted by the other side because it might really come to this: that if we proceed slowly by gradual steps, there might be a very great obstacle at the moment when the international agreement is proposed.

MAJOR ELIOT: I think that the secrecy which you fear was the main worry of all the objectors to the May-Johnson Bill. The stifling of scientific research in other fields is a question of domestic relations as far as this country is concerned.



Convincing the Congress of the United States that a type of legislation which will permit such preliminary inventories as you mention is necessary. Whether it can be obtained or not I don't know. The hearings before the McMahon Committee may generally determine what the Congress' attitude in the matter may be. I think it might be advisable. Whether Congress thinks so is another matter. It might be advisable that the A.B.C. Powers which were originally concerned with the matter set up a temporary arrangement in the form of a board to say that there will be so many bombs and no more, and that these three governments jointly pledge to their associates of the United Nations not to have any more beyond the limit thus fixed. I think the assurances of the three powers together might very well have a considerable effect. That again is a matter of domestic legislation in this country - to get the authorization for it.

DR. RABINOWITCH: So far no domestic legislation has provided in any way for this control. The McMahon Bill has no provisions on that. It was not mentioned in the hearings so far.

One further question, for Dr. Lubin: Does he think some other kind of control would be trusted more by the Russians say than the present control by the United States Army?

DR. LUBIN: I think very definitely that the suggestion made by Major Eliot for an A.B.C. temporary organization, pending an international organization of wide scope, would be very helpful. I honestly believe you could do it without Congress. I think the President through an executive order could say to the Army, "Stop making bombs." He could also say to the Army, "I am appointing certain people and I have asked the Prime Minister to appoint somebody, I have asked Mr. King of Canada to appoint somebody for the record at least, to check up on what the situation is."

MAJOR ELIOT: I think you would have a terrific row in Congress.

DR. LUBIN: You probably would, but I believe the President has the authority now to say, under the War Powers Act, "Stop making bombs."

MAJOR ELIOT: Theoretically. Whether he would think it politically wise is another matter.

DR. LUBIN: If enough people were stirred up he would do it tonight.

DR. RABINOWITCH: It seems something worth starting a fight for.

MAJOR ELIOT: It is a matter of public opinion, as Dr. Lubin says. If any of you heard the President's speech last night, you know he has trouble with Congress anyway whether he does it or not. Public opinion is another matter.

DR. WALTER C. BEARD: I have a question. Here in this country we pride ourselves in the development of and the force behind the atomic bomb, especially after the Smyth Report. We have talked about it all the time, and we take it quite seriously.

Dr. Lubin says that in Russia the people who were informed about the atomic bomb were few in numbers. The mass of the people don't know about the effects of it, do not realize the power behind it.

I think the effect upon the population, on the peoples of the world, how seriously they take it, will influence how seriously they are going to take an inspection program, how much weight would be given to it by their government. Do our speakers agree with this?

DR. KING: I was in London when the bomb fell, and the effect the next day was absolutely appalling. People were chilled into horror by it because, after all, you must remember that the whole population of the south of England had been subjected to bombing by various types of German explosives off and on for about four years. Now they came to realize that just one bomb, which was now in existence, could annihilate a whole city, so you can imagine the effect. They identified it with the people in Japan. They were emotionally identified with the people in Japan on whom it was dropped because they

had gone through similar experiences, and were horrified that the bomb was dropped at all. That will probably be true of every people in Europe who suffered directly and physically through the war.

MR. DAVIS: I should re-emphasize what Dr. King has said in that regard; certainly among the English friends with whom I talked I thought I found that feeling, and in two senses - one a shock due to the rigorous way in which we of the United States had employed the bomb, suddenly without warning, and second, a shock because after first indications that we would like now to control this energy and make it available through international organization for the world, our secondary attitude seemed to be to withdraw from that position. That was the impression in England when I was there, that we seemed to withdraw and say, "No, this is a national secret; we are going to use it in our way, unless, until - some time."

In that connection a very great impression was made by the fact that some of our leading physical scientists, among them some who had been concerned with the project itself, came out publicly and took a lead for an international policy. That had a very salutary corrective effect in England at the time I was there because it was expressing a different position, that they were not facing a national attitude on the part of the United States in trying to use it in a restricted, secretive way.

The same was true, as far as I had an opportunity to know, on the Continent. It was certainly true in France where they were just as aware of the effects of bombing as the people in England, although they had less experience with it, and consequently <sup>were</sup> far more shocked than it was possible for us to be by an event of this sort. The same thing was reported to me by friends with whom I talked from the Netherlands, from Belgium, from Norway, from Sweden and Switzerland. I did not visit those countries but they reported the same sort of attitude.



DR. I. I. RABI: I would like to ask what elements are there in this country that are opposed to control? Where does the opposition come from? What are their vested interests? What is the situation which makes it seem difficult? Everybody seems to agree that this country might be the most difficult country to convince as far as international control is concerned. What is the rallying point? As far as I can judge from the newspapers it is extremely disorganized and represents nothing but a certain lack of understanding of the problem or a certain conservatism in treating this weapon like any other.

MAJOR ELIOT: It varies in its sources very greatly. It varies from ignorance to active malice. It varies from a complete failure to understand the situation to the feeling to which Dr. Lubin referred a little while ago which has taken hold on some minds, that we have got to lick the Russians. There are a great many people who feel that this is a very important weapon which we have in our hands and with it, if not that we can rule the world, we can at least make ourselves secure - that this is something which we should keep. The idea that there is a secret which we can retain has taken hold on many minds which are unable to understand the scientific ramifications of the matter. There are all sorts. There is nothing like a large organized movement like "America First" or anything of that kind, but the mentality which supported "America First" is still in our midst, and the idea that we can live our own lives in this world without taking other people into account, and the desire to do so.

You must remember that most of the people who are now in positions of authority in this country, whether in business, in the Armed Forces, or in politics, are people who had their first acquaintance with American history at a time when the policy of isolationism was our political bible and the Monroe Doctrine was our military bible. They learned in their first history lessons that our forefathers came to this country to escape the turmoils of wars of

the Old World, and a good thing it was, too. It is very hard to get that out of their minds. Even when you can do so with the intellect, the instinctive reaction is: would it not be nice to go back to the good old days?

PROFESSOR CRIST: When we were trying to arrive at the conclusion of the project, it was somewhat currently said that if we did not finish it in time to be effective in the war, it would be an important element in controlling the peace. Is there any undercurrent of thought in that respect now, that this is a big stick to determine the organization of the peace?

MAJOR ELIOT: I don't think so. I don't see how that opinion could be held responsibly. It is obviously not to be used for police purposes. If you consider it in such terms at all -- to enforce the peace -- you must consider it in terms of the United States in relation to other great powers. Then you must ask yourself whether the American people would undertake a preventive war, let us say against the Soviet Union if they thought the Soviet Government was going too far in any direction which was harmful to American policy. You have to answer that question in the negative. The people in the War Department have had too long and bitter experiences with trying to get the American people just to undertake reasonable measures of preparedness to suppose they would really go the whole hog now and undertake an offensive operation before they had been even attacked. I don't believe that that view is or could be entertained.

PROFESSOR FURRY: I would like to make some remarks which are not confined entirely to this afternoon's discussion. I had the feeling all morning that although the remarks on inspection were very interesting on a technical level, they showed clearly that inspection is not the answer -- that you cannot make it watertight, that you could never get a situation in which you can be sure that the different countries will not evade inspection if they are determined to evade it. It was made plain that if they were bent on evasion they would do so no matter what measures you imposed.

It becomes evident therefore that such measures, while important, can play only a limited role in keeping us safe and easy in our minds for the rest of our lives.

The actual situation is, even if you assume that the inspection was perfectly successful -- if it could somehow be made watertight -- that if another international war occurs a plan run during the inspection period in all good faith could be converted within a few months at the outside to the production of atomic bombs in large numbers. These bombs would then be used in the war. The most that the watertight system of inspection could do would be to make us reasonably safe against surprise attack in the beginning of war. If we do not want atomic bombs used in wars we will really have to arrange things so we don't have wars in the future.

I am not convinced of the necessity of setting up a world state right now or of the possibility of doing so, but I do want to say that many of us, who although not connected with the atomic project, knew about the problem for years before it was finally solved, worried about it a good deal before and have been worrying intensely since. We have had to come to this conclusion: there is no very easy answer to apply, no easy technical measure. It is necessary then to get a friendly attitude between nations, the sort of attitude in which we can live in a world which has these weapons and still live in an atmosphere of reasonable confidence and without exploding into hysterical excitement or sudden attacks against each other merely because these attacks are technically possible.

In order to get this confidence I think these measures of exchange of information and of the feeling that we do know that the atomic resources are not being used for military purposes, are necessary and important, and some of the technical measures will be interesting in that respect.

Something which has not been emphasized very much so far today is important here and that is that we ought to try to get this thing regarded



not as primarily a weapon of war, but for its possible non-military use, medical and industrial. That should be emphasized as soon as possible. That means, of course, as soon as public opinion in this country is willing to do it. Atomic energy could have been immensely useful industrially and could over a long period of years have been developed primarily for industrial peacetime purposes if the war had not stimulated its hothouse development for military purposes.

If we can get the emphasis on atomic energy removed from the idea that it is primarily a weapon for war we will have accomplished a great deal for the peace, both of mind and for the actual political peace of the world.

One obvious way to do this, if we can get the consent of the people to do it, is to get the thing put to work as rapidly as possible in various parts of the world for a useful practical purpose, a constructive purpose. There are undoubtedly a number of Arctic settlements, particularly I should think in the Soviet Union, which could make enormous practical use of atomic energy for heat, light and power, and there are also industrial uses. We know there are enormous medical uses for it. Medical research is held up largely by security regulations. If we simply sell some plutonium or enriched uranium to the Russians, either on credit or for cash, and let them use it in starting some power plants going, that would enormously emphasize the non-military use.

Of course, this immediately raises the question: you have got to get the War Department not only to give up some of its secrecy regulations but also to give up some material, and that will take a terrific amount of pressure from public opinion.

I want to say again what has been said before, that while we spent a good deal of the morning in policing other countries, which is a big problem, actually public opinion in this country is the main problem. This country is in fact the one which has raised atomic energy for the world and put all the other countries in the position of feeling insecure because we have it. To

get the matter across in this country offers at least two obstacles. One is that the military establishment has a vested interest in it and has the traditional attitude that never before has there been a suggestion that new and improved weapons be given up in this manner. A new improved weapon has always been a very treasured possession, and I don't think we can expect that the military authorities will change their attitude on this unless there is a great deal of aroused public opinion about it; and public opinion itself among the masses of the people is way behind what it is in sophisticated groups like this.

Some people have suggested that the scientists might as well have kept quiet and said very little more after, say, the middle of last November, because it began to be apparent that most people in high places - in the government, in educational institutions and so on - were no longer talking so brashly about the secret of the atomic bomb. But you still noticed that in the newspaper where a man had been interviewed or a poll taken anywhere -- of the soldiers on the returning transports, or so -- there was the unanimous statement that of course we ought to keep the secret of the atomic bomb. These things had not penetrated the consciousness on the mass level. There are various reasons for this of course, but the public follows the traditional attitude.

There is also the general failure of the public to comprehend that this is a real thing. It sounds like fantasia out of the Sunday supplement. The public, not having lived through the discovery of the neutron and the various other discoveries, did not have the big jolt which many of us got six or seven years ago when we realized that this thing might lead to a bomb. To the public it is simply still another fairy tale, something which perhaps the scientists can do, something outside of reality as far as actual conception is concerned. To get the thing across through some sort of a crusade of public education, so that the American public in the mass appreciates that the

thing is real, and that it is something which is unlike many of the other things which have been written about before, will really have a big effect and is really one of our main jobs.

DR. RIDENOUR: I would like to ask Major Eliot a question. In the discussion this morning it was perfectly apparent that under any capable system of inspection or control, it would be possible for evasion to take place. The scale of this evasion will depend upon the extent to which the various people engage mutually in such inspection and control, go honestly along with the system, and the extent to which they wish to evade.

I think it is important to get the estimate of the military analysts as to the number of atomic bombs, assuming a destructive capacity about equal to those which have been used up to now, which could be decisive in a war between major powers.

MAJOR ELIOT: I don't think it would be possible under present circumstances for either the United States or the Soviet Union to be sure that either could produce decisive results on the other right away, assuming that the Soviet Union had caught up with us in atomic research and were actually manufacturing bombs and had a considerable number of them and also had a long range air force, or a long range rocket program to deliver them, neither of which they now have.

We could certainly make war on the Russians and produce decisive results and they would have little chance of successful resistance. They could not under present circumstances do us any serious harm.

At any future time, if the Russians had as many bombs as we have now and had as big an air force as we have now, I still don't think they could be sure of knocking us out in one blow. There would be a large question as to whether to begin <sup>in</sup> such a way, even if they thought it was to their great political advantage to do so.

DR. RIDENOUR: I asked the question because at lunch Dr. Wheeler



spoke of the production of clandestine bombs at the rate of as low as one bomb in several months -- bombs of the general order or magnitude of the present bomb. Such quantities seem to me scarcely significant.

MAJOR ELIOT: No, they are not. I think it was Senator Fulbright who spoke of knocking out twenty American cities. But even if you did that and killed all these people, nevertheless unless you knocked out the offensive bases of the American Air Force you would not have done yourself much good because you would just get the same thing back the following morning at half-past six, so there would not be much use or sense to starting such a war. Wars are started for the purpose of obtaining some material or political advantage. If it is no more than to defend yourself against attacks, still the war has a political object, a reason for beginning. An offensive war may be intended as preventive in such a way, although few wars in history generally have been preventive. They have mostly been for the purpose of getting something that belongs to somebody else which you want to take away from him by force. Well, you must then have some reasonable chance of getting what you start the war for, and if the only reasonable chance which you can foresee is that you can begin a war and you are going to do the enemy a great deal of damage, but a comparable or greater amount of damage is going to be done you, including the extinction of the people doing the planning, there is no point in it.

DR. RABINOWITCH: Did you ever consider a war in which the attacker will be unknown and it will be difficult to know where to retaliate -- not a war directed toward occupying the country attacked or taking anything away from it directly but intended to weaken it by destruction of its cities, destruction of its industries for a decade or two so as to give other countries in the meantime a free hand, with the possibility of accomplishing this by hidden mines or by stratosphere rockets coming from unknown directions?

MAJOR ELIOT: The stratosphere rocket coming from an unknown

direction nevertheless must proceed from a base on the surface of the earth. The preparation of the German V-2 rocket program, which was intended to produce a certain number of rockets with an effective radius of actually some two hundred miles, was nevertheless a huge industrial undertaking involving very large operations of transport, manufacture, research, etc. Those things are not easily concealed in a world which has grown as small as this one has. It is for those purposes that governments maintain secret services.

DR. SHILS: I think that the Allies had rather an easier opportunity for finding out what the Germans were doing by means of air reconnaissance than would exist in peace time when that would not be possible.

MAJOR ELIOT: But actually our information about the German rocket program obtained from air reconnaissance was only a small part in comparison to what was obtained from other sources.

DR. WOLFE: I want to try to tie together a little bit some of the discussion about inspection this morning and the political discussion this afternoon. I want to ask the political people what should the Security Council do about a nation which, while outwardly agreeing to an inspection program, is definitely undertaking a program of evasion and of building up atomic armaments in opposition to its agreement under the UNO control plan?

MAJOR ELIOT: That is chiefly a political question. The UNO as it is now set up is not intended to deal with a great power by the combined military force of the others. It is intended to provide a forum, a place for discussion. It is intended to remove the causes of war arising outside of the great powers by concerted and agreed action rather than by the unilateral action of one of the powers. It is intended to remove as far as possible the causes of war and it is intended to make possible the gradual reduction of armaments as it increases confidence. That is the way we are dealing with it here. I never heard anyone in San Francisco who was at all informed say that it was intended, for example, to bring the United States and Great Britain

together in a war on the Soviet Union if the Soviet Union had done something which the others disapproved of or felt was a peril to them. That is a matter which those powers have to decide for themselves.

Therefore, it seems to me the answer to your question is this: That if the Security Council found that a particular power, a great power, was making a systematic attempt to evade the inspection system, then it would be for the governments of the other great powers to determine whether that was a matter affecting their national security and to take such action together or singly as they might find necessary to deal with the matter to maintain their security.

DR. WOLFE: I would like to ask one further question. Would not the inspection system we have talked about today, even though we agreed it could not be completely effective to prevent all evasions, have served its vital function if the intent of a nation to act against the security of the rest of the world became evident through its attempted evasion?

MAJOR ELIOT: I think you can go farther. If the nation accepts the inspection system and the inspection procedure begins to function and there is a subsequent decision to attempt to evade it, the fact will become apparent. I think when that decision is being considered, it will be a very strong deterrent to the offending nation to know that the fact that evasion is being attempted will presently become apparent to the other countries, and that one or two of them are very strong and well armed and may decide to take preventive measures.

DR. MUDD: There are certain things we have to root out in this country in order to get a more liberal attitude about sharing atomic energy.

I wonder if the gentlemen in the panel would not feel that in addition to tradition, factors of ignorance, the Army, etc., there were not still other factors. Isn't the thinking or perhaps the feeling back of the secretive-ness and possessiveness that we show about this matter really bound up with the



idea that it is an instrument for military power and of power in support of the economic imperialism which Dr. King has spoken of? I wonder if it is not up to us to demonstrate convincingly the fallacy of that idea?

MR. DAVIS: For the question as a whole I am inclined to agree it is a complex of many elements of interest; and perhaps part of the concern, almost unanalyzed, is what the economic and industrial influence of this power would be if it began to be applied as a power for production.

It seems to be agreed that it is not within practical reach at this time if a profitable return is the object; but as Dr. Shotwell knows, this may also be an element of concern about the whole problem, because under the Soviet Union the element of profit is not a consideration and the application of atomic energy for industrial use in the interest of social welfare might be undertaken as a political program regardless of profitable return.

I would sum it up by an old quotation from Lenin when he was instituting electrification of the Soviet Union. He said that Communist collective economy is the Soviet State plus electrification. He might now say much more effectively: it is the Soviet State plus atomic energy.

MAJOR ELIOT: I would like to make one brief remark in reply to Dr. Mudd's question concerning economic imperialism. That is, we have had in the history of our relations with Latin America some reason to understand what goes on in the minds of people who feel that they are confronted with an irresistible force in the hands of those with whom they have economic relations and who they feel are exploiting them. Then it makes no difference what the nature of the force may be. The fact of the matter is that a small American cruiser or 500 marines represented to these small countries an irresistible force and it was frequently employed, as they felt, for the benefit of American corporations who were taking profits out of their countries and they were very uneasy about it. We had almost 100 years of real hatred and distrust, which the "Good Neighbor" policy has only partially eradicated, and which still

plagues us in our relations with our American neighbors.

That is what happens when an irresistible force is behind the operations of a large commercial institution or large commercial countries, and that is the way in which I hope the atomic energy will not be applied by the United States. But there is no question that perhaps in the minds of some people -- the same sort of people who are always anxious to see marines and ships of war used in support of what might be called economic imperialism in Latin America -- that it might be a very good thing so to apply atomic power on a world scale.

MR. JOHNSON: I have a question for Dr. Lubin. He painted rather a pessimistic picture of Russia and the Big Thirty. I wonder if he feels there is any chance at all of getting this Big Thirty to accept a system of inspection which will involve ferreting through their complete industrial system.

DR. LUBIN: I am sorry that I left the impression on you that I was pessimistic about this thing, or that I gave you a pessimistic picture. It was an attempt to be realistic to the end of pointing out the problems we have to cope with and the approach you would have to take in dealing with a group of men. I tried to give you something of the background so we would all understand with whom we are doing business, and what their attitude is.

I am convinced beyond any doubt that the Russian people don't want war. By "Russian people" I mean everybody in Russia, from Stalin down, or from the fellow on the collective farm up. They have not had a new suit of clothes in four years. All of the textiles made in Russia in the last four years went to the Army. They have not had a pair of shoes in the last four years. They all went to the Army. They had plenty to eat, but if I had to live that way for four years I would go mad. The Russians now want a chance to get a new suit of clothes, a new pair of shoes. They want to be let alone without worrying about what the other fellow is doing across the border. That includes their attitude towards Hungary, Roumania and the Balkans. It even is

their attitude towards Turkey. They want to be assured. They don't want to be that suspicious.

The question is: can we in our approach to them, in our negotiations with them, in our dealing on the atomic bomb, act in such a way as to assure them they need not be afraid of us? They have, in my opinion with justice, a basis for being suspicious. We have to eliminate that, and we have to convince them. I think we can make a deal with them -- and I will tell you one other thing. Once they have made the deal, if one can judge by all of the deals which have been made with the American Government and the American enterprise system since they came into power, they would keep to the line.

CHAIRMAN EICHELBERGER: Major Eliot, do you want to say anything in the summing up?

MAJOR ELIOT: Only this: what has impressed me very much is the general agreement that it would be a good idea which would contribute to the lessening of fear and suspicion of which Dr. Lubin speaks, if the United States could say frankly what we are doing with regard to the manufacture of this bomb, and place some limitation on its manufacture. We could say we have so-and-so many bombs and that we are not going to make any more. We could invite other people to witness such experiments as we may carry out with the bombs in the military field.

That does not necessarily involve giving foreign observers the exact technical know-how of the manufacture of the bombs or the means of detonation; but it does involve letting them see what the effects are and it does also involve a statement of the facts. If there is a fear that we are going to use these things, other people would at least know the dimensions of fear, how many we have and what our intentions are in regard to future manufacture.

CHAIRMAN EICHELBERGER: Dr. King?

DR. KING: I would like to add just one or two words to the previous speakers'.



We must I think all agree in the end that what we have to do is to establish mutual confidence between the various nations and particularly between Russia and the western countries, and we as scientists have a very big part to play in that. I am talking not as a British official but as a scientist and a human being.

Dr. Lubin has stressed how the scientists might help in getting to grips with their colleagues in Russia, and possibly through the common language of science being able to establish a little mutual confidence or to break down a little of the barrier of suspicion which has grown up over the last twenty or thirty years. Possibly the scientists can go a good deal further by getting together on the subject in a bigger way even than now. We as a profession are probably the only people who emotionally and in our daily life are continually thinking about this, realizing the implications of the bomb, the effect on our political issues and the effect on our own work and our own future. That is true I think of scientists throughout the world, irrespective of almost any subject, whether we be nuclear physicists or biologists. That does not make very much difference. You cannot talk to a scientist anywhere today who is not thinking constantly of this thing.

Here at any rate surely is a basis of mutual international understanding. I mean we are an international class, and I feel that we ought to get together in an international way still more strongly than has been done so far.

The phenomenon of the reaction of the scientists in this country over the last few months has been marveled at by the rest of the world. It was felt previously by scientists in England and other places that the American scientists had very little political consciousness, that they were not really aware of some of the implications of what they were doing, and yet now you have risen almost as a man throughout the country and set an example which has already influenced public opinion not only in the United States but in

many other lands.

Why not go further? Why not let us base from this movement some international charter of scientists which will be signed by scientists throughout the whole world? By this we would agree to behave in all our activities which had some influence on human life and national life according to a certain code of ethics, very much as the medical code of ethics makes possible the medical profession as it is today, but going further, projecting it in an international way. I think if we could have such a charter signed by scientists from all the various countries of the earth, showing a solidarity, showing that here was an informed public opinion of a group who knew what they were talking about, who were beginning to take some responsibility for the results of their thought and their invention, not only would that action have an enormous influence on public opinion in the various countries, but it would lead to an increase in international respect and international confidence.

CHAIRMAN EICHELBERGER: Mr. Davis?

MR. DAVIS: There is only a brief final comment which can be made in the light of what I tried to say earlier. It is difficult to see America from the outside looking in, and it is particularly difficult for many of us to think or realize to what extent, in England or Europe, we look powerful and prosperous, to be regarded with respect and also to be suspected.

I would like to second what Dr. King said because in the short time that I was in England and France I did have reason to feel in what measure the scientists over here, by the public stand which they were taking here at home, decreased the mistrust and increased the regard in which the United States is held.

That is an opportunity and also a responsibility, and with regard to Russia I would like to conclude with a final inquiry, directed really to Dr. Lubin: I think we in America have to ask ourselves when we are thinking about the U.S.S.R. -- and not only in America but in the United Kingdom and in

France -- as to how we would feel if twenty-five years ago there had been British forces at Boston and Baltimore and French forces at New Orleans, and Russian forces in San Francisco.

Having been in Russia at the time, I wonder whether the Russians, among the other things which Dr. Lubin mentioned, remembered also that within about that same period they did have American and British and French forces on their soil? They have a long memory and that may be part of what we still have to work out with them.

DR. LUBIN: I think it is, but I might say that I personally feel that other factors which have developed in the other five years have put that far into the remote background and you rarely heard that; but they had other comments.

CHAIRMAN EICHELBERGER: Thank you, gentlemen, for your cooperation. I am afraid that this must end our discussion for the afternoon. We will continue it tomorrow morning, when we take up the subject of the Charter of the United Nations in its relation to some of these matters which we have been talking about today.

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