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THE  
DEPARTMENT  
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# BULLETIN

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January 19, 1970

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## INTERNATIONAL ORGANIZATIONS AND CONFERENCES

## Sharing the Practical Benefits of New Technology in the Peaceful Uses of Outer Space

*Following are statements made in Committee I (Political and Security) of the U.N. General Assembly on December 10 by U.S. Representative William B. Buffum and on December 11 by Peter S. Thacher, Counselor, Disarmament, Science, and Technology, U.S. Mission to the United Nations, together with the text of a resolution adopted by the General Assembly on December 16.*

### STATEMENT BY AMBASSADOR BUFFUM, DECEMBER 10

U.S./U.N. press release 198 dated December 10

This has been a year of achievement in the exploration of outer space. But such technical accomplishments as the Apollo 11 and 12 lunar landings and the televising of the surface of Mars are not the only successes to which one should look. There are other peaceful uses of space which offer the promise of practical returns for the development of our societies. I am referring in particular, Mr. Chairman, to the still-experimental earth resources satellite program which the United States is currently exploring. Indeed, President Nixon used this program to illustrate his declaration to the General Assembly that the United States would share the benefits as well as the adventures of space.<sup>1</sup> The President, you may recall, pledged that our earth resources satellite program, as it proceeds and fulfills its promise, "will be dedicated to produce information not only for the United States but also for the world community."

<sup>1</sup> For text of President Nixon's address on Sept. 18, 1969, see BULLETIN of Oct. 6, 1969, p. 297.

For a number of years we have been exploring the potential of various remote sensing techniques for such practical uses as aiding in identifying areas of crop diseases, locating mineral deposits, and surveying forests, rangelands, vegetation, soils, river basins, and ground water. We have analyzed the data obtained from our meteorological and advanced technology satellites for the information they provide on snow cover, ice floes, and ocean currents. We have studied the color photographs taken during the Gemini and Apollo flights for the broad range of data they contain, and we continue to publish the results. We have undertaken basic research in the development of sensors and data-handling systems. In this connection we have conducted an aircraft program to test sensors over carefully selected resources test sites to determine the characteristic responses of significant surface phenomena and to determine which observational techniques are most suitable for space application and which are best adapted to surveys by aircraft.

The purpose of the experimental earth resources satellite program will be to determine the desirability and configuration of an operational space-based earth resources survey system and the problems associated with handling data from such a system. We are now defining the specific experimental objectives and character of the first two earth resources technology satellites, the first of which we hope to be able to launch sometime in 1972.

Our earth resources technology satellite program will mark the first attempt to obtain earth resources data through telemetry. In testing the capabilities of this first earth resources technology satellite, we will concentrate primarily on

test sites in the United States about which a considerable body of ground truth data and knowledge is being acquired. We will make this data available and the test sites open to the world scientific community. This will help us to consider together our common interests in developing these survey techniques.

#### **Cooperative Programs Already Initiated**

At the same time that we are exploring the extent of our program's future utility we are endeavoring to provide other nations with ample opportunity to judge for themselves the practical applications of remote sensing of earth resources.

The United States has initiated cooperative programs with Mexico and Brazil concerning the techniques and prospects for earth resources surveys. Special attention should be paid to the airborne phase of these programs. The study of aircraft surveys is useful both intrinsically and for training and experience necessary to the use of similar data which we hope eventually to make available from satellite systems. We in the United States shall be happy to offer technical guidance, as well as training opportunities, to member states who may wish to pursue aircraft-based sensing programs on either a national or regional basis. We are already helping India to set up its own experiment to identify areas of coconut palm blight through airborne remote sensing techniques.

On the satellite side, we have provided the Secretary General with a detailed description of the earth resources survey program of the National Aeronautics and Space Administration and have asked that copies be made available in the Outer Space Affairs Division for study by interested states. Other United States actions to date include joint development with Canada of an absorption spectrometer for earth resources applications; the broad international circulation of relevant studies and documents, together with examples of Gemini and Apollo terrain photography; our active participation in U.N.-sponsored earth resources survey sessions at the 1968 United Nations Space Conference in Vienna and more recently in earth resources

symposia held in Argentina, France, and the United Kingdom; and our support for the international biological program.

Last October, at the invitation of the United States through the Secretary General, 41 experts from 12 countries took advantage of the International Symposium on Remote Sensing of Environment at the University of Michigan. We shall continue to inform other nations of such technical conferences as they are scheduled.

#### **Proposals for Future Action**

The foregoing represents some steps already taken. What of the future? The President mentioned in September that we would be putting before the United Nations several proposals with regard to the use of earth resources satellites for the world community. We plan in this respect the following actions as immediate steps parallel to the recommendations of the Scientific and Technical Subcommittee endorsed by the Outer Space Committee:

We shall convene an international workshop on earth resources survey systems in the spring of 1971 to provide interested agencies of other nations with a substantive opportunity to acquire a practical understanding of remote sensing equipment, techniques, and applications which will assist them in making their own national plans. This workshop will be based on the very successful pattern of the 1961 international meteorological satellite workshop in Washington, D.C., and U.N. member states will be invited to send technical and policy personnel.

We shall expand NASA's international fellowship program (now underway) to include courses at U.S. universities on the fundamentals of remote sensing. Information concerning this training opportunity will be widely circulated internationally.

We shall provide briefings and exhibits on earth resources surveying for U.N. members, the Secretariat, and specialized agency representatives, as well as arrange for visits to the data facility and the Manned Spacecraft Center in Houston and other U.S. facilities where remote sensing work is being conducted. In particular, we are inviting members of the Outer

Space Committee and staff of the specialized agencies dealing with resources information and management to visit the NASA Manned Spacecraft Center for a briefing on the NASA earth resources survey program and to inspect the facilities and data bank there.

We plan not only to make available information about earth resources surveying (through such steps as the foregoing) but also to invite potential international users to work with us as we explore, from the standpoint of their needs and problems, the best ways of approaching such technically difficult matters as data processing, interpretation, and utilization. In this way the international community will be able to draw directly on our experience.

We support the Outer Space Committee recommendation that the Secretary General appoint a full-time expert to promote the practical applications of space technology and the accompanying suggestion that member states designate a specific point of contact for communications about practical space applications. This twofold mechanism, which we had the honor to share in developing with the delegation of India, is directly relevant to earth resources surveys, and we hope that interested members will designate their contacts and take full advantage of the opportunity it will afford.

Beyond the necessary work of understanding and evaluating these new survey techniques, it seems to us that all member states should give thought to practical mechanisms which might be considered in the future to facilitate further international cooperation in this field. For example, governments may wish to consider the establishment of a central data facility or center to serve the U.N. family already active in the resources field, and they may wish to consider regional arrangements for processing and distributing data.

In conclusion, remote sensing by satellite and aircraft offers not only significant promise of assisting in the acquisition of significant new information about resources but opens the door for the first time to a means by which a regular inventory of resources might be taken, thus permitting us to manage our resources to a de-

gree far beyond anything previously thought attainable. The ultimate result, therefore, could be a major contribution to the solution of a number of the earth's food, water, and other resources problems, including the improvement of environmental quality. Thus, we reaffirm our support for the recommendations of the Outer Space Committee which relate closely to our program and the practical application of space technology.

Mr. Chairman, we are consulting various interested members of the Outer Space Committee with a view to submitting a proposal which would invite member states with experience in this field to make such experience available to other member states and which would be designed to encourage the study of earth resources survey satellite programs, including programs relating to airborne sensing techniques, as well as participation to the extent feasible and practicable in their development. We favor inviting states to join in exploring all aspects of data analysis and the dissemination and application of data so as to maximize the benefits obtained, taking into account the particular interests and needs of the developing countries. We would have to ask the Secretary General to bring this subject to the attention of the United Nations family of agencies whose objectives or programs might be furthered by remote earth resources survey technology including, for example, the Preparatory Commission for the Conference on Environment. Finally, we would request the Outer Space Committee to continue its studies regarding the possibilities of further international cooperation. This could constitute an important first step toward an exploration together of the potential of remote earth resources surveying.

Mr. Chairman, these are preliminary suggestions and comments. We look forward to learning the views of others, and we hope that our mutual consideration of these views, as President Nixon stated in his address to the General Assembly, will "be marked not by rivalry but by the same spirit of fraternal cooperation that has so long been the hallmark of the international community of science."

### Outer Space Liability Convention

Mr. Chairman, I turn now to the outer space liability convention. The United States regrets that the repeated call of the General Assembly for a liability convention has not yet been heeded. The target date of 1968, which we had thought reasonable, has long since passed, and the Assembly is now obliged to content itself with the hope that the convention will be completed during 1970 in time for the 25th anniversary of the United Nations.

As the Chairman of the Outer Space Committee, Ambassador [Heinrich] Haymerle, has already noted, dissatisfaction at the September session of the Outer Space Committee over the failure of the Legal Subcommittee to complete the convention was so grave that it was decided to hold a resumed session of the Committee on November 12 and to use the interim period for intensive consultations.

I want to take this occasion to say that we are grateful to Ambassador Haymerle for his unstinting efforts to transform failure into success. Considering the burden of his other duties as Permanent Representative [of Austria] and in the General Assembly, his devotion to the cause of the convention and his energy in seeking mutual accommodation have been outstanding and a credit to the best traditions of the United Nations.

Consultations among members of the Outer Space Committee quickly revealed that three problems stand in the way of the liability convention. The first relates to applicable law; that is, to the standard the convention will lay down for determining what elements of a specific claim for compensation may be compensated under the regime of the convention. The second concerns the need to provide an efficient and impartial means for settling claims that have not been promptly resolved within a reasonable time by bilateral negotiation. The third problem that needs to be resolved is the question of a ceiling on liability per incident.

The United States considers that the problem of applicable law can best be resolved by agreement to the formulation under which compensation will be determined in accordance with international law, taking into account the law of the place where the damage occurred.<sup>2</sup> This

formula will permit due regard to be paid to the practices of states in presenting and paying international claims, and it will give special emphasis to the payment of compensation appropriate to the social setting in which the accident took place. As we have pointed out, the purpose of compensation is to restore—to the extent that money can do so—a person or family that has been injured to the condition that existed before the injury. This purpose would be accomplished by this formula. On the other hand, justice would not be served by the Indian suggestion which would permit a launching state to claim that its law was relevant and thereby defeat elements of a claim that a claimant state might reasonably put forward.

A second problem that requires resolution is that of arbitration. All members of the Outer Space Committee now appear to agree that the convention should provide an effective way of securing an impartial opinion in case a dispute over a claim remains unsolved after a year of negotiations between claimant and launching states and if a bilateral commission of inquiry has not promptly provided a solution acceptable to the states involved. There is general agreement that the claimant state should be entitled to invoke the arbitral process without seeking the consent of the launching state, that the procedure for constituting the three-man tribunal should be automatic, and that the tribunal should be empowered to reach its decision by majority vote where unanimity is not possible. Now, the great majority of the members of the Outer Space Committee believe that the award of the arbitral commission should be binding on the parties, while a few members have said the award should have only a recommendatory character.

Mr. Chairman, considering that we do not have before us a completed convention, the addendum to the report of the Outer Space Committee<sup>3</sup> does show a certain measure of progress. We particularly note that the report contains the text of a statement read into the record of the Committee's proceedings on

<sup>2</sup> For U.S. statements made in the Outer Space Committee on Sept. 9 and Nov. 20, 1969, see BULLETIN of Oct. 20, 1969, p. 340, and Jan. 5, 1970, p. 18.

<sup>3</sup> U.N. doc. A/7621/Add. 1.

December 5 by Ambassador Haymerle, to which, as the report notes, "the Committee agreed." This agreed statement constitutes a good basis for consideration by governments of remaining problems. The United States hopes that a meaningful and mutually acceptable convention will be completed well before the beginning of the 25th session of the General Assembly. We intend to bend every effort to that end.

Finally, Mr. Chairman, I want to say a few words about other aspects of the work of the Outer Space Committee. The Scientific and Technical Subcommittee accomplished much useful work during 1969, concentrating on practical applications of space technology. The two reports of the Working Group on Direct Broadcast Satellites likewise constitute a measure of positive achievement.

The first report<sup>4</sup> produced realistic timetables and noted the indispensability of international cooperation to the establishment of satellite systems for direct broadcasting. I might note, in this connection, that a first example of cooperation may be seen in the project now being pressed forward by the United States and India for an experimental community broadcasting service for use in education in India.<sup>5</sup> The working group also noted the critical importance of the International Telecommunication Union in accommodating direct broadcasting on an operational basis and the significance of the questions to be resolved at the 1971 World Administrative Radio Conference for Space Telecommunications at Geneva.

The second report of the working group<sup>6</sup> also rightfully draws attention to the potential of direct broadcast satellite technology for developing nations that may not have acquired an extensive infrastructure of telecommunications using conventional technologies. The working group has asked for contributions by UNESCO [United Nations Educational, Scientific and Cultural Organization], the United International Bureaux for the Protection of Intellectual Property (BIRPI), and regionally based associations of broadcasting organizations, and we hope that their contributions will enable the work of the Committee to go forward in a timely manner.

It is impossible to discuss outer space in the year 1969 without noting that we have entered a new era with the landing of man on the moon. Of course, this marks not the end of an effort but the opening of a new horizon whose contours are promise, challenge, and excitement. The United Nations has already marked out a role in this great new venture through the contributions of the Outer Space Committee.

The foundation has been laid. It is now up to us to continue to build together on this foundation. The common lesson that American astronauts and Soviet cosmonauts have told me they have brought back from outer space is that the earth is one single, small planet. It is our responsibility and our challenge as we enter the space age to make it the best home for mankind that human ingenuity and good will can produce.

#### STATEMENT BY MR. THACHER, DECEMBER 11

U.S./U.N. press release 207 dated December 11

I have the honor on behalf of the delegations of Mexico, Sweden, and the United Kingdom to introduce a draft resolution<sup>7</sup> which was forecast in the statement to this committee yesterday by Ambassador Buffum with regard to earth resources survey satellites. If I may, I will describe the resolution briefly, in view of the shortness of time remaining before this committee will be asked to consider this draft resolution.

In the preambular context, we recall Resolution 2453 of last year, and we recall particularly the recommendations which arose during the work of the Space Committee this past summer with respect to the promotion of the applications of space technology. You will also recall Resolution 1426 of ECOSOC [Economic and Social Council], which stated that international cooperation through the United Nations should continue to play an important role in assisting<sup>8</sup> the efforts of governments in the field of investi-

<sup>4</sup> U.N. doc. A/AC. 105/51.

<sup>5</sup> BULLETIN of Jan. 12, 1969, p. 44.

<sup>6</sup> U.N. doc. A/AC. 105/66 and Corr. 1 and 2.

<sup>7</sup> The draft resolution (A/G.1/L.509); as orally amended, was adopted by Committee I on Dec. 12 by a vote of 94 (U.S.) to 8, with 3 abstentions.

gation and utilization of agricultural and natural resources. We also recognize the significant contribution that this new technology can make to a more complete understanding of man's environment, and we express the desire that these programs be available to produce information to the world community as a whole.

It will be recalled—and the distinguished Representative of Italy was good enough to remind us of this fact—that President Nixon on the 18th of September spoke of this program and said that it would be “dedicated to produce information not only for the United States but also for the world community,” and that “These are among the positive, concrete steps we intend to take toward internationalizing man's epic venture into space—an adventure that belongs not to one nation but to all mankind. . . .”

In the wish to encourage the study of earth resources survey programs, including those related to airborne sensing techniques, and to encourage participation to the extent feasible and practicable in their development, we present our four operative paragraphs.

The first of these invites member states with experience in the field of remote earth resources surveying to make such experience available to other member states which do not have such experience and encourage them to become familiar with this field.

The United States is proud to be cooperative on a very active basis with the Governments, among others, of Mexico and Brazil in the perfection of remote sensing techniques, principally from airborne platforms, and also with Canada in the development of the sensors themselves.

There are additional programs underway, among others with India, which are more specialized in terms of detecting particular phenomena on the face of the earth which deserve constant measurement. In this connection I would recall that in the early part of this session of the General Assembly we called attention to an International Symposium on Remote Sensing of Environment which was held at the University of Michigan in October. I am proud to report that 41 experts from 12 countries were able to attend and participate usefully in that conference.

In our second operative paragraph we would invite member states to join in exploring the various aspects involved in the analysis of data obtained through this new technique, and its dissemination and application, so as to maximize the benefits to be obtained therefrom, taking into account the particular interests and needs of developing countries.

In this connection I should recall that at the United Nations Conference in Vienna last year it was pointed out that there is the danger of a surplus of information being derived from this system. It is with this in mind that we are particularly concerned to encourage international study, with regard to the data handling, of the information that comes out from the system. To quote from this report, which was just published by the United Nations, Practical Benefits of Space Exploration, there is the observation made that the drawback of the various kinds of entries described is that they provide almost too much information on patterns and not enough decisive information on composition.

Our third operative paragraph would invite the Secretary General to bring this resolution to the attention of all organizations within the United Nations family of agencies whose objectives or programs might be furthered by this developing technology.

It would be a mistake to attempt to list all of the various component parts of the Secretariat and the specialized agencies whose work stands to benefit as this technology is achieved, but among them we would have in mind, for example, the Preparatory Commission for the Conference on Environment. We would have in mind various elements in the Department of Economic and Social Affairs. We would have in mind, of course, the Food and Agriculture Organization, whose work in monitoring crops and in the early detection of pestilence, plagues, and other phenomena that affect the food output of the world would stand to benefit very greatly.

In the fourth paragraph of this resolution we request the Outer Space Committee to continue its studies with regard to the possibilities of further international cooperation, in particular in the framework of the United Nations system, in connection with the development and use of remote earth resources surveying tech-



niques so as to assure that as the practical benefits of this new technology are achieved, they are made available to both developed and developing countries.

I think this concept reflects the principles which have long been established by the General Assembly, and have been long embodied in the Outer Space Treaty, that there shall be no discrimination between developed and developing countries, that it simply reflects the recommendations arising from the work of the Outer Space Committee in recent years more actively to promote the application of space techniques for the benefit of all countries, having in mind particularly the needs of the developing countries.

I thank you for the privilege of being able to present this resolution, and I hope it will enjoy full support.

#### TEXT OF RESOLUTION<sup>8</sup>

##### *International co-operation in the peaceful uses of outer space*

*The General Assembly,*

*Recalling its resolution 2453 (XXIII) of 20 December 1968,*

*Bearing in mind the report of the Committee on the Peaceful Uses of Outer Space,<sup>9</sup> especially the recommendations of the Scientific and Technical Sub-Committee at its sixth session with respect to the promotion of the applications of space technology,*

*Recalling Economic and Social Council resolution 1426 (XLVI) of 6 June 1969, in which the Council *inter alia* stated that international co-operation through the United Nations should continue to play an important role in assisting the efforts of Governments in the fields of investigation and utilization of non-agricultural natural resources,*

*Aware of the urgent need for more complete understanding of man's environment,*

*Recognizing that space technology may make a significant contribution to this understanding,*

*Expressing the desire that earth resources survey satellite programmes be available to produce information for the world community as a whole,*

*Wishing to encourage the study of earth resources survey programmes, including those related to remote-*

<sup>8</sup> U.N. doc. A/RES/2600 (XXIV); adopted by the General Assembly on Dec. 16 by a vote of 105 (U.S.) to 9, with 3 abstentions.

<sup>9</sup> U.N. doc. A/7021 and A/7021/Add. 1.

sensing techniques, and participation to the extent feasible and practicable in their development,

1. *Invites* Member States with experience in the field of remote earth resources surveying to make such experience available to other Member States which do not have such experience and encourage them to become familiar with this field;

2. *Invites* Member States to join in exploring the various aspects involved in the analysis of data obtained through earth resources surveying techniques and their dissemination and application, so as to maximize the benefits to be obtained therefrom, taking into account the particular interests and needs of developing countries;

3. *Invites* the Secretary-General to bring this resolution to the attention of all organizations within the United Nations family of agencies whose objectives or programmes might be furthered by this developing technology;

4. *Requests* the Committee on the Peaceful Uses of Outer Space to continue its studies with regard to the possibilities of further international co-operation, in particular in the framework of the United Nations system, in connexion with the development and use of remote earth resources survey techniques so as to assure that as the practical benefits of this new technology are achieved, they are made available to both developed and developing countries.

## United Nations Calls for Measures Against Aircraft Hijacking

*Following is a statement by Congressman Dante B. Fascell, U.S. Representative to the U.N. General Assembly, made in plenary session on December 12, together with the text of a resolution adopted by the Assembly that day.*

#### STATEMENT BY CONGRESSMAN FASCELL

U.S./U.N. press release 210 dated December 12

On the 18th of September last, President Nixon spoke in this hall of five matters "of great concern to everyone here with regard to which there should be no national differences, in which our interests are common, and on which there should be unanimity." One of these matters was securing the safety of international air travel. On that occasion the President said:<sup>1</sup>

<sup>1</sup> BULLETIN of Oct. 6, 1969, p. 297.