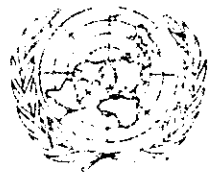


UNITED NATIONS  
GENERAL  
ASSEMBLY



Distr.  
GENERAL

A/AC.105/PV.193  
20 June 1979

ENGLISH

COMMITTEE ON THE PEACEFUL USES OF OUTER SPACE  
VERBATIM RECORD OF THE ONE HUNDRED AND NINETY-THIRD MEETING

Held at Headquarters, New York,  
on Wednesday, 20 June 1979, at 10.30 a.m.

Chairman: Mr. JANKOWITSCH (Austria)

General exchange of views (continued)

Organization of work

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The meeting was called to order at 10.50 a.m.

GENERAL EXCHANGE OF VIEWS (continued)

Mr. LA ROCCA (Italy): Mr. Chairman, as this is the first time I have spoken in this Committee I should like to avail myself of the opportunity to express my personal appreciation and that of my delegation of the fact that you are once again presiding over our deliberations. I am sure that under your wise and experienced guidance, this session will prove fruitful and successful.

I should also like to pay a tribute to the contributions made to this Committee over a number of years by the Chairman of the Scientific and Technical Sub-Committee, Mr. Carver of Australia, and by the Chairman of the Legal Sub-Committee, Mr. Wyzner of Poland, as well as by the members of the Secretariat, and especially by Mr. Perek, Head of the Outer Space Affairs Division.

I will not deal again on this occasion with Italy's experience in space science and applications, which includes an extensive national programme, full participation in the programmes of the European Space Agency and various bilateral undertakings and which has provided a sound basis for our contribution to the work of this Committee. My delegation described our space activities in detail at the last session of the Scientific and Technical Sub-Committee, so I will just reaffirm at this stage Italy's commitment to fostering the principle of international co-operation in the peaceful uses of outer space for the benefit of all mankind.

While reserving my delegation's right to explain its views in greater detail whenever we deem it necessary during the discussion of the reports of the two Sub-Committees, I should like now to review briefly the Committee's agenda.

Remote sensing and direct television broadcasting by satellite have once again absorbed a large share of the efforts of both Sub-Committees. In this respect we should like to emphasize the interdependence of the scientific and technical aspects of these issues and their legal implications, and the need to pay due regard to this interdependence in the work of the Committee.

(Mr. La Rocca, Italy)

Italy continues to support the principle of unrestricted dissemination of the data and information resulting from remote-sensing activities. That principle is in accordance with international law and, at the same time, provides the best safeguard, for all countries, against the possibility that one sensing country or a small group of them might use the information obtained to the detriment of the sensed countries. The success of many years' worth of open dissemination of data and information from LANDSAT satellites confirms our belief in the validity of the principle. Should guidelines and measures in the field of remote sensing be agreed upon, they should be flexible and pragmatic enough to preclude hasty restrictions likely to undermine or postpone beneficial applications of those activities. Of course, sensed States should be entitled to timely and priority access to data obtained by remote sensing, but they should also agree to reconcile their legitimate national interests with the general interest of mankind as a whole, to increase opportunities for the development of the earth's resources on a fair and equitable basis and in close international co-operation.

So far as Italy is concerned, we have consistently followed this path of co-operation in the field of remote sensing. The Italian ground receiving station at Fucino continues to serve as a focal point for sensing operations throughout the Mediterranean area and to make a crucial contribution to research efforts utilizing the data gathered and processed by it. As remote sensing becomes an increasingly sophisticated technology, and as its applications become broader, all countries in the area served by the Fucino station will take greater advantage of its facilities.

While Italy's policy has always been to make available to any and all interested parties both the data received by the station and its facilities for processing them, we also continue to support the remote-sensing programmes carried on by the United Nations Food and Agriculture Organization (FAO), particularly its training initiatives. My Government has actively contributed for several years now to the successful United Nations/FAO training courses in remote-sensing techniques held at FAO headquarters in Rome. Those courses are designed to train and assist experts from developing countries by means of on-site field work under the supervision of Italian experts at the Fucino station, and we consider them a most worthy contribution in the field of the peaceful use of

(Mr. La Rocca, Italy)

space technology. I am certain I speak for all here in expressing our appreciation of the achievements of Mr. Murthy and Mr. Howard in establishing these international courses on a regular basis. Finally, my Government has participated in other courses for experts organized by FAO in developing countries, by providing instructors.

In the area of direct television broadcasting by satellite, as well as that of remote sensing, Italy feels strongly that all efforts aimed at regulating such activities should be made within the limits of full respect for the principle of the free flow of information, on the understanding, of course, that that principle would be responsibly implemented. It is on that assumption that we intend to continue contributing actively to the definition of what may eventually constitute a kind of "code of conduct" for States engaging in direct television broadcasting by satellite.

(Mr. La Rocca, Italy)

Concerning the definition and/or delimitation of outer space, we trust that the ample documentation available to us and the continued co-operation of all members of this Committee, acting in their traditionally constructive spirit, will enable us to make progress on this matter. As we have stated in the past, my delegation believes that the demarcation line between air space and outer space should be established through an international treaty and, therefore, should be the same for all States. Moreover, any such treaty should recognize formally the right of free transit of space objects through air space, on the understanding that such transit will not be used to prejudice or harm other States. Since no agreed definition of the term "space object" exists now, the search for one should precede the elaboration of a treaty, in which the definition arrived at should then be included.

Turning now to the subject of nuclear-power sources in outer space, without reiterating my Government's well-known position on the issue, I should like to express our satisfaction at the progress achieved at the last session of the Scientific and Technical Sub-Committee. We hope that the momentum thus created may foster the elaboration of an ad hoc legal régime as well. In fact, we trust that as early as next year it may be possible to deal with both technical and legal aspects of the use of nuclear-power sources in outer space.

In regard to the question of the geostationary orbit, while we see no basis for unilateral claims of national sovereignty over that orbit, we believe that procedures should be discussed which, in accordance with international law and in the interest of the world community, would continue to make it available to all States, on an equal basis, for peaceful exploration and use.

Once again it has not proved possible to reach agreement on the moon treaty. Our attitude is flexible on this issue, and we do not foresee difficulties in accepting any formulation which meets with general agreement, as long as the provisions that refer to the sharing of the benefits of the moon's resources are fair and reasonable to all countries. Let me reiterate

(Mr. La Rocca, Italy)

at this point our feeling that the Austrian draft treaty constitutes a worthy contribution to the eventual completion of our work on this item of the agenda. We hope that efforts will continue to be made in the search for solutions to the outstanding problems.

In regard to the proposed United Nations Conference on the Peaceful Uses of Outer Space, we hope that the preparations for that Conference will be planned and carried out in such a way as to guarantee its full success. We believe that the financial implications of the Conference should receive careful consideration, and for this reason we would prefer to see it held in one of the principal United Nations cities, such as Vienna, so as to keep expenses to a minimum.

Of course, we trust that in both the preparatory work and the proceedings of the Conference itself, the spirit of consensus which has traditionally characterized our work will prevail.

I should like to conclude these general remarks by informing this Committee - the United Nations body that has made the most important contribution to the development of outer space law - of a recent initiative taken by my Government for the promotion of the exclusively peaceful use of outer space. As members are probably aware, during the special session of the General Assembly devoted to disarmament, my delegation, supported by others, sponsored a provision which was eventually incorporated in the Final Document of that session as paragraph 80 of its Programme of Action, and which reads as follows:

"In order to prevent an arms race in outer space, further measures should be taken and appropriate international negotiations held, in accordance with the spirit of the Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies." (General Assembly resolution S-10/2, para. 80)

As a follow-up to this provision, and as a contribution to its implementation, the Italian Government recently introduced in the Committee on Disarmament in Geneva a proposal - document CD/9 of 26 March 1979 - for the elaboration of an additional protocol to the Outer Space Treaty of 1967.

(Mr. La Rocca, Italy)

In our view, the combined provisions of articles I and IV of the Treaty are clear indications of man's concern with the prevention of the extension of the arms race into outer space, and have been rightly hailed as significant steps in this general direction. However, recent advances in space technology, and the possible use of outer-space weapons not specifically prohibited by article IV, suggest - as we stated in our proposal - the need to supplement the existing legal system with new provisions. The proposal mentions the possible advisability of a total ban on military activities in outer space other than those that are peaceful, so as to prevent the development of new outer-space weapons which would add a new, more serious dimension to the arms race. The essential purpose of our proposal is to ensure that:

"outer space, including the moon and other celestial bodies, ... be used for peaceful purposes only",

and that States undertake to:

"refrain from engaging in, encouraging or authorizing, directly or indirectly, or in any way participating in any measures of a military or other hostile nature, such as the establishment of military bases, installations and fortifications, the stationing of devices having the same effect, the launching into earth orbit or beyond of objects carrying weapons of mass destruction or any other types of devices designed for offensive purposes, the conduct of military manoeuvres, as well as the testing of any type of weapons." (CD/9, annex I, p. 1)

Of course, the use of reconnaissance, surveillance and communications satellites and, indeed, of any space system which would reinforce strategic stability by ensuring, *inter alia*, the verification of disarmament and other arms-limitation agreements, will not be prejudiced.

My Government hopes that the Italian document may provide a concrete basis for discussion when this new aspect of the arms race receives due consideration, at an appropriate stage in the relevant multilateral forum. We felt encouraged in this regard by the recent adoption of the United Nations Disarmament Commission's report to the General Assembly, which, in listing the elements of a comprehensive programme for disarmament, explicitly included outer space among the areas in which disarmament measures are to be pursued.

(Mr. La Rocca, Italy)

Finally, I should like to take this occasion to express our gratitude to those delegations which have signified their interest in our proposals since the time they were first introduced in Geneva, especially the Austrian delegation, which spoke here yesterday.

The CHAIRMAN: I thank the representative of Italy for the kind words he addressed to me.

Mr. RICHER (France) (interpretation from French): My satisfaction at attending this Committee on the Peaceful Uses of Outer Space for the first time is accompanied, unfortunately, by some concern. My satisfaction derives from the fact that this body is not simply committed to talking about a situation but is working to achieve progress and to draft regulations for the protection of the rights of every member State. My concern stems from the not very encouraging aspects of the work under way to which you, Mr. Chairman, referred. I must say, however, that this concern is tempered by your experience, Sir, by your sense of conciliation and by the effectiveness with which you have thus far guided the Committee's work.

(Mr. Richer, France)

I should also like to mention that the Chairmen of the two Sub-Committees, Mr. J. H. Carver and Mr. Eugeniusz Wyzner, possess similar qualities and their activity has been a determining factor in the work of the plenary Committee. I also wish to thank the Secretariat for the studies and the texts which they have provided us and which are indispensable for carrying out our work.

Being anxious that our debate should proceed smoothly, I shall limit myself, after briefly recalling French space activities, to some observations on the most essential items of our agenda which, by the way, has been presented to us in annotated form, a fact that is keenly appreciated by the French delegation.

France, as members know, is paying particular attention to the development of space technology and the applications of that technology. Moreover, France attaches great importance to the development of international co-operation in this field.

In national terms, this policy is implemented by the National Centre for Space Studies (CNES), which is a scientific and technical establishment of an industrial and commercial character. The Centre plays a co-ordinating role with regard to the centres for research and applications. Its budget in 1978 was set at 1.6 billion francs, or almost \$35 million. The budget is essentially made up of State subsidies from the Government of France. The fact that 64 per cent of this total is devoted to activities of bilateral and multilateral co-operation shows that for France space is an area which is naturally open to international collaboration. The year 1979 has also seen the development of the activities of the SATEL Council. That is a group which is made up of the CNES, the French company France Cable et Radio and Télédiffusion de France. Its role is to provide international consultant services on loans for space systems applications.

Apart from the research and development carried out nationally, particularly with respect to on-board equipment, reception and the processing and interpretation of data from remote sensing, France is actively co-operating beyond its frontiers, in a whole series of projects which I shall now list.

(Mr. Richer, France)

Within the framework of the European Space Agency, France is making a decisive contribution to the development and the building of the ARIANE launcher, which will make its first flight next November and by 1980 will be operational at a competitive price. Already the technicians of the CNES and of Aérospatiale are working to improve this launcher in order to increase its technical performance and, simultaneously, to reduce its production costs. Thus, we see the development of a European line of rocket launchers that can put into orbit larger and larger payloads, which ultimately will reach three tons.

France is also participating, at the technological level, in the European telecommunications satellite programme (OTS), which is a prelude to the regional European Communications Satellite (ECS) system, whose completion is planned for 1982-1983.

We are also involved in building the METEOSAT satellite. The CNES, in particular, is supplying an important part of the software for the processing of images being provided by this meteorological satellite.

Finally, France is concerned in the implementation of the Marecs maritime telecommunications programmes, which are sent from the H Sat direct television heavy platform. It is also involved in the preparation of payloads for SPACELAB.

In terms of bilateral work, France, represented by CNES, is continuing its co-operation with NASA in numerous experiments. I should like to cite in particular the SARSAT programme, whose purpose is maritime search and rescue. Carried out jointly with the United States and Canada, this programme will bring about the integration of the French Argos locating data collection system and the CNES specialized centre for information processing in Toulouse.

In the same spirit, France is co-operating with the Soviet Union, in particular in the field of space biology and in the study of the magnetosphere and gamma rays. France is also involved in the Soviet programme for studying Venus and its atmosphere by means of scientific equipment which will be placed aboard two complementary vehicles: one is a satellite which will be in orbit around the planet and the other a balloon which will be positioned in the principal cloud layer. That balloon will be provided by France.

(Mr. Richer, France)

I also wish to mention the French SPOT teledetection programme in which two of our European partners, Sweden and Belgium, are involved on a contractual basis. As the French delegation has already had the opportunity to indicate, this is an earth observation satellite which is put into a circular heliosynchronous orbit. Its payload will consist of two identical high-resolution "push broom" type pieces of equipment. Its launching by an ARIANE rocket is planned for 1983.

This brief picture of French activities would be incomplete if I were not to mention the co-operation we are involved in with the Federal Republic of Germany on the SYMPHONIE satellite programme, as well as our work with other States, particularly in Latin America and Asia.

This last point emphasizes, moreover, France's willingness to be open and to co-operate with the developing countries. In this regard, in 1979 we invited numerous fellowship holders and trainees for training operations. We organized international colloquia and seminars on several aspects of space technology. I shall mention in particular the colloquium on observation of the earth from space and the management of planetary resources, the space technology course and the space physics summer school.

France, moreover, will have the pleasure of providing a certain number of experts for various seminars organized by the Outer Space Affairs Division for the developing countries. In this respect, the French delegation wishes to thank the Expert on Space Applications of the Scientific and Technical Sub-Committee for the attention that he was kind enough to give to the candidates presented by our country.

I now come to the main items of our agenda. I shall limit myself to making a few observations.

I must say, Mr. Chairman, that I fully share the concerns that you expressed in your statement at the beginning of our work. It will soon be two years, as you noted, since any noticeable progress has been achieved in the study of the majority of the items included in our plan of work. In these circumstances shall we succeed here in finding our second wind as we need to do and as we must if we are to achieve our goals?

(Mr. Richer, France)

This question requires reflection, although no one should read into the observations I am about to make any criticism of anyone at all.

The present situation, as we understand it, is the result of several factors which combined together are gradually making the search for and the adoption of solutions more difficult, in spite of the spirit of compromise displayed by all delegations.

The first of these factors is undoubtedly the continuing development of space technology and the growing difficulties that we encounter in keeping up with the progress of this new science and in coming to grips with questions in a concrete way.

More and more the customary references to the most classic general principles seem to lack any clear relation to the technical and complex nature of the questions before us. The result for many of us is a great deal of uncertainty - I would even say, disquiet - which is not very conducive to the assumption of commitments or responsibilities, the scope and long-term effects of which are not clearly perceived by any of us.

Additional factors, in the view of the French delegation, are the importance and multiplicity of the items on our agenda. At present we can scarcely devote between two and four meetings to the study of each item, whereas, at the same time - and the French delegation is the first to welcome this - we have seen the Committee membership double in 10 years. We must all be clearly aware of this situation.

(Mr. Richer, France)

Furthermore, emphasis has on several occasions been placed on the need for closer co-ordination between the work of the Scientific and Technical Sub-Committee and that of the Legal Sub-Committee. This is a procedural problem which the representative of France to the General Assembly mentioned on 19 October 1978 in connexion with the work of the Special Political Committee.

A first step towards this co-ordination and synthesis has already been taken by the presentation in analytical form of the reports of these two Sub-Committees. None the less we believe that we should go further and ensure that the sessions of the two Sub-Committees and the plenary Committee are held at the same time, according to the practice in force in United Nations bodies. In other words, the plenary Committee would meet first for one day and then split into the two Sub-Committees for two weeks and then again hold plenary meetings. This method, which would involve but one session a year, would avoid the current shuttling back and forth of our three bodies and lead not only to a saving of time and resources but above all to greater effectiveness in all our work. This reform in our method of work would furthermore meet the wish of the Secretary-General of the United Nations, Mr. Waldheim, with regard to our work. The French delegation hopes that this suggestion can be studied in its various aspects as soon as possible.

Against the background of these few observations, I am tempted to limit my statement this morning to the items which seem to me to offer the best chance of progress.

While hoping that it does not turn out this way, I doubt that at this session we shall be able to arrive at a positive result with regard to the problem of direct television broadcasting by satellite and, in particular, the problem of consent prior to the establishment of a system of broadcasting to a State which is not the transmitting country. I personally believe that many of us will note that there is no problem, once we are willing to devote a few moments to reading the radio-communications regulations, in particular paragraph 428 (a) and articles 3, 4, 5 and 12 of the Final Act of the World Administrative Conference of the International Telecommunications Union, held in Geneva in February 1977. In the meantime, I really do not see what progress we could achieve in the search for a solution.

(Mr. Richer, France)

Can we at this session entertain any greater hope of success with regard to remote sensing of the earth by satellite? On this point too, the sensitivity of the question, the rapidity of technical progress and its complexity lead me to doubt that we can. I fear that in this area success will come only through a broader reorienting of our discussions. To the extent that there already exists consensus recognizing the right of access to remote sensing data, progress in our work runs the risk of being linked no longer to the definition of technical criteria that are in constant evolution but rather to the search for a solution that would allow each country to benefit fairly from these data. Certain delegations have spoken of establishing an agency; that is one idea. The French delegation believes that things can be done in a much more simple and less costly way. Should we not be guided rather by the GARP programme or the METEOSAT or INMARSAT systems, whose relatively light structures bring, or, in the case of INMARSAT, will bring, the benefits which each of our countries expects from a technology whose worth is obvious in terms of economics and environmental protection.

With regard to the orbit of geostationary satellites, I believe that we should wait for the additional studies which have been requested from the Secretariat. There again the problem must be dealt with in a specific way. Indeed, I understand that the totality of the geostationary orbit cannot be used profitably or economically and that in fact we are already seeing requests more specifically related to certain orbital positions. Therefore, we have a problem with regard to regulations whose aim must be to confirm the free access of each country to the geostationary orbit, which the International Telecommunication Unit (ITU) has already mentioned in its regulations. No State should be penalized because it does not yet have the necessary resources to put a geostationary satellite into orbit. First come must not necessarily mean first served.

That is why, in order not to mortgage the future by dividing the geostationary orbit into segments or carving it into pieces, certain delegations wonder whether a specific solution might not be found by convening meetings more or less periodically - let us say every four or five years - at which each country would set forth its needs for the immediate future on the understanding that the necessary provisions would then have to be adopted to meet those needs and bring

(Mr. Richer, France)

about the best possible use of that orbit. The latter is a rare and limited natural resource; however, contrary to what we observe with regard to the earth's raw materials, its use does not lead to its gradual disappearance. Consequently, we continue to entertain the hope and the certainty that, with goodwill and a spirit of compromise, the needs of each country, regardless of when they arise, can be met if adequate regulations are established. That is the mandate which we might perhaps give ourselves.

If we refer to the debates of the Legal Sub-Committee with regard to another item - the definition and/or delimitation of outer space - we must indeed note that the plenary Committee will not at this session find a solution to the differences in position existing on this topic. The adoption of a one-shot, package solution, as proposed by certain delegations, is tempting and appears to be the only way in which, with our present knowledge, we could at least temporarily settle this problem. For the time being, we can only hope that we shall one day see a compromise emerge on the basis of such a solution. Consequently, should we continue to linger over this agenda item? That is the question for us to answer.

A rather similar problem exists with regard to the treaty relating to the moon. The points of divergence are well known and specific. Will a new discussion bring in new elements? It is doubtful. But the French delegation will spare no effort if other delegations deem it useful to resume discussion on it. We feel that this is a political problem, which must be settled in political terms and perhaps in a larger body than the one to which it is at present limited.

In view of the foregoing, which can appear gloomy, the least optimistic among us will wonder on which items the Committee on Outer Space can achieve concrete results in the immediate future.



(Mr. Richer, France)

In the opinion of the French delegation, there are still three areas where there is hope for and almost a certainty of success. First, there is the United Nations Programme on Space Applications. Everyone recognizes the merits of and the need for that Programme. No doubt some people would like more money to be devoted to that Programme; but, given the present situation of the world economy, I do not think that we can achieve that goal. Then we have the problem of the use of nuclear power sources in outer space. And, finally, we have the preparation for the second United Nations Conference on the Exploration and Peaceful Uses of Outer Space.

If I may be allowed to make a suggestion, I think that we should - at least this is the opinion of the French delegation - devote this session of the plenary Committee to studying those three topics. The French delegation for its part proposes to revert essentially to those items during our discussion of the various items of our agenda.

Mr. THUNBORG (Sweden): Allow me at the outset to express my delegation's satisfaction at seeing you, Mr. Chairman, once again presiding over the deliberations of the Committee on the Peaceful Uses of Outer Space. We feel confident that your wise and experienced leadership will guide the Committee in making further progress in its work on important aspects of the growing activities in outer space. We pledge our full support in your endeavours.

I should also like to express our appreciation for the work of the Chairmen of the two Sub-Committees, Mr. Carver of Australia and Mr. Wyzner of Poland, as well as the Chairmen of the Working Groups established by the Sub-Committees. We are also grateful for the valuable contribution of the Outer Space Affairs Division and the Legal Department of the United Nations Secretariat to the work of this Committee and its two subsidiary organs.

Before commenting on some of the important matters that are before us, I should like to touch briefly on some developments in the field of space technology and mention some of our own national activities in this field.

(Mr. Thunborg, Sweden)

The Soviet Union has demonstrated man's remarkable capacities by its record-length manned SALYUT space flights. The United States VOYAGER spacecraft on mission to the outer planets have given important new data on those planets.

The launching of a third greatly improved LANDSAT has extended a highly successful series of remote sensing satellites.

The programmes of the European Space Agency continue to progress; for example, the telecommunications satellite OTS will provide important experience for the design of operational systems.

We note with satisfaction that the coming into force of the Convention on the establishment of INMARSAT has been secured, as planned, through the necessary ratifications. The Swedish membership of INMARSAT has been accepted by Parliament and the signing of the Convention and the operating agreement is due to take place in the next few days. The establishment of INMARSAT represents another important step in the development of the peaceful uses of outer space and the practical application of space technology for the benefit of mankind.

A decision was recently taken to make a substantial increase in the Swedish space budget. The financial resources will be approximately doubled and will provide for greater emphasis on space applications.

Sweden and the other Nordic countries have carried out extensive studies on the possibilities of establishing a Nordic system for direct television broadcasting by satellite. On the basis of the report of those studies, it is hoped that a decision on the system will be taken in 1980.

Earth observation satellites continue to attract attention in Sweden. Thus a co-operation agreement with France was signed in 1978 regarding the satellite SPOT for which certain sub-systems will be developed by Sweden.

The Swedish receiving station for LANDSAT data at Kiruna in the northern part of our country is now fully operational. The station forms part of the Earthnet network managed by the European Space Agency.

We expect our domestic use of data from earth resources satellites to become truly important during the 1980s, when data from improved satellites become available, starting with LANDSAT D and SPOT.

(Mr. Thunborg, Sweden)

In addition to our membership in the European Space Agency, Swedish authorities and scientific institutions are co-operating in the scientific field with several foreign partners, notably in the Soviet Union.

I should now like to turn to some of the subjects before us. The Outer Space Committee will at this session meet for the first time as the Preparatory Committee for the second United Nations Conference on the Peaceful Uses of Outer Space. I should therefore like first to make some general remarks on the objective of the Conference and its preparation.

We believe that the preparatory work should be given the greatest emphasis to ensure the success of the Conference. As my delegation sees it, the main purpose of the Conference should be to stimulate a wider use of space techniques and to increase the possibility of a greater number of countries enjoying the benefits of space technology. With this approach ways and means for helping to solve the special problems of developing countries in this context should be given highest priority.

We should consider the Outer Space Conference as a follow-up, in a way, of the United Nations Conference on Science and Technology for Development (UNCSTD), to be held in Vienna in August. Thus, we hope that the Outer Space Conference will, using the approach of UNCSTD, lead to concrete measures for strengthening the capacities of countries to make use of space technology. The conclusions of UNCSTD should be given great attention when preparing for the Outer Space Conference.

We hope that the Outer Space Conference will contribute to and stimulate international co-operation and, in particular, mobilize the resources of the specialized agencies of the United Nations system. The relevant agencies should be invited to take an active part in the preparatory work, and we envisage reports from the agencies being submitted to the Conference.

Still using the experience of UNCSTD, we would suggest that the preparation of national reports is of importance, considering the fruitful effects it can have at the domestic level.

We hope that the United Nations Expert on Space Applications will be able to contribute to the preparatory work by the inclusion in his programme of activities specially related to the Conference.

(Mr. Thunborg, Sweden)

At the last session of the Legal Sub-Committee particular attention was given to the principles regarding direct television broadcasting by satellite. My delegation had hoped that a final compromise could have been achieved and that the "clean text" put forward by Sweden and Canada would have made that possible. We regret that the work on this matter could not be concluded. From a look at things as they stand in the Sub-Committee, it is clear that direct television broadcasting by satellite is the item most ripe for a final settlement. We should use the possibilities of the negotiating machinery of the Legal Sub-Committee to make a serious effort to come to a conclusion of the question of direct television broadcasting by satellite as soon as possible.

Remote sensing of the earth by satellite appears on the agenda of both Sub-Committees. We consider it very useful that all aspects of this question continue to be the subject of detailed discussion from both the scientific and technical and the legal point of view so as to permit us to penetrate the complex issues involved and to clarify the problems that ought to be solved by the Sub-Committees.

My delegation continues to believe that close international co-operation offering an opportunity to all countries to participate in remote sensing activities is the best way of ensuring that the benefits of this promising technology can be shared by all and of avoiding its possible misuse.

In order to prevent the growing inequality among States at different levels of economic and technical development, we believe that remote sensing data should be as freely accessible as possible to all. Sensing States have data about all countries, and any restrictions on data dissemination would not be very relevant in the prevention of the growing dominance of sensing States.

(Mr. Thunborg, Sweden)

Intimately related to the question of the availability of data for all is the need to provide developing countries with adequate assistance for the use of this promising technique in order to make it possible for them to interpret and make use of the data. The role of the United Nations Space Applications Programme in this context is very important. Its resources to provide assistance in remote sensing need to be further strengthened.

Following an agreement at the last session of the Outer Space Committee -- subsequently confirmed by the General Assembly -- the two Sub-Committees have this year discussed the use of nuclear power sources in outer space.

The Working Group of experts established under the Scientific and Technical Sub-Committee to study technical aspects and safety problems related to the use of nuclear power sources in outer space has held its first meeting. My delegation welcomes the constructive deliberations and outcome of that first meeting. We believe that studies recommended to be undertaken on certain aspects will be of great importance for the successful completion of the task of the Working Group, and we should find it useful if an informal meeting could be held in the autumn to assist the Secretariat in compiling contributions of Member States to these studies.

Any discussion of the legal aspects of the use of nuclear power sources in outer space would, of course, have to take into account findings on the technical side. We hope that the technical Working Group will make sufficient progress at its next meeting to provide at least some basis for the initiation of a consideration of legal aspects.

In the Legal Sub-Committee it was proposed that a separate item concerning the use of nuclear power sources in outer space be included in its agenda. My delegation supported that idea then, and we continue to support it now.

We have noted in this context that attention has been drawn in previous statements to the forthcoming re-entry of SKYLAB. As in the case of the use of nuclear power sources in outer space, we would be open to any lessons that may be drawn and to considering what relevance it might have for future work within the framework of the Outer Space Committee. As far as the provision of information on the predicted time of the re-entry is concerned, my delegation would like to express its appreciation to the United States for giving available data straight away to Governments and to the public.

(Mr. Thunborg, Sweden)

The question of the geostationary orbit has been under discussion in both Sub-Committees this year. In this context, I should like to point out that the International Radio Consultative Committee of the International Telecommunication Union (ITU) has for a long time been studying different aspects of this subject, including the question of equitable use of the orbit. The World Administrative Radio Conference to be held in 1979 will discuss the issue on the basis of these studies. We believe it is necessary to take the work carried out by the ITU in this context into consideration when discussing the issue here in the United Nations. It should also be noted that the relevant provisions of the Outer Space Treaty and of the International Telecommunications Convention provide for the equitable use of the orbit.

With these remarks I conclude the general comments of my delegation. As different subjects are brought up for discussion, we may come back with further comments.

The PRESIDENT: I thank the Permanent Representative of Sweden for the kind words he addressed to the Secretariat and to me.

Mr. ROSENDALE (United States of America): As you noted in your opening statement, Mr. Chairman, our Committee's session opened this year at a time when two world leaders -- President Carter of the United States and President Brezhnev of the USSR -- were meeting in your country to sign a Strategic Arms Limitation Treaty (SALT), and in so doing expressing the belief that their summit meeting would usher in a period of reduced tension and increased co-operation, not only for the nations they represent but for the international community of nations as well. It is my delegation's belief that your country, in addition to providing the site for that historic occasion, will through you, Mr. Chairman, provide, as in the past, the leadership to guide our discussion and deliberations to the achievement of a similar objective: increased co-operation among all nations to fulfil the promises of space exploration and application for the benefit of all mankind.

It was just a short 10 years ago that human footprints were placed on the surface of the moon. History has already recorded that first lunar landing as one of the most profound adventures in the history of humanity. Having

(Mr. Hosenball, United States)

accomplished that goal, the United States space programme, with increased and expanding co-operation from other nations, has been proceeding with programmes that will increase mankind's knowledge about the history of the cosmos and our understanding of the evolutionary processes involved; with programmes that will further demonstrate that space techniques and observations can make substantive contributions to telecommunications, weather forecasting, forecasting of climatic fluctuations, environmental monitoring, the tracking of severe storms, the assessment of resources and knowledge of the motions of the earth's crust; and with programmes for the development of a space transportation system that will provide reliable, economic and expanded launch capability.

Let me report on the current status of these programmes.

For the space shuttle the past year has been a period of construction, development, testing and training. The fabrication of the second shuttle orbiter was completed and the vehicle delivered to the Kennedy Space Center; major shuttle elements were tested, a new group of astronaut candidates was selected and the crew for the first orbital flight test named.

In the shuttle launch and landing area at the Kennedy Space Center, all facilities are being activated to support the first manned orbital test flight, which will probably occur early next year.

Nine users have made advance payments for 35 commercial payloads to be flown on the space shuttle. I should like to point out that six of those nine users are foreign Governments or international organizations. The small self-contained payload programmes - what the National Aeronautics Space Administration (NASA) calls Getaway Specials - continues to attract new users for the shuttle. The Getaway Specials have been so named by NASA because they are fully self-contained. They would weigh between 60 and 200 pounds and are limited in volume to from 2.5 to 5 cubic feet. They are also limited to research and development experiments, and the approximate cost of having them flown on the shuttle will be from \$3,000 to \$10,000. Over 160 users have made down payments to have 290 of these payloads flown; and, incidentally, 64 of these payloads, amounting to over 20 per cent of the total, belong to foreign customers.

(Mr. Hosenball, United States)

We are also studying concepts that could improve the future utility of the Space Transportation System and enhance its thrust, its power and its duration in orbit.

Other advanced studies for the shuttle are concerned with the fabrication and assembly of space structures and how the shuttle can best provide improved satellite services such as placement in orbit, retrieval from orbit, and on-orbit maintenance and repair.

VOYAGER-I's encounter with Jupiter in March 1979 marked a major step in the systematic exploration of the solar system. There were a number of unexpected findings, including the discovery of volcanic eruptions on Io, the identification of Saturn-like rings around Jupiter, and an indication that atmospheric motions on Jupiter are much more complex than ever imagined. This July, VOYAGER-II will fly by Jupiter, focusing attention on different regions and different satellites of Jupiter from those observed by VOYAGER-I. Both spacecraft will continue towards Saturn, arriving there in November 1980 and August 1981, respectively. The Saturn encounter will be the first by a spacecraft. If all goes well, VOYAGER-II will also reach Uranus and, possibly, Neptune.

The High Energy Astronomy Observatory (HEAO), launched in November 1978, is returning excellent data, including the first X-ray telescope photograph of an X-ray "burster", one of the most bizarre celestial phenomena ever observed. This is an X-ray source that suddenly and temporarily brightens, an occurrence that conventional theory cannot yet explain. HEAO-C, the third spacecraft in this series, will be launched this fall.

The Solar Maximum Mission (SMM) will be launched in the fall to study the sun during the following two years, when solar flare activity will be at the peak of its 11-year cycle. It is expected that, in addition to obtaining valuable information on processes taking place on the sun, the mission will also shed light on how these processes affect the earth's atmospheric, ionospheric and magnetospheric environment.

In February 1979 NASA launched the Stratospheric Aerosol Gas Experiment (SAGE) to study aerosols and other constituents of the atmosphere. This mission is an essential step in understanding and measuring the creation and migration of atmospheric pollution. Two scientists from the United Kingdom are members of the NASA experiment team studying SAGE's performance. In addition, scientists from

(Mr. Hosenball, United States)

Belgium, the Federal Republic of Germany, Japan, the United Kingdom and the European Community's Joint Research Centre are providing ground truth measurements to supplement SAGE data and further our study of the earth's climate.

During the past year the United States international space programme has been quite active. On 14 July 1978, the second Geostationary Scientific Satellite (GEOS-2) was launched for the European Space Agency (ESA). The primary mission of GEOS-2 is to study the earth's magnetosphere. GEOS-2 will continue seven experiments begun by GEOS-1. An advanced domestic communications satellite, ANIK-B, was launched on 16 December 1978 for Telesat Canada, which owns and operates the satellite. A scientific satellite, UK-6, was launched on 2 June 1979 for the United Kingdom on a Scout launch vehicle from Wallops Island, Virginia.

The critical design review of the remote manipulator system for the shuttle orbiter being contributed by Canada was successfully completed in April 1978. The remote manipulator system is attached to the space shuttle orbiter and will be used, in conjunction with special fittings for that purpose, on the payloads. It will be used to hold payloads outside the shuttle, to place payloads in orbit, or to retrieve those payloads from orbit. Delivery of the first unit is scheduled for the fourth quarter of 1979.

The European Space Agency continues to make substantial progress in the development of a SPACELAB that will be carried to and from orbit in the space shuttle orbiter. The integration and testing of the engineering model is well under way, and it is scheduled to be delivered to NASA later this year.

The sensors of TIROS-N, launched on 13 October for the National Oceanographic and Atmospheric Administration (NOAA) are multi-national in character. Each operational spacecraft in the NOAA series will carry a stratospheric sounding unit developed and funded by the United Kingdom and a data collection and platform location system developed, funded and operated by the French Space Agency, CNES.

The third International Sun Earth Explorer (ISEE-3), launched last August, is part of a co-operative NASA/European Space Agency project designed to gain a better understanding of how the sun controls the earth's near-space environment. The over-all three-spacecraft project involves 117 scientific investigators representing 35 universities in 10 nations. ISEE-3 is currently measuring the

(Mr. Hosenball, United States)

solar wind and other solar phenomena such as sunspots and solar flares, while ISEE-1 and 2 are measuring the effect of the same phenomena in the near-earth environment.

Agreements were signed earlier this year with the National Research Council of Thailand and the Japanese National Space Development Agency for the establishment of operating LANDSAT ground stations in those countries. Stations are currently operating in Brazil, Canada, Italy, Japan and Sweden. The station in Iran has temporarily ceased its data reception. Stations are under development in Argentina, Australia, India and Thailand, and interest has been expressed by Chile, China, Kenya, New Zealand, Upper Volta, Romania and Zaire. Last October, NASA and ESA signed three memoranda of understanding concerning the acquisition of LANDSAT data and the acquisition and investigation of data from NASA's NIMBUS-VII, an atmospheric research satellite, and SEASAT, an ocean observation satellite.

A similar agreement for SEASAT data acquisition and investigation was signed by Canada last September. Unfortunately, however, shortly thereafter the SEASAT ceased to function because of an electrical problem. Investigations using the extensive data that were received by ESA and Canada are still continuing.

(Mr. Hosenball, United States)

Discussions with Canada, France and the Soviet Union are continuing on planned international co-operation in an experimental satellite-aided search and rescue demonstration project.

In March 1979, NASA and ESA concluded a memorandum of understanding for co-operation in the International Solar Polar Mission (ISPM). Two spacecraft, one provided by NASA and one by ESA, will be launched into orbits in opposite directions over the poles of the sun. This mission will afford the first opportunity to observe the polar regions of the sun and the interplanetary space surrounding the solar system outside of the ecliptic plane, the plane in which the planets in the solar system orbit the sun.

NASA and Japan's Space Activities Commission are pursuing their joint study programme to assess possible co-operative space science and applications projects of mutual interest. The third meeting of the study group was held in Tokyo earlier this month.

Co-operation between the United States and the Soviet Union was further advanced through meetings of joint working groups in the areas of planetary exploration, space biology and space medicine. The United States and the Soviet Union are also engaged in ongoing negotiations on antisatellite systems.

In January 1979, a formal understanding on space co-operation was reached between the United States and China whereby China will purchase from United States industry a satellite broadcasting and communications system, including associated ground equipment, as well as a LANDSAT ground station.

As you, Mr. Chairman, and other representatives have indicated, the United States SKYLAB will re-enter the earth's atmosphere in the near future. I believe that a brief review of the SKYLAB programme and the latest information on the re-entry would be of interest to the Committee.

SKYLAB was launched in May 1973 to provide a workshop and living area to allow scientists to conduct experiments in space for a longer duration than had previously been possible. SKYLAB was a particularly productive scientific programme. It demonstrated that such space activities can be of enormous practical value to life on earth. The programme included over

(Mr. Hosenball, United States)

50 scientific, technological and medical experiments. There were high-resolution astronomical studies of the sun at short wave lengths not observable from earth, medical research associated with man's living and working in space for extended periods of time, and investigation and application of remote sensing to the location, measurement and protection of earth resources.

All told, the three crews spent 740 hours observing the sun with telescopes and brought home more than 175,000 solar pictures. Such data are changing long-standing theories of solar physics and could lead to more practical use of the sun's vast energy.

More than 46,000 photographs and 64 kilometres of data tape obtained by SKYLAB's earth resources instruments have been used by government and industry for studies ranging from agriculture to zoology.

SKYLAB biomedical findings indicated that people can adapt well and function effectively in space for a period of almost three months, and they provided insights into the proper diet and exercise, sleep, work and recreation for periods of even longer duration in the future.

SKYLAB is cylindrical in shape, 6.6 metres in diameter and about 35.4 metres long, and it weighs approximately 70,000 kilograms. It was manned by astronauts during three missions. The last crew left the spacecraft on 8 February 1974. At that time, NASA estimated that SKYLAB would remain in orbit until 1983. However, largely because of higher than normal sun spot activity, the orbit has decayed more rapidly than expected. At present, SKYLAB is approximately 300 kilometres above the earth at a 50-degree inclination to the equator.

In the late spring and early summer of 1978, NASA completed a series of manoeuvres and stabilized SKYLAB in a minimum drag attitude in an effort to extend its lifetime. The intent was to launch a Teleoperator Retrieval System (TRS) which would have been used either to raise the SKYLAB orbit or to cause SKYLAB to re-enter the earth's atmosphere in a controlled fashion for impact in a remote ocean area.

(Mr. Hosenball, United States)

On 18 December 1978, NASA announced that because of uncertainties which had developed in the SKYLAB systems, space shuttle schedules and TRS delivery, as well as recent high sun spot activity which was accelerating the decay of the SKYLAB orbit, further planning for the TRS mission was impracticable.

We are now studying manoeuvres to shift SKYLAB into a lower-drag attitude, which could add as much as 10 to 12 hours to the space vehicles' orbital lifetime. By changing SKYLAB from a high-drag to a low-drag attitude for eight hours, for example, it may be possible to delay re-entry by about four hours. This is equivalent to nearly three revolutions around the earth, during which time the earth's rotation would shift the prospective re-entry area by several thousand miles.

On the last day of SKYLAB's flight, if the most populous areas of the earth - that is, orbits which would include both Europe and Asia - lie under the orbital path on which re-entry is expected, drag modulation manoeuvres offer the possibility of delaying the re-entry, thus shifting the likely re-entry orbit to an orbit passing over an area of less total population - an area which includes portions of the continental United States - thereby further reducing the likelihood of any injury occurring.

(Mr. Hosenball, United States)

In order to preserve the option of exercising drag modulation, NASA this morning reoriented SKYLAB towards a "torque equilibrium" attitude that balances the increasing aerodynamic forces and permits the relatively weak on-board system to maintain spacecraft stability. If this initial manoeuvre has been successful - something which we should know within the next 24 hours - and if the on-board systems do not degrade further, the SKYLAB attitude should remain under ground control up to the last few hours of orbital life. Drag modulation or re-entry delay would be attempted only if a significant reduction of the risk to human life were possible and if failure of the manoeuvre would not increase the risk of injury. Under these strict rules, the chances are roughly 4 out of 5 that no drag modulation manoeuvre will be attempted. If we are able to implement the drag modulation manoeuvre, however, the already slight risk of injury would be further reduced by at least a factor of 10.

Studies indicate that, beginning about 24 hours before re-entry, it will be possible to identify which areas of the earth lie under the more likely re-entry orbits and which do not. Arrangements have been made to keep Governments currently informed during that period through diplomatic channels. Even in the last hours, however, it will be impossible to predict accurately the geographic locations within the re-entry orbit where SKYLAB debris might reach the surface.

Current estimates are that SKYLAB will re-enter the earth's atmosphere some time between 7 July and 25 July. The probability of damage or injury from re-entry is very small. There is virtually no possibility of destructive shock waves or "craters" being formed. Further, the re-entry of SKYLAB presents no danger of toxic or nuclear material causing injury. The SKYLAB, upon re-entering the earth's atmosphere is expected to break up into hundreds of pieces. Most of the pieces will burn up during re-entry, but it is expected that some fragments may reach the earth's surface and be scattered in a footprint of approximately 6,400 kilometres long by 160 kilometres wide somewhere between latitudes 50° North and 50° South. Its total flight path is 70 per cent

(Mr. Hosenball, United States)

over water. Over 60 per cent by weight of the original SKYLAB assembly, that is, the S-II stage and shroud panels, has already re-entered and returned to earth with no damage reported.

The work of this Committee has established legal norms and provided a legal framework to cover damage or injury caused by the re-entry of space objects. Article VII of the 1967 Outer Space Treaty provided that States are internationally liable for damage caused by their space objects. That general rule was implemented by the Liability Convention which sets forth detailed procedures for the resolution and settlement of claims that might arise from damage caused by the re-entry of space objects. Many members will recall that the United States proposed the conclusion of a treaty on liability for damage caused by man-made space objects at the very first session of the Outer Space Legal Sub-Committee in June 1962. The United States also introduced the first complete treaty proposal on liability at the 1964 session of the Legal Sub-Committee - document A/AC.105/C.2/L.8 - and we pursued the negotiations vigorously until in 1971 agreement was reached in the Outer Space Committee on the Liability Convention. The United States is fully prepared to discharge its international responsibilities and in particular that imposed by article XXI of the Liability Convention which provides that the launching State render appropriate and rapid assistance to a State which has suffered damage when such State requests such assistance.

It should be noted that with the advent of the space shuttle there will be a significant decrease in the number of United States space objects that will decay in orbit and re-enter the earth's atmosphere. The space shuttle, unlike expendable launch vehicles, will not leave expended launch vehicle stages in orbit. Further, the next generation of United States payloads will be designed with special fixtures to permit their retrieval by the shuttle for repair, for re-use, or for return to earth.

I should like now to turn briefly to some of the principal agenda items before the Committee.

(Mr. Hosenball, United States)

I should like first to discuss the status of the experimental LANDSAT programme. LANDSAT-1, launched in July 1972, completed five and a half years of collecting and transmitting the unique signatures that characterize land, minerals, vegetation and environmental conditions. LANDSAT-2 was launched in January 1975 and continues to function. LANDSAT-3 was launched last year and provides expanded services.

While several States have initiated or plan to initiate satellite remote sensing systems, as of now the LANDSAT system remains the most utilized satellite remote sensing system in the international community. LANDSAT-2, since its launching in 1975, has returned 142,000 scenes of multispectral data to the United States as well as 175,000 scenes transmitted directly to foreign ground stations. LANDSAT-3, launched in 1978, has transmitted some 34,000 scenes to the United States and 58,000 scenes to foreign stations from the Multispectral Scanner, together with nearly 10,000 panchromatic Return Beam Vidicon (RBV) images to the United States and 19,000 such images to foreign stations.

LANDSAT-D, an advanced earth resources monitoring satellite, and its duplicate back-up, LANDSAT-D prime, are under development for launching in 1981 or 1982. Research is continuing on new applications and new space-borne sensors for studying renewable and non-renewable resources from space.

The President of the United States recently stated this nation's intention to maintain the continuity of LANDSAT data through the 1980s. In our view, the absence of any régime requiring the prior consent of sensed States before dissemination of data from such systems as LANDSAT or SEASAT, or of information derived therefrom, has been crucial to the success and wide acceptance the programmes have known. We know of no adverse effects on any State resulting from the absence of a prior consent régime. We can foresee serious impediments and inequities arising if restrictive régimes are imposed which impede the flow of useful data on the natural resources of the earth and the environment.



(Mr. Hosenball, United States)

In particular, a prior consent régime would be to the disadvantage of those States which do not themselves possess remote sensing systems and must therefore rely upon international co-operation for information which may be important to their well-being and economic development.

All these considerations should be taken into account as we attempt to develop a set of principles intended to govern programmes, such as the experimental LANDSAT, which are designed and conducted specifically to collect data on the earth's natural resources and environment.

The issue of direct broadcasting by satellite has received considerable attention in this Committee and its two Sub-Committees. Although the United States Government has no plans to engage in direct broadcasting by satellites, I want to reaffirm our position that direct broadcast principles must not infringe upon the internationally recognized right to seek, receive and impart information and ideas through any media and regardless of frontiers. In saying that, at the same time, we recognize that States have interests, concerns and sensitivities related to direct broadcasting by satellite. These are alleviated by the fact that such broadcasts would have to be conducted in accordance with the International Telecommunications Union technical regulations. We believe that a solution to any remaining problems can be found by means of a principle calling for consultations before the commencement of a direct broadcasting service by satellite, if the intended receiving State so requests. These consultations will enable a State to present its views and interests to the State which proposes to establish or authorize such a service in order that they may be taken into account and be given due regard.

We note that since 1972 this Committee and its Legal Sub-Committee have been considering and have made a great deal of progress on the treaty relating to moon and other celestial bodies. In fact, on several occasions we have been close to consensus on a treaty text. In this context, the text put forth by Austria in the 1978 Legal Sub-Committee session and discussed in the 1979 Legal Sub-Committee session is a meritorious one, representing a meritorious effort. Although agreement was not reached at the 1979 session, the outstanding issues are few. The Austrian compromise draft text, with perhaps certain minor modifications, could still facilitate a successful conclusion to our work. My delegation stands ready to work with all delegations in the effort to achieve such an end.

(Mr. Hosenball, United States)

Considerable work has been carried out on the issue of nuclear power sources in space since the last meeting of this Committee. We commend the report of the Working Group, which met during the February session of the Scientific and Technical Sub-Committee. The experts effectively illuminated the technical and safety factors involved in the use of these devices and recommended fruitful areas for further study. The United States will continue to play a constructive role in this work, looking towards the eventual establishment of a regulatory régime, to which the Legal Sub-Committee can make important contributions. We would anticipate that such a régime would have three major elements: first, safety standards and procedures; secondly, notification; and thirdly, assistance in emergencies and appropriate handling of costs.

On the issue of the definition of "outer space", it is significant that, although this question has been on the agenda for a number of years, no compelling legal or technical need or justification for such a definition has yet been put forth. To the contrary, it is evident that the setting of an arbitrary demarcation line would result in certain major difficulties. Such an arbitrary boundary would substantially affect our ability to work together as a community of nations towards our common good. We cannot at this time predict with confidence the consequences of choosing an arbitrary boundary. It is clear that, had such an arbitrary demarcation been agreed upon in the past on the basis of the state of our knowledge as it then existed, many current space activities would have been either delayed or permanently inhibited. It is our view that the international community has not yet adequately examined the multitude of scientific, legal, technical and political factors that are relevant to meaningful definition. Having said this, we are prepared to continue to participate in Committee and Sub-Committee discussions of this issue.

The United States is pleased that a second United Nations Conference on the Exploration and Peaceful Uses of Outer Space will be convened. Such a Conference can provide an excellent opportunity for sharing information regarding progress in the space programmes of all Member countries and in considering how the benefits of space technology can be made more widely available, especially to meet the needs of developing countries. Indeed, it is our understanding that this was the fundamental rationale for proposing a second such conference.

(Mr. Hosenball, United States)

In its role as Advisory Committee in the preparations for the Conference, the Scientific and Technical Sub-Committee has already done much useful work on the organization of and agenda for the Conference. Considerable work remains before us, of course, to ensure a successful Conference. For example, important questions regarding the venue, timing and officers remain to be resolved. The United States delegation is prepared to participate constructively in the Working Group presided over by the representative of India, Mr. Yash Pal, to ensure that preparations for the Conference are indeed thorough and successful.

The CHAIRMAN: I thank the representative of the United States for his kind words to me. I also wish, on behalf of the Committee, to express appreciation for his providing us with comprehensive, accurate and up-dated information on the re-entry of SKYLAB.

#### ORGANIZATION OF WORK

The CHAIRMAN: As no other delegation is ready at this point to speak on agenda item 3, I wish to announce that, as we are now somewhat better informed of delegations' intentions, we shall handle the schedule of meetings flexibly, as far as the allocation of items 3 and 4 to morning and afternoon meetings is concerned, so as to allow us to go through the various lists of speakers. It will therefore be possible for delegations, after due notification, to speak under item 3 in the afternoon also, and, perhaps, on item 4 in the morning. While injecting that measure of flexibility, we shall, however, try to keep to the schedule we originally adopted.

The meeting rose at 12.30 p.m.