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CONTENTS

ARTICLES

- John B. Gantt, *The Commercialization of Space—Twenty Years of Experience: Some Lessons Learned* 109
- Karl-Heinz Böckstiegel, *Proposed Draft Convention on the Settlement of Space Law Disputes* 136
- Harry R. Marshall, Jr., *Commercialization of Space: Incentives, Impediments and Alternatives* 163

SPECIAL FEATURES

- Events of Interest 174
- A. Past Events 174

(a) Reports

1. International Telecommunication Union WARC-85 Conference Preparatory Meeting Geneva, Switzerland - June 25 to July 20, 1984: Summary of Highlights and Results (*Stephen Doyle*)... 174
2. Consideration of Matters Relating to the Peaceful Uses of Outer Space at the Thirty-Ninth Session of the General Assembly, (*Boris Khabirov*) 183

(b) Short Accounts

3. Symposium on "International Security and Outer Space", McGill University, March 16-17, 1984 (*Jean Louis Magdelénat*) 191
4. International Symposium on Space Law held in Naples and Capri from 11-16 June 1984 (*I.H.Ph. Diederiks-Verschoor*) 193
5. Study Week on "The Impact of Space Exploration on Mankind", Rome, 1-5 October, 1984 (*Vladimir Kopal*) 194

6.	Hamburg Colloquium on Legal Aspects of Space Stations, October 3-4, 1984 (<i>Karl-Heinz Böckstiegel</i>)	195
7.	The 27th Colloquium on the Law of Outer Space, Lausanne, 8-13 October 1984 (<i>I.H.Ph. Diederiks-Verschoor</i>)	198
8.	Symposium on Space Safety and Rescue, IAF Congress, Lausanne, Oct. 9, 1984 (<i>M. Gorove</i>)	200
9.	Roundtable on Problems of Protecting the Space Environment, IAF Congress, Lausanne, 10 October 1984 (<i>Vladimir Kopal</i>) ..	201
10.	Symposium Conference on Lunar Bases and Space Activities of the 21st Century, Washington, D.C., October 29-31, 1984 (<i>Stephen Gorove</i>)	204
11.	Other Events	205
12.	Brief News	206
B.	Forthcoming Events	206
	Book Reviews/Notices	207
	Dieter O. A. Wolf, Hubertus M. Hoose and Manfred A. Dausen (eds.), <i>Die Militarisierung des Weltraums (The Militarization of Outer Space)</i> (<i>A. Bueckling</i>)	207
	Paul Anaejionu, Nathan C. Goldman and Philip J. Meeks (eds.), <i>Space and Society: Challenges and Choices</i>	208
	Gloria W. Heath (ed.), <i>Space Safety and Rescue</i>	208
	Jerry L. Salvaggio (ed.), <i>Telecommunications: Issues and Choices for Society</i>	208
	Books Received	209
	Recent Publications	210
	Books	210
	Articles	210
	Reports	212
	Book Reviews/Notices	212

Official Publications	212
Miscellaneous	215
Current Documents	216
Request for the Inclusion of an Additional Item in the Agenda of the Thirty-Ninth Session - Use of Outer Space Exclusively for Peaceful Purposes for the Benefit of Mankind	216
Index	219

THE COMMERCIALIZATION OF SPACE—TWENTY YEARS OF EXPERIENCE:
SOME LESSONS LEARNED—

John B. Gantt*

On July 20, 1984, the White House announced a "National Policy on the Commercial Use of Space."¹ The policy prescribes four general categories of initiatives to be undertaken by the Government: economic initiatives; legal and regulatory initiatives; research and development initiatives; and initiatives to implement the National Policy on the Commercial Use of Space. The latter is described as intended to provide to entrepreneurs assurances of consistent government actions and policies over extended periods of time. Such assurances of "clear policy defining government's role in encouraging private sector space-based activities" are stated to be the key to industrial research and manufacturing in space. A reading of these goals and initiatives gives a sense of *déjà vu* at least with respect to what has to-date been the singularly most important and successful area of space commercialization—international commercial satellite communications.

On August 31, 1962, President Kennedy signed into law the Communications Satellite Act of 1962 following months of extensive legislative hearings and debate.² The Satellite Act, which represented a compromise between commercialization of communications satellites and government ownership and operation, states as the policy of the United States:

"to establish, in conjunction and in cooperation with other countries, as expeditiously as practicable a commercial communications satellite system, as part of an improved global communications network, which will be responsive to public needs and national objectives, which will serve the communications needs of the United States and other countries, and which will contribute to world peace and understanding."³

The Act further declared as a matter of policy that the United States' participation in the global system would be in the form of a private corporation subject to appropriate government regulation, as a means to provide the widest form of private enterprise

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¹*National Policy on the Commercial Use of Space*, The White House (July 20, 1984). On August 15, 1984, the President approved a National Space Strategy which, *inter alia*, reaffirms the earlier commercial policy, and was designed to implement the National Space Policy. See *Aviation Week and Space Technology* 14 (Aug. 27, 1984).

²Communications Satellite Act of 1962, 76 Stat. 419 (codified as amended at 47 U.S.C. §701-757 (1976) [hereinafter cited as Satellite Act]. The major congressional committee reports on the Satellite Act are REPORT OF THE SENATE COMMITTEE ON AERONAUTICAL AND SPACE SCIENCES, S. REP. NO. 1319, 87th Cong., 2d Sess. (1962); REPORT OF THE SENATE COMMITTEE ON FOREIGN RELATIONS, S. REP. NO. 1873, 87th Cong., 2d Sess. (1962); REPORT OF THE SENATE COMMITTEE ON COMMERCE, S. REP. NO. 1584, 87th Cong., 2d Sess. (1962); REPORT OF THE HOUSE COMMITTEE ON INTERSTATE AND FOREIGN COMMERCE, H.R. REP. NO. 1636, 87th Cong., 2d Sess. (1962). Senate Reports 1584 and 1873 are reprinted in 1962 U.S. CODE CONG. & AD. NEWS 2269-2329.

³Satellite Act §102(a) (codified at 47 U.S.C. §701(a) (1976)).

participation.⁴ Six months later, the Communications Satellite Corporation was incorporated under the laws of the District of Columbia pursuant to the Satellite Act. Two years following the enactment of the Satellite Act, interim international arrangements were concluded among the United States and ten other countries for the establishment of the International Telecommunications Satellite Consortium (INTELSAT).⁵ Thus was born the global system—an institutional concept conceived by President Kennedy in 1961⁶ as the first step in the commercialization of space.

Measured by any standard, INTELSAT has been an enormous success, both technically and as an instrument of United States foreign policy.⁷ From its first satellite—Early Bird—launched in April 1965 with the capacity to carry 240 simultaneous telephone conversations or one television channel across the North Atlantic between earth stations located in the United States, Canada, France, the Federal Republic of Germany and the United Kingdom, INTELSAT has grown to a system covering the entire globe and presently utilizing operational satellites each capable of transmitting simultaneously 12,000 telephone conversations plus 2 television broadcasts among more than 170 countries and territories. More than two-thirds of all intercontinental telephone calls and all intercontinental television are transmitted "via satellite". The system, for example, made it possible for more than an estimated two billion people to watch the 1984 Summer Olympics—a truly global audience. The INTELSAT organization, now established under definitive arrangements⁸ has a membership of 109 countries, with most other countries of the world utilizing the system to some degree although they are not members of INTELSAT.⁹

Although the global system has met with great success and its international arrangements have been widely accepted and adhered to, the implementation within the United States of this first national policy for the commercialization of space has continued to engender considerable policy and legal debate. This article briefly examines certain of these debates and their possible significance as to the emerging commercial space

⁴Satellite Act §102(c) (codified at 47 U.S.C. §701(c) (1976)).

⁵Agreement Establishing Interim Arrangements for Global Commercial Communications Satellite System, with Special Agreement, August 20, 1964, T.I.A.S. No. 5646. For discussion on the establishment of INTELSAT, see e.g., Colino, *INTELSAT: Doing Business in Outer Space*, 6 Col. J. Transn. L. 17 (1967).

⁶1962 U.S. CODE CONG. & AD. NEWS 2287-88.

⁷See *Statement of Under Secretary of State William Schneider, Jr. Before the Subcomm. on Telecommunications, Consumer Protection and Finance, of the House Comm. on Commerce and Energy*, 98th Cong., 1st Sess. (July 25, 1984). "I would like to preface my remarks by commenting that the global system of international communications satellites is a magnificent achievement of U.S. policy based on the Communications Satellite Act of 1962." *Id.*

⁸Agreement relating to the International Telecommunications Satellite Organization "INTELSAT" and Operating Agreement, February 12, 1973, 23 U.S.T. 4091, T.I.A.S. 7532 [hereinafter cited as INTELSAT Agreement and Operating Agreement]. For informative insights on the definitive arrangements negotiations, see Colino, *The INTELSAT Definitive Arrangements: Ushering in a New Era in Satellite Telecommunications*, European Broadcasting Union Legal and Administrative Series, Monograph No. 9 (1973); Mizrach, *The INTELSAT Definitive Arrangements*, 1 J. Space L. 129 (1973); Washburn, *The International Telecommunications Satellite Organization, International Cooperation in Outer Space: A Symposium*, Doc. No. 57, 92nd Cong., 1st Sess. 437 (1971).

⁹Any state which is a member of the International Telecommunication Union can accede to the INTELSAT Agreement and either sign or designate an entity to sign the Operating Agreement, thereby becoming a Signatory to INTELSAT. INTELSAT Agreement, Art. XXIX, *supra* note 8. In the case of a non-member state, access to and utilization of the INTELSAT space segment is obtained through application by the duly authorized telecommunications entity of that state. Operating Agreement, Art. 14, 15, *supra* note 8.

activities and concludes that while the approach adopted with the Satellite Act as to the form of United States participation in the global system was necessary and appropriate for the development of commercial satellite communications, it may not be a particularly useful or appropriate model for future space commercialization activities.

1. *The Comsat Model*

A. *International Communications Facilities In the Early 1960's—The Setting*

At the time of the debate and passage of the Satellite Act, international communications consisted essentially of limited telephony, telegraphy and telex services. Communications across the North Atlantic were transmitted either through underseas cable or by high frequency radio. Cables were expensive and, although they provided reasonable quality, communications were limited by the number of telephone circuits in the cable and by the fact that the cables were essentially point-to-point facilities. High frequency radio afforded service of sporadic reliability and low quality, since it was affected by such natural phenomena as weather and sunspot activity. Nevertheless, the growing post-war international economy created a demand for international communications, and telephone calls often had to be booked in advance. The market conditions were, therefore, appropriate for the introduction of a new technology which would not only provide greater capacity and higher reliability and quality, but would also afford the means by which to route calls to many points, not just primarily between the countries at the opposite ends of the cable.

Within the United States, international communications services were furnished by private companies operating as communications common carriers subject to government regulation. Long distance telephone service was the *de facto* monopoly of the American Telephone and Telegraph Company (AT&T) and international telegraph, telex and leased line services were provided by essentially four international record carriers (IRC's)¹⁰. The furnishing of international communications service was regulated by the Federal Communications Commission (FCC) and provided pursuant to tariffs filed with the FCC¹¹. The rates of return (i.e. profits) which the carriers were permitted to earn were established by the FCC. AT&T was a fifty percent owner of the trans-Atlantic submarine cable facilities—the remainder owned by foreign interests¹². AT&T's investment in the cable was included as part of its overall rate base against which it was allowed to earn an FCC regulated rate of return. Competition, to the extent it existed, was confined essentially to the record carrier services (e.g. telegraph and telex), although their rates were largely identical between the same two points.

¹⁰ITT World Communications, Inc.; RCA Global Communications, Inc.; Western Union International, Inc. (*not* part of Western Union Telegraph Company, the U.S. domestic telegraphy and telex carrier); and Tropical Radio and Telegraph Co. (now TRT Telecommunications Corp.) Tropical also provided telephony service between the United States and Latin America. U.S. international communications carriers are generally referred to as international service carriers (ISC's). WUI is now part of the MCI Corporation.

¹¹See generally, Title II of the Communications Act of 1934, 48 Stat. 1064 (codified as amended at 47 U.S.C. §201-224 (1976)) (Title II) [hereinafter cited as Communications Act].

¹²In both cable and satellite transmission facilities, governments maintain joint ownership in international facilities thereby extending their respective jurisdictions to what is described as the theoretical mid-point of the circuit. Hence, the concept of a half circuit which is a two way channel extending to the theoretical midpoint of the transmission facility and back.

Overseas, communications services were furnished (and for the most part still are today) by government-owned monopolies which in many cases were outgrowths of the government-owned postal systems. As a result, communications services were viewed in these countries as another service furnished by the government and competition was limited essentially to the provision of equipment (e.g. telephones) to the government—not to the individual consumers of communications. International standards and protocols for exchanging communications traffic were (and are today) set by recommendations of consultative committee (CCI's) of the International Telecommunication Union (ITU)¹³ in which the government monopolies generally represented their respective governments. The FCC represented the United States but relied considerably on the technical and operational expertise of the carriers such as AT&T.

In order to facilitate international communications between two countries, its communications entities entered into operating arrangements which established the financial and operational terms pursuant to which they would exchange international communications traffic in accordance with the ITU recommendations. These arrangements, which could be as informal as the exchange of letters or telexes, specified the mode of transmission i.e. the facilities to be used and the number of circuits to be established. Except for the desirability of having diverse traffic routes (i.e. some circuits through cable and some through other modes so as to better ensure reliability of service), the tendency was to use those international facilities in which the particular parties had the greatest investment. Hence, a preference for cables.

As a result, the international communications environment existing in the early 1960's was highly structured and regulated. The introduction of the communications satellite into this environment not only revolutionized international communications from the consumers' standpoint but significantly altered the institutional arrangements and policies concerning the furnishing of such communications. In the United States, the catalyst for change was the creation by national policy of a company dedicated to one mode of transmission—satellites—and granted a lawful monopoly by Congress as the sole provider of channels of communications into and out of the United States through a system of communications satellites, which materialized as the INTELSAT global system. While industry ably responded in providing the necessary technology to implement the global system concept, its acceptance placed considerable strain on the regulatory and policy making apparatus of government, resulting in compromises and artificial constraints which, while satisfactory in the short run in enabling satellite communications to gain a necessary foothold, failed to provide satisfactory long term solutions in a rapidly expanding market for international communications services¹⁴.

B. The Creation of Comsat—Its Structure

Comsat, the United States participant in INTELSAT, is a publicly traded, for-profit corporation with currently more than 60,000 shareholders, assets exceeding \$1 billion and shareholder equity in excess of \$500 million. Its form was largely the result of legislative compromise between establishing an entity owned and controlled solely by the Government and one owned and controlled by AT&T and the other international carriers. Initially,

¹³International Telecommunication Convention, Article 11, October 25, 1973, T.I.A.S. 8572.

¹⁴For a discussion of the Government relationships with Comsat, see Ganitt, *U.S. Government-Industry Relations and the Space-Based Technologies: The Comsat Example*, in *INTERNATIONAL SECURITY DIMENSIONS OF SPACE* 196 (Ra'anani and Pfaltzgraft, Jr., eds. 1984).

fifty percent of the stock was set aside for and subscribed to by communications common carriers¹⁵. (AT&T owned approximately 29 percent). The other fifty percent was quickly subscribed to by the public in what was then the largest initial public stock offering in a start-up venture. This arrangement sought to give the carriers an investment opportunity in the new technology, but not control, so as to afford the new entity the benefit of their expertise. Subsequently the international carriers, including AT&T, all sold their stock holdings in Comsat.¹⁶

The board of directors initially consisted of six directors elected by the carriers, six by the public shareholders and three appointed by the President of the United States and confirmed by the Senate. However, ever since the ISC's sold their stock, all twelve shareholder directors have been elected at large by all the shareholders¹⁷. Furthermore, no one shareholder or affiliated group of shareholders (other than carriers authorized by the FCC) can by law own more than 10 percent of the stock of Comsat—an effective measure against a merger or hostile takeover.¹⁸

As for government regulation, and in order to achieve the objectives of the Satellite Act, the FCC was given powers in addition to those which it already possessed under the Communications Act of 1934, as amended.¹⁹ The Satellite Act mandated that Comsat would be a communications common carrier regulated by the FCC.²⁰ Among the powers accorded the FCC was the power to:

grant appropriate authorizations for the construction and operation of each satellite terminal station [i.e. earth station], either to the corporation [Comsat] or to one or more authorized carriers or to the corporation [Comsat] and one or more such carriers jointly, as will best serve the public interest, convenience, and necessity . . . [And] without preference to either [Comsat or such carriers].²¹

The President likewise was given certain authority with respect to Comsat, including the requirement to:

"exercise such supervision over relationships of [Comsat] with foreign governments or entities or with international bodies as may be appropriate to assure that such relationships shall be consistent with the national interest and foreign policy of the United States."²²

¹⁵Satellite Act §304(b) (codified as amended at 47 U.S.C. §734(b) Supp. XIII 1984)).

¹⁶As the result of restrictions placed upon AT&T in the Domestic Satellite Proceedings, AT&T disposed of its ownership interest in Comsat in 1973. Memorandum, Opinion and Order, 38 (F.C.C. 2d 665, (1972). The other major carriers had previously sold their holdings.

¹⁷Satellite Act §303(a) (codified as amended at 47 U.S.C. §733(a) (Supp. XIII 1984)).

¹⁸Satellite Act §304(b)(3) (codified at 47 U.S.C. §734(b)(3) (1976)). Pursuant to Article 502(c) of the Comsat Articles of Incorporation, this percentage has been further reduced to five (5) percent.

¹⁹47 U.S.C. §§701-757 (1976). In the event application of provisions of the Satellite Act are inconsistent with application of provisions of the Communications Act, the provisions of the Satellite Act control. Satellite Act §401 (codified at 47 U.S.C. §741 (1976)).

²⁰Satellite Act §401 (codified at 47 U.S.C. §741 (1976)).

²¹Satellite Act §201(c)(7) (codified at 47 U.S.C. §721(c)(7) (1976)). Thus, only communications common carriers may own and operate U.S. earth stations that access the INTELSAT global system.

²²Satellite Act §201(a)(4) (codified at 47 U.S.C. §721(a)(4) (1976)). The form of this supervision with respect to meetings of the governing body of INTELSAT (Board of Governors) on which Comsat sits as the United

In addition to owning the United States interest in the satellites comprising the global system and owning and operating earth stations as determined by the FCC, Comsat is authorized by the Satellite Act to furnish channels of communication

"to [the] United States communications common carriers and to other authorized entities, foreign and domestic."²³

and

"to contract with authorized users, including the United States Government, for the services of the . . . [global] system."²⁴

At the same time that Congress conferred on Comsat the broad mandate with respect to what was to become the INTELSAT global system, it also placed a potential limit on the extent of Comsat's exclusivity by the following language in its Declaration of Policy and Purpose:

It is not the intent of Congress by this Act to preclude the use of the [global] communications satellite system for domestic communication services where consistent with the provisions of this chapter *nor to preclude the creation of additional communications satellite systems, if required to meet unique governmental needs or if otherwise required in the national interest.*²⁵ [Emphasis added.]

States representative has been the subject of much discussion and criticism. The process involves three Government agencies—the Department of State, the National Telecommunications and Information Agency and the FCC—which review the Board agenda and proposed Comsat positions in advance of the meeting and issue instructions to Comsat as regards the foreign policy implications for the United States. Comsat regards these instructions as binding and keeps in close contact with the Department of State as to developments during the Board meetings and debriefs the agencies following the meeting. The critics seek greater participation in the process of formulating these instructions and continue to urge that the Government place an "observer" in the meetings as part of the Comsat delegation to see the instructions are faithfully carried out. The opponents cite the need to maintain secrecy in the development of the U.S. positions and the concern that a Government representative present in the Board meeting would be solicited for support by other delegations and detract from Comsat's statutory role as U.S. participant in INTELSAT. *See generally*, Comsat Study, 77 F.C.C.2d 564 (1980).

²³Satellite Act §305(a)(2) (codified at 47 U.S.C. §735(a)(2) (1976)).

²⁴Satellite Act §305(b)(4) (codified at 47 U.S.C. §735(b)(4) (1976)).

²⁵Satellite Act §102(d) (codified at 47 U.S.C. §701(d) (1976)). While the underscored language establishes a potential limit to Comsat's exclusivity, the language with respect to domestic communications services was relied on by the FCC in authorizing Comsat to enter the U.S. domestic communications satellite business through the establishment of a separate system, COMSTAR, leased to AT&T, and as a minority participant in a multipurpose domestic satellite system which eventually became Satellite Business Systems. *See*, Establishment of Domestic Communications Satellite Facilities by Non-Governmental Entities, Report and Order, 22 F.C.C.2d 86 (1970) (Annex C); Satellite Business Systems, Memorandum, Opinion and Order, 62 F.C.C.2d 997, *recon. denied*, 64 F.C.C.2d 872 (1977), *aff'd en banc* 652 F.2d 72 (D.C. Cir. 1980).

Thus, what emerged from the enactment of the Satellite Act was

- a private, for profit, corporation,
- with a limited exclusive mandate and accompanying "franchise",
- to establish, own and operate in conjunction with foreign governments or entities a global system of commercial communications satellites,
- to construct and operate, itself or jointly with other U.S. carriers, as authorized by the FCC, satellite earth stations within United States,
- through which to furnish, as a common carrier, communications services to authorized U.S. communications common carriers and other authorized users, including the U.S. Government,
- pursuant to regulation by the FCC and foreign policy supervision by the President,
- in furtherance of national policies and purposes enunciated in the Satellite Act.

Previously the U.S. communications carriers had been able to establish and utilize, by mutual agreement with their foreign correspondents, international transmission facilities through which to furnish international communications services to their U.S. customers, subject only to applicable economic and technical regulation by the FCC. They were now required in the case of this new technology to obtain the necessary communications capacity by which to furnish such services to their customers from a government imposed "middleman", Comsat—a carriers' carrier.²⁶ In order to ensure that the carriers would fairly utilize this new transmission medium and not by-pass it in their own economic self-interest by relying disproportionately on submarine cables, particularly on high density traffic routes such as the North Atlantic, the FCC imposed various artificial constraints. One of these allowed the carriers in setting their rates between given points to average their transmission facilities costs between those points, thus eliminating any cost advantages that satellites possessed over cables.²⁷ Another required that new satellites and cable circuits

²⁶As a carriers' carrier, Comsat provides under tariff satellite capacity to international service carriers which, in turn, utilize this capacity in furnishing communications services, such as telephone, telex and leased circuits, to consumers of those services. The extent to which Comsat, as a matter of law and policy, can provide its services directly to those consumers, i.e. to authorized users, in competition with the carriers has been the subject of extensive FCC proceedings and is discussed later in this article.

²⁷*Authorized Entities and User*, 4 F.C.C.2d 421 (1966), *recon. granted in part*, 6 F.C.C.2d 593 (1967). The FCC removed the requirement for composite rates in Modification of Authorized User Policy Report and Order, 90 F.C.C.2d 1394 (1982), *rev'd on other grounds*, 725 F.2d 732 (D.C. Cir. 1984) (Authorized User II).

be activated in ratios specified by the FCC.²⁸ These policies—which all but eliminated intermodal competition between cables and satellites—were viewed as essential to ensure viability and growth of the new satellite system.

C. *The Comsat Model—Issues of Implementation*

While the obvious benefits offered by satellite communications—e.g., multiple access, high quality, high reliability, instantaneous communications, including for the first time the capability to furnish broadband communications services such as television and high speed data—made it desirable for the carriers to utilize this new technology to meet their customer demands, it also led to institutional tensions. The carriers, certain large users and, to a lesser extent, Comsat were motivated to seek broader interpretations of their respective institutional roles in the furnishing of satellite communications. This, for the most part, took the form of demands on the Government to modify the role of COMSAT, through legislative, regulatory or policy changes, primarily in response to advances in technology, changes in the marketplace and increased governmental emphasis on deregulation of communications services.

Under traditional public principles, an entity such as an electric power company or a local telephone company, in exchange for the grant of an exclusive geographic service area franchise from the responsible government body, undertakes to provide service within that area to all customers on a non-discriminatory basis pursuant to reasonable terms and conditions of service. These terms and conditions are subject to regulation by the government and designed to earn for the utility a reasonable rate of return on its investment. In many respects the global system operations of Comsat fit this general mold of a public utility, the major difference being that Comsat historically has acted as a wholesaler or “carrier’s carrier” of satellite communications capacity to the international communications carriers, which, in turn, serve the end users.

What are these channels of communications and how are they utilized in, for example, the transmission of international telephone calls from New York City to London? An overly simplified description would be to imagine a two-way voice grade telephone circuit from New York City to the nearest general purpose U.S. earth station in Roaring Creek, Pennsylvania. This terrestrial circuit is established, for example, by AT&T Communications, an international service carrier, with appropriate interface in New York City to the local circuits of the New York Telephone Company. At the earth station the terrestrial circuit is electronically connected to a similar two-way voice grade half circuit which Comsat has established between the earth station and an appropriate Atlantic Ocean Region Intelsat satellite. In the satellite it is electronically interfaced with a similar half circuit established between the satellite and the earth station in England and from there to London by the British telephone company (British Telecom), the UK participant in INTELSAT.

²⁸See e.g., *Overseas Communications*, 67 F.C.C.2d 358 (1977) (balanced loading of available facilities); *ITT Cable & Radio Inc.-Puerto Rico*, 5 F.C.C.2d 823 (1966), 7 F.C.C.2d 957 (1967) (prescribed use formula requiring carriers to activate equal numbers of circuits in the new cable and through the new earth station). See *Authorized User II*, 90 F.C.C.2d at §§75-99, for a discussion of the FCC's reasons for deciding to gradually phase out the fill requirements and for making permissive the compositing of rates.

From an economic standpoint, Comsat, as the U.S. Signatory²⁹ to INTELSAT, makes capital investments in INTELSAT in proportion to its ownership share of INTELSAT—presently approximately 23 percent. INTELSAT uses the capital to acquire and launch the INTELSAT space segment.³⁰ It recoups its investment plus a 14 percent return on investment for its investors by “selling” allotments of communications capacity in the satellite. The basic unit of allotment is a “half circuit” which is that amount of bandwidth capacity necessary to establish a one-way voice grade channel from the earth station to the satellite and back to the earth station,—hence a two-way voice circuit on the U.S. “side” of the satellite. Under the INTELSAT arrangements, allotments of capacity can only be made, in the case of a member state such as the United States, to the Signatory of that state.³¹ Thus, in the foregoing example of a telephone circuit from New York City to London, Comsat establishes the two-way communications circuit between the U.S. earth station and the satellite by purchasing a half circuit allotment from INTELSAT at the current rate of \$390 per month. (British Telecom makes a similar purchase of a half circuit on its side of the satellite.) The \$390 rate per half circuit allotment is designed to recoup for INTELSAT its proportionate share of the INTELSAT operating costs and investment amortization costs and contribute towards the 14 percent return target.³² To the extent Comsat’s proportionate use of the INTELSAT satellite equals its percentage investment, the transaction over time becomes a wash except for operating cost and the time value of money. To recover these elements Comsat must include them, along with its other operating and amortization costs, together with its FCC-allowed rate of return on its rate base investment, in determining its revenue requirement and, hence, the rate to its customers for the satellite half circuit. Currently Comsat’s rate for its leased voice grade channel service—for both earth station and the space segment—is \$1060 per month.³³

1. *Scope of Comsat’s Role in International Satellite Communications—*

A reading of the Satellite Act, its history and the resulting INTELSAT agreements suggests that Comsat’s role in international satellite communications can be described as encompassing (1) the ownership, operation and management of the U.S. share of a “communications satellite system”—to use the language of the Satellite Act³⁴—, (2) when

²⁹Signatory is the term used in the INTELSAT arrangements to denote the government agency or private entity designated by the government of a member state to be that state’s investor or “shareholder” in INTELSAT and to sign the Operating Agreement and assume the rights and obligations of a Signatory. INTELSAT Agreement, Art. I(g), *supra* note 8.

³⁰The INTELSAT space segment consists of the satellites and associated ground telemetry, control and command (TT&C) equipment. It does not include the communications earth stations which, instead, are owned separate from INTELSAT by the individual member states’ governments or private communications entities. *Id.*, Art. I(h).

³¹Operating Agreement, Art. 15, *supra* note 8.

³²*Id.*, Art. 8. The 14 percent return is realized by the signatory only if, and to the extent, its investment exceeds its use, in which case it is earning 14 percent on that part of its investment representing the capacity utilized by another signatory or designated non-member user.

³³Comsat Tariff FCC No. 101, 6th Revised Page 19, Effective July 30, 1984.

³⁴Satellite Act §305(a)(1) (codified at 47 U.S.C. §735(a)(1) (1976)).

authorized by the FCC, the ownership and management of U.S. earth stations, (3) the sale of communications capacity derived from the system to authorized U.S. communications common carriers and other authorized users, and (4) the representation of the United States in the INTELSAT Board of Governors and Meeting of Signatories.³⁵ As will be discussed below, if the FCC follows through on its previous proposals in the remand of the *Authorized User II* proceeding currently before it, Comsat will have a potentially broader, albeit non-exclusive, customer base for its services including large government and corporate users. Furthermore, if Comsat so chooses, it may enter the retail end-to-end international communications services business (e.g., high speed data). In one sense, *Authorized User II*, in opening the policy door for Comsat to enter the end services business, may prove pivotal to Comsat's future viability given the other developments in this field. Even the FCC, in *Authorized User II*, reminded Comsat that it may no longer have the luxury of remaining just a carriers' carrier.³⁶

a. As Defined by the FCC's Authorized User Policy

The Satellite Act authorized Comsat to furnish channels of communications to "United States communications common carriers and to other authorized entities" and "to contract with authorized users, including the United States Government" for the services of the global system.³⁷ When Comsat filed its first tariff in May 1965, which offered services only to communications common carriers, it informed the FCC that it stood ready to provide service to any other entities which the FCC authorized to receive service from Comsat. While the Satellite Act specifies³⁸ that the term "communications common carrier" shall have the same meaning as the term "common carrier" in the Communications Act of 1934, as amended,³⁹ nowhere is the term "authorized entities" or "authorized users" defined. The task was left to the FCC which has sought to define the concept of an "authorized user" more on policy than strictly legal grounds.

³⁵The Board of Governors is the governing body of INTELSAT meeting at least four times a year and responsible for the establishment and operation of the space segment. Its composition is for the most part determined on the basis of investment, and decisions on substantive matters are taken by weighted voting based on investment unless all the Governors, less no more than four, are in favor of a decision in which case the decision carries without weighted voting. INTELSAT Agreement, Art. IX, X, *supra* note 8. The Meeting of Signatories, meets once a year and can be compared to an annual stockholders meeting of a corporation with limited powers. *Id.*, Art. VIII.

³⁶90 F.C.C.2d 1394, 1422 (1982). "74. We also observe that Comsat, in stating that it is unlikely to enter the switched-services market and that any benefit from its entry would be "minimal," is departing from a position which it has advocated in the past. At the time of our 1966 *Authorized User* proceeding, Comsat attached a great deal of importance to the ability to market its innovations to potential users. Moreover, Comsat has on a number of occasions eagerly sought precisely the broadened authority in which it now disavows interest. Comsat's reluctance in this proceeding may arise from a desire not to upset existing institutional arrangements, including a comfortable monopoly as supplier of satellite facilities with a guaranteed share of overseas circuits, for the vagaries of the competitive market. We expect that, as a result of our earlier decisions and those taken today, Comsat increasingly will be subjected to market pressures. In this changing environment where Comsat's monopoly position is less firm, it may become more interested in providing new services in competitive markets."

³⁷Satellite Act §305 (codified at 47 U.S.C. §735 (1976)).

³⁸Satellite Act §103(7) (codified at 47 U.S.C. §702(7) (1976)).

³⁹47 U.S.C. §153(h) (1976).

As can be seen, in view of the fact that Comsat wholesales capacity to the international service carriers which then retail it to the end users, to the extent Comsat can sell its capacity to a broader market and thereby by-pass the carriers, it is competing with them. Comsat is required by the Satellite Act to sell its capacity on a non-discriminatory basis under tariff, at the same rate to all buyers for the same service.⁴⁰ Any difference in rates must be cost-justified. But most importantly, even if Comsat could sell service directly to the end users, it would be selling them only a part of the service (i.e. a circuit between the earth station and the satellite). The end user would have to make its own arrangements to get to the earth station and for the foreign circuits. As a consequence, Comsat would not as a practical matter be competing with the carriers except, perhaps, as regards the largest users. These large customers (e.g. ARINC, the Federal Government), which could arrange for their own terrestrial communications links to the earth station and for foreign circuits, could therefore buy large amounts of capacity "wholesale" from Comsat at the same rate Comsat charges the ISC's, thereby avoiding having to pay the ISC markup.

The international record carriers, however, successfully took the position originally that Comsat's sale of leased private line satellite circuits to large users would severely undercut the carriers' business, which was heavily dependent on revenues from leased circuits, and thereby jeopardize the growth of the telex services and other non-leased services. To avoid this result, the FCC, in 1966, determined that while, as a matter of law, Comsat was not barred from providing its services directly to non-carrier entities, such could only be done as a matter of policy in "unique or exceptional circumstances."⁴¹ Although, in general, this decision remains in effect today;⁴² the FCC has under active consideration in its *Authorized User II* proceeding a revision of the policy to (1) require Comsat to furnish services to entities other than common carriers directly at the earth stations and (2) permit it to provide end-to-end services to such entities through a fully separated subsidiary.⁴³

b. As Defined by the FCC's Direct Access Proceeding

Since the implementation of this new *Authorized User II* policy would place Comsat in competition of sorts with the ISC's in furnishing international communications services, the FCC on the date that it announced *Authorized User II*, and as part of a general re-

⁴⁰Satellite Act §201(c)(2), 401 (codified at 47 U.S.C. §721(c)(2), 741 (1976)).

⁴¹Authorized Entities and Users, 4 F.C.C.2d 421 (1966), *reconsid. granted in part*, 6 F.C.C.2d 593 (1967). (Authorized User I).

⁴²In 1978, upon application by the Spanish International Network (SIN) for authorized user status in connection with its Spanish language telecasts, the FCC rather than grant an exception to *Authorized User I*, waived that policy and designated SIN an authorized user, Spanish International Network, 70 F.C.C.2d 2127 (1978) (SIN I), and in 1980 permitted Comsat to provide service at its earth stations directly to SIN and other television networks, Communications Satellite Corporation 76 F.C.C.2d 5 (1980) (SIN II), and to revise its tariff to include the offering of the new service. Communications Satellite Corporation 79 F.C.C.2d 562 (1980) (SIN III). All three decisions were subsequently affirmed *sub nom*, ITT World Communications, Inc. v. FCC, 725 F.2d 732 (D.C. Cir. 1984).

⁴³Authorized User II, 90 F.C.C.2d 1394 (1982), *vacated and remanded sub nom*, ITT World Communications, Inc. v. FCC, *supra* note 42. The court in considering *Authorized User II* and after holding that the Satellite Act gives the FCC broad discretion to designate non-carriers as authorized users, found that the FCC had abused its discretion by failing to consider adequately certain relevant factors prior to implementing *Authorized User II*. Accordingly, the court vacated and remanded *Authorized User II* to the FCC for further proceedings. The decision of the FCC on remand is presently pending.

examination of its policies concerning Comsat, initiated a Notice of Inquiry (NOI) looking towards some form of direct economic involvement by the ISC's in the ownership of satellite capacity.⁴⁴ This it was believed would readjust the "playing field" to a level state by permitting the ISC's to gain access to the INTELSAT capacity, albeit through Comsat, on an equivalent economic basis with Comsat. Specifically, the FCC asked for comments whether the existing tariff arrangements under which the ISC's acquired capacity on a non-capitalized lease basis should be modified to permit acquisition on a capitalized lease basis or as an investment, such as an indefeasible right of use⁴⁵, in Comsat's share of the INTELSAT satellite capacity.

After considering the comments, filed in response to the *Direct Access NOI*, the FCC decided not to implement its proposals. It concluded that the benefits did not substantially outweigh the adverse results which the FCC found were likely to attend the adoption and implementation of direct access.⁴⁶ The Commission found that any form of direct economic access would likely not reduce the space segment costs significantly but, instead, the most likely outcome would be a dividing of costs between Comsat and the ISC's with very little to be gained by way of increased efficiency. Moreover, the FCC expressed concern that AT&T's economic participation in INTELSAT investment decisions would adversely impact intermodal competition between satellite and cable given the fact of AT&T's large investment in cable facilities and large use of the satellite system.

Although the ISC's had not gained direct economic access to INTELSAT satellite capacity on the same economic conditions as Comsat, the FCC did propose in the companion Earth Station Ownership Notice of Proposed Rule Making Proceeding⁴⁷ that Comsat unbundle its service and offer its customers a space segment-only tariff for satellite capacity which the customer could then derive through a non-Comsat earth station.⁴⁸ This unbundling of the Comsat service coupled with the advances made in earth station technology opened the way for a proliferation of smaller earth stations offering more unique forms of service to customers at various locations than had been traditionally offered through the large general purpose earth stations. Even so, Comsat retained its economic exclusivity with respect to the space segment for international satellite communications—or so it appeared.

c. As Defined by the FCC's Earth Station Ownership Policy

The Satellite Act empowers Comsat to "own and operate satellite terminal stations [i.e. earth stations] when licensed by the [FCC]".⁴⁹ The FCC, as one of its specific responsibilities under the Satellite Act is required to grant authorizations and licenses

⁴⁴INTELSAT Satellite Facilities, Notice of Inquiry, 90 F.C.C.2d 1446 (1982) (Direct Access NOI).

⁴⁵An indefeasible right of use is a capital investment interest in a transmission facility in which the holder does not obtain rights in management or control of the facility. *Id.*, at §18 n. 28. The holder, however, is permitted to place this investment in its rate base and earn a return on it, thus providing it with an economic interest in the facility. The concept was invented by the FCC to permit the IRC's to have an investment interest in the Transatlantic TAT-4 cable facilities.

⁴⁶Report and Order, INTELSAT Satellite Facilities, 97 FCC 2d 296 (1984). (Direct Access Decision)

⁴⁷Notice of Proposed Rule Making, Ownership and Operations of Earth Stations, 97 FCC 2d 444 (1984).

⁴⁸Satellite Act §305(a)(3) (codified at 47 U.S.C. §735(a)(3) (1976)).

⁴⁹Satellite Act §201(c)(7) (codified at 47 U.S.C. §721(c)(7) (1976)).

for the construction and operation of earth stations to Comsat, or to one or more authorized carriers or to Comsat and one or more such carriers, jointly.⁵⁰ The initial U.S. earth station was constructed by AT&T at Andover, Maine, prior to the creation of INTELSAT for use with its experimental TELSTAR satellite. Comsat subsequently acquired the use of this facility to operate with the first INTELSAT satellite, Early Bird. In 1966, the FCC established its first earth station ownership policy pursuant to which the U.S. earth stations working with the INTELSAT satellites were owned jointly by Comsat and the ISC's.⁵¹ In April 1982, the FCC initiated a Notice of Inquiry (NOI)⁵² to determine whether this 1966 policy continued to serve the public interest and suggested a possible distinction between the general purpose earth station with which all ISC's interconnect to provide international switched and private line services to the public and specialized stations designed to meet the private line needs of a dedicated user or group of users, the latter being of a type that customarily would be located on or near the dedicated user(s) premises.

Comments were received from various interested parties, including a proposal by Comsat to restructure the existing ownership and operating arrangements by dissolving the ESOC arrangement and converting the ESOC stations into "wholesale/retail combination stations", in which Comsat's wholesale operations would be located in the same facility with the carriers retail operations. In June 1983, INTELSAT announced the introduction of a major new service, INTELSAT Business Services (IBS), which would enable the authorized carriers to establish for their customers dedicated international communications networks employing customer premised earth stations to furnish all types of digital communications services such as video conferencing, facsimile and high speed data. Comsat, subsequently obtained from the FCC authority to furnish the new service to its U.S. carrier customers and to construct and operate special earth station facilities.⁵³ Other carriers also obtained authority to construct similar specialized stations through which to offer the IBS service.⁵⁴

These significant developments reflected the major advances that had been made in earth station technology and the customer demand for more flexible satellite service offerings to meet their rapidly expanding communications requirements. The FCC took note of these developments and tentatively concluded that significant benefits would flow from a liberalization of its earth station ownership policy. This policy, having served its purpose as a conservative policy imposing stability during the infancy of INTELSAT, had outlived its usefulness now that INTELSAT had evolved into a mature and financially viable organization. A new policy which stressed the benefit to users while continuing to recognize the U.S. commitment to a mature INTELSAT was now required.

⁵⁰Ownership and Operation of Earth Stations, 5 F.C.C.2d 812 (1966). The ownership is manifested by an agreement establishing separate consortia for earth stations in the continental United States, Hawaii and Guam with Comsat owning 50 percent and the ISC's owning the remaining 50 percent in approximate proportion to their respective use as projected in 1966. An Earth Station Ownership Committee created by the Agreement oversees the operation of these stations which are made available to Comsat to enable it to furnish its communications channels under tariff to the authorized carriers and users. Comsat, in turn pays a rental to the carriers for its use of their share of the investment in the stations. *See*, Notice of Proposed Rule Making, Ownership and Operation of Earth Stations, 97 FCC 2d 444 (1984).

⁵¹90 F.C.C.2d 1458 (1982).

⁵²Notice of Proposed Rule Making, *supra* note 51.

⁵³Communications Satellite Corporation, FCC 84-124, 126 (April 11, 1984).

⁵⁴*E.g.*, International Relay, Inc., FCC 84-125 (April 11, 1984).

Accordingly, the FCC proposed a policy which (1) would permit—but not require—existing earth stations to continue to be jointly owned and (2) would allow new earth stations to be individually owned by Comsat or by authorized carriers including new entrants.⁵⁵ In order to implement this policy of independent ownership, the FCC required Comsat to unbundle its service offering and file a cost-based tariff solely for space segment capacity which the independent earth stations owner could purchase for use in providing its customers service through its station.⁵⁶ This tentative policy was designed to promote within the United States intra-modal competition for international communications satellite services in much the same vein as the FCC's *Authorized User II* policy was designed to promote intermodal competition between satellites and cables. Instead of the various institutional classifications of earth stations proposed in the earlier NOI, the FCC decided to employ a more practical classification scheme based upon prevalent technology (i.e. IBS, television and multi-purpose earth stations) as the basis for evaluating future earth station applications under a list of criteria which were set out in the NPRM for further public comment.⁵⁷ Thus, the FCC tentatively concluded after 18 years of a conservative earth station ownership policy designed primarily to facilitate the orderly maturing of INTELSAT—and, which, had concomitantly provided security for Comsat—that the future viability of INTELSAT and the interests of the users in competitive international communications services could be mutually achieved through a greatly liberalized earth station ownership policy.

d. As defined by the FCC's Transborder Services Decision

With the advent of Canadian and U.S. domestic communication satellites, the growth of the cable TV industry and the reduction in cost and size of television receive-only (TVRO) earth stations, it was not long before various applications were submitted to the FCC to (1) receive TV signals from Canadian satellites,⁵⁸ (2) transmit communications to Canada via U.S. domestic satellites⁶⁰ (3) and transmit television signals to Caribbean and Central American countries using U.S. domestic satellites.^{57,3} The applicants argued that in the case of television programming, they were not creating additional programming but would merely be furnishing to additional points the programming that was *already* on the satellite either for distribution to Canadian or U.S. television or cable stations. To put the same programs through INTELSAT for transborder distribution, they argued, would be inefficient and costly, assuming they could get capacity on INTELSAT satellites. Further, as to U.S.-Canada traffic, they contended that INTELSAT had never provided services between the two countries—instead expensive and inefficient terrestrial means were used theretofor. Comsat opposed most of the applications asserting, as a major basis,

⁵⁵Notice of Proposed Rulemaking, *supra* note 50, at §27.

⁵⁶*Ibid.*

⁵⁷*Id.*, at §32.

⁵⁸*E.g.*, 220 Television, Inc. (File No. 318 DSE-ML-78) to permit the reception by a television station licensee in St. Louis, Mo. of television station signals from TELESAT Canada's ANIK I and II satellites.

⁵⁹*E.g.*, RCA Americom Communications, Inc. (File No. W-P-C-1719) to add various new receive points in Canada for signals transmitted through its SATCOM U.S. domestic satellites.

⁶⁰*E.g.*, Southern Satellite Systems, Inc. (File No. I-P-C-44) to extend its domestic television programming services to the Cayman Islands, BWI via a U.S. domestic satellite.

its exclusivity under the Satellite Act and the United States commitment to the single global system for international public telecommunications services.

After obtaining guidance from the Executive Branch as to foreign policy and national interest considerations⁶¹, the FCC found that the public interest would be served by a grant of the applications subject to certain conditions which included prior coordination with INTELSAT under Article XIV of the INTELSAT Agreement.⁶² In a seminal decision, the FCC decided that the use of domestic satellite facilities for the limited purpose of furnishing international public telecommunications services of the type sought in the applications did not contravene the Satellite Act, the INTELSAT Agreement or U.S. international telecommunications policies.

"On balance, the operational difficulties, increased costs of facilities and services, and spectrum inefficiencies make use of the global system impractical when compared to the alternative utilization of domestic satellite facilities. We find that in particular cases such as these where the United States has discharged its treaty obligations to INTELSAT, and has obtained the concurrence of the appropriate foreign governmental authorities, the Commission may permit receive-only earth station operators to receive the authorized signals of non-U.S. domestic satellite facilities, and may authorize United States [domestic satellite] carriers to provide service to transborder locations."⁶³

Although ostensibly confined to use of domestic satellite facilities, this decision served as a major prelude for a frontal attack on the concept of the single global system and Comsat's exclusivity under the Satellite Act.

⁶¹Letter dated July 23, 1981, from Undersecretary of State James L. Buckley to FCC Chairman Mark Fowler [the Buckley Letter]. Copy appears as Appendix A to FCC's *Transborder Services* decision, footnote 62, *infra*. After reciting that the "foundation of our international communications satellite policy includes the concept of a global system to which all nations can have non-discriminatory access", Secretary Buckley noted that the INTELSAT Agreement recognizes that members may choose to rely on separate satellite systems to meet their international public telecommunications service requirements under certain conditions.

Certain exceptional circumstances may exist where it would be in the interest of the United States to use domestic satellites for public international telecommunications with nearby countries. One such case would be where the global system could not provide the service required. Another case would be where the service planned would be clearly uneconomical or impractical using the INTELSAT system. In such cases, the United States commitment to the global system would not preclude reliance on domestic satellite facilities. [Buckley letter, p. 2]

The letter suggested certain consultation and coordination procedures in the event the FCC decided to authorize the applications, but cautioned that service would not be inaugurated unless:

"(a) the proposal not to utilize the INTELSAT space segment receives a favorable recommendation in the INTELSAT Assembly (for these purposes a favorable recommendation requires a two-thirds favorable vote); or
(b) such proposal is supported by the U.S. Government and both the U.S. and the foreign governmental authorities concerned, in the absence of a favorable recommendation by the Assembly, consider in good faith that the obligations under Article XIV have been met. [Buckley letter, p. 3]

⁶²*Transborder Satellite Video Services*, 88 F.C.C.2d 258 (1981) (*Transborder Services*).

⁶³*Id.*, at §52.

2. *The Extent of Comsat's Exclusivity in International Satellite Communications*

As change through technological and regulatory means was being imposed on the role of Comsat domestically in international satellite communications through the INTELSAT global system, a challenge was mounted within the private sector to the concept of INTELSAT remaining the single global system. In 1983, an application was filed with the FCC by Orion Satellite Corporation for authority to establish and operate a private satellite system over the Atlantic to serve customers on the high density North Atlantic corridor.⁶⁴ The applicant proposed to sell or lease the satellite transponders to high volume users which would use them as part of their respective worldwide company networks. Orion contended that the types of communications services these customers desired were not being offered through the INTELSAT system and, therefore, their system would serve the national interest by meeting these demands and should be authorized under the "additional systems" exception of Section 102(d) of the Satellite Act. Furthermore, Orion maintained that as a private system it would not be offering "public telecommunications services" as defined under the INTELSAT Agreement and, therefore, only technical coordination would be required with INTELSAT under Article XIV and not economic coordination.⁶⁵

Orion's application was followed by four others⁶⁶ and a fifth which was subsequently withdrawn.⁶⁷ These applications,—because, with one exception,⁶⁸ they seek to compete with INTELSAT, on its major and most lucrative traffic route, the North Atlantic route,—have presented the U.S. Government with the most serious international communications legal and policy issues since the enactment of the Satellite Act. On the one hand, the United States as the principal architect of INTELSAT—one of the major triumphs in United States' foreign policy of the past twenty years—is being unanimously urged by the other member states of INTELSAT not to take any action which would injure the organization. The smaller countries have especially benefited from the services of INTELSAT which has interconnected them to the world community at the same price per circuit as paid

⁶⁴Application of Orion Satellite Corp., File No. CSS-83-002-P (filed Mar. 11, 1983).

⁶⁵*Id.*, at I-7. See INTELSAT Agreement, Art. XIV, *supra* note 8. If a person within the jurisdiction of a Party to the INTELSAT Agreement proposes to establish, acquire or utilize space segment facilities separate from the INTELSAT space segment they must undertake a technical coordination of those facilities with INTELSAT. Furthermore, under Article XIV(d), if the separate facilities are for the purposes of meeting "international public telecommunications services" requirement then there must also be an economic coordination with INTELSAT including finding and recommendations by INTELSAT's Assembly of Parties as to whether the use of the separate facilities to meet such requirements will cause "significant economic harm" to INTELSAT and "prejudice the establishment of direct communications links through the INTELSAT space segment among all the participants." Orion maintains that since its service will not be available to the public it is not offering an international public telecommunications service and, therefore, no economic coordination is required. *Id.*

⁶⁶Application of International Satellite, Inc., File No. CSS-83-004-P(LA) (filed August 12, 1983); Application of RCA Americom for modification of authority, File No. 909-DSS-MP-84 (filed Feb. 13, 1984); Application of Cygnus Satellite Corp., File No. CSS-84-002-P(LA) (filed Mar. 7, 1984); Application of Pan American Satellite Corp., File No. CSG-84-004-P/L (filed June 4, 1984).

⁶⁷Application of Systematics General Corp., File No. CSS-84-005-P(LA) (filed June 12, 1984).

⁶⁸Pan American Satellite Corp. (PANAMSAT) propose to provide both video and audio services between the U.S. and Latin America as well as domestic transmission service in the Caribbean Basin and South America—a Western Hemisphere Satellite system. See Application of Pan American Satellite Corp., *supra* note 66.

by the major developed nations.⁶⁹ The United States has enjoyed a position of respect in its leadership role in the organization. U.S. industry has benefited substantially in the several billions of dollars of contracts awarded by INTELSAT.⁷⁰ While there do exist several regional systems outside of INTELSAT, these generally were envisioned at the time the INTELSAT agreements were negotiated and were taken into account in INTELSAT planning. Furthermore, they have been coordinated with INTELSAT under Article XIV(d) and found not to threaten "significant economic harm" to INTELSAT.

Opposing this argument for a sustained commitment to the concept of a single global system, is the current United States policy favoring deregulation and reliance on competitive marketplace forces in the provision of telecommunications facilities and services. Extensive deregulation having occurred in the U.S. domestic satellite services market,⁷¹ the proponents of deregulation and competition, both in government and industry, were prepared to pursue similar goals internationally.

From all signs, however, little serious consideration or planning was given to the fact that although the technology existed, politically the United States cannot accomplish these goals without the agreement and assistance of the foreign governments involved.⁷² Historically, the international submarine cable facilities have been jointly owned by the countries using those facilities, regardless of whether that ownership was public or private. This concept was recognized early on as essential to the successful development of the global satellite system.⁷³ Foreign governments were offered ownership in the satellite facilities. In fact, with its investment-equals-use principle, INTELSAT resembles an international cooperative association among the governments involved to establish and operate the central "relay" facility (i.e. the satellites). This "relay" facility is essential for communicating transoceanically in the high quality, microwave frequency bands, since signals at these higher frequencies travel in a straight line and do not reflect off the ionosphere as do ordinary radio broadcast signals.

Many, if not most of the members of INTELSAT appear to view international communications as a means of facilitating economic growth and commerce rather than an end in itself. Therefore, the amount of opposition that has been leveled against these proposed separate systems should come as no surprise.

⁶⁹INTELSAT averages its cost of service since, pursuant to Article V(d) of the INTELSAT Agreement, it may not discriminate among users in the charges for the same type of service. Thus, the half circuit charge of \$390 per month applies equally to use with Atlantic Ocean, Pacific Ocean and Indian Ocean region satellites. See INTELSAT Agreement, Art. V, *supra* note 8.

⁷⁰Intelsat has procured six major series of satellites during its 20 years. The prime contractor of each of these has been a U.S. contractor although a portion of the subcontract work in most cases has been performed internationally, primarily by European or Canadian companies.

⁷¹See e.g., Fifth Report and Order, Competitive Common Carriers, Dkt 79-252 (August 9, 1984).

⁷²One recent study is helpful in focusing the issues and suggesting that a less confrontational approach would be to negotiate first with the foreign governments concerning separate satellite systems and then license U.S. entities on the basis of the outcome of those negotiations. Rein *et al*, Implementation of a U.S. "Free Entry" Initiative for Transatlantic Satellite Facilities; Problems, Pitfalls and Possibilities (July 3, 1983). See also, Gantt, *International Satellite Communications—Some Current Issues*, American Bar Association, Forum Committee on Air and Space Law, Second Annual Forum, November 1, 1984.

⁷³For example, the Satellite Act contemplated ownership of the "communications satellite system" in conjunction with "foreign governments or business entities". Satellite Act §305(a)(1) (codified at 47 U.S.C. §735(a)(1) (1976)).

The Government must now decide whether (1) to adhere to the concept of a single global system, or (2) to permit the establishment of facilities parallel to INTELSAT along its most lucrative traffic route. If it decides in favor of the latter, it will have further reversed the policies of the past twenty years with respect to the role of Comsat whose exclusivity in international satellite communications is tied to the INTELSAT global system. The ISC's would then have means involving, perhaps, greater economic participation on their part by which to furnish communications services via satellite without having to deal with Comsat.

The applicants for separate systems rely principally on two major arguments to distinguish their proposed services from those constituting what they contend to be the limits of Comsat's exclusivity. First, they contend that their systems by providing services which they believe INTELSAT does not and/or cannot reasonably offer, will be meeting a "national interest" requirement, and therefore, should come within the Section 102(d) exception of the Satellite Act, for additional systems required in the national interest.⁷⁴ Second, the assertion is made that by offering to sell or lease on long term bases satellite transponders to private users for their internal communications purposes, they are not furnishing "public telecommunications services" and, therefore, are not in economic competition with INTELSAT within the terms of Article XIV(d) of the INTELSAT Agreement.

a. *Section 102(d) of the Satellite Act as a Limit on Comsat's Exclusivity*

Although the applicants for separate systems all point to the Section 102(d) "additional systems" language, that subsection must be read in the context of the entire Section 102 in which Congress declared the United States policy with respect to international satellite communications. Read in that context, subsection (d) appears as no more than a narrow exception to the otherwise broad policy endorsement of a global satellite system, so as not to preclude the creation of additional systems should they be required in the national interest. Several important factors and issues emerge from such a reading of the language.

First, the language imposes the broader "national interest" test rather than the standard FCC criteria of the "public interest, convenience and necessity."⁷⁵ Second, a successful applicant would have to demonstrate not only that the grant of its application would *serve* the national interest, but that it was *required* by the national interest—a more stringent requirement. Thus, for example, a court might reasonably conclude that the creation of competitive conditions which may serve to further a national policy of promoting competition would not, standing alone, be a sufficient showing in support of an additional system under Section 102(d). The primary purpose of the Satellite Act is not to maintain and strengthen competition; rather, the Act was intended to establish and operate an efficient global communications system for the benefit of the general public.⁷⁶

⁷⁴Satellite Act §102(d) (codified at 47 U.S.C. §701(d) (1976)).

⁷⁵Communications Act §309 (codified at 47 U.S.C. §309 (1976)).

⁷⁶*ITT World Communications, Inc. v. FCC*, 725 F.2d 732, 747 n. 33 (D.C. Cir. 1984). ("The primary purpose of the Satellite Act is not to maintain and strengthen competition; rather, the Act was intended to establish and operate an efficient global communications system for the benefit of the general public.")

Third, since the same term "communications satellite system" is used in Section 102(d) as elsewhere in the Satellite Act, an applicant for a separate system should be required to demonstrate that its system fits the definition of this term as contained in Section 103(1) of the Satellite Act: The term 'communications satellite system' refers to a system of communications satellites in space whose purpose is to relay telecommunications information between satellite terminal stations,⁷⁷

The term "satellite terminal station" is itself defined in Section 103(3) as a complex of communications equipment located on the earth's surface and "operationally connected with one or more terrestrial communications systems."⁷⁸ The term—terrestrial communications systems—however, is not defined in the Satellite Act, thus leaving open the question of whether an "additional communications satellite system" to provide international private network services through customer premised earth stations would come within the language of the term "satellite terminal station."⁷⁹ If it does, the inquiry continues. On the other hand, if it does not, then a limit would appear to have been established as to Comsat's exclusivity; namely, service through a satellite system interconnected by means of satellite terminal stations to the terrestrial *public* network.

Fourth, who is empowered to authorize an additional system? The Congress? The FCC? The President? How do the policy objectives set forth in the Satellite Act and the special provisions with respect to the President in Section 201(a) and the FCC in Section 201(c) apply or relate, if at all, to an additional system? These and other questions are not answered in the Satellite Act.⁸⁰ However, their importance and the magnitude of the foreign policy issues involved suggest the need for congressional legislation to reformulate U.S. policy and to make consequent changes in U.S. institutional structures if, indeed, there is to be a change in the United States policy towards a single global system. Specifically, any such legislation should declare the new policy (assuming there is to be a change), the relationship of additional systems with the present global system and the role of Comsat. The Satellite Act merely states that in limited circumstances there could be additional systems. It does not state who is to authorize these systems—only that they must be required in the national interest. Elsewhere, in Section 301 of the Satellite Act Congress expressly reserved to itself the right to appeal, alter, or amend the Satellite Act

⁷⁷Satellite Act §103(1) (codified at 47 U.S.C. §702(3) (1976)).

⁷⁸Satellite Act §103(3) (codified at 47 U.S.C. §702(3) (1976)).

⁷⁹Specifically, can customer premised earth stations be considered operationally connected to terrestrial communications systems? The proponents of additional satellite systems would presumably argue that they are not, but instead are interconnected with private company networks, for example, the intra-premises PBX, which are different from the telephone companies' terrestrial systems used to furnish common carrier service to the public at large. The opponents of additional systems might argue that the Satellite Act must be construed as a living document and, therefore, the definition of satellite terminal station must be viewed in the context of industry developments. Customer-premised earth stations connecting via satellite multinational companies' private communications networks to local premises PBXs was probably not envisaged in 1962. Nevertheless, the growth in communications technology, it can be argued, has made this intra-office PBX as much a terrestrial communications system as the large microwave and cable systems operated by telephone companies.

⁸⁰For example, should the President supervise the negotiations of an "additional system" operator with foreign governments and international bodies in respect to matters of foreign policy? Likewise, should an "additional system" operator be required to extend service to foreign points other than those it wishes to serve? In other words, is the "additional system" operator to be free of the regulatory restraints imposed by the Satellite Act on Comsat and, hence on the services available to U.S. customers through the INTELSAT system? Such a dichotomy of regulation could undermine the viability of the global system—a result, it is submitted—*not in the national interest*.

at any time.⁸¹ In fact, the Satellite Act bill (HR 11040) in the version passed by the House of Representatives on May 3, 1962, reserved *to the Congress*, in Section 102(d), the right to provide for additional systems if required in the national interest. The reservation language was added by amendment to the bill during the floor debate on May 2, 1962, by Representative Harris who explained that his amendment, which had been suggested by the Speaker of the House, was intended to state in a positive manner the intent of Congress ("The Congress reserves . . .") rather than in a negative fashion ("It is not the intent of Congress by this Act . . . to preclude . . .").⁸²

When HR 11040 was introduced in the Senate the language of the entire House-passed version of the Satellite Act was stricken and the Senate version (S 2814) substituted.⁸³ Although the Senate does not appear to have specifically addressed the Harris amendment, Senator Church commented directly, in a Committee report, as to the purpose behind Section 102(d);

"The wisdom of this last clause 'or if otherwise required in the national interest' is perfectly apparent. *We* cannot now foretell how well the corporate instrumentality established by this act will serve the needs of our people. If it should develop that the rates charged are too high, or the service too limited, so that the system is failing to extend to the American people the maximum benefits of the new technology, or if the Government's use of the system for, say, Voice of America broadcasts to certain other parts of the world proves excessively expensive for our taxpayers, then certainly this enabling legislation should not preclude the establishment of alternative systems, whether under private or public management. And just as certainly is that gateway meant to be kept open, in case *we* should ever need to use it, by the language [of Section 102(d)]."⁸⁴ [Emphasis added].

In the legislative scheme, Congress had determined to proceed with a global system on the basis of the United States' participant being a private entity. Unable, however, to predict the future success or conduct of this entity, Senator Church believed it prudent for Congress to reserve the right to alter this legislative scheme to accommodate additional systems where required in the national interest. Given the totality of the circumstances, a good case is made that Congress should address the issues certainly as a matter of national policy if not as a matter reserved to it exclusively by law.

b. The Scope of INTELSAT "Public Telecommunications Services" As a Limit on Comsat's Exclusivity

An analysis as to the scope of Comsat's exclusivity with respect to international satellite communications services must consider the scope of the global system's undertaking. The INTELSAT Agreement states as the prime objective" of INTELSAT, "the provision, on

⁸¹Satellite Act §301 (codified at 47 U.S.C. §731 (1976)).

⁸²108 Cong. Rec. 7523-24 (1962).

⁸³*Id.*, at 10649.

⁸⁴S. REP. NO. 1873, *supra*, note 2, reprinted in 1962 U.S. CODE CONG. & AD. NEWS 2327.

a commercial basis, of the space segment required for international public telecommunications services of high quality and reliability to be available on a non-discriminatory basis to all areas of the world."⁸⁵

The term "public telecommunications services", defined in the INTELSAT Agreement:

means fixed or mobile telecommunications services which can be provided by satellite and which are available for use by the public, such as telephony, telegraphy, telex, facsimile, data transmissions, transmission of radio and television programs between approved earth stations having access to the INTELSAT space segment for further transmission to the public, and leased circuits for any of these purposes; . . . ⁸⁶

All other forms of service are categorized as "specialized telecommunications services."⁸⁷

Applicants for separate systems argue that to the extent their systems are private systems they do not provide "public telecommunications services" and are, therefore, not encroaching on either INTELSAT's or Comsat's exclusive mandate. They direct their argument to the language—"and which are available for use by the public"—and contend that their services will not be available for *use* by the public but only by their private customers for internal communications under individual contracts—as opposed to common carrier tariffs offering non-discriminatory service.⁸⁸ Comsat defends by arguing that "available to the public" is not a condition but is language intended merely to exemplify that it is the type of use—not the identity or class of customer—which is the controlling factor.⁸⁹

The description of the services offered by INTELSAT is for the purpose of identifying the *types* of services and not the customer.⁹⁰ Given its nature as the provider of a transmission path to facilitate the exchange of international communications traffic by national telecommunications administrations and entities, there is no reasonable way in which INTELSAT could regulate its services by customer class (i.e. public or private). INTELSAT does not serve the end users. Articles III and I(k) and (l) establish the priority of transmission of traffic on the system. The owners did not want their investment used to establish specialized telecommunication services such as those listed in Article I(l), nor did they wish for purely domestic public telecommunications services (Article III(c)) to have the same priority as international public telecommunications services. Thus, there was a need for a series of definitions keyed to *types* of service—not class of customer—to facilitate the operation of the system. The public/private dichotomy further breaks down in view of the fact that leased circuits are mentioned specifically as a type of public telecommunications service.⁹¹ Such circuits are by their nature used, for example, by the

⁸⁵INTELSAT Agreement, Art. III, *supra* note 8.

⁸⁶*Id.*, Art. I(k).

⁸⁷*Id.*, Art. I(l).

⁸⁸*See e.g.*, Application of Orion Satellite Corp., *supra* note 58 at 1-8.

⁸⁹Comsat Petition to Deny Application of Orion Satellite Corp., File No. CSS-83-002-P.

⁹⁰*See*, Legal Opinion on the Scope of INTELSAT's "Public Telecommunications Services" (January 13, 1984) placed in FCC file in Application of International Satellite, Inc., File No. CSS-83-004-P(LA).

⁹¹INTELSAT Agreement, Art. I(k), *supra* note 8.

customer-lessee on a full-time, as opposed to a per message, basis for private internal communications of the customer.

The difficulty with the INTELSAT definition can be traced to two major factors and should be instructive in defining the scope of future collaborative space endeavors. First, the rapid growth in technology and services has brought about uses and concepts—such as the sale of satellite transponders—that were not readily foreseen during the negotiations of the INTELSAT definitive arrangements. Second, the term “public telecommunications services” was left until the end of the negotiations for final definition—although the term had been used throughout the negotiations in formulating other articles. As a result, the language of the definition was extensively negotiated and redrafted in a final attempt by some delegations to place boundaries on the organization’s primary objective in furtherance of their own political objectives. This resulted in a somewhat less than precise final definition.

3. *Government Regulations and Supervision of Comsat's Role in International Satellite Communications*

a. *Regulation*

Comsat is subject to extensive regulations by the FCC under both the Communications Act and the Satellite Act.⁹² In addition to the proceedings described previously in this paper which pertained to Comsat’s role in international communications services, the FCC has conducted a series of major proceedings concerning Comsat’s organizational structure to determine whether and to what extent Comsat should be permitted to engage in non-INTELSAT/INMARSAT (i.e. competitive) lines of business and, if so, the financial and procedural safeguards necessary to ensure that Comsat does not take unfair advantage of its statutory role in financing and conducting its competitive business activities.⁹³ In its *Comsat Study* the FCC concluded that Comsat should not

⁹²Comsat is regulated both as a common carrier under Title II and as a licensee of the frequency spectrum under Title III of the Communications Act. Regulation under the Satellite Act is pursuant to Section 201(c).

⁹³The series of FCC proceedings relating to the Corporate Structure of Comsat were an outgrowth of a statutory requirement enacted in 1978 that the FCC conduct a study of the corporate structure and operating activities of Comsat and report to Congress by May 1980 with a view towards determining whether any changes were required to ensure that Comsat would affectively fulfill its obligations and carry out its functions under the Satellite Act and the Communications Act. Satellite Act §505 (codified as amended at 47 U.S.C. §754 Supp. VIII 1984)). The study requirement was part of an amendment to the Satellite Act which designated Comsat as the United States participant in a proposed International Maritime Satellite Organization (INMARSAT) patterned along the lines of INTELSAT and with the mission of establishing a global system of maritime communications satellites to serve the maritime commercial and safety needs of the United States and foreign countries. In May 1980, the FCC issued its report in which it concluded that while Comsat could, as a legal matter, engage in activities in addition to its INTELSAT and INMARSAT businesses, as a matter of policy Comsat’s authority to engage in such additional competitive businesses would be conditioned on changes being made in Comsat’s corporate structure, its accounting systems, its information distributions systems and the current arrangements for Government oversight of Comsat’s activities. Communications Satellite Corporation, 77 FCC2d 564 (1980) [hereinafter cited as *Comsat Study*]. Of particular concern to the FCC were the potentials for cross-subsidization between the INTELSAT/INMARSAT and competitive activities and for unfair use of information in its competitive business derived from its INTELSAT/INMARSAT roles. Comsat, thereafter filed a plan with the FCC as to how it proposed to remedy these concerns of the FCC through changes in its structure and operations, and this plan was put out for comment in October 1980 in the form of a Notice of Proposal Rule Making (NPRM). See 81 FCC2d 287 (1980). Following receipt of comments, the FCC issued its First Comsat Structure Order reaffirming its earlier legal and policy conclusions but finding Comsat’s proposed cost allocation plans inadequate and deficient. See 90 F.C.C.2d 1159 (1982), *recon. denied*, 93 F.C.C.2d 701 (1983), *appeal denied*.

be precluded from applying its corporate technology and expertise in new areas of satellite application. As a legal matter Comsat should engage in activities outside of its *INTELSAT* and *INMARSAT* lines of business to the extent these activities were not inconsistent with the purpose and objectives of the Satellite Act.⁹⁴

As a matter of policy, however, the FCC concluded that certain structural, accounting and information distribution aspects of Comsat's business raised significant issues that required changes in Comsat's structure, its accounting practices and the arrangement for Government oversight of Comsat's activities. What followed—and is still in progress—was an in-depth look on the public record at Comsat's activities and practices.⁹⁵

b. *Supervision*

Pursuant to the Satellite Act the Government exercises a degree of supervision over Comsat's activities as they may impact on foreign policy, which it does not exercise with respect to a normal multinational private corporation. First, and by far the least controversial of these is the requirement that Comsat notify the Department of State of business negotiations with any international or foreign entity.⁹⁶ As a consequence, the Department is to advise Comsat of any relevant foreign policy considerations. In practice, this requirement appears to have worked well and to the mutual benefit of both parties. In

sub nom., *RCA Global Communications, Inc. v. FCC*, No. 83-1662 (D.C. Cir. 1983) (Corporate Structure I). Comsat thereafter submitted a report to the FCC proposing certain further changes in its cost allocation practices relating to R&D expenses and G&A expenses and made further modifications in these practices. Comments were filed by interested parties after which the FCC issued its Second Comsat Structure Order on March 30, 1984. *Communications Satellite Corporation*, 97 FCC 2d 145 (1984) [hereinafter cited as *Corporate Structure II*]. In the text of its *Corporate Structure II* decision, the FCC reviewed the role of Comsat under the Satellite Act. It concluded that while during the infancy of INTELSAT it had viewed Comsat's mission broadly, circumstances had now changed, particularly the fact that INTELSAT had matured and its staff now carried out the management and operation of the global system. Because of this, Comsat's mission had narrowed and its cost allocation practices, including its treatment of the Comsat Laboratories, a significant portion of which appeared in the Comsat rate base, had to reflect this change. The practical effect of the FCC's decision was to remove portions of Comsat's assets from its rate base and require Comsat to revise its tariff filings accordingly, resulting in lower rates to its customers. Comsat's petition for reconsideration of *Corporate Structure II* is awaiting further FCC action.

⁹⁴77 F.C.C.2d 564 (1980). Subsequently, the U.S. Court of Appeals for the District of Columbia, in a separate case involving, *inter alia*, the authority of Comsat to engage in the furnishing of direct broadcast services (DBS) adopted a "consistent with" test for the scope of Comsat's authority using as the benchmark the purposes of the Satellite Act.

"In holding that Comsat may engage in certain non-INTELSAT or INMARSAT activities even when those activities are not ancillary to its INTELSAT/INMARSAT responsibilities, we do not suggest that Comsat can engage in any business ventures it desires; despite the colorful drafting of NAB's arguments, we need not decide today whether the FCC intends or is authorized to allow Comsat to participate in venture's involving 'department stores, dairy farms, football, or fountain pens.' We hold only that, *at least* when Comsat's activities are directed to the purposes for which it was created—the development of satellite communications technology, *see* 47 U.S.C. §701,—Comsat's activities are 'consistent with' the purposes of the 1962 Act within the meaning of section 201(c)(8). Participation in DBS meets this standard."

National Assoc. of Broadcasters v. FCC, 740 F.2d. 1190, 1218 (D.C. Cir. 1984).

⁹⁵E.g., *Corporate Structure II*, *supra* note 93.

⁹⁶Satellite Act §402 (codified at 47 U.S.C. §742 (1976)).

conducting foreign business negotiations it is useful for a U.S. company to be knowledgeable of its government's relations with the relevant foreign government or international organization.

The second type of supervision concerns Comsat's role as the U.S. participant in INTELSAT and INMARSAT and as the U.S. representative in the substantive decision-making bodies of those organizations in which the investors are represented.⁹⁷ Criticism has been leveled at the so-called "instructional process"—Comsat preferred the term "guidance".⁹⁸ While some criticism has been valid—and changes have been made in the process to accommodate a greater public awareness of the process, the matters dealt with relate to U.S. foreign policy and, under the circumstances, may not readily lend themselves to public debate if the process is to be effective. For example, before each meeting of the INTELSAT Board of Governors, the Government representatives—Department of State, FCC, National Telecommunications and Information Administration—review the proposed agenda and proposed Comsat positions and provide foreign policy guidance as well as instructions where appropriate. Comsat, alone, attends the INTELSAT and INMARSAT Board of Governors, Meeting of Signatories and Council meetings, but keeps in close communications with the Department of State to advise as to developments and receive any updated guidance and instructions.

Is this an effective form of supervision? On balance, the answer is probably yes. On the positive side, it affords the government visibility as to what is occurring in the organization and allows the Government to inquire as to the Comsat positions on various items. In addition, under recently implemented procedures⁹⁹ there is afforded an opportunity for public input—i.e. input from U.S. carriers, end users and manufacturers as to what the instructions should be, but not as to what the Government actually proposes to instruct. But then how often does the State Department seek public comment on foreign policy matters, generally? The U.S. companies are free, of course, to make their views known to Comsat as well. However, the latter is viewed by some as a competitor in light of its competitive business activities in areas such as manufacturing. Various solutions have been proposed such as placing a government "observer" in the Board of Governors and Council meetings to ensure that instructions are properly followed and implemented. This, however, could diminish Comsat's role and stature within these organizations and provide foreign delegations, which for the most part are more closely aligned with their respective governments, additional leverage against Comsat—and, in effect, against the United States—when a controversial matter comes before the organization for decision.

An alternative to such an institutional solution, would be to permit a broader range of input from industry and government through a mechanism similar to a private sector advisory committee. Whatever mechanism is used, the important factor is that given Comsat's diversification into competitive lines of business, the Government's supervisory role must of necessity expand beyond purely foreign policy matters to include making sure that Comsat by virtue of its statutory monopoly does not gain an unfair advantage

⁹⁷In INTELSAT, this is the Board of Governors and the Meeting of Signatories. In INMARSAT, it is the Council.

⁹⁸*Comsat Study*, *supra* note 93 at §440. A thorough discussion of the process appears in the *Comsat Study*, *supra* note 93, beginning at §431.

⁹⁹Beginning with the 60th Board of Governors meeting, September 1984, copies of most BG documents are placed in the public reading room at the FCC as soon as possible after receipt by Comsat. This accords some opportunity for interested parties to transmit their concerns to the Government for consideration in the instructional process—but does not afford a direct opportunity to comment on the instructions, themselves.

either through advance information or by securing action within INTELSAT or INMARSAT uniquely favorable to its competitive lines of business. This supervision can redound to Comsat's benefit should claims of unfair trade practices be asserted. The burden is on Comsat, in the first instance, to propose a satisfactory solution that properly takes into account and balances the legitimate concerns of government and industry as to decisions taken by INTELSAT and INMARSAT, the "public trust" placed on Comsat and Comsat legitimate business interests (*i.e.* preservation of its INTELSAT and INMARSAT investments). If Comsat does not fulfill this burden, then either the FCC or Congress must.

4. *The Comsat Model—Is It Appropriate For Other U.S. Space Commercialization Activities?*

The concept of a global system of communications satellites—when viewed generally in the context of the "half-circuit" international communications arrangements—suggests that any successful system of communications satellites would have to be jointly owned or controlled by the participating states, as an extension of their national sovereignty over communications into and from their respective territories. The decision by Congress not to permit U.S. participation to be through one or more of the U.S. international carriers meant that the operating companies, which had traditionally owned the U.S. portion of international communications facilities, would not own a direct interest in this new mode—satellites. However, they would continue to be the U.S. correspondents of the foreign PTT's for all communications whether transmitted through the satellites or via other modes. The concept of a designated U.S. entity—Comsat—worked particularly well in the early development stages of this new mode of communications. The entity was dedicated solely to the satellite mode, and its foreign INTELSAT partners were, like Comsat, also lawful monopolies. This dictotomy between Comsat and the ISC's, however, as the system matured led to considerable regulatory tension within the United States and, more recently, internationally.

If we consider other forms of commercialization of space *e.g.* remote sensing and materials processing, the need for—or, indeed, the appropriateness of—a U.S. designated entity is not readily apparent. Remote sensing can be carried out by a sensing state without any active participation required on behalf of the sensed state. Manufacturing in space is—or promises to be—an extension of earth-bound businesses, which traditionally have been operated on competitive bases. While, conceivably, there could be formed an international organization with the responsibility for establishing, owning and operating remote sensing satellites and distributing the unenhanced sensed data, there is no global infrastructure for data gathering, processing and dissemination similar to the telecommunications infrastructure from which to rationalize the need for a designated U.S. participant in such an organization.

Thus, given the difficulties inherent in the designated entity concept—*e.g.* a monopoly, the need for a regulatory scheme and the likely future desire to diversify into affiliated competitive businesses—a substantial justification should be required before the concept is utilized in other space commercialization activities. Moreover, if utilized, the enabling legislation should set forth a scheme by which over time the designated entity's exclusivity could be replaced with competitive marketplace conditions.

5. *Postscript*

Subsequent to the preparation of this article, the President, on November 28, 1984, determined pursuant to Sections 102(d) and 201(a) of the Satellite Act¹⁰⁰ that "separate international communication satellite systems are required in the national interest." He further announced that the United States would consult with INTELSAT regarding such systems as are authorized by the FCC in order to meet the obligations of the United States under the INTELSAT Agreement.¹⁰¹

Pursuant to the President's direction, the Secretaries of State and Commerce notified¹⁰² the Chairman of the FCC of the President's determination and of the criteria necessary to ensure that the United States meets its international obligations and to further its telecommunications and foreign policy interest. These criteria, which must be satisfied as part of any final FCC authorization of a separate system, require that:

- (1) each system is to be restricted to providing services through the sale or long-term lease of transponders or space segment capacity for communications not interconnected with public-switched message networks (except for emergency restoration services); and
- (2) one or more foreign authorities are to authorize use of each system and enter into consultation procedures with the United States Party [to the INTELSAT Agreement, i.e., the U.S. Government] under Article XIV(d) of the INTELSAT Agreement to ensure technical compatibility and to avoid significant economic harm.

Furthermore the letter premised the President's determination, its conditions and these criteria on the Executive Branch's review of the applications now before the FCC and cautioned that any forthcoming proposals that were "substantially different" may require further Executive Branch review. Finally, the letter suggested that the FCC should afford the interested parties an opportunity to comment on the pending applications in view of the recommendations of the Executive Branch.

Accompanying the letter was a memorandum of law¹⁰³ from the Legal Adviser of the Department of State on the issue as to whether the proposed use of the satellite system of Orion Satellite Corporation and International Satellite, Inc. would constitute international "public telecommunications services" requiring coordination with INTELSAT as to both technical compatibility *and* the avoidance of significant economic harm. The memorandum concluded that, although the issue "is not free from doubt, the sounder view appears to be "that the systems would provide public telecommunications services within the meaning of the INTELSAT Agreement, and thereby require both technical and economic coordination under Article XIV(d) of the INTELSAT Agreement.

¹⁰⁰Satellite § 102(d) (codified at 47 USC § 701(d) (1976); Satellite Act § 201(a) (codified at 47 USC § 721(a) (1976)).

¹⁰¹Presidential Determination No. 85-2, November 28, 1984, 49 Fed. REG. 46987 (1984).

¹⁰²Letter, dated November 28, 1984, from George Schultz, Secretary of State, and Malcolm Baldrige, Secretary of Commerce, to the Honorable Mark Fowler.

¹⁰³Memorandum of Law, *The Orion Satellite Corporation and International Satellite, Inc. Applications for International Satellite Communication Facilities*, Legal Adviser, U.S. Department of State, (November 21, 1983).

Also of significant further interest is a concurrent release from the National Telecommunications and Information Administration (NTIA) of the Department of Commerce to the effect that both Commerce and State have been instructed to address two related issues that are "important to ensure the efficient development of international satellite systems." The first issue deals with whether INTELSAT under its Agreement may vary its prices to meet actual or potential competition. The second issue and one of more direct impact to COMSAT, it would appear, concerns the matter of direct access to INTELSAT space segment capacity:

Commerce and State are expected to recommend to the FCC that INTELSAT be allowed to deal directly with other U.S. carriers with respect to competitive communications services. Affording companies in addition to COMSAT [which the release refers to as essentially the 'exclusive U.S. marketing agent for INTELSAT'] the option of dealing directly with INTELSAT for competitive services is a necessary step to ensure additional facilities are constructed only where economically or technically justified.¹⁰⁴

The focus of attention now returns to the FCC which is expected to conduct some further inquiries permitting additional public comment. In addition, there may also be congressional hearings as significant interest has been shown by several committees.¹⁰⁵

¹⁰⁴NTIA, Technical Information Advisory, *International Satellite Determination* (November 28, 1984).

¹⁰⁵See, e.g., Letter dated October 9, 1984, from Senator Packwood, Chairman of the Senate Committee on Commerce, Science, and Transportation, and Congressman Dingell, Chairman of the House Committee on Energy and Commerce, to Chairman Fowler; Letter, dated November 9, 1984, from Senator Pell, Ranking Minority Member on the Senate Committee on Foreign Relations, to the President.

PROPOSED DRAFT CONVENTION ON THE SETTLEMENT OF
SPACE LAW DISPUTES

*Karl-Heinz Böckstiegel**

In Space Law, as in other fields of international law, the substantive rules of the law are of primary importance. They give the legal framework of the rights and duties of those participating in space activities. But also, as in other fields of the law, any rights and duties expressed in substantive law are only worth as much as the degree to which they stand the test of enforceability, if other members of the legal regime are not ready to accept without doubt or without opposition the rights of members of the regime. It is commonly acknowledged that enforceability is a weak point in most fields of international law. In most fields of international law we have only limited means of enforceability and this is also the case for existing space law.

1. Rules on Dispute Settlement in Existing Space Law Instruments

If we look at the main instrument of present space law, the Outer Space Treaty,¹ we find some relevant wording asking for cooperation, mutual assistance and consultations, but no rules on actual dispute settlement.²

The Liability Convention provides some machinery referring first to diplomatic negotiations in case of a dispute and, if no settlement of a claim is arrived at in such a way, to a Claims Commission at the request of either party.³ However, Article 19, paragraph 2 provides that the decision of the Commission shall be final and binding only if the parties have so agreed. Otherwise, the decision is only a recommendation "which the parties shall consider in good faith."

None of the other general space law instruments provides for dispute settlement. On the other hand, more sophisticated and also sometimes binding dispute settlement machineries are provided for in more specific space law instruments. The INTELSAT Agreement provides for arbitration and expressly states that the decision of the arbitral tribunal shall be binding on all the disputants and shall be carried out by them in good faith.⁴ Similar provisions can be found in the INMARSAT Agreement,⁵ the ESA

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¹The Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, Including the Moon and Other Celestial Bodies, was signed on January 27, 1967, and entered into force October 10, 1967, [1967] 18 U.S.T. 2410, T.I.A.S. No. 610 U.N.T.S. 205.

²*Id.* at Arts. 9 and 13.

³Convention on International Liability for Damage Caused by Space Objects, March 29, 1972, [1973] 24 U.S.T. 2389, T.I.A.S. No. 7762 (effective Oct. 9, 1973), Arts. 9 *ff.*

⁴Art. 13 of Annex C to the Agreement of the International Telecommunications Satellite Organization, Communications Satellite System (agreement, with annexes, done at Washington August 20, 1971, and entered into force February 12, 1973) 23 U.S.T. 3813, T.I.A.S. 7532.

⁵The Operating Agreement on the International Maritime Satellite Organization was done at London September 3, 1976, and entered into for the United States July 16, 1979, T.I.A.S. 9605.

Convention⁶ and similar instruments of multilateral or bilateral character dealing with very specific and concrete space activities and the participation of particular states therein.⁷

2. Initiatives for Further Development of Relevant Space Law

During the exploratory stage of space activities, differing opinions in space law meant only a dispute on principles, and meant relatively little as far as collision of practical interests and of concrete application of such rules were concerned. Now, however, with the growing use of space and with the increasing number of states active or at least interested in space activities of some kind, conflicting views and uses of outer space will be incompatible, not only in theory but also in practice. Under such circumstances more and more often a situation will arise where disputes on various aspects of space law can no longer be left open, allowing each state to persist on its own view and to act accordingly. Space law, therefore, is and will continue to be facing a demand to develop techniques for the settlement of disputes. It is on this background that a number of initiatives for the further development of relevant space law have been undertaken in recent years and are still continuing.

The first major initiative of this kind was the Munich Colloquium on "Settlement of Space Law Disputes - The present State of the Law and Perspectives of further Development" organized in 1979 by the Institute of Air and Space Law of Cologne University in cooperation with the Space Law Committee of the International Law Association, the International Institute of Space Law and the German Society for Aeronautics and Astronautics.⁸ Participants from all over the world contributed their views and experience. In short, and not without a certain simplification, the results could be characterized by the following conclusions:

1. If we want progress to be achieved in the development of procedure for the peaceful settlement of disputes in space law, instead of enthusiastic recommendations, a pragmatic endeavour to choose the settlement method best fit and most acceptable to states for a given type of case or a specific area of space law would usually seem to be the wise approach. A number of specific criteria might be taken into account in the deciding process.

2. The method finally required for at least certain, practically relevant areas of space law, in order to assure peaceful cooperation or at least coexistence of the international community in space activities, will be compulsory third-party settlement.

3. States can only be expected to be willing to accept this latter method for those areas of space law where a reasonable certainty as to the applicable rules exists, but not for highly controversial areas.

4. A greater number of states may be found ready to accept compulsory third-party settlement if they are given a choice between adjudication and arbitration.

⁶The European Space Agency was established in Paris, on May 30, 1975; by the Convention for the Establishment of a European Space Agency. See European Space Agency Annual Report (1976), Annex X.

⁷See *Relevant Materials and Texts* in SETTLEMENT OF SPACE LAW DISPUTES - THE PRESENT STATE OF THE LAW AND PERSPECTIVES OF FURTHER DEVELOPMENT 206-402 (K. H. Böckstiegel ed. 1980) (Proceedings of an International Colloquium, Munich, September 13 & 14, 1979, organized by the Institute of Air and Space Law, University of Cologne in cooperation with the Space Law Committee of the International Law Association).

⁸See generally SETTLEMENT OF SPACE LAW DISPUTES, *supra* note 7.

5. Where such a combined system is considered not fit or too complicated for a limited area of space law, a settlement by the more flexible method of arbitration will normally be more effective and more easily acceptable to states than the jurisdiction of a permanent international court.

6. Space lawyers have the responsibility to elaborate further criteria and alternative solutions in this field which states may then draw upon.

7. Most probably, if at all, progress will be achieved in state practice, conceivably in limited areas of space law, especially in the law of space communications and other such fields, where the functioning of the system is in the interest of all states concerned, and depends on disputes being settled without delay.⁹

Another initiative was the round table on "Settlement of Space Law Disputes" by the Council of Advanced International Studies in Cordoba, Argentina in which this author participated.¹⁰

At the governmental level a major initiative relevant in this field is the Study on the Applications of establishing an International Satellite Monitoring Agency (ISMA).¹¹ No matter how one judges in principle or in detail the proposal for an ISMA, it is interesting to note that the report contains a detailed section on "Settlement of Disputes Within an ISMA" and envisages the four following possibilities regarding the nature and composition of a dispute settlement organ of an ISMA: the establishment of a permanent arbitral body, an ad-hoc arbitral body, an executive organ of ISMA acting in an adjudicatory capacity and a panel of arbitrators nominated by member states from which parties select the arbitrators for each dispute.¹²

In November 1982, a workshop organized by the Hague Academy of International Law and the United Nations University dealt in the Hague with "The Settlement of Disputes on the New Natural Resources." Under several headings in that workshop, papers were presented and discussions held on conflict resolution in outer space. Major presentations in that respect came from Isabella Diederiks-Verschoor, Stephen Gorove, Lubos Perek, Nandasiri Jasentuliyana, and Delbert Smith.¹³

Another symposium in the Hague, this time organized by the International Institute of Space Law and the United Nations University in March 1984, dealt with "Conditions Essential for Maintaining Outer Space for Peaceful Uses." Though the agenda and the participants from all over the world were mainly occupied with the substantive and most fundamental question of how military activities in outer space can be reduced or banned, several papers also dealt with the settlement of disputes in that respect. Additionally, this author was asked to present a specific paper on a proposed Draft Convention on the Settlement of Space Law Disputes also applicable in this field of space activities.¹⁴

⁹*Id.*

¹⁰The proceedings were published by the President of the Council. COUNCIL OF ADVANCED INTERNATIONAL STUDIES, SETTLEMENT OF SPACE LAW DISPUTES (A. A. Cocca ed. 1981).

¹¹See the report of the Secretary General, U.N. Doc. A/AC.206/14 (August 6, 1981).

¹²*Id.* at § 436 *ff.*

¹³THE SETTLEMENT OF DISPUTES ON THE NEW NATURAL RESOURCES (1983) (Proceedings of an international workshop, the Hague, November 1982, organized by the Hague Academy of International Law and the United Nations University).

¹⁴The proceedings of this Hague colloquium will be published in the near future.

The last initiative to be mentioned here started in 1978 and is still continuing. The 1978 Manila conference of the International Law Association recommended that the problem of the settlement of space law disputes be studied by the Space Law Committee in order to present a report to the next ILA conference.¹⁵ This started a discussion both in the ILA Space Law Committee and in the International Institute of Space Law, on future possibilities for providing procedures on the peaceful settlement of space law disputes. On the basis of the aforementioned preparatory discussions and research efforts, the Montreal 1982 Conference of the International Law Association passed a resolution recommending that the Space Law Committee start the formulation of a Draft Convention on the Settlement of Space Law Disputes incorporating the following basic principles:

"The 60th Conference of the International Law Association held in Montreal 29th August - 4th September, 1982,:-

Noting with approval the report concerning the Settlement of Space Law Disputes by the Rapporteur of the Space Law Committee based on answers from Committee Members to a questionnaire;

Recommends that the Committee now start the formulation of a Draft Convention on the Settlement of Space Law Disputes on the basis of the report, of the discussion held during the Montreal Conference, incorporating the following Basic Principles:

1. The Convention should provide States with a choice for its application to:
 - (a) all Space Law disputes with other States parties;
 - (b) application to specific areas of Space Law as may be dealt with in specific bilateral or multilateral treaties;
 - (c) certain categories of disputes or certain sections of the Convention, subject to such exceptions that the State may wish to claim.
2. The Convention should in one section provide for non-binding settlement methods including recommendatory awards, but should in another section provide for binding methods of settlement upon application by one of the parties, if the other party does not agree to the conclusions of such non-binding methods.
3. The Convention should provide States with a choice among different settlement methods which, for binding settlement, should include adjudication by the International Court of Justice as well as administered and ad-hoc arbitration.
4. The Convention should provide that States parties have to select one method for binding settlement within the choice given according to Principle 3.
5. The Convention should stress that States parties have an obligation to fulfil decisions of the tribunal chosen under Principle 4.
6. In the Convention or as an annex thereto a "disputes settlement clause" should be drafted which could serve as a model to be included into future bilateral or multilateral treaties on Space Law."¹⁶

As requested by the above resolution, this author submitted a first draft of such a Convention to members of the ILA Space Law Committee and to members of the

¹⁵7 J. SPACE L. 63, 63-64 (1979).

¹⁶10 J. SPACE L. 256, 256-57 (1982).

International Institute of Space Law in the fall of 1983 for further discussion. A number of comments were received from prominent experts all over the world which, without exception, welcomed the draft in principle and considered it a sound basis for work on a final wording of such a Draft Convention. These comments were reproduced in the printed report for the 1984 Paris Conference of the International Law Association.¹⁷ Furthermore the Draft Convention was discussed at the 1984 Paris Conference of the ILA. In a resolution this author was asked to prepare a final draft in consultation with members of the ILA Space Law Committee for possible adoption of the 1986 ILA Conference.

Before one reads the Draft Convention which is reproduced below, the following explanations might be useful. The sections of the Draft are listed at the beginning and need not be repeated here. The Draft follows as much as possible and as closely as possible the dispute settlement procedures of the Law of the Sea Convention of 1982/1983.¹⁸ This had already been suggested in the preparatory discussions in view of the fact that the respective parts of the Law of the Sea Convention and its Annexes represent the most recent indication of what is acceptable in present day state practice and that they have not been subject to any controversy in the later stages of the Law of the Sea Conferences. Obviously, certain adaptations had to be made in wording as well as in substance in order to comply with the different scope of application, the above mentioned ILA resolution and to avoid unnecessary complications. Thus, the articles dealing with the International Sea Bed Authority, the Sea Bed Disputes Chamber and the Special Arbitration could be deleted. Furthermore, contrary to the International Tribunal for the Law of the Sea, the "International Tribunal for Space Law" is only provided for as an option of the High Contracting parties if they wish to establish such a tribunal at a later stage.¹⁹ To a certain extent, Article 1 of the Draft Convention makes use of wordings found in the European Convention for the Peaceful Settlement of Disputes of April 29, 1957. As requested in the aforementioned ILA resolution, a model dispute settlement clause is submitted as an annex to the Draft Convention.

Convention on the Settlement of Space Law Disputes
(First Draft)

Contents

Section I	:	Scope of Disputes Settled under this Convention Articles 1 - 2
Section II	:	Non-Binding Settlement Procedures Articles 3 - 4
Section III	:	Binding Settlement Procedures Articles 5 - 13
Section IV	:	Conciliation Procedure Articles 14 - 23
Section V	:	Arbitration Procedure Articles 24 - 36
Section VI	:	International Tribunal for Space Law Articles 37 - 68
Section VII	:	Final Provisions Articles 69 - 76
Annex	:	Model Disputes Settlement Clause

¹⁷The Draft Convention was discussed at the Conference and was approved. The Rapporteur and the Committee were asked to present a finalized draft to the next ILA Conference in 1986 for eventual adoption of the Draft Convention.

¹⁸For text, see *Draft Convention on the Law of the Sea*, U.N. Doc. A/CONF.62/122, of Oct. 7, 1982.

¹⁹See *Id.*

Preamble

The High Contracting Parties

Recognizing the common interest of all mankind in furthering the exploration and use of outer space for peaceful purposes,
Recognizing that the pursuit of peace based upon justice is vital for the preservation of human society and civilization,
Resolved therefore to settle by peaceful means any disputes which may arise between them with regard to outer space, have agreed as follows:

Section I. Applicability of this ConventionArt. 1 Scope of disputes settled under this Convention

1. This Convention applies to all activities in outer space and all activities with effects in outer space, if such activities are carried out by High Contracting Parties (HCPs), by nationals of HCPs or from the territories of HCPs.
2. Any HCP, on depositing its instrument of ratification, may declare
 - a) that it excludes from the applicability of this Convention space activities of a specific kind described in such declaration,
 - b) that it limits the applicability of this Convention to certain space activities or to specific areas of space law as may be dealt with in specific bilateral or multilateral treaties described in such declaration,
 - c) that it will not be bound by certain sections or articles of this Convention described in such declaration.
3. A HCP may only benefit from this Convention insofar as it is itself bound.
4. A HCP which is bound by only part of this Convention, or which has made reservations, may at any time, by a simple declaration, either extend the scope of its obligations or abandon all or part of its reservations.
5. This Convention shall not apply to disputes which the parties have agreed or may agree to submit to another procedure of peaceful settlement, if that agreement provides for a procedure entailing binding decisions.

Art. 2 Definitions

(This article is left open for definitions that should appear to be useful as the result of the discussion of the draft.)

Section II. Non-Binding Settlement ProceduresArt. 3 Obligation to exchange views

1. When a dispute arises between HCPs concerning a matter described in Art. 1, paragraph 1, the parties to the dispute shall proceed expeditiously to an exchange of views regarding its settlement by negotiation or other peaceful means.
2. The parties shall also proceed expeditiously to an exchange of views where a procedure for the settlement of such a dispute has been terminated without a settlement or where settlement has been reached and the circumstances require consultation regarding the manner of implementing the settlement.

Art. 4 Conciliation

1. A HCP which is a party to dispute concerning a matter described in Art. 1, paragraph 1, may invite the other party or parties to submit the dispute to conciliation in accordance with the procedure under section IV, or another conciliation procedure.
2. If the invitation is accepted and if the parties agree upon the conciliation procedure to be applied, any party may submit the dispute to that procedure.
3. If the invitation is not accepted or the parties do not agree upon the procedure, the conciliation proceedings shall be deemed to be terminated.
4. Unless the parties otherwise agree, when a dispute has been submitted to conciliation, the proceedings may be terminated only in accordance with the agreed conciliation procedure.

Section III. Binding Settlement ProceduresArt. 5 Application of procedure under this section

Any dispute concerning a matter described in Art. 1, paragraph 1, shall, where no settlement has been reached by recourse to section II, be submitted at the request of any party to the dispute to the court or tribunal having jurisdiction under this section.

Art. 6 Choice of procedure

1. When signing, ratifying or acceding to this Convention or at any time thereafter, a State shall be free to choose, by means of a written declaration, one or more of the following means for the settlement of disputes concerning the interpretation or application of this Convention:
 - (a) the International Tribunal for Space Law, if and when such a Tribunal has been established in accordance with section VI;
 - (b) the International Court of Justice;

- (c) an arbitral tribunal constituted in accordance with section V.
2. A HCP, which is a party to a dispute not covered by a declaration in force, shall be deemed to have accepted arbitration in accordance with section V.
 3. If the parties to a dispute have accepted the same procedure for the settlement of the dispute, it may be submitted only to that procedure, unless the parties otherwise agree.
 4. If the parties to a dispute have not accepted the same procedure for the settlement of the dispute, it may be submitted only to arbitration in accordance with section V, unless the parties otherwise agree.
 5. A declaration made under paragraph 1 shall remain in force until three months after notice of revocation has been deposited with the Secretary-General of the United Nations.
 6. A new declaration, a notice of revocation or the expiry of a declaration does not in any way affect proceedings pending before a court or tribunal having jurisdiction under this article, unless the parties otherwise agree.
 7. Declarations and notices referred to in this article shall be deposited with the Secretary-General of the United Nations, who shall transmit copies thereof to the State Parties.

Art. 7 Jurisdiction

1. A court or tribunal referred to in article 6 shall have jurisdiction over any dispute concerning a matter described in Art. 1, paragraph 1, which is submitted to it in accordance with this Convention.
2. A court or tribunal referred to in article 6 shall also have jurisdiction over any dispute concerning the interpretation or application of an international agreement related to the purpose of this Convention, which is submitted to it in accordance with the agreement.
3. In the event of a dispute as to whether a court or tribunal has jurisdiction, the matter shall be settled by decision of that court or tribunal.

Art. 8 Experts

In any dispute involving scientific or technical matters, a court or tribunal exercising jurisdiction under this section may, at the request of a party or proprio motu, select in consultation with the parties no fewer than two scientific or technical experts to sit with the court or tribunal but without the right to vote.

Art. 9 Provisional measures

1. If a dispute has been duly submitted to a court or tribunal which considers that prima facie it has jurisdiction, the court or tribunal may prescribe any provisional measures which it considered appropriate under the circumstances to preserve the respective rights of the parties to the dispute or to prevent serious harm to the space environment, pending the final decision.
2. Provisional measures may be modified or revoked as soon as the circumstances justifying them have changed or ceased to exist.
3. Provisional measures may be prescribed, modified or revoked under this article only at the request of a party to the disputes and after the parties have been given an opportunity to be heard.
4. The court or tribunal shall forthwith give notice to the parties to the dispute, and to such other HCP as it considers appropriate, of the prescription, modification or revocation of provisional measures.
5. Pending the constitution of an arbitral tribunal to which a dispute is being submitted, any court or tribunal agreed upon by the parties or, failing such agreement within two weeks from the date of the request for provisional measures, the International Tribunal for Space Law or, as long as this Tribunal has not been erected, the International Court of Justice, may prescribe, modify or revoke provisional measures in accordance with this article if it considers that prima facie the tribunal which is to be constituted would have jurisdiction and that the urgency of the situation so requires. Once constituted, the tribunal to which the dispute has been submitted may modify, revoke or affirm those provisional measures, acting in conformity with paragraphs 1 to 4.
6. The parties to the dispute shall comply promptly with any provisional measures prescribed under this article.

Art. 10 Access

1. All the dispute settlement procedures specified in this Convention shall be open to HCPs.
2. The dispute settlement procedures specified in this Convention shall be open to entities other than HCPs unless the matter is submitted to the International Court of Justice in accordance with article 6.

Art. 11 Applicable law

1. A court or tribunal having jurisdiction under this Convention shall apply this Convention and other rules of international law not incompatible with this Convention.

2. Paragraph 1 does not prejudice the power of the court or tribunal having jurisdiction under this section to decide a case ex aequo et bono, if the parties so agree.

Art. 12 Exhaustion of local remedies

Any dispute concerning a matter described in Art. 1, paragraph 1, may be submitted to the procedures provided for in this section only after local remedies have been exhausted where this is required by international law.

Art. 13 Finality and binding force of decisions

1. Any decision rendered by a court or tribunal having jurisdiction under this Convention shall be final and shall be complied with by all the parties to the dispute.
2. Any such decision shall have no binding force except between the parties and in respect of that particular dispute.

Section IV. Conciliation Procedure

Art. 14 Institution of proceedings

If the parties to a dispute have agreed, in accordance with article 4, to submit it to conciliation under this section, any such party may institute the proceedings by written notification addressed to the other party or parties to the dispute.

Art. 15 List of conciliators

A list of conciliators shall be drawn up and maintained by the Secretary-General of the United Nations. Every State Party shall be entitled to nominate four conciliators, each of whom shall be a person enjoying the highest reputation for fairness, competence and integrity. The names of the persons so nominated shall constitute the list. If at any time the conciliators nominated by a HCP in the list so constituted shall be fewer than four, that HCP shall be entitled to make further nominations as necessary. The name of a conciliator shall remain on the list until withdrawn by the HCP which made the nomination, provided that such conciliator shall continue to serve on any conciliation commission to which that conciliator has been appointed until the completion of the proceedings before that commission.

Art. 16 Constitution of conciliation commission

The conciliation commission shall, unless the parties otherwise agree, be constituted as follows:

- a) Subject to subparagraph g), the conciliation commission shall consist of five members.

- b) The party instituting the proceedings shall appoint two conciliators to be chosen preferably from the list referred to in article 15, one of whom may be its national, unless the parties otherwise agree. Such appointments shall be included in the notification referred to in article 14.
- c) The other party to the dispute shall appoint two conciliators in the manner set forth in subparagraph b) within 21 days of receipt of the notification referred to in article 14. If the appointments are not made within that period, the party instituting the proceedings may, within one week of the expiration of that period, either terminate the proceedings by notification addressed to the other party or request of the Secretary-General of the United Nations to make the appointments in accordance with subparagraph e).
- d) Within 30 days after all four conciliators have been appointed, they shall appoint a fifth conciliator chosen from the list referred to in article 15, who shall be chairman. If the appointment is not made within that period, either party may, within one week of the expiration of that period, request the Secretary-General of the United Nations to make the appointment in accordance with subparagraph e).
- e) Within 30 days of the receipt of a request under subparagraph c) or d), the Secretary-General of the United Nations shall make the necessary appointments from the list referred to in article 15 in consultation with the parties to the dispute.
- f) Any vacancy shall be filled in the manner prescribed for the initial appointment.
- g) Two or more parties which determine by agreement that they are in the same interest shall appoint two conciliators jointly. Where two or more parties have separate interests or there is a disagreement as to whether they are of the same interest, they shall appoint conciliators separately.
- h) In disputes involving more than two parties having separate interests, or where there is disagreement as to whether they are of the same interest, the parties shall apply subparagraph a) to f) insofar as possible.

Art. 17 Procedure

The conciliation commission shall, unless the parties otherwise agree, determine its own procedure. The commission may, with the consent of the parties to the disputes, invite any HCP to submit to it its views orally or in writing. Decisions of the commission regarding procedural matters, the report and recommendations shall be made by a majority vote of its members.

Art. 18 Amicable settlement

The commission may draw the attention of the parties to any measures which might facilitate an amicable settlement of the dispute.

Art. 19 Functions of the commission

The commission shall hear the parties, examine their claims and objections, and make proposals to the parties with a view to reaching an amicable settlement.

Art. 20 Report

1. The commission shall report within 12 months of its constitution. Its report shall record any agreement reached and, failing agreement, its conclusions on all questions of fact or law relevant to the matter in dispute and such recommendations as the commission may deem appropriate for an amicable settlement. The report shall be deposited with the Secretary-General of the United Nations and shall immediately be transmitted by him to the parties to the dispute.
2. The report of the commission, including its conclusions or recommendations, shall not be binding upon the parties.

Art. 21 Termination

The conciliation proceedings are terminated when a settlement has been reached, when the parties have accepted or one party has rejected the recommendations of the report by written notification addressed to the Secretary-General of the United Nations, or when a period of three months has expired from the date of transmission of the report to the parties.

Art. 22 Fees and expenses

The fees and expenses of the commission shall be borne by the parties to the dispute.

Art. 23 Right of parties to modify procedure

The parties to the dispute may by agreement applicable solely to that dispute modify any provision of this section.

Section V: Arbitration Procedure

Art. 24 Institution of proceedings

1. Any party to a dispute may submit the dispute to the arbitral procedure provided for in this section by written notification addressed to the other party or parties to the dispute. The notification shall be accompanied by a statement of the claim and the grounds on which it is based.

2. The arbitral procedure provided for in this section is not applicable, if the parties to the dispute, by arbitration agreement, have submitted the dispute to another arbitration procedure, provided that other arbitration procedure entails binding decisions.

Art. 25 List of arbitrators

1. A list of arbitrators shall be drawn up and maintained by the Secretary-General of the United Nations. Every HCP shall be entitled to nominate four arbitrators, each of whom shall be a person experienced in space law or space affairs and enjoying the highest reputation for fairness, competence and integrity. The names of the persons so nominated shall constitute the list.
2. If at any time the arbitrators nominated by a HCP in the list so constituted shall be fewer than four, that HCP shall be entitled to make further nominations as necessary.
3. The name of an arbitrator shall remain on the list until withdrawn by the HCP which made the nomination, provided that such arbitrator shall continue to serve on any arbitral tribunal to which that arbitrator has been appointed until the completion of the proceedings before that arbitral tribunal.

Art. 26 Constitution of arbitral tribunal

For the purpose of proceedings under this section, the arbitral tribunal shall, unless the parties otherwise agree, be constituted as follows:

- a) Subject to subparagraph g), the arbitral tribunal shall consist of five members.
- b) The party instituting the proceedings shall appoint one member to be chosen preferably from the list referred to in article 22, who may be its national. The appointment shall be included in the notification referred to in article 21.
- c) The other party to the dispute shall, within 30 days or receipt of the notification referred to in article 24, appoint one member to be chosen preferably from the list, who may be its national. If the appointment is not made within that period, the party instituting the proceedings may, within two weeks of the expiration of that period, request that the appointment be made in accordance with subparagraph e).
- d) The other three members shall be appointed by agreement between the parties. They shall be chosen preferably from the list and shall be nationals of third States unless the parties otherwise agree. The parties to the dispute shall appoint the President of the arbitral tribunal from among those three members. If, within 60 days of receipt of the notification referred to in article 24, the parties

are unable to reach agreement on the appointment of one or more of the members of the tribunal to be appointed by agreement, or on the appointment of the President, the remaining appointment or appointments shall be made in accordance with subparagraph e), at the request of a party to the dispute. Such request shall be made within two weeks of the expiration of the aforementioned 60-day period.

- e) Unless the parties agree that any appointment under subparagraph c) and d) be made by a person or a third State chosen by the parties, the President of the International Tribunal for Space Law, and before the creation of this Tribunal, the President of the International Court of Justice, shall make the necessary appointments. If the President is unable to act under this subparagraph or is a national of one of the parties to the dispute, the appointment shall be made by the next senior member of the International Tribunal for Space Law, or the International Court of Justice respectively, who is available and is not a national of one of the parties. The appointments referred to in this subparagraph shall be made from the list referred to in article 25 within a period of 30 days of the receipt of the request and in consultation with the parties. The members so appointed shall be of different nationalities and may not be in the service of, ordinarily resident in the territory of, or nationals of, any of the parties to the dispute.
- f) Any vacancy shall be filled in the manner prescribed for the initial appointment.
- g) Parties in the same interest shall appoint one member of the tribunal jointly by agreement. Where there are several parties having separate interests or where there is disagreement as to whether they are of the same interest, each of them shall appoint one member of the tribunal. The number of members of the tribunal appointed separately by the parties shall always be smaller by one than the number of members of the tribunal to be appointed jointly by the parties.
- h) In disputes involving more than two parties, the provisions of subparagraph a) to f) shall apply to the maximum extent possible.

Art. 27 Functions of arbitral tribunal

An arbitral tribunal constituted under article 23 shall function in accordance with this section and the other provisions of this Convention.

Art. 28 Procedure

Unless the parties to the dispute otherwise agree, that arbitral tribunal shall determine its own procedure, assuring to each party a full opportunity to be heard and to present its case.

Art. 29 Duties of parties to a dispute

The parties to the dispute shall facilitate the work of the arbitral tribunal and, in particular, in accordance with their law and using all means at their disposal, shall:

- a) provide it with all relevant documents, facilities and information; and
- b) enable it when necessary to call witnesses or experts and receive their evidence and to visit the localities to which the case relates.

Art. 30 Expenses

Unless the arbitral tribunal decides otherwise because of the particular circumstances of the case, the expenses of the tribunal, including the remuneration of its members, shall be borne by the parties to the dispute in equal shares.

Art. 31 Required majority for decisions

Decisions of the arbitral tribunal shall be taken by a majority vote of its members. The absence or abstention of less than half of the members shall not constitute a bar to the tribunal reaching a decision. In the event of an equality of votes, the President shall have a casting vote.

Art. 32 Default of appearance

If one of the parties to the dispute does not appear before the arbitral tribunal or fails to defend its case, the other party may request the tribunal to continue its proceedings and to make its award. Absence of a party or failure of a party to defend its case shall not constitute a bar to the proceedings. Before making its award, the arbitral tribunal must satisfy itself not only that it has jurisdiction over the dispute, but also that the claim is well founded in fact and law.

Art. 33 Award

The award of the arbitral tribunal shall be confined to the subject-matter of the dispute and state the reasons on which it is based. It shall contain the names of the members who have participated and the date of the award. Any member of the tribunal may attach a separate or dissenting opinion to the award.

Art. 34 Finality of award

The award shall be final and without appeal, unless the parties to the dispute have agreed in advance to an appellate procedure. It shall be complied with by the parties to the dispute.

Art. 35 Interpretation or implementation of award

1. Any controversy which may arise between the parties to the dispute as regards the interpretation or manner of implementation of the award may be submitted by either party for decision to the arbitral tribunal which made the award. For this purpose, any vacancy in the tribunal shall be filled in the manner provided for in the original appointments of the members of the tribunal.
2. Any such controversy may be submitted to another court or tribunal under article 6 by agreement of all the parties to the dispute.

Art. 36 Application to entities other than State Parties

The provisions of this section shall apply mutatis mutandis to any dispute involving entities other than State Parties.

Section VI: International Tribunal for Space Law

Art. 37 General provisions

1. Anytime after the deposit of the 30th instrument of ratification accession to this Convention, if at least 21 of the HCPs so agree, an International Tribunal for Space Law shall be created in conformity with this section VI.
2. The International Tribunal for Space Law is constituted and shall function in accordance with the provisions of this Convention and this section.
3. The seat of the Tribunal shall be determined at the time of its creation.
4. The Tribunal may sit and exercise its functions elsewhere whenever it considers this desirable.

Subsection 1. Organization of the Tribunal

Art. 38 Composition

1. The Tribunal shall be composed of a body of 21 independent members, elected from among persons enjoying the highest reputation for fairness and integrity and of recognized competence in the field of space law.
2. In the Tribunal as a whole the representation of the principal legal systems of the world and equitable geographical distribution shall be assured.

Art. 39 Membership

1. No two members of the Tribunal may be nationals of the same State. A person who for the purposes of membership in the Tribunal could be regarded as a national of more than one State shall be deemed to be a national of the one in which he ordinarily exercises civil and political rights.

2. There shall be no fewer than three members from each geographical group as established by the General Assembly of the United Nations.

Art. 40 Nominations and elections

1. Each HCP may nominate not more than two persons having the qualification prescribed in article 38. The members of the Tribunal shall be elected from the list of persons thus nominated.
2. At least three months before the date of the election, the Secretary-General of the United Nations in the case of the first election and the Registrar of the Tribunal in the case of subsequent elections shall address a written invitation to the HCPs to submit their nominations for members of the Tribunal within two months. He shall prepare a list in alphabetical order of all the persons thus nominated, with an indication of the HCPs which have nominated them, and shall submit it to the HCPs before the seventh day of the last month before the date of each election.
3. The first election shall be held within six months of the date of the agreement on the creation of the Tribunal according to Art. 37, paragraph 1.
4. The members of the Tribunal shall be elected by secret ballot. Elections shall be held at a meeting of the HCPs convened by the Secretary-General of the United Nations in the case of the first election and by a procedure agreed to by the HCPs in the case of subsequent elections. Two thirds of the HCPs shall constitute a quorum at that meeting. The persons elected to the Tribunal shall be those nominees who obtain the largest number of votes and a two-third majority of the HCPs present and voting, provided that such majority includes a majority of the HCPs.

Art. 41 Term of office

1. The members of the Tribunal shall be elected for nine years and may be re-elected; provided, however, that of the members elected at the first election, the terms of seven members shall expire at the end of three years and the terms of seven more members shall expire at the end of six years.
2. The members of the Tribunal whose terms are to expire at the end of the above-mentioned initial periods of three and six years shall be chosen by lot to be drawn by the Secretary-General of the United Nations immediately after the first election.
3. The members of the Tribunal shall continue to discharge their duties until their places have been filled. Though replaced, they shall finish any proceedings which they may have begun before the date of their replacement.

4. In the case of the resignation of a member of the Tribunal, the letter of resignation shall be addressed to the President of the Tribunal. The place becomes vacant on the receipt of that letter.

Art. 42 Vacancies

1. Vacancies shall be filled by the same method as that laid down for the first election, subject to the following provisions: the Registrar shall, within one month of the occurrence of the vacancy, proceed to issue the invitations provided for in article 40, and the date of the election shall be fixed by the President of the Tribunal after consultation with the HCPs.
2. A member of the Tribunal elected to replace a member whose term of office has not expired shall hold office for the remainder of his predecessor's term.

Art. 43 Incompatible activities

1. No member of the Tribunal may exercise any political or administrative function, or associate actively with or be finally interested in any of the operations of any enterprise concerned with space activities.
2. No member of the Tribunal may act as agent, counsel or advocate in any case.
3. Any doubt on these points shall be resolved by decision of the majority of the other members of the Tribunal present.

Art. 44 Conditions relating to participation of members in a particular case

1. No member of the Tribunal may participate in the decision of any case in which he has previously taken part as agent, counsel or advocate for one of the parties, or as a member of a national or international court of tribunal, or in any other capacity.
2. If, for some special reason, a member of the Tribunal considers that he should not take part in the decision of a particular case, he shall so inform the President of the Tribunal.
3. If the President considers that for some special reason one of the members of the Tribunal should not sit in a particular case, he shall give him notice accordingly.
4. Any doubt on these points shall be resolved by decision of the majority of the other members of the Tribunal present.

Art. 45 Consequences of ceasing to fulfil required conditions

If, in the unanimous opinion of the other members of the Tribunal, a member has ceased to fulfill the requested conditions, the President of the Tribunal shall declare the seat vacant.

Art. 46 Privileges and immunities

The members of the Tribunal, when engaged on the business of the Tribunal, shall enjoy diplomatic privileges and immunities.

Art. 47 Solemn declaration by members

Every member of the Tribunal shall, before taking up his duties, make a solemn declaration in open session that he will exercise his powers impartially and conscientiously.

Art. 48 President, Vice-President and Registrar

1. The Tribunal shall elect its President and Vice-President for three years; they may be re-elected.
2. The Tribunal shall appoint its Registrar and may provide for the appointment of such other officers as may be necessary.
3. The President and the Registrar shall reside at the seat of the Tribunal.

Art. 49 Quorum

1. All available members of the Tribunal shall sit; a quorum of 11 elected members shall be required to constitute the Tribunal.
2. Subject to article 52, the Tribunal shall determine which members are available to constitute the Tribunal for the consideration of a particular dispute, having regard to the effective functioning of the chambers as provided for in article 50.
3. All disputes and applications submitted to the Tribunal shall be heard and determined by the Tribunal, unless the parties request that it shall be dealt with in accordance with article 50.

Art. 50 Special chambers

1. The Tribunal may form such chambers, composed of three or more of its elected members, as it considers necessary to dealing with particular categories of disputes.
2. The Tribunal shall form a chamber for dealing with a particular dispute submitted to it if the parties so request. The composition of such a chamber shall be determined by the Tribunal with the approval of the parties.

3. With a view to the speedy dispatch of business, the Tribunal shall form annually a chamber composed of five of its elected members which may hear and determine disputes by summary procedure. Two alternative members shall be selected for the purpose of replacing members who are unable to participate in a particular proceeding.
4. Disputes shall be heard and determined by the chambers provided for in this article if the parties so request.
5. A judgement given by any of the chambers provided for in this article shall be considered as rendered by the Tribunal.

Art. 51 Rules of the Tribunal

The Tribunal shall frame rules for carrying out its functions. In particular it shall lay down rules of procedure.

Art. 52 Nationality of members

1. Members of the Tribunal of the nationality of any of the parties to a dispute shall retain their right to participate as members of the Tribunal.
2. If the Tribunal, when hearing a dispute, includes upon the bench a member of the nationality of one of the parties, any other party may choose a person to participate as a member of the Tribunal.
3. If the Tribunal, when hearing a dispute, does not include upon the bench a member of the nationality of the parties, each of those parties may choose a person to participate as a member of the Tribunal.
4. This article applies to the chambers referred to in article 50. In such cases, the President, in consultation with the parties, shall request specified members of the Tribunal forming the chamber, as many as necessary, to give place to the members of the Tribunal of the nationality of the parties concerned, and, failing such, or if they are unable to be present, to the members specially chosen by the parties.
5. Should there be several parties in the same interest, they shall, for the purpose of the preceding provisions, be considered as one party only. Any doubt on this point shall be settled by the decision of the Tribunal.
6. Members chosen in accordance with paragraph 2, 3 and 4 shall fulfill the conditions required by articles 38, 44 and 47. They shall participate in the decision on terms of complete equality with their colleagues.

Art. 53 Remuneration of members

1. Each elected member of the Tribunal shall receive an annual allowance and, for each day on which he exercises his functions, a special allowance, provided that in any year the total sum payable to any member as special allowance shall not exceed the amount of the annual allowance.
2. The President shall receive a special annual allowance.
3. The Vice-President shall receive a special allowance for each day on which he acts as President.
4. The members chosen under article 52, other than elected members of the Tribunal, shall receive compensation for each day on which they exercise their functions.
5. The salaries, allowances and compensations shall be determined from time to time at meetings of the HCPs, taking into account the work load of the Tribunal. They may not be decreased during the term of office.
6. The salary of the Registrar shall be determined at meetings of the HCPs, on the proposal of the Tribunal.
7. Regulations adopted at meetings of the HCPs shall determine the conditions under which retirement pensions may be given to members of the Tribunal and to the Registrar, and the conditions under which members of the Tribunal and Registrar shall have their traveling expenses refunded.
8. The salaries, allowances, and compensation shall be free of all taxation.

Art. 54 Expenses of the Tribunal

1. The expenses of the Tribunal shall be borne by the HCPs on such terms and in such a manner as shall be decided at meetings of the HCPs.
2. When an entity other than a HCP is a party to a case submitted to it, the Tribunal shall fix the amount which that party is to contribute toward the expenses of the Tribunal.

Subsection 2. CompetenceArt. 55 Jurisdiction

The jurisdiction of the Tribunal comprises all disputes and all applications submitted to it in accordance with this Convention and all matters specifically provided for in any other agreement which confers jurisdiction on the Tribunal.

Art. 56 Reference of disputes subject to other agreements

If all the parties to a treaty or convention already in force and concerning the subject-matter covered by this Convention so agree, any disputes concerning the interpretation or application of such treaty or convention may, in accordance with such agreement, be submitted to the Tribunal.

Art. 57 Applicable law

The Tribunal shall decide all disputes and applications in accordance with article 11.

Subsection 3. Procedure

Art. 58 Institution of proceedings

1. Disputes are submitted to the Tribunal, as the case may be, either by notification of a special agreement or by written application, addressed to the Registrar. In either case, the subject of the dispute and the parties shall be indicated.
2. The Registrar shall forthwith notify the special agreement or the application to all concerned.
3. The Registrar shall also notify all NCPs.

Art. 59 Provisional measures

1. In accordance with article 9, the Tribunal and its Chambers shall have the power to prescribe provisional measures.
2. If the Tribunal is not in session or a sufficient number of members is not available to constitute a quorum, the provisional measures shall be prescribed by the chamber of summary procedure formed under Art. 50, paragraph 3. Notwithstanding Art. 50, paragraph 4, such provisional measures may be adopted at the request of any party to the dispute. They shall be subject to review and revision by the Tribunal.

Art. 60 Hearing

1. The hearing shall be under the control of the President or, if he is unable to preside, of the Vice-President. If neither is able to preside, the senior judge present of the Tribunal shall preside.
2. The hearing shall be public, unless the Tribunal decides otherwise or unless the parties demand that the public not be admitted.

Art. 61 Conduct of case

The Tribunal shall make orders for the conduct of the case, decide the form and time in which each party must conclude its arguments, and make all arrangements connected with the taking of evidence.

Art. 62 Default

When one of the parties does not appear before the Tribunal or fails to defend its case, the other party may request the Tribunal to continue the proceedings and make its decision. Absence of a party or failure of a party to defend its case shall not constitute a bar to the proceedings. Before making its decision, the Tribunal must satisfy itself not only that it has jurisdiction over the dispute, but also that the claim is well founded in fact and law.

Art. 63 Majority for decision

1. All questions shall be decided by a majority of the members of the Tribunal who are present.
2. In the event of an equality of votes, the President or the member of the Tribunal who acts in his place shall have a casting vote.

Art. 64 Judgement

1. The judgement shall state the reasons on which it is based.
2. It shall contain the names of the members of the Tribunal who have taken part in the decision.
3. If the judgement does not represent in whole or in part the unanimous opinion of the members of the Tribunal, any member shall be entitled to deliver a separate opinion.
4. The judgement shall be signed by the President and by the Registrar. It shall be read in open courts, due notice having been given to the parties to the dispute.

Art. 65 Request to intervene

1. Should a HCP consider that it has an interest of a legal nature which may be affected by the decision in any dispute, it may submit a request to the Tribunal to be permitted to intervene.
2. It shall be for the Tribunal to decide upon this request.
3. If a request to intervene is granted, the decision of the Tribunal in respect of the dispute shall be binding upon the intervening HCP insofar as it relates to matters in respect of which that HCP intervened.

Art. 66 Right to intervene in cases of interpretation or application

1. Whenever the interpretation or application of this Convention is in question, the Registrar shall notify all HCPs forthwith.
2. Whenever pursuant to article 55 or 56 the interpretation or application of an international agreement is in question, the Registrar shall notify all the parties to the agreement.
3. Every party referred to in paragraph 1 and 2 has the right to intervene in the proceedings; if it uses this right, the interpretation given by the judgement will be equally binding upon it.

Art. 67 Finality and binding force of decisions

1. The decision of the Tribunal is final and shall be complied with by all the parties to the dispute.
2. The decision shall have no binding force except between the parties in respect of that particular dispute.
3. In the event of dispute as to the meaning or scope of the decision, the Tribunal shall construe it upon the request of any party.

Art. 68 Costs

Unless otherwise decided by the Tribunal, each party shall bear its own costs.

Section VII. Final Provisions

Art. 69 Signature

1. This Convention shall be open for signature by:
 - a) all States;
 - b) Namibia, represented by the United Nations Council for Namibia;
 - c) all self-governing associated States which have chosen that status in an act of self-determination supervised and approved by the United Nations in accordance with General Assembly resolution 1514 (XV) and which have competence over the matters governed by this Convention, including the competence to enter into treaties in respect of those matters;
 - d) all self-governing associated States which, in accordance with their respective instruments of association, have competence over the matters governed by this Convention, including the competence to enter into treaties in respect of those matters;

- e) all territories which enjoy full internal self-government, recognized as such by the United Nations, but have not attained full independence in accordance with General Assembly resolution 1514 (XV) and which have competence over the matters governed by this Convention, including the competence to enter into treaties in respect of those matters;
- f) international organizations

- 2. This Convention shall remain open for signature at the United Nations Headquarters in New York.

Art. 70 Ratification and formal confirmation

This Convention is subject to ratification by States and other entities referred to in Art. 69, paragraph 1 b), c), d), and e), and to formal confirmation by the entities referred to in Art. 69, paragraph 1 f). The instruments of ratification and of formal confirmation shall be deposited with the Secretary-General of the United Nations.

Art. 71 Accession

This Convention shall remain open for accession by the States and the other entities referred to in article 69. The instruments of accession shall be deposited with the Secretary-General of the United Nations.

Art. 72 Entry into force

- 1. This convention shall enter into force 12 months after the date of deposit of the 30th instrument of ratification or accession.
- 2. For each State ratifying or acceding to this Convention after the deposit of the 30th instrument of ratification or accession, the Convention shall enter into force on the thirtieth day following the deposit of its instrument of ratification or accession, subject to paragraph 1.

Art. 73 Relation to other conventions and international agreements

- 1. This Convention shall not alter the rights and obligations of HCPs which arise from other agreements compatible with this Convention and which do not affect the enjoyment by other HCPs of their rights or the performance of their obligations under this Convention.
- 2. Two or more HCPs may conclude agreements modifying or suspending the operation of provisions of this Convention, applicable solely to the relations between them, provided that such agreements do not relate to a provision derogation which is incompatible with the effective execution of the object and purposes of this Convention, and provided further that such agreements shall not affect the application of the basic principles embodied herein, and

that the provisions of such agreements do not affect the enjoyment by other HCPs of their rights or the performance of their obligations under this Convention.

3. HCPs intending to conclude an agreement referred to in paragraph 2 shall notify the other HCPs through the depositary of this Convention of their intention to conclude the agreement and of the modification or suspension for which it provides.
4. This article does not affect international agreements expressly permitted or preserved by other articles of this Convention.

Art. 74 Denunciation

1. A HCP may, by written notification addressed to the Secretary-General of the United Nations, denounce this Convention and may indicate its reasons. Failure to indicate reasons shall not affect the validity of the denunciation. The denunciation shall take effect one year after the date of receipt of the notification, unless the notification specifies a later date.
2. A State shall not be discharged by reason of the denunciation from the financial and contractual obligations which accrued while it was a Party to this Convention, nor shall the denunciation affect any right, obligation or legal situation of that State created through the execution of this Convention prior to its termination for that State.
3. The denunciation shall not in any way affect the duty of any HCP to fulfill any obligation embodied in this Convention to which it would be subject under international law independently of this Convention.

Art. 75 Depositary

1. The Secretary-General of the United Nations shall be the depositary of this Convention and amendments thereto.
2. In addition to his functions as depositary, the Secretary-General shall:
 - a) report to all HCPs and competent international organizations on issues of a general nature that have arisen with respect to this Convention;
 - b) notify HCPs of agreements in accordance with Art. 73, paragraph 4;
 - c) convene necessary meetings of HCPs in accordance with this Convention.

Art. 76 Authentic texts

The original of this Convention, of which the Arabic, Chinese, English, French, Russian, and Spanish texts are equally authentic, shall be deposited with the Secretary-General of the United Nations.

IN WITNESS WHEREOF, the undersigned Plenipotentiaries, being duly authorized thereto, have signed this Convention.

ANNEX: Dispute Settlement Clause

The following clause is recommended as a model for inclusion in bilateral or multilateral treaties on Space Law or Space Activities:

"Any dispute arising in connection with this Treaty shall be settled in accordance with the Convention on the Settlement of Space Law Disputes which hereby is made an integral part of this Treaty. Ratification of this Treaty is, therefore, also to be considered as a ratification of that Convention. The Instrument of Ratification will, therefore, be also deposited with the Secretary-General of the United Nations."

Related Work in Study Groups and Interim Working Parties

Studies of the use of geostationary satellites by the fixed-satellite service had been in progress for many years in CCIR Study Group 4. With the prospect of a relevant conference, efforts were intensified. As work proceeded, other interested Study Groups paid more attention to this area. Detailed work was carried out by existing Interim Working Parties (IWPs) or by new ones formed temporarily for the purpose. Following approval by Study Groups, material was embodied in a report to the XVth Plenary Assembly of the CCIR in 1982. Nearly all Study Groups have presented reports to the CPM since 1982, based on the latest available information. With these contributions and those from administrations and other participating organizations, the CPM had a wealth of material from which to draft a report containing the technical information available.

Timing of the CPM introduced a problem. Interim Study Group meetings in 1983 revised texts of the CCIR XVth Plenary Assembly and added information which could be useful to the WARC, but which did not have the approval of a CCIR Plenary. The policy adopted is to make reference to the texts of the XVth Plenary, since these are widely available, when they contain information essential for the Conference, but to refer to texts of the later interim meetings that include significant changes.

Although the new material in the interim texts of the Study Groups will not be endorsed by a CCIR Plenary Assembly before WARC-ORB-85, it is to be expected that much of this material, and reports on the continuing work of some IWPs, will be so endorsed by the XVIth CCIR Plenary Assembly in 1986 and will therefore be available for WARC-ORB-88. Attention is drawn in the CPM Report to topics on which further information will be needed at that time, and administrations are urged to submit contributions on these topics to the final meetings of CCIR Study Groups. It may be noted, however, that WARC-ORB-88 is likely to be in a time-relationship with the next cycle of CCIR meetings similar to the first session's relationship with the present cycle. Consequently, some interim studies that will be relevant and useful to WARC-ORB-88 will not have been formally approved by a CCIR Plenary.

Meeting Attendance and Participation

The CPM was attended by 340 delegates from 61 administrations (see Table 1) and 33 other organizations (see Table 2). The work proceeded in four Working Groups, chaired by Messrs. D. J. Withers of the United Kingdom, T. Murstani of Japan, A. Bastikar of Canada and E. Kamdem-Kamga of Cameroon, plus an Editorial group chaired by Mr. M. Thue of France. Each Working Group was responsible for specific chapters and annexes of the report, but the parts could not be entirely dissociated and continual interaction was needed to use the available expertise to best advantage and to avoid unnecessary duplication of material. The detailed work was carried out by Sub-Working Groups and drafting parties.

An analysis was done by one U.S. delegate of the frequency of national delegation participation in the discussions at various working levels during the Conference. In a sampling that included ten plenary sessions, nine working group sessions, and eight sub-working group and drafting group sessions, it appeared that 96% of the speaking and discussion (measured by frequency, not length of speeches) was provided by 19 national delegations and INTELSAT. Table 3 shows the tabulated count and percentage share of the 20 most frequent speaking delegations. Many of the top ten on the list in Table 3 provided subworking group or working group chairmen and frequency of speeches was increased by their reporting and explaining work done in other meetings. The delegations speaking most often to present, explain, interpret or correct material under consideration are those in a position to significantly influence the content of the conference documentation. It is interesting to note that so much of the discussion is generated by so few of the delegations.

The Work of the CPM

The CPM produced a Report in 12 chapters with annexes supplying additional information in support of the chapters. Chapter 1 is an Introduction. Chapters 2 to 8 inclusive deal with the subject matter of Resolution 3 of the WARC-79. Chapter 2 provides general technical information on terminology and propagation. Chapters 3 and 4 provide basic technical and operational information and factors necessary for the WARC-ORB-85 to decide which services and bands should be planned, and what other approaches might be taken to meet the objectives of Resolution 3. Chapters 5 and 6 are concerned with the technical and operational information relating to principles, parameters, criteria and guidelines for regulatory procedures required for services which are to be planned. Chapter 7 provides information on regulatory procedures for those services which are not to be planned. Chapter 8 considers the available sharing criteria applicable to shared frequency bands to be considered by WARC-ORB-85 with the exception of feeder links for the broadcasting-satellite service, which are treated in Chapters 10 and 12.

Chapters 9 and 10 are concerned with technical and operational factors and with sharing criteria relating to the planning of feeder links for the broadcasting-satellite service in Regions 1 and 3.

Chapter 11 provides information relating to the objectives of Resolution 505 of WARC-79 on sound broadcasting in the broadcasting-satellite service.

Chapter 12 provides technical information which is related to the task of WARC-ORB-85, of formally adopting the decisions of RARC-SAT-83.

The Report also contains eight annexes which elaborate on the material contained in the chapters. Annexes 1, 2 and 3 are relevant to Chapters 2 and 3. Annex 4 provides background material for Chapters 4, 5, 6 and 7. Annex 5 relates similarly to Chapters 8 and 10. Annexes 6 and 7 provide material for Chapters 9 and 11 respectively. Finally Annex 8, in support of Chapter 12, provides a detailed procedure for the coordination between earth stations which use frequencies in the bidirectional sense.

Resolution 3 of WARC-79 invited the CCIR to carry out preparatory studies and provide the first session of the Conference with technical information concerning principles, criteria and technical parameters including those required for planning space services.

Having completed this task, the CPM considered it necessary to submit for information a description of alternative planning methods and other possible approaches to the problem of ensuring that the principle of guaranteeing all countries equitable access to the geostationary orbit is upheld in practice.

In the text of the CPM report it was agreed by the meeting to refer to these methods and approaches as "planning methods."

The CPM recognized that the CCIR was not empowered to define whether a method/approach is a planning method or not. This question can only be determined by the WARC ORB-85.

The Alternative Planning Approaches

During the CPM, the point of departure for consideration of alternative planning methods was the Report of IWP 4/1 contained in conference document no. 30. In that report, the IWP had presented five alternative approaches. In the national submissions of CPM documentation, two additional

approaches were elaborated, one by the USSR and one by China. In the CPM report, the first five alternatives presented are the IWP developed alternatives, the sixth method is the USSR proposal and the seventh is the Chinese proposal. Thus, the CPM report places before WARC-QRB-85 seven alternative methods for planning as described here:

METHOD 1: WORLD OR REGIONAL DETAILED LONG-TERM (10-20 Years)
A PRIORI ALLOTMENT PLAN

This method involves a long-term world or regional a priori frequency/orbit allotment plan with a procedure for the revision of requirements that is similar to Article 4 of Appendix 30 (the 1977 BSAT plan). Under this procedure new satellite service requirements may be accommodated only if they do not cause unacceptable interference to those within the plan.

METHOD 2: WORLD OR REGIONAL DETAILED SHORT-TERM (3-5 Years)
A PRIORI ALLOTMENT PLAN

Under this method, conferences would be convened periodically (3-5 years) to revise the technical parameters and regulatory procedures for the plan and to accommodate new requirements. At each conference all of the existing networks and all of the new or modified requirements would be accommodated. During the interval between conferences, new requirements would be accommodated to the extent that they did not cause unacceptable interference to networks in the plan. The short time between conferences would result in few unforeseen needs arising, given the planning lead-times that are needed to establish new spacecraft.

METHOD 3: WORLD, REGIONAL OR SUB-REGIONAL DETAILED A PRIORI ALLOTMENT
PLAN WITH SPECTRUM/ORBIT SEGMENTATION

In this approach, conferences would be convened from time to time as required (at intervals of ten years or less) to revise the overall technical parameters and regulatory procedures. At these conferences, all existing networks and new requirements would be accommodated in the plan. Between conferences, there would be guaranteed access for new requirements. Access would be guaranteed by such mechanisms as reserving spectrum/orbit capacity for future requirements unforeseen at the time of the conference, or by the subsequent convening of a special meeting. This approach would necessitate spectrum and/or orbit segmentation of some kind, as agreed by the conference.

METHOD 4: GUARANTEED ACCESS BY MEANS OF MULTILATERAL COORDINATION

Under this approach, a conference would not establish a formal plan, but would establish procedures for guaranteed frequency/orbit access for new requirements. Normally frequency/orbit access would be coordinated in accordance with the procedures contained in Method 5. When a new requirement could not be accommodated readily a special meeting would be called of those administrations which might be affected and a means would be found to accommodate the new requirement.

METHOD 5: PROCEDURES AND TECHNICAL FACTORS PERIODICALLY REVISED

This approach to planning is a phased revision of the existing regulatory procedures, regulations and CCIR Recommendations, as well as the development of new procedures, regulations and Recommendations (simplified to the extent possible) leading to a more efficient use of the geostationary satellite orbit/spectrum resource.

A French proposal to the CPM introduced a mechanism that could be applied in any of several methods. The mechanism is called M3 Harmonization, or Multilateral Three Factor Harmonization. This approach was introduced by France as an alternative to a priori planning.

The French administration introduced and explained the concept of their approach in this way:

"For this harmonization, principles for universal compliance must be established. The concept of harmonization as such is not linked with any particular "planning method." The considerations below are to be viewed essentially in the context of multicoordination, but it will be seen that the concept of harmonization is not reduced to a mere method of multicoordination, being based on a different principle.

"The originality of this concept resides in the fact that it is in no way based on a forcible homogenization of networks... The aim is not to eliminate the differences between networks which serve as the very basis of the recognized characteristics of satellite networks. On the contrary, the objective is to reduce the inequalities between networks, which may be of three kinds:

- inhomogeneity (incompatible characteristics);
- rigidity (fixed orbital positions);
- unequal treatment (resulting in very different interference levels).

"This harmonization can therefore be defined as a set of measures intended to make satellite networks more compatible with each other and more equal without eliminating their individual features. These measures are as follows:

- segmentation of the spectrum;
- repositioning of satellites;
- equitable interference.

"Since the harmonization is defined in the context of multilateral coordination and involves three factors (spectrum, orbit and interference), it is designated as "M3 harmonization"...

"The application of the harmonization described in this document can be envisaged only for networks published after a date to be determined."

This particular proposed alternative is presented in some detail in this outline, because it may be the best example produced by the CPM of a kind of creative approach, a kind of flexible adjustment to existing procedures, that does not go to the extreme of a priori planning, but does move toward some combination of adjustments and accommodations that could produce a "guarantee in practice" of access to the orbital and spectrum resources. Thinking of this kind may be a viable source of alternatives to a priori planning.

METHOD 6: AN A PRIORI PLAN FOR A PERIOD OF ABOUT TEN YEARS IN GENERALIZED PARAMETERS

This method combines the concept of an a priori plan with the possibility of flexible system design, taking into account the development of technology and possible future changes in the requirements of administrations. Conferences would be convened periodically (about every ten years) to revise the technical parameters and regulatory procedures for the plan and to accommodate new requirements. At each conference, all of the existing networks and all of the new or modified requirements would be accommodated.

The technical parameters of the plan would characterize the sensitivity of a system to interference as well as the level of interference caused to other systems in the plan, but without specification of the types of signals used, modulation or signal processing or the detailed characteristics of the earth and space stations of the planned systems. The plan would specify for each satellite network: (1) satellite position; (2) beam coverage; (3) frequency/polarization allotment; and (4) the following generalized parameters:

A (θ) - maximum permissible value of the power radiated by the earth station in a given frequency band, as a function of angle θ calculated from the direction of maximum radiation;

B (θ) - permissible power flux-density(PFD) that may be produced at the location of the wanted satellite by interfering signals from other satellite systems arriving at angle θ to the axis of the receiving antenna of the wanted satellite. This parameter characterizes the sensitivity of the satellite receiver to interference;

C (θ) - maximum permissible PFD produced at the Earth's surface by the satellite emission, as a function of angle θ calculated from the direction of maximum radiation;

D (θ) - permissible PFD that may be produced at the Earth's surface by interfering signals from other satellite systems arriving at angle θ to the direction of the wanted signal. This parameter characterizes the sensitivity of the Earth receiving equipment to interference.

For each of the generalized parameters (A, B, C, D) minimum and maximum values should be specified in the plan to provide certain flexibility for the system designer. On the other hand the choice of the range of parameters must take into account the fact that the more permissive the range of generalized parameters serving as a basis for planning, the smaller will be the total capacity of the GSO.

METHOD 7: WORLD WIDE PLAN COVERING ONE SATELLITE GENERATION LIFETIME (ABOUT TEN YEARS)

This method uses the requirements submitted by administrations as a basis for optimizing satellite orbital positions, beam shapes, frequency assignments, etc., on a world-wide scale with a view to the establishment of a world-wide plan for a satellite generation lifetime (about ten years). Operational and technical parameters are defined in a computer facility that evaluates all requirements and determines the appropriate allocations and assignments of resources to accommodate all requirements.

The planning method adopts a step-by-step approach in cases where requirements in a certain arc of the orbit cannot be fully accommodated. Each step is carried out through multilateral coordination among the administrations concerned using computerized analysis and resource allocation.

Requirements which fail to meet stipulated interference criteria may also be recorded in the plan if they are considered to be accepted by the submitting administrations and if they do not cause unacceptable interference to the service of any other administration.

Concluding Observations

At the completion of work at the CPM, it was the generally shared view of many delegates that a useful and constructive documentary base for the WARC-ORB-85 had been assembled by the CPM. The CPM report will be important to the work at the '85 Conference. In addition, a forthcoming report from the IFRB on the situation prevailing with regard to use of the GEO, and describing the experience of administrations to date on gaining access to the orbit, will be an important basic text. Finally, from all the discussion and learning that has taken place in recent years, it appears very likely that many administrations will make additional submissions to WARC-ORB-85 with national proposals on how to deal with the major agenda items.

Some important groundwork has now been completed. A great deal of work remains ahead.

TABLE 1

Administrations Participating in the CPM (61)
(Alphabetical listing originally in the French language)

Algeria	Ethiopia	New Zealand
Federal Rep. Germany	Finland	Oman
Saudi Arabia	France	Pakistan
Argentina	Greece	Papua-New Guinea
Australia	Guatemala	Netherlands
Austria	Guyana	Peru
Bolivia	Hungary	Poland
Brazil	India	Portugal
Bulgaria	Indonesia	German Dem. Rep.
Cameroon	Iran	Great Britain
Canada	Iraq	Senegal
Chili	Ireland	Singapore
Peoples' Rep. China	Italy	Sweden
Colombia	Jamaica	Switzerland
Cuba	Japan	Czechoslovakia
Denmark	Jordan	Togo
Egypt	Kenya	USSR
Ecuador	Malaysia	Venezuela
Spain	Mali	Yugoslavia
USA	Mexico	Zaire
	Norway	

TABLE 2

Organizations Participating in the CPM (33)
(Alphabetical listing originally in the French language)

Recognized Private Operating Agencies (20)

Norddeutscher Rundfunk (NDR)	Yeisradio
Zweites Deutsches Fernsehen (ZDF)	Radiotelevision Italiana (RAI)
Oesterreichischer Rundfunk	Telespazio
Telecom Canada	Kokusai Denshin Denwa Co., Ltd. (KDD)
Teleglobe Canada	Nippon Hoso Kyokai (NHK) Japan
Telesat Canada	Nippon Telegraph & Telephone Public Corporation (NTT)
Cia Telefonica Nacional de Espana (CTNE)	Companhia Portuguesa Radio Marconi
Radiotelevision Espanola (RTVE)	British Telecom
Communications Satellite Corp (COMSAT)	Radiotelevision Yougoslave
GTE Services Corporation	
Satellite Business Systems (SBS)	

International Organizations (10)

Pan African Telecommunications Union	European Broadcasting Union (EBU)
European Space Agency (ESA)	Provisional Eutelsat
Inter-unions Committee for	INMARSAT
Assignment of Frequencies for	INTELSAT
Radioastronomy & Space	ARABSAT
Science (IUCAF)	Asia-Pacific Broadcasting Union

Scientific and Industrial Organizations (2)

Systematics General Corporation
Electronic Industries Association of Japan (EIAJ)

UN Specialized Agencies (1)

World Meteorological Organization (WMO)

TABLE 3

Frequency of Delegation Speeches During CPM

	<u>% of Total</u>	<u>No. of Statements</u>
Great Britain	12.5	107
Canada	11.3	97
USSR	10.3	88
India	10	86
USA	7.3	62
France	6.8	58
Brazil	6.3	54
Japan	5	43
Colombia	3.9	33
China	3	25
Algeria	2.8	24
Kenya	2.6	22
Iran	2.2	19
Netherlands	2.1	18
Cameroon	1.9	16
Fed. Rep. Germany	1.8	15
Iraq	1.6	14
Senegal	1.6	14
Egypt	1.5	13
Intelsat	1.5	13
All Others	<u>4</u>	<u>34</u>
Total	100	855

This statistical analysis is based on a sampling of the frequency of delegations speaking in ten plenary sessions, nine working group sessions, and eight sub-working and drafting group sessions. It was concentrated in Working Group B and Sub Group B-2, in which the alternative methods of planning were discussed and described.

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 Advisory Committee

*2. Consideration of Matters Relating to the Peaceful Uses of Outer Space at the Thirty-Ninth Session of the General Assembly**

The adoption by consensus on December 14, 1984, of General Assembly Resolution 39/96 on Agenda Item 72 "International cooperation in the peaceful uses of outer space" concluded the round of U.N. deliberations in the field of the peaceful uses of outer space for the year 1984.

As in previous years, Item 72 was assigned to the Special Political Committee (SPC) of the General Assembly and was considered by this committee at its 39th to 45th, 47th and 49th meetings between November 23, and December 6, 1984. The discussions in which 47 delegations took part, centered on the questions featured in the report of the Committee on the Peaceful Uses of Outer Space (COPUOS) to the General Assembly,¹ national space programs and international cooperation in outer space activities, as well as the implementation of the recommendations of the Second UN Conference on the Exploration and Peaceful Uses of Outer Space (UNISPACE '82).

The purpose of this report is to review briefly the debate concerning Agenda Item 72 held in the SPC during the thirty-ninth session of the General Assembly and, in particular, the views of different States on the principal questions relating to the legal aspects of outer space.

Remote sensing

The debate in the SPC showed once again that this subject continues to be one of the key issues on the agenda of COPUOS. Speaking on this item the large majority of delegations emphasized its importance for the international community and expressed regret and disappointment that the formulation of draft principles relating to remote sensing of the earth from space was so very limited. The representatives of Brazil, Indonesia, India and Bulgaria stated that the lack of progress was attributable to the unwillingness of certain countries to adopt a serious approach and to the absence of a political will to negotiate. In this regard, Austria pointed out that "a breakthrough in the deadlock could be achieved only if there was a stronger commitment on the part of all to reach agreement on generally accepted draft principles."²

The delegations of Czechoslovakia, the German Democratic Republic, Nigeria, Pakistan, the Philippines, Syria, Uganda, and Uruguay, while drawing attention to the importance of the elaboration of draft principles on remote sensing, advocated the speedy establishment of international legal norms governing the activities of States in this field. Emphasizing the need to intensify the COPUOS Legal Sub-Committee's efforts to agree on the principles, Rumania stated that otherwise, without international rules on the matter, States would merely apply their own rules for remote sensing activities which might be fraught with serious consequences.³ The representative of Hungary proposed that the General Assembly should request the Legal Sub-Committee to complete the important task.⁴ The delegations of Austria, Brazil, Canada, Italy and others suggested contributing priority treatment for this item in the Legal Sub-Committee.

*The views contained herein are those of the author and do not necessarily reflect those of the United Nations.

¹Doc. A/39/20 (Supplement No. 20).

²A/SPC/39/SR.41, p.4.

³A/SPC/39/SR.43, p.14.

⁴A/SPC/39/SR.41, p.7.

⁵A/SPC/39/SR.42, p.13.

As in the past, participating developing nations spoke in favor of securing the concerns of sensed States with regard to sovereignty over their natural resources and information relating to those resources. Accordingly, they advocated the principle of respect for sovereignty of sensed States which in their view was essential to protect the legitimate rights and interests of sensed States against possible misuse of information regarding their national territories. Such an approach was stressed by the representatives of Venezuela, Kenya, Mali, Brazil, Iraq, Nigeria, and Uganda and was shared by socialist countries such as Bulgaria, Czechoslovakia, Poland, the Soviet Union, and Vietnam.

The delegations of Kenya, Nigeria, the Philippines, Uganda and others supported by Rumania, Vietnam, and Poland were of the view that sensed States should have rights over the dissemination of data concerning their territory and resources to other States. It was noted by these delegations that such data should not be disseminated to third parties without the approval of sensed States. Moreover, the delegation of Kenya went as far as proposing that no remote sensing should be carried out at all without prior notification and the consent of the State concerned.⁶

The representatives of Nigeria, Kenya, Cuba, Pakistan, Iraq, and Uganda spoke in favor of the right of the sensed State to have continuous, non-discriminatory and timely access on a priority basis to all data and information obtained over its territory. Some of these delegations as well as the delegations of Uruguay and Uganda believed that such information should be supplied to sensed States on a free of charge basis or at nominal cost.

The representative of the Soviet Union, dwelling on the problem of dissemination of information, said that one problem remained to be solved, namely, determining whether dissemination of data and information collected through remote sensing of foreign territory should be limited or whether States and private corporations should be given a free hand in that respect. His government reiterated its position that such activities should be limited.⁷

The representative of Brazil recalled his delegation's proposal to the effect that a sensed State shall have timely and non-discriminatory access to remote sensing data concerning its territory before access is granted to any third party, and that a sensing State shall be held internationally responsible for the dissemination of any data that adversely affects the interests of a sensed State.⁸ The Brazilian delegate regretted that, despite the widespread support for this initiative, negotiations were at a standstill.⁹ Referring to the proposal of Brazil, the delegate of Vietnam characterized it as "a compromise" which provided a good basis for negotiations.¹⁰

The delegations of Mexico, Czechoslovakia and the German Democratic Republic expressed concern at the commercialization of space activities and, in particular, the involvement of private corporations in the field of remote sensing. In this connection, the Mexican delegate referred to the recent announcement by the U.S. National Aeronautics and Space Administration (NASA) concerning "its policy on the commercial use of outer space and the effects which that policy might have on the future participation of developing countries in the use of outer space."¹¹

In the course of the debate, developing States, as in the past, called for the strengthening of the coordinating role of the United Nations in the collection and

⁶A/SPC/39/SR.42, p.6.

⁷*Id.*, p.13.

⁸WG/RS (1982)/WP.11.

⁹A/SPC/39/SR.43, p.12.

¹⁰A/SPC/39/SR.40, p.5.

¹¹A/SPC/39/SR.40, p.3.

dissemination of information and some of them endorsed the proposal to establish an international body to direct and operate remote sensing activities.

The western countries, whose position generally has been that any viable set of legal principles should foster the development of remote sensing programs and not inhibit their practical operation and that the dissemination of remote sensing data should not be restricted, did not address in any detail the international legal aspects of remote sensing and touched mainly on the scientific and technical problems of the issue. They also dwelt on their national and international programs on remote sensing and in general form endorsed continuing priority treatment for the elaboration of draft principles in the Legal Sub-Committee. The representative of Italy noted that an aim to reach a final text on remote sensing still required "sensible work" and underlined the importance of progressing on this subject.¹² The delegate of Japan pointed out the fact that in drafting the principles on remote sensing "it was important not to impede the development of activities and international cooperation in this field."¹³

Nuclear Power Sources (NPS)

The debate showed that in general the points of views of different groups of States on this item remained unchanged and that they continued to adhere to their known positions.

One group of States insisted that the present provisions of the outer space treaties needed to be supplemented in view of the existing inadequacies of the law in the field of the use of NPS in outer space. They stated that the present title of the Legal Sub-Committee's agenda item should be changed and the Sub-Committee should have a clear mandate to draft principles governing the use of NPS in outer space on a priority basis. However, another group of States did not agree with this approach pointing out that the current title of the agenda item was appropriate and need not be changed and given priority treatment.

The delegations of Austria, Canada, France, Italy, and Sweden underlined the importance that they attached to the problem of NPS and favored the speedy elaboration of a set of international rules on the use of NPS which in their view should not be difficult, provided there was political willingness on all sides. These delegations as well as those of Pakistan, Japan and Brazil regretted that little progress had been achieved in the Legal Sub-Committee on this matter. In this regard the reconvening of the Working Group on NPS within the Scientific and Technical Sub-Committee was highly appreciated and considered by them as a good practical measure in the right direction. It was also hoped that the Working Group would be able to reach agreement in 1985 on recommendations of substance.

Referring to the efforts of the Legal Sub-Committee in elaborating an agreed text on the format and procedure for notification in case of malfunction of a spacecraft with NPS on board, the representative of Canada said that the momentum achieved by this body in 1983 must not be lost.¹⁴ In the view of the Swedish delegate internationally accepted safety regulations must be urgently adopted for the use of NPS and this activity should be subject to at least the same regulations that have been adopted for the use of NPS on earth.¹⁵

¹²A/SPC/39/SR.45, p.8.

¹³A/SPC/39/SR.44, p.13.

¹⁴A/SPC/39/SR.43, p.17.

¹⁵A/SPC/39/SR.42, p.11.

The representative of Uruguay stressed the need for notification prior to re-entry into the earth's atmosphere, assistance to States affected in order to minimize risks, safety measures for radiological protection and an international code of responsibility for direct and indirect damage.¹⁶ The delegate of Iraq supported the view that in the case of a space craft with a nuclear power source on board falling to earth, clean-up operations should be carried out by national teams, to be trained, in part, by the United Nations.¹⁷ The idea of the responsibility of nuclear power source users was also endorsed by Argentina.¹⁸

Definition and Delimitation of Outer Space and the Geostationary Orbit (GSO)

The exchange of views revealed that a growing number of States of different orientation have taken a favorable attitude toward the need for delimitation of outer space in relation to air space. Yet another group of States opposed such an approach on the grounds that no disputes or other difficulties had arisen from the absence of a boundary and that its establishment at a particular altitude would be arbitrary and premature and could create more problems than it could solve in view of the rapid development of space technology.

The delegations of Argentina, the Philippines, Iraq, Ukrainian SSR, Vietnam, the Soviet Union and others insisted that the delimitation of outer space was a necessary and urgent question and should continue to be considered in the Legal Sub-Committee through its working group on a priority basis. It was pointed out that defining the limits of State jurisdiction should be based on the principle of State sovereignty and the right of all States to freely explore and utilize outer space.¹⁹ In the view of the representatives of Uganda and Poland the definition and delimitation of outer space was important because of the different legal regimes governing airspace and outer space and in order to avoid any violation of State sovereignty.²⁰ The same aspect was emphasized by Nigeria; its representative stated that the boundary should clearly establish where State sovereignty begins and ends in relation to space so that any infringement on sovereignty could be duly punished in accordance with international law and the United Nations Charter.²¹ It is worthwhile to mention that Poland and Mongolia expressed their support of the USSR proposal to fix the lower limit of outer space at 100-110 kilometers above sea-level and to recognize the right of innocent and peaceful passage through air space.²² It was stated that the Soviet proposal could provide a suitable basis for discussion on that sensitive matter.²³

The equatorial States (Colombia, Ecuador, Indonesia, Kenya, and others) contended that a set of rules should be elaborated to regulate the use of the geostationary orbit, as the absence of such rules placed the equatorial and other developing countries in a disadvantageous position and facilitated the preponderant use of it by States capable of stationing satellites there. This approach was also shared by Iraq, Madagascar, Venezuela, Vietnam, and Uruguay. With the exception of Kenya, which as in previous years considered that equatorial States had a legitimate claim over the orbit above their territories and should be given special rights, other equatorial States did not reassert such claims.²⁴

¹⁶A/SPC/39/SR.44, p.3.

¹⁷*Id.*, p.2.

¹⁸A/SPC/39/SR.42, p.2.

¹⁹A/SPC/39/SR.44, p.8.

²⁰*Id.*, p.14.

²¹A/SPC/39/SR.45, p.4.

²²A/AC/105/337, p.38.

²³A/SPC/39/SR.42, p.4.

²⁴A/SPC/39/SR.45, p.6.

Endorsing the need to establish a special regime for the geostationary orbit and, in the case of Ecuador, proposing that recourse to the orbit should be declared *sui generis* and subject to international regulation,²⁵ the delegations of Uganda, Indonesia, and Colombia recognized the rights of other States and specially of developing countries with respect to the orbit. In this regard the delegations of the Philippines and Indonesia referred to the initiative of Colombia, Ecuador, Indonesia, and Kenya on Draft General Principles Governing the Geostationary Orbit which was submitted at the twenty-third session of the Legal Sub-Committee in 1984.²⁶

Placing emphasis on the threat of saturation of the orbit, the equatorial States drew attention to the necessity of preserving their "special rights and interests" and the importance of keeping the orbit for future use by countries which at the moment had no access to space technology. The delegation of Colombia was concerned not only by the congestion and saturation of the GSO but also by "the monopolistic appropriation of space" and therefore asked the Scientific and Technical Sub-Committee to submit at the following session a historical analysis of the development of the use of the GSO in the last 25 years when the orbit had been "systematically invaded, thus creating a serious problem".²⁷

The delegations of Iraq, Syria, and Uruguay shared the concern of the equatorial States at the possible saturation of the GSO. As stated by the representative of Uruguay the danger of saturation existed in reality in view of the annual 18 percent increase in the number of satellites in orbit.²⁸ The representatives of Pakistan, Poland, Austria, Yugoslavia, and Nigeria, while agreeing that the GSO was a limited natural resource, emphasized that all States ought to be able to use the orbit on a just, rational and equitable basis while Syria, Brazil, and Ecuador proposed that due account must be taken of the interests of developing States, to benefit from the use of the orbit. Along with China, Syria, Mali, and Madagascar, these countries favored the speedy elaboration of a regime for the orbit so that it would be used by the international community in a planned and regular manner.

The delegates of Cuba and Poland proceeded from the fact that the GSO was an integral part of outer space and that its use by States must be governed by the 1967 Outer Space Treaty.²⁹ In supporting this approach, Mongolia stated that the orbit could not be subject to national acquisition.³⁰ The Soviet representative urged that a generally acceptable solution of this complicated but important issue should be found without infringing on the competence of the International Telecommunication Union (ITU).³¹

The delegations of western countries (Sweden, FRG, Italy, and others) referred to the important work being done by ITU, the appropriate international forum for dealing with that matter, and emphasized its role in finding acceptable solutions for the allocation of radio frequencies and the problems of interference. Italy was of the opinion that more thorough consideration should be given to the characteristics of the orbit before any rules were adopted.³²

²⁵A/SPC/39/SR.44, p.4.

²⁶A/AC/105/337, p.38-40.

²⁷A/SPC/39/SR.45, p.9.

²⁸A/SPC/39/SR.44, p.2.

²⁹A/SPC/39/SR.45, p.6 and A/SPC/39/SR.42, p.4.

³⁰A/SPC/39/SR.43, p.16.

³¹A/SPC/39/SR.42, p.14.

³²A/SPC/39/SR.45, p.8.

Direct Television Broadcast Satellites (DTBS)

Although the item on DTBS has not been on the agenda of the General Assembly or of COPUOS and its Legal Sub-Committee since the adoption by the General Assembly in 1982 of the Principles Governing the Use by States of Artificial Earth Satellites for International Direct Television Broadcasting,³³ a number of delegations in the course of the debate in the SPC touched on this question in their statements.

The representatives of developing States and socialist countries drew attention to the importance of this subject as well as to the adoption by the General Assembly of the Principles on DTBS. The delegations of Uganda, Nigeria, Czechoslovakia, Poland, Ukrainian SSR, and the German Democratic Republic, while highly appreciative of the principles contained in Resolution 37/92, were of the view that COPUOS and its Legal Sub-Committee should continue its efforts to codify those principles in a legally binding instrument which would define the responsibilities of the broadcasting and receiving States. It was emphasized that the work should be completed in the shortest time in order to avoid possible disputes. As to the principles in Resolution 37/92, it was pointed out that they could serve as a useful basis for the preparation of a legally binding document.

In the view of Uganda, a new convention should safeguard the sovereignty of States, the right of peoples to choose their way of life and the balanced flow of information. Further, direct broadcasting satellite activities should be aimed at strengthening friendly relations and cooperation among States and should benefit both the sponsors and the recipients of the broadcasts.³⁴ In this connection the observer of the Holy See referred to the words of Pope John Paul II who said that rich countries must not attempt to use space technology to impose their own culture on poorer nations by "a kind of cultural imperialism."³⁵ The same views were expressed by the representative of Nigeria who stated that to impose a *fait accompli* by one or two countries on the majority of States in relation to DTBS was not only unacceptable but also ran counter to the spirit of equity and justice in international relations.³⁶

Prevention of an Arms Race in Outer Space

This question was the most important and controversial and almost all States participating in the debate in the SPC spoke on it emphasizing the growing importance of taking timely measures with the aim of preventing an arms race in space. The Group of 77 and socialist countries (Brazil, Egypt, Nigeria, Madagascar, Syria, Cameroon, Kenya, Tunisia, India, Indonesia, the Philippines, Vietnam, Cuba, Bulgaria, Hungary, the Soviet Union, and others) expressed their grave concern regarding the militarization of outer space which in their view represented a threat to the future of mankind and to its very existence and favored the speedy elaboration of legal and political principles halting the spread of an arms race to outer space.

These States endorsed General Assembly Resolution 38/80 by which the questions relating to the militarization of space were introduced in the agenda of COPUOS. They expressed the view that COPUOS had a legitimate interest and competence on this issue and that along with the Conference on Disarmament (CD) it should play an active role in this area. They referred to the rich experience and the potential of COPUOS which

³³A/RES/37/92.

³⁴A/SPC/39/SR.44, p.14.

³⁵A/SPC/39/SR.40, p.6.

³⁶A/SPC/39/SR.45, p.4.

in a relatively short period of time prepared five important international legal instruments whose objective is the peaceful uses of outer space.

At the same time, attention was drawn to the necessity of close coordination between COPUOS and CD. Uganda, supported by Pakistan, took the position that COPUOS could supplement the efforts of CD.³⁷ Syria suggested that CD must take into account the views of COPUOS³⁸ and Bulgaria thought that the relevant tasks could be divided between these two bodies.³⁹

The representatives of western countries (United States, France, Japan, Sweden, the FRG, and Canada) held the view that COPUOS was not the appropriate body to discuss disarmament questions and that it was a mistake to introduce these questions in the Committee's agenda. These countries voiced dissatisfaction with respect to the manner in which Resolution 38/80 had been adopted by vote, breaking as they stated the long standing tradition of decision making by consensus and stressed that only return to this tradition could guarantee successful UN work in the field of outer space. They felt that efforts should be done at the current session to find solutions to the problems on the basis of consensus.⁴⁰

The delegations of Austria, Sweden, Japan, and Ireland, on behalf of the European Community, expressed concern at the extension of an arms race in outer space and their commitment to the aim of preventing it. Proceeding from the fact that CD was the single multilateral disarmament negotiating body having a primary role in the negotiations of an agreement on the prohibition of an arms race in space, these and other western States believed that consideration of disarmament matters relating to outer space in COPUOS would only duplicate the efforts being undertaken in CD. It would also risk diverting COPUOS from its main task, which they said laid mainly in scientific, technical and legal fields and not in arms control issues, and thus make the Committee's ability to function effectively and constructively very doubtful.⁴¹ Reference was also made to the fact that a proliferation of disarmament fora would only impede progress and further complicate matters.⁴² Due to these reasons, the western States believed that the item on the militarization of outer space should be removed from the agenda of COPUOS.

Opposing the militarization of outer space, the delegation of China placed emphasis on the responsibility of the superpowers in this regard and urged them to adopt immediate measures to halt the arms race in outer space.⁴³ It also referred to the proposals on this matter put forward by Chinese delegations to the CD and COPUOS.⁴⁴

³⁷A/SPC/39/SR.44, p.14.

³⁸*Id.* at 10.

³⁹*Id.* at 6.

⁴⁰The developing states, while emphasizing the importance of consensus, made it clear that they did not regard the consensus rule as one that must be observed at any cost. It was noted that the developing states must not be expected to make all of the concessions and that a false consensus arising from intransigence and the perpetuation of injustices was totally unacceptable (A/SPC/39/SR.40, p.3).

⁴¹Responding to assertions of this kind, the representative of Uganda stated that "the procedural objections on competence of organs reflected a lack of political will to tackle the real issue endangering all mankind" (CA/SPC/39/SR.44, p.14). In the view of Brazil, the question of competence of different forums is not a sufficient argument to preclude the consideration of this vital issue by COPUOS (A/SPC/39/SR.43, p.13).

⁴²A/SPC/39/SR.42, p.10.

⁴³A/SPC/39/SR.41, p.6.

Exercising the right of reply, the Soviet delegate said that the attempts to attribute equal responsibility for the arms race to the two main space powers were groundless. As confirmation, he drew attention to the specific proposals of the USSR with a view to preventing an extension of an arms race to space and to the practical measures which the USSR had taken unilaterally, for instance, the moratorium on the launching of anti-satellite weapons (A/SPC/39/SR.41, p.9).

⁴⁴A/C.1/39/L.3.

The delegations of socialist states (Bulgaria, Byelorussian SSR, Poland, Hungary, Czechoslovakia, Cuba, Vietnam, Mongolia and others) were critical of "militaristic forces" for taking practical steps toward the militarization of outer space and transforming it into a theatre of war "with a view to achieving global military supremacy." They stated that the plans to acquire military superiority were "illusory and adventuristic."

The USSR delegation spoke in detail on the concrete proposals of the USSR Government to ensure peace in outer space.⁴⁵ Regarding in particular the 1983 Soviet Draft Treaty, it was stated that the Draft provided for a combination of political and legal obligations by States to prevent the use of force against one another in space and from space, and measures of material nature aimed at preventing the militarization of outer space. The USSR representative suggested that CD could take up the questions of a material nature and COPUOS could examine the question of political and legal obligations. Such political and legal obligations in his view could form the content of an additional protocol to the 1967 Outer Space Treaty.⁴⁶

Conclusion

The general debate in the SPC and the analysis of positions of states clearly showed the serious differences on certain important matters relating to outer space. Although a sense of moderation and self-restraint prevailed during the discussion of Agenda Item 72 in the SPC and its working group, which was established under the chairmanship of Austria to prepare a draft resolution, the adoption of the resolution as it was anticipated, from the beginning proved not to be an easy task. In fact, until the last moment the adoption of the resolution by consensus appeared to be an elusive goal. A number of meetings of the working group as well as numerous informal consultations on bilateral and multilateral bases did not bring positive results. A compromise, however, was reached on the basis of the second Austrian draft resolution,⁴⁷ a text which made it possible for all groups of States to go along with a modified mandate of COPUOS and its Legal Sub-Committee. As a result, this text of the draft resolution sponsored by Austria on behalf of the working group was adopted on December 6, 1984, by a consensus of the SPC. Accordingly, on December 14, 1984, the General Assembly, upon recommendation of the SPC, adopted Resolution 39/96 on Item 72 by consensus and not, as was the case last year, by vote. It is worthwhile to note that the questions on which the Member States were divided in 1983, and which did not make it possible to adopt a consensus resolution, related mainly to two agenda items before COPUOS and its Legal Sub-Committee. The two agenda items were as follows: (a) the inclusion in the Committee's agenda of an item on the militarization of outer space and (b) the new strengthened mandate of the Legal

⁴⁵The socialist states welcomed the 1981 Soviet proposals for the conclusion of a treaty on the prohibition of the stationing of weapons of any kind in outer space (Doc. A/36/192) and the 1983 Soviet proposal for the conclusion of a treaty on the prohibition of the use of force in outer space and from space against the earth (Doc. A/38/194, April 23, 1983). In their view, together with the unilateral Soviet commitment not to be the first to deploy any type of anti-satellite weapons in space, these initiatives were designed to strengthen peace and security. By the same token they drew attention to the new Soviet proposal on the use of outer space exclusively for peaceful purposes for the benefit of mankind submitted at the current session of the GA (Doc. A/39/243, September 27, 1984). These countries also stated that they should positively consider any proposals aimed at reversing dangerous trends with respect to outer space. In this regard they expressed their support of the Indian proposal to declare a moratorium on the testing and deployment of any kind of weapons in outer space.

⁴⁶A/SPC/39/SR.42, p.13.

⁴⁷S/SPC/39/L.33.

Sub-Committee regarding the definition and delimitation of outer space and GSO. Those basic differences, as was shown above, remained throughout the current session of the General Assembly, as well.

On the question of demilitarization, Resolution 39/96 urged "all States, in particular those with major space capabilities, to contribute actively to the goal of preventing an arms race in outer space," and requested COPUOS to "consider, as a matter of priority, ways and means for maintaining outer space for peaceful purposes." The language of Resolution 39/96 compared with last year's Resolution 38/30 was softened. For instance, it does not contain provisions regarding negotiations with a view to reaching agreements on prevention of an arms race in outer space. But still the new mandate of COPUOS continued to be a priority item, and in our view it does not exclude the possibility of discussing at its next session the questions of militarization of outer space. As to the second major area of disagreement, the old mandate of the Legal Sub-Committee, *i.e.*, to elaborate general principles to govern the rational and equitable use of GSO, was changed to "consideration of ways and means to ensure the rational and equitable use of the geostationary orbit without prejudice to the role of ITU." Finally, all three items before the Legal Sub-Committee, *i.e.*, remote sensing, NPS and definition/GSO, will be considered in working groups and there is no mention in the resolution of priority treatment with respect to any of them.

Neither the Group of 77 and the socialist states, nor the western countries, were entirely satisfied with the resolution because it did not take into account all of their concerns. The adoption of the resolution by consensus, however, was regarded by many Member States as a positive step which could strengthen the work of COPUOS and its sub-committees.

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(b) Short Accounts

3. Symposium on "International Security and Outer Space", McGill University, March 16-17, 1984.

On 16-17 March 1984 the Centre for Research of Air and Space Law - the research arm of the Institute - of McGill University (Montreal) hosted a symposium organized by the United Nations Association in Canada and the Canadian Student Pugwash on "International Security and Outer Space".

One year after *President Reagan's* noted "Star Wars Speech" it was an appropriate timing to evaluate the use of space to maintain peace and security on earth.

The Conference opened by the *Minister of Defense* of Canada gathered 100 attendants who heard a message sent by (as he was then) *Prime Minister Trudeau* stressing the Canadian position toward "a treaty to prohibit the development, testing and deployment of all weapons for use in outer space. The Government is actively pursuing this priority in the Conference on Disarmament in Geneva. One of the ideas we have been discussing is a ban on high-altitude anti-satellite systems".

The *Minister of Defense* emphasized the role of satellites in preserving world peace:

Some programs have become indispensable to the preservation of world peace and deterrence; to the efficient and effective use of our limited resources, military and civilian; and to the capability and effectiveness of most arms control initiatives. This can be seen in the increasing reliance on space based systems by both sides . . . for example, the Soviet Union conducts some 90 to 100 space launches annually and maintains at least 50 satellites active at all times. The majority of these perform military functions (which) include: satellite-relayed communications; photographic reconnaissance in support of strategic and tactical forces; electronic intelligence satellite systems; launch-detection satellites to provide early warning of US ICM launches; navigation satellites; and ocean reconnaissance satellites.

Although they maintain fewer military satellites in orbit, the United States also carries out a full range of military space activities similar to those listed for the Soviet Union.

Many of the US and Soviet military satellite systems contribute immeasurably to strategic stability and the maintenance of peace. The Washington-Moscow 'hot line', for example, is borne on a satellite communication link. The strategic communications satellites, launch detection satellites and warning systems help guard against accidental war by the early detection of launches and by the positive control of national command if a launch is suspected.

Indeed arms control requires that both sides be protected against surprise. This would be very difficult if not impossible to achieve without the monitoring and verification provided from space systems.

It should be noted that these activities, military *per se*, are not prohibited as per Art. 4 of the Outer Space Treaty of 1967 which only prevents the placing in orbit of nuclear weapons or any other kind of weapons of mass destruction. It is, nevertheless, well known that both superpowers are now developing so-called "killer satellites" which would destroy the adversary's spacecraft in orbit.

Mr. Ralph Chipman from the Outer Space Division of the United Nations Directorate made a rapid review of the efforts and achievements of the United Nations in the field of outer space and its peaceful uses from the 1967 Outer Space Treaty to the present discussion within the U.N. Committee on Peaceful Uses of Outer Space.

The major discussion on *President Reagan's* "High Frontier Project" which planned to launch in orbit a shield of 432 satellites to destroy any attacking Soviet missiles, was led by two prominent American scientists: *Dr. Jack Ruina*, Professor of Engineering and head of the Arms Control and Defense Policy Program at M.I.T., and *Dr. Michael May*, Associate Director at large of the Lawrence Livermore National Laboratory at the University of California. Both speakers expressed some reservation about the feasibility and the efficiency of the project. On one side, the precision required to obtain a useful protection requires the development of a powerful laser beam or particle beam generator aboard which is capable of operating from a spacecraft. The development of these weapons will require enormous financial resources and the system itself may not even be affordable as compared to present classical defense systems. *Dr. May* mentioned that the spacecraft in orbit would also be very vulnerable to, for instance, the present killer satellites that the Soviet Union has in its present state of technology. It was also mentioned that the precision and short time needed to reach small targets on earth make the deployment of weapons permanently orbiting very difficult and not such a logical choice against a target.

Since a Soviet scientist was invited but unable to participate, it became the task of *Dr. Nicholas Johnson* from Teledyne Brown Engineering (Colorado Springs) to talk about the Soviet space system, at least as well informed Western sources know about it. On

the Canadian side, it was *Dr. Franklin*, Director General, Applications Branch, Department of Communications, who gave a survey of Canadian participation in space activities in the future from the Mobile Telecommunication Satellite Programme, the Radarsat for remote sensing and possible participation in the NASA Space Station Program. *Dr. Freleigh Osborne* of SPAR Aerospace Ltd. presented in detail some of the Canadian involvement in space activities at present, and *Col. Ron Cleminson*, Department of External Affairs, made a presentation on the position of the Canadian Government on the Arms race in space.

The final address at the closing banquet was made by *Marc Garneau*, the first Canadian astronaut who is going to participate in the space shuttle mission in October 1984 during which Canada will make some purely civilian and scientific experiments such as a study of space sickness. *Mr. Garneau*, who was a Canadian Air Force officer, noted that the present military activities in outer space are accepted by both sides as stabilizing but it appears that when one of the two superpowers achieves a technological advance over the other and obtains a sort of power advantage the stability is broken. He concluded therefore in favor of more bilateral and multilateral international cooperation for the sharing of knowledge in order to avoid technology gaps which reduce the credibility of a stable balance of power.

The Symposium was a major success but, unfortunately, the papers are not going to be published.

Jean Louis Magdelénat
Assistant Director, Institute and
Centre of Air and Space Law, McGill University

4. International Symposium on Space Lab held in Naples and Capri from 11-16 June 1984.

The University of Naples and especially the "Istituto di Aerodinamica Umberto Nobile" has organized an International Symposium on Spacelab, stressing the relevant results, implications and perspectives. Prof. *Dr. L. Napolitano* has given all his capacities and energy to make this symposium a big success. Both E.S.A. and N.A.S.A. took part in the organization. There were two big Forums, each covering a full day. The first one on the subject "From Spacelab to space stations" was held in the prestigious, old castle Maschio Angioino in Naples. Scientific experts of E.S.A. and N.A.S.A., among them mission specialists, gave a general overview of the development of space stations. Moderator was *Sen. Luigi Granelli* from the Ministry for Scientific Research and Technology.

The Second Forum was held in the Europe Palace Hotel in beautiful Anacapri and dealt with the utilization and the legal/economic aspects of space systems. Several lectures were given on the legal aspects of space activities dealing with the liability and insurance problems of launching states. Other lectures were devoted to the legal aspects of radio broadcasting via satellites and the need for a remote sensing international agency. Industrial interest in space activities, space industrialization and problems related to peaceful uses of nuclear energy in space were other topics that were discussed. Between these forums there were general lectures and also five workshops on life sciences.

The great merit of the symposium was not only the number of interesting lectures presented but also the possibility for all representatives of different disciplines to discuss, in warm surroundings full of hospitality, the major developments in space by looking

at the topics from different angles. The University of Naples has started a very fortunate initiative that deserves continuing so as to open the opportunity for a wider perspective on the development of space activities.

I.H.Ph.Diederiks-Verschoor
President, International Institute
of Space Law (IAF)

5. Study Week on "The Impact of Space Exploration on Mankind", Rome, 1-5 October, 1984

Social, economic, cultural, legal and moral aspects of the impact of space exploration on mankind have become subjects of growing interest in the world community as reflected in the conferences convened by different institutions, both national and international, in recent years. A teleconference on "Space Deontology" organized by UNESCO in December 1983, a debate on "The Deontology of the Conquest of Space" held during the plenary session of the Academy of the Kingdom of Morocco in March 1984, a Symposium on "The Conditions Essential for Maintaining Outer Space for Peaceful Uses" organized jointly by the United Nations University and the International Institute of Space Law (IISL) and held in the Peace Palace, The Hague, in March 1984, are just a few examples of such meetings. These meetings were devoted to a deeper consideration of both the benefits and tensions arising from human activities in the space environment. To these endeavors, a new contribution has just been made at a Study Week on "The Impact of Space Exploration on Mankind" convened by the Pontifical Academy of Sciences in Rome, 1-5 October 1984.

The Pontifical Academy is a permanent scientific institution of the Holy See, with individual membership from among outstanding scientists of many countries, both developed and developing. In recent years, this learned body, headed by its President Professor Carlos Chagas of Brazil, has initiated several actions related to the impact of scientific developments that pose problems and even cause grave concerns for humanity. Probably the most significant amongst them has been the meeting of representatives of national academies of sciences that was held in Rome on 23-24 September, 1982. Sixty representatives of renowned scientific institutions around the world, from both the East and the West, from developed and developing countries, actively participated in this meeting. A "Declaration on the Prevention of Nuclear War" emerged from these deliberations and was unanimously adopted by "The assembly of Presidents of Scientific Academies and other Scientists from all over the World". It was declared in this document, *inter alia*, that "The current arms race increases the risk of nuclear war. The race must be stopped, the development of new more destructive weapons must be curbed, and nuclear forces must be reduced, with the ultimate goal of complete nuclear disarmament." A call upon all nations was made "never to be the first to use nuclear weapons", "to abide by the principle that force or the threat of force will not be used against the territorial integrity or political independence of another State" and "to take all practical measures that reduce the possibility of nuclear war by accident, miscalculation or irrational action". Finally, an appeal to national leaders, scientists, religious leaders and people everywhere was made "to insist that the avoidance of war is a common responsibility, to combat the belief that nuclear conflict is unavoidable, and to labour unceasingly towards ensuring the future of generations to come."¹

¹Cf. Pontificiae Academiae Scientiarum Documenta 4: Declaration on Prevention of Nuclear War, 23-24 September 1982, pp. 9-11.

The new initiative of the Pontifical Academy of Sciences, that relating to space exploration and its impact on mankind, was conceived along similar lines. Invitations to participate in a Study Week on "The Impact of Space Exploration on Mankind" were extended to representatives of different institutions and also to outstanding individuals active in space related research all over the world, some of them members of the Academy.

The meeting was held at the official seat of the Academy, the Casina Pio IV in the Vatican Gardens. It was opened by the President of the Pontifical Academy, *Professor Chagas* and chaired by a member of the Academy from India, *Professor M.G.K. Menon*. The UN Secretary-General honored the Study Week by his message.

After the introductory address of the President of the Academy, two more general papers, dealing respectively with "The advances of our understanding of the structure of the Universe" and "Space Station: The potential to serve humanity through science, exploration and utilization", were delivered.

Among those submitting a paper to this meeting were *Professor J. H. Carver* of Australia, Chairman of the Scientific and Technical Sub-Committee of COPUOS, *Dr. A. C. Clarke*, the renowned science-fiction writer living in Sri Lanka, *Professor Yash Pal* of India, formerly Secretary-General of UNISPACE 82, *Dr. R. Sunaryo*, Head of the Aeronautics and Space Research Institute in Indonesia and Vice-President of the IAF, *Professor L. Leprince-Ringuet* of France, one of the founding architects of CERN, *R. E. Butler*, Secretary-General of ITU, Geneva, *Dr. A. Caruso*, Secretary-General of Eutelsat, Paris, *Dr. R. Colino*, Director General of Intelsat, Washington, and others.

The discussion mostly concentrated on problems relating to satellite communications and remote sensings. To those topics a particular attention was also dedicated in the speech pronounced by His Holiness, *Pope John Paul II* during a private audience offered by him for the participants of the Study Week on the second day and also in the introduction made by the President of the Academy at this occasion.²

At the end of the Study Week a summary of deliberations was prepared and discussed. It was divided into three parts: Space Technology - Applications for the Benefit of Mankind, Telecommunications Satellites, and Future Uses of Space.

Similarly, as was done after previous meetings, the Pontifical Academy of Sciences intends to public an information document in which the substance and outcome of the deliberations on outer space problems will be summarized. Moreover, all submitted papers are expected to be published in a volume of the Proceedings of the Study Week.

Dr. Vladimir Kopal
Chief, Outer Space Affairs Division,
United Nations

6. *Hamburg Colloquium on Legal Aspects of Space Stations, October 3-4, 1984.*

On October 3 and 4, 1984, the Institute of Air and Space Law of Cologne University and the German Society for Aeronautics and Astronautics organized in cooperation with the Federal Ministry for Research and Technology an international Colloquium entitled "Space Stations - Legal Aspects of Scientific and Commercial Use in a Framework of Transatlantic Cooperation". The site of the Colloquium was the Hamburg Chamber of Commerce. Some 70 experts from different parts of the world participated, especially

²The full text of these speeches was published in *Osservatore Romano*, 3 October 1984).

from North America and Western Europe. Among those participants were lawyers and other Government officials participating in the present negotiations on space station developments between western governments as well as practitioners from the space industry and many leading academic space law experts from western university centres. The significance given in Germany to the Colloquium was illustrated by two receptions, hosts of which were the Hamburg Chamber of Commerce, the Hamburg Senate and the Federal Ministry of Research and Technology.

The initiative for this Colloquium had been given by the German Government. As is well known, *President Reagan*, in his State of the Union Message of January 1984, announced the intention of the United States to develop and build space stations. This new direction of the U.S. space program was endorsed by the U.S. Congress, when it approved *President Reagan's* full fiscal year 1985 space station funding request. On this background, NASA already early in 1984 started discussions with the western European states as well as Canada and Japan with a view to transatlantic cooperation in this field. These discussions were without doubt the main reason for the German Federal Ministry for Research and Technology to approach the Institute of Air and Space Law with the question, whether they could organize some kind of a meeting on the legal aspects of space stations, since very little information was available in this regard. Such information was considered necessary also in view of competitive alternatives to the U.S. program presently discussed, such as projects like COLUMBUS or a combination of ARIANE 5, HERMES and COLUMBUS or similar efforts of the Soviet Union. But, as indicated, in its title, the focus of this Colloquium was transatlantic cooperation in the development, construction and assembly of space stations as presently discussed between the western industrialized States. Possible future cooperations with the Soviet Union or Third World countries in this field was, therefore, left to eventual further meetings.

The meeting started with an introduction by the author of this report as the organizer of the Colloquium. The introduction dealt shortly with the political, technological and economic background of the space station effort, the relative role of lawyers in this effort and the function of the Colloquium. It indicated that with regard to the question what could be a realistic aim for this Colloquium at this particular time, one should realize that the technical, economic and political aspects of space stations will be dominating the further discussion, but that on the other hand space efforts in the past have proved to several governments and enterprises that not being aware of all legal alternatives and legal consequences may entail economic and political disadvantages. Indeed, the Colloquium proved useful as an exchange of basic information and a discussion of basic alternatives and consequences. The program of the Colloquium provided first a general background and then a transition to specific stages and aspects. Though many statements and comments during and after the Colloquium stressed how valuable this first exchange was thought to be for the ongoing practical and academic work regarding space stations, it also became clear that much more specific details will have to be discussed at a later stage, once space station technology, utilization and architecture have been further clarified.

Within the limited space available for this report it is not possible to present summaries of the many extensive and highly specific papers presented at the Colloquium as well as the relating discussion. The proceedings of the Colloquium will be published in the Studies in Air and Space Law of the Institute of Air and Space Law of Cologne University. But at least hereafter the main speakers and the topics of their papers may be mentioned.

The first session which was chaired by *Professor Nicolas Matte*, the Director of the McGill Institute of Air and Space Law in Montreal, dealt with general aspects. The technical and economic context of the transatlantic space station effort was presented by *Dr. Greger* from the German Federal Ministry for Research and Technology and by *K. Pedersen* from

NASA. Papers on the legal context were presented by *Eilene Galloway* (Washington, D.C.) from the International Institute of Space Law with the topic "Relevance of General Multilateral Space Conventions" and by *Professor P. Haanappel* (Montreal) with the topic "Possible Models from Specific Space Agreements".

The second session on "Construction, Transport, Assembly in Space of Space Stations" was chaired by *Dr. O. Greve*, the Chairman of the German Aerospace Industries Association (Bonn). Here, *Dr. M. Bourély* (Paris), the former Legal Counsel of ESA, spoke on "Agreements between States and with International Organizations". *Dr. E. Wolff* from Dornier System GmbH in the German space industry and *R. Stowe* from Satellite Business Systems (Virginia) both gave papers on contracts of and with private enterprises. R. Stowe's paper was presented by F. Tuttle, also from Satellite Business Systems. Then the author of this report presented a paper on "Applicable Law and Dispute Settlement" and *A. Bauer* (Munich) from the insurance group, Deutscher Luftpool, spoke on insurance in this context.

The third session was chaired by *Professor C. Christol* (Los Angeles) and dealt with "Operation of Space Stations". *Dr. W. von Kries* (Bonn/Washington, D.C.) from the by far largest space research institution in Germany, DFVLR, presented a paper on "State Supervision and Registration". *Neil Hosenball*, NASA's General Counsel, addressed specific legal questions arising in the current status of space station development in such fields as international law, national law of torts, of taxation and of liability. *Professor S. Gorove* (Mississippi) specifically examined the present space conventions in this context, especially their applicability and the gaps for which provisions are still lacking.

The final session was chaired by *Professor Isabella Diederiks-Verschoor* (Utrecht), the President of the International Institute of Space Law. It dealt with "Exploitation of Data and Products". The aspects of law and practice in Western Europe were presented by *Professor F. Beier* from the Max-Planck-Institute for Foreign and International Patent, Copyright, and Competition Law in Munich, the aspects of law and practice in the United States by *Barbara Luxenberg* from the Department of Commerce in Washington, D.C. "Experiences of International Organizations" were then the topic of the final paper by *G. van Reeth* from ESA in Paris.

All sessions were followed by a discussion which quite often brought up additional perspectives from the participants' specific backgrounds in government or industrial practice or legal or other research. Indeed, this combination of practitioners and academics in the field was one of the outstanding characteristics of this meeting. Finally it might be pointed out that some of the discussions continued among a number of the participants, when they attended the following week in Lausanne the Colloquium of the International Institute of Space Law which had devoted one of its sessions to legal aspects of large space structures.

Karl-Heinz Böckstiegel

Chair for International Business Law and
Director of the Institute of Air and Space Law,
Cologne, FRG

7. *The 27th Colloquium on the Law of Outer Space, Lausanne, 8-13 October 1984.*

The Twenty-Seventh Colloquium on the Law of Outer Space took place from October 8 through the 13th, 1984, in the Congress Building of Lausanne, Palais de Beaulieu, during the XXXIV Congress of the International Astronautical Federation (IAF). The Colloquium was well attended by not only lawyers from all parts of the world but also by several representatives of the United Nations.

The five subjects discussed during the four official sessions of the Colloquium were: (1) Space Law and Domestic Law; (2) Space Activities and Intellectual Property, including Industrial Property; (3) Nuclear Power Sources in Outer Space; (4) Legal Aspects of Large Space Structures; and (5) Conditions Essential for Maintaining Outer Space for Peaceful Uses.

After the opening of the Colloquium by the President of the International Institute of Space Law, the first session was chaired by a Swiss lawyer, *Mr. H. Bourgeois*. *Mr. Bourgeois*, who is President of the Swiss Association of Air Law, has a great interest in space law developments.

Various authors, who had chosen space law and domestic law as their subject, contributed papers which highlighted their respective national regulations on space law. Because of the great number of contributions to this subject, its general discussion had to be postponed until the next session in spite of the efficient guidance of *Mr. Bourgeois*.

Thus the second session, which was chaired by *Dr. G. Gál* from Hungary began with a discussion. With reference to the question of whether Article I, para. 2 of the Outer Space Treaty could be regarded as "jus cogens", *Professor Gorove* pointed out that part of the article which states that "there shall be free access to all areas of celestial bodies" is a general provision which is limited by Article XII providing for a conditional right of visitation of stations and other facilities on the moon on the basis of reciprocity and certain other requirements.

Dr. Maiorski observed that commercialization was now common practice and therefore, space activities should be profitable. The central problem encountered was the question of who would get the profit. Also, it was noted that there was not enough control over nongovernmental entities and Article VI of the Space Treaty of 1967 mentions nongovernmental entities only as an exception, not as a rule. The base involved was national registration.

Mr. Hosenball thought that the primary question might be who was investing. He suggested that the United States was concerned with investments in novel ways in space. Even though the United States would not be motivated by profit, the result of the investment would be advantageous to the entire world. The launching state would be liable, even in case of joint programs. *Professor Haanappel* was of the opinion that Article VI of the Space Treaty of 1967 was applicable in cases of commercialization and therefore, that the state could be held liable. He asked *Mr. Steptoe* why commercial licensing systems were not established in the United States. *Mr. Steptoe* stressed that it was not the profit but the prestige which was important to the state and that there was no intention to provide regulations which prevented the involvement of private companies.

Following this discussion, the subjects "Space Activities and Intellectual Property (including Industrial Property)" and "Nuclear Power Sources in Outer Space" were treated. Several authors who had submitted papers on "Space Law and Domestic Law" were unable to attend this discussion. However, this second session evoked a good deal of interest from — among other contributors — *Professor Haanappel* of Canada, *Dr. Maiorski*, who presented a paper written by *Mr. Terekhov*, and *Professor Tesauo* of Italy.

The papers presented during the third session on "Legal Aspects of Large Space Structures" showed very interesting developments of space stations. *Professor Gorove* spoke on issues of liability and damage, while many other speakers addressed different aspects. *Professor Haanappel* chaired this session.

The fourth session followed in an atmosphere of cooperation with an informative discussion of the "Conditions Essential for Maintaining Outer Space for Peaceful Uses." This subject had previously been discussed informally at the United Nations University (in cooperation with the International Institute of Space Law) by 29 experts in the fields of space law and international relations. The Symposium on Outer Space for Peaceful Uses" was held March 12-15, 1984, at the Peace Palace, The Hague, Netherlands. It was helpful on this occasion to hear the opinions from a large group of experts.

During the discussion, *Dr. Jasentuliyana* brought up the current state of negotiations within the United Nations Committee on Disarmament. After presenting an overview of the Italian and the two Soviet proposals on the demilitarization of outer space, *Dr. Jasentuliyana* pointed out the flaws in the proposals. He further discussed the debate within the United States on outer space arms control and concluded by saying that any success of an international agreement on arms control in space would strongly depend on the outcome of national discussions within the United States between the Reagan Administration and Congress. *Professor Christol* discussed the problems associated with different points of view related to the question of whether demilitarization of outer space should be considered within the Committee of Disarmament or within the COPUOS. He also discussed the present debate within the United States and the implications of these discussions on the United States and the implications of these discussions on the United States/Soviet dialogue concerning ASAT's.

Eilene Galloway gave a summary of the conference on "Conditions Essential for Maintaining Outer Space for Peaceful Uses," held at the Peace Palace. She emphasized the importance of the conclusions reached at that conference. The proceedings of the Hague Colloquium will be published in a book by the United Nations University.

Dr. Maiorski and *Mr. Piradov* then clarified both the intentions and the interpretation of the Soviet draft of the Treaty on the Prohibition of the Use of Force in Outer Space and from Space against the Earth.

Ms. Sterns and *Mr. Tennen*, who analyzed the militarization of outer space as seen from different strategic theories, showed that the result of the militarization of outer space would result in instability among the nations of the earth and would lead to an uncontrolled escalation in the arms race.

Mr. Stoebner gave an overview of several ideas and proposals on the demilitarization of outer space and the economic warfare advanced by different scholars. He stressed the need for the involvement of the United Nations in the implementation of an international air and space organization. Thereafter, *Mr. Vereshchetin* rightly emphasized that

... the urgency of negotiations on the prevention of militarization of outer space both on multilateral (Conference of Disarmament, U.N. Space Committee) and on bilateral (USSR-USA) basis is necessitated by historical experience which testifies to the fact that it is always easier to agree on the prohibition and elimination of those kinds of weapons which have not yet been created or deployed.

At the conclusion of this session *Professor Gorove* stated that one of the most important tasks in maintaining outer space for peaceful uses was to move the international community away from the brink of human disaster and explore areas of possible agreement between the leading space powers on arms control measures in relation to outer space. One such area was covered in a proposal which he had made at The Hague Symposium

in March 1984 which was attended by a number of distinguished authorities from both developing and developed nations, including the United States and the Soviet Union. The proposal which was endorsed by the Symposium participants, was to incorporate the Moon Agreement's control provisions into a separate agreement since the Moon Agreement was not likely to be ratified in the near future either by the United States or the Soviet Union for reasons unrelated to arms control. *Professor Gorove* suggested only one change in the relevant text to the effect that the first sentence of Article 3, para. 2 should read: "Any hostile act or threat of a hostile act, including the threat or use of force in a hostile manner on the moon is prohibited." He felt that this language more accurately reflected the scope of the prohibition.

At the end of this Twenty-Seventh Colloquium of the International Institute of Space Law, *Ambassador Finch* handed the participants a note which contained the text of a Magna Carta of outer space with ten principles for all nations. He invited the participants to give their opinions on the content of the text. The first reaction came from *Dr. Maiorski* who criticized the purpose of a new Magna Carta by arguing that the Outer Space Treaty of 1967 could already be viewed as a Magna Carta. Moreover, he argued that "the province of mankind" in the 1967 treaty was different from the "common heritage of mankind" in the Moon Treaty; the 1967 treaty refers to an area where functions take place. He contended that outer space had to be viewed as a whole. The concept of common heritage in the Moon Treaty was limited. Another observation was that there was no registration of celestial bodies, but only of space objects. It was contended that celestial bodies could not be objects of national expropriation.

The chairmen at the colloquium were assisted by *Mrs. M. Miklódy* and by students *Van Der Heyden* and *De Vries*.

Finally, it should be noted that the International Institute of Space Law cooperated in an excellent Roundtable session of technicians and lawyers. This session was chaired by *Dr. Kopal* and the rapporteur was *Dr. Bourély*. The subject was "Present and Expected Uses of Outer Space and Problems of Protecting the Space Environment."

Professor Christol, *Dr. Gál*, *Dr. Jasentuliyana* and several participants, including *Professor Gorove*, from the audience took part in what was a lively discussion.*

Prof. Dr. I.H.Ph. Diederiks-Verschoor
President, International Institute of Space Law (IAF)

8. *Symposium on Space Safety and Rescue, IAF Congress, Lausanne, Oct. 9, 1984.*

One of the sessions of the 17th IAA International Symposium on Space Safety and Rescue was held on October 9th 1984 and concern for regulations was paramount. The paper presented by *Dr. Lubos Perek* entitled "Views on International Approaches to the Regulation and Safety Assurance of Space Activities" was an excellent summary of the present situation. He pointed out the need for the good will of nations to ensure the carrying out of any regulations, and pointed to the 1967 Outer Space Treaty as the most important and beautiful of all the international agreements since it took into consideration the interests of mankind as a whole and not the interests of a single state. It remains universal in concept, unlike most other treaties. *Dr. Perek* noted that it was only in communications, with the detailed regulations of the ITU Convention, that nations had joined to maintain order, yet there was a great need for additional regulations to ensure

*For an account of the Roundtable, see the report by *Dr. Kopal*, *infra*.

space safety and rescue, particularly with respect to qualifications of personnel and spaceworthiness of vehicles.

In the informal discussion following *Dr. Perek's* talk, *Edwin "Buzz" Aldrin*, the second person to walk on the moon, also emphasized the importance of regulations to cover "spaceworthiness" and questioned whether space stations in the present configuration were good for the long term. He elaborated further on *Dr. Perek's* remarks by noting that the inclinations of orbits needed continual review since the present U.S. Space Shuttle orbit limits the ability of other nations to come to assistance in rescue operations. Items of rescue and retrieval reveal the need for more correlation between advanced planners and decision makers, as well as for regulations.

Another item in need of international attention is orbital data. *Dr. Perek* noted that six elements are needed for the accurate computation of orbital data, and while three of them are known, the other three are in constant change. There is no international registry of such data, nor are there international regulations to limit the amount of debris. Possible solutions include intentional decay (destruction) of space objects and disposal orbits. However, as pointed out by *Bob Davis* of the Aerospace Corporation, such protective devices would be the first thing to go when a budget is cut, and the problem is likely to get worse. *Mr. U. Thomas*, from the Technical University of Berlin, analyzed the varied "Alternative Operational Modes and Cost of Removing Geostationary Satellite Debris" and noted that the need for regulation was now, in as much as 340-380 satellites were expected to be in geostationary orbit by the end of this decade. The number of inoperational satellites is increasing and further collision possibilities arise with space objects that periodically cut into the geostationary orbit and for which there are no data available.

Mr. R. Mamen, from the Department of Communications in Ottawa, pointed out that, at best, one can predict up to 35 or 40 percent, but usually only up to 10 percent, of a satellite's lifetime. *Mr. Perek* agreed with this estimate and emphasized that not even the landing of a satellite can be predicted with certainty, noting the problems of Skylab in 1978.

All participants at the Symposium agreed on the need for legal regulations to assist with space safety and rescue. This same concern for regulation was expressed at the 14th IAA International Symposium on Space Economics and Benefits, held on October 12th, where the topic of Commercialization of Space Activities was addressed by many speakers from France, Germany and the United States.

M. Gorove
Rapporteur, IAA Symposium on
Space Safety and Rescue

9. Roundtable on Problems of Protecting the Space Environment, IAF Congress, Lausanne, 10 October 1984.

The Scientific-Legal roundtables, jointly organized by the International Academy of Astronautics (IAA) and the International Institute of Space Law (IISL) under the scope of International Astronautical Congresses of the IAF, mostly on a biennial basis have evolved, during two decades of their appearances, as suitable forums for consideration of the interaction of scientific, technological and legal questions resulting from space activities. At present, the roundtable is probably the sole forum existing in the international non-governmental level which is trying to approach outstanding space problems on a multidisciplinary basis and thus fairly reflect one of the principal aims shared by the IAF, IAA and IISL.

Two years ago, a roundtable on "Energy from Outer Space" was held during the 33rd IAF Congress in Paris.* Papers submitted during that meeting, as well as an account of the discussion, were published in English in the Proceedings of the Twenty-Fifth Colloquium on the Law of Outer Space (pp. 337-368), and also were printed in 1983 in a book form in English and Spanish with the support of the Cordoba House of Culture Foundation in Argentina.

Under the scope of the 35th IAF Congress another roundtable was organized, this time on "Present and Expected Uses of Outer Space and Problems of Protecting the Space Environment". This roundtable was held in Lausanne on 10 October 1984 and was already the tenth in the series of meetings of this kind. Its aim was to outline the problems arising from different kinds of present and future space activities and to relate the need for protecting the space environment against actual and possible harmful effects of such activities. In particular, the question of the kinds of measures to be undertaken by the nations developing space activities and the international community both on the technical and legal fields in order to prevent such effects or to remove them was to be considered.

In the absence of the Chairman of the IAA Scientific-Legal Liaison Committee, *Judge Manfred Lachs* from the International Court of Justice, who was unable to arrive due to the hearings held in the Court at that time, *Ing. Gen. Pierre Contensou* from France and the undersigned chaired the roundtable. Seven papers were announced for this roundtable and were included in its agenda.

The session was opened by a contribution of *Dr. L. Perek* from the Astronomical Institute of the Czechoslovak Academy of Sciences, Prague, Czechoslovakia. In his paper entitled "Protection of Environment and of Space Activities", he first reviewed the existing space law instruments in the light of the given problem and concluded that there is an apparent gap in this respect which may not have been crucial in the first decades of space activities but which may become serious with the growing density of space traffic. He then analyzed the existing hazards arising both from the regular activities in outer space and the consequences of its militarization. Finally, the speaker emphasized that preventive measures should be introduced wherever possible. As to space debris, such measures might consist in recommendations to restrict its number by suitable design and engineering, by planning the life of any space object until its decay, by using disposal orbits or intentional decay and by making monitoring data on space objects publicly available. The gaps in space law should be discussed in the United Nations and eventually filled.

A thorough scientific and technical background for further considerations was then provided in two contributions. The first one was delivered by *Dr. E. A. Roth*, Head of Mission Analysis Office of the European Space Operations Centre (ESOC) in Darmstadt, F.R.G. In his paper called "The Geostationary Ring. Physical Properties and Collision Probability", *Dr. Roth* first clarified the notion of "Geostationary Ring" and presented new results concerning the collision hazard. He then concentrated on recommendations of rather inexpensive measures which would prevent increasing pollution of this non-renewable resource. In specific terms he suggested to design litter free satellites, remove deactivated satellites and avoid explosions. He concluded that especially the removal from the geostationary ring is immediately feasible and requires only a few kilograms of fuel.

Another review of the actual situation in outer space, as well as present and expected risks and possible remedies, was made in a contribution presented by *Dr. Yuri Zonov*, Director of Space Data Research Center, USSR Ministry of Fisheries. *Dr. Zonov*, who for many years has specialized in pollution control and environmental protection, concentrated

*For an account of the Roundtable, see 10 J. SPACE L. 213-8 (1982).

his attention, *inter alia*, on the risks arising from metals dispersed in the space environment which penetrate into the air, the presence of which may endanger health of peoples.

"Protection of Outer Space from an Inefficient Use of the Orbit/Spectrum Resource" was the subject of a paper presented by *Professor Carl Q. Christol* from the University of Southern California, Los Angeles, USA. First, he reviewed both physical and political-legal problems relating to this topic and then he drew a number of conclusions. Among them, he emphasized that the enormous utility of the orbit/spectrum resource to all mankind should, in principle, prevent its being used inefficiently. According to his opinion, concerns over "guarantee in practice" of equal or equitable access to the resources should not inhibit the efficient, economical, equal and equitable use of the resource. He concluded that "it will only be as a result of the profitable use of the resource that conditions will come about allowing for the formation of new principles and new institutions able to guarantee the practical right of all potential users to equal and equitable access."

Dr. Gyula Gál from the University of Budapest, Hungary, analyzed the problem of protecting space environment in the light of the issue on delimitation of outer space. He also raised the possibility of working out a special international convention dealing with the subject.

A similar idea, namely the establishment of a legal and administrative framework to mitigate environmental impact of space activities, was elaborated in greater detail in a substantive paper presented by *Dr. N. Jasentuliyana*, Deputy Chief of the Outer Space Affairs Division, United Nations. He observed that while existing agreements established general principles of conduct, they failed to provide the necessary standards and procedures by which space activities could be controlled and regulated to minimize or eliminate harmful environmental effects caused by such activities. According to *Dr. Jasentuliyana*, the best course of action would be the establishment of an international expert group of scientists and technicians to review, assess and establish standards concerning space activities that have environmental impact. The group would further adopt "recommended practices" in those areas in which the impact was not sufficiently critical to force States to follow these practices without any variants. An international framework for the establishment of the expert group should be laid by a special convention which would serve as the enabling legislation of such standard-setting and to which the adopted standards and recommended practices would be annexed.

In the last prepared paper, two law counsellors from the United States, *Ms. Patricia M. Sterns* and *Leslie I. Tennen* presented a detailed picture of the current United States policy toward protection of the outer space environment.

During the discussion that followed the presentations of the invited speakers, additional valuable information relating to the subject was provided. *Dr. Gloria Heath*, Chairman of the IAA Committee on Space Safety and Rescue Studies, informed the roundtable on the activities accomplished and planned by this body under its own terms of reference. *Dr. Malcolm G. Wolfe* from the Aerospace Corporation in Los Angeles, USA, stressed the need for both closer studies and an international discussion of the problem of space debris.

Other speakers suggested a more action oriented approach to the problem. Thus *Professor Stephen Gorove* from the University of Mississippi, USA, recommended consideration of the various alternatives of particular policies that could be adopted. While it was essential to know what the present law relating to this subject is, our major effort should concentrate on the *lex ferenda*, bearing in mind different types of activities in outer space. *Professor Charles Ch. Okolie*, Vice Chairman of the Continental Africa Chamber of Commerce in Chicago, USA, recalled a collective responsibility of States for the protection of space environment. This responsibility is expressed in general terms

in the 1967 Outer Space Treaty and in the 1979 Moon Agreement, while sectorial responsibility is specified in other instruments. He emphasized the concern of mankind as a whole in this field. The intervention of *Professor Aldo A. Cocca* from Argentina also went in this direction when he spoke against an unlimited and unilateral exploitation of outer space and its resources.

Some of the participants in the discussion favorably responded to suggestions for elaborating international regulations of the problems involved. Thus *e.g. Professor Karl-Heinz Böckstiegel*, Director of the Institute of Air and Space Law of the Cologne University, F.R.G., pleaded for a close cooperation of technical and legal experts in order to work out an appropriate framework for international standards and recommended practices. *Dr. Robert M. Bowman*, Director of the Institute for Space and Security Studies in Potomac, USA, also concurred with the need for preventive measures in the form of international regulations. He pointed out, however, that the most serious potential source of space debris and environmental pollution is an arms race in space.

Finally, the *Hon. Edward R. Finch* from the USA drew the attention to some particular aspects of the problem, such as the use of expendable launch vehicles, and the role of some military objects in outer space to ensure national and international security. He emphasized the necessity of avoiding any explosion in outer space, both intended and unintended, as one of the urgent tasks of this time. It may be concluded that the Roundtable on Problems of Protecting the Space Environment had a good attendance and brought valuable suggestions both in the invited papers and the discussion.

The IAA Scientific-Legal Committee, which is responsible for organizing the scientific-legal roundtables, also held a meeting during the Lausanne Congress at which questions of further activities were considered. Due to the growing interest in this type of discussion, it was recommended that the next roundtable be already prepared for the forthcoming International Astronautical Congress, to be held in Stockholm, Sweden, 7-12 October, 1985. The theme of this roundtable will be "Legal and Technical Implications of Space Stations." Besides general aspects of this subject, the discussion should concentrate on scientific, technical and legal problems pertaining to communication between space objects, the danger of collisions, the re-entry and other particular problems. Since the topic of space stations attracts the ever growing attention of the international community of space researchers, the Stockholm roundtable might become another step forward in this joint venture of the International Academy of Astronautics and the International Institute of Space Law.

Vladimir Kopal
Chief, Outer Space Affairs Division,
United Nations

10. *Symposium Conference on Lunar Bases and Space Activities of the 21st Century, Washington, D.C., Oct. 29-31, 1984.*

A Symposium on "Lunar Bases and Space Activities of the 21st Century" was held by NASA on October 29-31, 1984 in the building of the National Academy of Sciences, Washington, D.C. The purpose of the Symposium was to provide a forum for the exchange of ideas on the uses of a base on the Moon for scientific, industrial and other purposes and to shed light on the technological, economic, political, legal and other social implications of such a base. It was anticipated that the conference would identify specific needs and issues to be addressed prior to the initiation of a lunar base project.

The conference was very well attended with over a hundred experts addressing a whole range of relevant topics and issues, much to numerous to list in a brief account. Among the highlights were the keynote address by NASA Administrator *James M. Beggs* on the "Challenge of a Lunar Base: A Vision Reborn", the presentations by *Krafft A. Ehrlicke* on "Lunar Industrialization and Settlement—Birth of Polyglobal Civilization" and by *Edward Teller* on "Science Applications of a Lunar Laboratory".

It was somewhat unfortunate that the discussions on the legal and policy issues were not grouped together since this would have contributed to a sharper focus and better interchange. Among the presentations were those by: *Art Dula* and *Herb Lingl* on the debate concerning the merits of competing international legal frameworks governing the utilization of lunar resources and *C. C. Joyner* and *H. H. Schmitt* on lunar bases and extraterrestrial law where they discussed the general legal principles and also made a proposal for a particular regime. This writer addressed issues relevant to the appropriation of lunar resources, those of jurisdiction and control, liability, registration as well as some other issues.

Stephen Gorove
University of Mississippi Law Center

11. Other Events

The National Space Club held its fourth annual conference on June 19-20, 1984, in Vienna, Virginia. The theme of the conference was "National Space Outlook: 1984," and presentations were made by senior NASA, DOD, NOAA and DOT officials.

The Space Law Committee of the International Law Association discussed *inter alia*, a proposal presented by Professor Böckstiegel for a draft convention on the settlement of space law disputes during the Association's conference, held in Paris, August 26 to September 1, 1984.

The Forum Committee on Air and Space Law of the American Bar Association held its second annual forum in Arlington, Virginia, on November 1-2, 1984. Among the presentations were the legal implications of the U.S. goals regarding space privatization and commercialization (*L. J. Evans, Jr.*), space privatization and commercialization from the European perspective (*George Van Reeth*), domestic satellite communications (*Philip V. Permut*) international satellite telecommunications (*John B. Gantt*), legal aspects of special financing and investment mechanisms used for space ventures (*Gary J. Miglicco*, *Bruce W. Ferguson* and *Calliope K. Ligelis*), NASA joint endeavor agreements (*John E. O'Brien*), protecting your clients' space investments (*Daniel W. Vittum, Jr.*), and insurance losses and future space development (*A. Michael Hewins*).

A symposium on the Geostationary Orbit and the Prospects for WARC '85 was sponsored by the Association of American Law Schools in Washington, D.C., on January 6, 1985, and was chaired by Professor Stephen Gorove.

"International Business in Space" was the theme for a conference sponsored by The Center for Space Policy, Inc., on January 9-11, 1985, in Washington, D.C. Topics of discussion included the international space policy environment, international cooperation in space science, space station development, advanced satellite communications, prospects for commercial remote sensing, materials processing in space, and the launch services market.

12. Brief News

The Space Shuttle retrieved two satellites from useless orbits and returned them to earth; it also retrieved, repaired and redeployed a satellite in space . . . NASA begins selecting bids for a space station and formulates investment policy to encourage private participation in commercial space ventures, but it faces increased competition from Europe's Arianespace . . . America's first orbiting telescope is scheduled for launch in 1986 . . . The Infrared Astronomical Satellite (IRAS) provides the first infrared pictures of our solar system . . . The International Cometary Explorer (ICE) will be the first spacecraft to encounter a comet . . . Two important legislations were passed by Congress. The Land Remote Sensing Commercialization Act and the Commercial Space Launch Act . . . Eilene Galloway, a member of this Journal's Editorial Board, was recently presented the NASA Public Service Award for her outstanding achievements of advising the Congress on legal and technical aspects of outer space, and her further service to the United Nations and other international organizations in helping to develop a rational basis for international space law.

B. Forthcoming Events

The 13th annual Friedmann Conference sponsored by the Columbia International Law Society will be held on March 29, 1985 at Columbia University Law School. Its theme will be "Telecommunications" addressing international legal issues of: direct broadcast satellites, the upcoming WARC and transborder data flows.

On April 26, 1985, the Association of the U.S. Members of the International Institute of Space Law is planning to co-sponsor a panel discussion on arms control and U.S. policy during the annual meeting of the American Society of International Law in New York City.

The "Asia Telecom '85" conference will be held in Singapore on May 14-18, 1985.

The 1985 IISL Colloquium will be held in Stockholm, Sweden, October 7-12, 1985. The Colloquium topics include the following: 1. Maintaining Outer Space for Peaceful Uses; 2. Comparison Between Sea and Space Law, Especially in View of Exploration and Exploration Activities; 3. Legal Problems of Registration of Space Objects; and 4. Space Activities as the Subject of Space Law.

Die Militarisierung des Weltraums, (The Militarization of Outer Space) by Dieter O. A. Wolf, Hubertus M. Hoose and Manfred A. Dausen (Bernard & Graefe, Koblenz, Fed. Rep. Germany, 1983), pp. 219.

The first step in the conquest of outer space was taken on 3 October 1942 when, under the technical direction of *Dr. Wernher von Braun*, the first large-scale rocket of the world was launched from Peenemünde to the very threshold of outer space, reaching a maximum height of some 86 km (53 miles). Those few lines are all that need to be added to this historical survey of space flight contained in Chapter I.

The three authors, a military expert, *Hubertus Hoose*, (a lieutenant-colonel in the West German Air Force), a lawyer *Manfred Dausen* (a senior legal secretary at the European Court of Justice) and a political scientist, *Dieter Wolf*, (Professor of international relations at Boston University, who sadly died in 1983 at the age of 44) each have established reputations based upon numerous publications in their respective fields. The aim of the book written, in German language, is to provide "basic information", but in fact it goes much further. The writers give a clear but comprehensive survey of technological, political and legal aspects of the military use of outer space and provide a lucid analysis of the complex interaction between progress in arms technology and developments in defense policy.

Chapter III, on technological developments for military use in outer space, forms the core of the book. A brief summary of celestial mechanics is followed by a thorough review of the potential applications of arms technology in outer space and their military implications. A hypothetical scenario of an all-out war involving the use of satellites is then presented.

Chapter IV deals with the legal aspects and gives an outline of developments leading to the conclusion of the Outer Space Treaty and subsequent agreements. It reviews the main themes of the law of outer space, with particular emphasis upon the demilitarization clause in Article IV of the Outer Space Treaty.

The political scientist takes as his starting point in Chapter V the effect on the West of the launching of the first sputnik ("Sputnik Shock"). It retraces the military and political considerations which have so far helped to maintain peace, and pays particular attention to crisis management and the political means available for defusing crises and bringing them under control.

Naturally, it remains to be seen whether reasonable global political control, in the form of limitations upon the use of arms in space, can be achieved. This, the authors hope, would make military strategies in outer space more predictable. The curbing of the arms race in outer space is currently a matter of great concern throughout the world. All in all, the appearance of this most stimulating and informative book could not have been better timed.

Adrian Bueckling
Judge, Oberlandesgericht,
Koblenz (FRG)

Space and Society: Challenges and Choices, (Volume 59, Science and Technology Series), Edited by Paul Anaejionu, Nathan C. Goldman and Philip J. Meeks, published for the American astronautical Society of Univelt, Inc., San Diego, California (1984), 429 pages.

This volume is a compilation of papers which were presented at the Space and Society Symposium held at the University of Texas at Austin in April, 1982. The central theme of the symposium was the underlying political and economic issues in mans' quest to develop and colonize space.

The various topics discussed include the American Government and space, political economics and space, foreign space programs, space applications, and the future. The articles examine the roles of the military, governmental agencies and the private sector in applying space technology to ease the problems of depleted natural resources, the energy crisis, food shortage, over population and other problems facing the world community. The competition for commercial satellite launchings between NASA and the European Space Agency is also examined, along with the advances made by Japan and China in launching development.

Space Safety and Rescue 1982-1983, edited by Gloria W. Heath (American Astronautical Society, vol. 58, San Diego, Univelt, 1984), pp. 366.

This book is a compilation of the proceedings of the 15th and 16th International Symposia on Space Safety and Rescue organized under the aegis of the International Academy of Astronautics.

The materials presented are divided into two broad topics. The first topic concerns the developing threat of space debris to space activities. The papers presented generally point to the increasing threat of debris, how the debris may be detected using existing technologies, and offer suggestions as to how the danger may be alleviated as, for example, through design modification of existing spacecraft.

One article in particular, by *S. Neil Hosenball*, describes the present U.S. procedures for assuring the safety of private activities in space and notes that governments must take an active role in ensuring the safety of both their own space programs and the programs of nongovernmental entities.

The second topic of discussion pertains to the potential uses of present space technologies in the management of earthbound disasters and non-disaster situations such as communicating with mobile craft and central response to isolate remote population needs.

Telecommunications: Issues and Choices for Society, edited by Jerry L. Salvaggio (Longman, New York and London, 1983), pp.

This book contains a group of essays by scholars in the field of telecommunications. Among them are Roland S. Horner, Jr., a communications lawyer and a former director of International Communications Policy at the U.S. International Communications Agency and an article by Read. Their essays hold the most interest for the legal scholar.

In his essay entitled "Monopoly Versus Competition: Social Effects of Media Convergence", Homet discusses the effect of monopoly on the telecommunications industry and how effectively the FCC controls monopoly. He suggests that, especially when dealing with large corporations such as IBM and AT&T, antitrust is quickly becoming a more efficient safeguard than the current communications laws. Homet lists protection of personal privacy, freedom of expression, and stability of service among the important social values at issue. He concludes by saying that as long as the public has a choice, the quality of communications services should be guaranteed.

The article by Read entitled, "The First Amendment Meets the Information Society," focuses on two landmark decisions: *Red Lion Broadcasting Co. v. FCC* and *Miami Herald Publishing Co. v. Tornillo*. *Miami Herald* deals with the right of reply, or lack thereof of a politician to remarks printed in a newspaper. *Red Lion* discusses the different characteristics of print and broadcast media and the different standards that apply.

Both essays offer interesting reading pertinent to law within the broader context of the "telecommunications revolution" with which the book deals.

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C. Official Publications

Agreements

- Agreement concerning the installation in Portugal of a ground-based, electro-optical deep space surveillance (GEODSS) station. Effected by exchange of notes at Lisbon March 27, 1984. Entered into force Mar. 27, 1984.

- Agreement relating to INTELSAT, with annexes. Done at Washington Aug. 20, 1971. Entered into force Feb. 12, 1973. (T.I.A.S. 7532). Accession deposited: Malawi, July 17, 1984.
- Agreement with China extending the agreement of Jan. 31, 1979 (T.I.A.S. 9179) on cooperation in science and technology. Signed at Washington Jan. 12, 1984. Entered into force Jan. 12, 1984.
- Agreement with India amending and extending memorandum of understanding of July 18, 1978 (T.I.A.S. 9285), concerning furnishing of launching and associated services for Indian national satellite system (INSAT)-1 spacecraft. Signed at Washington and Bangalore Apr. 10 and 25, 1984. Entered into force: July 31, 1984; effective Jan. 1, 1984.
- Agreement with Japan continuing in effect the agreement of Dec. 19, 1980 (T.I.A.S. 9961) relating to government procurement in the field of telecommunications, with related letters. Effected by exchange of letters at Washington Jan. 30, 1984. Entered into force Jan. 30, 1984.
- Agreement with Senegal extending the agreement of Jan. 30 and Feb. 5, 1981, as amended (T.I.A.S. 10088, 10325), regarding the establishment and operation of a space vehicle tracking and communication facility in connection with the space shuttle. Effected by exchange of notes at Dakar Oct. 27, 1983, and Feb. 14, 1984. Entered into force Feb. 14, 1984.
- Agreement with Thailand on cooperation in science and technology. Signed at Washington Apr. 13, 1984. Entered into force Apr. 13, 1984.
- Memorandum of understanding with Brazil concerning the Landsat system. Signed at Brasilia May 8, 1984. Entered into force May 8, 1984.
- Memorandum of understanding concerning furnishing of launch and associated series of INTELSAT programs. Signed at Washington and Rome Sept. 29 and Oct. 10, 1982, and entered into force Mar. 5, 1984.
- Memorandum of understanding with Italy for development and launch of the Laser Geodynamis Satellite-2 (Lageos). Signed at Rome Mar. 7, 1984. Enters into force upon exchange of diplomatic notes confirming agreement and providing for implementation of joint project.
- Memorandum of understanding with Italy for development of the Tethered Satellite System (TSS). Signed at Rome Mar. 7, 1984. Enters into force upon exchange of diplomatic notes confirming agreement and providing for implementation of project.
- Memorandum of understanding with Japan relating to the operation of the Landsat system, with annex. Signed at Washington Dec. 13, 1983. Enters into force 30 days after the date of exchange of ratifications.
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International Telecommunication Union

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REQUEST FOR THE INCLUSION OF AN ADDITIONAL ITEM IN THE
AGENDA OF THE THIRTY-NINTH SESSION *USE OF OUTER SPACE EXCLUSIVELY FOR PEACEFUL PURPOSES
FOR THE BENEFIT OF MANKIND

Letter dated 27 September 1984 from the First Deputy Chairman of the
Council of Ministers and Minister for Foreign Affairs of the Union
of Soviet Socialist Republics to the Secretary-General

The Soviet Union proposes the inclusion in the agenda of the thirty-ninth session of the United Nations General Assembly of an important and urgent item entitled "Use of outer space exclusively for peaceful purposes for the benefit of mankind".

This proposal is motivated by a desire to ensure that the inexhaustible opportunities for the use of outer space are utilized in the interests of all mankind and not to its detriment.

The peaceful exploration of outer space, which has become a symbol of the spectacular achievements of science and technology, is destined to serve as an effective means of solving many global problems, including that of economic development. This involves, for example, the study and wider use of the Earth's natural resources, natural disaster control, provision of food to the population, improvements in transport and communications, and development of promising materials and technologies. Positive experience has already been accumulated in concerting the efforts of States in this domain, including joint missions by astronauts of different countries, rescue of people and of vessels and aircraft in distress, international scientific and technological experiments and research, and co-operation in developing spacecraft and placing them in orbit.

However, the danger that outer space may be transformed into a springboard for aggression and war has lately become increasingly real. Programmes are under way to develop space weapons designed to destroy objects in outer space and to strike from outer space against targets on Earth. These actions, prompted by calculations of gaining military superiority, can make an arms race in outer space irreversible and result in a drastic destabilization of the situation, and are heightening the risk of nuclear war. Spreading the arms race to outer space would impair the prospects for limiting and reducing armaments in general.

Understandably, the militarization of outer space, if not checked in time, will consume enormous material and intellectual resources and erect insurmountable barriers to international co-operation in the peaceful exploration of outer space and to the devotion to peaceful uses of the results of scientific and technological progress in this field.

The USSR proposes that the United Nations General Assembly should proclaim the historic responsibility of all States to ensure that the exploration of outer space is carried out exclusively for peaceful purposes, for the benefit of mankind and should recommend the adoption of specific measures to this end.

The Soviet Union believes that today as never before it is important that exclusion of outer space from the sphere of the arms race should become a mandatory norm of State policy and a generally recognized international obligation, and that all channels for the militarization of outer space without exception should be

*Taken from U.N. Doc. A/39/243 (27 September 1984). For texts of the earlier Soviet proposals, see 10 J. Space L. 27 (1982) and 12 J. Space L. 98 (1984).

safely blocked. The point is that no attack weapons of any kind - conventional, nuclear, laser, particle beam or any other - should be placed and deployed in outer space, whether on manned or unmanned systems. Space weapons of any basing mode should not be developed, tested or deployed for anti-ballistic missile defence, or as anti-satellite systems, or for use against targets on Earth or in the air. Any such systems already created should be destroyed. The use of force in outer space and from space against Earth as well as from Earth against objects in outer space should be prohibited for all times. In other words, the USSR proposes that agreement be reached on a radical solution to the question of preventing the militarization of space - on banning and eliminating space attack weapons, as well as any land-, air-, or sea-based systems designed to destroy objects in outer space.

The United Nations is required to raise its voice in favour of the early elaboration through negotiations of appropriate reliably verifiable agreements on a bilateral and multilateral basis.

Only guaranteed prevention of the militarization of outer space will provide an opportunity for its exploration for creative rather than destructive purposes. Thereby a way would be opened to concerted efforts by States in this domain, which could eventually result in the establishment of a world organization for the use of outer space for the benefit of mankind.

I request you, Sir, to regard this letter as the explanatory memorandum required under the rules of procedure of the General Assembly and to circulate it, together with the annexed draft resolution, as an official document of the General Assembly.

(Signed) A. GROMYKO
First Deputy Chairman of the Council
of Ministers of the Union of Soviet
Socialist Republics, Minister for
Foreign Affairs of the USSR

ANNEX

Use of outer space exclusively for peaceful purposes for the benefit of mankind

The General Assembly,

Expressing grave alarm over the threat of an extension of the arms race to outer space, which would lead to a sharp increase in the risk of nuclear war, impair the prospects for limiting and reducing armaments in general and erect insurmountable barriers to international co-operation in the peaceful exploration of outer space,

Deeply convinced of the need to prevent, before it is too late, the militarization of outer space, which should be used exclusively for peaceful and creative purposes,

Noting that concerted efforts by States in the peaceful exploration and use of outer space would create new opportunities for studying the Earth's natural resources, controlling natural disasters, providing food to the population, improving transport and communications, developing promising materials and technologies and performing other economic, scientific, technological and cultural tasks,

1. Proclaims it a historic responsibility of all States to ensure that the exploration of outer space is carried out exclusively for peaceful purposes for the benefit of mankind;

2. Declares that exclusion of outer space from the sphere of the arms race should become a mandatory norm of State policy and a generally recognized international obligation,

and to this end calls upon all States, and above all those with major space capabilities:

- to take urgent measures to prohibit for all times the use of force in outer space and from space against Earth as well as from Earth against objects in outer space and to ban and eliminate space attack systems, including space-based anti-satellite and anti-ballistic missiles systems as well as any land-, air- or sea-based systems designed to destroy objects in outer space;

- to seek through negotiations the early elaboration of appropriate reliably verifiable agreements on a bilateral and multilateral basis;

3. Indicates that guaranteed prevention of the militarization of outer space will provide an opportunity for its peaceful exploration and use in solving acute major problems of economic, social and cultural development facing mankind today as well as in concerting the efforts of States of the world in this domain, including the eventual establishment of a world organization for the use of outer space for the benefit of mankind;

4. Requests the Secretary-General of the United Nations to seek the views and proposals of Member States about the provision of guarantees for the prevention of the militarization of outer space and the possible establishment, in these conditions, of an organization for its peaceful use, and to report to the fortieth session on the subject.

- Additional Protocol to 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 with a View to Preventing an Arms Race in Outer Space, 4.
- Administrative Procedure Act, 32.
- Agreement Governing the Activities of States on the Moon and Other Celestial Bodies ("Moon Agreement", "Moon Treaty"), 3, 18-19, 70, 72, 77.
- Agreement to Reduce the Risk of Outbreak of Nuclear War ("Accident Measures Agreement"), 2-3.
- Agreement on the Prevention of Nuclear War ("Prevention of Nuclear War Agreement"), 3.
- Agreement on the Rescue of Astronauts, the Return of Astronauts, and the Return of Objects Launched into Outer Space, 18.
- Agreement Relating to the International Telecommunications Satellite Organization ("INTELSAT Agreement"), 29-31, 75.
- Anti-Ballistic Missile Systems, 11.
- Anti-Satellite (ASAT) systems/weapons, 4-10, 62-63, 72.
- Arms Export Control Act, 48-49.
- Atlas-Centaur, 65.
- Authorized User, 118, 122.
- Böckstiegel, Karl-Heinz, *Proposed Draft Convention on the Settlement of Space Law Disputes*, 136-162.
- Book Reviews/Notices, 82-86, 207-209.
- Adelman, Andrew and Peter M. Bainum (eds.) *International Space Technical Applications*, 86.
- Anaejionu, Paul, Nathan C. Goldman and Philip J. Meeks (eds.) *Space and Society: Challenges and Choices*, 208.
- Azud, Jan. *Vedecko-technicka revolucia, mierove spoluzitie a medicina rodne pravo (Scientific and Technological Revolution, Peaceful Co-existence and International Law)* (Vladimir Kopal), 82-83.
- Brown, Jeri W. (ed.) *Space Safety and Rescue*, 85.
- Burke, James D. and April S. Whitt (eds.) *Space Manufacturing 1983*, 85.
- Gerbner, George and Marsha Siefert (eds.) *World Communications: A Handbook*, 83-84.
- Heath, Gloria W. (ed.) *Space Safety and Rescue*, 208.
- Matte, Nicolas Mateesco, *Aerospace Law: Telecommunications Satellites*, 84-85.
- Salvaggio, Jerry L. (ed.) *Telecommunications: Issues and Choices for Society*, 208-09.
- Wolf, Dieter O. A., Hubertus M. Hoose and Manfred A. Dausen, *Die Militarisierung des Weltraums (The Militarization of Outer Space)* (Adrian Bueckling), 207.
- Books Received, 86, 209.
- Cabinet Council on Commerce and Trade, 41-42, 66.
- Centre National D' Etudes Spatial (CNES), 165.
- Claims Commission Tribunal, 37, 136.
- Commerce, Justice, State Department Appropriations Bill, 67.
- Commercialization of Space: Incentives, Impediments and Alternatives, 163-173.
- Committee on Space Research (COSPAR), 80.
- Communications Satellite Act of 1962 ("Satellite Act"), 109-111, 113-115, 117, 120, 123-124, 126-128, 130-131, 134.
- Communications Act of 1934 ("Communications Act"), 113, 118.
- Communications Satellite Corporation (COMSAT), 66, 110-124, 126-133, 135.
- Computation of Miss Between Orbits (COMBO), 50.
- Conestoga I, 43-44, 46, 48-50.
- Committee on Disarmament (formerly "Conference on Disarmament"), 4, 10, 24, 52, 72.
- Congress, 40-41, 50-51, 61-67, 114, 126-27, 171.
- Convention on International Liability for Damage Caused by Space Objects ("Convention on Liability"), 18, 47, 136, 166.
- Convention on Principles Governing the Use by States of Artificial Earth Satellites for Direct Television Broadcasting, 19.

Convention on Registration of Objects Launched into Outer Space ("Registration Convention"), 3, 11, 18.
 Convention on the Prohibition of Military or Any Other Hostile Uses of the Environment, 70.

Current Documents, 98-107, 216-18.

Request for the Inclusion of a Supplementary Item in the Agenda of the Thirty-Eighth Session -
 Conclusion of a Treaty on the Prohibition of the Use of Force in Outer Space and From Space
 Against the Earth, 98-101.

Resolution Adopted by the General Assembly 37/89 (1983), International Cooperation in the Peaceful
 Uses of Outer Space, 102-104.

Resolution Adopted by the General Assembly 37/90 (1983), Second United Nations Conference
 on the Exploration and Peaceful Uses of Outer Space, 105-107.

Request for the Inclusion of an Additional Item in the Agenda of the Thirty-Ninth Session—Use
 of Outer Space Exclusively for Peaceful Purposes for the Benefit of Mankind, 216-18.

Danielson, Sune, *Examination of Proposals Relating to the Prevention of an Arms Race in Outer Space*, 1-11.

Defense Against Ballistic Missiles (DABM) (formerly "Ballistic Missile Defense"), 61-62, 64.

Defense Technologies Study Team ("Fletcher Commission"), 64.

Delta, 65.

Department of Commerce, 41-42, 65-66, 135, 166.

Department of Defense, 35, 41, 45, 61-64, 66, 167.

Department of State, 36, 40, 42, 45, 130-31, 134, 167-68.

Department of Transportation, 35-36, 38, 40-42, 65, 67, 79, 164, 168, 172.

Direct Access Notice of Inquiry (NOI), 120-22.

Draft Treaty on the Prohibition of the Stationing of Weapons of Any Kind in Outer Space, 4-5.

Earth Remote Sensing Satellite (ERS), 133.

Emergency Emergency Jobs Bill, 66.

European Space Agency, 136, 165, 169.

Eutelsat, 75.

Events of Interest, 52-81, 174-206.

A. Past Events, 52-81, 174-206.

(a) Reports, 52-74, 174-191.

Review of the Work of the Committee on the Peaceful Uses of Outer Space (*N. Jasentuliyana*), 52-60.

Military and Civilian Space Issues Before the First Session of the 98th Congress -
 A Legislative Report (*M. Smith*), 61-67.

The 26th Colloquium on the Law of Outer Space, Budapest, October 10-15,
 1983 (*L.H.Ph. Diederiks-Verschoor*), 68-69.

Report on Symposium on "Conditions Essential for Maintaining Outer Space for
 Peaceful Uses", The Hague, March 12-15, 1984 (*E. Ploman*), 70-74.

International Telecommunications Union WARC-85 Conference Preparatory
 Meeting, Geneva, Switzerland, June 25 - July 20, 1984; Summary of
 Highlights and Events (*Stephen E. Doyle*), 173-183.

Consideration of Matters Related to the Peaceful Uses of Outer Space at the
 Thirty-Ninth Session of the General Assembly, (*Boris Kabirow*), 183-191.

(b) Short Accounts, 74-81, 191-206.

Session on Policy, Strategy and Legal Aspects of Space, Colorado Springs, Aug. 4,
 1983 (*S. Sloboda*), 74.

Legal Symposium Panel on Space Telecommunications Issues, International
 Telecommunications Union Forum 83, Geneva, Oct. 18, 1983 (*M. Rothblatt*), 74-76.

Program on "Space Law and Practice", Association of American Law Schools, San
 Francisco, Jan. 5, 1984 (*S. Gorove*), 76-77.

Toledo International Law Society Symposium on "Arms Control and Outer
 Space", Feb. 18, 1984 (*R. Edwards, Jr.*), 77.

- Program on "Commercialization of Space: Incentives, Impediments, and Alternatives", American Society of International Law, Washington, D.C. April 11-14, 1984 (*S. Gorove*), 77-78.
- Symposium on Military and Commercial Aspects of the Uses of Outer Space, Colorado Springs, May 9-10, 1984 (*W. Wirin*), 78-79.
- FBA Session on Government Contracts and Space Commercialization, New Orleans, La., May 11, 1984 (*C. Taylor*), 79.
- Program on "Space Activities of Developing Nations: Overcoming the Barriers", International Centre, Vienna, June 14, 1984 (*S. Gorove*), 79-80.
- Symposium on "International Security and Outer Space, McGill University, March 16-17, 1984 (*Jean Louis Magdelénat*), 191-193.
- International Symposium on Space Law, Naples and Capri, June 11-16, 1984 (*I.H. Ph. Diederiks-Verschoor*) 193-194.
- Study Week on "The Impact of Space Exploration on Mankind", Rome, 1-5 October 1984 (*V. Kopal*), 194-195.
- Hamburg Colloquium on Legal Aspects of Space Stations, October 3-4, 1984 (*K.H. Böckstiegel*), 195-197.
- The 27th Colloquium on the Law of Outer Space, Lausanne, 8-13 October 1984 (*I.H.Ph. Diederiks-Verschoor*), 198-200.
- Symposium on Space Safety and Rescue, IAF Congress, Lausanne, Oct. 9, 1984 (*M. Gorove*), 200-201.
- Roundtable on Problems of Protecting the Space Environment, IAF Congress, Lausanne, 10 October 1984 (*V. Kopal*), 201-204.
- Symposium Conference on Lunar Bases and Space Activities of the 21st Century, Washington, D.C., Oct. 29-31, 1984 (*S. Gorove*), 204-205.
- Other Events, 80-81, 205.
- Brief News, 81, 206.
- B. Forthcoming Events, 81, 206.
- Evolution of the Main Principles of Space Law in the Institutional Framework of the United Nations, 12-25.
- Evolution of Proposals Relating to the Prevention of an Arms Race in Outer Space, 1-11.
- Expendable Launch Vehicles (ELV), 41-43, 65, 67, 164, 169, 171-72.
- Federal Aviation Administration (FAA), 40, 43-45, 49.
- Federal Aviation Regulations (FAR's) 43-44.
- Federal Communications Commission (FCC), 28, 31-33, 36, 40, 42, 49-50, 74, 81, 111, 113-124, 126-27, 130, 132, 134.
- Federal Government Regulation of Commercial Operations Using Expendable Launch Vehicles, 40-51.
- Food and Agricultural Organization of the United Nations (FAO), 14, 54.
- Forum 83 Symposium, 74.
- Fractional Orbit Bombardment System (FOBS), 3, 11.
- Future Security Strategy Study, 64.
- Gantr, John B., *The Commercialization of Space—Twenty Years of Experience: Some Lessons Learned*, 109-35.
- German Society for Aeronautics and Astronautics, 137.
- Group of 77, 52.
- House Appropriations Committee, 63.
- House Government Operations Committee, 66.
- House Science and Technology Committee, 64-66.
- Institute of Air and Space Law, 137.
- Interagency Board on Civil Operational Earth Observing Satellite Systems (IBCOESS), 164.
- Interagency Source Evaluation Board (SEB), 164.
- Intercosmos Programme of 1978, 69.
- Interim Agreement Between the U.S. and U.S.S.R. on Certain Measures with Respect to the Limitation of Strategic Offensive Arms ("SALT I"), 2-3, 6, 8.

- International Astronautical Federation (IAF), 69, 79.
- International Bank for Reconstruction and Development ("World Bank"), 15.
- International Civil Aviation Organization (ICAO), 15.
- International Cooperation in the Peaceful Uses of Outer Space, 24.
- International Court of Justice, 11, 168, 70.
- International Institute of Space Law (IISL), 69-70, 79, 137, 140.
- International Law Association (ILA), 137, 139-40.
 - Space Law Committee, 137, 139-40.
- International Maritime Organization (IMO), 15.
- International Maritime Satellite Organization (INMARSAT), 51, 130-133, 136.
- International Record Carriers (IRC's), 111.
- International Satellite Monitoring Agency (ISMA), 11, 24-25, 138.
- International Telecommunications Convention, 2, 7-8, 57, 70.
- International Telecommunications Satellite Organization (INTELSAT), 51, 110, 112, 114, 116-18, 120-26, 128-35, 165, 168.
 - Agreement, 29-31, 75, 123, 125, 128, 134, 136.
 - International Business Service (IBS), 30, 162.
 - Satellites, 30, 165.
 - Systems, 29.
- International Telecommunications Union (ITU), 2, 10, 14, 20, 28, 30, 51, 56-58, 74, 76, 112.
- International Traffic in Space Arms Regulation (ITAR), 167.
- International Tribunal for Space Law, 140.
- International Tribunal for the Law of the Sea, 140.
- Japan Space Development Council, 166, 169.
- Kennedy Space Center, 44, 46.
- Kopal, Vladimir, *Evolution of the Main Principles of Space Law in the International Framework of the United Nations*, 12-25.
- Landsat, 61, 66-67, 163, 171-72.
 - Transfer Proposal, 163.
- Law of the Sea Conference, 140.
- Law of the Sea Convention, 140.
- Leasecraft, 170.
- Marine Observation Satellite, 165.
- Marshall, Harry A., Jr., *Commercialization of Space — Incentives, Impediments and Alternatives*, 163-73.
- Myers, James R., *Federal Government Regulation of Commercial Operations Using Expendable Launch Vehicles*, 40-51.
- National Aeronautics and Space Act, 45.
- National Aeronautics and Space Administration (NASA), 27, 36, 40-42, 45-46, 49-50, 61, 65-67, 79-81, 164, 170.
- National Oceanographic and Atmospheric Administration (NOAA), 66-67, 163-64.
- National Security Council, 41.
- National Telecommunications and Information Administration, (NTIA), 132, 134.
- North American Air Defense (NORAD)/Space Command, 50.
- Nuclear Power Sources (NPS) in Outer Space, 22.
- Office of Commercial Space Transportation, 42-43, 45.
- Office of Management and Budget (OMB), 41.
- Office of Science and Technology Policy (OSTP), 41.

- People Protection Act, 62.
- Percheron, 50.
- Presidential Space Policy, 40.
- Proposed Draft Convention on the Settlement of Space Law Disputes, 136-162.
 1. Rules on Dispute Settlements in Existing Space Law Instruments, 136-37.
 2. Initiatives for Further Development of Relevant Space Law, 137-40.
- Recent Publications, 87-97, 210-215.
 - Articles, 87-89, 210-212.
 - Book Reviews/Notices, 89-90, 212.
 - Books, 87, 210.
 - Miscellaneous, 93-97, 215.
 - Official Publications, 90-93, 212-215.
 - Reports, 89, 212.
- Request for Proposals (RFP), 65, 67, 164.
- Rothblatt, Martin A., *Space Law and Practice in the 1980's and Beyond: A Practitioner's Perspective*, 26-39.
- Sea Bed Authority, 140.
- Sea Bed Disputes Chamber, 140.
- Sea-Law Conference, 19.
- Senate, 70, 113.
- Senate Committee on Commerce, Science and Transportation, 64, 172.
- Senate Foreign Relations Committee, 61-62.
- Senior Interagency Group for Space ("SIG Space"), 41, 65.
- Source Evaluation Board, 67, 164.
- Space Cooperation Agreement, 168.
- Space Law Practice in the 1980's and Beyond: A Practitioner's Perspective, 26-39.
- Space Services, 44, 46, 49, 65, 167.
- Space Shuttle, 27, 33, 37, 46.
- Space Shuttle Columbia, 41.
- Space World Administrative Radio Conferences ("WARC's"), 32, 51, 75.
 - Space WARC Advisory Committee, 32.
- Starstruck, 43, 46, 50, 65.
- Strategic Arms Limitation Talks ("SALT II") 2, 3, 6, 8, 11.
- Symposium on Military Space Communications and Operations, 74.
- Système Probatoire D' Observation de la Terre (SPOT)*, 165, 169.
- The Commercialization of Space - Twenty Years of Experience: Some Lessons Learned, 109-135.
- Treaty Banning Nuclear Weapons Tests in the Atmosphere, in Outer Space and Under Water ("Partial Test Ban Treaty"), 2, 70.
- Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, Including the Moon and Other Celestial Bodies ("Outer Space Treaty", "1967 Space Treaty"), 2, 4, 7-10, 16-17, 22-23, 35, 38, 47, 53, 57, 69-70, 77, 136, 166.
- Treaty on the Limitation of Anti-Ballistic Missile Systems ("ABM Treaty"), 3, 8, 11, 70.
- Treaty on the Prohibition of the Use of Force in Outer Space and from Outer Space Against the Earth (Draft) 8, 24.
- Union of Concerned Scientists, 70.
- United Nations
 - Administrative Committee on Coordination (ACC), 15.
 - Charter, 1-2, 5, 7-8, 10, 14-16.
 - Committee on the Peaceful Uses of Outer Space ("COPUOS", "UNCOPUOS"), 10, 13-15, 18, 20, 23-24, 51-56, 59-60, 71-72, 79-80.
 - Ad Hoc Committee, 13.
 - Legal Sub-Committee, 16, 18, 20-22, 52-59, 71.
 - Special Political Committee, 22.
 - Sub-Committee on Outer Space Activities, 15.
 - Technical and Scientific Sub-Committee, 10, 23, 52, 55-56, 59-60.

- Department of Political and Security Council Affairs, 14.
Outer Space Affairs Division, 14.
First United Nations Conference on the Exploration and Peaceful Uses of Outer Space (UNISPACE), 15.
National Development Programme (UNDP), 15.
Natural Resources Energy Division (NRED), 15.
Office of the United Nations Disaster Relief Coordination (UNDRO), 15.
Programme on Space Applications 52, 59.
Second United Nations Conference on the Exploration and Peaceful Uses of Outer Space (UNISPACE 82), 23, 25, 52, 57, 59, 71.
Security Council, 4-5, 7-8.
United Nations Educational, Scientific and Cultural Organization (UNESCO), 14.
United Nations Environment Programme (UNEP), 15.
United States Air Force, 45-46, 50, 65, 74.
United States Coast Guard, 45.
United States Navy, 43, 45.

World Administrative Radio Conference, 56.
World Meteorological Organization (WMO), 14.

JOURNAL OF SPACE LAW

VOLUME 12

SPRING & FALL 1984

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CONTENTS

1984

(No. 1, Spring 1984, pp. 1-107, No. 2, Fall 1984, pp. 109-224)

ARTICLES

Sune Danielsson, <i>Examination of Proposals Relating to the Prevention of an Arms Race in Outer Space</i>	1
Vladimir Kopal, <i>Evolution of the Main Principles of Space Law in the Institutional Framework of the United Nations</i>	12
Martin A. Rothblatt, <i>Space Law and Practice in the 1980's and Beyond: A Practitioner's Perspective</i>	26
James R. Myers, <i>Federal Government Regulation of Commercial Operations Using Expendable Launch Vehicles</i>	40
John B. Gantt, <i>The Commercialization of Space—Twenty Years of Experience: Some Lessons Learned</i>	109
Karl-Heinz Böckstiegel, <i>Proposed Draft Convention on the Settlement of Space Law Disputes</i>	136
Harry R. Marshall, Jr., <i>Commercialization of Space: Incentives, Impediments and Alternatives</i>	163

SPECIAL FEATURES

Events of Interest	52, 174
A. Past Events	52, 174

(a) Reports

Review of the Work of the Committee on the Peaceful Uses of Outer Space (<i>N. Jasentuliyana</i>)	52
Military and Civilian Space Issues Before the First Session of the 98th Congress—A Legislative Report (<i>Marcia S. Smith</i>)	61

The 26th Colloquium on the Law of Outer Space, Budapest, 10-15 October, 1983 (<i>I.H.Ph. Diederiks-Verschoor</i>)	68
Report on Symposium on "Conditions Essential for Maintaining Outer Space for Peaceful Uses," The Hague, March 12-15, 1984 (<i>Edward W. Ploman</i>)	70
International Telecommunication Union WARC-85 Conference Preparatory Meeting Geneva, Switzerland - June 25 to July 20, 1984: Summary of Highlights and Results (<i>Stephen Doyle</i>)	174
Consideration of Matters Relating to the Peaceful Uses of Outer Space at the Thirty-Ninth Session of the General Assembly, (<i>Boris Khabirov</i>)	183
(b) Short Accounts	
Session on Policy, Strategy, and Legal Aspects of Space, Colorado Springs, August 4, 1984 (<i>Steven J. Sloboda</i>)	74
Legal Symposium Panel on Space Telecommunications Issues, International Telecommunication Union Forum 83, Geneva, Oct. 18, 1983. (<i>Martin A. Rothblatt</i>)	74
Program on "Space Law and Practice," Association of American Law Schools, San Francisco, January 5, 1984 (<i>Stephen Gorove</i>)	76
Toledo International Law Society Symposium on "Arms Control in Outer Space," February 18, 1984 (<i>Richard W. Edwards, Jr.</i>)	77
Program on "Commercialization of Space: Incentives, Impediments, and Alternatives," American Society of International Law, Washington, D.C., April 11-14, 1984 (<i>Stephen Gorove</i>)	77
Symposium on Military and Commercial Aspects of the Uses of Outer Space, May 9-10, Colorado Springs (<i>William B. Wirin</i>)	78
FBA Session on Government Contracts and Space Commercialization, New Orleans, Louisiana, May 11, 1984 (<i>Chester D. Taylor</i>)	79
Program on "Space Activities of Developing Nations: Overcoming the Barriers", International Centre, Vienna, June 14, 1984 (<i>Stephen Gorove</i>)	79
Symposium on "International Security and Outer Space", McGill University, March 16-17, 1984 (<i>Jean Louis Magdelénat</i>)	191

International Symposium on Space Lab held in Naples and Capri from 11-16 June 1984 (<i>I.H.Ph. Diederiks-Verschoor</i>) ..	193
Study Week on "The Impact of Space Exploration on Mankind", Rome, 1-5 October, 1984 (<i>Vladimir Kopal</i>)	194
Hamburg Colloquium on Legal Aspects of Space Stations, October 3-4, 1984 (<i>Karl-Heinz Böckstiegel</i>)	195
The 27th Colloquium on the Law of Outer Space, Lausanne, 8-13 October 1984 (<i>I.H.Ph. Diederiks-Verschoor</i>)	198
Symposium on Space Safety and Rescue, IAF Congress, Lausanne, Oct. 9, 1984 (<i>M. Gorove</i>)	200
Roundtable on Problems of Protecting the Space Environment, IAF Congress, Lausanne, 10 October 1984 (<i>Vladimir Kopal</i>)	201
Symposium Conference on Lunar Bases and Space Activities of the 21st Century, Washington, D.C., October 29-31, 1984 (<i>Stephen Gorove</i>)	204
Other Events	80, 205
Brief News	81, 206
B. Forthcoming Events	81, 206
Book Reviews/Notices	82, 207
Ján Azud, <i>Vedecko-technická revolúcia, mierové spoluzitie a medzinárodné právo (Scientific and Technological Revolution, Peaceful Co-existence and International Law)</i> (<i>Vladimir Kopal</i>) ..	82
George Gerbner and Marsha Siefert (eds.), <i>World Communications: A Handbook</i>	83
Nicolas Mateesco Matte, <i>Aerospace Law: Telecommunications Satellites</i>	84
James D. Burke and April S. Whitt (eds.), <i>Space Manufacturing 1983</i>	85
Jeri W. Brown (ed.), <i>Space Safety and Rescue 1979-1981</i>	85
Andrew Adelman and Peter M. Bainum (eds.), <i>International Space Technical Applications</i>	86

Dieter O. A. Wolf, Hubertus M. Hoose and Manfred A. Dausen (eds.), <i>Die Militarisierung des Weltraums (The Militarization of Outer Space)</i> (A. Bueckling)	207
Paul Anaejionu, Nathan C. Goldman and Philip J. Meeks (eds.), <i>Space and Society: Challenges and Choices</i>	208
Gloria W. Heath (ed.), <i>Space Safety and Rescue</i>	208
Jerry L. Salvaggio (ed.), <i>Telecommunications: Issues and Choices for Society</i>	208
Books Received	86, 209
Recent Publications	87, 210
Books	87, 210
Articles	87, 210
Reports	89, 212
Book Reviews/Notices	89, 212
Official Publications	90, 212
Miscellaneous	93, 215
Current Documents	98, 216
Request for the Inclusion of a Supplementary Item in the Agenda of the Thirty-Eighth Session—Conclusion of a Treaty on the Prohibition of the Use of Force in Outer Space and From Space Against the Earth	98
Resolution Adopted by the General Assembly 37/89 (1983). International Cooperation in the Peaceful Uses of Outer Space ..	102
Resolution Adopted by the General Assembly 37/90 (1983). Second United Nations Conference on the Exploration and Peaceful Uses of Outer Space	105
Request for the Inclusion of an Additional Item in the Agenda of the Thirty-Ninth Session - Use of Outer Space Exclusively for Peaceful Purposes for the Benefit of Mankind	216
Index	219