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COMMITTEE ON THE PEACEFUL USES OF OUTER SPACE

VERBATIM RECORD OF THE ONE HUNDRED AND NINETY-SECOND MEETING

Held at Headquarters, New York,
on Tuesday, 19 June 1979, at 3 p.m.

Chairman: Mr. JANKOWITSCH (Austria)

Applications of space science and technology and activities in outer space:

- (a) Remote sensing of the earth by satellites
- (b) Direct television broadcasting by satellites
- (c) Definition and/or delimitation of outer space and outer space activities, bearing in mind the issues relating to the geostationary orbit
- (d) Space transportation systems
- (e) Use of nuclear power sources in outer space
- (f) Examination of the physical nature and technical attributes of the geostationary orbit
- (g) Draft treaty relating to the moon

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The meeting was called to order at 3.30 p.m.

APPLICATIONS OF SPACE SCIENCE AND TECHNOLOGY AND ACTIVITIES IN OUTER SPACE

- (a) REMOTE SENSING OF THE EARTH BY SATELLITES
- (b) DIRECT TELEVISION BROADCASTING BY SATELLITES
- (c) DEFINITION AND/OR DELIMITATION OF OUTER SPACE AND OUTER SPACE ACTIVITIES, BEARING IN MIND THE ISSUES RELATING TO THE GEOSTATIONARY ORBIT
- (d) SPACE TRANSPORTATION SYSTEMS
- (e) USE OF NUCLEAR POWER SOURCES IN OUTER SPACE
- (f) EXAMINATION OF THE PHYSICAL NATURE AND TECHNICAL ATTRIBUTES OF THE GEOSTATIONARY ORBIT
- (g) DRAFT TREATY RELATING TO THE MOON

Mr. RICHER (France) (interpretation from French): Today, I shall set forth France's position on agenda item 4 (e), "Use of nuclear power sources in outer space". The delegation of France, of course, reserves its right to speak again on other subitems of agenda item 4.

It will be recalled that in a resolution adopted on 10 November 1978 by the General Assembly of the United Nations, there is a provision for the consideration of technical aspects and safety measures relating to the use of nuclear power sources in outer space, and for the creation to that end of a working group of experts. The same resolution contains a request to States launching the satellites to inform States concerned in the event that a malfunction entailed the risk of the re-entry of radioactive materials into the atmosphere.

The wording of that resolution gives a mandate to our Committee, which at its last session supported the establishment of a working group of experts. That Working Group met during the last session of the Scientific and Technical Sub-Committee. It noted that if the use of nuclear power sources in outer space was indeed advantageous for certain types of missions and if the safety of such use could be technically ensured in internationally recognized conditions, that presupposed the elaboration of conditions and criteria of safety that the Group could take into consideration. It was felt also that notification of launchings was technically advantageous, for several reasons, and that it should be recommended.

(Mr. Richer, France)

On those bases, and thanks to the spirit of compromise shown during the work of the Group, a consensus was reached on several points, and of course there is no need to revert to that. The Group concluded, at the same time, that there was still work to be done - in particular, a study of the concept of a safe orbit for the functioning of satellite nuclear reactors; of the safety criteria to be observed in the conception and exploitation of nuclear power sources in outer space; of the principle of the systematic evaluation of safety by the country involved, before each launching of a nuclear object into outer space; and, finally, of the systematic notification of the launching of nuclear objects into outer space.

The success of our work is of course linked to the need not to take up too many subjects at the same time. None the less, we think that we should not leave aside too systematically certain topics whose final aim is the protection of peoples. France indeed feels that there is advantage to be gained from the use of nuclear power sources in outer space, but we feel also that such use must be attended by the indispensable precautions, which, moreover, it is difficult to ignore.

Those principles explain why the delegation of France agreed to informal consultations before the next session of the Scientific and Technical Sub-Committee. The French expert will make his contributions available by the end of September. He hopes that the meeting will not take place before November, and that it will be held in Europe - no doubt in Switzerland. But that is not the end of our mandate.

As I said at the beginning of my statement, the General Assembly resolution refers also to the need to inform States concerned in the event of a malfunction likely to lead to a premature re-entry of the satellite. That raises the problem of notification of the launching of a satellite with nuclear power sources. It raises the problem of the nature of the information to be furnished in the event of a re-entry. Finally, it raises the problem of the means of assisting the countries that are victims of an accident. Those three problems, to the extent that they require the formulation of international regulations, seem to the French delegation to be within the competence of the

(Mr. Richer, France)

Legal Sub-Committee. That is why my delegation hopes that the plenary Committee will deem it appropriate to include in the Legal Sub-Committee's agenda a separate item on the use of nuclear power sources in outer space. Nevertheless, it should be understood that the work of the Legal Sub-Committee must remain strictly linked to that of the Scientific and Technical Sub-Committee, and that the work to be undertaken should be preceded by a preliminary study of the legal provisions already in effect under the other instruments that have been adopted.

Those, briefly, were the observations that the French delegation wished to make. We must, of course, emphasize the importance we attach to this subject, particularly to the success of the work and studies still to be undertaken.

Mr. YASH PAL (India): Regarding remote sensing of the earth by satellites, we have had long deliberations in the Scientific and Technical Sub-Committee, which has devoted a large fraction of its time to that topic. We have had long discussions in the Legal Sub-Committee also, trying to draft principles governing remote sensing. As has already been mentioned, we have had only marginal success in our efforts.

(Mr. Yash Pal, India)

However, in certain areas the work, at least that of the Scientific and Technical Sub-Committee, has had important spin-offs and we should recognize that.

In the Scientific and Technical Sub-Committee we have for some time been stressing, through the initiative taken by the expert from Canada and also the expert from the Soviet Union who have been participating in these meetings, the need for complementarity and compatibility in remote sensing systems. That has led several countries, several people, to set up bilateral arrangements before an international arrangement has been set up to discuss the complementarity and compatibility of the systems which they are implementing or which are on the horizon. I do know that there are discussions between Canada and European space agencies. We have had discussions ourselves with the French Space Agency and with the European Space Agency and clearly some of the work which is initiated here does have an impact.

There is another aspect which we have discussed in the Scientific and Technical Sub-Committee and which is also generally connected with the United Nations Programme on Space Applications, and that is the use of remote sensing in developing countries. It has become clear through all the training courses which have taken place and through some of the discussions which have been taking place in the Scientific and Technical Sub-Committee, that the time has come to demystify remote sensing so far as the developing countries are concerned - to demystify it in the sense of showing that it is not an entirely new discipline, that it must come out of the normal training programmes and, furthermore, that these countries need to develop an indigenous internal organizational system in order to make use of the data from remote sensing, and that they need to have appropriate decision-making systems so that the remote sensing element becomes just one small element in the total planning process.

(Mr. Yash Pal, India)

Those are some of the things which have been communicated through the discussions in the Scientific and Technical Sub-Committee. But the fact remains that we have made very little progress so far as the drafting of legal principles is concerned. My view is that events and technical developments have left us behind. In fact, some of the draft principles, even in square brackets, are probably no longer relevant. Perhaps we need to look at this problem ab initio in connexion with many other things which are happening. We have not had success in this area because it is difficult. It is difficult not only because of the things that we discuss in this Committee but also because of several things which we do not discuss in this Committee. I should like to mention some of them.

So far as the collection of data is concerned, clearly the draft principles of having to get permission from various countries before gathering data cannot be taken very seriously any more, at least with regard to one class of data. The remote sensing satellites which are called meteorological satellites have so far proved to be extremely successful. The first remote sensing done by those satellites has become almost global and data from it are being used by practically all countries. This is a recognition of the fact of the special character of space which unifies and which does not recognize national boundaries. Everybody recognizes that if we are going to study weather and meteorology then we must do it globally. The World Meteorological Organization has done a wonderful job of this and by now nobody doubts or has any fears with regard to the remote sensing that is done through meteorological satellites operating around the world. All the data are shared. A lot of studies have been made. It has proved to be one of the most successful applications of space.

Those remote sensing satellites have a typical resolution on the ground at the moment of the order of 1,000 metres, about a kilometre. When we come to the next set of remote sensing satellites, the most successful ones, the LANDSAT satellites, we come to a resolution of the order of 70 and 80 ~~metres~~ metres. We have had a lot of discussion on this through the years: whether those data ought to be freely disseminated and as to what ought to be done and what ought not to be done. Clearly by now there are many countries which have receiving stations. These data are being freely disseminated and generally the feeling so far as

(Mr. Yash Pal, India)

these data are concerned is that that is all right. People are getting used to it. There has been the very constructive suggestion by the Soviet Union that while this dissemination of data is all right, we should probably set a limit on the resolution, which is somewhere around 50 metres photographically. Below that, for any finer resolution, one would need the consent of the country sensed before disseminating data.

That particular suggestion has also led to various discussions at a scientific and technical level. In fact, some of the earlier scientific discussions, were related to trying to find out which class of data corresponds to what particular use. We have had the help of COSPAR in this and COSPAR has done two studies in this regard which have been exceedingly useful. But the problem to a certain extent still remains. Let us face it: the concern about remote sensing data on the one hand arises because of its economic implications or the possibility of the economic exploitation of resources. On the other hand, it is connected with what one might call strategic or military aspects. We do not talk about that very much here, but there is that connexion. Clearly, the studies done by COSPAR do not relate to the possibility of detecting feature changes or objects which are related to defence activities and clearly the COSPAR study has not specifically addressed itself to that problem.

If we go a little further in resolution we still talk about completely free dissemination of data, but I do not know whether we are quite serious about that, because if we go to a really fine resolution we will find that we have problems in regard to another aspect. Remote sensing is a continuum starting on one side with meteorological satellites and on the other side with surveillance satellites which are used for monitoring agreements like the SALT Agreement, which are necessary for the so-called peaceful military uses of outer space. It is a complete continuum; the use of surveillance satellites is as much remote sensing as that of meteorological satellites. Now, we are not openly saying, "Let us also have the surveillance data freely disseminated" and I am not suggesting we ought to do that, but we ought to recognize the elements which enter into this discussion and why it is so difficult to draft legal principles about this matter.

(Mr. Yash Pal, India)

In this connexion I should like to make a suggestion. Since this aspect is not unconnected with our work, this Committee being concerned with the peaceful uses of outer space - and I hope that implies that it wants outer space to be used peacefully and not that it will not look into non-peaceful uses at all - I should like to suggest that in regard to remote sensing, particularly finer-resolution remote sensing that borders on surveillance, the time has come for you, Sir, as Chairman of the Committee, to take an initiative for the holding of a back-to-back meeting with the Disarmament Commission. These are considerations that are being discussed in disarmament bodies and some mechanism ought to be found so that we can discuss this problem openly. Unless we do that, I feel that the whole exercise of trying to draft these principles is not likely to meet with much success.

There are of course other aspects connected with the possibility of getting together with the Disarmament Commission that have already been mentioned: questions like the militarization of space, anti-satellite weapons, and other things that are happening in space which we do not discuss here very much and which, indeed, we cannot discuss in isolation because other aspects are involved.

(Mr. Yash Pal, India)

I wish to go on now to item 4 (b), "Direct television broadcasting by satellites". In this area the Legal Sub-Committee had, at least a few years ago, made enormous progress. The very commendable efforts made by Canada and Sweden to produce a clean draft after many years of effort seem to have been thwarted during the last meeting of the Legal Sub-Committee. As far as my delegation is concerned, we would be prepared to go along with that text, but we do insist that the clause relating to consultation and agreement cannot be diluted any further.

Having had some experience of direct broadcasting in my country, and having been personally involved, I should like to make the following remarks. Some people who think there need to be legal principles governing direct broadcasting by satellites do not want to obstruct the free flow of information as such. Indeed, as far as the developing countries are concerned, the free flow of information into the developing countries has proceeded to such an extent that I believe about 70 per cent of the television programmes in many of those countries come from Western countries. This, probably, is not the best form of free flow of information, but some aspects of this free flow of information are good, and, speaking from personal experience within one country, I do not believe that I would want all the villages in India to get all their programmes from Delhi. It is not that I want to stop information from Delhi going to those villages, but I believe that if direct broadcasting by satellite has to be used in my country for educational development, then the developmental programmes which relate to and touch people's lives intimately just cannot all be produced in Delhi, and they certainly cannot be produced anywhere else outside Delhi either. So this is a very practical aspect.

Indeed, as we go towards the operation of a direct broadcasting satellite in our country, we are forced to think of a system in which programmes are produced in hundreds of places, and we just use the high reach of the satellite, not to homogenize people but to integrate them. That is why we need agreements and consultations: so that this total programme of education and development is not tampered with, but so that the world does get integrated. We want to do it within our own country, and I believe it is necessary to do it throughout the world also.

(Mr. Yash Pal, India)

I should like to speak briefly on subitem (d), entitled "Space transportation systems". I recall that my delegation was one of those that insisted a few meetings ago that we should include this item as one of the agenda items for discussion in this Committee and in the Scientific and Technical Sub-Committee. During the last session of the Sub-Committee, we had very good and informative presentations about various space transportation systems that were being developed by various countries. We had audio-visual presentations and a great deal of literature and we benefited enormously from that. However, one of the reasons for introducing this agenda item - in addition, of course, to knowing what space transportation systems are going to be available to us for launching our satellites, which will be cheaper, how we will be able to retrieve the satellites and build structures in space, and so on - was to start us thinking about the new activities that are going to take place in space 10, 20, 30 and 40 years from now and that are likely to affect relationships between the countries here, likely to affect economies and likely to affect the whole way of life. I am speaking of space manufacturing; solar power stations; pharmaceuticals in space and various other activities. Unfortunately, we have not had much discussion on those matters, largely because we do not really have a good idea of what is going to happen and whether industrial activity in outer space is going to be important, at least as far as some of the strategic items are concerned. Unless we gather some of that information, some of the discussions on this item in the future will remain rather peripheral.

I should like to suggest that we request the Secretariat, as we always do whenever we are in trouble, to try to prepare a study which at least will list what has been achieved and what are the various things that are being done in the area of, let us say, space manufacturing, including a bibliography of various scientific and technical papers on this subject. I believe this would be exceedingly useful to some of us in trying to think about this subject in so far as we can, as was mentioned by the representative of Austria, think of issues and problems decades ahead. Therefore, I would request the Secretariat, if you agree, Mr. Chairman, to undertake this task.

I shall now speak briefly about the nuclear power sources issue. This is one area in which this Committee and the Scientific and Technical Sub-Committee can take due pride, in that they were able to respond to a situation rather quickly in a very constructive manner. The Working Group has been set up and it is working

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exceedingly well. Very positive suggestions have been made. The Working Group is going to meet again and I am sure that the initiative that was taken at the last Committee meeting under your leadership, Mr. Chairman, will bear fruit and that we do have a reasonable way of handling this issue. We all recognize that nuclear power sources are going to be needed for many of the space activities, but we also all recognize that we need to minimize the chances of accidents happening and the chances of injury to people. We are ourselves taking an active part. We brought an expert last time to the Scientific and Technical Sub-Committee and we hope to continue working very actively in this Working Group.

I do not wish to go any further in this connexion because the work is proceeding exceedingly well. However, I might mention that accidents do occur. There was an accident to the COSMOS and there is another accident of the sort which is likely to happen to SKYLAB, an accident in the sense that the atmospheric density increased because of increased solar activity, and therefore SKYLAB may come down a little earlier than expected and it is not likely that one will be able to go up there with a shuttle and boost it up to a higher orbit. The efforts that NASA has been making in this connexion in order to increase the lifetime of SKYLAB and to manoeuvre it in such a way that when it falls the pieces come down as far as possible, on uninhabited areas, are really heroic and commendable. I have only praise for what they are doing in this regard. I am also aware of the fact that the chance of injury is very small, though it exists.

In this connexion, some of the things that we have said in regard to incidents like that of COSMOS or the possibility satellites with nuclear power sources coming down apply. We suggested, for example, in the last Working Group that long before anything like this happens we should have standard ways of informing administrations and Governments about what to do, what kind of a drill to impose. Maybe nothing; maybe something. Should people stay indoors? What is indoors if you have only a thatched hut? How far in advance do administrations need this information or could get this information in order to inform the people? The communications systems in all parts of the world are not alike. Here you could have information given out and everybody would know it within ten minutes. That is not so in my part of the world. In my part of the world it would take some time before you could get the information to all the farmers, fishermen and everybody else. The

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problem here is not one of a real danger; it is one of probabilities and very small probabilities. But strangely enough, we have already had demonstrations about it in India. In fact, people think that because I am dealing with space matters that I have something to do with this. I have received dozens of telephone calls asking whether SKYLAB is going to fall over Bombay or Delhi or Bangalore or Ahmedabad and asking what I am going to do about it and whether I cannot do something about it.

It would be useful in this case to have at least some kind of information package available, without causing undue alarm. People will feel that somebody is doing something and is worrying about it and that they can be informed well ahead of time.

Finally, with regard to the draft treaty relating to the moon, very commendable work has been done by the Austrian delegation. We had hoped that during the last session of the Legal Sub-Committee that draft would have been generally accepted and approved. We had decided, after a lot of thinking, that we would go along with it. But something seems to have happened. I do not know what. I do hope the draft treaty will be resurrected, that we shall move back a year in time and again look at that draft with great favour and approve it as soon as possible.

I have taken a little more time than usual, but then I wanted not only to fill in time but to say some things about which I felt rather strongly.

The CHAIRMAN: There are no further speakers on the list for this afternoon, but before adjourning the meeting I should like to remind the Committee that the number of meetings at our disposal is shrinking rapidly and that we agreed this morning to close the list of speakers on agenda items 3 and 4 tomorrow at noon.

The meeting rose at 4.10 p.m.