

**CONFERENCE OF THE EIGHTEEN-NATION COMMITTEE
ON DISARMAMENT**

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FINAL VERBATIM RECORD OF THE SIXTY-FOURTH MEETING

Held at the Palais des Nations, Geneva,
on Wednesday, 1 August 1962, at 10 a.m.

Chairman:

Mr. ZORIN

(Union of Soviet
Socialist Republics)

PRESENT AT THE TABLE

Brazil:

Mr. ARAUJO CASTRO
 Mr. de ALENCAR ARARIPE
 Miss MAUD GOES

Bulgaria:

Mr. M. TARABANOV
 Mr. N. MINTCHEV
 Mr. G. GUELEV
 Mr. M. KARASSIMEONOV

Burma:

Mr. J. BARRINGTON
 U MAUNG MAUNG GYI

Canada:

Mr. J. E. G. HARDY
 Mr. J. F. M. BELL
 Mr. R. M. TAIT
 Mr. A. E. GOTLIEB

Czechoslovakia:

Mr. J. HAJEK
 Mr. M. ZEMLA
 Mr. J. RIHA

Ethiopia:

ATO HADDIS ALAMAYEHU
 ATO M. HAMID
 ATO GETACHEW KEBRETE

India:

Mr. A. S. LALL
 Mr. A. S. MEHTA
 Mr. K. KRISHNA RAO

Italy:

Mr. F. CAVALLETTI
 Mr. A. CAGIATI
 Mr. C. COSTA-REGHINI
 Mr. LUCIOLI OTTIERI

PRESENT AT THE TABLE (cont'd)

Mexico:

Mr. L. PADILLA NERVO
Mr. E. CALDERON PUIG
Miss E. AGUIRRE
Mr. D. GONZALES GOMEZ

Nigeria:

Mr. M. T. MBU
Mr. L. C. N. OBI
Mr. F. B. KOSOKO

Poland:

Mr. M. LACHS
Mr. S. ROGULSKI
Mr. E. STANIEWSKI
Mr. W. WIECZOREK

Romania:

Mr. G. MACOVESCU
Mr. H. FLORESCU
Mr. N. ECOBESCU
Mr. O. NEDA

Sweden:

Mrs. A. MYRDAL
Baron C. H. von FLAEN
Mr. M. STAHL
Mr. B. FRIEDMAN

Union of Soviet Socialist Republics:

Mr. V. A. ZORIN
Mr. L. I. MENDELEVITCH
Mr. P. F. SHAKHOV
Mr. V. V. ALDOSHIN

United Arab Republic:

Mr. A. FATTAH HASSAN
Mr. A. EI-ERIAN
Mr. A. E. ABDEL MAGUID
Mr. S. AHMED

PRESENT AT THE TABLE (cont'd)

United Kingdom:

Mr. J. B. GODBEE
Sir MICHAEL WRIGHT
Mr. B. T. PRICE
Lord NORWICH

United States of America:

Mr. C. C. STELLE
Mr. D. E. MARK
Mr. A. AKALOVSKY
Mr. R. A. MARTIN

Special Representative of the
Secretary-General:

Mr. O. LOUTFI

Deputy to the Special Representative
of the Secretary-General:

Mr. W. EPSTEIN

The CHAIRMAN (Union of Soviet Socialist Republics) (translation from Russian): I declare open the sixty-fourth plenary meeting of the Conference of the Eighteen Nation Committee on Disarmament.

Mrs. MYRDAL (Sweden): I hope that my intervention will not too long delay the Committee's deliberations on the important issue which is more directly on the agenda today, but I feel impelled to use the licence given to delegations according to paragraph 4 of the co-Chairmen's recommendations with regard to our procedure of work (ENDC/52) to bring up a matter of continued urgency. All must agree that we have been making insufficient progress on the most pressing of our tasks, that is, to achieve the stopping of nuclear tests. While we are engaging in debates here the days and weeks are running past us. Thus the urgency of our task is even increasing. The representatives of Brazil and Mexico have already reminded us, within the last few days, of some of the views, hopes and misgivings of the non-nuclear Powers. I will now try to consider the test ban problem from a somewhat different angle but still with the same feeling of anguish and frustration which we discerned in their statements.

I know full well that the United States delegation -- and even more the United States and the United Kingdom press -- have given us fair warning that the West's position on the detection system may be modified, which might mean a great step forward in the deliberations of our nuclear Sub-Committee. I congratulate them on those efforts and I am looking forward to their initiative in that forum.

Today, however, I want to raise certain other points which are not per se related to, or dependent on, the outcome of Mr. Dean's consultations in Washington -- points which this Committee must anyhow deal with, and the sooner the better. At least these points must be taken up for consideration simultaneously with the new ones which Mr. Dean might bring back with him.

Really, since the very day -- 16 April 1962 -- when the eight non-aligned delegations tabled their joint memorandum (ENDC/23) we have expected that serious work would have started on some of the suggestions contained therein, even if others had to be left in abeyance for the time being. It seems to our delegation a most pressing concern that we in this Committee should do our utmost to have various practical measures which relate to the test ban treaty so well prepared that we can face the debate in the United Nations with confidence and, if possible, with pride;

(Mrs. Myrdal, Sweden)

because we now know for certain that that question is going to be discussed in the forthcoming seventeenth session of the United Nations General Assembly, since the Government of India requested on 25 June that the item "Urgent need for suspension of nuclear and thermonuclear tests" be inscribed on its agenda.

But what will this Conference have to report? How can we meet the expectations and the hopes which the world has invested in us? Such thoughts must harass us all, day and night. For that reason, I want to pinpoint certain measures which could be initiated now, thus forming part of a recommendation, or at least a positive report, to the United Nations.

The first chapter which should be dealt with immediately in the Sub-Committee on the Discontinuance of Nuclear Tests is -- and I hope this Committee will agree -- what we might briefly call the Brazilian proposal outlawing at least tests in the atmosphere and in outer space:

"Why, then, not concentrate our efforts on this question of atmospheric and outer space tests which are the most dangerous, actually and potentially, and the ones which have a most disturbing effect on mind, body and nerves?"

(ENDC/PV.61, p. 36).

That proposal, of course, closely resembles the familiar one which President Kennedy and Prime Minister Macmillan made on 3 September 1961 (GEN/DNT/120), although it was then made conditional upon acceptance within a short time limit. On that occasion only atmospheric tests were explicitly offered for coverage by a treaty without additional control measures. Somewhat later, on 27 November 1961, the Soviet Union declared its willingness to enter upon an uncontrolled test ban treaty embracing atmospheric, outer space and underwater tests (GEN/DNT/122). Disregarding here the political contexts in which those offers were made, the crucial issue is that in these cases there have been no claims to establish a control system. Thus, if we should objectively consider the principle of including in a preliminary treaty a ban on all kinds of tests which do not demand international control and inspection, we might expect such a first prohibition to apply at least to atmospheric tests, including high altitude tests.

Hitherto such proposals for a more restricted test ban treaty have not been stressed so much in our deliberations; all the efforts in this Eighteen Nation Disarmament Committee have concentrated on the possibility of achieving a more ambitious, over-all agreement, including also underground tests, although they

(Mrs. Myrdal, Sweden)

certainly are the most elusive ones. But for the sake of demonstrating good will the nuclear Powers would now at least have to assure us that an agreement on those categories of tests for which no inspection is needed and no "espionage" is to be feared would be within our immediate reach.

In order to overcome all hesitations we might even welcome an agreement on still more lenient terms, coupling that we now for short refer to as the Brazilian with the Mexican proposal. That would call for a decision to be reached here and now that the above-mentioned kind of tests would stop at a certain future date. The delegations which have been speaking in this vein have focussed their hopes on 1 January 1963, but it is evidently for the nuclear parties concerned to negotiate how much leeway for further testing they will want to give themselves -- and the others. In fact, as somebody has said, it might be a blessing in disguise if both sides made the "last tests" simultaneously, as there would then be no quarrel over who was first and who shall be last.

In all deference I venture to intimate to the great nuclear Powers that these arguments about who started and who will finish these abominable rehearsals of Doomsday are of little concern to the rest of the world. These arguments do not even command much respect, because we cannot agree that anybody has ever the right to play so hazardously with the destiny of the world of today and the generations of the future. At all events, we now urgently appeal that in the Sub-Committee this minimum proposal for a test ban treaty be considered in all seriousness and that an agreement be reached and announced to the world that no more nuclear tests will occur after a certain date. If such an undertaking were restricted, as an initial measure, to atmospheric and outer space tests -- plus, I hope, underwater tests -- a treaty would be easy to draft and the hopes of the tormented world would mount and confidence would begin to be felt.

May I add, parenthetically, that this suggestion enters into the framework of what the Swedish Foreign Minister called "provisional" measures in his speech on 20 March at the fifth meeting of this Committee? Of course, Mr. Unden never had in mind just an uncontrolled moratorium -- which is what his statement has sometimes been interpreted to mean. He had in mind any measure of a provisional character -- that is, any measure which would prepare the way for further, more complete and more final obligations. Among such measures he called first and foremost for a test ban treaty. He said:

(Mrs. Myrdal, Sweden)

"It is, indeed, difficult to imagine that an agreement would not be within reach, in spite of all the evil omens to the contrary. At least agreement ought to be possible on a provisional treaty." (ENDC/PV.5, p. 21)

Consequently I urge the Sub-Committee to take up for decision as a primary item on its agenda this matter of a preliminary test ban treaty, restricted if necessary to tests in certain environments, as it has met with no reasoned reservations on the part of any of the parties concerned. Therefore it should not have to wait. If no positive decision were to be forthcoming from those deliberations we could only conclude that one or both of the nuclear parties did not want to stop testing. However, we should expect a straightforward answer on this question, and I can only express the ardent hope that this Conference will soon be able to register a first unisoned Yes.

But why stop there? The inclusion of underground tests of nuclear weapons at the soonest possible date is sorely needed, as only then would we be guaranteed that these most deadly weapons were not further developed, or "perfected". Certain practical preparations for achieving this purpose could be and must be started right now, it being admitted that these tests call for some system of monitoring. Before our summer intermission I had the honour to propose that such preparatory work should be begun. This need for preparatory work has also been one of the reasons why the Swedish delegation -- although perhaps with a slightly deviating interpretation -- has wanted to support Mr. Padilla Nervo's proposal that a target date for banning all nuclear tests be set in advance, and preferably immediately. Our motive for having a prospective deadline agreed upon even before the treaty was signed was to make possible such preparatory work under an "as if" hypothesis. Then, if the parties concerned so desired, they could introduce also the ultimate deadline within the treaty clauses.

This preparatory work, which anyway is necessary before any test ban treaty can be implemented, is the second chapter I wish to deal with today. May I refer again to the wishes expressed by the Swedish delegation in my speech on 8 June. The point of departure was my contention that during the discussion of the eight Power memorandum (ENDC/28) the two sides had moved their positions considerably closer, the Soviet Union accepting an international commission and the West also making moves towards the middle by being more favourable to international co-operation between national networks of observation posts instead of a full-fledged system of international control posts. I said:

(Mrs. Myrdal, Sweden)

"I, for one, dare to conclude that a considerable closing of the gap between the positions, extreme as they were at the beginning of this Conference, has occurred. At least it has occurred on two of the three main points; that is, it has not occurred -- or hardly -- in regard to the issue of inspection, but has occurred in regard to the international collaboration between the detecting stations and in regard to the proposed international commission of scientists. The two sides have had both to give and to take, and they have done so to a certain extent. On the one point -- that of the observation posts -- more has been given by the West; on the other point -- that of the international commission -- more has been given by the East." (ENDC/PV.52, p. 28)

However, such arrangements do not come into being by any process of self-generation. My suggestion, therefore, was and is that we must start planning now for a more effective collaboration between the existing observation posts and also start planning the international commission. I do not intend to deal with the more controversial questions of on-site inspection or with the constitutional elements in the prospective treaty, to which of course we might return at some other time. They continue now, as they were in the eight Power memorandum, to be left to negotiations between the interested parties. But what we suggest on the practical side, I hope, will give the Sub-Committee something more substantial to bite into than the ingenious extrapolations and repetitive polemics which we find in its records and which might have come to bore even the participants themselves.

As an initial step in this practical designing of the new system of international collaboration, I had suggested that an inventory be made of the existing geophysical observation posts and their capacity for detection of man-made explosions. This idea seemed to meet with some approval at the time. Thus Mr. Godber stated at the following meeting -- I quote him with some brief omissions:

"It is true, as Mrs. Myrdal said, that the West has given ground in relation to international systems of detection; we have come some way. She said also that the East had given ground on an international commission -- and it is true, within very carefully defined limits, that they have done so. These are the hopeful signs.

"The Swedish representative then suggested to us that when we returned from our recess we ought to be willing to approach this problem from a more practical side. ... I understood her to say that we should make an inventory of what exists because any argument would carry more weight after such a survey.

(Mrs. Myrdal, Sweden)

"I think that we have got to look very carefully at this suggestion. There is very considerable merit in it because clearly ... we must know exactly what is present before we know how much more is required to fill in the gaps. After all, the eight-Power memorandum says 'Such a system might be based and built upon already existing national networks'; extensions are clearly envisaged. But how can one know what extensions are required if the facts are not provided? It does really tie up with certain suggestions I have made in the past in this regard.

"If our Soviet colleagues are willing to agree to such a suggestion I should certainly want to give it very sympathetic attention indeed, ...".

(EMDC/PV.53, p. 12)

Has that inventory been made? In the absence of any positive evidence to that effect from the Sub-Committee, we in my delegation attempted to look into the matter. We have found that the conclusion to be drawn from any stocktaking, even if restricted to material which has already reached the publication stage, is that there exists a vast network of observation posts, not only potentially open for an organized international exchange of data but in fact already now to a surprisingly great degree actually co-operating among themselves, although they are located in different countries and even in different political hemispheres.

Let us take a quick look at the availability of such observation posts capable of registering geophysical events relevant to the problem of monitoring nuclear explosions. As we know, these are to be found within the different fields of meteorology, seismology, the measuring of radioactivity, of electromagnetic waves and so on. So far the institutes are separated within their respective fields. It seems that only during the so-called International Geophysical Year -- which stretched from 1957 a few years forward and was a fine international undertaking which in one way initiated the satellite era -- has it been possible more systematically to bring about an intensive international co-operation across the borderlines of the different disciplines. But, if it has been done once, it can be done again.

Looking somewhat more closely at the information on hand, we find in regard to meteorology that observations are made by about 7,800 stations on land and 12 anchored weather ships. In addition, an agreement has been made with about 3,000 ships to make observations while crossing the oceans. Data are sent by telephone to regional centres and from there re-transmitted to larger centres, usually one in

(Mrs. Lyrdal, Sweden)

each country. From those centres they are in turn distributed by cable or radio to other interested meteorological institutes. In the case of radio transmission the interested customer has only to listen in in order to obtain information. Observations are made every six hours. After some fifteen minutes all data observed have been disseminated through the country of origin, after half an hour throughout their home continent and after about one hour have become available over the whole globe. Additional observational data are collected by satellites -- at present at least two United States ones -- which send pictures to special receiving stations, whence they are distributed through the same network as the data mentioned above.

As should be clear already from this rough description, frontiers are no obstacle to this exchange of information. All nations participate in the registration and distribution of meteorological data, including countries not Members of the United Nations, such as Switzerland. The only seeming exception is the huge country of the People's Republic of China, which is unable to obtain membership in the World Meteorological Organization since Formosa China is already represented there. However, the People's Republic of China has a bilateral agreement with Japan and, as the centre in Tokyo assembles data and transmits them by radio, even that country is for all practical purposes participating in this international network.

Not all meteorological data are of value for monitoring suspected nuclear tests. However, records obtained with the help of microbarographs are of paramount interest. As yet this equipment is only installed at a few places, but the instrumentation is said to be inexpensive and it would not seem impossible to let registration by this instrument follow the outflow of other observations.

I now come to seismology, which is the discipline whose observations have aroused the greatest interest in this Conference. About 200 stations are at present working and half of them participated actively in the International Geophysical Year. An excellent collaboration across national frontiers is already functioning, although the communications are not generally as rapid as may be desired from the point of view which is our preoccupation. Sweden, for instance, is transmitting its seismological readings daily by cable to the United States Coast and Geodetic Survey, and by airmail every week and by printed bulletins every month to 46 institutes in various parts of the world. And it is sending annual bulletins to 300 institutions and libraries in other countries. The whole world system relies on a kind of producer-customer relationship. That means simply that institutes may subscribe to

(Mrs. Nyrdal, Sweden)

regular series of information or they may, on an ad hoc basis, have recourse to the exchanging of data. Information is flowing freely from institutes in the East as well as in the West.

To give an idea of the non-political character of this flow of information I want to refer particularly to the reports on the Geophysical Year -- for example Annals of the International Geophysical Year, volume VII, published in 1959. I felt particularly tempted to try to present visually some tables from the International Geophysical Year World Data Centre, which show month by month which stations linked up in this voluntary give and take of information. Practically all our eighteen countries are represented, and it is encouraging to look particularly at the pages where the list of institutes in the great nuclear countries is ticked off for faithful observance, the Soviet Union's Sverdlovsk and Vladivostok having failed to report as seldom as the United States Tucson and Guam.

Plans are now under way to improve the exchange of data. Experiments are carried out to get more rapid and more homogeneous data with the aid of punch cards, and 44 stations in all parts of the world, including Upsala in Sweden, are participating. There are also advanced plans to establish a central institute for assembling data and processing them with the aid of electronic computers. A decision concerning such a centre is expected in 1963, the international agency interested being the International Union of Geodesy and Geophysics. A report published in July 1961 by the International Association of Seismology and Physics of the Earth's Interior, which is a sub-group of that Union, sets out the plan in considerable detail. I have the reports here if anybody wants to look at them.

We can move on to the field of measuring radioactivity, which is one byproduct of all nuclear explosions. As is well known, radioactivity is spread in various ways and can also be detected after certain time intervals at a great distance from its place of origin. During the International Geophysical Year the measuring of radioactivity was organized through collection in some 500 localities all over the world, the samples being transmitted for analysis to eighteen different institutes, which in turn distributed the results to four data centres, one of which was in Sweden. At present the exchange of information on such observations is not internationally institutionalized but occurs more informally between leaders of research institutes around the globe. The results are published in scientific journals. Furthermore, plans are under way for the establishment of a regular worldwide network.

(Mrs. Myrdal, Sweden)

I need only mention in passing that other methods for recording explosions are also, of course, available, and their degree of efficiency is being studied. In atmospheric tests the electromagnetic signals are spread over vast areas. Again I might mention that the Swedish geophysical observatory at Kiruna is following this development with keen attention. Similarly, we are among those interested in mathematical on-line processing of the recorded signals. In these newer fields the predominating concern is with the further development of research rather than, as yet, with using the methods for practical servicing, as in the more firmly organized discipline of meteorology.

The purpose of my summary exposition is quite obviously to permit us to draw some practical conclusions as to how we can utilize the existing observation posts and their international co-operative arrangements for the task of monitoring nuclear testing. But it should go without saying that this is only a side aspect of the work of those institutions, while scientific development is and must continue to be their primary concern.

The unavoidable main conclusion is that there already exists an international apparatus which is capable of providing considerable knowledge. Many reports have been published to demonstrate how nuclear tests in different parts of the world have been detected and identified in various countries. Take, just as one example, the recent French underground test in the Sahara. Within six weeks of its occurrence, on 1 May this year, no less than sixty-five stations had reported on their registration of it. They reported to the United States Coast and Geodetic Survey. Among those who most rapidly produced the data were stations in Bolivia, Canada, the Congo, Czechoslovakia, Ethiopia, Finland, France, the Federal Republic of Germany, Eastern Germany, Greece, Greenland, Iran, Israel, Italy, Morocco, Norway, Peru, Puerto Rico, Spain, Sweden, Southern Rhodesia, Turkey, the United States and Yugoslavia. This is just to show the breadth of the co-operation. Similar international comparative studies have been undertaken on many other tests, especially on the Rainier, Logan and Blanca shots in Nevada in 1957 and 1958, and the results and conclusions have been published in scientific journals both in the United States and in the Soviet Union. May I suggest that those who pretend that no truly international co-operation exists are as much retreating from reality as those who assert that international co-operation might mean espionage?

(Mrs. Myrdal, Sweden)

Obviously results so far observed and obtainable through the network of geophysical stations do not assure any 100 per cent detection capability. There is still less evidence of a satisfactory identification capability, and it will remain difficult to establish any meaningful reliability index without full knowledge of all underground tests by the United States, the United Kingdom and the Soviet Union. But that is not the main thing. The main thing is that, practically speaking, a more complete collation of data from stations in widely different geographical positions would greatly add to the effectiveness. Further, we might bear in mind that the risk one wants to be insured against if a test ban treaty is signed is not a unique occurrence which might happen to go unnoticed. Tests to be executed for the improvement of weapon systems would then, as now, have to be repeated, and probably even continue to reappear in series. Therefore the possibility of detecting them would increase by the law of numbers. What has hitherto been most glaringly lacking, both in political speculations about detection capabilities and also in the practical analysis and calculation of the wealth of observations actually recorded, has been the statistical approach.

Since observations abound, there would just be needed a more systematic attempt to collect, collate and compare them. The missing link is, in other words, an agency for the central processing of the data. If it were put into operation, there is no doubt that much more information than has until now been acknowledged as lying within the field of possibilities would flow from the already-existing stations. May I mention in passing that many of them are located in territories of non-nuclear Powers, and therefore our co-operation must be of fundamental importance to the work of any international system. This does not seem to have been sufficiently recognized when the experts from the nuclear blocs made their report in 1958. It is this crucial question of our willingness to co-operate which has been given a much more positive turn by the submission of the eight Power memorandum last spring.

A second conclusion is that the cost of making the apparatus effective would be comparatively moderate. What would be called for is more modern equipment in many local observation posts; the cost of cabling, or of other rapid communications; the services of some electronic computers; and finally some top-level scientists for the central international assessment of the data obtained. The costs could by no play of imagination be brought into the neighbourhood of \$2,500 million for installation and \$500 million for annual costs which Mr. Dean recently mentioned as the cost of an international control system.

(Mrs. Myrdal, Sweden)

Although I would not want to hold anybody down to estimates once given, I might mention, for the sake of comparison, that the International Seismological Summary, on which seismologists from the United States and the Soviet Union -- as well as others -- actively co-operate, made cost estimates for their desired international centre amounting to about \$250,000 for initial outlay and, with a staff of thirty-four people, together with publications et cetera, running up the annual costs somewhat higher, but still not beyond \$500,000. Now these figures, I want to stress again, are only given for the sake of comparison of magnitudes. The task of working out tenable cost estimates belongs, of course, to our Sub-Committee, or any group of experts it might want to co-operate with.

A further conclusion from our quick inventory is that the time interval between a political decision to countersign a test ban agreement and the actual functioning of some control system which could service it would be shortened to the utmost possible extent. It has rarely been made explicit that, according to the report by the 1958 Committee of Experts (EXF/NUC/28) and also according to the draft treaty of 18 April 1961 (ENDC/9), a considerable time would elapse before the envisaged control system would be functioning to any satisfactory degree. I do not need to review the timetable which was outlined for first the signing, then the ratification and then the entry into force of a treaty and the building up of the system of control stations and the international agency which these plans provided for, but it may just be recalled that the three stages through which the control system was to be developed would only have been completed six to eight years after the entering into force of the treaty. On the other hand, if we utilized the existing stations the monitoring system -- and I hope it is noted that I consistently refrain from calling it "the control system" -- could begin right away, and as a matter of fact is already in operation, while the setting up of the international commission might be a matter of months only. If the preparatory work were taken in hand now, its inauguration might be made to coincide with the target deadline for stopping all tests.

Finally, to me and to many others, the most imperative reason for preferring utilization of the existing observation posts instead of building up a vast system of control posts for following eventual nuclear tests, is that only thus can we be certain that scientists, attracted as they are by the full freedom of research, being subservient to nothing but truth will feel a lasting propensity for playing an additional role in this international scheme for promoting peace-making. They would continue their present work with its centre of interest being the progress of science

(Mrs. Myrdal, Sweden)

and the concomitant utilization of its findings for practical application — protection against radioactivity, etc. Certainly, scientists in the disciplines concerned are anxious to be left free to pursue their scientific endeavours, albeit, we hope, willing to take on certain additional duties for the sake of helping to detect, identify and localize man-made geophysical upheavals as well as those caused by nature. They could, on the other hand, not be expected to muster any enthusiasm for a system with an exclusive task of policing a nuclear test ban.

What then should be the next practical step? First, there must be a more detailed and more up-to-date inventory of the kind I have tried to indicate. Next, there must come an elaboration of specific plans for the equipping of some stations with modern instruments, for inviting the institutes to accept as a more definitive obligation the duty to register internationally the data observed. Further, there must be a study of what a more rapid communications system would imply and, probably, blueprints for some additional stations, either in countries willing to erect new ones within their territories or, as an international endeavour perhaps, placed on ships in international waters.

When our Sub-Committee starts such work it will find that certain other plans are already on their way in that direction. The World Meteorological Organization has recommended that an international network be instituted for collecting data as to radioactivity in air and rain-water. This network would rely on some 100 collecting posts transmitting their results to some 15 stations for scientific analysis. In the field of seismology, as was mentioned a few moments ago, planning is going ahead for an international centre which should be able to base its computations on data received from the majority of the world's seismic stations — its functions, budget and location are to be decided upon in 1963. The requests for grants to be principal organs in this field -- the international scientific unions -- are usually channelled through UNESCO, of which, I believe, the eighteen nations in this Committee are all members.

Against this background I hope it becomes self-evident that, if the interest of the nuclear Powers in monitoring a test ban treaty should call for the creation of an international commission, plans for setting it up must be made immediately. At least the scientific nucleus which is to process all related data must be discussed, together with the agencies which are handling similar plans for centralization and internationalization within the various disciplines. I think that, at the same time,

(Mrs. Myrdal, Sweden)

financial plans to meet the cost of making the international exchange of data effective should proceed immediately. It should be noted particularly that the international commission must be attached to one or other scientific institute or centre, since it must continually be in close touch with actual research in order not to lose the high-power technical skill of its scientists. The open availability of the data-flow will, by the way, permit every geophysical institute to calculate and verify the results which are to form the basis for the commission's decisions.

These matters, our delegation dares suggest, are some of those with which the nuclear Sub-Committee should be seized; they would constitute its practical agenda for some weeks ahead, particularly if they fall under the auspicious signs of Mr. Dean's returning with a bag full of good news. It means that the Sub-Committee should immediately take up for study the designing of an international commission, as well as plans for more effective utilization of existing observation posts in the geophysical field, capitalizing on their proven willingness to co-operate regardless of political frontiers.

It has been rather amusing, during the debate in this Committee of ours, to hear how often the socialist countries nowadays talk about the need to proceed with our work in "a business-like manner", while the other side seems to prefer the phrase "a workman-like attitude". Whatever may be the explanation of this new-fangled difference in predilection as to vocabulary, we rather regret that so little of either a business-like or a workman-like approach has been prevalent in the deliberations on a test ban. Improvement could certainly be gained by starting now to draw up the schemes of the scientific apparatus so that it will be serviceable when -- I refuse to say if -- such a treaty comes into force.

I am fully aware that in this context I have bypassed, on the one hand, the political problem as to how sufficient or insufficient the nuclear Powers of both sides will judge the detection and, more particularly, the identification capability of existing institutions and existing methods to be, and, on the other hand, the even more politically loaded problems with regard to what degree of on-site inspection will be considered necessary or acceptable. Those questions are left out purposely, as they must remain items for the finally decisive negotiations. In these matters the nuclear Powers are the primarily interested parties, but in the other ones, which I have been concentrating on today, we are all -- nuclear and non-nuclear Powers, great Powers and those not so great -- directly involved. ^{*} Either we all co-operate and build up confidence, or else.

(The Chairman, USSR)

Obviously we have no intention at present of going into the specific considerations put forward by the representative of Sweden. We shall return to these matters when the three-Power Nuclear Sub-Committee meets to consider the discontinuance of nuclear weapon tests, and I think that many of the considerations which the representative of Sweden put forward this morning will prove useful in our Sub-Committee and also perhaps in the subsequent discussion of this matter in the plenary meeting of our Committee.

We have noted with particular attention Mrs. Myrdal's comments on the factual aspects of present-day observations of various natural phenomena, on those which have a bearing on the observation of nuclear weapon tests. The facts and information she adduced on the existing national posts, the existing national detection systems, both in the atmosphere and underground, showed that we already have a sufficiently firm basis for the observation and identification of all nuclear tests. As you know, the Soviet Union has repeatedly emphasized that it considers this system quite adequate for the detection of any nuclear weapon tests, wherever they may occur.

I therefore feel that the facts and information which the representative of Sweden adduced this morning should enable all of us to approach more soberly the possibilities of reaching agreement, provided we set aside extraneous considerations and base ourselves solely on the interests of the task and the real possibility of detecting such tests. We shall therefore study very thoroughly the verbatim record of the statement made by the representative of Sweden and shall analyse the facts and information which she adduced at our meeting.

What struck me as particularly important in Mrs. Myrdal's statement were the conclusions she drew towards the end of her speech, when she spoke about the use of the existing verification system in various countries of the world, a system which includes a very great number of countries and a great number of observation posts and stations, and also her remarks to the effect that it was desirable that the staff working at those national posts and stations should not be treated as people to whom some special international function had been assigned. I think that is a very important point, which was quite well argued by the representative of Sweden, who stressed that if the staff at these posts did not feel that they were national scientists and technicians engaged in a definite field of science, but were people performing some international functions and subject to some special directives and instructions, this would of course inevitably affect their whole work and the quality of the results derived from it. I believe that these points merit serious consideration.

(The Chairman, USSR)

Towards the end of her speech the representative of Sweden also said that she had bypassed the political aspects of the matter and had left out the controversial issues which had given rise to disagreement in our discussions and, in particular, as to whether the existing system is adequate, whether on-site inspection is necessary, what degree of inspection there should be and so on. As I understood, she wished to propose that these aspects of the problem should be taken up by those who are directly concerned with the final solution of the problem, that is by the nuclear Powers. However, I do not think she could maintain that any fruitful work is possible on the substance of the specific proposals which she and a number of other representatives have put forward unless these problems are solved.

We feel that even if the representative of Sweden did find it possible to bypass all these controversial questions at this stage, they cannot be bypassed in real life. Unfortunately these questions do exist and must be settled. Unless these controversial questions are solved, we cannot have a fruitful discussion of all the details of the specific measures which could be taken in order to bring about that political solution, without which a solution of the whole problem would be impossible. That is how it seems to us. I repeat, however, that the Soviet delegation will study very carefully all the views and practical proposals put forward by the representative of Sweden, and in our three-Power Sub-Committee we shall no doubt have an opportunity to exchange views on some of these questions.

As to the views expressed by the Swedish representative on possible provisional solutions, she referred to the proposals of the Brazilian and the Mexican delegations; she also recalled the proposal of the Soviet Union of 28 November 1961. I must say that we shall consider carefully all these specific proposals. I think we can try to come to some decision on them. However, for this, of course, the agreement of both sides will be required; without this no decision will be possible.

Those were the remarks I thought it necessary to make immediately; although, I repeat, the statement itself, which was sufficiently detailed and well-reasoned, requires a more thorough study, which we will carry out later.

With your permission, I will now pass on to the question of disarmament measures in regard to nuclear weapons delivery vehicles which is on our agenda according to the procedure of work agreed upon by the co-Chairmen and approved by the Committee (ENDC/52). In accordance with the recommendations approved by the Committee, we now take up the question of disarmament measures in regard to nuclear weapons delivery vehicles, including the problems pertaining to the production of such vehicles, together with appropriate control measures.

(The Chairman, USSR)

The special importance of this question is obvious. Nuclear weapon delivery vehicles are among the most dangerous devices in the present military arsenals of states. Their liquidation is therefore a most important element of the measures constituting the substance of general and complete disarmament. We believe that all the participants in the negotiations of the Disarmament Committee are fully aware of this. I should like to refer to the statement made by Mr. Dean, the representative of the United States, who said:

"I fully understand the desire of all of us to deal with the danger posed by nuclear weapons delivery vehicles; it is these nuclear weapons delivery vehicles which, more than any others, have created a new condition in the world so that general war could place our civilization, as we now know it, in serious jeopardy. It is these armaments which have radically altered all aspects of national power, and altered them to a degree and in ways which we are only beginning to appreciate and understand. It is these nuclear weapons delivery vehicles which, more than any other devices, make necessary our quest for general and complete disarmament..." (ENDC/PV.26, p.11)

When considering the measures in stage I, we should start from the premise that decisive steps to remove the threat of an attack with the use of means of mass destruction must be taken without delay and in the initial stage of the disarmament process. It is the only way. Indeed it is impossible to imagine that States will scrap their weapons and go far along the path of disarmament if at any moment they may become victims of crushing nuclear attacks.

What is the speediest and the most effective way of removing the threat of nuclear attack? We have already indicated on many occasions that there are two ways which ensure the achievement of this aim: either to destroy and prohibit nuclear weapons, or to destroy all atomic and hydrogen weapons delivery vehicles. However, the first way was objected to by the Western Powers, which are against the prohibition of nuclear weapons and the destruction of their stockpiles. Under these circumstances, the Soviet Government went half-way to meet the proposals put forward by the President of France, General de Gaulle, and included in its plan for general and complete disarmament measures to eliminate the means of delivery of nuclear weapons together with the simultaneous dismantling of foreign military bases and the withdrawal of troops from alien territories.

(The Chairman, USSR)

Mr. N.S. Khrushchev, Chairman of the Council of Ministers of the USSR, said in his speech at the World Congress for General Disarmament and Peace on 10 July 1962:

"The Soviet Government proposes at least the immobilizing of all nuclear weapons, paralyzing them by destroying all means of delivering them, from the outset, from the very first stage of disarmament. We propose abolishing at one stroke the rockets, aircraft, surface warships and submarines that can carry nuclear weapons, atomic artillery installations and all military bases on foreign soil, and the withdrawal of all troops from foreign soil.

"Without rockets, aircraft, surface warships or submarines, nuclear arms would no longer be dangerous, even if an unscrupulous government stowed some of them away. The destruction of all means of delivery would make it impossible for any country possessing atomic weapons to strike a nuclear blow at other countries." (ENDC/47, p.10)

In the Soviet draft treaty on general and complete disarmament (ENDC/2) which was submitted for the consideration of the Committee, the measures relating to nuclear weapons delivery vehicles are set forth in Part II, Chapter 1, articles 5, 6, 7 and 8. These measures relate to all categories and types of nuclear weapons delivery vehicles. Article 5 stipulates the withdrawal from the armed forces and the destruction of all rockets of every calibre and range, whether strategic, operational or tactical, which are capable of delivering nuclear weapons (with the exception of a strictly limited number of rockets to be converted to peaceful uses), as well as the elimination and destruction of pilotless aircraft of all types. Furthermore, not only rockets capable of delivering nuclear weapons are to be destroyed, but also all launching pads, silos and platforms for the launching of rockets and pilotless aircraft, except those pads which will be retained for launchings for peaceful purposes. All instruments for the equipment, launching and guidance of the above-mentioned rockets and pilotless aircraft shall be destroyed, as well as all underground depots for such rockets, pilotless aircraft and auxiliary facilities.

It is no secret that the Soviet Union has the most perfected and powerful global and intercontinental rockets capable of delivering multi-megaton nuclear warheads to any point on the globe. Nevertheless, for the sake of a speedy solution of the disarmament problem and the consolidation of peace, the Soviet Union expresses its willingness to forgo this advantage.

(The Chairman, USSR)

Article 6 of the Soviet draft treaty provides for disarmament measures relating to another type of delivery vehicle, namely military aircraft capable of delivering nuclear weapons. Under the provisions of this article, all military aircraft capable of delivering nuclear weapons are to be withdrawn from the armed forces and destroyed. Military airfields serving as bases for such aircraft, repair and maintenance facilities, and storage places at these airfields, are either to be rendered inoperative or converted to peaceful uses. Training establishments for the crews of such aircraft are to be closed.

The next article— article 7 -- of the Soviet draft treaty contains provisions for the elimination from the armed forces and destruction of all surface warships capable of carrying nuclear weapons, as well as submarines of any class or type. Naval bases and other installations for the maintenance of these warships and submarines would be destroyed or be dismantled and handed over to the mercantile marine for peaceful uses.

Lastly, article 8 of the Soviet draft treaty contains measures for the elimination from the armed forces and destruction of all artillery systems capable of serving as a means for delivering nuclear weapons. All subsidiary instruments and technical facilities designed for controlling the fire of such artillery systems are also to be destroyed. Surface storage places and transport facilities for such systems are to be destroyed or converted to peaceful uses. The entire non-nuclear stock of munitions for such artillery systems, whether in the armed forces or in depots, would be completely destroyed. Underground depots for such artillery systems and for the non-nuclear munitions pertaining to them would also be destroyed.

This is the series of measures covering the elimination of the means of delivering nuclear weapons outlined in the Soviet draft treaty on general and complete disarmament. The necessity of destroying all categories and types of nuclear weapons delivery vehicles is dictated by the fact that this is the only way to preclude all possibilities of using atomic and hydrogen weapons and to avert in a reliable way, from the very first stage of disarmament, the threat of outbreak of a nuclear war. Moreover, this approach safeguards to an equal extent the interests of all States. The elimination of only certain types of the means of delivery, while at the same time other nuclear weapons delivery vehicles are retained, would be prejudicial to the security of one side and could give a unilateral advantage to the other.

(The Chairman, USSR)

We have already repeatedly expressed our general point of view, and we will not now go into details in order to show the essential organic connexion between the measures for the elimination of the means of delivery and the measures for the dismantling of foreign military bases and the withdrawal of troops from alien territories, since disarmament measures in regard to military bases and armed forces at such bases or elsewhere in foreign territories will be considered in due course as a separate item.

Further, we should like to point out specially that it is not sufficient to remove all nuclear weapons delivery vehicles from the armed forces and to destroy them. At the same time it is necessary to liquidate the production facilities for manufacturing such vehicles and this is why the Soviet draft treaty contains specific provisions which would bind States to discontinue completely the production of all types of rockets, pilotless aircraft, military aircraft, warships and submarines, as well as artillery systems capable of delivering nuclear weapons. All related plants, shipyards and workshops are either to be dismantled or converted to the production of peaceful items. Machine tools and equipment specially designed for producing the means of delivery of nuclear weapons are to be destroyed and the premises of the plants, general purpose machine tools and equipment will be converted to peaceful uses.

Under the Soviet draft treaty the implementation of every disarmament measure with regard to the means of delivering nuclear weapons would be controlled by inspectors of the international disarmament organization, and as regards verification of the 100 per cent elimination of the means of delivery, the Soviet Union is prepared to accept 100 per cent verification of the implementation of this measure throughout its territory. All such means of delivery will be eliminated before the eyes of the international inspectors, who will make sure that what is being destroyed is not something else, but precisely the means of delivering nuclear weapons.

During our work the representatives of the Western Powers have put forward a number of objections to the Soviet proposals for the complete elimination of all means of delivering nuclear weapons to their targets in the first stage of general and complete disarmament. Most frequently they repeat the argument that the elimination of the means of delivery would lead to upsetting the military balance in favour of the Soviet Union. In earlier meetings of the Committee we have shown in detail what would be the military and strategic position of the Western Powers and their military blocs, and of the Warsaw Pact countries as a result of the implementation of the first stage

(The Chairman, USSR)

measures of our treaty. We have considered the references of the Western representatives to geographical factors. On the basis of concrete evidence and factual data which cannot be refuted, it has been proved by us that, if these measures are implemented, no question of upsetting the military balance can arise and that the strategic position of the Western Powers by the end of stage 1 would at least be no worse than it is at the present time. So this particular argument of the Western Powers has been proved to be unfounded.

Another argument put forward by the representatives of the Western Powers in this connexion can be summed up as follows: that the implementation of these measures would weaken NATO. Of course, any disarmament measure would weaken the military groupings of States - not only NATO, but also the alliance of the Warsaw Pact countries to the same extent. This is obvious and natural. It simply cannot be otherwise under disarmament. But the question arises: on what are the Western Powers basing their policy? On the interests of their own military alliances or on the interests of disarmament? If you give priority to the interests of disarmament, then our views coincide. But if you give priority to the interests of military blocs, then a hardly surmountable obstacle is raised on the path towards an agreement. We should not like, however, to be pessimistic. And Mr. Dean's promise that the day will come when the United States troops will leave Europe inspires us with some hope in this respect.

A further argument is also put forward to the effect that, even if nuclear weapons delivery vehicles were destroyed, civil aircraft, fishing boats -- and even ordinary suitcases -- could be used to deliver atomic and hydrogen weapons to their targets. What can be said in this regard? If there is to be talk about delivering nuclear bombs in fishing boats or suitcases, it would befit more the authors of primitive fantastic novels and adventure stories than the representatives in the Disarmament Committee to deal with such fabulous ideas.

I must say, however, that the Soviet Government has not overlooked the statements made by some of the representatives of the Western Powers about the possibility of delivering nuclear weapons by civil aircraft. In his speech to the World Congress for General Disarmament on 10 July of this year, Mr. Khrushchev, Chairman of the Council of Ministers of the USSR, said:

" It is said that nuclear weapons can also be carried in TU-114s, Boeing 707s and other civil aircraft. But if there is a real desire for disarmament,

(The Chairman, USSR)

the various countries may for a while keep their means of defence - anti-aircraft artillery and air defence rockets and fighters. Modern means of warfare make it possible to shoot down any aircraft flying at any altitude. As you see, the argument is thoroughly untenable." (ENDC/47, pp.10,11)

Now let us consider how the question of the means of delivery of nuclear weapons is dealt with in the United States Outline of Basic Provisions of a Treaty on General and Complete Disarmament. (ENDC/30 and Add.1, 2) It is clear from the United States document and from the explanations given us by the United States representative that the United States has no desire to single out nuclear weapons delivery vehicles from other armaments, and in its Outline (Stage I, section A) it provides for measures in regard to a number of agreed categories and types of armaments, including nuclear weapons delivery vehicles. What does it all mean? The United States itself - at the beginning of my speech I quoted Mr. Dean's statement in this respect - recognizes that it is these nuclear weapons delivery vehicles which, more than any others, have created a new and dangerous condition in the world, and that it is these nuclear weapons delivery vehicles which make necessary our quest for general and complete disarmament; at the same time the United States Government in its proposals practically lumps these vehicles together with conventional armaments, and does not single them out.

We cannot agree with the United States that nuclear weapons delivery vehicles are merely one of the ordinary categories of armaments which do not, in principle, differ in any way from conventional armaments. Delivery vehicles are a type of armaments, which are specially designed or, in any case, can be adapted for the use of nuclear warheads in operations against vital centres, military objectives, armed forces and the populations of the other side. The means of delivery is a weapon of nuclear warfare. It differs in principle in its nature, strategy and destructive capabilities from all the types of weapons used in the wars which have so far occurred in the history of mankind. How, then, is it possible in these circumstances to regard delivery vehicles and conventional armaments as a single whole and put them on the same level?

(The Chairman, USSR)

Nevertheless, that is what the United States is doing. Why? For what purpose? One cannot help gaining the impression that the United States lumps together the means of delivery of nuclear weapons and conventional armaments solely in order to retain this most dangerous type of weapon for a greater length of time - if not for ever - and to adjust disarmament measures in regard to these delivery vehicles to the same percentage reduction which it proposes for conventional armaments. If delivery vehicles are to be considered just another variety of conventional armaments, as the United States is trying to maintain, then it would have to be assumed that the international armed forces would be equipped with these delivery vehicles. Perhaps the United States even considers it necessary to place nuclear weapons delivery vehicles at the disposal of the contingents of militia or police which will be retained by States after general and complete disarmament?

In this connexion we should like to have some clarification on the part of the United States representative. We are all the more concerned with this question because the provisions of the United States plan do not in fact ensure the elimination of nuclear weapons, and the United States representative has on several occasions invited us to discuss the question of equipping international armed forces with nuclear weapons. Does this not mean that the United States is seeking to retain nuclear weapons and the means of their delivery for all time? What sense would there then be in general and complete disarmament?

The percentage method of reducing nuclear weapons delivery vehicles together with other armaments, as proposed by the United States, is aimed not at the speediest elimination of the threat of a nuclear missile war, but at keeping this threat indefinitely. Moreover, this method may be aimed at obtaining unilateral military advantages for the United States and its NATO allies. Let us speak frankly.

What secret information concerning the objective of attack is the most important today from the strategic point of view of anyone plotting such an attack? Obviously such information would relate, first of all, to the location of launching pads for missiles and other means of delivery, and secondly to the design of the ballistic missiles. In the light of this one cannot help getting the idea that certain circles in the United States would perhaps like, on the basis of the proposal for a 30 per cent reduction of the means of delivery, to obtain already at

(The Chairman, USSR)

the beginning of the stage I all information concerning the ballistic missiles possessed by the Soviet Union, including information regarding the design of our global missiles, to ascertain their number and the Soviet Union's capabilities for their production and to find out by means of sample zonal control where the launching pads are located, to pin-point, as United States generals say, the targets for a nuclear attack. That such attacks could be launched even at the end of stage I is shown by the fact that, under the United States plan, by the end of stage 1, 70 per cent of the means of delivery of nuclear weapons and practically all stockpiles of the weapons themselves would remain at the disposal of States.

Being possessed of all the information in which they are interested concerning Soviet ballistic missiles, in respect of which the Soviet Union is ahead of the United States, the Western Powers could, if they wished, easily halt the disarmament process. We have already pointed out that the provisions regarding transition from one stage to the next, according to the United States plan, are drafted in such a way that the whole business might be limited to the first stage alone.

It is, of course, no accident that the United States proposes that, in the first stage, States should retain the right to continue the production of the means of delivering nuclear weapons. This means that ever newer types of missiles, aircraft and artillery systems would continue to come off the production lines of plants, while warships and submarines adapted for the delivery of nuclear weapons would be built at shipyards. It also means that scientists would be working hard in design offices and laboratories engaged in perfecting the means of delivery of nuclear weapons. And the newly produced and more advanced means of delivery of nuclear weapons would go into the armaments, while worn out and obsolete nuclear weapon vehicles would be eliminated and destroyed as the 30 per cent reduction quota required. Though on the whole the quantity of the means of delivery would be somewhat reduced, actually, under the guise of disarmament, a renewal of armaments would take place.

I recall that the representative of India, Mr. Lall, also criticized the provisions of the United States plan in regard to the retention of the possibility of continuing production of nuclear weapons delivery vehicles. He asked why there should be any production at all except for spare parts during the progress of the

(The Chairman, USSR)

disarmament plan, and went on to say that, if the disarmament plan and treaty which we eventually adopt is one that will work with reasonable speed, then surely it should be possible to have no production at all of weapons except spare parts (ENDC/PV.27, pp.14-16). One is bound to agree with these remarks.

Those are the considerations which the Soviet delegation deemed it necessary to state in connexion with the beginning of the discussion of disarmament measures in regard to nuclear weapons delivery vehicles. In conclusion, I should like to express the hope that the United States and the other Western Powers will reconsider their position on this important question and that they will agree to consider as a basis for an agreement the corresponding articles of the Soviet draft treaty on general and complete disarmament which deal with the complete elimination of all means of delivering nuclear weapons.

We hope especially that the United States and the other Western Powers will make a move to meet us, since the Soviet Union has shown its goodwill and has already made definite moves towards meeting the views of the United States on the question of conventional armaments and armed forces, on the question of the time limit of the treaty and, in particular, of stage I. In the course of yesterday's meeting of the two co-Chairmen we stated that we would agree that the duration of stage I should be twenty-four months, that is two years, instead of fifteen months, as we had mentioned earlier.

It is our hope that in response to our moves towards the United States position, the United States will make some move towards meeting our position on this very important question of eliminating the threat of nuclear war and, in particular, of eliminating nuclear weapons delivery vehicles in the first stage of disarmament.

Mr. STELLE (United States of America): I have listened with the greatest attention, and my delegation will give the most careful study, to the considered, informative, constructive and important statement made today by the representative of Sweden. I do not propose to comment on it at all at this time. I shall merely say that, as has been the case with other important statements made by representatives in this Committee, my delegation will see to it that Mrs. Myrdal's statement is immediately brought to the attention of my Government.

(Mr. Stelle, United States)

Mr. Chairman, as representative of the Soviet Union you today initiated our discussion of the item contained in paragraph 5(b) of our agreed procedure of work (ENDC/52), which deals with disarmament measures in regard to nuclear weapon delivery vehicles. My delegation also wishes to discuss that subject today. I hope that the members of the Committee will find what we have to say, and our approach, both workman-like and business-like.

In order to be clear at the outset about what the United States has proposed concerning the reduction of armaments, including nuclear delivery vehicles, in stage I we should like to review very briefly and in general terms the appropriate provisions of the United States draft outline of basic provisions of a treaty on general and complete disarmament in a peaceful world (ENDC/30). In doing so, my delegation would like also to restate very briefly the principal factors which lie at the heart of our proposals for the reduction of all major armaments, including nuclear weapon delivery vehicles.

On page 4 of document ENDC/30, under section A, Armaments, the United States proposal provides for reduction of the following types of equipment: (1) all surface-to-surface, air-to-surface and submarine-launched missiles and free rockets having a range greater than 10 kilometres, together with, where applicable, their related fixed launching pads; (2) all armed combat aircraft having an empty weight of over 2,500 kilogrammes; (3) all anti-missile systems, together with related fixed launching pads; (4) all surface-to-air missiles, together with any related fixed launching pads; (5) tanks; (6) armoured cars and armoured personnel-carriers; (7) all artillery and mortars and rocket launchers having a calibre of 100 millimetres or greater; and (8) all combatant ships with standard displacement of 400 tons or greater of the following classes: aircraft carriers, battleships, cruisers, destroyer types and submarines.

The principles underlying this proposal of the United States are straightforward and simple. First of all, the United States draft treaty outline sets forth on its pages 4 and 5 an illustrative list of ten categories of major armaments, which includes all those armaments in the group which I have just noted. As can be seen, these range in size from the largest armed combat aircraft and missiles -- strategic, tactical and defensive -- to all other significant types of major armaments, down to certain sizes of artillery, mortars, rocket launchers and various classes of combatant ships.

(Mr. Stelle, United States)

At the very heart of this proposal is the problem of balance and verification, which we will want to discuss in some detail at a later point in our statement today. One of the additional, important factors connected with this proposal, however, is the fact that despite extensive study the United States has been unable to find a way of distinguishing between nuclear delivery vehicles on the one hand and certain conventional armaments on the other. That is a problem to which we will turn shortly. My delegation is prepared, both in this statement and in the future, to elaborate in some detail the reasons for which the United States has found it impossible to arrive at some definition, or to find some clearly differentiating characteristics, to distinguish between nuclear delivery vehicles and conventional armaments. These problems have led us to propose that reductions of armaments extend across the broad range of all major armaments.

The second principle of the United States proposal is that the amount of reduction by the parties to a treaty during stage I would be 30 per cent of the inventory existing at an agreed date of those major armaments listed in each of the ten specified categories. In the light of the size and importance of the task which must be accomplished that appears to us to be an equitable and effective way of ending the threat to the world posed by the continuance of the arms race in all classes of armament. The nuclear arms race would be stopped and turned down; similarly, the capability of conducting war by conventional means would be diminished.

Thirdly, the United States plan proposes that within each of the illustrative categories of armaments set forth on pages 4 and 5 of document ENDC/3C weapon systems be described and reduced by types. We believe that a "type" of weapon system or armament would be a precisely described kind of vehicle or tool of war. With respect to United States armaments, for illustrative purposes, we have relied for a description of the type of armament subject to reduction on certain military model designations, such as B-52, B-47 and B-58 aircraft and the Atlas and Titan missiles, together with their related fixed launching pads.

Our hope is that we may be able to apply military model designations when we come to consider the armaments of other nations. Our purpose in defining types is to ensure an across-the-board reduction in armaments so that no party could reduce a patently inferior weapon or weapons system by more than 30 per cent in order to avoid making a full 30 per cent cut in certain of its major, first-line weapons.

(Mr. Stelle, United States)

Now in some respects the complete plans put forward by the Soviet Union and the United States with regard to nuclear delivery vehicles and other types of major conventional armaments have certain similarities. First, it seems to us that both sides have as an ultimate objective the reduction of nuclear delivery vehicles to the point where nuclear war would be no longer feasible. Secondly, both the United States and Soviet plans propose to accomplish this by a series of reductions of those armaments which contribute to a State's capacity to wage such a war. Indeed, both the United States and the Soviet Union, in their proposals for the destruction of the means of delivering nuclear weapons, will inevitably, in one or more stages, pass through the same levels of such armaments, starting from 100 per cent and shrinking those armaments downwards through 90 per cent, 80 per cent, 50 per cent, 30 per cent and so on. Therefore it is quite clear that both sides will be required in some period of time to reduce their arms over a full range of levels, and they must as a result address themselves to the problem of just how that is to be done. Common methods should not be too difficult to arrive at, since in essence it will be a mechanical problem of balancing the steps taken by each of the parties to the treaty so that there will be no inequalities as disarmament proceeds.

It appears to us also that the two sides have certain other common elements in their approach. My delegation can see, for example, that the Soviet Union and the United States are in apparent agreement that all types of weapons should be reduced; and while there is a difference over the timing, or the pace at which this reduction should proceed, there is no apparent difference with regard to the principle. In addition, the recent acceptance -- which we welcome -- by the Soviet delegation of the principle of percentage cuts, apparently by type, contained in the United States proposal, leads us to hope that it will also see the utility, and indeed the advantages, of accepting the complete proposal by including the principle of across-the-board percentage reductions.

However, we should be less than candid if we did not point out that there are a large number of important substantive differences between the two approaches to the problem of reduction of nuclear delivery vehicles. Some of those problems stem directly from a lack of clarity which my delegation sees in the Soviet draft treaty. Others stem from more deep-seated and explicit differences over substance.

(Mr. Stelle, United States)

It is with respect to the former that we believe the most immediate progress can be made in our present series of discussions. With regard to the latter, we will have to depend upon increasing clarification of the major substantive differences to arrive at a point, we hope soon, at which each side can approach the question of practical negotiations aimed at reaching agreement.

In this area of clarification we find that the Soviet proposals for stage I reduction -- or rather elimination -- of nuclear delivery vehicles require certain further explanations if they are to be clearly understood by my delegation, and for that matter by the other delegations at this Conference. The Soviet draft text appears to single out and to segregate for early elimination all means of delivering nuclear weapons. It uses language such as, "All military aircraft capable of delivering nuclear weapons" (ENDC/2, p.6), to distinguish those types of vehicles which would be subject to particular reductions.

However, it is the considered opinion of the United States delegation that such a distinction will not withstand careful analysis, for as one examines the types of armaments listed in the Soviet draft treaty and their counterparts in the United States treaty outline it is just not clear how it would be possible, as a practical matter, to differentiate among various types of armaments between those falling into the class of nuclear delivery vehicles and those falling into the class of strictly conventional or non-nuclear armaments.

The inescapable fact is that there is a broad "twilight zone" existing between the two points where sharp distinctions cannot be made with regards to what are clearly nuclear delivery vehicles and what are clearly conventional armaments. By way of example: at the one extreme there are those distinct types of weapon systems which are nuclear and nuclear alone and can be isolated, such as certain intercontinental ballistic missiles which for strategic and military reasons alone can now be classed as purely nuclear; and at the other extreme there are conventional armaments such as the rifle and machine gun which, in the present state of technological development, are perhaps not now nuclear-capable. Between those two extremes lies the broad spectrum of this "twilight zone".

This "twilight zone" is really composed of two parts. The first part consists of the group of weapon systems which are designed to have dual capability -- an ability to deliver, either with or without slight modifications, nuclear or conventional warheads. This is generally a designed capability and it is well known that the Soviet Union, for example, possesses certain armaments which are built

(Mr. Stelle, United States)

to have this dual capability. This part of the "twilight zone" would include such vehicles as certain missiles, manned aircraft, submarines, artillery, and perhaps tanks and mortars.

The second and even more difficult part of the "twilight zone" covers those vehicles which, while not designed with a dual capability, can be used to deliver a nuclear weapon to a target. It might include almost any vehicle large enough to transport what in recent years have become comparatively small-sized nuclear weapons. It is not a question of science fiction, but a fact that this class could include such vehicles as civil airliners, non-combatant military aircraft, and certain auxiliary naval vessels. When the Soviet Union speaks of "vehicles capable of delivering nuclear weapons" it includes also within that broad definition, a priori, almost the whole gamut of conventional forces which it also has agreed should be reduced on a scale somewhat different from that proposed for the nuclear delivery vehicles.

The fact of the matter is that, from a practical standpoint, we can discuss the general problem area of nuclear delivery vehicles, particularly those of a strategic nature, but we cannot define vehicles as those capable or not capable of delivering nuclear weapons; rather we have to ask ourselves what nuclear ammunition -- bombs, warheads or shells -- is available or can be developed for the whole broad range of armaments. Given the nature of modern technology, it is very obvious that if one draws a line at a certain calibre gun and says that is the lower limitation of the delivery vehicle category, there is nothing to prevent the development of a shell that will be used in a smaller-calibre gun.

It is simply not clear to us how the Soviet Union proposes to distinguish in a meaningful way which weapon systems have only a nuclear capability and, conversely, those which have only a conventional capability when this vast "twilight zone" between the two categories exists. My delegation believes that it is highly unlikely that an objective definition of those two classes of weapons systems could be arrived at.

It is clear that one side may wish to retain arms that it knows to be purely conventional, while the other side may, in good faith, insist that those armaments constitute a means of delivering nuclear weapons and should, therefore, also be subject to the reduction in question. We found a pertinent example of this problem in a statement by Chairman Khrushchev which the Soviet representative quoted this morning. Mr. Khrushchev said in Moscow on 10 July:

(Mr. Stelle, United States)

"It is said that nuclear weapons can also be carried in TU-114s, Boeing 707s and other civil aircraft. But if there is a real desire for disarmament, the various countries may for a while keep their means of defence -- anti-aircraft artillery, and air defence rockets and fighters." (ENDC/47, p.10)

But, whatever the merits of Mr. Khrushchev's suggestion may be, we all know that air defence fighters can be quickly and easily re-configured for an offensive role -- and a role which could involve the use or delivery of nuclear weapons. Certainly, within Mr. Khrushchev's own statement, which the representative of the Soviet Union quoted this morning, there is a clear example of the lack of clarity with which the Soviet Union approaches this extremely difficult problem of defining nuclear delivery vehicles.

Several other complex questions arise with respect to the Soviet draft treaty proposal that nuclear delivery vehicles and conventional armaments be treated for reduction separately. For example, what are we to do about those armaments in the inventories of both sides in connexion with which it is not possible for the other side to know that a nuclear capability exists or could exist? Certainly, with the knowledge of the tremendous devastation which could result from a nuclear war, this is not a fact the discovery of which should be left to chance. What system of verification would the Soviet Union propose to ensure that armaments originally not configured for a nuclear delivery capability were not later converted to have such a capability, or that no nuclear warheads or ammunition were designed for use in such armaments?

Aside from the problem of definition which I have just discussed, there are important questions of control. What verification means does the Soviet Union propose to institute to give both parties assurance of the fact, even assuming that satisfactory definition of delivery vehicles were arrived at, that all means of delivering nuclear weapons were actually destroyed and that no such vehicles were clandestinely retained?

In addition, what means of verification does the Soviet Union intend to put forward to assure that there is no production and stockpiling of components, major assemblies, or spare parts which could later be put together to provide a significant advantage to one side when the other had in good faith destroyed all its means of nuclear delivery?

(Mr. Stelle, United States)

Those are all questions which this Conference, and indeed, in the first instance the Soviet Union, must answer before we can hope to see clearly the issues which divide us and get on with the job of resolving them. Even given reasonable answers to the questions which we have cited above, and to the many analogous questions which those answers themselves may raise, it appears to us that it will still be impossible to reach an agreement on the basis of Soviet proposals which would meet the legitimate concerns of all parties. Not the least among the factors which leads us to that conclusion is the fact that the Soviet plan -- whatever Mr. Zorin says -- would cause major strategic imbalances during the course of disarmament. The United States delegation has pointed out in earlier statements certain of those imbalances with respect to the question of the relationship, or rather the inter-relationship, of nuclear delivery vehicles and conventional forces during the course of disarmament.

We have shown also how at one extreme almost the full range of conventional armament could be classed as "capable of delivering nuclear weapons". Nevertheless, even assuming some acceptable definition, the imbalances caused between the two sides by the Soviet proposal are to us patently clear. They were described by General Burns in an interchange with Mr. Zorin (ENDC/PV.63, pp. 13 to 20 and 42 to 48). Mr. Zorin disputed them. General Burns suggested that members of the Committee read the competing statements and judge on the merits. For the moment my delegation is content to rest on the record.

Other types of imbalances may also occur during the 21 or now 24 month period which the Soviet Union proposes for the complete elimination of all nuclear delivery vehicles. Parenthetically I might say that Mr. Zorin did, on 27 July, suggest that the Soviet Union would accept a two-year period for stage I (ENDC/PV.62, p.47). I found his statement this morning a little ambiguous, and I questioned him on his statement on 27 July, which I also thought a little ambiguous. That he is proposing is to accept the United States proposal that stage I begin on the entry into force of the treaty and last for two years. The former Soviet position, as we all know, was that stage I would not begin for six months after the entry into force of the treaty, and the stage itself would then last fifteen months; so, in effect, the new Soviet position adds three months to the period of stage I, or, rather, to the end of stage I after the treaty comes into force.

(Mr. Stelle, United States)

The type of imbalance we are speaking of here will be clear when we realize that we must guard against allowing one State to "get the jump" on another by saving all its significant reductions in stage I until the last few weeks or months of the first stage. Now some may say that in the United States plan the same problem arises. But what really makes this problem acute in the Soviet plan is that it intends to sweep away all these armaments in such a short time period that no State could possibly have assurance that its neighbours had reached the 30 per cent level and the 60 per cent level and so on of reductions while the process was being carried on. The heart of this aspect of the problem, of course, is the question of verification. States must be assured that weapons of approximate military equivalence are being destroyed simultaneously on both sides to preserve a "natural balance of forces" during the reduction process.

The United States plan provides for that by use of percentage reductions by stages and steps within stages of all major types, adequately verified, during a time period in which it is realistic to believe that effective measures of verification can be instituted and carried out. We have heard several delegations in this Conference propound the view that disarmament should be accomplished as rapidly as possible, consistent with the need for adequate verification. My delegation has made proposals on both the time limits for stage I and has submitted suggestions for the measures of verification which it realistically believes can be instituted and carried out during that time limit.

One of the greatest failings of the Soviet plan from the point of view of the United States delegation is this question of verification, and it is particularly apparent with respect to the question of destruction of nuclear delivery vehicles. The Soviet plan envisages 100 per cent destruction of nuclear delivery vehicles in stage I in a time which, under the present Soviet proposal, is only two-thirds as long as my delegation estimates it would take to set up and implement control provisions adequate to assure a 30 per cent reduction in such vehicles. We have consistently asked the Soviet Union for an explanation and clarification of its control provisions. We do not believe that we have received adequate replies. We are here in a sincere effort at negotiation. It is our hope that, in the course of our discussions in depth of this question and related questions, the Soviet Union will meet squarely and responsively our requests for further information on this problem of the verification of the reduction of nuclear delivery vehicles.

(Mr. Stelle, United States)

The United States has, in order to try to overcome the many problems of verification, made certain illustrative proposals in its draft outline of the basic provisions for a treaty. Those proposals include measures to institute a system of progressive zonal verification which would increase the amount of control gradually extended over armaments of any party to the treaty in proportion with the amount of disarmament undertaken by that party. We ask only that that illustrative proposal should receive careful consideration and study by all members of the Conference. My delegation will, in future meetings, be prepared with certain supplementary comments on it and other verification proposals which have been made by the United States.

An important and closely-linked aspect of the question of the reduction during stage I of nuclear delivery vehicles is the problem of production. Since my delegation intends in the near future to elaborate in detail its proposals on the entire question of production allowances, we shall only very briefly refer to the subject this morning.

In the opinion of my delegation it is essential that agreed production allowances should not permit a significant alteration of the "weapons mix" which exists at the time a treaty becomes effective. In such a manner we believe that satisfactory agreements can be concluded which will not upset the essential national security of any nation, while permitting marked progress to be made towards general and complete disarmament.

I have spoken at some length this morning on the definition of types of armaments proposed by the United States. My delegation would like to suggest that, since the Soviet Union has recently agreed that it would be expedient to enumerate specifically the main types of its conventional armaments, the Soviet delegation should take the next logical step and agree as well to enumerate specifically by type all armaments that would be reduced during stage I.

In conclusion, my delegation desires to reiterate that, although we assented to a discussion of the problem of nuclear delivery vehicles to be considered for reduction during stage I, we believe there are no verbal distinctions between classes of armaments -- nuclear and conventional -- which can serve as a basis for arriving at agreed treaty language. Indeed, if the Soviet proposal for defining nuclear weapons delivery vehicles as "all vehicles capable of delivering nuclear weapons" is carried to its full extension, it is clear that the Soviet Union would be asking for practically a 100 per cent cut in all major conventional armaments.

(Mr. Stelle, United States)

That would mean, of course, that the Soviet Union would in fact be abandoning even the pretence of a carefully-arranged disarmament programme for reductions spread over three separate stages. Instead it would be virtually insisting that we should all complete disarmament, except for demobilizing the remaining troops with their very small arms and minor weapons, in the very first stage. That sort of proposal would, of course, offend against a great many of the principles contained in the joint statement of agreed principles for disarmament negotiations of 20 September 1961 (ENDC/5), including those providing for staging and balance.

Therefore the position of my Government is that there must be a uniform, comprehensive, and practical approach to the reduction in stage I of all armaments of the kind indicated in the United States outline treaty. We hope that the Soviet Union will eventually accede to the logic of that principle and accept the proposal of the United States as the basis for considering the reduction of all agreed armaments.

Mr. GCDBER (United Kingdom): We listened this morning, first of all, to a remarkable speech made by the representative of Sweden, Mrs. Myrdal, in relation to the problem of nuclear tests, and I think we shall all want to study very carefully the detailed arguments which she put forward. I myself pledge the United Kingdom delegation to give her important statement the full and careful consideration which it deserves. I was particularly impressed by the emphasis which she so rightly laid on the scientific basis of the problem of detecting and identifying nuclear explosions. I do not want to develop the point further this morning. As both the representative of the Soviet Union and the representative of the United States have said, we should give it the most careful thought in the Sub-Committee and consider in what way it can help us forward.

I was glad to hear the representative of the Soviet Union say that he saw value in some of the thoughts which Mrs. Myrdal put before us. However, I was just a little disturbed when I understood him to say words to the effect -- and I am not sure whether I have taken them down rightly -- that it is impossible to put aside the political differences as though they do not exist and just proceed on a factual and scientific basis. Of course, the two things have to be considered together; but I would remind Mr. Zorin that up until 28 November 1961

(Mr. Godber, United Kingdom)

we did have an agreed scientific basis for our discussions. That we have not got one now is not the fault of the West. However, it appeared to me that the proposals which the representative for Sweden put forward suggested a way of getting round the present difficulties in this regard and that is why I shall look at them with very keen interest.

I wanted to say a few words this morning on the topic which was touched on by both our two co-Chairmen: item 5 (b) of our agreed procedure (ENDC/52), dealing with nuclear delivery vehicles. I am very glad that we are now getting into detailed discussion on matters of real substance; and, quite frankly, we have to admit real difficulty to the Committee as a whole. But perhaps as we study these problems more deeply we may see the ways out of some of our difficulties. That certainly is my hope.

Of course the Western delegations, as I think has been made quite clear many times, are as conscious as anybody of the need to eliminate nuclear delivery vehicles. We want to get rid of them just as much as anyone else. We have taken the view, however, because of the nature of those weapons and because of the Powers involved, that we have to find means and methods whereby we can proceed with this process in such a way as to enable us to carry with us confidence that in fact others are getting rid of theirs in the same way that we are, and that there shall be no break in the problem -- the very real problem -- of balance which has been touched on so many times, and which I do not propose to go into at length this morning.

I would only say, in regard to what the representative of the Soviet Union said this morning, that I still cannot accept the line that he puts forward in that connexion. It is significant that he has not, even this morning, touched on the very important and cogent major points put forward by the representative of Canada at our last meeting (ENDC/PV.63 pp.13 et seq.). I pointed out just at the end of that meeting (ibid., p.52) that there were two major issues which had not been in any way touched on, let alone refuted, by the representative of the Soviet Union on that occasion, and he has not referred to that at all today. However, I do not wish to develop the point today, although there is much that I could still say in regard to it.

(Mr. Godber, United Kingdom)

I should just like to refer very briefly to one or two of the points that divide us in relation to that. Whatever the representative of the Soviet Union may say, the measures which are set out in the first stage of the Soviet plan (ENDC/2), and which he very properly put before us this morning, do not and cannot in my view eliminate the nuclear threat. I would just remind my colleagues of what the representative of Sweden, Mr. Edberg, pointed out on 11 May, when he said:

"A complete elimination of all potential nuclear weapon carriers seems to be practically impossible to effectuate." (ENDC/PV.35, p.36)

I myself have tried to give practical examples of that; and I would only refer my colleagues to the speech I made on the subject on 6 June (ENDC/PV.5C, p.4).

Secondly -- and, once again, in spite of our Soviet colleague's assurances to the contrary -- as I have said before, we do believe that the balance will be upset by these proposals; and while the extent to which the West would find itself at a military disadvantage is a subject which we could discuss at great length, I do not think there is any need for me to add at this stage to what our Canadian colleague said on Monday (ENDC/PV.63, p.13).

Then there are of course the enormous practical difficulties that are involved. As Mr. Burns pointed out to us on 3 May (ENDC/PV.30, p.10), articles 5 to 8 of the Soviet draft treaty propose first that the manufacture of all means of delivery of nuclear weapons, including rockets, military aircraft, submarines, warships, and artillery, should be discontinued in the first stage. But there would then be the difficulties of checking the enormous inventories which States would have to provide, and there are the problems of destroying and dismantling everything on those inventories simultaneously under the inspectors' control. I am afraid, with the greatest respect, that such a programme does strike me as being sadly unrealistic. And of course there are, tied up with that, all the problems of verification.

Further, the fact that the Soviet Union has chosen to put forward 100 per cent elimination of these delivery vehicles in this stage, with different percentages for other armaments in this stage, does of course tremendously increase the complications in relation to the whole problem of verification, basing it on the Soviet Union's own approach to verification. I have pointed this out in the past.

(Mr. Godber, United Kingdom)

~~On the one hand~~ the Soviet Union deliberately complicates the verification process; on the other hand it does not help us as yet -- I say as yet -- in the problem of solving how the verification procedure can proceed. I make no apology for returning to the problem of verification today, but I want to leave it for the moment to say something about another problem, that of definition.

I have already referred to a remark by Mr. Edberg of Sweden in the course of that most interesting and illuminating series of questions which he put to both our co-Chairmen on 11 May. Now the tenth of Mr. Edberg's twelve questions was quite simply, "What is a nuclear weapon carrier?" (ENDC/PV.35, p.35). I think both sides are aware -- and, indeed, must be aware -- of the difficulties inherent in that question. Mr. Zorin, in his reply at the following meeting (ENDC/PV.36, p.40) appeared to try to shrug off this matter by telling us that the problem would solve itself, since under his draft treaty States would have to submit information about their delivery vehicles before the implementation of first-stage measures began. That is all right as far as it goes, but in the absence of any clear intimation from the Soviet side of precisely what categories they have in mind it would really be very difficult for us to reach a satisfactory agreement on those lines.

Our United States colleagues, on the other hand, have put forward in their plan, under section A of stage I, a detailed list of such categories and types, including the delivery vehicles which would be subject to the 30 per cent cut which is proposed. I understood our Soviet colleague today to find it displeasing that these were put alongside other categories; but it is quite easy to spell out all types of armaments, and I think we have to find some way of doing so. We believe that the term "delivery vehicles", while it may be satisfactory for general statements, really ought not to be used in detailed discussions such as we are now entering on without full qualification so that people know precisely what is meant by it. In isolation the phrase -- which we have come to use in our jargon in the Conferences -- is vague and ambiguous, and therefore could be potentially dangerous because leading to misunderstanding.

Now that we have agreed to submit the question to close examination, I would suggest that we should all be careful to specify just what groups of delivery vehicles we mean at any particular moment. Are we talking about rockets, aircraft

(Mr. Godber, United Kingdom)

ships, artillery, or any other means which may be or have been devised? At the moment I should just like to turn to what I think is the most pressing of those categories, that of rockets. My Government has been studying various problems raised by our current negotiations with regard to the elimination of rockets as strategic delivery vehicles, and we have now produced two short papers^{1/} which I should like to table and which I would ask to have circulated as conference documents.

I should like to say a few words in explanation of these papers. First, they are intended only as a preliminary approach to certain of the problems which arise; secondly, they have deliberately been made non-technical. As the Conference will know, we had originally hoped that certain technical working parties or sub-committees might have been established to which technical papers could have been submitted but, in the absence of such bodies, we believed that it was better at this stage to keep the papers simple and, as far as possible, non-technical. If any representatives have questions I shall be only too happy to endeavour to answer them, or to obtain answers, at an appropriate time when representatives have had an opportunity to study the papers. If any delegation would like to discuss with us the issues raised then I shall be very happy to arrange that at any mutually-convenient time. Today I just want to limit myself to a few introductory remarks in relation to them.

I would ask representatives please not to look to these papers for solutions to our problems. They do not claim to provide any, for the excellent reason that in many cases we simply do not yet know ourselves where those solutions lie. What we are trying to do in this exercise is to suggest lines of inquiry which may help us all to clear our minds and help us forward towards possible solutions.

The first of the two papers which we are tabling suggests four particular lines of inquiry. First of all, it discusses whether or not it is possible to distinguish between rockets designated for military purposes and those which are intended for the peaceful exploration of space. That is not a problem of terminology; it is a practical difficulty which we have to recognize and resolve.

^{1/} ENDC/53 and 54

(Mr. Godber, United Kingdom)

I would add in this connexion that the paper, while covering the question of rockets in general, deliberately concentrates on the largest rockets, that is, the inter-continental ballistic missiles. That is because, owing to their size, those are obviously easier to inspect and supervise and the verification problem -- which always looms up in these matters -- posed by them is correspondingly less acute.

The only solution that suggests itself to this first problem of differentiation is a close supervision of all stages from the first blueprints to the final launching of all civil and military rocket programmes. That is, to say the least, an uncomfortable conclusion, but we have to face the fact that, as the paper points out, the rockets used to launch every space shot so far carried out were originally designed as ballistic missiles, and there is no reason to believe that future rockets will not also be just as capable of delivering a warhead to its target as of launching a satellite or a capsule into outer space.

In that connexion might I just refer briefly to the Soviet draft treaty (EMDC/2), article 5, which talks of the elimination of rockets capable of delivering nuclear weapons? It talks about all rockets capable of delivering nuclear weapons being eliminated and destroyed and their production stopped. But the point I have just made shows the difficulty of such sweeping definitions, and we have to face that particular problem.

The next question posed by the paper concerns the degree to which the manufacture and testing of space rockets could be controlled and supervised. It is largely a question of the number of inspectors necessary. By our calculations that number, for all the countries involved, would inevitably run into several thousands. Precise figures are obviously difficult to give at this stage, if only for instance because we have no clear idea of the number of scientists, engineers, technicians and workers at present engaged in the Soviet rocket industry.

The third line of inquiry which the paper suggests is the study of verification of destruction of military rockets, their means of production and their proving grounds, and the chances of undetected evasion of disarmament

(Mr. Godber, United Kingdom)

requirements. I shall say a little more about this question of verification of destruction in relation to the second paper, but it is -- as I am sure members of this Committee will be glad to realize, if they had not realized it already -- a rather simpler problem than the other problems which I have just been discussing.

On the other hand, our paper does have to take a rather gloomy view about the possibility of detecting hidden stockpiles, although we can perhaps draw comfort from the fact that underground silos are considerable undertakings, and are, moreover, extremely expensive items to construct.

As can be seen, there is also some crumb of comfort to be found in the fact that, given reasonable inspection facilities, it would be difficult to conceal or to disguise the highly sophisticated manufacturing processes which are needed to construct the walls of a ballistic missile.

Lastly, the paper asks whether we have any means of ensuring that further developments in space technology will not be used to conceal or to threaten any aggressive intention by countries engaged in space research. It could be said that that question falls more properly into sub-paragraph (h) of paragraph 5 of our agreed procedure (ENDC/52), and we do not wish to anticipate in any way the discussion we shall have of the use of outer space for peaceful purposes when we reach that item. The section in this paper which I have submitted consists of only two paragraphs and has been included merely to complete the picture as far as rockets are concerned.

If I could summarize the first paper, I would say that its conclusions are the following:

1. We know of no satisfactory means of differentiating between military and civil rockets. The only safeguards in our view lie in control and inspection.
2. We believe that the number of inspectors required to cover this problem in all the countries concerned would be of the order of thousands rather than hundreds.
3. The degree of insurance against evasion is directly proportional to the effectiveness of the inspection system which is, in turn, a combination of sufficient numbers with adequate powers of inspection; and,

(Mr. Godber, United Kingdom)

4. Complete international collaboration is, in our view, the only certain method of ensuring against misuse of future developments in space. Such collaboration could serve also to remove suspicion that the resources of a legitimate space programme might be diverted to launching a strategic attack. Failing effective collaboration, increased control and supervision of rockets would be required at all stages from design to launching.

Now I should like briefly to develop a little further the subject of the verification of the destruction of certain types of delivery vehicles, and, remembering what I said earlier about qualifying the term "delivery vehicles", I would hasten to add that what I am thinking of here are two particular types, namely, military rockets and aircraft. That is a subject which is touched upon in the paper which I have just been discussing, but because it raises a certain number of special problems we thought it desirable to produce our second paper devoted particularly to the point.

Thus the second paper examines the methods which are available for the actual destruction of rockets and military aircraft, and it goes on to discuss the effort which would be required to verify that their destruction had in fact taken place. It discusses also the possibility that countries might attempt to meet the letter rather than the spirit of their disarmament obligations by destroying sub-standard equipment. These are points that we have to face, and it suggests measures, if they are considered necessary, for verifying that weapons and aircraft, before destruction, are in fact up to operational standard.

The first part of the second paper is devoted to rockets. It will be noticed that in it they are in fact referred to as "ballistic missiles". I should reassure my colleagues that that term covers the same categories as the term "rockets" used in the first paper, but the difference in terminology is explained by the fact that in the first paper we were having to consider not only military rockets but also those required for peaceful purposes, whereas the second paper is of course exclusively concerned with weapons of war.

As our second paper explains, there are two principal means of destroying ballistic missiles: the most obvious and perhaps the simplest way of doing so is to fire them on to a range -- with the warhead removed, of course -- and

(Mr. Godber, United Kingdom)

subsequently to verify that they have performed as they were expected to. Such a system would have the disadvantage of entailing large numbers of launchings with certain risks of accident. But the alternative would be what are referred to as demolition factories, where the missile could be physically and deliberately destroyed. Such a system would require additional measures in order to ascertain that various technical forms of equipment were still installed in the missile at the time of its delivery to the demolition factory and that such equipment would also be destroyed or salvaged under proper controls for civil and peaceful use.

In the case of aircraft, only the second of the two alternative systems to which I have referred would, it seems to us, be suitable. It is proposed that the aircraft should be required to fly to the destruction centre, and possibly even to perform some simple exercise in order to prove that it had not been stripped of its main high-quality components. The numbers of inspectors, engineers and non-technical staff which would be required for that particular aspect of the work of the international disarmament organization would probably be considerably less than the numbers called for by the first of our two papers. Once again, however, I shall refrain from going into further detail until such time as my colleagues in the Committee have had a chance, if they wish, to study our papers and to form conclusions upon them. I would only repeat that we in the United Kingdom delegation should be glad to discuss the papers in greater detail at any appropriate time.

The object of my delegation in tabling these papers and others which we may be able to bring forward is not to delay in any way the political consideration of the subjects involved or the drafting of appropriate treaty language. We present them in order to make available to delegations generally the outcome of some of our technical considerations of certain of the issues involved in the various subjects which we are now beginning to consider in detail and in depth. We believe that consideration of some of the problems raised really is essential to a proper and a full appreciation of the decisions that we are called upon to take. We believe that their study will help us all in producing a treaty which is both realistic and sound; we hope very much that our papers will be of assistance to our colleagues and may help to move our discussions forward, because we have to face up to these very real, difficult and complicated problems. While it is easy to make speeches which appeal to the emotions with regard to the things we want to do, what we must do is find the practical ways of doing them.

(Mr. Godber, United Kingdom)

I do not wish to be critical, but I would say that I was sorry when, for instance, in your own speech today, Mr. Chairman, you did not face up to some of the real problems of verification which, however one looks at it, are an essential part of the problem relating to this matter as to so many of the matters we are facing. I hope that this is merely a delay, and we shall look forward to the contributions which you are going to give us and which will help us forward in solving this issue, just as we must all work together in solving the other major issues that confront us.

Mr. ALEMAYEHU (Ethiopia): Mr. Chairman, the remarks I wish to make would take about a half-hour or thirty-five minutes. In view of the lateness of the hour, you may prefer me to defer them until our next meeting, although I am ready to go ahead now if you wish.

The CHAIRMAN (Union of Soviet Socialist Republics) (translation from Russian): I think it is for the Committee to decide what it considers appropriate. We could, of course, listen now to the statement of the representative of Ethiopia but this would, of course, hamper to some extent our subsequent arrangements after this meeting. Therefore, if it entails no inconvenience to the representative of Ethiopia, since we are to have a plenary meeting on Friday, we could perhaps let him be the first speaker on Friday. If he has no objection and the members of the Committee have no objection either, perhaps that would be the best thing to do. I see there are no objections. Then with your permission I take it that this is the opinion of the Committee and that it does not clash with your intentions.

The Conference decided to issue the following communique:

"The Conference of the Eighteen Nation Committee on Disarmament today held its sixty-fourth plenary meeting at the Palais des Nations, Geneva, under the Chairmanship of Mr. Zorin, Deputy Minister for Foreign Affairs and representative of the Union of Soviet Socialist Republics.

(The Chairman, USSR)

"Statements were made by the representatives of Sweden, the Soviet Union, the United States and the United Kingdom

"The United Kingdom delegation submitted two documents: (a) 'Preliminary study of problems connected with the elimination of rockets as nuclear delivery vehicles';^{1/} and (b) 'Preliminary study of problems connected with the verification of the destruction of certain nuclear delivery vehicles'.^{2/}

"The next plenary meeting of the Conference will be held on Friday, 3 August 1962, at 10 a.m."

The meeting rose at 1.15 p.m.

^{1/} ENDC/53

^{2/} ENDC/54