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COMMITTEE ON THE PEACEFUL USES OF OUTER SPACE

VERBATIM RECORD OF THE ONE HUNDRED AND FIFTY-EIGHTH MEETING

Held at Headquarters, New York,
on Tuesday, 22 June 1976, at 10.30 a.m.

Chairman: Mr. JANKOWITSCH (Austria)

- General debate (continued)
- Organization of work

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GENERAL DEBATE (continued)

Mr. PIRADOV (Union of Soviet Socialist Republics) (interpretation from Russian): During the year which separates us from the previous session held by the Committee, a number of important events have taken place in the world which have had and will continue to have a decisive influence on the development of international relations and co-operation among States in all areas, including the conquest of space.

On 1 August 1975 in Helsinki, the Conference on Security and Co-operation in Europe successfully concluded its work. The leaders of 33 countries of Europe as also of the United States and Canada participated in that Conference. That historic forum showed with abundant clarity that the dominant factor in international life has become the trend towards détente in relations among States with differing social systems, the victory of the policy of peaceful co-existence over the policy of the cold war. The principles which were formulated in the final act of the Conference concerning relations among States, provided that they are unswervingly observed, will form a sound foundation for the strengthening and consolidation of pan-European understanding and co-operation on the broadest possible basis.

It is a source of some pleasure to note that those that participated in the meeting -- and among them, as members may recall, were 16 member States of our own Committee -- recognized space studies and the study of the natural resources of the earth by means of satellites to be one of the most promising areas of international co-operation. The direct relationship of the development co-operation among States in the conquest of space and the struggle for the improvement of the international climate cannot be doubted. The Soviet Union has also regarded that co-operation as an important contribution to the cause of peace and friendship among peoples.

It is significant that one of the most striking symbols of détente in relations among States with differing social and political systems appeared at the very outset of the European Conference in the joint flight of the Soviet and American space ships Soyuz and Apollo. Their successful launching, their docking as they orbited the earth and the joint work carried out in space.

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by the first genuinely international crew in history are very significant and, in particular, indicate that the prospects for international co-operation in the conquest of space are limitless, that its tasks are noble ones and that its possibilities are inexhaustible. Such joint experiments are indeed a signal contribution to the process of improving relations among States, and we are entitled to say that distant outer space is in fact bringing people closer together.

I should like to express my conviction that the Committee as a whole shares our pride and admiration at the dauntless work of the cosmonauts and astronauts, all worthy sons of the Soviet Union and United States and who shook hands in outer space.

One of the most important events in the life of my country in recent years, an event which undoubtedly has tremendous international significance as well, was the Twenty-fifth Congress of the Communist Party of the Soviet Union. In the final report to the Congress made by the General Secretary of the Central Committee of the Communist Party, Comrade L. I. Brezhnev, a thorough analysis was given of the present situation in the world. The eminent achievements of the Soviet people in carrying out the tasks of the ninth five-year plan, that is, from 1971 to 1975, were summarized and the guidelines for the next five-year plan were made clear. We can say with some pride that during those five years a great deal has also been done in the Soviet Union in the field of research into and utilization of outer space. Here are some indicative data.

During this period we launched approximately 600 satellites in the Cosmos series; four orbital stations of the Salyut series; 10 manned space ships in the Soyuz series and a series of space ships designed to investigate remote space; Luna-18; Luna-23; Mars-2; Mars-7; Venera-8; Venera-10; dozens of satellites in the Meteor, Prognoz, Molniya, and Oreol series, and the stationary satellite Raduga. As members will realize, this is by no means an exhaustive list.

(Mr. Piradov, USSR)

During those five years there have been further developments in the direct utilization of space technology for purposes of communication, meteorology, the investigation of natural resources and the solution of a number of other problems including economic ones. Among recent achievements, together with the experiments carried out by Soyuz and Apollo, we should also like to refer to the 63-day flight of the cosmonauts Pyotr I, Klimuk and Vitaly L. Sevastyanov on the orbital station Salyut-4. This was the second team on a station which was sent into earth orbit in December 1974, and it is an interesting fact that the station Salyut-4 is continuing its flight and is still in orbit, thus demonstrating the tremendous reliability and durability of its systems and components. On board that station, cosmonauts Klimuk and Sevastyanov carried out a broad programme of comprehensive studies of the earth and its atmosphere, of the sun and other celestial bodies and also medical and biological experiments.

A great amount of material has thus been gained which is of considerable interest for geology, meteorology, oceanology and other branches of science and economics.

We should also refer to the fact that in the autumn of 1975 the Soviet automatic interplanetary stations Venera-9 and Venera-10, covering a distance of more than 300 million kilometres, reached the planet Venus. For the first time in the history of the conquest of space two artificial Venus satellites were set in orbit. On various parts of the planet's surface soft landings were carried out by the modules thus launched. For the first time in the conditions of the Venusian atmosphere, with a pressure which is 90 times greater than that on earth and with a temperature which is 485 degrees Celsius, unique images of the surface of the planet were obtained and important comprehensive scientific studies were carried out.

In the basic guidelines for the development of the economy of the Soviet Union for 1976-1980, which were approved at the Twenty-fifth Congress of the Communist Party of the Soviet Union, a broad programme of space studies was outlined to be carried out by our country, which involves not only a study of the universe but the further utilization of outer space and the achievements of space science technology in order to tackle a number of economic problems.

(Mr. Piradov, USSR)

It can be said, I think without any exaggeration, that today more and more space experiments are being evaluated from the point of view of their effectiveness and of their practical output, as well as of the contribution they can make to solving problems on earth.

The implementation of the ninth five-year plan was also marked by further success in the development of international co-operation in the study and utilization of outer space. During that period, within the framework of a joint space programme among the countries of the socialist commonwealth, 10 satellites in the Intercosmos series were launched. There are regular, joint experiments carried out with other socialist countries with geophysical rockets of the vertical type; joint work is being carried out on a broad range of problems relating to space physics and meteorology, biology and medicine, long-range communications and the investigation of the natural resources of the earth.

Mutually profitable co-operation has been developed in the conquest of outer space with the United States, France, India, Sweden and other countries. The scope of international co-operation in this area undoubtedly depends on the general state of international relations and on the role which States assign in their foreign policy plans to joint activities in the investigation and utilization of outer space. In this connexion, we would particularly like to emphasize that, in Comrade Brezhnev's report, the exploration of outer space is included among the most important and topical general issues which in the long run "will have an ever more noticeable influence on the life of every people and on the entire system of international relations". The development of equitable co-operation in the exploration and utilization of outer space for peaceful purposes on the basis of strict respect for the sovereign rights of all States is regarded in our country as a significant factor in international détente, an important contribution to the cause of peace and social progress for all peoples.

We shall have to discuss the reports of the Legal and the Scientific and Technical Sub-Committees and evaluate the work done by those bodies, as well as set forth further steps towards agreement on important political

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aspects of the conquest and utilization of outer space. As we see it, on the whole the work of the fifteenth session of the Legal Sub-Committee which has just been concluded should be commended. That Sub-Committee was, of course, under the constant guidance of Ambassador Wyzner. That session was able to elaborate nine principles, by which States should be guided when carrying out direct television broadcasts (DTB) with the help of artificial earth satellites. Undoubtedly, this is a success which we all share and it is a proof of the fact that DTB will help to achieve further rapprochement between the peoples of the earth and will help to promote an exchange of cultural values for the development of co-operation among States in the interest of the strengthening of international peace and economic and social progress.

Of course a number of problems relating to DTB have not as yet been solved. One of the main problems is the principle of the prior consent of a State to special foreign broadcasts over that country. However, we assume that the possibilities of a generally acceptable decision on that question have by no means been exhausted. During the period before the regular sixteenth session of the Legal Sub-Committee, a great deal can be done along these lines, so that by 1977, that is in a year's time, the preparation of a text covering all the principles of DTB can be completed.

It is also to the credit of the Legal Sub-Committee at that session that it was able successfully to start its work on the draft principles governing activities relating to the investigation of the natural resources of t earth by means of space technology. In a preliminary way, that is, at the first reading a number of important principles were agreed upon. We consider that that useful work should be continued as a matter of priority. In connexion with this point, the Scientific and Technical Sub-Committee might give its juridical colleagues some serious assistance, especially if it were to prepare conclusions concerning criteria for the establishment of categories of remote sensing data the scope of which should be regulated by international law and, especially, concerning the applicability

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for these purposes of limitations on local permission. We would support a decision by this Committee to instruct the Scientific and Technical Sub-Committee to do that.

Unfortunately, the Legal Sub-Committee did not obtain the same result on all items of its agenda. It was impossible to make any progress towards completing the elaboration of a draft treaty relating to the Moon. The Soviet delegation is prepared to continue that important work during the Committee's present session. However, it is our expectation that steps towards the achievement of generally acceptable compromise decisions will be made by all delegations and that all delegations will demonstrate due flexibility in this very complex and delicate process.

As representatives know, the question of the status of the natural resources of the Moon is a subject on which the Soviet delegation has, for the purpose of compromise, made serious concessions to those delegations which wish the draft treaty relating to the Moon to comprise the foundation of the future régime for the exploitation of its resources. At the same time we have frequently had occasion to explain in some detail that at the present stage of space activity we cannot agree with the proposal that the concept of "the common heritage of mankind" should be immediately applicable to the Moon and other celestial bodies and their natural resources.

First, we are genuinely convinced that such a proposal is premature in the absence of the necessary objective foundations and factual material for it. Secondly, we have referred to the juridical and political vagueness and lack of specificity in the concept which has been put forward.

The discussion at the fifteenth session of the Legal Sub-Committee, as we see it, clearly showed that among those delegations which spoke in favour of the concept of the common heritage of mankind there was no common view as to what it meant. In certain arguments that were put forward to support that idea, the idea in fact emerged that space activities should be internationalized and a supra-State nature should be given to whatever body guides those activities. Such legal arguments can obviously not be accepted by us as the proper way to proceed with respect to the gradual development of international space law.

(Mr. Piradov, USSR)

Therefore, the search for a compromise in this matter should obviously be pursued by means of a very accurate interpretation of the concepts used in the draft treaty, on the basis of due respect for the sovereign rights of States participating in space activities.

We should also commend the work done by the Scientific and Technological Sub-Committee at its thirteenth session. Its members have devoted much attention to the problems of remote sensing of the earth, have considered and gathered together a large quantity of factual material, and indeed have handled these problems very well.

We believe that the further elaboration of a possible United Nations role in international activities with regard to the remote sensing of the earth should be concentrated in the Scientific and Technical Sub-Committee, the body most competent to carry out that task.

I should also like to mention the tremendous work done by the members of the secretariat of the Sub-Committee, who prepared a number of interesting and useful studies for that body. Noteworthy also is the successful implementation of the United Nations programme on space applications under the leadership of the United Nations Expert, Mr. Murthy. As you know, under this programme the holding of a seminar in the Soviet Union in 1977 is planned to deal with the problems of remote sensing and preparations for this are already under way.

In conclusion, may I voice our profound satisfaction that we have once again met under your experienced guidance, Mr. Chairman, which as in previous years will undoubtedly help the Committee to conclude its work successfully and ensure that we all achieve constructive results.

Mr. EDMONDS (Canada): Mr. Chairman, the Canadian delegation is very pleased to participate in the nineteenth session of the Committee on the Peaceful Uses of Outer Space. Under your greatly appreciated and skilful guidance, we have a full agenda to cover, including in particular the reports of the Legal and the Scientific and Technical Sub-Committees. I should like to make some general comments on these reports and some of the issues you reviewed for us in your opening remarks.

First, however, I wish to report to the Committee on some of the highlights of Canada's space programme since we last met.

You will recall that Canada has been a pioneer in the area of communications by satellite, and there are now three operational satellites, of the Anik series, providing transmission capacity for a high volume of telecommunications traffic throughout Canada. A particularly important feature of this system is that it provides service, including television, to remote communities in the Canadian north. Experience with the system has indicated the need for further related experiments, and earlier this year the Communications Technology Satellite was launched. The CTS, as it is called, an experimental satellite built in co-operation with the United States and the European Space Agency, has the general objective of advancing the state of the art in both space and ground segments of satellite communications. A wide variety of experiments is to be carried out, including socially-oriented experiments in education, long distance medical diagnosis and health care, community interaction, and satellite communications for native peoples. I draw these developments to the Committee's attention as they provide examples of where space technology can be used to help to solve not only technological but also social problems.

A major new project for Canada in the field of space technology involves the development and construction of a key component of the NASA Space Shuttle. This is the so-called remote manipulator system, a complex mechanical arm which will make it possible for scientists aboard the Space Shuttle to deploy, retrieve and repair satellites in orbit. The National Research Council of Canada is leading a group of Canadian firms in this project.

Finally, the Canada Centre for Remote Sensing has been successfully operating a ground receiving station in Western Canada for some years, as part of the ...

(Mr. Edmonds, Canada)

Landsat programme. In this respect, we have been particularly conscious of the value to Canada of our co-operation with the United States. The success of that programme and the utility of the data supplied to federal and provincial agencies, universities, industry and the general public indicated the need for a second station to permit full coverage of Canada. This second station has now been built and is being installed at a site in the Province of Newfoundland, on the east coast. It is a complete co-located reception, preprocessing and dissemination facility which has been developed at a cost of only $2 million, including building and antennae; its low cost verifies the estimate given by the International Astronautical Federation in its 1975 report.

As we come to study the reports of the Scientific and Technical and Legal Sub-Committees, we note with satisfaction that both placed high priority in their debates on the important subject of remote sensing. As this technology matures, as its practical applications multiply and as the awareness of its utility as well as of its limitations grows, it is becoming recognized that it is not simply a glamorous offshoot of space exploration, but a practical, cost-effective tool which can benefit not only the scientists working in a wide variety of disciplines but, much more important, the planners and managers entrusted with the care of our dwindling resources and fragile environment.

Having helped to pioneer the development of remote sensing applications technology, and recognizing the great benefit which might be derived from it through improvements in our ability effectively to manage our resources and control our environment, Canada naturally hopes that others will take advantage of the opportunities offered by satellite remote sensing. It is for this reason that we have stressed, particularly in the Scientific and Technical Sub-Committee, and continue to stress here, the important role of the United Nations in helping to disseminate the knowledge of this technology and its applications. That is also the reason why we have welcomed experts and laymen alike from many countries, some briefly to view our facilities, some to attend seminars or conferences, others to perfect their understanding of the technical subject or to understand the organizational structure we have established in Canada to co-ordinate our national remote sensing effort. Similarly, Canada has been pleased to participate in the United Nations activities in this field, among other things by making scientists available to assist in various United Nations studies.

(Mr. Edmonds, Canada)

Although my delegation would like to reserve substantive comment on the legal aspects of the issues being considered in the Legal Sub-Committee until we come to item 4 (a), we wish at this point to make one or two general observations.

The first concerns the elaboration in the Legal Sub-Committee of principles to govern direct television broadcasting by means of satellites. The Canadian delegation believes that considerable progress has been made since the last session of this Committee. To a large extent this progress is reflected in the report of the fifteenth session of the Legal Sub-Committee. It is in our opinion a matter for some satisfaction that agreement has now been reached on nine principles which should provide a sound basis for further drafting at the next session of the Legal Sub-Committee.

(Mr. Edmonds, Canada)

While we are happy to share in this satisfaction, we also continue to be aware that several key issues remain to be resolved. There is still work to be done, work which cannot be delayed or avoided for long if we are to achieve a coherent, practical set of principles to regulate operational television broadcast systems. It is clear from recent technological developments, including the launch earlier this year of the Canadian Communications Technology Satellite of which we have already spoken, that television transmissions by means of satellites directly to individual home or community receivers equipped with very small antennae are no longer in the distant future. In order to keep pace with this rapidly developing technology and to identify positive action which can be taken by the United Nations General Assembly prior to the establishment of operational broadcast systems, it will be necessary to move as expeditiously as possible to reach agreement on a full set of principles, including principles concerning the outstanding but central issues of co-operation, participation and mutual agreement or consent. In the opinion of the Canadian delegation, and this opinion is reflected in the Canada-Sweden proposals first tabled in 1973, these difficult issues surrounding direct television broadcasting will best be resolved through the establishment of a legal framework based on a spirit of international co-operation involving consultations leading to mutual agreement and consent to the establishment of broadcast systems, coupled with the participation in the system by the State for whom the broadcast is intended. In this way, we believe it will be possible to reconcile the right and duty of States to regulate their communications systems and to decide, in the light of their own social and cultural needs, the type of broadcasting they require, with an equally strong obligation to ensure the freest possible exchange of information by means of broadcast satellite technology. This delegation therefore, while sincerely expressing its appreciation of the work already accomplished, looks forward to tackling in a precise and concrete way the remaining key issues at the next session of the Legal Sub-Committee.

My second comment on the report of the Legal Sub-Committee concerns remote sensing. In the course of the past year, Canada has undertaken a careful review of its national experience in this area and of the international ramifications of this sophisticated, rapidly developing technology. This review has heightened Canada's awareness of the need to strike a balance in approaching issues related

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to international remote sensing programmes -- encouraging, on the one hand, the development and widest possible application of this technology, while, on the other hand, exercising caution that, in the words of one of the "common elements" agreed on by the Legal Sub-Committee.

"Remote sensing data or information derived therefrom should not intentionally be used by States to the detriment of other States". (A/AC.105/171, annex III, p. 3)

At the last session of the Legal Sub-Committee, the Canadian delegation suggested a number of what we called "working hypotheses", which came out of the Canadian review of the implications of remote sensing and which we feel might go some distance to solving the questions posed by international remote sensing activities. We suggested that these hypotheses might, in one form or another, eventually be reflected in any workable and acceptable international régime. Basic to these hypotheses is the proposition that the balance we have spoken of could best be achieved through affirming, through legal guidelines, two central concepts: first, that all States should have equal and non-discriminatory access to remote sensing data, and, secondly, that States obtaining data concerning the territory of a sensed State and developing information or analysis concerning the natural resources of that State from such data should, upon request of the sensed State, enter into consultations promptly with a view to concluding mutually acceptable arrangements for respecting the confidentiality of, or the need for prior access of the sensed State to, such information to the extent necessary to avoid detrimental effects to the interests of the sensed State.

While these two concepts may be basic, they could not, in our view, be isolated and should be seen in the context of other, also important, provisions which should be included in the legal framework. In the Canadian statement at the last session of the Legal Sub-Committee, we suggested other working hypotheses which we feel should be given careful consideration, along with proposals already submitted and under discussion. It is our intention to touch somewhat more fully on these hypotheses, and one other issue relating to the implications of remote sensing, when this Committee comes to consider the report of the Legal Sub-Committee.

(Mr. Edmonds, Canada)

Reviewing in a general manner the report of the Scientific and Technical Sub-Committee, my delegation notes that that Sub-Committee devoted a major portion of its deliberations to the subject of remote sensing, and we should like to compliment the Secretariat for the high quality of the many reports which were prepared. These reports formed a useful foundation upon which further work was based.

With regard to the organization of international remote sensing, it was the view of the Scientific and Technical Sub-Committee, as reflected in paragraph 52 of its report, that the United Nations should not own or operate either the ground or the space segment of a satellite remote sensing system in the foreseeable future. This view coincides with that of Canada. However, it was felt that the United Nations could play a most important co-ordinating role, especially in the areas of training and technical assistance. With regard to training, those experts from Canada who have recently visited a number of developing countries concur with the Sub-Committee in the belief that increasing emphasis should be placed upon on-site, rather than centralized, training.

(Mr. Edmonds, Canada)

Another important subject discussed by the Scientific and Technical Sub-Committee was the possibility of new steps which might be taken to enhance the United Nations ability to study the important issues associated with remote sensing, as reflected in paragraphs 79 and 80 of its report. Canada has a strong interest in the development of greater understanding and the eventual resolution of problems, and the Canadian delegation will welcome and support proposals which will result in the advancement of the debate on the various aspects of remote sensing.

It is the intention of my delegation more fully to discuss these subjects, and other issues related to the technical aspects of remote sensing, when this Committee considers the report of the Scientific and Technical Sub-Committee.

At this point I should like to make a few comments concerning the question of holding a United Nations conference on outer space. At the meeting of the Scientific and Technical Sub-Committee, a working group chaired by Canada reached a carefully balanced compromise which, my delegation feels, took into account the essential concerns of all Member States. It is our hope that the spirit of constructive compromise which prevailed in the discussions of the working group and subsequently in the Sub-Committee's acceptance of the working group's recommendations will be reflected in our consideration of this item.

In those discussions it became clear that a principal reason for the initial lack of consensus was the absence of detailed information on such fundamental matters as the objectives which such a conference should serve, its scope, the organizational arrangements needed to reach the objectives identified, and the financial implications of such a conference. It was precisely to enable the Sub-Committee to study those important matters that it has stressed the need for a study in depth on the question of convening a United Nations conference on space matters. To permit constructive discussion to proceed, my delegation would like to suggest that we accept the recommendation of the Sub-Committee and instruct it to discuss this matter further at its next meeting on the basis of such a study and related information.

As I have mentioned, we shall have additional specific comments to make on particular parts of the reports as we reach them, but those are the general comments my delegation wished to make at this stage.

Mr. REIS (United States of America): The United States delegation is happy to participate in the nineteenth session of the Committee on the Peaceful Uses of Outer Space. Since its first session, in 1962, the Committee has established a record of solid achievement. It has stimulated international co-operation in space and space-related activities, educated Governments on the practical applications of space technology and helped to establish a legal régime for space activities characterized by freedom of scientific investigation and the sharing of information.

We believe it appropriate on this occasion to review the current status of the four multilateral agreements concerning outer space and space activities negotiated in the outer space Committee. We had occasion to discuss this matter briefly in the Legal Sub-Committee, and we think it might be useful to do so here.

As members know, the United States Government is one of the three depositary Governments for the outer-space Treaty, the astronaut Agreement and the liability Convention, while the Secretary-General is the single depositary for the registration Convention. The information I will now give is current as of the opening of our session, on 21 June.

The 1967 Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies, has now been ratified or acceded to by 69 States. This represents approximately half the membership of the United Nations. It seems reasonable to expect this number to grow steadily in view of the increasing appreciation of the practical applications of space technology. The 1968 Agreement on the Rescue of Astronauts, the Return of Astronauts and the Return of Objects Launched into Outer Space has received 64 ratifications and accessions in all, most of them quite recently; in addition, the European Space Agency has filed a declaration of acceptance under article VI of the Agreement. The 1972 Convention on International Liability for Damage Caused by Space Objects has been ratified or acceded to by 40 countries, but I wish to note that of the 31 members of the outer space Committee only 16 have so far become Parties to this Convention. Finally, the 1974 Convention on Registration of Objects Launched into Outer Space was opened for signature here at the United Nations in

(Mr. Reis, United States)

January 1975. According to the information which the Secretariat was kind enough to provide, as of yesterday it had been signed by 24 countries and had been ratified by France, Bulgaria and Sweden.

Our delegation is very pleased to be able to report that yesterday the Senate of the United States gave its advice and consent to the ratification by the President of the registration Convention. The Senate took this action unanimously, with 88 votes in favour and none opposed. We very much appreciate this action by the Senate, and hope the Administration will be able soon to deposit the United States instrument of ratification with the Secretary-General.

We would like to suggest that the outer space Committee consider recommending to our Governments that they review the desirability of accepting the rights and obligations contained in these treaty instruments. While the General Assembly regularly includes a suggestion to this effect in its omnibus resolution coming from the First Committee on the outer space agenda item, progress might better begin at home, here in this Committee. We think it would be worth while to encourage those of our Governments which are not Parties to these treaties to undertake a fresh analysis of them.

Since the last session of the Committee, in June 1975, there have been many significant achievements in international space co-operation and the exploration and use of space. Many of these were touched upon by you, Mr. Chairman, in the review you gave us yesterday, and more have been adverted to by the representatives of the Union of Soviet Socialist Republics and Canada this morning. They were also touched upon by Professor De Jager of COSPAR yesterday. One dramatic example, as indeed we have heard, is the Apollo-Soyuz mission successfully completed through co-operation between the Soviet Union and the United States, involving, as has been pointed out, both scientific experiments and a rendezvous and docking programme. Its many engineering and scientific achievements included the design and flight testing of a universal docking system, which will be required for the operation of any large co-operative manned systems in the future. Another main product is the establishment of an expanded rescue capability for future manned space flights. A significant satellite and communications engineering feat involved the relay of live television coverage

(Mr. Reis, United States)

of the Apollo-Soyuz mission through the ATS-6 satellite and via an earth station near Madrid to television audiences around the world.

Apart from the tangible results of Apollo-Soyuz, the participating States and the international community have enjoyed a variety of less tangible but, we believe, significant benefits. These include the cordial relations that have grown up among large numbers of United States and Soviet men and women during the preparation of the mission and the good will engendered in astronaut and cosmonaut tours around the world following the mission. In another co-operative venture involving several Eastern European countries, the United States contributed scientific experiments as part of a biological satellite payload -- Cosmos 782 -- launched by the Soviet Union last November. The establishment of these relations and the demonstration of the feasibility of joint missions in space have laid the foundation for future operations in the interests of all countries and have contributed significantly to the implementation of the central theme of the promotion of international co-operation and understanding as set forth in article III of the outer space Treaty.

(Mr. Reis, United States)

On 1 August 1975 the Satellite Instructional Television Experiment (SITE), which has been referred to by earlier speakers, was inaugurated by the Indian Space Research Organization (ISRO). In 1969, as I think the Committee knows, the National Aeronautics and Space Administration (NASA) had undertaken to make an ATS satellite available to India for four hours every day for one year in order to broadcast programmes on family planning, agriculture and public health, as well as school and adult education programmes, to 5,000 Indian villages. About 2,700 of these villages in fact received the programmes on conventional television receivers augmented with a low-cost 10-foot diameter parabolic antenna, a frequency converter and a pre-amplifier. India has had full responsibility for the design, development, operation and maintenance of the ground receiving and transmitting equipment and for the programming of SITE broadcasts. ISRO will also evaluate the social impact of the experiment. The Administrator of NASA, Mr. Fletcher, recently confirmed on his return from a tour in India that the programmes have been arousing great interest in the villages and that the experiment appears to be highly successful.

Since the Committee's eighteenth session, last year, NASA has launched two Viking automated spacecraft to orbit and place a lander on Mars. The first of these two craft entered Martian orbit on 19 June. A primary objective of the mission is to determine whether there are or have been living micro-organisms either on or below the Martian surface. The initial lander, which is expected to descend to the Martian surafce during the first week of July, is also intended to provide a spatial and spectral characterization of the landing site and the surrounding atmosphere. Among other experiments, it will make geological, biological and meteorological analyses. Several non-United States scientists will be using data from Viking for scientific studies of Mars.

Another international co-operative programme of major significance during the past year has involved the successful launching by NASA of the Canadian Communications Technology Satellite (CTS) in January 1976. This was just discussed by the representative of Canada. As he noted, this is an advanced experimental communication satellite designed to transmit at substantially higher power levels than standard communication satellites and thereby permit the use of smaller receiving stations in isolated communities and for governmental and industrial

operations in northern Canada. As the representative of Canada noted also, in addition a Canadian programme continues on schedule to contribute a remote manipulator system for use on the NASA Space Shuttle.

The development by the European Space Agency (ESA) of the Spacelab to be launched in the Space Shuttle is proceeding on schedule as well. The experimental objectives of the first Spacelab flight scheduled for 1980 have been selected by ESA and NASA jointly. Moreover, under the Helios Co-operative Solar Probe Project carried out with the Federal Republic of Germany, NASA successfully launched Helios 2 in January 1976. Helios 1, which was launched in 1975, has already discovered unexpected characteristics of the solar wind, as well as particle fluxes and cosmic dust concentrations in hitherto unexplored areas in proximity to the sun. Helios 2 will be working with its predecessor to extend and correlate those investigations in space and time.

Other co-operative projects under study or development and involving the United States are an Infrared Astronomy Satellite with the Netherlands, an x-ray satellite of the Explorer class with the United Kingdom, a space telescope project with the European Space Agency and an out-of-the-ecliptic probe with ESA designed to examine the astronomical region beyond the principal plane of the solar system.

The past year has also seen marked progress in the field of satellite remote sensing of the natural phenomena and environment of the earth, a subject which was of principal concern to both the Scientific and Technical and the Legal Sub-Committees at their recent sessions. Facilities for direct reception of Landsat data are currently in operation in Brazil, Canada, Italy and the United States. Chile, Iran and Zaire have also concluded agreements with NASA under which they will fund the construction of Landsat ground facilities in their countries, and a number of other countries are actively considering establishing such stations in 1977 and 1978. The United States intends to continue to be responsive to the growing interest in this network.

Although not exhaustive, those various projects and activities illustrate the advances that are being made for the benefit of mankind. In addition, many other countries, developed and developing alike, are becoming increasingly capable of exploiting space technology for their own purposes. In the 10-year

period 1965 to 1975 NASA conducted more than 40 international reimbursable launches in addition to those co-operative programmes in which there is no exchange of funds. Five such international reimbursable launches will be conducted this year and 11 more are scheduled for 1977. That level of activity is a clear index to the improved capacity of States to benefit from space technology. We believe that the United Nations Committee on the Peaceful Uses of Outer Space has made a major contribution to these achievements by creating a climate of international co-operation in which space science, exploration and applications have been able to flourish.

As scientists and technicians are making impressive progress in the exploration of outer space, the members of this Committee, through their representatives on the Scientific and Technical and the Legal Sub-Committees, have also been hard at work trying to assess the future technical potential and the organizational and legal needs of the international community in this field. Each of the Sub-Committees devoted a considerable amount of time this year to the subject of remote sensing, as I have already noted. In particular, the work of the Scientific and Technical Sub-Committee was assisted by a series of detailed and most useful studies written and compiled by the Secretariat. We share the high opinion of this work expressed by the two previous speakers this morning.

Although many different aspects of remote sensing were examined by the Scientific and Technical Sub-Committee, one of the most important results of its review was the emerging consensus in support of regional co-operation for the reception, processing and analysis of data. Building on the recommendation of its twelfth session, in 1975, that training facilities should be combined with such regional centres, the Sub-Committee noted the expanding number of training opportunities being offered by States and international organizations in order to increase the capability of all countries to share in the benefits of remote sensing of the earth. The Sub-Committee specifically noted that

"International co-operation was needed as this was the only cost-effective approach for acquiring the benefits of satellite remote sensing for the majority of countries". (A/AC.105/170, para. 50)

(Mr. Reis, United States)

The Scientific and Technical Sub-Committee also

"reaffirmed the view that a regional, international and national approach would be preferable for reception of remote sensing data from satellites". (Ibid., para. 59)

It cited three examples of regional arrangements, including

"(i) A station encompassing a geographic zone within a given nation;

"(ii) A station jointly owned and operated by several nations;

"(iii) A national station that may serve the needs of several States under appropriate bilateral or multilateral arrangements between those States". (Ibid.)

In the view of the United States, the practical experience which the international community has thus far gained through current experimental programmes strongly supports the desirability of a co-operative international approach to the reception and development of and sharing of benefits from remote sensing data.

We believe also that the United Nations can play a most valuable role in the dissemination of information about the technical aspects of remote sensing, about the potential benefits in which countries may share, and about how scientists and other experts in all countries may apply those benefits to their own national development programmes.

Our delegation has read with considerable attention the note from the Permanent Mission of India concerning a possible regional ground station for remote sensing which might be established in India. That note is contained in document A/AC.105/174. We await with interest a fuller exposition of this matter by the delegation of India.

(Mr. Reis, United States)

For its part the Legal Sub-Committee has begun a careful and useful analysis of the legal implications of remote sensing. This analysis includes, as was noted by other speakers, the drafting of guiding principles in areas where common elements have been identified through the discussion of legal implications. Five such principles have been developed, and additional common elements identified. As we continue this work, we believe that the most constructive progress can be made through careful attention to the interdisciplinary aspects of remote sensing and as well to the need to integrate legal, technical and organizational considerations into the development of additional principles. It seems worth noting that in the body of the five principles so far developed by the Legal Sub-Committee, the single paragraph unburdened by brackets reinforces the theme of regional co-operation. The paragraph reads:

"In order to maximize the availability of benefits from such remote sensing data, States are encouraged to consider agreements for the establishment of shared regional facilities." (A/AC.105/171, annex III, p. 3)

The Legal Sub-Committee also made substantial progress in drafting principles to guide broadcasting authorities planning the conduct of direct television broadcasting by satellite. Although certain issues remain to be resolved, the discussions at the May session of the Sub-Committee were useful and productive. It may well tax our collective ingenuity to develop mutually acceptable solutions to the remaining issues for there are fundamental values involved which require very considerable discussion and analysis. For the United States, as for many other countries, the principle of the free and open exchange of information and ideas is central. Nevertheless, the outer space Committee has faced difficult issues in the past and will do so again in the future. We hope that in the course of time we shall be able to develop a consensus in this matter as well.

We also hope the Legal Sub-Committee will be able to complete its work on the draft moon treaty and add this agreement to the growing list of successful products of the Sub-Committee, to be approved by the outer space Committee and endorsed by the General Assembly.

(Mr. Reis, United States)

A topic of increasing interest to Governments is the matter of energy development programmes. We have heard interesting and stimulating comments in this area from several speakers, including our Chairman, Ambassador Jankowitsch, and there are two papers on this subject before the Committee at the current session. There is, of course, a great deal of work which could be done in this area.

While it is desirable to use some caution as to the scope of a possible study by the outer space Committee, it may be helpful for Governments to be asked to present for the next session of the Scientific and Technical Sub-Committee a survey of work in progress or of work planned in each country in the area of developing energy resources or systems in space.

The agenda of each Sub-Committee continues to be full. Each has important and difficult questions of interest to all of our Governments. The tenor of our work has been notably constructive. The United States delegation looks forward t continuing to join in the collective effort to explore the many important aspects of the peaceful uses of outer space.

Mr. BUSSE (Federal Republic of Germany): Another year has elapsed sinc the last meeting of this Committee. We have again gathered to review the progres achieved and to define the lines which might guide our further work. One may not with satisfaction that the general public has become more and more interested in, and aware of, the activities of the United Nations with regard to the exploration and use of outer space and the important role which our Committee has assumed in this connexion. Its task is not an easy one. In accordance with its mandate it has to ensure that the new space technologies will be used for the benefit of all mankind, taking into account the special needs of the developing countries. My delegation has in the past actively contributed to the efforts undertaken by this Committee and will continue to do so in the future.

Before addressing myself to the major topics on our agenda, I should like to illustrate the importance my Government attaches to outer space affairs and, in particular, to United Nations activities in this field. My Government deposited the instruments of accession to the Convention on International Liability in December 1975 and signed the Convention on Registration in March 197

(Mr. Busse, Federal Republic of Germany)

The Federal Republic of Germany now is a Party to all the international instruments our Committee has elaborated; in the case of the registration Convention, it is a signatory.

My Government once again carried out a number of space activities during the last year. The space programme of the Federal Republic of Germany has reached a certain culminating point. The operation of the two German-French experimental telecommunication satellites "Symphonie" has been very successful. The application possibilities of Symphonie have been demonstrated by a telecommunication link between United Nations Headquarters and the United Nations peacekeeping forces in the Middle East. India will make use of the transponder capacity of Symphonie. The satellite will be used for education purposes by several African countries. Another example of successful bilateral co-operation in space is the United States-German solar probe Helios which provides us with valuable information on the sun. European co-operation in the European Space Agency (ESA) has since its start in 1975 already become an efficient routine. In the past years, our national programme has gradually been integrated into common European activities. Two thirds of the present national space budget are spent on joint European projects. The projects focus on applied space activities leaving, however, ample room for basic research. My Government believes that the development of Spacelab, Europe's contribution to the United States Shuttle programme, will create a new dimension in the exploration and use of space for all mankind. The Federal Republic of Germany contributes substantially to the development costs of this space laboratory. In addition, in May 1976, my Government concluded an agreement with ESA under which a European team of payload specialists has already started to work on integration aspects at the facilities of the DFVLR, the German Research and Testing Agency for Aeronautics and Space.

After this very brief report on some of our space activities, I should like to concentrate on the reports of the two Sub-Committees. Before going into details, I wish to thank first of all, their Chairmen, Ambassador Wyzner and Mr. Carver, for their experienced guidance of the discussions. I also wish to express my appreciation for the most valuable assistance rendered by the Secretariat. Both Sub-Committees have made progress. However, we are still left

(Mr. Busse, Federal Republic of Germany)

with several problems on which I should like to elaborate with a view to finding possible future solutions. May I, first of all, turn to the question of direct broadcasting by satellites. The main problem is, as we all know, the relation between the principles of free flow of information and the sovereignty of States.

The principle of free flow of information includes the right of the individual to seek, receive and impart information and ideas through any media, regardless of frontiers. This freedom forms part of the right to freedom of opinion and expression. On the other hand, some States would like to base the concept of prior consent on the principle of State sovereignty. The sovereignty of States is an undisputed principle of international law. In this respect my Government certainly is in full accord with all other Governments represented here. With the concept of prior consent, however, States wanting to censor information generated and disseminated within and from the territory of other States, would be going beyond the limits of State sovereignty.

(Mr. Busse, Federal Republic of Germany)

We are fully aware of the fact that there are different social systems which may handle the same subject differently. In my country we also sometimes dislike broadcasts which we receive from abroad. Yet we are prepared to live with them because we believe that the principle of the free flow of information must not and cannot be divided. Once you introduce restrictions for whatever reason, you are going to have more and more restrictions for other reasons. This may lead to incomplete communication and finally to a lack of communication which may endanger peace.

My delegation, therefore, cannot support the concept of prior consent; on the contrary, my delegation would like to see maximum use being made of the possibilities provided for by direct broadcasting by satellites. The always restless ingenuity of engineers and technicians has provided us with a technology which opens up new dimensions for the quality of life. It is our responsibility to ensure that the best use is made of this technology to the benefit of all mankind. Direct broadcasting is not a means in itself, but it is a means of information. What other purpose should it serve if not the purpose of international communication? By reaching beyond national borders and bridging continents it greatly enhances the possibilities of better understanding our neighbours and improving international co-operation. To my Government, therefore, it is of vital interest that the free flow of information should exist.

Thanks to the technical possibilities which the mass media offer us today -- and direct broadcasting certainly is a very important and interesting one -- it will be possible to increase mutual understanding and friendship throughout the world. This holds true not only for relations between States but also in particular for those between individuals because the benefits derived from direct broadcasting will ultimately be received by individuals. The right of individuals to seek, receive and impart information and ideas across frontiers has already been well established in such international instruments as the Universal Declaration of Human Rights and the Covenant on Civil and Political Rights. My delegation considers it one of the most

noble achievements of the United Nations to have confirmed to the individual the right of self-expression and self-representation, thereby making a decisive contribution to international understanding and co-operation.

My Government has made it clear on many occasions that the principles of State sovereignty and the free flow of information are not incompatible. One way of reconciling the different positions, I am certain, would be to make wide use of the instrument of consultations. Consultations have proved an efficient means for solving open issues, and I do not see any reason why this approach should not work in the context of direct broadcasting.

I feel encouraged to make such an optimistic interpretation when I look at the discussions which took place in the Legal Sub-Committee. Its Working Group II was able to formulate nine of the 14 principles. That result is due to the spirit of compromise which prevailed through all the meetings of the Working Group and which was shown by all delegations. My delegation would like to thank Ambassador Mishra for the valuable work done under his chairmanship.

It was the generally expressed opinion of the Legal Sub-Committee that the major problems, among them the question of prior consent, should be left to the next session and that there should be a second reading of the nine principles although they had already been formulated. I think we should identify ourselves with that approach, because each principle will make sense only in the larger context of the complete draft, after we have reached agreement in substance on all the principles.

Another item which still presents problems, because of the different philosophies underlying the approaches used, is remote sensing of the earth from outer space. Working Group III established by the Legal Sub-Committee was able to do substantial work and to find common elements. Once the ground was cleared in that way, it was possible to move on and formulate principles. This procedure -- first to agree on common elements and then to elaborate principles -- has proved very successful, and I should like to suggest that we keep this in mind for other occasions where the same working method might also be advisable. May I, above all, express my thanks to Ambassador Nettel for the progress reached in that Working Group.

In both Sub-Committees new technical proposals were made. Those new concepts have given us a lot of substantial material to think about, and they may help to solve some of the political problems connected with the dissemination of data. To my delegation there can be no question that the free dissemination of data, uninhibited by rules of prior consent, is the policy on which future solutions should be based. This policy rests on two fundamental considerations. First of all, everybody -- be it a State, an institution, an organization or an individual -- should have free access to data relating to the earth. To deprive someone of remote sensing information may produce a serious handicap, because, ignorant of the natural resources at his disposal, he will be unable to make use of them. Secondly, only by establishing free access to data do we have a good chance to prevent disadvantages, mistrust and tensions.

A restrictive system of data dissemination may easily, unwittingly and uncontrollably lead to discrimination; and if some of the proposals before the Committee were to be accepted, one might easily imagine the coming into existence of different types of information recipients, namely, privileged and underprivileged ones. In any case, such a system would be to the disadvantage of the developing countries. On the other hand, an open system of data dissemination guarantees that whoever is interested in the data available will receive them on reasonable terms.

One additional and important aspect should be mentioned. In the view of my delegation, participation in remote sensing activities should be made possible for other interested States. Such participation is complementary to an open system of dissemination. In order to achieve as much participation as possible, technical assistance should be given in particular to the developing countries. In this connexion, I should like to mention the seminar on remote sensing for developing countries, to which the Federal Republic of Germany is acting as host under the auspices of the United Nations and the Food and Agriculture Organization of the United Nations (FAO), in August of this year.

(Mr. Busse, Federal Republic of Germany)

Another subject before us is the treaty relating to the Moon. Under the able chairmanship of Professor Haraszti, Working Group I tackled the difficult question of the natural resources of the Moon, trusting that a solution to this problem would lead to agreement on the remaining issues, namely, the scope of the treaty and the information to be furnished on missions to the Moon. Many and serious efforts were undertaken to reach a compromise solution. Although that proved not yet possible, the treaty was brought nearer to conclusion. My delegation would welcome it if the draft treaty could be finalized soon, thus making it possible to add yet another instrument to the excellent work of codification done in the past. We should therefore charge the Legal Sub-Committee to continue its examination of the remaining unsolved questions and, as proposed by the Sub-Committee, deal with this matter as one of high priority next year.

(Mr. Busse, Federal Republic of Germany)

As far as the delimitation of outer space is concerned, some delegations feel that this question should have the highest priority. Although my delegation is not convinced of the necessity of settling the question of the delimitation of outer space immediately, it fully shares the view that we should endeavour to reach agreement on this problem also in the not too distant future. There is a tendency to expand national influence beyond one's own territory -- a tendency which would be contradictory to the concept of freedom of outer space. Whatever borderline we may finally be prepared to accept -- and the Scientific and Technical Sub-Committee should be asked to look further into the matter -- this will also be a political decision. We shall have to ascertain that no solution will be found which might endanger the free use and exploration of outer space.

The Scientific and Technical Sub-Committee also dealt with the question of a possible United Nations conference on outer space matters. My delegation has, on various occasions, expressed its conviction that such a conference would be a useful undertaking. It should be left to that Sub-Committee to define its scope. I think it would be most worth while to study the proposal to entrust such an important event to an institution which has the necessary experience and the know-how in this field and which has world-wide membership. The idea that the International Astronautical Federation may be interested in organizing such a meeting under the auspices of the United Nations should also be taken into consideration in this connexion.

We notice with satisfaction that discussions on many items have not stood still, but have made considerable progress. It has also been gratifying to note the fair and business-like manner in which discussions were carried on and to see that all concerned showed a spirit of compromise. I feel certain that this spirit of co-operation will facilitate our future work. Technological progress offers us many opportunities and we should make the best possible use of them. It is the noble task of this Committee to ensure that these opportunities will be used to the benefit of all mankind and that possible frictions are overcome in a peaceful way.

ORGANIZATION OF WORK

The CHAIRMAN: As no other delegation wishes to speak at this time, I should like to put the following proposals to the Committee.

Regrettably, there are as yet no speakers for this afternoon's meeting, and unless the Committee feels strongly to the contrary, and unless anyone wishes to speak, I would suggest that in the interests of economy we should cancel that meeting.

I would appeal to delegations to come forward and inscribe their names, especially for tomorrow morning's meeting. In order to speed up this process, I would suggest that, in keeping with our practice in previous years, the list of speakers for item 3, the general debate, be closed at 5 p.m. today. If I hear no objection, I shall assume that the Committee agrees to this procedure.

It was so decided.

The CHAIRMAN: We are faced here, as in many other United Nations organs, with the problem of not being able to open or close a meeting on time for lack of speakers or for lack of a quorum. I would therefore urgently appeal to representatives to make the best use of the time available to us by coming early tomorrow morning so that the meeting can start at as close to 10.30 as possible.

The meeting rose at 12.15 p.m.