

Kefauver

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The Quadrangle Club
The University of Chicago
Chicago 37, Illinois
September 10, 1956

The Honorable Estes Kefauver
United States Senate
Washington, D. C.

Dear Senator Kefauver:

Clearly if the Republican ticket wins, then within a year or two Nixon might become President. It is conceivable that he would be a very good President, but the opposite is conceivable also, and it seems to me this is too great a risk for the country to take.

Therefore, I asked myself some time ago if there are any legitimate means by which your side may decisively influence the outcome of the election, and I thought of a very simple plan of action in this connection. It is, of course, possible that what I have to propose has been considered already and I myself can think of reasons why you might want to decide against it.

Nevertheless under the circumstances I would like to make sure that the matter is properly presented to you, Mr. Stevenson and Mr. Pinnegan, and I would like to present it in person to the three of you if this can be arranged. Since I do not know Mr. Stevenson and Mr. Pinnegan, I would be grateful if I could have a few minutes with you before I talk to them if you can conveniently fit in such a "preview".

Since what I have to propose will affect only what goes over the radio and television on the eve of election, this is not a matter of great urgency. Still we should not delay too long for some time will be needed for mature reflection before a final decision is taken and also, if the plan is adopted, some advance notice may have to be given in order to secure adequate time on the air.

The Honorable Estes Kefauver

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September 10, 1956

I know all this must sound rather mysterious, and it would be so much simpler all around if I spelled out to you the proposal right in this letter. When I talk to you, you will see, however, why this would have been inadvisable.

If you set up a date with Mr. Stevenson and Mr. Finnegan, I can fly to Washington any time after the 15th of September.

You could contact me in Chicago at The Quadrangle Club, where I live (Hyde Park 3-8601) or if I am East, through Mrs. Morene Mann (Midway 3-0800, extension 3789 from 9 a.m. to 5 p.m. and Fairfax 4-5575 in the evening). Mrs. Mann will know where you can reach me.

I am going to write to Archibald Alexander about another matter connected with the elections which might interest you, and I shall therefore mail you a copy of the letter.

With best wishes,

Very sincerely yours,

Leo Szilard

Alexander

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The Quadrangle Club
The University of Chicago
Chicago 37, Illinois
September 12, 1956

Mr. Archibald Alexander
National Volunteers for
Stevenson-Kefauver
1025 Connecticut Avenue, N.W.
Washington, D. C.

Dear Mr. Alexander:

You must be snowed under with work right now but still I hope that you will be able to drop me a line and say what you think of the proposal here presented, and whether you think you may have an opportunity to bring it to the attention of Governor Stevenson. I do not know Stevenson personally and, in any case, I should want someone within his organization to pass upon such a proposal before it is put before him.

It seems to me that if Stevenson is elected, it would be very important that the men, who might be expected to have operating or advisory responsibilities in the field of international relations in his administration, devote the three months available between elections and inauguration to a full-time study of the basic problems which face the nation in this field. After the inauguration those who take office will be occupied with day-to-day decisions and they will be unable to devote the kind of dispassionate thinking to the basic problems which the situation demands.

In the past fifty years the foreign policy of all the great powers was based on premises which are no longer valid today when the greatest powers can destroy each other to any desired degree. In a

sense everyone knows this, of course, but we are far from having developed a philosophy for a sound foreign policy that would rest on the new premises. By and large, the armed forces have adjusted military thinking fairly fast to the facts of life but our political thinking seems to adjust much more slowly to these facts. Official opinion lags -- not perhaps behind public opinion -- but behind what you might call "informed opinion", and informed opinion itself lags at times behind the facts.

The "Pre-Inauguration Study" that is needed could be carried out in several ways and one form that might be chosen could be as follows:

The group carrying out the survey would hold both open and closed hearings, and men who may have a contribution to make would be invited to present their views. They should not be asked, however, for disconnected proposals relating to immediate issues, such as the problem of the Middle East or China or the bomb or disarmament. Rather they should be asked to sketch out their version of a consistent, basic, long-range, over-all policy that would be adequate for stabilizing the peace under the conditions which have arisen and those we now know will arise within the next ten years. If a consensus can be reached on such a basic policy, then the more immediate, concrete issues will fall into their proper place and their intelligent discussion may become quite easy. Men like Kennan and Lippmann may have something to contribute and they and others might rise to the challenge if they have sufficient advance notice and understand clearly what is expected from them. Even though the time is short, it should be possible to hear everybody -- within reason -- who has anything to say.

September 12, 1956

Should Governor Stevenson decide in favor of such a study, then perhaps he would want to announce publicly that such is his intention. If it were possible somehow to convey to every voter the feeling that, after the elections, he can go to Washington and present his considered opinion on the most vital issue that faces the United States under Stevenson's Administration, then this should perhaps be done. Keeping the implied promise would involve a technical problem but this problem can be handled without too much difficulty.

I assume that the funds needed for such a study could be obtained either from the Emergency Fund of President Eisenhower or from the Council on Foreign Relations (which, in turn, could obtain the funds from the Ford Foundation, the Rockefeller Foundation, and the Carnegie Corporation).

I am looking forward to hearing from you.

With kind regards,

Very sincerely yours,



Leo Szilard

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cc: Chester Bowles
Thomas Finletter
Hubert Humphrey
Estes Kefauver

ALBERT MEADOW
BAR HARBOR, MAINE

September 19, 1956

Dear Dr. Szilard:

I like your suggestion in your letter of September 12. However, ^{I have} some reservations as to details, but only as to details. I will discuss this with the Governor when I see him next.

Perhaps you and I might talk about it sometime when you are next in New York.

With best regards,

Sincerely yours,

Albert Meadow

Dr. Leo Szilard
The Quadrangle Club
University of Chicago
Chicago 37, Illinois

The Quadrangle Club
The University of Chicago
Chicago 37, Illinois
September 24, 1956

Mr. Thomas K. Finletter
c/o Albert Meadow
Bar Harbor, Maine

Dear Mr. Finletter:

Many thanks for your note of September 19th.

I shall let you know if I hear anything from Alexander.

Attached you will find a copy of a letter which I received from Thomas L. Hughes, Legislative Counsel to Humphrey.

With kind regards,

Sincerely yours,

Leo Szilard

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Encl.

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ALBERT MEADOW
Bar Harbor, Maine

September 19, 1956

Dear Dr. Szilard:

I like your suggestion in your letter of September 12. However, I have some reservations as to details, but only as to details. I will discuss this with the Governor when I see him next.

Perhaps you and I might talk about it sometime when you are next in New York.

With best regards,

Sincerely yours,

Thomas K. Finletter

Dr. Leo Szilard
The Quadrangle Club
University of Chicago
Chicago 37, Illinois

HUBERT H. HUMPHREY
MINNESOTA

Humphrey
HERBERT J. WATERS
ADMINISTRATIVE ASSISTANT

United States Senate

WASHINGTON, D. C.

September 21, 1956

Dr. Leo Szilard
The Quadrangle Club
The University of Chicago
Chicago 37, Illinois

Dear Dr. Szilard:

In Senator Humphrey's absence from Washington, I am taking the liberty of acknowledging your letter to him of September 12 attaching a copy of your letter to Archibald Alexander.

I personally am struck with the possibilities of your suggestions for a high level pre-inauguration study with advance notice to high level participants. I suspect that the suggestion will fall upon all friendly ears, both in the Stevenson headquarters and in the other offices to which you sent carbons. I saw Chester Bowles over the weekend and know that his reception would be cordial.

I shall make it a point to send your memorandum out to Senator Humphrey and hope that it will catch him some place during the campaign. He is constantly on the go at the moment and does not intend to return to Washington until after the elections, for possibly one or two days in the middle of October.

I have not forgotten our pleasant evening with you a year ago and I hope that the next time you are in Washington you will be sure to stop at the office.

Best wishes.

Sincerely,

Tom Hughes

Thomas L. Hughes
Legislative Counsel to
Senator Hubert H. Humphrey

Kefauver

Stevenson-Kefauver

C A M P A I G N C O M M I T T E E

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September 22, 1956

Mr. Leo Szilard
The Quadrangle Club
The University of Chicago
Chicago 37, Illinois

Dear Mr. Szilard:

May I take this opportunity to acknowledge your letter of September 13, 1956. Thank you for sending me a copy of your letter ot Archibald Alexander. Your suggestion is certainly worthy of consideration and I am sure Mr. Alexander will discuss it with Governor Stevenson.

There is much to be done between now and November 6th., but I am sure if we all work hard we will have a Democratic victory in November.

Sincerely,


Estes Kefauver

VOTE DEMOCRATIC

The Quadrangle Club
The University of Chicago
Chicago 37, Illinois
September 24, 1956

Mr. Archibald Alexander
National Volunteers for
Stevenson-Kefauver
1025 Connecticut Avenue, N.W.
Washington, D. C.

Dear Mr. Alexander:

I wrote you September 12th a letter of which I sent copies to Bowles, Finletter, Humphrey, and Kefauver. Your office has so far not acknowledged this letter and I am, therefore, attaching a copy for your convenience.

In the meantime I had letters in response from Finletter and from Thomas L. Hughes (Legislative Counsel to Humphrey). I am enclosing copies for your information.

With kind regards,

Very sincerely yours,

Leo Szilard

m
Encl.

The Quadrangle Club
The University of Chicago
Chicago 37, Illinois
September 24, 1956

Mr. Thomas L. Hughes
Legislative Counsel to
Senator Hubert H. Humphrey
United States Senate
Washington, D. C.

Dear Mr. Hughes:

Many thanks for your kind letter of September 21st.
Enclosed you will find a copy of a letter I received from Fin-
letter. I shall let you know if I get any other responses.

With kind regards,

Sincerely,

Leo Szilard

m
Encl.

CALIFORNIA INSTITUTE OF TECHNOLOGY
PASADENA, CALIFORNIA

GEOLOGICAL SCIENCES

September 24, 1956

Dr. Leo Szilard
The Quadrangle Club
The University of Chicago
Chicago 37, Illinois

Dear Leo:

It was very good indeed to receive your letter of September 13 together with the copy of your letter to Archibald Alexander.

Jonas died on Sunday, September 9 very suddenly of his second heart attack. It was apparently peaceful and painless and he was buried the following day in a grave which will be unmarked overlooking the Caribbean. Wendy, Helen and Rudd all flew down there and Wendy and Rudd have now returned. Helen plans to bring Kitty to New York on October 3rd and to get her settled for a while in the Westbury Hotel. Considering everything Kitty is in pretty good shape.

I have read the copy of your letter to Archibald Alexander with great interest and I believe that it expresses a fine idea. Certainly something of this sort is absolutely essential if the new administration is to create a foreign policy which makes some sense.

May I have your permission to write directly to Chester Bowles and to Tom Finletter about this? And if the opportunity presents itself may I bring your suggestion directly to Mr. Stevenson's attention?

I will not do anything until I hear from you. Please come out soon for a visit if you possibly can.

With warm wishes,

Sincerely,



Harrison Brown

HB:ds

VOLUNTEERS FOR

STEVENSON-KEFAUVER

NATIONAL HEADQUARTERS

1025 CONNECTICUT AVE., N.W.

WASHINGTON 6, D.C.

telephone, STerling 3-1672

28 September 1956

Dr. Leo Szilard
The Quadrangle Club
University of Chicago
Chicago 37, Illinois

Dear Dr. Szilard:

Just as your letter of the 24th came to my desk, so did the reply from Adlai Stevenson.

He and all the people to whom he spoke felt that there was a great deal of merit in your proposal for a full time study of basic problems which face the nation in the field of international relations, the study to begin as soon as the election is concluded.

There is, however, some feeling that a public announcement of the intention to have such a study, if made at this time, would have the disadvantage of sounding a little bit like the Eisenhower "I will go to Korea" move of 1952. Honest people then felt that that move was motivated by political reasons. In the present case, there would be an entirely valid reason for the proposal, but it may be that many people would think there was a political motive, and be antagonized in consequence.

I am sending copies of this letter to Senators Humphrey and Kefauver and to Messrs. Finletter and Bowles. It may be that some of them will wish to raise the matter again. Meanwhile, I should value your suggestions as to the kind of people who should be making the study which you suggest. Perhaps I should be more specific, and ask you for names. I am assuming that the people who would make the study would not necessarily be, at least in every case, directly involved in operating or advisory responsibilities in the Stevenson administration. The choice of those to have these responsibilities would of course lie only with Governor Stevenson, but I have the feeling that an appropriate group could make a study, even if not destined to hold actual responsibility. The parallel occurs to me of the book recently published by the Council on Foreign Relations, under the title "Russia and America", written by a Henry L. Roberts and with a foreword by John J. McCloy. The book itself was the result of meetings of a very interesting study and advisory committee, of which Mr. Roberts was the rapporteur.

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I hope you will forgive my not acknowledging your earlier letter until I had the answer.

We all deeply appreciate your interest and the very thoughtful suggestion which you have made. Adlai Stevenson himself found it most stimulating, and knowing him I feel sure that something, perhaps a little different from your exact suggestion, but something good, will result from your idea.

Sincerely,

Archibald S. Alexander

Archibald S. Alexander

ASA/ojf

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United States Senate

COMMITTEE ON THE JUDICIARY

October 1, 1956
(enroute to Texas)

Dr. Leo Szilard
The Quadrangle Club
The University of Chicago
Chicago 37, Illinois

Dear Dr. Szilard:

Please forgive the delay in replying to your letter sooner. It has just reached me inasmuch as our itinerary was changed to some extent while on our last trip out West. We have been on a very hectic campaign schedule the past several weeks.

I would like to meet with you and discuss your proposal but the National Committee has me on the road until the time of election. I certainly hope you will write me your ideas, sending them to Mrs. Henrietta O'Donoghue, my personal Secretary in Washington, and she will see that your letter is forwarded to me promptly.

It is very thoughtful of you to contact me about your plan and I am anxious to learn the details.

With my appreciation and best regards,

Sincerely,

EK:ed



Albert Dorfman

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CHESTER BOWLES
ESSEX, CONNECTICUT

October 5, 1956

Dear Mr. Szilard:

I was interested in your letter to Archie Alexander. Yours is a very imaginative suggestion and, offhand, it seems to me to have great merit.

As you point out, if Stevenson should win, this three months' period will be of the utmost importance in which to organize our efforts to come to grips with both domestic and foreign problems.

The technique that you suggest happens to be close to the regularly established technique here in Connecticut where the newly elected governor is immediately thrown into a whole series of budget hearings for the two months before he takes office. This gives him an unusual opportunity to learn something about the inner workings of the government without totally committing himself on any particular position.

Your proposal, of course, would broaden this general approach to include foreign affairs where these hearings would have the double effect of a great deal of public education. If Stevenson is interested in this idea, I also agree with you that there would be great advantage in his announcing his intention to do this before Election Day as I think it could be developed in a most appealing and persuasive way.

I shall think about it some more and speak to him about it when I see him which will probably be in the next few days.

With my best wishes.

Sincerely,

Chester Bowles
Chester Bowles

CB:ib
transcribed and signed in
Gov. Bowles' absence

Mr. Leo Szilard
University of Chicago
Chicago 37, Illinois

The Quadrangle Club
The University of Chicago
Chicago 37, Illinois
October 9, 1956

Mr. Earl D. Osborn
President, Institute for
International Order
11 West 42nd Street
New York City 36, New York

Dear Mr. Osborn:

Many thanks for your very kind letter of October 4th. I shall limit myself today to the last paragraph of your letter regarding which I have two comments to make.

The group which I thought should go to work between election and inauguration would be one appointed by the President-elect and would be composed mainly of the men who will have later on operating and advisory responsibilities. This group may not be able to solve any of the basic problems which face the nation in the field of international relations but, since they are going to operate in this field, the nation will be better off if they have a chance to educate themselves. This, of course, pre-supposes that they are willing to listen to outsiders who may have something to say on the issues involved. I believe that an excellent group of outsiders could be assembled for such a purpose and everything turns, of course, on the quality of the minds that can be mobilized.

In contrast to this, I doubt that any university given \$25,000. or even some much larger amount can get the right kind of people to join its staff. I also doubt that the people whom a university may employ would be sufficiently motivated.

October 9, 1956

This brings me to my next point. A few days ago Professor Milton Friedman came to me with a tentative proposal. (He is one of the younger economists -- by far the most brilliant one whom I have ever met. He happens to belong to the "Republican" school; i.e. he believes in the free market, with as little regulation as possible -- preferably no regulation at all. He is on the staff of the Department of Economics at this University.) He wondered whether the time has not come to bring together for an extended and leisurely study a small group of men (about 15) who are concerned about the state of the world. They would try to conclude where the world ought to be going at this juncture and how it could get there. The overriding issue is creating a stable peace. This involves the problem of disarmament but is not limited to it.

Friedman is tentatively thinking that one should get fifteen people together, first, for two to three weeks around Christmas time or in the early spring, and then again in the summer for another four weeks. In the summer time they would, no doubt, want to have their families with them, and one would have to pick a spot where this could be easily arranged; for instance, the "Y" Camp at Estes Park, Colorado, or the "Y" Camp at Asilomar on the Monterey Peninsula in California, or conceivably Aspen, Colorado.

I told Friedman that I shall write you and find out whether you still have funds available and whether such a proposal would at all appeal to you.

Mr. Earl D. Osborn

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October 9, 1956

My discussion with Friedman has not reached the point where we ourselves feel sure that such a study can be organized with a good chance of success. I shall have lunch with Friedman tomorrow and we shall examine the proposal further.

We are both completely tied up for the rest of the week but if you would be good enough to let me know your tentative reaction and also let me know whether you still have the \$25,000. at your disposal, Friedman and I would get to work early next week and could let you know within a few days whether Friedman may undertake to organize such a study. The Department of Economics of this University could then handle the funds necessary for this study. I figure that \$25,000. should be enough to provide expenses for fifteen people. Most men with families take a vacation in the summer anyway and they would not expect the university to pay the vacation cost for the whole family.

With best wishes,

Sincerely yours,

Leo Szilard



To promote through education
support of the United Nations . . .

and of measures to strengthen
it and enable it to maintain peace.

INSTITUTE FOR INTERNATIONAL ORDER

ELEVEN WEST FORTY-SECOND STREET • NEW YORK 36, N. Y. • WISCONSIN 7-2723

October 4, 1956

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Dr. Leo Szilard
The Quadrangle Club
The University of Chicago
Chicago 37, Illinois

Dear Dr. Szilard:

I do appreciate your long and thoughtful letter of September 13th. I have been in Europe at a WFUNA conference and have just returned.

You make the suggestion that in our disarmament studies we ask the Russian government to recommend someone who would collaborate with our staff. This is indeed an interesting and suggestive idea, and if the studies amount to anything I do believe that I would like to use it.

I am really surprised that you do not consider background material of any value in solving a problem. To me the whole progress of mankind, whether it has been in the sciences, in the spiritual realm or in automation, has been based on a vast volume of work, some of which certainly seemed to be at the time irrelevant. To me, if you wish to achieve something you have to work at it; and in working it is possible you will develop other ideas of achieving your aims or even possibly material which will be useful. Though I certainly agree with you that a political settlement is necessary, I do not agree that a political settlement would be permanent unless it has a sound background of well worked out statutes on new concepts of international law and on inspection and disarmament.

If you, with your fertile and creative mind, have no ideas as to how I can spend \$25,000 with a university, (it must be a university for tax reasons) why do you feel, as suggested in your letter of September 12th to Mr. Alexander, that any group between elections and inauguration could by full-time study solve any of the basic problems which face the nation in the field of international relations? What kind of men could do this work; and

Dr. Leo Szilard

October 4, 1956

even if you find men of long-range vision and statesmanship, would their opinions be politically acceptable? It is on this rock that the Arden House Conference founded.

Sincerely yours,

Earl D. Osborn

Earl D. Osborn
President

EDO/ak

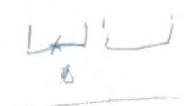
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October 10, 1956

TO: Archibald Alexander

FROM: Leo Szilard

Because there are no great issues in this campaign, it is probably impossible to change many votes either way by talking about issues. President Eisenhower's health is the one real issue on which many votes may turn, but it is not an issue that should or could be made the topic of any campaign speeches. Therefore, the Democrats may not win the elections unless they find some way to bring home to the voters in a forceful way the issue of Eisenhower's health without appearing to make a campaign issue of it. How this should be done I do not see clearly at present.

According to the Gallup Poll published in the Sun-Times on October 3rd the fraction of voters who thinks that the Republicans are best able to keep us out of war has risen from 27% in May, 1951 to 42% today, while the fraction of those who thinks the Democrats would be best has fallen from 21% to 17%. This, I believe, is a very bad omen for a Democratic victory.

I do not believe that this trend can be counteracted by raising isolated issues of foreign or defense policy, such as, for instance, the stopping of H-bomb tests. The raising of such issues merely leads to noisy controversy and a dissipation of efforts.

The problem is how could Governor Stevenson convince the people that he is deeply concerned about the issue of peace; that he does not imagine that, as of today, he knows all the answers, and that he would approach the difficult task of re-evaluating our foreign policy in a spirit of humility.

It is well to remember at this point Eisenhower's, "I shall go to Korea". While this statement was widely criticized and was certainly made for political purposes, it was nevertheless an effective way of expressing Eisenhower's genuine concern about the continuation of the war in Korea. I believe that it helped his election, and rightly so. Is there something similar that Governor Stevenson could say to give effective expression to his real concern about the dangerous situation in which we find ourselves?

There are several alternative stands that Governor Stevenson might contemplate taking. Those of them that might do some real good are the very same that might also backfire, ~~and~~ it seems to me that a quick poll will be needed before any such stand is taken in order to determine with reasonable assurance how the undecided voter would respond to any one of several alternatives. On the assumption that such a quick poll could be accomplished in the remaining short time, I shall now proceed to spell out one possible stand that might be contemplated.

Governor Stevenson might make a major foreign policy speech rather late in the campaign (no sooner perhaps than a week before elections) that might move along the following lines:

(1) The most important issue is to avert the danger of war and we must move much faster than we have up till now towards stabilizing the peace.

(2) Therefore, he would regard as his most important task, if elected, to conduct a re-evaluation of our whole foreign policy, including our policy in the Far East. Such a re-evaluation is not accomplished in a day, and it might take six months to complete it after he takes office.

(3) The time between inauguration and election, however, Stevenson intends to spend in exploring the premises upon which such a re-evaluation must be based.

(4) If he is elected, he will therefore invite the Heads of China to meet with him and his advisors in Switzerland late in November or early in December. His purpose is to gain a personal impression to what extent a re-evaluation of our foreign policy in the Far East might be based on the hope that China may cooperate in a sincere effort to stabilize the peace in the Far East.

(5) Governor Stevenson, as must be every American, is deeply concerned that China still has not released all of its American prisoners, but he believes that their release may be one of the first results of the proposed meeting.

(6) The difficult task of re-evaluating our foreign policy must be conducted in a spirit of humility and not in a spirit of self-righteousness. With God's help Governor Stevenson hopes to achieve such humility.

We got entangled in a war with China when General MacArthur crossed the 38th Parallel in Korea and moved up to the Yalu River. Governor Stevenson regrets that the decision to cross the 38th Parallel was taken by a Democratic Administration.

But while the Democrats have learned their lesson, the Republicans have not. In four years of a Republican Administration they were not able to heal the wounds in the Far East, and by adopting a policy of "no speak" towards China they led us to the brink of war over Quemoy and Matsu.

At the moment the crisis over Quemoy and Matsu appears to have subsided, but it can flare up again any time without any advance warning. The danger that we might get into a third World War through the backdoor of the Far Eastern crisis remains great and everything must be done to eliminate this danger.

It might well be that some of the issues will turn out to be not negotiable today. But before we resign ourselves to this as a fact, we have to explore all possibilities. This we cannot do if we are going to persist indefinitely in a policy of "no speak."

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While only a poll of the undecided voters can tell us how they would respond, I believe we can be sure that such a speech would be violently attacked by the Republicans. But when they attack the policy of "keep an open mind towards China" which is here proposed, they will also be forced to assert loudly that they are all for peace. This at least would put them on the defensive on the peace issue, and as you know, "qui s'excuse s'accuse".

If Governor Stevenson should feel strongly that the position outlined above is the right position for America to take, his voice will carry conviction and the speech might accomplish something. I believe the voters have a sixth sense with which they recognize a sincere statement when they hear one, and they respond to sincerity even if they are uncertain -- as they frequently are -- about the validity of the political judgment that is present^{ed} to them.

The End

The Quadrangle Club
The University of Chicago
Chicago 37, Illinois
October 11, 1956

Mr. Archibald Alexander
National Volunteers for Stevenson-Kefauver
1025 Connecticut Avenue, N.W.
Washington, D. C.

Dear Mr. Alexander:

A few days ago I ran into Fred K. Hoehler and expressed my concern to him about some aspects of the campaign. He subsequently made an appointment for me to see Mr. Blair. I gave Mr. Blair two short memos that I had written "To Whom It May Concern", and in which I had recorded some tentative thoughts.

In the meantime my thoughts have taken a more definite shape as you will see from the memorandum addressed to you which is attached. My conversation with Mr. Blair revolved mainly around the topic of the first paragraph of this memorandum, and I would appreciate getting your reaction if you have one mainly to the rest of the memorandum.

Since I last wrote you I received the enclosed letter from Chester Bowles.

As to the composition of the official committee which Governor Stevenson might wish to appoint if he is elected, I have one comment to make. It seems to me that it would be desirable to have on this committee not only as many as possible of the men who might subsequently be given advisory or operating responsibility, but also the key men in the Senate who have shown in the past an intelligent interest in the issues of our foreign policy.

Sincerely yours,

Leo Szilard

^m
Encl.

The Quadrangle Club
The University of Chicago
Chicago 37, Illinois
October 11, 1956

Mr. Archibald Alexander
National Volunteers for Stevenson-Kefauver
1025 Connecticut Avenue, N.W.
Washington, D. C.

Dear Mr. Alexander:

A few days ago I ran into Fred K. Hoehler and expressed my concern to him about some aspects of the campaign. He subsequently made an appointment for me to see Mr. Blair. I gave Mr. Blair two short memos that I had written "To Whom It May Concern", and in which I had recorded some tentative thoughts.

In the meantime my thoughts have taken a more definite shape as you will see from the memorandum addressed to you which is attached. My conversation with Mr. Blair revolved mainly around the topic of the first paragraph of this memorandum, and I would appreciate getting your reaction if you have one mainly to the rest of the memorandum.

Since I last wrote you I received the enclosed letter from Chester Bowles.

As to the composition of the official committee which Governor Stevenson might wish to appoint if he is elected, I have one comment to make. It seems to me that it would be desirable to have on this committee not only as many as possible of the men who might subsequently be given advisory or operating responsibility, but also the key men in the Senate who have shown in the past an intelligent interest in the issues of our foreign policy.

Sincerely yours,

Leo Szilard

m
Encl.

The Quadrangle Club
The University of Chicago
Chicago 37, Illinois
October 16, 1956

Mr. Archibald Alexander
National Volunteers for Stevenson-Kefauver
1025 Connecticut Avenue, N.W.
Washington, D. C.

Dear Mr. Alexander:

Attached you will find a memo which is being sent by Professor Leopold Haimson to Clayton Fritchey. Haimson recently joined the History Department at this University. He came to us from the Russian Research Center at Harvard. His field is Russian History and Soviet Politics and in July and August of this year he spent four weeks in Russia under a grant from the Carnegie Endowment.

Haimson's memorandum deals with one objection raised by President Eisenhower against Governor Stevenson's proposal on the H-bomb; i.e. the objection that the Russians might agree to a test ban but might accumulate, over a period of a year or two, a large number of experimental bombs, and then put us to a disadvantage by suddenly testing these accumulated bombs.

Since I know that you are interested in this subject, I thought you might like to have a copy of Haimson's memorandum.

Sincerely yours,

Leo Szilard

m
Encl.

P.S. The Atomic Scientists of Chicago will hold a press conference this coming Saturday on the H-bomb test issue, and I have arranged for Dr. Haimson to participate and possibly speak on the topic of his memo.

CHESTER BOWLES

ESSEX, CONNECTICUT

November 8, 1956

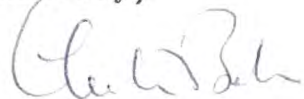
Dear Dr. Szilard:

Your letter of October 2nd, with its enclosures which Archibald Alexander had already sent me, came to my attention some weeks ago. I have been off campaigning almost continuously since that time, and I do want to let you know that I talked with Archie Alexander about this and also with some of the Stevenson people. I hope something may come of it after the election, should he win, although he did not make use of your suggestion during the campaign itself. I think it is a good one, and I hope that we will have an opportunity to do something about it.

Thanks so much for sending it to me, and please accept my apologies for being so slow in replying to you.

With my best wishes.

Sincerely,



Chester Bowles

Dr. Leo Szilard
The Quadrangle Club
The University of Chicago
Chicago 37, Illinois

CB:fmo

October 8, 1956

Memorandum on the Elections

by Leo Szikard

Because there are no issues in this campaign, it is not possible to change many votes either way by talking about issues. President Eisenhower's health is, of course, the one real issue on which many votes may turn, but it is not an issue that should or could be made the topic of any campaign speeches. Therefore, the Democrats may not win the elections unless they find a way to bring home the issue of the President's health to the voters in a forceful way, without appearing to make a campaign issue of it. (See attached "restricted" memo.)

According to the Gallup Poll published in the Sun-Times on October 3rd the fraction of voters who thinks that the Republicans are best able to keep us out of war has risen from 27% in May, 1951 to 42% today, while the fraction of those who thinks the Democrats would be best has fallen from 21% to 17%. This, I believe, is a very bad omen for a Democratic victory.

I do not believe that this trend can be counteracted by raising isolated issues of foreign or defense policy, such as, for instance, the stopping of H-bomb tests. The raising of such issues merely leads to noisy controversy and dissipation of effort.

On the issue of peace Eisenhower is invulnerable. Raising isolated issues is no way in which Governor Stevenson could convince the American people that he is more concerned about peace than President Eisenhower. He could perhaps get across his deep concern about the way our foreign policy has been conducted by the State Department by making an announcement somewhat along the following lines:

He could say that he is assembling a distinguished group of people who will go to work one day after the elections and spend their full time until inauguration conducting a thorough reexamination of our whole foreign policy. He could say that only those who were not involved in the work of the State Department during the last four years can conduct such a reexamination without being hampered by preconceived notions.

It is possible that the voter will accept the thesis that it is time for a change and that the men backed by Stevenson, as well as Stevenson himself, might come up if they worked hard at it with something better than the State Department has now. I do not believe, however, that the voter can be persuaded that with the knowledge now in the possession of the Democratic party or Governor Stevenson himself, a Democratic Administration could do appreciably better in the foreign policy field than the present Republican Administration.

Such an announcement by Stevenson might be criticized just as some people criticized Eisenhower's, "I shall go to Korea", statement. Yet Eisenhower's statement served to give effective expression to his real concern about the continuation of the war in Korea, and I believe it helped his election.

R E S T R I C T E D

TO: Whom It May Concern

FROM: Leo Szilard

On the last day before elections the radio and television audience will be swamped with partisan statements. It is, therefore, proposed that a non-partisan group go into action on the eve of the elections to counteract false assertions and false rumors. This group would operate exclusively by means of spot announcements on the radio and television which may appear every twenty minutes. Their sequence would begin about the time when the campaign is being wound up, and if possible after the last speech by President Eisenhower. The announcements may continue all through the late evening and may be concentrated on a few key states.

The text of these spot announcements need not be frozen until the last minute. However, three different texts may be contemplated right now.

Text 1) Could be pro-Democratic and could be designed to counteract some Republican assertions.

Text 2) might be as follows:

"May we have your attention for an important bulletin? The rumor, that President Eisenhower suffered a heart attack after his speech tonight (last night), was rushed to Walter Reed Hospital and is now in an oxygen tent, is not true. The state of President Eisenhower's health is as good as can be expected in a man with his medical history, and there is every hope that he may retain his present state of health for many years to come if he spares himself. We repeat: The rumor that President Eisenhower suffered a heart attack tonight (last night) and is now in an oxygen tent is not true."

Text 3) might be as follows:

"Are you one of those who is tempted to vote for Eisenhower as President but hesitates to do so because of his precarious health? Are you disturbed because President Eisenhower has Krohn's disease and someone told you that the full medical term for this disease is: chronic, recurrent, regional ileitis? To you we say: if this is what disturbs you, put your fears aside and if you are a Republican vote your party's ticket. Naturally if President Eisenhower is reelected all Americans will fervently pray that his health may stand the strain of the office. But should it be otherwise and should Richard Nixon take over the functions of the Presidency, the country may not be worse off; in fact, it may be better off. The Presidency is an exacting job. Nixon is young and vigorous. He need not spare himself and can put in a hard day's work day after day. The President's work requires giving attention to details. Nixon would be able to give attention to details. Therefore, if you are a Republican, we say to you: President Eisenhower's health need be no issue for you, go ahead in good cheer and vote your party's ticket.

The group sponsoring such spot announcements, being non-partisan, may solicit funds both in Republican and in Democratic circles. It is not possible to foresee at the present time where the funds may actually be coming from.

84th Congress }
2d Session }

Wester
COMMITTEE PRINT

Electronics

CONTROL AND REDUCTION OF
ARMAMENTS
TECHNICAL PROBLEMS

STAFF STUDY NO. 4
SUBCOMMITTEE ON DISARMAMENT
OF THE
COMMITTEE ON FOREIGN RELATIONS
UNITED STATES SENATE



OCTOBER 7, 1956

Printed for the use of the Committee on Foreign Relations

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PREFACE

By Senator Hubert H. Humphrey, Chairman

Increasingly, the assumption is being made that the "balance of terror" may spare the human race the catastrophe of nuclear war. Even if this assumption were correct, and there is no assurance that it is, the harrowing race to maintain the balance prevents civilization from developing its fullest potentialities. The nuclear race channels a large share of man's resources, energy, and genius into destructive ends. It denies to the people of the world that sense of security and faith in the future which individuals need to achieve their maximum growth. The fear it breeds may be suitable for tyranny. It is not conducive to an atmosphere of freedom.

It seems to me that control and reduction of armaments is imperative. The attainment of international disarmament, however, is not made easier by its urgency. The political problems involved are as difficult as ever. The technical problems continue to grow more complex as weapons and military organizations become more intricate. Disarmament will be safe and practicable only to the degree that progress is made in solving the political and technical problems.

This staff study, the fourth in a series being prepared at my request on various aspects of the disarmament question, outlines the scope of the technical problems involved in achieving disarmament.

As this study points out, there would be many difficulties in obtaining a satisfactory disarmament program, even without the complication of political issues which stand between the Communist and non-Communist worlds. Is there, for example, any formula by which a balanced reduction of forces and armaments can be devised which will be equitable and acceptable to all sides? How many submarines would equal an aircraft carrier in such a formula? These are the types of questions with which this study is concerned. Such questions bring to mind, moreover, an even more fundamental question. Can a system of inspection and control be devised which is sufficiently foolproof to make it possible, in theory at least, to reduce arms even in a period when suspicion, not trust, dominates relations among many states?

The study reemphasizes that one of the great technical problems confronting us is that there is no feasible method at present of detecting hidden stockpiles of nuclear weapons. Awareness of this fact makes it reckless to consider an agreement to destroy all stockpiles when there would be no way of ascertaining whether the agreement had been observed. It leaves disarmament planners with several alternatives; they can wait until some method of detection is found and concentrate scientific knowledge on this search; they can bypass this barrier in controlling nuclear weapons by working along other avenues such as reduction of armed forces and conventional weapons; they can attack the nuclear threat from a different direction by work-

ing to prevent the stockpiles from growing bigger; and they can attempt to control the methods by which nuclear weapons are delivered.

The technical roadblock created by our inability to detect stockpiles of bombs warns us of the need to seek agreement with all possible speed on those aspects of disarmament where technology presents a gateway, rather than a roadblock. One such area which is already available is that of detection of large nuclear-test explosions. Although the Soviet Union does not announce its tests to the world, as the United States does, we are not only able, according to competent testimony received by the committee, to detect large tests that occur but we also have the ability to determine, to a considerable extent at least, their magnitude. The significance of this technical knowledge is that if the United States and the Soviet Union were to agree to ban the testing of large nuclear weapons, it would not be necessary to rely on the Soviet's word alone that the agreement was being observed. Nor would such an agreement, to be effective, require an elaborate inspection system. Our detecting methods are presently located outside the Soviet Union. Many other nations have means to detect large nuclear explosions wherever they occur. Any violation of an agreement would, therefore, be almost instantly known to the world at large. Certainly our negotiators should not overlook these facts in attempting to reach agreement with the Russians on the control of armaments.

This study also points up another aspect of the disarmament problem. With scientific research continuing in a technological race between the United States and the Soviet Union, new weapons systems may soon be devised which will render present disarmament proposals obsolete or, at least, inadequate. This applies to the race for the development of the intercontinental ballistic missile as well as weapons yet unknown.

Staff Study No. 4: Control and Reduction of Armaments, Technical Problems, is a valuable introduction for those of us who are not military experts but who, nevertheless, are faced with the challenge of finding an arms-control agreement which will enhance rather than jeopardize our security. This study was prepared under the direction of the subcommittee staff, by Col. Charles H. Donnelly, senior specialist in national defense, Legislative Reference Service, Library of Congress. It does not necessarily reflect the views of the subcommittee or any of its members.

OCTOBER 7, 1956.

CONTROL AND REDUCTION OF ARMAMENTS

TECHNICAL PROBLEMS

A. INTRODUCTION

This staff study is concerned with the main technical problems which would require solution in order to make any disarmament system workable. As far back as organized society has resorted to the use of arms, either to inflict its will upon others or to defend itself from aggression, it has had the concomitant problems of keeping its armament program within the bounds of its means and insuring against undue destruction. When risk of devastation and the expense of armaments have become unusually great, leaders have tried to find a formula by which their people could be relieved of at least some of the burdens without worsening their defensive position vis-a-vis other states. Disarmament, therefore, is a subject wherein there have been many attempts to achieve international agreement and upon which many discourses have been written. The terminology peculiar to the subject is often used loosely. Some definition and explanation of terms is therefore in order.

1. *Armaments*

The terms "conventional" and "unconventional," as applied to weapons, the forces which use them and the kind of warfare in which they would be employed, have often been used loosely; the same applies to the term "weapons of mass destruction." In 1948 the United Nations Commission for Conventional Armaments adopted the following definition:

* * * weapons of mass destruction should be defined to include atomic explosive weapons, radioactive material weapons, lethal chemical and biological weapons, and any weapons developed in the future which have characteristics comparable in destructive effect to those of the atomic bomb or other weapons mentioned above.¹

As used herein, unconventional weapons will be regarded as including nuclear explosive weapons (regardless of their power), lethal chemical, biological and radiological weapons, and any weapons developed in the future with characteristics comparable in destructive effect to those mentioned above. Conventional weapons will include all which do not fall into the unconventional category. Those referred to as weapons of mass destruction will be unconventional types whose destructive effect is so great as to render them unsuitable for tactical use. Unconventional weapons of the low-yield atomic type might be used in so-called conventional warfare, as the use of an atomic weapon to destroy an aircraft carrier or an atomic projectile to neutralize part

¹ Department of State Bulletin, August 29, 1948, p. 268.

of a battlefield. In these cases the unconventional weapons would supplant less effective or less powerful conventional weapons, but the principles of their use would be relatively the same.

2. Definition of "disarmament"

"Disarmament" is used herein to designate any plan or system for the limitation, reduction, or abolition of armed forces, including their arms and equipment and other related items such as military bases and budgets.² It could be argued that a plan for freezing military expenditures at current levels is hardly a disarmament plan. For the purposes of this study, however, it will be considered as such since budgetary limitation has frequently been considered in this connection in negotiations on disarmament.

Disarmament is brought about through the process of placing a limitation or ceiling on the size of armed forces, armaments, or military expenditures and then taking the necessary measures to bring these elements within the ceiling set. These measures are by reduction, where the ceiling is below existing levels, and freezing, where present levels are to be retained but not exceeded. In actual practice, an agreed ceiling might actually exceed the existing level of strength of a country at the time of the agreement, and this ceiling might never be attained. This was the case with the United States following the 5-5-3 naval limitation agreement between the United States, Great Britain, and Japan, signed in 1922. During the life of the treaty the United States never built up to the tonnage permitted.

3. Definition of "control"

The term "control" will be used to denote the regulatory device by which the terms of a disarmament plan would be implemented. Control might be retained by a sovereign state within its own jurisdiction or it might be vested by agreement in an international body or another state to administer. A nation undertaking, unilaterally, to reduce its forces, as did the United States following World War II, would naturally exercise control of its own disarmament process. In the case of defeated countries, disarmament is usually imposed and controlled by the victor nations.

Control of an international disarmament agreement has frequently been left to the honor of the participants, as in the case of the United States-British agreement in 1817 (Rush-Bagot agreement), for limitation of arms on the Great Lakes. Under present conditions of mutual distrust between nations, however, any plan for control or limitation of arms, to be acceptable to the participants, in all probability would need to contain some provision by which the parties could be assured as to the extent to which disarmament was being carried out by the other participants in the agreement. The technical problems of carrying out such a provision would be considerable, and it must be observed that the greatest difficulty encountered in negotiations since World War II has been lack of accord on this question. So far, in the

² Hearings before the Senate Foreign Relations Subcommittee on Disarmament (hereafter referred to as "subcommittee hearings"), pt. 1, January 25, 1956, p. 13. Mr. Harold E. Stassen, special assistant to the President for disarmament, said: "'* * *disarmament' has come to mean, not the literal meaning of the dictionary, but any offer to reach any kind of agreement or limitation or control or inspection affecting armed forces and armaments. It has taken on a special meaning in international circles."

view of the West, the Soviet Union has been unwilling to permit realistic inspection, which the former considers a vital aspect of control.

Many believe that if history has shed any light at all on this problem, it has shown that a disarmament plan, to be effective, must carry with it a means of observation or inspection by which other parties to the agreement can be assured as to the manner in which the agreement is being kept. President Eisenhower expressed the view of the United States in this matter at Geneva on July 21, 1955, when he said:

No sound and reliable agreement can be made unless it is completely covered by an inspection and reporting system adequate to support every portion of the agreement.

The lessons of history teach us that disarmament agreements without adequate reciprocal inspection increase the dangers of war and do not brighten the prospects of peace.³

Marshal Bulganin at least outwardly agreed with the President when he told the Supreme Soviet on August 4, 1955:

The President of the United States justly remarked that each disarmament plan boils down to the question of control and inspection.⁴

B. BACKGROUND

The record of previous attempts to bring about reduction of armaments is one wherein there have been a few successes but many failures. Where there has been a degree of success, it has usually been accompanied by political accord and mutual trust, as in the case of the Rush-Bagot agreement limiting armed naval vessels on the Great Lakes. Mostly, however, disarmament attempts have failed at the conference tables or, where agreement was obtained, failure came later at the control stage. Two instances of such failure are cited in illustration:

(1) The Treaty of Versailles, signed June 28, 1919, imposed a detailed limitation upon the German Armed Forces and provided for inter-Allied commissions of control. These commissions had broad powers to inspect.⁵ Nevertheless, they found themselves being circumvented by the Germans when they undertook to make their inspections.⁶ In this instance, even though there was an inspection system, it failed to work properly largely because of two factors: the system had been unilaterally imposed upon a defeated people who resented what they considered to be an intrusion, and the Allies did not deal firmly enough with the situation.

(2) The Japanese agreed when they signed the Washington Naval Treaty of 1922⁷ that the fortifications in their Pacific insular possessions would remain in status quo as of the date of signing. Years

³ U. S. Congress, Senate Committee on Foreign Relations, Subcommittee on Disarmament. A Collection of Documents, 1919-55, 84th Cong., 2d sess., Washington, U. S. Government Printing Office, 1956, p. 340. Hereinafter referred to as "Collection of Documents."

⁴ Bulganin's report on Geneva Conference, The Current Digest of the Soviet Press, vol. VII, No. 29, August 31, 1955, p. 17.

⁵ Collection of Documents, pp. 1-12.

⁶ Morgan, J. H., *Assize of Arms*, New York, 1946, pp. 60-68. General Morgan gives a firsthand account of Allied attempts to enforce the disarmament of Germany after World War I. In an unguarded moment the Inter-Allied Military Commission of Control allowed the Germans to set up a commission to act in a liaison capacity with the Allied Commission, ostensibly to facilitate the work of disarmament. It soon became evident that the German liaison officers were primarily concerned with delaying and sabotaging, rather than expediting, the work of the Allied officers. Several instances of assault on the British and French officers were related.

⁷ Collection of Documents, op. cit., p. 13.

later, there was suspicion that Japan was violating the terms of the treaty with respect to these islands, but there was no right of inspection by which such violations could be determined.

The League of Nations' attempts to achieve disarmament foundered when the delegates could not find a formula acceptable to all of the great powers and, in the 10 years of its existence, the United Nations has yet to reach agreement on any kind of a solution. Present-day negotiations to bring about disarmament agreement stem from article 26 of the United Nations Charter which states that—

* * * The Security Council shall be responsible for formulating, with the assistance of the Military Staff Committee referred to in article 47, plans to be submitted to the members of the United Nations for the establishment of a system for the regulations of armaments.

The General Assembly of the United Nations, on December 16, 1955,⁸ recognized the need "to continue to seek agreement on a comprehensive programme for disarmament * * *" and noted that special technical difficulties had arisen in regard to the detection and control of nuclear weapons material.

Classification of forces and weapons as to their use

Earlier attempts to solve the disarmament problem have sometimes begun with attempts to classify forces and armaments as "offensive" or "defensive." At the World Disarmament Conference at Geneva in 1932 the delegates labored to draw a line between weapons of offense and weapons of defense, with the objective of placing a limitation on forces and weapons which might be used for aggressive action. The difficulty lay in the fact that even though a force or a weapon might be employed for offense, the user might actually be engaged in a counterattack to repel an invasion. As M. Tardieu said:⁹

Every arm can be employed offensively or defensively in turn. * * * The only way to discover whether arms are intended for purely defensive purposes or are held in a spirit of aggression is in all cases to inquire into the intentions of the country concerned.

Experience has indicated that for purposes of armament limitation, classification of forces or weapons as offensive or defensive in character is not a realistic approach. Artillery, tanks, nuclear bombs, submarines, fighter planes—each category may be used offensively or defensively depending on the purpose of the action. A weapon may in fact be used offensively on one occasion and defensively the next. The United States Strategic Air Command, for example, is a defensive force in that it is intended to serve as a deterrent against aggression.¹⁰ If the United States were attacked, however, this command would actually be employed as an offensive force, in retaliation.

While it is true that most weapons have been designed with a particular purpose in view, they are often used for other purposes and a specific weapon is not necessarily used against other weapons of the same type. An example is the rocket launcher designed for individual use—the bazooka, as it is popularly known. This weapon was designed to give the individual soldier an effective defense against the

⁸ Collection of Documents, op. cit., p. 394.

⁹ League of Nations, Records of the Conference for the Reduction and Limitation of Armaments, series B, Minutes of the General Commission (Geneva, 1932-36), pp. 53, 51.

¹⁰ Department of Defense, Semiannual Report, January 1 to June 30, 1954, p. 259.

tank. He also uses it on occasion to knock out pillboxes and other field fortifications. It is not a suitable weapon, however, for use against another bazooka.

C. CONTROL OF FORCES AND ARMAMENTS

Those engaged in the problem of disarmament have considered many different ways of applying limitations including the eight listed below:

1. *Qualitative disarmament*—limitation as to form, function, or effect. Restrictions against the use of weapons deemed aggressive or offensive.

2. *Quantitative limitation*—a ceiling on the numbers of military personnel or weapons, by category.

3. *Budgetary limitation*—the freezing or reduction of military spending.¹¹

4. *Limitation on resources devoted to disarmament*—the establishment of ceilings on the proportion of key resources, such as steel, which a country may use for arms.

5. *Limitation as to location*—for instance, the creation of a demilitarized area.

6. *Limitation of private manufacture and sale of arms, ammunition, and military equipment*—embargoes and export licenses are examples.

7. *Limitation as to manner of use*—the rules of warfare. An illustration is the outlawing of barbarous weapons.

8. *Limitation as to the desirability or necessity of use*—eliminating the need for armaments. Methods include international organization and attempts at pacific settlement.

This study will explore the technical problems involved in some of the main disarmament plans, rather than the political and moral aspects. The technical problems have been made much more complex since the advent of unconventional weapons. Because the problems differ widely as to the technology involved, those pertaining to control of unconventional weapons will be considered separately from those involved in the control of conventional forces and armaments.

1. Control of unconventional weapons

In 1926 a committee of the League of Nations investigated the technical aspects of enforcing a prohibition against the wartime use of poison gas and bacteriological weapons. It found that plants capable of manufacturing such weapons could quickly convert from their normal and legitimate peacetime manufacturing to the manufacturing of the wartime weapons; therefore, inspection by an international body would not only encounter serious difficulties but would serve no useful purpose. Besides, the committee emphasized, "such supervision would completely destroy secrecy in commercial affairs." One proposal made in this connection (by the Soviet Union) was to organize workers' committees or use trade unions in plants capable of manufacturing these weapons with a view to preventing such manu-

¹¹ Welles, Benjamin, *New York Times*, March 18, 1956, p. 19. The French have placed particular emphasis on this aspect of control.

facture, presumably in the event that the management should attempt to evade the agreement.¹²

Twenty years later, a new member of the family of unconventional or mass destruction weapons became the object of international concern, this time within the United Nations. The United States had developed and used the atomic bomb and realized the possibilities which might ensue if prompt and effective measures were not taken to bring this weapon under strict control. In June 1946 the United States proposed to the United Nations Atomic Energy Commission a plan (Baruch plan) for the international control of atomic energy. Coupled with this proposal was a stipulation that there must be an inspection system which would insure compliance with the terms of the control plan. This proposal was rejected by the Soviet Union largely on the ground that it constituted an unwarranted infringement of national sovereignty. Previous to this rejection a Scientific and Technical Committee of the United Nations Atomic Energy Commission, which included a Soviet national, had reported unanimously that it did not find any basis in the available scientific facts for supposing that effective control was not technologically feasible.¹³

Conditions have changed in the decade since the committee made its optimistic report. A considerable quantity of nuclear material has been manufactured both in and out of the United States. Improvements in technology now make it possible to produce vastly more explosive power from a relatively smaller amount of nuclear material. Unfortunately, technology has not kept up in two other respects. In checking past production of nuclear materials, it would be impossible to eliminate a certain margin of error in accounting. A substantial stockpile of nuclear weapons, therefore, could have been concealed. Once a stockpile of nuclear weapons has been shielded and hidden, there are presently no technical means by which these weapons can be detected.¹⁴ To some extent similar problems exist with regard to detecting a deliberately concealed stockpile of chemical or biological weapons. It follows, then, that the type of control envisaged under the Baruch plan, that is, total accounting for all production, is no longer feasible. Both the United States and the Soviet Union have acknowledged this.¹⁵

Although it is presently not feasible to audit all the past production of nuclear materials, it is technically possible to keep a fairly close reckoning of materials which might be manufactured in the future and the purposes for which they are used. Accounting and control of fissionable materials made available to an International Atomic Energy Agency is envisaged in a draft statute pursuant to the President's atoms-for-peace proposal which was drawn up in April 1956 by representatives of 12 nations, including the United States and the Soviet Union, meeting under the aegis of the United Nations. This statute was agreed to in principle by all of the participants, and it is now

¹² Collection of Documents, *op. cit.*, pp. 178, 179, 180, and 185. A current study of opinion by some manufacturers on the subject of factory inspection can be found in "Factory Inspection and Armaments Control," published by the Institute for International Order.

¹³ Collection of Documents, *op. cit.*, p. 197; also, Department of State publication 2737, 1947, p. 18.

¹⁴ Subcommittee hearings, *op. cit.*, pt. 1, pp. 9, 10; also Cavers, David F., *The Challenge of Arms Control*, Foreign Affairs, vol. 34, October 1955, pp. 52, 53.

¹⁵ Subcommittee hearings, *op. cit.*, pt. 1, p. 10.

being given further consideration by an international conference of 81 nations which convened at United Nations Headquarters on September 20, 1956.¹⁶

The statute, if adopted, would establish an International Atomic Energy Agency which would have as one of its functions the task of insuring "so far as it is able" that assistance granted by it or at its request would be used solely for peaceful purposes. Participants would pledge that none of the assistance provided through the agency would be used to further the development of weapons, and the agency would be granted authority to verify by inspection or by calling for reports as to whether this agreement was being complied with. Since the same reactor can be used to produce both power for peaceful purposes and plutonium which could be used for weapons, the Agency would attempt to insure that none of the fuel or reactor byproducts involved is directed to weapons. To accomplish its task, among other powers and safeguards, the Agency would have authority to approve facilities to be used in connection with the nuclear material which would be supplied, to prescribe health and safety measures, to control the disposition of nuclear material produced, and, through a system of records, reports, and on-the-spot inspections, to keep an accounting of fissionable materials supplied to and produced by the countries which would be the benefiting participants. According to its draft statute the Agency would be entitled to make its own measurements to verify reported data, and take various steps, such as the suspension of supply of materials, in the event of finding a violation.

This plan for control of nuclear materials destined for peaceful purposes obviously falls far short of being a disarmament plan. Only those countries having little or no fissionable materials would be covered, and these only to the extent to which they were furnished such materials under the agreement by the producing countries, such as the U. S. S. R., United States, Great Britain, or France. Nevertheless, if such a plan could be made to work it would be an invaluable source of technical and practical experience for the creation of a disarmament plan of much wider scope at some future time and the Agency itself might provide the nucleus for expansion into such a wider system.

There being no visible prospect of discovering a scientific technique for establishing complete accountability of nuclear materials produced in the past or even of detecting hidden nuclear weapons, an alternative approach is to control the means by which mass-destruction weapons can be delivered. This immediately brings into consideration the question, of guided missiles, particularly the ballistic type.

Many experts believe that, if any control over long-range ballistic-type missiles is to be achieved, the means of control must be established before these weapons are perfected. Launching sites might be identified by aerial or ground inspection or a combination of these methods. It must be assumed, however, that men who are capable of overcoming the manifold scientific and technological difficulties of creating a 5,000-mile missile are likewise capable of devising a launching system which can be effectively camouflaged.¹⁷ The longer it

¹⁶ For text, see Department of State Bulletin, October 24, 1955, pp. 666-672. Should the conference agree on a final statute, it would not go into effect until approved by participating states in accordance with their constitutional processes. In the United States, congressional action would be required.

¹⁷ Subcommittee hearings, op. cit., pt. 1, pp. 14, 25, 41; *ibid.*, pt. 3, p. 99; *ibid.*, pt. 5, pp. 206, 207, 209, 287, and 290.

takes to bring about control of ballistic missiles, the more difficult it will become, technically, to work out a solution to this problem.

The fate of the Baruch plan for control of nuclear energy is an excellent example of what can happen. Had the United States proposal been put into effect at the time it was offered, it would have had a reasonable chance of success. The United States was the only country in production of nuclear materials at that time¹⁸ and experts could have computed the end products within a relatively small margin of error, assuming that the figures submitted by the United States would not have been accepted at their face value. Now, 10 years later, with three countries producing nuclear weapons, auditing past production has become a practical impossibility. Moreover, the number of countries, and groups within countries, capable of producing nuclear weapons promises to become continually larger because of various programs, either proposed or already in effect, to promote the use of atomic energy for peaceful purposes. Such programs include the United Nations atoms-for-peace plan, the United States bilateral program, internal programs of various countries, and Euratom, which is the proposed European agency for the pooling of nuclear resources.

2. Control of conventional weapons and forces

The problem of effective control of the conventional type of weapons is much simpler in at least one respect: the quantity of tanks, artillery, warships, aircraft, or other conventional weapons necessary to obtain a strategic decision, or even a major tactical decision, cannot be hidden from detection as can a stockpile of unconventional weapons. Furthermore, the massing of forces armed with conventional weapons, sufficient to gain such a decision, could easily be detected by either aerial or ground inspection methods.

In setting up a control agency for conventional forces and weapons, valuable guidance can be had by observing the operation of the provisions for inspection in the Korean Armistice Agreement.¹⁹ The inspection system functioned nominally for 3 years, but it never worked to the satisfaction of the United Nations command.²⁰ The agreement contained no provision for aerial inspection, and ground inspection was carried out by teams of inspectors from neutral nations. These teams were so restricted in North Korea that individual inspectors could not make free unannounced inspections. All inspections were made by teams composed of an equal number of members from the neutral countries which were nominated by the United Nations side and those nominated by the Communists. The results were strikingly similar to those in Germany following World War I.

¹⁸ Subcommittee hearings, op. cit., pt. 3, p. 128.

¹⁹ Additional experience in inspection may eventually be gained from the Western European Union. When the Brussels Pact was amended in 1954 to expand the Western European Union and admit Western Germany as a member, agreements were reached as to the levels of certain categories of weapons and forces which the members might attain. Western Germany undertook not to manufacture in its territory atomic, biological, and chemical weapons. An agency for the control of armaments was created with authority to check weapons stocks. It was given power to examine statistical and budgetary information supplied by the members and NATO authorities and to undertake at regular intervals test checks and inspections at production plants, depots, and forces. The control agency was established in 1955 and 1956 was set up as the first control year. However, the system of armaments control is not yet functioning due to difficulties encountered in organizing the agency and staff and defining its powers and scope of operations. Moreover, to date Germany has received only a relatively small quantity of arms and has no effective combat force in being (unless the 20,000 border police could be so considered).

²⁰ Subcommittee hearings, op. cit., pt. 2, p. 76.

Visits by inspecting teams were known in advance, giving the military installation commanders enough time to put things in order before the arrival of the inspectors. Since the inspection system was not mutual in practice, the United Nations Command finally announced it would suspend inspections in South Korea.²¹

In terms of security resulting through disarmament, control of conventional weapons and weapons systems offers fewer technical difficulties than attempting to control military manpower. The difficulty inherent in hiding a stockpile of combat aircraft, tanks, or warships has already been pointed out. On the other hand, it would not be too difficult to circumvent a limitation on troop strength. This could be done in several ways. One way would be to turn over certain jobs to civilians, either by employing civilians—mechanics, for instance—or by contracting with civilian firms to handle certain jobs such as maintenance, transportation, and other logistical functions. Admittedly, military commanders would probably not like such arrangements, but would have to accept them if based on a national decision. Another reason why military manpower would be hard to control is that a large reserve force could be built up through a policy of short training periods and frequent rotations of personnel in and out of uniform. However, regardless of the number of militarily trained men available to a country, they would not constitute an effective combat force until equipped with weapons.

3. Control of defense budgets

Another means of controlling armaments is through budgetary procedures. Basically, this type of control involves a freeze on the amount nations spend for defense followed by reductions in defense expenditure according to an agreed-upon formula. Reductions in the military budget of a nation would occur each year and by an increasing percentage based on the amount of the original defense budget. The inspection system would include financial and economic experts acting somewhat as accountants going over the books of a company.

The budgetary approach has been currently advanced by the French who view it as being a complete check on armaments, but who are also willing to see it adopted as part of other methods of control.²² The French have suggested that all or part of the savings resulting from a reduction in defense expenditure be put into a common pool for assistance to economically underdeveloped countries.

Under the French plan no country would be required to change its present practices of formulating and presenting its budget. A country would, however, be asked to present its budget to an international inspection authority in a form common to all nations. This practice is used at the present time by the members of the North Atlantic Treaty Organization. Thus, a common definition of military expenditure would be agreed upon and followed by all parties to the agreement. The international secretariat would be given the civil and military budgets submitted by governments to legislative bodies. The secretariat would then prepare a common nomenclature for all states and a list of the categories of military expenditure.

²¹ Announcement by United Nations Command, May 31, 1956. Department of State Bulletin, June 11, 1956, p. 967.

²² Subcommittee of the United Nations Disarmament Commission, verbatim record of the 56th meeting, September 7, 1955.

The French plan also envisages a system of severe penalties for countries which attempt to falsify their budgets and awards to countries which declare their budgets correctly. Falsification of budgets could be detected, according to the French expert, Jules Moch, because it would not be possible for a nation to falsify one expenditure without also attempting to mislead in others.²³ The inspectors would have opportunities to detect the deception, in some cases by close scrutiny of the figures themselves and in other cases by analysis of the various economic activities within a country including its purchases of raw materials.

A number of problems arise in considering budgets as a device to control armaments. One already referred to is the need for a common definition of what constitutes military expenditure. Examples of the lack of a common definition are: (1) In one nation war pensions will be included in military expenditure; in other nations a different category will be used. (2) Military police sometimes are listed as military, sometimes as civil. (3) A railway line under construction exclusively for strategic purposes can be classified as public works or defense. (4) Nuclear power reactors can be classified as peaceful facilities because of the electrical power produced, or as military facilities because of the plutonium or weapons material produced.

A second problem concerns types of governments. Some governments are highly centralized, others very decentralized. This raises the question of whether all local budgets must come under the review of the inspectorate. If so, such a system could be extremely complicated and costly to carry out. Governments also vary in their budgetary practices. Some present very detailed budgets while others devise them very generally, using only broad headings to cover thousands of items.

Many governments have industrial contracts for defense. If the inspectors were permitted to check the books of private companies it might be considered as undue interference in a company's affairs.

A fourth problem is whether the limitations on defense expenditures should be qualitative or quantitative. If the latter, a country could reduce its expenditures in one area of defense and increase them in others through effective economy measures. Also, wage and price fluctuations would enable a country to change its budgets without necessarily reducing armaments, although the French believe that coefficients can be applied to allow for such variations from one year to another to give a constant value to the monetary unit concerned.²⁴

4. Control of research and development

It is assumed that any system for control of research and development activities would be confined to those activities connected with military uses. Even in the case of control of atomic energy it will be noted that the draft statute of the proposed International Atomic Energy Agency envisages that functions of the Agency would be to assist and encourage research, to help members to obtain necessary materials and to assist in the exchange of scientists and scientific information in the field of peaceful uses of atomic energy. Actual control

²³ *Ibid.*

²⁴ *Ibid.*

would be limited to making sure that fissionable material would not be used for military purposes, and this control could be exercised by retrieving for deposit with the Agency reactor byproducts suitable for making weapons.²⁵

It is hardly conceivable that research would be prohibited under any system of control on the grounds that the end product might have some military value. Had that been the case in the last few decades, consider the effect it would have had upon such useful machines as the radio, telephone, automotive vehicle, airplane, and radar, to mention a few. The present intensified research and development which is in progress in the world in the field of long-range rockets is applicable either to the uses of war or peace. The problems in launching an earth satellite for the purpose of gathering geophysical data are similar to those of launching an intercontinental ballistic missile with a nuclear warhead. Research in the field of bacteriology for development of vaccines could be applied to the production of biological weapons. Such examples could go on and on.

If agreement were made at the political level to limit or monitor tests of weapons or other devices of a purely military nature, no insuperable technical problems are envisaged which would make it difficult to control such tests provided, of course, adequate provision were included for inspection. By agreement, future tests of nuclear weapons could be either prohibited or carried out under the aegis of an international agency. Unauthorized tests would be difficult to conceal.²⁶ The difficulty, from a technical aspect, would arise in determining, for example, whether a long-range rocket was part of a weapons system or a device designed to explore space. From a technical standpoint, attempts to differentiate between military and nonmilitary research and to impose control on research and development activities only in the former category would be, in general, impractical.

The foregoing conclusion raises the question of what should be done in the event of another scientific discovery of military significance. Such an event could conceivably give the discoverer a tremendous advantage, at least for a period of time, over other nations and would probably complicate the disarmament negotiations.

D. METHODS OF INSPECTION AND CONTROL

One of the principal purposes of the United States and others in disarmament planning has been to develop a system which will tend to reassure each nation that it is not in danger of attack, particularly a surprise attack, and that other nations are observing the arms limitation agreement. In view of the atmosphere of deep distrust which has developed, especially since the close of World War II, the creation of such a system has become most difficult since the element of good

²⁵ Congressional Record, April 25, 1956, op. cit., pp. 6187 and 6189.

²⁶ While there is general agreement that at least large bomb tests can ordinarily be detected even without international inspection arrangements information varies on the detectability of all tests. Mr. Stassen has said that every explosion cannot necessarily be detected. Subcommittee hearings, op. cit., pt. 1, p. 22. Commissioner Murray of the Atomic Energy Commission has testified that we have very accurate means of determining the size of tests that are carried on throughout the world. *Ibid.*, pt. 6, p. 362.

faith has so much bearing upon the outcome of the venture.²⁷ As it is presently being considered, a workable system of control involves three main features: provision for exchange of military information, an inspection system, and a plan for enforcement of the disarmament agreement or some kind of action in the event the inspection procedures raise suspicions or produce definite evidence of a violation of the agreement.

1. *Exchange of information*

One step in control is the exchange of military information or "blueprints," as the President has termed it. This could be relatively simple from the technical aspect, though admittedly involving much work by many individuals. Difficulties would be more likely to appear in the process of arriving at agreement as to the extent, manner, and timing of the release of secret information affecting national security; for instance, the size of nuclear weapons stockpile. In the United States, the President's proposal suggests the need to review our laws pertaining to the disclosure of information affecting national security and our treaty obligations with respect to disclosure of defense information jointly held with other countries, such as members of NATO. An especially delicate point would be the release of information regarding United States forces stationed at overseas bases where such release might involve information bearing on the base itself and would therefore bring up the question of concurrence of the host country.

If the exchange of military information is carried out as envisaged by the United States, each participating nation should have a reasonably accurate estimate of the military capabilities of the other participants. This would mean having all of the information required to form a true estimate of the size of the forces, their organization, equipment, state of training, logistic system, status of reserves, replacement system, and mobilization potential. It would also require information as to the deployment of these forces, including order of battle information, notice of intended troop movements, station lists, armament programs, military budgets and expenditures, census of armament and personnel, and rotation plans. This type of information can be assembled and verified. Given enough time and trained personnel and free access to the necessary records and military installations, an inspection team could make an accurate comparison of information provided with the actual status of the military establishment. This, however, would not hold true in the case of unconventional weapons since, as has been previously pointed out, stockpiles sufficient to gain a strategic decision could be hidden beyond present likelihood of detection.

²⁷ While this staff study is limited to outlining the technical problems involved in establishing a working disarmament system, the United States has eight task forces composed of eminent specialists in their fields who are extensively studying the requirements and methods of effective international inspection and control. The President's special assistant on disarmament had this comment to make on the work of these task forces:

"As a result of their studies, and in connection with the work of these task forces: we shall have something we have never had before—a detailed operating manual of what to inspect, how and where it would be inspected, and a knowledge of what can and cannot be profitably inspected if we seek to provide a safeguard against surprise attack and to supervise an international arms limitation agreement. * * * The problem is the kind of inspection you would want on the other side, and that you would reciprocally accept within the United States, and that in itself is a complex problem." Subcommittee hearings, op cit., pt. 1, pp. 11, 12.

Recent disarmament proposals of both the Soviet Union²⁸ and the United States²⁹ acknowledge, in effect, the present inability to detect hidden nuclear weapons. Whether any disarmament system should be undertaken in the absence of technical means of verifying the status of the unconventional weapons stockpile of other member countries, is, of course, a political decision. It should be borne in mind, however, that until long-range ballistic missiles have been perfected, there are means now in existence for checking on the delivery systems for these weapons.

After agreement has been reached as to details and extent of information to be exchanged, the timing and mechanics of the exchange must be determined. Fear would exist in each country that it might find itself in the position of having released important or vital defense information without receiving in exchange an adequate quid pro quo. Two safeguards could be instituted to deal with such a possibility. Before any information is exchanged, the control machinery for handling such information could be not only existent but ready to function. Secondly, information could be disclosed on a step-by-step basis. The first increment could cover conventional arms and forces and could be quite complete without undue risk to any country since most of the information would already have been obtained either by overt or covert means. Subsequent disclosures of more vital information, especially that pertaining to advanced weapons systems and nuclear stockpiles, might be deferred until assessment was made of the results of the first exchange and of the political climate existing at the time.

2. Inspection

President Eisenhower and, among other officials, Secretary Dulles and Mr. Stassen have emphasized the necessity for establishing a satisfactory inspection system before the United States moves to any great degree in the direction of disarmament. Secretary Dulles has expressed his personal view that it would not be possible to achieve a system of mutual inspection and control 100 percent mechanically complete but that, if the risks could be reduced to small enough proportions, these risks might be balanced against the serious risk otherwise resulting from an arms race.³⁰ Secretary Wilson believes that an inspection system is important because it would reveal the attitudes of the parties. He said:

It is like auditing the financial activities of a big corporation. Somebody may do a little local stealing once in a while, but you can tell whether the thing is right or not. * * * [From] my point of view, this inspection system is simply to assure each party that the attitudes of the other parties continue to be proper.³¹

Any inspection system would contain these risks: Failure to achieve adequate inspection coverage, to assess accurately the significance of observations made during the inspection process, and to make prompt, trustworthy, and full reports of inspection results.

The handling of reports and, to a large degree, the correct interpretation of observations made during inspections are matters to be con-

²⁸ Collection of Documents, op. cit., pp. 385-392; and Frye, William R., *Christian Science Monitor*, May 8, 1956, p. 1.

²⁹ United States Draft Working Paper for the First Phase of a Comprehensive Agreement for Disarmament, submitted before the U. N. Disarmament Subcommittee on April 3, 1956.

³⁰ Subcommittee hearings, op. cit., pt. 2, p. 54.

³¹ *Ibid.*, pt. 4, p. 177.

trolled by proper selection, training, and management of personnel. To accomplish inspections on a base broad enough to meet the critical needs of national security would mean making an agreement that would give the inspectors full authority to inspect without hindrance.³² They would have to be permitted, within the fields agreed upon as subject to inspection, to proceed with their work at such times and places and in as much detail as they chose. The agreement under which they acted would need to be clear, precise, and detailed.

Considerable difficulty can be foreseen, so far as implementing the agreement in the United States is concerned, in determining how far inspectors might be allowed to go in covering private industry, transportation, utility and communications systems, research laboratories, and similar institutions having any connection with defense work. Manufacturers are especially zealous in protecting their trade secrets and the question arises of how inspection might intrude into the field of trade secrets or technical know-how. This type of inspection would undoubtedly be considered by many as an invasion of their right to privacy.

Both the Soviet Union and the United States would certainly find some difficulty in reaching accord as to how deeply they would allow inspectors to probe into their highly secret weapons systems, communications centers and emergency systems, technical and scientific processes, and strategic weapons stockpiles. Another complication might be that of obtaining the consent of host countries, where we have foreign military bases and installations, for inspection by parties of other governments, in the event these bases were included in an inspection system. Even though these inspections were limited to United States installations and forces, local sovereignty would be involved, and the host countries might not be parties, at least initially, to the disarmament agreement.

Inspections could be made by air reconnaissance, by actual visits to strategic or suspected areas, or by a combination of both. The United States has stressed the importance of aerial inspection as a means of allaying the fears and dangers of surprise attacks.³³ The Soviet Union, on the other hand, has expressed reservations as to the aerial inspection plan and has tried to show that a system of control posts at strategic points would be preferable.³⁴ The advantages of aerial inspection lie, first, in the vast areas which can be photographed in a relatively short time by jet planes flying at very high altitudes and using the newest photographic equipment.³⁵ Second, the equipment and personnel to do the photographing are already available, at least in the United

³² Slessor, Sir John, *Air Power*, vol. 3, No. 1, October 1955, p. 5. Marshal of the Royal Air Force Slessor says, "A system of control and inspection to be absolutely 100 percent cast-iron-proof against bad faith would mean that the agents of the international control organ would have to be free to go literally anywhere they chose." He added that he doubted if this would be acceptable to the British, Americans, or Russians in the immediately foreseeable future.

³³ Department of State Bulletin, August 1, 1955, pp. 173-174.

³⁴ *Ibid.*, October 24, 1955, pp. 645-646.

³⁵ U. S. News & World Report, August 5, 1955, p. 73. Mr. Sherman M. Fairchild, chairman of the board, Fairchild Camera & Instrument Corp. has estimated that, on the basis of 1 RB-47 photographing 4,000 square miles an hour, 34 RB-47's could photograph the 8.5 million square miles of Soviet Russia in 30 days of clear weather; however, it would probably take a year to find 30 days clear enough to do the task.

Subcommittee hearings, op. cit., pt. 1, p. 7. Mr. Stassen estimated that it would take less than 6 months to photograph the Soviet Union, allowing for weather.

Subcommittee hearing, op. cit., pt. 5, p. 289. Dean Duncan E. MacDonald, Boston University, estimated that it would take about 200,000 photographs for overall coverage of the U. S. S. R. and another 200,000 for additional closeup coverage of selected areas.

States, though many additional skilled workers would be needed for photographic interpretation. Third, much spot checking would be used after the first broad coverage since the first inspection would disclose many areas where military activity would be unlikely. Aerial inspection would draw heavily on the highly developed techniques of aerial photography, but even these have their limitations. A major disadvantage of aerial inspection is the impossibility or difficulty of checking activities in covered or hidden areas, movements at night or during periods of low visibility, and movements of submarines, any of which might involve nuclear missiles, and the problem of differentiating between routine training maneuvers and preparations for attack. Ground inspections, while unable to cover large areas in the time and at the relatively low cost of aerial inspections, would be needed as a complement to the latter to cover "blind spots."

3. Personnel for inspection duty

Whether inspections would be made from the air, on the ground, or by both methods, one of the major problems would be to find and train the necessary personnel and to organize their activities in such manner as to permit them to do their work effectively, yet to avoid unpleasant incidents arising from working contacts. The control agency for making inspections might be set up as a bilateral agency, or as a multilateral body drawing its personnel from the participating countries. In the latter case, it would not be realistic to expect that either the Soviet Union or the United States would be satisfied to rely entirely upon personnel from other countries to make their inspections. With national security so deeply involved, the Soviet Union could be expected to insist upon having a substantial number of its own nationals take part in any inspection involving United States military installations, and the United States would take the same attitude regarding the U. S. S. R.

So far as conventional weapons are concerned, both the United States and the Soviet Union undoubtedly have sufficient skilled personnel in their own armed services who could be trained quickly to make ground and aerial inspections, except in the matter of photo interpretations. In the United States, and this would also probably be true in the Soviet Union, initially taking a large corps of inspectors and photo interpreters from the armed services for this duty would introduce a collateral problem of replacing these men in their military occupations. An eventual cutback in military strength would not entirely solve this problem because many of those released in the cutback would not be suitable for inspection duties. Also, it would be in the interest of achieving smooth and efficient working arrangements if the inspection system were fully prepared to operate before any disarmament steps are taken. This is provided for in the United States draft plan.³⁶

Personnel for inspection of nuclear-energy installations and activities would present a more difficult problem, at least in the United States. When asked if the United States Atomic Energy Commission (AEC) would be in a position to supply a sufficient number of technically trained ground inspectors to determine with a high degree

³⁶ United States Draft Working Paper *op. cit.*, sec. III, par. 13, p. 7; also Welles, Benjamin, *New York Times*, April 4, 1956, p. 1.

of certainty that the Soviets were not concealing atomic weapons, Chairman Strauss replied that the AEC has less than 4,000 employees of all sorts. The bulk of the atomic energy program is conducted by the employees of contractors. If the contractors' employees were used, the program as presently carried on would suffer. He said it would therefore be necessary for Congress to provide the means for the AEC to obtain and train the necessary people outside of the existing program.³⁷

Personnel to be selected for inspection work would need to be screened most carefully, not only as to their integrity and professional competence but also as to their ability to do their work under adverse conditions. The experience of Allied inspectors in Germany following World War I has been previously mentioned. In light of the atmosphere of deep distrust which has conditioned the thoughts of citizens of Soviet Russia and the United States about each other for many years, it cannot be expected that the operations of the inspecting personnel, particularly the ground inspectors, could be carried out without the possibility of friction at working levels. Regardless of how cordial relations might be at top levels, the success of an inspection system would, to a very large degree, rest on the ability of the inspectors to do a thorough job; this could be next to impossible if the attitudes of the inspectors were such as to aggravate the suspicion and ill feeling inherent in the situation, especially among the employees of private companies working on military contracts and, therefore, presumably subject to some degree of inspection.

The United States has proposed setting aside nonsensitive demonstration areas in the United States and the Soviet Union "to facilitate the study and negotiation of a disarmament agreement."³⁸ The Soviet Union has suggested demilitarization of Germany, which, if agreed, might provide an opportunity to give inspectors actual field training. A proposal made to the Senate Disarmament Subcommittee was that the United States arrange for a practical tryout of an inspection plan with some friendly country.³⁹ This plan has the merit of not requiring approval by the U. S. S. R. and thus it could be put into operation at an early date. The experience of meeting and solving the unexpected as well as usual problems sure to arise would give the United States invaluable data and experience for later use; however, some experts consider that lack of realism would detract from the benefits which might be expected.

4. Inspection coverage

The purpose of inspection under a disarmament system, as now being considered, would be twofold: to prevent surprise attacks and to verify the progress of disarmament under an agreement. Frequent checks to discover mass movements or concentrations of conventional forces or the accumulation, at campaign levels, of such supplies as gasoline and ammunition behind possible points of attack, would give warning of the possibility of an attack by such forces. Getting evidence or warning of an attack with mass destruction weapons poses a much more difficult problem. Since it is technically

³⁷ Subcommittee hearing, op. cit., pt. 3, p. 131.

³⁸ United States Draft Working Paper, op. cit., sec. 11, par. 2, p. 2.

³⁹ Subcommittee hearings, op. cit., pt. 5, p. 245.

impossible to detect nuclear weapons which have been deliberately hidden, warning of an attack with these weapons would have to come from observation of the means of delivery. This would involve checking movements of aircraft (including civil aircraft) capable of delivering the weapons; of naval vessels, both surface and submarine, which might approach shores closely enough to launch missiles with nuclear warheads, also other ships which conceivably could detonate nuclear bombs in harbors or along coastlines with resulting devastation and dangerous irradiation from fallout; and, finally, it would involve checking known missile launching sites. If and when long-range ballistic missiles are perfected, it must be expected that means of launching them will also have to be devised. There is general agreement that present techniques of inspection against surprise attack would be inadequate in the event of the stockpiling of intercontinental ballistic missiles.

Some conception of the magnitude of the task of carrying out inspections may be gained from a consideration of what should be looked at and at what intervals. These, generally speaking, would fall into the following categories:⁴⁰

- (1) Armed forces: Strength, structure, equipment, and deployment.
- (2) Weapons and delivery systems suitable for surprise attack.
- (3) Transportation and telecommunications facilities.
- (4) Manufacturing facilities for military equipment and armaments, including chemical and biological weapons.
- (5) Logistic supply systems.

Specifically, this would involve inspections and spot checks of such diversified items as these:

(a) Military installations: Posts, camps, and stations; air and naval bases; depots; warehouses (both owned and leased by the military); armories (National Guard, Reserve, and ROTC); naval and merchant marine anchorages (mothballed ships); testing areas; launching sites for missiles; training areas; air and sea ports of embarkation and debarkation; communications centers; radar stations; repair and maintenance facilities; oil and ammunition storage.

(b) Transportation facilities (other than military facilities included in (a) above): Freight terminals, classification yards and loading-unloading facilities for railroads, trucking lines and airlines; oil pipelines; air and sea port facilities.

(c) Manufacturing facilities: Arsenal, tanks, and other heavy equipment; shipyards; airframes, engines, and missiles; signal and electronic equipment; explosives and propellants; chemical and biological weapons; power generating and distribution systems; sources and stockpiles of strategic raw materials; nuclear reactors and installations; machine tools for military production; component parts vital to certain equipment, e. g., timing devices.

(d) Intangible items: Military budgets and expenditures; legislation and orders affecting the military; agreements for support of military establishments of other countries.

⁴⁰ Nutting, Anthony, *Vital Speeches*, vol. XXI, No. 24, October 1, 1955, p. 1511; also, *U. S. News & World Report*, September 9, 1955, p. 106, and *United States Draft Working Paper*, op. cit., sec. III, par. 7 (a), p. 5.

An important objective of the inspection process from the United States viewpoint is to prevent surprise attacks. It follows that inspection teams would need their own communications systems for reliability in transmitting information of ominous nature. It also follows that such a communications system would need to be foolproof against jamming if national security is to rest upon its reliability.

5. Enforcement

What would happen if the inspectors should some day find evidence indicating failure to keep an agreement, possibly of a menacing nature? It has been pointed out that the Communists could decide to sabotage an arms-control plan, as they often have other international agreements, by tactics short of formal breaches but, in effect, sufficient to balk the inspectors.⁴¹ Each instance would need to be decided on a case-by-case basis. If the violation were of a minor nature, the decision might be to overlook it or to bring it to the attention of the offender by a diplomatically worded note. If the violation appeared willful and threatening, the redress might conceivably include resort to international legal proceedings, escape clauses, and sanctions of various forms.

An international police agency might be effective against smaller nations. Among the great powers themselves, however, this concept runs into the reality that in the present context of world organization they would naturally have contributed forces to such a police group, and it is unthinkable that any country would make any armed force available for use against itself. Enforcement of a disarmament agreement as between the most powerful nations depends either on self-policing on the part of these countries, the threat of reciprocal violation of the agreement by other parties to the agreement, or international suasion, short of acts of war, in some form. The alternative, the direct use of force by a nation or a coalition of nations against a great power which had failed to keep a disarmament agreement would bring about the very situation which the agreement was designed to prevent—war.

E. PROBLEMS RELATING TO REDUCTION OF ARMED FORCES

Constructing a formula for limitation of armed forces which will be acceptable to all parties means that a searching analysis must be made of the requirements upon which the forces of each country are based. Military strength is not measured by the simple process of taking an inventory of men, equipment, weapons, and supplies. Important factors such as the state of morale and training of the troops and the modernity of their weapons must be calculated; also, the industrial potential for backing up the armed forces, transportation facilities for moving troops and their logistic requirements, and communications facilities for command and control of the armed forces complex. Actual military strength also depends upon the ability to bring a force to bear at the time and place and in the numbers necessary to win the battle. Thus, a country might hold the largest stockpile of nuclear weapons in the world but actually be very weak because it did not have the means of delivering these weapons on the targets for which they were designed.

⁴¹ Cavers, David F., *Foreign Affairs*, vol. 34, October 1955, p. 64.

1. Definition of "balanced forces"

Another important factor to be considered is the state of balance between, as well as within, the respective forces. By "balanced forces" is meant those which have been so organized, trained, and equipped that each force can carry out its part of the overall mission in the most effective and efficient manner. This means that each force must have the necessary strength and means to accomplish its mission but that there will be no unnecessary duplications between forces and that no single force will be topheavy with unneeded strength. The term balanced forces implies a degree of interdependence between forces; that no one force will try to be self-sufficient in all fields but will look to the other forces for support in the fields which are the primary responsibilities of those forces.

It could not be expected that the parties to a force-reduction agreement would accept a status which would leave them relatively inferior to that which they held before the agreement became effective. In other words, reductions are likely to be approved only if they leave the parties with the same relative strength as they had before the cuts were made. This factor militates strongly against a procedure of considering different weapons separately and trying to set acceptable ceilings in each case. It suggests that a more fruitful procedure involves simultaneous consideration of all weapons or weapons systems in the same category, together with the weapons or threat which the category was designed to counter.

As an illustration, assume that the submarine were to be considered for the purpose of setting ceilings on it as a weapon. The Soviet Union has a submarine fleet much larger than the United States submarine force. If a proposal were to be made that each country should cut its submarine strength by a given percentage, a likely reaction would be that the Russian submarines constituted a defense against the United States overseas bases which the Russians consider a threat against their country. This would then bring up the question of why the United States had thought it necessary to build these bases; in other words, there would probably ensue a full-scale consideration of all the factors which had led to the buildup of the Russian submarine fleet and the creation of the United States overseas bases. These considerations would be more political than technical, which is likely to be the case in all arms-reduction negotiations. It is most difficult to separate the political aspects from the technical, but there must be a measure of political accord before the technical experts can know where to begin cutting and how deeply they can go.

Another problem which would have considerable significance in the United States would be that of obtaining concurrences from the three services as to where reductions should be applied. With a relatively liberal budget to be split three ways, we have seen the difficulties which have arisen in getting Army, Navy, and Air Force agreement. As the forces were reduced, service feelings would be intensified in this regard.

Some past experiences in trying to bring about reductions in armaments are enlightening. At the Washington Conference for Limitation of Naval Armaments, held in 1921-22, the British proposed the abolition of the submarine.⁴² Such a proposal was understandable,

⁴² Latimer, Hugh, *Naval Disarmament*, Royal Institute of International Affairs, London, 1930, p. 9.

considering the frightful damage which the British had suffered from German submarines during World War I. However, the proposal was not accepted; it was argued that the underseas boat was useful for scouting as well as a weapon against combatant naval vessels. Had it been outlawed, this would have been considered as of special benefit to the British whose very existence was dependent upon her long trade routes. Again, in 1927 at the Three Power Naval Conference at Geneva, the British, Japanese, and the United States tried to reach agreement as to the permissible size of cruisers. Great Britain had 80,000 miles of trade routes to patrol and wanted a large number of 6-inch gun cruisers for commerce protection. The United States and Japan were more interested in heavy cruisers with 8-inch guns and long range of action, since neither had a wide network of naval bases for refueling and servicing the smaller cruisers as did Great Britain.⁴³ The Conference failed to reach agreement because, as one of the British delegates said later:

We could not find a formula which could equate ships mounting 8-inch guns with ships mounting 6-inch guns. * * * The reason for the breakdown of the Conference was that, although we agree on equality, we could not find a formula for it.⁴⁴

Sir Winston Churchill, at that time Chancellor of the Exchequer, said shortly after the close of the Conference:

The fundamental course which prevented agreement lay in the different views of what constitutes naval equality by the Americans and ourselves. * * * Therefore, we are not able now—and I hope at no future time—to embody in a solemn international agreement any words which would bind us to the principle of mathematical parity in naval strength. * * * The doctrine of naval equality, if it is to be accepted by us, must take into consideration the whole position of the two countries on the sea, and their respective risks and vulnerability.⁴⁵

A reduction in actual numbers of troops or in certain categories of weapons does not necessarily mean a reduction in the real overall military strength of a nation. If the reductions consisted of troop units which were surplus to the strategic and tactical needs of the country, that is, units which could not be brought to bear effectively during combat, the armed forces of that country could well be strengthened by such a reduction, through the simple process of diverting the efforts and expenditures from maintenance of these unprofitable forces to modernizing the remaining forces. The same would be true of retiring or scrapping out-of-date weapons, aircraft, and naval vessels. It is perfectly possible, therefore, that the reductions in troops announced by the U. S. S. R.—640,000 announced in late summer 1955, and 1,200,000 in May 1956—would when completed leave the Soviet military strength even greater than before the reductions were made. This would almost certainly be true if the cuts were made in connection with a modernization program that would result in bringing the forces into balance and in increasing the potential for manufacture of armaments by taking men not needed in uniform and putting them to work in factories.

One other weakness exists in connection with reliance upon reductions in numbers of troops to accomplish a lowering of military strength. There are many jobs in the military which can be handled acceptably by civilians, especially in the logistics field. A sizable re-

⁴³ *Ibid.*, pp. 32-48.

⁴⁴ *Ibid.*, p. 45.

⁴⁵ *Ibid.*, p. 47.

duction in military force could be made by a country with little if any diminution of military strength by the expedient of replacing the troops in certain logistics fields with civilians, perhaps by the same personnel changing from military to civilian status.

2. Influence of timing on limitations and reductions

Failure to limit the use or manufacture of nuclear weapons soon after the end of World War II has made it technically infeasible, perhaps impossible, to apply such limitations under present conditions. A similar situation may be shaping up with regard to the intercontinental ballistic missile (ICBM). Unless prompt measures are taken to adopt some workable plan for the limitation of development of this weapon, or for an effective control, some country is quite sure, within the relatively near future, to complete a successful test of an ICBM. Once a country has made such a test, even if the missile were to be outlawed immediately thereafter, that country would have a very great and significant advantage over other countries. It would mean that, in the event the disarmament agreement were dissolved or broken, the country having completed the test and having carefully preserved its research and development data could go into production of the weapon far ahead of any other countries.

In a complex weapon of this nature, it would be unthinkable to enter production before the many technical obstacles and difficulties, especially those concerned with guiding the missile to its target, had been solved by thorough testing. From a technical aspect, therefore, if there is to be agreed international limitation or control of ballistic missiles or other new weapons of similar destructive power and advanced scientific or technological concept, it appears important that such control or limitation be made effective before their originators have had the opportunity to perfect them.

Timing as to reductions in forces, bases, logistics systems, and conventional weapons or weapons systems, poses a very different kind of problem. It is assumed that the disarmament planners would have to be concerned with a phasing of cutbacks which would maintain the relative strengths of the negotiating countries while the reductions were being made. This would require a timing plan which would not only provide for phasing out certain personnel and weapons on certain dates but would also take into consideration the need for simultaneous cutbacks in forces, weapons systems, or installations, in different categories, perhaps, but matching each other in strength and with some relation as to purpose. If all countries considering an arms control plan used their submarines for scouting and combat against warships, it might be relatively easy to agree upon a reduction, but where these undersea boats are used by nations for different purposes, any reductions should bear some relation, as to timing, to comparable reductions in the weapons or forces which the submarines were designed to counter.

F. CONCLUDING OBSERVATIONS

1. Need for political accord

If a disarmament plan is to succeed, that is, if it is to enable participating countries safely to reduce their armaments and armed forces, the plan must carry with it some positive means of inspiring interna-

tional confidence. So far as the United States is concerned, the fears of its citizens center largely around possible surprise attacks. It will be a long time before the shock and the lesson of Pearl Harbor are forgotten. The United States has sought to find the answer to the danger of surprise attack in the establishment of an effective, dependable inspection and reporting system. However, before the technical problems connected with setting up such a system can be solved, there must be some political accord as to the objectives to be sought. Without firm guidance in that respect, those who are charged with working out the technical details of armaments control cannot hope to reach any real agreement in the more sensitive fields, as for example, the latitude to be allowed inspectors in delving into the hitherto sacrosanct secrets of government and industry pertaining to defense.

There would also need to be political accord as to the scope of participation in the disarmament agreement. From the point of view of the technical expert charged with devising a safe plan it would be most unrealistic to engage in any important national disarmament process until assured that all countries having the capability of seriously threatening world security were safely under the umbrella of the agreement. This immediately brings to mind the question of Communist China and the problem of working out the technical details of a disarmament agreement with a government which the United States has not recognized. This is another example of the dependence of the technical experts upon political guidance in order to carry out their responsibilities.

2. Limiting unnecessary inspections and reports

It would seem good judgment to limit inspection and reporting activities to those weapons, weapons systems, and forces which would be capable of bringing about a battlefield decision. Much valuable time could be wasted in accounting for the number of pistols held in the armed forces of a nation. After the information was reported, of what value would it be? Such weapons would bear little influence on the outcome of a war under modern conditions. Some earlier disarmament plans carried detailed annexes designed to get complete information on everything military, but the trend in later working papers is to eliminate the unimportant items for reporting. There is likely to be difficulty in obtaining enough skilled inspectors to cover the more important military items, making it doubly important that they not be wasted on nonessential activities.

3. Avoiding clashes at the working level

Any inspection system which would require a group of foreign nationals to have relatively free access to a large segment of the manufacturing, transportation, and communications processes of a country involves major considerations affecting the national sovereignty of that country. Although an inspection system of that kind might be accepted by a government as being in the best interests of the nation, there is no assurance that those at the working levels who would be dealing at firsthand with the foreign inspectors would welcome what they might consider as unwarranted interference with their daily work. Numerous unpleasant incidents might occur unless two steps were taken to avoid such happenings: First, careful selection and training of inspection personnel; and, second, an intensive campaign to educate personnel in factories, airlines, railways, and communica-

tions systems who would be most likely to come into close contact with the inspectors. Fewer difficulties are foreseen in the relations between inspectors and military or government personnel since the latter would, presumably, have been thoroughly briefed and instructed as to the importance of making the disarmament process work, and would be subject to greater disciplinary measures.

4. Personnel of inspection teams

Regardless of what kind of a control system might be adopted, inspection teams would probably need to include some personnel from the major nations. No matter how friendly, capable, and reliable nationals of third countries might be, nations are likely to insist that their security interest in a matter of this kind is too great to entrust to others. Since much of the value of the inspection system would lie in having an opportunity to assess the attitude toward disarmament on the part of the country being inspected, this is the type of information which would need to be acquired firsthand, particularly because of its intangible nature.

5. Influence of timing on ICBM control

In the absence of technical means for discovering hidden stockpiles of nuclear, chemical, or biological weapons, any disarmament system which called for abolition or reduction of weapons of this category could hardly be adequately controlled under present-day conditions. Failure to stop production of atomic bombs in the early days following World War II has led to an arms race which is about to be duplicated in the case of the ballistic-type missile. Once a nation has made a successful test of such a weapon, other countries will not rest easy until they, too, have the capability of making the weapons.

6. Chemical-biological-radiological weapons

It is very noticeable that in all current considerations having to do with disarmament, most of the concern is with mass destruction weapons of the nuclear type and their delivery systems. Little notice has been taken of other deadly types, particularly chemical and biological weapons. It is almost as though there were some kind of tacit understanding that, while countries might conceivably destroy each other with nuclear bombs, they would never contemplate using these other devastating weapons. The present-day interest in nuclear warheads and long-range missiles is a natural result of the postwar emphasis on these weapons, but any program for reduction or limitation of armaments and any inspection system would need to take cognizance of these other deadly weapons and make provision as well for many types of mass destruction or highly effective weapons which have not yet been developed or, perhaps, even conceived.

7. Reductions on overall basis

If the time comes to begin actual reductions in strength under a disarmament plan, these reductions will need to be undertaken on the basis of a broad study of the overall military strength and capabilities of the participating countries. Quantitative reductions are too easy to evade, as for instance, the substitution of civilian for military personnel in certain jobs, or the substitution of one kind of weapon for another. In computing the strengths of the countries concerned, it will, of course, be important to bear in mind the legitimate needs of the respective countries for internal and external security.

GLOSSARY

Arsenal—A plant devoted to the manufacture or storage of arms or ammunition.
Atomic weapon—According to the Atomic Energy Act of 1954, "any device utilizing atomic energy, exclusive of the means for transporting or propelling the device (where such means is a separable and divisible part of the device), the principal purpose of which is for use as, or for development of, a weapon, a weapon prototype, or a weapon test device." Atomic energy is defined as "all forms of energy released in the course of nuclear fission or nuclear transformation." Technicians use the term "atomic weapon" to refer to a nuclear weapon which depends for its effect upon the energy released by atomic fission, as opposed to atomic fusion.

Balanced forces—See text, page 19.

Biological warfare—Use of disease-spreading micro-organisms or toxins against an enemy; it includes bacteriological warfare which relates only to use of bacterial agents.

Blueprint—As used herein, a blueprint of military establishments consists of the identification, strength, command structure, and disposition of personnel, units, and equipment of all major land, sea, and air forces, including organized reserves and paramilitary; and a complete list of military plants, facilities, and installations with their locations. (See Order of battle.)

Camp—A military post of temporary nature used for quartering, training, or staging troops.

Chemical warfare—The use of chemical agents against the enemy. In this study, only lethal chemical weapons are classified as unconventional. Nonlethal gases, such as tear gas, and smoke and incendiaries are classed as conventional weapons.

Conventional weapon—See text, page 1.

Deployment—As used herein, it refers to the disposition of United States Armed Forces in various areas of the world to meet national commitments and to guard against threats to the United States or its allies.

Depot—A storage and distribution center for supplies or a processing center for personnel replacements.

ICBM—Intercontinental ballistic missile; a rocket-type missile with a range of about 5,000 miles, which has a velocity of 3 to 4 miles a second, travels at an altitude of several hundred miles and carries its own oxygen supply (as distinguished from air-breathing missiles) for fuel combustion.

IRBM—Intermediate range ballistic missile; smaller version of the ICBM, with a range of about 600 to 1,500 miles.

Mass destruction weapon—See text, page 1.

Military—Used as a noun, it refers to the armed forces collectively.

Nuclear material—Material capable of releasing substantial quantities of energy from nuclear fission or nuclear transformation.

Nuclear weapon—A weapon utilizing the force released in the course of a nuclear transformation, either fission or fusion. See Atomic weapon and Thermo-nuclear weapon.

Order of battle—The identification, strength, command structure, and disposition of the personnel, units, and equipment of a military force. (See Blueprint.)

Post—A military location at which troops are stationed.

Radiological warfare—Use of radioactive materials, or of methods resulting in production of radioactivity, against the enemy.

Station—A general term referring to any ground, naval, or air activity of military nature at a fixed land location.

Station list—A complete list of all military units and the stations at which they are located.

Strategy—The overall or master plan by which objectives of national policies are to be secured. National strategy includes the use of political, economic, psychological, and military resources. Military strategy is confined to the use of the armed forces to secure objectives of national policy, either by use of or by the threat of force.

Tactics—The employment of units in combat; in other words, the method by which strategy is implemented.

Thermonuclear weapon—A nuclear weapon depending upon the energy released by the fusion of atoms for its effect. The hydrogen bomb is of this type.

Unconventional weapon—See text, page 1.