

CONFERENCE OF THE EIGHTEEN-NATION COMMITTEE  
ON DISARMAMENT

ENDC/SC.I/PV.47  
6 December 1962  
ENGLISH

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SUB-COMMITTEE ON A TREATY FOR THE  
DISCONTINUANCE OF NUCLEAR WEAPON TESTS

FINAL VERBATIM RECORD OF THE FORTY-SEVENTH MEETING

Held at the Palais des Nations, Geneva,  
on Thursday, 6 December 1962, at 3.30 p.m.

Chairman:

Mr. A.H. DEAN

(United States  
of America)

PRESENT AT THE TABLE

United States of America:

Mr. A.H. DEAN  
Mr. C.C. STELLE  
Mr. D.E. MARK  
Mr. V. BAKER

Union of Soviet Socialist  
Republics

Mr. S.K. TSARAPKIN  
Mr. A.A. ROSHCHEV  
Mr. P.F. SHAKHOV  
Mr. I.G. USACHEV

United Kingdom:

Sir Michael WRIGET  
Mr. D.N. BRINSON  
Mr. R.C. BEETHAM

Deputy Special Representative  
of the Secretary-General:

Mr. W. EPSTEIN

The CHAIRMAN (United States of America): I call to order the forty-seventh meeting of the Sub-Committee on a Treaty for the Discontinuance of Nuclear Weapon Tests.

If no other representative wishes to speak, I shall make a statement in my capacity as representative of the United States.

Before I begin, I should like to take note of the fact that this forty-seventh meeting of the test ban Sub-Committee of the Eighteen-Nation Committee on Disarmament is something in the nature of an anniversary. As Mr. Tsarapkin and Sir Michael Wright will recall, the Conference on the Discontinuance of Nuclear Weapon Tests at the time of its recess last January held its three hundred and fifty-third meeting. Now, if my arithmetic is correct, this is the four hundredth formal tripartite meeting on negotiations to end all nuclear weapon tests. I am sorry to say that this is not a very auspicious anniversary. If someone had told me at the three hundredth meeting that we would still be negotiating one hundred meetings later, I would have replied that I hoped he was wrong. In this connexion, I recall that I myself said at the three hundredth meeting:

"It taxes my imagination to think that the Conference might still be floundering in the same sea of indecision innumerable meetings hence."

(GEN/DIT/PV.300, p.10)

While the length of this Conference is a direct measure of our failure to reach agreement, and therefore a deep disappointment to my government and to me personally, I am reliably informed that the negotiations for the Austrian State Treaty lasted for a similar number of meetings. I sincerely hope that our success can be measured in the same terms as those in which that conference was successful, and that we do not find ourselves here again without a test ban agreement after another 100 meetings.

But we know that the difficulties in Moscow with respect to the negotiation of the Austrian Treaty were not with its terms - that is, with the terms of the Treaty - as Chairman Khrushchev has since made known, but rather were connected with the opposition for political reasons of certain elements in the Soviet Union to agreeing to any treaty at all. We hope that the Soviet Union will realize very soon that a nuclear test ban treaty on sound lines is indeed required to end all nuclear

(The Chairman, United States)

tests in all environments and that it will speedily sign the United States-United Kingdom comprehensive draft treaty (ENDC/58), the terms of which are, I submit, equally beneficial to both sides.

Yesterday, in plenary meeting, a number of interesting and important statements were made. I particularly noted that the representative of Ethiopia took the trouble, in the course of his comments, to point out that paragraph 2 of General Assembly resolution 1762 A (XVII) (ENDC/63) should in effect be considered as a goal of our endeavours (ENDC/PV.87, p.16). Paragraph 3 on a comprehensive treaty, and paragraph 6 on an interim agreement, on the other hand, should be considered as the means for reaching that goal. This seems to me to be a very helpful reading of the intent of the General Assembly and an apt means of clarifying what our purpose here should be - for which we thank the representative of Ethiopia.

In sum, it seems to me that we should all strive for an arrangement by which we could cease all nuclear tests in all environments for ever, under adequate and effective international control. That is the goal which both the United Kingdom and the United States seek. The way of reaching that goal is to agree on a comprehensive and effective treaty which will evolve as a result of a settlement of the remaining differences between the negotiating sides on the effective control of underground tests.

Or, failing this, let us hope we can reach agreement on an interim basis using the United States-United Kingdom partial treaty ban (ENDC/59) accompanied by a suspension of underground tests under "adequate assurances for effective detection and identification of seismic events by an international scientific commission" (resolution 1762A (XVII), para. 6), along the general lines we have proposed in our comprehensive treaty - an agreement which would of course have to be adequately financed and staffed.

In either type of arrangement, whether permanent or interim, there will have to be certain essential features to assure adequate control. Those features will fall into the three important areas of verification inherent in the eight-nation memorandum (ENDC/28) which have been incorporated in our draft comprehensive treaty. To recall these for a moment, I am speaking about an adequate system of observation or detection posts around the world, an international scientific commission, and

(The Chairman, United States)

the necessity for adequate and effective identification by the commission of seismic events through a number of obligatory on-site inspections on the territory of the country in which the unidentified event occurs.

I should like to discuss in some detail what my delegation believes to be the essential features of each of these particular areas of verification. I should like to begin with what has apparently become the most difficult area, that is, the question of obligatory on-site inspections.

My delegation believes, as indeed it seems to me almost all the other delegations here believe, with the possible exception of the Soviet bloc for political rather than scientific reasons, that any truly effective system must include adequate means by which seismic events will be identified - that is, distinguished. This procedure is based upon the premise that all States should be assured that no underground tests are taking place. The only means of which we know for giving that assurance is by providing for adequate and effective identification of seismic events.

This identification could be effected in one of two ways, as my United Kingdom colleague so lucidly pointed out yesterday (ENDC/PV.87, pp. 9 and 10). First, we could look at or identify all of the unidentified events, as seems to me is implied in the eight-nation memorandum. Or, secondly, we could look at only a selected number of these unidentified events on a quota basis, as was originally suggested by the Soviet Union and as is provided in article VIII of our draft comprehensive treaty (ENDC/58).

The reasons why we have to examine the actual geographical site of any unidentified seismic event should be abundantly clear. We now know that it is not possible through seismic means alone to identify, that is, to distinguish from earthquakes, an underground nuclear test. On this even the Soviet scientists, writing in Izvestia of 11 November 1962 (ENDC/67), apparently agree - and this is in fact in accordance with our understanding of what the Soviet scientists do agree.

For these noted Soviet scientists indicate no means of identifying explosions, but rather discuss a number of means which are useful for the identification of earthquakes. We cannot identify explosions seismically because seismometers have no way of distinguishing between all earthquakes and explosions. Rather, seismometers can only indicate that some earthquakes take place. According to our scientific information - and if I am wrong I would be very happy to be corrected - there are generally three possible ways of doing this.

(The Chairman, United States)

First, since nuclear explosions result in an outward movement of the earth around the particular event in all directions from the point of origin, seismometers in all directions should clearly indicate that a compressional wave was formed at the time of the detonation. But, unfortunately for our purposes, there are some earthquakes which also act in this way. On the other hand, a large majority of earthquakes involve movement in some directions at the source of the earthquake, which is inward rather than outward. In the case of these particular earthquakes, seismometers on some azimuths can distinguish this inward or rarefactional motion. These earthquakes with rarefactional first motion, as it is called among seismologists, can therefore be identified by instrumentation.

However, in many cases of small earthquakes and explosions, the signals at the site of a number of seismic observation or detection stations are too small in comparison with the level of normal background noise at the site to determine accurately whether these signals originated with a compressional or rarefactional movement of the earth. So this identification criteria can only point up the existence of some earthquakes, with all other events remaining unidentified.

Secondly, we can also generally determine the depth within the earth at which certain seismic events occurred, but on a world-wide basis we can only do this to within about plus or minus 50 kilometres accuracy. The usefulness of this technique would be expanded if we could determine depth with greater accuracy since normally man-made explosions cannot be set off as deep in the earth as most earthquakes generally occur. Therefore, we can by this technique identify many large, deep earthquakes, but we cannot determine the exact depth of those events which take place within the margin of error of the technique, that is, the exact depth of events 30 to 60 kilometres below the earth's surface. So this technique is useful for identifying those earthquakes which take place at rather large depths, but unfortunately it is not well enough refined at present to discriminate precisely those events which take place below the limits to which man can now penetrate the earth from those above that limit.

One final technique is also useful in solving this problem. Large earthquakes are usually preceded and followed by fore-shocks and after-shocks, and these fore-shocks and after-shocks can usually be identified by their strength and location.

(The Chairman, United States)

With all three techniques it is clear that there will be some residue of unidentified seismic events which cannot be identified by instrumentation. This unidentified residue will include both earthquakes and events which might be nuclear explosions. According to our scientific information - and again I stand subject to correction - the only positive way which is left to identify the remaining seismic events is to examine physically the site of the event.

The occurrence of a nuclear explosion can only be satisfactorily proved by the collection at the site of radioactive debris resulting from the explosion. Again, this collection of radioactive debris can only be satisfactorily accomplished for underground tests by physical on-site inspections. The timing of such inspections after the event is important. Therefore, we believe inspections must be obligatory, and our comprehensive draft treaty, under article VIII, provides for this.

But in order to avoid the problem and the burden of inspecting every such unidentified event, and in order to get agreement with the other side, we have agreed to an annual quota of such inspections, provided only that each side, for reasons of maximum deterrence, is permitted to choose the particular events to be inspected in the territory of the other side. This formula, as my United Kingdom colleague pointed out yesterday, was originally a Soviet proposal and is one which we have adopted as a good way of ensuring that States will be deterred from carrying out underground tests in violation of the treaty.

In sum, therefore, to be workable the treaty must provide for some positive means of identifying those seismic events which could be underground nuclear explosions. Since distant seismic equipment is incapable of identifying explosions, this will have to be done by physical on-site inspection. In order to get agreement with the other nuclear side there may well be an annual maximum quota of such inspections, but the actual choice of events within this maximum quota should neither be random nor subject to chance or political pressures, but rather should follow, in any test ban treaty for maximum deterrence, the actual selection of an unidentified event for on-site inspection by the other nuclear side.

(The Chairman, United States)

The second basic feature which any agreement would have to have is an adequate system for the detection of seismic signals. We know that a number of properly and scientifically placed seismic detection stations, or observations posts, would be needed to record signals from the movements of earthquakes which take place every year around the world. The United States and the United Kingdom have indicated that they believe, on the advice of their scientists - and again we would be glad to discuss this advice with our Soviet colleagues - that the type of system proposed in their draft comprehensive treaty includes provisions for an adequate detection of seismic events. It will be noted that I use the word "detection" and not "identification". We have carefully studied the number of events which would occur annually in the areas of significant interest and we believe our proposals on detection or control posts would ensure a sufficient degree of worldwide coverage, so that significant events would not escape detection.

The United States and the United Kingdom have proposed that there should be substantially fewer observation or detection stations of all types in the Soviet Union than the 19 stations formerly proposed. In addition, they envisage that the worldwide network would be considerably smaller than the 180 stations of all types proposed by the Geneva Conference of Experts (EXF/NUC/28, p. 21). In fact, the worldwide network might consist of as few as 80 stations, provided that adequate locations in good sites could be found and agreement reached on modern instrumentation and the training of personnel.

Observation or detection posts for the detection of underground nuclear tests must be of extremely high quality. Those stations, if they are to be efficient, must be equipped with the latest and best instruments. The stations must be located, on the best scientific advice, in quiet sites or areas - and I cannot stress strongly enough the importance of their location. Most existing seismic stations are not sufficiently well located, from the standpoint of noise ratio, to detect very small seismic events well. In fact, most such detection stations around the world were originally built to study the large earthquakes which cause property damage and which have been of concern to seismologists over the years. Now we are concerned with the spectrum of seismic waves which lies in the smaller magnitude range. To find appropriate locations for such stations requires considerable research.



(The Chairman, United States)

The reason why sites for such stations must be looked for and chosen so carefully is that there are present in the earth's crust small seismic waves, set up by such natural phenomena as the wind and the waves and by such cultural phenomena as railroad, highway and industrial noise. Those noises, called background noises, tend to obscure the signals from such seismic events as earthquakes and nuclear explosions. In the whole of the territory of the United States there are perhaps only one or two existing stations which meet the highest standards of both instrumentation and site location for control posts. Those are, of course, the recent stations built under Project Vela, (see ENDC/45) which the United States is now financing and carrying on in an effort to improve the ability of those stations to detect and identify nuclear explosions. For this reason our draft treaty provides for the construction of new national stations as well as for the use of existing stations. The new stations would be constructed in regions where they were necessary to fill gaps in existing systems and also in places selected for their quiet location.

It is also clear that the loss in quality in accepting stations in less quiet locations could not necessarily be made up by increasing the number of poorly located stations reporting to the system. In the United States-United Kingdom draft treaty primary reliance would be placed on newly constructed national stations, for precisely the reasons which I have outlined. Preliminary surveys conducted by the United States in Project Vela show in fact that large numbers of existing stations throughout the world would not be adequate for the task, even if they were re-equipped with modern instrumentation.

Nevertheless, those existing stations, if properly supplemented by the new national stations I have just described, would be useful for two major tasks, as we see it. First, they would help to fill in the gap in the time period when new national station sites were being selected and the stations built and put into operation. In our draft treaty we have proposed that those stations should be relied upon for approximately six months in the early life of the treaty - a period to begin six months after the entry into force of the treaty and to last until the new stations were finished, which would be twelve months after the treaty's entry into force (ENDC/58, art.VII, para.3). Secondly, the existing university and government stations would serve as a useful supplement in cases where the additional data which they might have collected could be used in the evaluation of a particular event.

(The Chairman, United States)

The new stations, on the other hand, would be funded by the international commission and built to commission specifications, and their personnel would be trained by the commission. Those stations would, however, be nationally manned and operated under international supervision. The new national stations would have to be located in very quiet areas or sites to ensure maximum operating effectiveness.

There is also provision in the United Kingdom-United States draft treaty for such international stations as might be deemed necessary by the commission and agreed to by the parties or governments concerned (ibid, para.1). Internationally manned and operated stations might be useful in the further promotion of international co-operation in seismic research and in training seismologists from less well developed areas, so that national seismic services might be begun or up-graded. It would be necessary also to continue programmes of seismic research for improvement in the detection system, and those research programmes might well be facilitated by the addition of several new truly international stations to the network.

In addition, seismic data will need to be reliably and accurately reported. A functioning network of posts must act as a system, and to use the words in the eight-nation memorandum, there must be "continuous observation" (ENDC/28, para. 3). This phrase means that stations in the main system will have to report around the clock the continuous observations which they make. While reports flow into the international scientific commission headquarters, there will also be a need for arrangements to provide for a two-way flow of information. In order to analyze data properly, the commission will also need to know the types of instruments on which the data has been recorded. In addition, the report will have to be processed on a rather rapid and continuous basis so that unidentified events can be picked out from the mass of other data for possible selection for on-site inspection.

The question of the use of automatic seismic stations has been suggested. In contrast to the seismic arrays which will most likely be installed at the new nationally manned detection stations or observation stations, these automatic seismic stations might prove to be a supplement rather than a replacement for the necessary manned stations.

(The Chairman, United States)

Arrays, we have found, are superior to automatic stations in that they have the advantage of combining the output from a number of stations while at the same time effecting a certain cancellation of the background noise. Under normal circumstances, a ten-element array should increase the signal-to-noise ratio by about a factor of three and detection capabilities in the first seismic zone by approximately a factor of 1.5 in distance. Similarly, an array station at only an average location in terms of background noise would be as good as one could reasonably expect the best automatic station to be.

Finally, because of the combination of several recording instruments as compared with a single instrument in a "black box", we have found that arrays give much more confidence in the quality and reliability of conclusions drawn about a particular signal. For example, a single weak pulse showing on a "black box" instrument could well be in doubt. But if one also has the confirmation of having recorded the same signal on the several instruments of an array, then interpretation should be much more reliable.

Nevertheless, there will be important problems to be considered in connexion with the possible linking electronically or by electrical cable of automatic stations with manned array stations. Perhaps a certain number of automatic stations will be useful in recording aftershocks of earthquakes, which, as I have already indicated, is a promising means of assisting in the identification of earthquakes and distinguishing them from nuclear events.

Work will also have to go forward on the problem of calibrating any automatic stations which we might find useful to incorporate into an overall control system. This will be a particularly difficult problem to solve, as will that of ensuring that the automatic stations are properly located. We have asked the Soviet delegation for its answers to such questions and we hope it is studying the answers to these questions; until we are able to see a little more clearly what its proposal might involve, it will be extremely difficult for us to reach a meaningful evaluation of it.

Nevertheless, I should like to emphasize at this point that nothing we have seen or read or which our scientists have seen or read leads us to believe that automatic stations can be used to replace a system of manned control posts with suitable arrays of seismic instruments, or to reduce significantly the number of necessary, obligatory on-site inspections required to identify seismic events.

(The Chairman, United States)

It thus seems from my review of the control system that an adequate control system must satisfy several important parameters: first, with regard to individual stations, there must be a number of high quality stations at quiet sites. These stations for the most part just do not exist at the present time. Use should also be made of existing stations to supply supplementary data and these stations, in some cases, could be upgraded and incorporated into the system. There would have to be a uniformly high quality of instrumentation. The posts would have to be manned by able, well-trained local nationals and would be operated on a standardized and internationally co-ordinated basis. Stations should operate instruments continuously.

Second, with regard to the system, there must be a communications network for the interchange of information. Standard reporting forms would be necessary and all data must be adequately centralized for rapid processing and analysis.

These particular specifications would apply to any system of detection stations for the monitoring of nuclear weapon test cessation in the underground environment. Such a system would be built and based on existing networks wherever possible, but would involve a high degree of international co-operation and supervision.

The third area which I would like to examine for a moment is the international commission, which will be the central governing body for a test ban control organization. Such a body will be charged with the paramount responsibility for ensuring the proper functioning of the overall control system. This commission will be concerned with the appointment of officials, the raising of finances, the processing and evaluating of data, the issuing of necessary reports and the appropriate relations with the United Nations and with the parties to the test ban treaty.

In addition, we believe that basic to any commission's task should be the question of assuring that truly objective research is conducted at all times and that the results of such objective research are properly incorporated into the system as rapidly as possible.

All those general principles underlying the areas of an effective verification system which I have just discussed are, I believe, suited to any type of agreement we may reach concerning a cessation of underground tests.

(The Chairman, United States)

Those principles would have to underlie any permanent arrangement on testing into which we might enter. At the same time, similar principles of effective detection and identification of seismic events would also have to be followed, my government believes, in the solution of the question by an effective interim agreement. This position of my government does not, of course, mean that the exact modalities would have to be precisely the same in each case, nor does it mean that the size and scope of the control system as it relates to the environments other than underground would necessarily have to duplicate in all phases in an interim agreement the features of a permanent arrangement. But the imperative is clear, and that is that effective control under this system be assured at all times either in an interim arrangement or a permanent arrangement.

Yesterday the representative of the United Kingdom made some very important points in regard to what the United States and the United Kingdom would be able to accept and what they would not be able to accept (ENDC/PV.87, pp. 4 et seq.). In my statement today I have talked of the principles underlying any effective control arrangement, and, by way of example, I have mentioned and discussed particular modalities of control. Certainly, it is clear that the Soviet Union now has before it the four alternative arrangements for reaching agreement set forth yesterday by the representative of the United Kingdom (*ibid.*, p.13). Those alternatives are: first, a comprehensive treaty without on-site inspection, if the Soviet Union can produce clear and satisfactory scientific evidence that all underground events can indeed be satisfactorily identified by existing national detection systems; second, the United States-United Kingdom comprehensive treaty (ENDC/58) with its minimum amount of necessary control, together with the continuation of additional necessary seismic research; third, the United States-United Kingdom partial ban treaty (ENDC/59) together with the interim arrangement for effective detection and identification recommended in paragraph 6 of resolution 1762A (XVII); fourth, a partial ban treaty, as suggested by the United Kingdom and the United States, to stop tests in the atmosphere, in outer space and under water, while negotiations continue for an effective cessation of underground tests along the general lines of the draft comprehensive treaty.

The United States and the United Kingdom would prefer, of course, to ban all tests in all environments for all time under effective international control along the lines of the draft comprehensive treaty. The Soviet Union can accept any one

(The Chairman, United States)

of those alternatives or can choose several for further exploration or further scientific research and for further discussion if it wishes to discuss them in detail with us. But only in this way, through a careful exploration and discussion of the issues so cogently set forth in the statement of the United Kingdom and along the general lines of the United States-United Kingdom draft comprehensive treaty, can we hope to make progress. We can then break free of the curtain of silence which the Soviet Union seems to have dropped over all of the answers to our many carefully framed questions, answers which we need in order to begin real negotiations. I submit that now is the time to lift that curtain and to get on with negotiation.

Sir Michael WRIGHT (United Kingdom): In my statement yesterday in the plenary meeting I outlined in some detail and in the most friendly manner to our Soviet colleague four alternative forms of agreement, any of which, in the view of the United Kingdom, would be within our grasp to conclude before 1 January 1963. Today, Mr. Chairman, you, in your capacity as representative of the United States, also have spoken of those four alternatives, and I think it must be clear to our Soviet colleague that those four alternatives, in so far as the United Kingdom and the United States are concerned, are open to his government.

We are approaching now the date on which we have to report the results of our negotiations to the United Nations General Assembly, and only three weeks beyond that we shall arrive at the date of 1 January 1963. It is my hope that our Soviet colleague, after having heard the statement of our Chairman on behalf of the United States and my own statement, finds himself today in the position to give us a positive response to what we have offered to him. I should like to ask him to give us the favourable word which I await and which I know that our Chairman, as representative of the United States, is also awaiting. Depending upon his reply, I might wish to make some further remarks.

Mr. TSARAPKIN (Union of Soviet Socialist Republics) (translation from Russian): Today, speaking as representative of the United States, you re-stated your old position which is unacceptable to the other side. You again insisted on compulsory inspection and an international system of control. We are most

(Mr. Tsarapkin, USSR)

disheartened by this. It shows, moreover, that the western Powers are not prepared to come to an agreement on the prohibition of nuclear weapon tests in all environments. We are compelled to note this with great regret, especially as the western Powers now have before them four possibilities of quickly reaching agreement on a mutually acceptable basis. I emphasize, on a mutually acceptable basis.

The first possibility is to conclude a comprehensive agreement on the basis of the eight-nation memorandum (ENDC/28) which provides for the use of national detection systems.

The second possibility is to reach agreement on the basis of a partial treaty about which the United States speaks (ENDC/59), providing for the cessation of nuclear weapon tests in the atmosphere, under water and in outer space, with an addition to the effect that side by side with this partial agreement the States shall assume obligation under the treaty not to carry out underground tests either while negotiations on the cessation and prohibition of underground nuclear weapon tests are in progress and until this agreement is concluded between us.

The third possibility - acting in accordance with paragraph 2 of resolution 1762A (XVII) (ENDC/63) adopted by the General Assembly on 6 November 1962 - is to cease all nuclear weapon tests and to continue negotiations between ourselves with the aim of achieving agreement on a comprehensive treaty prohibiting all nuclear weapon tests and all nuclear explosions. Consequently, here again there is a perfect possibility of coming to an agreement and continuing our negotiations for a comprehensive treaty in an atmosphere of calm.

The fourth and final possibility is to agree on a comprehensive treaty on the basis of the use of national means of detection in combination with automatic stations, about which we have already spoken on several occasions.

These four possibilities are open to the western Powers and we hope that they will change their rigid and intransigent position, will take a step forward and will agree to one of these possibilities which would lead to agreement being reached on mutually acceptable conditions, on conditions acceptable to both sides. What we have been talking about to-day is purely your position, the position of the western Powers, on which you have been insisting since 1958 and on the basis of which it is impossible to reach agreement no matter how many meetings we hold with

(Mr. Tsarapkin, USSR)

you here. I am sure that another four hundred meetings, and various other anniversaries such as the one you noted to-day, are likely to go by. If you continue insisting on these demands which are utterly unacceptable to the other side, we may well have eight hundred meetings with you here, perhaps even a thousand, I do not know how many more, but there will still be no agreement on the cessation of nuclear weapon tests. It is necessary to seek for mutually acceptable solutions. At present I should like to emphasize once again, we have a very peculiar situation. On the one hand, there is no longer so great a gulf between us; we are divided only by our disagreement on the question of underground nuclear weapon tests. We have already a common viewpoint, since you have now admitted the correctness of the point of view of the Soviet Union that nuclear weapon tests, nuclear explosions in the atmosphere, under water and in outer space, can effectively be recorded and identified by means of existing national systems and that for this purpose there is no need for any international system of observation, any inspection or any on-site verification.

At present the only disagreement between us is on the question of underground nuclear tests. This difference is not so great, and we are prepared to make a move to meet you, although we believe that we could reach agreement on underground nuclear explosions as well with the use of national detection systems without any additional means of control, and it is only in going forward to meet you that we propose the establishment of additional means of control in the form of automatic seismic stations. It is a queer business: we made this proposal, not because we needed to do so - we can sign an agreement to-day even without automatic seismic stations - but in order to meet you, yet we met, on your part, with what I would call such a testy reaction. You immediately rejected this proposal, in which we are not so particularly interested, but which we put forward merely in order to meet your position in regard to increasing the effectiveness of control. Your reaction to our proposal for automatic stations surprised us to the utmost, but on the other hand this reaction of yours to our proposal for automatic seismic stations shows that the western Powers are not interested in any form of control if it does not entail the dispatching of on-site inspection teams with foreign personnel. If there is the possibility of sending foreign agents into the



(Mr. Tsarapkin, USSR)

territory of the Soviet Union, then this is acceptable to the western Powers, but if we propose some other means of control which would increase the effectiveness of control but would not entail the sending of foreigners into the territory of the Soviet Union, you reject it, you express doubts, you find a dozen different pretexts in order to minimize the value of this proposal, and so on. But this shows once again that the only thing you are really interested in is in sending foreign personnel into the territory of the Soviet Union. You are not interested in these means of control which would increase its effectiveness, but would not require the sending of foreign agents into the territory of the Soviet Union in the guise of controllers or inspectors.

I should like once more to emphasize that the western Powers have before them the four possibilities which I have just mentioned. These possibilities are open to you. You can take any one of them or any combination of them, just as you wish. All that is required now is good will on your part. If you show this goodwill, political wisdom and farsightedness, then, of course, the way to a mutually acceptable agreement will be open.

Sir Michael WRIGHT (United Kingdom): I do not know whether it was my sorrow or my astonishment that was greater as I listened to the statement which has just been made by the representative of the Soviet Union.

In the first place, I made the same appeal to him yesterday as we made at the United Nations General Assembly in New York to Mr. Zorin (A/J.1/PV.1250, p.26), namely, to give - either to us or, if the Soviet Government feels some hesitation about that, through the Secretary-General of the United Nations - the knowledge, which both Mr. Tsarapkin and Mr. Zorin have publicly claimed that the Soviet Government possesses, of how to identify all underground events. Mr. Zorin was silent in response to my appeal. Mr. Tsarapkin is also silent in response to my appeal. I can only note that with regret.

Secondly, if I heard Mr. Tsarapkin correctly, he said that the western Powers, the United States and the United Kingdom, were turning down, or had turned down, the Soviet proposal concerning the "black boxes".

(Sir Michael Wright, United Kingdom)

I do not know how Mr. Tsarapkin can reconcile what I understood him to say with my own statement of yesterday. I will read again one or two extracts from that statement. I said:

"By all means let us discuss the possible use of 'black boxes' and see whether it may help to narrow the gap between the two sides and to reduce the requirements both for the use of conventional detection stations and even, perhaps, for the number of on-site inspections."

(EMDC/PV.87, p.13)

I went on to say:

"I should like, therefore, formally to propose that a meeting be convened of competent experts from the West, from the Soviet Union and, if desired, from other countries which have such experts to examine where and how far the use of 'black boxes' could be helpful in improving means of detection and identification. If there is a hope of making progress in this way, do not let us throw it away. Even without a meeting of experts, we are prepared to go into this matter with the representative of the Soviet Union as thoroughly as we can do without experts to help us." (ibid.)

Those were my words yesterday. Now it is possible to reconcile with those statements what I thought I heard Mr. Tsarapkin say to the effect that we refused discussion or consideration of the "black box" proposal is absolutely beyond my comprehension.

Next, I noted that the Soviet representative put forward what he said were four alternative possibilities for reaching agreement by 1 January 1963. I listened to them attentively - and, of course, I will examine them carefully when I see the verbatim record - but as I heard them they all seemed to have one thing in common, and one most remarkable factor in common, namely, that all four of them were in contradiction to paragraph 1 of General Assembly resolution 1762 B (XVII), or to paragraph 6 of General Assembly resolution 1762 A (XVII) (EMDC/63). As I heard them, each of his four alternatives was directly contrary to the resolution which the United Nations recently passed.

(Sir Michael Wright, United Kingdom)

I was even more astonished when he went on to say that the factor which was common to the western offers represented a purely western position. Far from representing a purely western position, the factors which underlie our four offers represent the views of all those countries which voted in the General Assembly for resolutions 1762 A and B (XVII).

So much for any helpful or constructive aspect of what our Soviet colleague has just said to us. So far from being helpful and constructive, I am afraid I find it disappointing and negative, and for that reason I am bound to make some additional remarks which I had hoped it would not be necessary for me to make today.

These remarks are inspired by the thought that in operative paragraph 5 of resolution 1762 A (XVII) we have been called upon by the United Nations General Assembly "... to negotiate in a spirit of mutual understanding and concession in order to reach agreement urgently, bearing in mind the vital interests of mankind;".

I have been casting my mind back in order to recall the attitude which the Soviet Government has been taking in this matter since we assembled here at the beginning of the Eighteen-Nation Conference, and to see how far that attitude matches the attitude which is enjoined upon us by the United Nations. I do not want to go into too great detail, but I am constrained at least to say this. We came here in March 1962 prepared to negotiate on the basis of our draft treaty of April 1961 (ENDC/9) as modified to meet Soviet objections. The Soviet representative refused. We offered to negotiate either about the details or about the main principles involved in the eight-nation memorandum. The Soviet representative refused to engage in such negotiation. He continues to refuse now, even in the light of some of the interpretative comments made during the last few meetings by some of the sponsors of the eight-nation memorandum. We carried out research without Soviet co-operation - co-operation for which we had asked, but which was refused - and on the basis of that research we produced a new draft comprehensive treaty on 27 August last (ENDC/58). We did not put it forward on a take-it-or-leave-it basis. We offered to negotiate upon it. The Soviet representative refused. We offered as an alternative, and as a step towards a comprehensive treaty, a draft partial treaty (ENDC/59), and we offered to negotiate on that. The Soviet representative refused. We offered to discuss in detail

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Soviet objections to international on-site verification, and to do what we could to meet them. The Soviet representative refused. We offered to discuss in detail the information available to us and to the Soviet Union about the capability of existing detection stations. The Soviet representative refused. We have offered to discuss the possibilities inherent in the use of "black boxes". The Sub-Committee has heard today the refusal of the Soviet representative to pursue my offer of yesterday to conduct such discussion. Finally, we have offered to discuss the suggestions put forward for an interim agreement covering underground tests in the terms of paragraph 6 of resolution 1762 A (XVII). The Soviet representative has refused.

In the last few months that we have been here this makes at least a total of eight plain, blunt, categorical "Noes" - categorical "Nyets" - from the Soviet Government to constructive initiatives on our part. Moreover, these refusals have not been accompanied by any real attempt on the part of the Soviet representative to justify them. On the contrary, they have been accompanied by sweeping and unsubstantiated statements about the arms race, about warmongering in the West, and about a great many factors totally outside the scope of our discussions here and totally unjustified.

I feel constrained today to put this situation clearly on the record. We know of course that the Soviet Union finds the concept of international inspection on Soviet territory difficult to accept. We understand that this objection is based on a fear of espionage - we do not share it, but we understand it - and that is why we on our side have taken these arguments of the Soviet Union seriously into account and have attempted to meet them as we shall go on attempting to meet them. What disturbs us and discourages us so profoundly is the way in which our efforts are brushed aside. How can we draw any other conclusion but that the Soviet Union does not - at any rate for the moment, and I hope it is only for the moment - want a test ban treaty?

I will not repeat at any length what I said yesterday about our position, which I think is in such striking contrast to the record of the Soviet Union, but I would repeat, as the United States representative has repeated today, that there lie before us alternatives which are plainly in accordance with the views expressed by

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the overwhelming majority of the United Nations General Assembly, proposals which would enable us to meet the deadline we have been asked to meet and which would give us an agreement by 1 January 1963. I think it is not too much to ask of a Government which has claimed to support so wholeheartedly the objectives for which the United Nations stands that it comply with these United Nations resolutions and accept the alternatives based upon them which we are offering in an attempt to meet the deadline before us.

Mr. TSARAPKIN (Union of Soviet Socialist Republics) (translation from Russian): The representative of the United Kingdom has just told us that his delegation, his government, is striving for an agreement on the cessation of nuclear weapon tests. I have never heard the United Kingdom representatives state anything else and, indeed, it would be strange to hear them state anything else here. Of course, you have to shout that you want an agreement. But your position, your actions and your demands that an agreement should give you a guarantee of compulsory inspection and an international system of control completely expose you as the opponents of an agreement.

Even in regard to automatic stations. You have just said, Sir Michael, that you do not reject this idea, but, on the contrary, you accept it. How do you accept it? You yourself have just quoted something that is just the opposite of what you say. You have just quoted from your statement of yesterday that you are prepared to discuss the proposal for automatic seismic stations and see to what extent these "black boxes" might reduce the number of control posts and, perhaps, the number of inspections and that a meeting of experts be convened for this purpose and so on. Again you tack on to this proposal inspection and international control and thereby you completely reduce to nought the aim which this proposal pursues. You switch even this proposal on to the rails of your old position, namely, compulsory inspection and international control. The representative of the United States said the same when he told us today, as he had told us before on many occasions, that automatic seismic stations can only be a supplement to the system proposed by the western Powers and not a replacement for it. This means that automatic seismic stations can be accepted by you for the equipment of the control system only together with and as an integral part of your system, which is based on compulsory inspection and international control posts.

(Mr. Tsarapkin, USSR)

This is your position. The core of your position remains just as unacceptable. You have maintained this position since 1958. This position of yours kills any possibility of reaching agreement on a mutually acceptable basis.

In its resolution 1762 A (XVII) the General Assembly called on the nuclear Powers to conduct constructive negotiations, that is to negotiate in a spirit of mutual understanding and concession. The Soviet Union has shown goodwill and made a great concession. We accepted the compromise proposals contained in the eight-nation memorandum as a basis for negotiation. This means that, if you too accepted the eight-nation memorandum, we should conclude an agreement, and we could have done this long ago on the basis of a national system of control without compulsory inspection. However, the western Powers decline such an agreement and this method of solving the question has, in fact, been rejected by you.

We have agreed to the western proposal for a partial treaty, but we have just one request to make of you: merely to add to this partial treaty the provision that while negotiations on the prohibition of underground nuclear weapon tests are in progress the States shall assume the obligation not to conduct underground nuclear explosions. That is the gist of our request. What we should like is that while these negotiations are going on, and until we conclude an agreement on the formal prohibition of underground nuclear tests as well, we should not be negotiating here on the cessation of nuclear tests to the accompaniment of the ominous thunder of underground nuclear explosions. Let the earth go on revolving quietly in space. Let it not be disturbed by nuclear explosions at great depths. But you have rejected this proposal of ours also, although it is completely in accord with paragraph 2 of resolution 1762 A (XVII). Therefore, when you reject this proposal of ours, you are also rejecting paragraph 2 of the resolution which was adopted almost unanimously on 6 November. You are taking upon yourselves a great responsibility when you reject this humane and mutually acceptable proposal of the Soviet Union.

You refuse to agree to implement paragraph 2 of the resolution as it stands, without linking it to any conditions. The nuclear Powers are bound to give effect to this paragraph of the resolution and to carry on their negotiations until they reach a mutually acceptable agreement. You refuse also to do that. Finally, you

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refuse to make use of the proposal for automatic seismic stations. I have already explained how you do this. You do it by linking this proposal with the demand for inspection and international control. Thus you reduce to nought this proposal as well. As a matter of fact, the position which you maintain, the phraseology which you use, your arguments on technical subjects and so on, all this is set going especially for the purpose of somehow creating a smoke-screen around your negative position in regard to the cessation of all nuclear weapon tests for all time. We have already told you repeatedly that United States instruments - I mean, above all, seismic instruments - are not inferior to Soviet instruments. In trying at all costs to secure inspection, United States specialists, as well as the political representatives here, are continually throwing exaggerated doubt in their statements on certain technical aspects of an agreement on the cessation of tests. You take hypothetical difficulties created by your imagination for realities, and you try to make out that they are really existing difficulties.

All this taken together creates, of course, an extremely unfavourable atmosphere for our negotiations. In this respect, the United Kingdom representative is particularly zealous. He has aggravated the atmosphere of the negotiations to the extreme, as well as the language which is used in our discussions, and he even tries to make accusations against the Soviet Union. For instance, the United Kingdom representative has just listed eight refusals on the part of the Soviet Union. All this is a purely demagogic performance, Sir Michael. That is how everyone understands it. You could scrape together another twenty-eight or even one hundred and twenty-eight such refusals which are irrelevant. You take your position which is absolutely unacceptable to the Soviet Union, you divide it into separate elements and you say that the Soviet Union rejected this and that element; you say that it has made eight refusals, but in fact they are all elements of your unacceptable position. All that we have rejected relates to inspection, which is unacceptable to us. You can divide your position into one hundred and twenty-eight elements and reckon up that we have rejected one hundred and twenty-eight elements. But everyone will understand that you are juggling, Sir Michael. We reject one thing. We reject your claim in regard to inspection. We reject your claim in regard to international control posts. No matter how you divide this into separate elements, it will be of no avail, Sir Michael. You will not surprise anyone by doing this, but you will unmask yourself.

Sir Michael WRIGHT (United Kingdom): I note with regret the statements of the Soviet representative, but I am more than content that his remarks and mine at yesterday's plenary meeting and at this present meeting of the Sub-Committee should stand on the record.

The CHAIRMAN (United States of America): If no other representative wishes to speak, I will make some brief remarks in my capacity as representative of the United States.

It seems to me abundantly clear that the delegations of the United Kingdom and the United States have said, and I think I can repeat it - but if the representative of the United Kingdom did not say so today he will correct me - that we are quite prepared to sit down with our colleagues from the Soviet Union and negotiate our comprehensive draft treaty (ENDC/58). We are also quite prepared to bring our scientists here and to explore all means and methods for detecting and identifying seismic events and trying to work out ways and means of actually identifying a seismic event short of physical on-site inspection - which, according to the advice of our scientists, will always be necessary with respect to a certain residue in each year of unidentified events. We are quite prepared to sit down with our Soviet colleagues and examine the existing national systems, the instrumentation of those systems and the personnel.

It may be that I did not understand his words correctly, but I understood my Soviet colleague to say that the eight-nation memorandum provides only for the setting up of a system on the basis of existing posts. Of course, the second sentence of paragraph 3 of that memorandum reads:

"Such a system might be based and built upon already existing national networks of observation posts and institutions, or if more appropriate, on certain of the existing posts designated by agreement for the purpose together, if necessary, with new posts established by agreement." (ENDC/28)

The last sentence of that same paragraph reads:

"Improvements could no doubt be achieved by furnishing posts with more advanced instrumentation." (ibid.),

as I tried to indicate in my first statement today.



(The Chairman, United States)

As to the Soviet representative's statement that the eight-nation memorandum provides only for on-site inspections by invitation, I would point out to him that the second sentence of paragraph 4 reads:

"This Commission should be entrusted with the tasks of processing all data received from the agreed system of observation posts and of reporting on any nuclear explosion or suspicious event on the basis of thorough and objective examination of all the available data." (ibid.)

The next sentence reads:

"All parties to the treaty should accept the obligation to furnish the Commission with the facts necessary to establish the nature of any suspicious and significant event." (ibid.) -

that is, all parties to the treaty should accept the "obligation" to furnish the commission with the facts necessary.

Paragraph 5 reads:

"Should the Commission find that it was unable to reach a conclusion on the nature of a significant event, it would so inform the party on whose territory that event had occurred, and simultaneously inform it of the points on which urgent clarification seemed necessary. The party and the Commission should consult as to what further measures of clarification, including verification in loco, would facilitate the assessment." (ibid.)

As I read the words "including verification in loco", they are supposed to mean the same thing as a physical on-site inspection.

The last sentence of paragraph 5 reads:

"The party concerned would, in accordance with its obligation referred to in paragraph 4 above, give speedy and full co-operation to facilitate the assessment." (ibid.)

This, as I have just said, might include "verification in loco" pursuant to the obligation of the party to give speedy and full co-operation to facilitate the assessment.

As I read paragraph 4, the last sentence has nothing to do with the fact that the party is under obligation to invite the commission to make an on-site inspection; that last sentence merely means that if a party itself wishes to clear its own good name it could invite the commission; but I do not read the last sentence of

(The Chairman, United States)

paragraph 4 as subtracting from the obligation on the party to invite the commission to make an on-site inspection. I think I am correct in saying that quite a number of the eight non-aligned countries read the memorandum in the same way.

As to these automatic stations, to which I also adverted in my statement today, we are quite prepared to sit down and to discuss them with our Soviet colleagues. I have already, at various meetings, asked them a number of questions about these automatic stations, and their sole answer so far, as I recall it subject to correction, is that we should agree on them in principle, and that then, after having agreed upon them in principle, we could discuss the details.

An old colleague of mine once said that when you agreed to something in principle, you agreed, for example, that somebody, somehow or other, would borrow some money. You did not know who, you had not agreed on the interest rate or what property would be pledged for it or when it would be paid back, or how, or in what kind of currency, but otherwise you had agreed in principle.

As I say, we are quite prepared to study these automatic stations. I have been trying to get a good deal more information from our scientists and from the scientists of the non-aligned States which are new to this Conference. I have been trying to find out what kind of arrays of seismometers, or how many, would be put into one of these automatic stations, and how much they would weigh. I am told that perhaps each automatic station would weigh from 4,000 to 5,000 lb., and that we would have to know whether there would be airfields in the Soviet Union where the aircraft which would carry these automatic stations to their sites and take them back to the headquarters in Vienna for processing could land, and whether there would have to be hoisting equipment there to unload them and to put them into place.

Again, I have been looking into the question whether, in trying to find the best place for the location of these automatic stations, it might not be possible to place some of them in the most desirable parts of the Soviet Union because of the noise ratio, because of snowfall, because of conditions in the spring, because of temperature, because of lack of roads, or as I have said, because of lack of suitable airfields. I have been trying to determine also whether one or more of these automatic stations ought to be connected electronically or by electric cable with one or more of the other detection or observation posts, and so on.

(The Chairman, United States)

According to the information we have received from our scientists so far, it would seem that these automatic stations would materially complicate the system. They would, I am informed, make the system considerably more expensive, and, except perhaps in the case of a small number of earthquakes with respect to the criteria of first motion, would not add materially to solving the problem of identification. In fact, taking into consideration the manpower and the expense involved, the work could be done on a much more efficient and effective basis by a small number of observation posts placed in quiet locations with modern instrumentation and properly trained personnel. Those detection stations, so instrumented and so located, would provide a more efficient system and perhaps, after they had been experimented with for a number of years, might even eventually be more efficient in cutting down the number of actual physical on-site inspections that might have to be made.

I am not approaching these automatic stations in any dogmatic sense or in any sense of suggesting that we know the answers relating to them. Our scientists tell us that, as things stand at present, they do not think they would be a substitute for modern array stations because it would be possible to have many more arrays in a normal station than would be possible in one of these automatic stations. It is my further understanding that if anything were to happen to any of these automatic stations, and if for any reason they were not vertical, they might not work very effectively, and in their ability to identify certain signals, if they comprised only single seismometers as against an array of seismometers, they would not be as efficient.

But let me be clear. As far as we are concerned, we are quite prepared to bring our scientists here, as I understand the United Kingdom is, to discuss this whole question of automatic stations until we have fully explored it with the scientists from the Soviet Union. We do not intend in any sense to be dogmatic or in any sense to lay down the law with respect to these automatic stations. We are quite prepared to discuss our scientific evidence. We are quite prepared to discuss the draft of our comprehensive treaty. We think it is correct, but if the Soviet representatives can prove to us that the theories on which it is drafted are not correct, we are quite ready to listen to any additional scientific data that they may wish to adduce.

(The Chairman, United States)

We do believe that on the basis of our Project Vela, of the work done by United Kingdom scientists and our own scientists, we have produced a draft treaty providing for a relatively small number of detection stations and a relatively small number of on-site inspections which, as I have said before, we are quite willing to apportion between seismic and aseismic areas on the territory of the Soviet Union. We are quite willing to listen to anything within reason which will enable us to get together on this question of how we can sign a comprehensive treaty which will ban all tests in all environments.

Since we first submitted our draft treaty (HEC/9), on 13 April 1961, we have made a large number of changes. There was the so-called veto list (GEN/HE/29). We understood that if that were met the Soviet Union would be willing to sign, and I submit we have met that veto list in so far as it can be interpreted on any reasonable basis. And there was the fact that the original treaty did not apply to those seismic events which registered on the seismic scale of magnitude below 4.75. It was indicated to us that if that threshold could be removed, a major obstacle to signing the treaty also would be removed. That threshold has now been removed. There were various representations made to us with respect to the appointment and the removal of the administrator. The views of the Soviet Union have been met on those counts, as indeed they have on the count of equal representation on the scientific commission, and on a number of other points.

We still have to work out this question of how the treaty would be financed. We have made a proposal to the Soviet Union on that score which, to the best of my recollection, it has so far not answered. I do not quite see how we could be any more open-minded or any fairer than we have been, and how it could normally be expected that we would be willing to sit down here and to agree in principle upon the working of automatic stations, without having both the Soviet scientists and our own scientists here to advise us what is the latest and most advanced scientific knowledge in this field. That is something which I do not really believe any of the eight non-aligned nations, or indeed any reasonable person, could logically expect either the United Kingdom or the United States to do. But in so far as there is any reasonable basis or any reasonable method of negotiation, the United Kingdom and the United States are quite prepared to conduct such negotiations.

Mr. TSARAPKIN (Union of Soviet Socialist Republics) (translation from Russian): The representative of the United States has just said that in his opinion the eight-nation memorandum states that the observation system could be organized not only on the basis of the existing national networks of observation posts and institutes but also on new posts. We do not deny this. We have already told you repeatedly that we could agree, if necessary, also in regard to new additional posts.

We consider, however, that these new posts would be national posts. They would be part of the national observation system, but **would not at all have any special international status.** That is my first remark.

My second remark concerns the attempts of Mr. Dean to make out that the eight-nation memorandum provides for obligatory inspection. Such an assertion is not in accordance with the actual text of the memorandum. So that there should be no particular disagreements with you about the text, I shall read out the appropriate passages of the text of the memorandum in English. Paragraph 4 contains the following obligation:

(continued in English):

"All parties to the treaty should accept the obligation to furnish the Commission with the facts necessary to establish the nature of any suspicious and significant event." (ENDC/28)

(continued in Russian):

Further we read:

(continued in English):

"Pursuant to this obligation the parties to the treaty could invite..."

(ibid.) It is not "should invite": it is "could invite".

(continued in Russian):

It is not for me to teach you English. It is quite clear that there is no obligation that inspection should be compulsory.

Let us take paragraph 5 - and again I shall read it in English:

(continued in English):

"... should consult as to what further measures of clarification, including verification in loco, would facilitate the assessment." (ibid.)

(Mr. Tsarapkin, USSR)

(continued in Russian):

There is one more phrase:

(continued in English):

" ... would, in accordance with its obligation referred to in paragraph 4 above ..." (ibid.)

And paragraph 4 above reads:

" ... the parties to the treaty could invite the Commission ..." (ibid.)

That is all. It seems to me it is quite clear.

(continued in Russian):

I should like once again to draw your attention - in particular the attention of the representative of the United Kingdom - to the fact that the Prime Minister of the United Kingdom, Mr. Macmillan, speaking in the House of Commons, formulated an assessment of the eight-nation memorandum and in the course of this assessment he pointed out that this memorandum did not provide for obligatory inspection. Those were the words of the Prime Minister of the United Kingdom. I have already quoted them here. You can read them in the verbatim record (ENDC/SC.I/PV.15, p. 18). Therefore, it is quite definitely understood that the eight-nation memorandum does not envisage compulsory inspection.

I have another remark to make. The representative of the United States said in regard to automatic seismic stations that before giving its agreement in principle the United States would like to know various details concerning the size of these automatic seismic stations, their weight, whether the size or external shape of the seismic stations would cause difficulties in loading and unloading, the places where they would be located, what the temperature would be in these places (I do not know whether he is referring to the mean annual or mean monthly temperature), also whether there may be deep snow in these places, whether there may be a lack of roads, what possibilities there would be of connecting these stations electronically or by electric cable or with some other posts. I should like to ask Mr. Dean how these purely technical details can prevent him from saying "Yes, we accept your proposal in principle. Now let us record this agreement with you and let us discuss certain technical details which need to be agreed upon." If you were to act in that way, that would be really businesslike negotiation and we would soon be able to reach agreement.

(Mr. Tsarapkin, USSR)

I do not exclude and apparently, it will surely turn out, that when we reach agreement in principle regarding the use of automatic seismic stations, we shall discuss with you a whole number of technical questions. We are not avoiding them; we do not want to evade them. But why do you want to put a technical discussion before agreement in principle? This is tantamount to putting the cart before the horse.

I must say that when we talk with you about questions of control, about certain fundamental questions of control; when we talk with you about our proposal for the use of automatic seismic stations, we are not asking you for anything more than we ourselves accept. We wish to receive from you your agreement in principle.

This is a reasonable basis for agreement and I hope that after you have had a little time for reflection you will give your consent to the use of automatic stations as an additional measure aimed at guaranteeing the western Powers additional capabilities for control. I must emphasize, however, that this is not a supplement to inspection, as you assert. We are prepared to agree to it on the condition laid down in the eight-nation memorandum, in which the use of notional observation systems is mentioned and there is no provision, of course, for any compulsory inspection.

It was in going forward to meet you and with a view to increasing the effectiveness of control that we put forward this idea of using automatic stations.

You say that you want to know what pig is in the poke. But there is nothing in the poke. This proverb of yours is unsuited to the case in question, because there is no poke and no pig. We say to you: let us first agree in principle to make use of automatic seismic stations and then we will work out the details together. Let us agree in principle on the use of automatic stations and we will also discuss with you the technical questions. Evidently, it will be necessary to agree on the parameters of these stations, where they should be located and so on. We have already mentioned to you even the locations of the stations which could be set up on the territory of the Soviet Union. You know this proposal of ours. Therefore your argument that you do not know where they would be located is no longer valid. We have told you near which towns they would be located (ENDC/PV.90, p.15). You know this. You also know how many stations there would

(Mr. Tsarankin, USSR)

be. As to where they would be located in other countries, that, too, could be agreed upon in consultation, of course, and in agreement with the countries concerned. In any case, that is no obstacle to agreement. It is an imaginary obstacle which you have artificially created. If we approach this question in a businesslike way, all these obstacles will immediately vanish. That is the situation. I hope that the representatives of the western Powers will think over the situation which has arisen and if they really desire to reach agreement on this question as quickly as possible, as we should like to believe they do, then we shall undoubtedly find a way to agreement.

Sir Michael WRIGHT (United Kingdom): I should like to make one remark: the fact that at this late hour I am not proposing to comment upon the last statement of our Soviet colleague does not imply that I agree with his statement. I reserve the right to revert to some of his remarks at a later date.

The CHAIRMAN (United States of America): If no other representative wishes to speak, I suggest that the next meeting should be held on Tuesday, 10 December 1962, at 10.30 a.m. If anybody wishes to suggest a change in the date later on, they are at liberty to do so, but at present we are agreed that that will be the date of the next meeting.

The meeting rose at 5.35 p.m.