INTERSPUTNIK INTERNATIONAL ORGANIZATION OF SPACE COMMUNICATIONS: AN OVERVIEW

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I. INTERNATIONAL LEGAL STATUS[1]

The Intersputnik International Organization of Space Communications[2] was established in 1971, in accordance with the *Intergovernmental Agreement on the Establishment of the Intersputnik International System and Organization of Space Communications*[3]. It now also conforms to *the Protocol on Amendments to the Agreement on the Establishment of Intersputnik International System and Organization of Space Communications.*[4] Intersputnik is an international, intergovernmental organization headquartered in Moscow, Russia. Its international legal status is also regulated by the *Agreement on the Legal Capacity, Privileges and Immunities of Intersputnik*[5], and the *Agreement Between Intersputnik and the Government of the USSR Concerning the Settlement of Questions Relating to the Seat of the Intersputnik Organization in the USSR.*[6] The Russian Federation officially assumed all the rights and liabilities arising from these agreements through the Ministry of Foreign Affairs of Russia.[7] In compliance with the *Intersputnik Agree-*

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[1] Immediately following this article, the full texts of the following documents are reproduced: 1) Agreement on the Establishment of the INTERSPUTNIK International System and Organization of Space Communication; 2) PROTOCOL on the Amendments to the Agreement on the Establishment of the INTERSPUTNIK International System and Organization of Space Communications; and, 3) OPERATING AGREEMENT of the INTERSPUTNIK International Organization of Space Communications. These texts were provided by the authors.

[2] Hereinafter, referred to as Intersputnik.

[3] Hereinafter, referred to as Intersputnik Agreement (November 15, 1971).

[4] Hereinafter, referred to as the Protocol (November 4, 2002).

[5] September 20, 1976.

[6] September 15, 1977.

[7] Ministry's Note No. 837/UMNTS of December 28, 1991.

ment, Intersputnik is a legal entity with the right to execute contracts, acquire, lease and alienate property and to institute proceedings.

Initially, Intersputnik had nine member states. At present, the Governments of the following twenty-four countries are members: State of Afghanistan, Republic of Bulgaria, Republic of Belarus, Hungarian Republic, Socialist Republic of Vietnam, Federal Republic of Germany, Georgia, Republic of India, Yemen Republic, Korean People's Democratic Republic, Republic of Kazakhstan, Kirghiz Republic, Republic of Cuba, Lao People's Democratic Republic, Mongolia, Republic of Nicaragua, Republic of Poland, Romania, Russia, Syrian Arab Republic, Republic of Tajikistan, Turkmenistan, Ukraine and the Czech Republic. Consultations on possible accession are in progress with a number of countries including Uzbekistan, Iran and Azerbaijan.

Intersputnik was registered with the United Nations Organization on March 27, 1973.[8] Intersputnik has the official status of a permanent observer with the UN Committee for the Peaceful Uses of Outer Space; the International Telecommunication Union; and UNESCO. It also participates in the activities of these organizations. Intersputnik is a member of the Asia-Pacific Satellite Communications Council which is headquartered in Seoul; the Global VSAT Forum; and the non-profit partnership Telecom Forum in Moscow. Intersputnik maintains contacts and develops cooperation with other global, regional and private satellite communications organizations.

II. NEW CONSTRUCTIVE DOCUMENTS

The XXVth session of the Intersputnik Board, held November 1996, reviewed and approved the final version of the two new Intersputnik constructive documents, the *Protocol* and the *Operating Agreement of INTERSPUTNIK*.[9] The Board recommended that the Member countries of Intersputnik approve the

[8] No. 12343.

[9] Hereinafter, referred to as the Operating Agreement.

Protocol in compliance with their national legislative procedures.

Both the *Intersputnik Agreement* and the *Protocol* are intergovernmental agreements to be adopted and ratified by the Governments. Conversely, the *Operating Agreement* is an international, interdepartmental agreement whose Parties are telecommunications entities, irrespective of being public or private and/or Telecommunications Administrations appointed by the members of the Intelsat. The *Protocol* entered into force on November 4, 2002, after two-thirds of the members of Intelsat approved it.

Entry into force of the *Protocol* resulted two categories of members in Intersputnik: the first consisting of the members that ratified the *Protocol* and the second consisting of those that did not. Under Article 24 of the *Intersputnik Agreement* and paragraph 4(b) of the *Vienna Convention on the Law of International Treaties*, the effective amendments are binding only on those members that ratified the Protocol. Those that did not approve the *Protocol* will continue to abide by the 1971 version of the *Intersputnik Agreement* in their relations with other Intersputnik Members and among themselves.

One should note that the authors of the *Protocol* and the *Operating Agreement* considered the interconnection and simultaneous entry into force of these two documents to be important in order to avoid controversies and a legal vacuum arising from a significant gap in their entry into force. Both documents use the same definitions and complement each other. The interconnection between the *Protocol* and the *Operating Agreement* are illustrated by two facts. First, no state may continue to be, or become a Member of, Intersputnik unless a Signatory appointed by it also signs the *Operating Agreement*, and second, in the case of a Signatory withdrawing from Intersputnik, the relevant Member is also considered to withdraw from the *Operating Agreement* unless it appoints another Signatory. Both the *Protocol* and the *Operating Agreement* provide that each Signatory acquires the rights provided for Signatories in the Basic Agreement and in *Operating Agreement* and undertakes to fulfill the obligations placed upon it by the two documents. Both the Depositary of the *Protocol* (the Government of the Russian Federa-

tion represented by the Foreign Ministry) and that of the *Operating Agreement* (the Intersputnik Director General) are notified of the appointment and withdrawal of the Signatories.

The main changes introduced by the *Protocol* and the *Operating Agreement* in the Intersputnik structure and activities are as follows:

-along with the right of ownership of the space segment, Intersputnik may lease it not only from its Members, but from any country or legal entity;

-a new body of the Intersputnik, the Operations Committee, is set up for the purpose of prompt consideration and decision-making with regard to Intersputnik's activity and the structure of Intersputnik's administration and financing is changed respectively as will be shown below;

-an institute of Signatories – telecommunications entities and/or Telecommunications Administration appointed by Intersputnik Members - is introduced, providing that one Member may appoint several Signatories.

No reservations either to the *Protocol* or to the *Operating Agreement* are admissible. Any dispute regarding interpretation or execution of the *Operating Agreement* arising between Signatories or between Signatories and the Organization may be settled by award of an ad-hoc arbitration.

III. MANAGEMENT STRUCTURE

The governing body of Intersputnik is the Board. The Board's functions cover the outlining strategic goals and fulfillment of international legal functions. It is worth noting that the Board reviews and approves the Operations Committee's activity. Each Member country of Intersputnik has a representative on the Board. Each representative has one vote and equal rights. Regular sessions of the Board are held at least once a year. The Board seeks to make its decisions unanimously. However, if this is not achieved the decisions of the Board are considered adopted if the decision is approved by two thirds of all Members of the Board. Decisions approved shall be binding upon each Member of Intersputnik.

The Operations Committee has wide authority on decision-making related to Intersputnik's activity, providing for an open list of its functions. In particular, the Operations Committee examines and approves issues related to the construction, procurement or lease as well as operation of the space segment; approves plans for the development and improvement of the communications system of Intersputnik; approves its action plan for the next calendar year; makes decisions on *all* financial issues; supervises the activity of the Directorate; and approves amendments to the Operating Agreement and submits them to the Board for confirmation.

As for the financial issues the Operations Committee adopts Intersputnik's financing policy, examines and approves finance rules, annual budgets and annual finance reports, sets tariffs for the transmission of units of information or channel lease charges associated with the use of Intersputnik's communication satellites, and makes decisions on any other financial issues including investment shares and their redistribution. The Operations Committee determines the size of the Share Capital. In this connection one should note that unlike the original 1971 version of the *Intersputnik Agreement*, which contained only general conditions and the details were supposed to be formalized by a special protocol, the *Operating Agreement* provides for a detailed procedure of formation and usage of the Share Capital. In case a Signatory fails to fulfill its financial obligations in respect of the Organization, the Operations Committee has the right to suspend its rights both under the *Intersputnik Agreement* and the *Operating Agreement*. The Operations Committee is vested to elect the Chairperson and members of the Auditing Commission, and approve the working procedure and reports of this Commission.

The Operations Committee will be composed of seventeen members, with thirteen members representing a Signatory or a group of Signatories which have the greatest investment share in the Share Capital of the Organization. The other four members come from those Signatories which are not represented in the Committee in any other way and are elected by the Board irrespective of their investment share in order to observe the principle of fair geographic representation. Any Signatory that

is not a member of the Committee may participate in sessions of the Committee as an observer. The initial composition of the Operations Committee will be announced by the Intersputnik Board based on information presented to the Board by the Members. The composition of the Operations Committee will be defined further in accordance with the Rules of Procedure to be adopted by the Operations Committee.

Each member of the Committee shall have a weighted vote equal to the investment share or investment shares contributed to the Share Capital. The voting share of a member of the Committee may not exceed 25% of the total volume of weighted votes. Should the voting share of a member of the Committee exceed 25% of the total number of weighted votes, the surplus shall be distributed among the rest of the members of the Committee in proportion to their investment shares in the Share Capital. The Committee shall seek consensus in its decision making. Should it be impossible to achieve consensus decisions will be made by a qualified majority of votes or by a simple majority of votes, subject to the importance of the issue in question.

The permanent executive and administrative body of Intersputnik is the Directorate. The Directorate consists of the Director General, his Deputy and the required staff. The Director General, who acts on the principles of undivided authority, is the Chief Executive Officer of the Organization. In this capacity, the Director General represents the Organization in relations with competent authorities of the Members of the Organization in all matters relating to its activities, as well as in relations with states whose governments are not Members of the Organization and with international organizations, with whom the Board and the Operations Committee finds it necessary to cooperate. The Director General is responsible to the Board and the Operations Committee and acts within the scope of the authority conferred on him by the *Intersputnik Agreement* and the decisions of the Board and the Operations Committee.

Under the *Intersputnik Agreement*, the Organization's finances are controlled by the Auditing Commission. The Commission consists of three members elected by the Operating Committee for a term of three years from among the nationals of different states, whose governments are Members of the Or-

ganization. The Auditing Commission annually audits the financial and economic activity, as well as book-keeping of Intersputnik. Reports of the Auditing Commission are approved by the Operations Committee. Any recommendations of the Auditing Commission approved by the Operations Committee must be implemented by the Director General.

IV. PRIVILEGES AND IMMUNITIES

As an international, intergovernmental organization Intersputnik is granted a number of privileges and immunities. The entry into force of the *Protocol* and the *Operating Agreement* neither changed its international legal status nor was there a split of its public and commercial functions. Thus the new constructive documents do not affect any of Intersputnik's privileges and immunities

The Agreement on the Legal Capacity, Privileges and Immunities of Intersputnik provides for the following immunities and privileges for the Organization in the territories of all Intersputnik member countries:

> -The premises of Intersputnik are inviolable. The property, assets and documents of Intersputnik, wherever they may be, are immune from any form of administrative or judicial intervention except when the Intersputnik Board itself waives the immunity in a particular case.
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> -Intersputnik is exempted from any direct dues and taxes, both national and local.
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> -Intersputnik is exempted from customs duties and limitations on the import and export of articles for official use.

The *Agreement between Intersputnik and the Government of the USSR Concerning the Settlement of Questions Relating to the Seat of the Intersputnik Organization in the USSR*, defines general conditions of Intersputnik having its headquarters in Russia, including the granting of the above privileges and immunities. Since Intersputnik is headquartered in Moscow, this Agreement explicitly states that Intersputnik's financial activity

is not subject to control by federal or local authorities of the host country.

For the purpose of independent performance of their functions, a number of principal staff members of the Directorate, Representatives on the Board, members of relevant delegations and members of the Auditing Commission are granted a number of immunities and privileges, specifically:

-Immunity from personal arrest or detention.

-Inviolability of official correspondence and documents.

-Exemption from personal services and direct duties and taxes in respect of remuneration paid by the country that sent a Representative or member of a delegation, as well as in respect of the salaries paid by Intersputnik to the principal staff members who are not citizens of the Organization's host country.

These staff members also enjoy customs privileges with respect to personal luggage and personal belongings.

V. OPERATIONS

Intersputnik is one of the first global satellite operators with more than 30 years of experience in operations. It operates modern communications satellites providing coverage of most of the globe. Intersputnik also offers services on Russian-built Express-A-series satellites (Express-6A(80E), Express-3A(11W), Express-A1R(40E)) as well as on the LMI-1 satellite (75E) procured by the joint venture Lockheed Martin Intersputnik. Additionally, Intersputnik has agreements in place on cross-marketing with a number of international and Russian operators, allowing it to offer transponder capacities of Eutelsat, Europe*Star and Gazkom to potential clients.

Intersputnik leases satellite channels to provide telecommunication services, including analogue and digital video, audio broadcasting, voice, data and multimedia transmissions. Jointly with its partners Intersputnik also provides for supply and integration of ground equipment and its experts provide technical support to the clients of the Organization.

In addition to its traditional operator activity, Intersputnik is also successful in implementing new projects. It is developing the Intersputnik-100M project to establish a global fleet of small communications satellites. This project provides for the manufacture and GSO injection of small communications satellites. Each satellite will have from eight to 20 transponders, weigh 500 to 1000 kg and its payload will consume 1.0 to 2.5 kW. It is planned to use relatively inexpensive launch services by Russian converted missiles. The core of this program is to reduce the cost of the satellite and its launch thus cutting lease prices and expanding the circle of potential users, starting with those in the developing countries.

Under the Intersputnik-100M project, relatively inexpensive small communications satellites are going to be built both for Intersputnik itself and for the interested customers. The governments of a number of developing countries in Asia and Africa, with medium to low traffic requirements or inadequately developed telecommunications infrastructure and which would like to have their own space programs and independent satellite systems demonstrated interest in cooperating with Intersputnik.

Within the framework of this project, Intersputnik drafted and presented comprehensive technological and commercial proposals regarding such small satellites to competent government authorities of a number of countries. Advanced discussions are underway with respect to the purchase of a small satellite with some of these countries.

Jointly with Gilat Satcom Ltd., Intersputnik connects corporate customers and Internet providers to the Internet backbone, via dedicated satellite channels. Intersputnik places special emphasis on this service in the developing countries in Africa and Asia, where it has over 200 clients and the number is growing. Intersputnik offers this service to customers in Pakistan, Nigeria, Cameroon, Ghana, Madagascar, South Africa, Kenya, Zimbabwe, Ethiopia, Somalia, Mongolia, Vietnam, etc.

Intersputnik is implementing several projects to establish additional international satellite voice links with more than 100 operators, including those in a number of developing countries, via an earth station in Moscow serving as a transit facility. Such

voice traffic channels are operational between Moscow and Baku, Moscow and Tashkent and Moscow and Baghdad. Advanced discussions are in progress with a number of other national telecom operators.

AGREEMENT

ON THE ESTABLISHMENT OF THE "INTERSPUTNIK" INTERNATIONAL SYSTEM AND ORGANIZATION OF SPACE COMMUNICATIONS

The Contracting Parties,

recognizing the need to contribute to the strengthening and development of comprehensive economic, scientific, technical, cultural and other relations by communications as well as by radio and television broadcasting via satellites;

recognizing the utility of cooperation in theoretical and experimental research as well as in designing, establishing, operating and developing an international communications system via satellites;

in the interests of the development of international co-operation based on respect for the sovereignty and independence of states, equality and non-interference in the internal affairs as well as mutual assistance and mutual benefit;

in pursuance of the provisions of Resolution 1721 (XVI) of the United Nations General Assembly and the Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, Including the Moon and other Celestial Bodies, of January 27,1967;

have agreed on the following:

ARTICLE 1

1. There shall be established an international system of communications via satellites.

2. To ensure cooperation and coordination of efforts in the design, establishment, operation and development of the com-

munications system the Contracting Parties set up the "INTERSPUTNIK" international organization, hereinafter referred to as the Organization.

ARTICLE 2

1. "INTERSPUTNIK" is an open international organization.

2. The Members of the Organization shall be the governments that have signed this Agreement and have deposited their instruments of ratification in accordance with Article 20 as well as the governments of other states that have acceded to this Agreement pursuant to Article 22.

ARTICLE 3

The seat of the Organization shall be in Moscow.

ARTICLE 4

1. The international system of communications via satellites shall include as its components:

   - a space segment comprising communications satellites with transponders, satellite-borne facilities and ground systems of control to ensure the normal functioning of the satellites;

   - earth stations mutually communicating via satellites.

2. The space segment shall be the property of the Organization or is leased from Members possessing such systems.

3. The earth stations shall be the property of states or recognized operating agencies.

4. The Members of the Organization shall have the right to include the earth stations which they have built into the communications system of the Organization provided these stations meet the Organization's specifications.

ARTICLE 5

The international communications system shall be established by the following stages:

- The stage of experimental work done by Members at their earth stations with the use of satellite communications channels made available to the Organization free of charge by the Union of Soviet Socialist Republics on its communications satellites. This stage shall cover the period until the end of 1973.

- The stage of work, involving the use of communications channels on Members' communications satellites on the basis of lease.

- The stage of commercial operation of the communications system with the use of the space segment owned by the Organization or rented from its Members. Transition to this stage will be effected when the establishment of the space segment owned by the Organization or its lease are considered economically advisable by the Contracting Parties.

ARTICLE 6

Communication satellites owned by the Organization shall be launched, put into orbit and operated in orbit by Members which possess appropriate facilities for this purpose on the basis of agreement between the Organization and such Members.

ARTICLE 7

The Organization shall coordinate its activities with the International Telecommunication Union and cooperate with other organizations concerned with the use of communications satellites both in technology (the use of the frequency spectrum, the applications of technical standards for communications channels and of equipment standards) and in international reglamentation.

ARTICLE 8

The Organization shall be a legal entity and shall be entitled to conclude contracts, acquire, lease and alienate property and to institute proceedings.

ARTICLE 9

1. It shall enjoy in the territory of the states whose governments are Members of the Organization the legal capacity necessary for the attainment of its goals and the performance of its functions. The scope of this legal capacity shall be determined by appropriate agreements with the competent authorities of the states in whose territory it carries out its activities.

2. The legislation of the states in whose territory the Organization carries out its activities shall apply to all matters not covered by the present Agreement or by agreements referred to in paragraph I of this Article.

ARTICLE 10

1. The Organization shall be liable with respect to its obligations within the limits of the property which it owns.

2. The Organization shall not be liable with respect to the obligations of the Contracting Parties, nor the Contracting Parties shall be liable with respect to the obligations of the Organization.

ARTICLE 11

1. The following bodies shall be established to govern the activities of the Organization:

   - the Board - a governing body;
   - the Directorate - a permanent executive and administrative body - headed by the Director-General.

The time for the establishment of the Directorate and the beginning of its activities shall be determined by the Board.

2. Prior to the beginning of the Directorate's activities the functions of the Director General in representing the Organization set forth in paragraph 2 of Article 13 shall be performed by the Chairman of the Board.

3. The Auditing Commission shall be established to supervise the financial activities of the Organization.

4. The Board may also set up auxiliary bodies required for the attainment of the goals of this Agreement.

ARTICLE 12

1. The Board shall be composed of one representative from each Member of the Organization.

2. Each Member of the Organization shall have one vote in the Board.

3. The Board shall hold its regular sessions at least once a year. An extraordinary session may be held at the request of any Member of the Organization or the Director General if no less than one third of the Members of the Organization favour its convocation.

4. The sessions of the Board shall be held, as a rule, at the seat of the Organization. The Board may decide to hold sessions in the territories of other states whose governments are Members of the Organization at the invitation of these Members.

   Prior to the beginning of the Directorate's activities the Board shall meet in succession in the states whose governments are Members of the Organization in the alphabetic order of their names in the Russian language. In this case

the costs of holding such sessions are borne by the host Members of the Organization.

5. Chairmanship at the sessions of the Board shall be rotated among the Members of the Organization in the alphabetic order of their names in the Russian language. The representative of the Member next in the alphabet shall be deputy chairman. The chairman and his deputy shall remain in office until the next regular session of the Board.

6. The Board shall be competent to deal with matters covered by this Agreement. The Board shall:

   6.1. examine and approve measures for establishing, acquiring or leasing and operating the space segment;

   6.2. approve plans for the development and improvement of the Organization's communications system;

   6.3. determine specifications for the Organization's

   6.4. examine and approve the programme of putting into orbit the Organization's communications satellites;

   6.5. approve the plan for the distribution of the communications channels among the Members of the Organization as well as the procedure and conditions for the utilization of the communications channels by other users;

   6.6. determine specifications for the earth stations;

   6.7. determine whether the earth stations offered for inclusion into the communications system of the Organization meet the specifications;

   6.8. elect the Director General and his deputy and supervise the activities of the Directorate;

6.9. elect the chairman and members of the Auditing Commission and approve the procedure for the work of the Commission;

6.10. approve the structure and staff of the Directorate as well as the Directorate's Staff Regulations;

6.11. approve the plan of the activities of the Organization for the coming calendar year;

6.12. examine and approve the budget of the Organization and the report on its execution as well as the Organization's balance sheet and distribution of profit;

6.13. examine and approve annual reports of the Director General on the activities of the Directorate;

6.14. approve the report of the Auditing Commission;

6.15. take note of the official statements of the governments wishing to accede to the Agreement;

6.16. determine the procedure and the dates for the payment of proportional contributions as well as readjust the contribution shares in accordance with paragraph 5 of Article 15;

6.17. set the rates for transmitting a unit of information or the lease cost of the Organization's satellites communications channel;

6.18. consider proposals for amendments to this Agreement and submit them to the Contracting Parties for approval as provided for in Article 24;

6.19. adopt its own rules of procedure;

6.20. examine and decide on other matters arising from this Agreement.

7. The Board should seek unanimity in adopting its decisions. If this is not achieved, the decisions of the Board shall be considered adopted if no less than two thirds of all Members of the Board vote for them. The decisions of the Board will not be binding on those members who did not favour their adoption and submitted their reservations in writing; however, such Members may later associate themselves with the decisions.

8. In performing its functions set forth in paragraph 6 of this Article the Board shall act within the resources determined by the Contracting Parties.

9. The first session of the Board shall be convened by the government of the state where the seat of the Organization is situated not later than three months after the entry into force of this Agreement.

ARTICLE 13

1. The Directorate shall consist of the Director General, his deputy and the required staff.

2. The Director General who acts on the principles of undivided authority shall be the chief executive of the Organization and in this capacity shall represent it in relations with the competent authorities of the Members of the Organization in all matters relating to its activities, as well as in relations with states whose governments are not Members of the Organization and with international organizations with which the Board finds it necessary to cooperate.
3. The Director General shall be responsible to the Board and shall act within the scope of the authority conferred on him by this Agreement and the decisions of the Board.

4. The Director General shall perform the following functions:

   4.1. ensures the implementation of the Board's decisions;

4.2. negotiates with the communications authorities, design agencies and industrial enterprises of the Members of the Organization on the questions of designing the entire system and of designing, manufacturing and delivering the satellite-borne equipment elements and units for the Organization's communications satellites;

4.3. negotiates on the questions of launching communications satellites for the Organization;

4.4. concludes on behalf of the Board and within the authority determined by the Board international and other agreements;

4.5. draws up the budget estimates for the forthcoming fiscal year, submits them to the Board for approval and reports to the Board on the execution of the budget for the past financial year;

4.6. prepares for submission to the Board the report on the Directorate's activities for the past year;

4.7. draws up plans for the Organization's activities as well as for the development and improvement of the communications system and submits them to the Board for approval;

4.8. ensures the preparation, convocation and holding of the sessions of the Board.

5. The Director General and his deputy shall be elected from among the nationals of the states whose governments are Members of the Organization for a period of four years. The Deputy Director General may be elected, as a rule, for one term only. The Director General and his deputy shall not be citizens of the same state.

6. The staff of the Directorate shall be composed of nationals of the states whose governments are Members of the Organization with due regard for their professional qualifications and the equitable geographical representation.

ARTICLE 14

1. The Auditing Commission shall consist of three members elected for a period of three years from among the nationals of different states whose governments are Members of the Organization. The chairman and a member of the Auditing Commission shall not hold any office in the Organization.

2. The Director General shall make available to the Auditing Commission all material and documents required for auditing.

3. The report of the Auditing Commission shall be submitted to the Board of the Organization.

ARTICLE 15

1. A statutory fund (fixed and current assets) shall be established to finance the activities of the Organization. The decision on the establishment and the size of the statutory fund shall be taken by the Contracting Parties on the basis of the recommendation of the Board and shall be formalized by a special protocol. The amount of the proportional contributions of the Members of the Organization to the statutory fund shall be fixed in proportion to the extent to which they use the communications channels.

2. If in the process of the improvement of the communications system a necessity to increase the statutory fund is revealed, the sum of additional contributions shall be apportioned among the Members of the Organization who have given their consent to such an increase.

3. The contributions of the Members of the Organization to the statutory fund shall be used to meet the following expenses of the Organization:

   3.1. for research, design and experimental work relating to space segment and the earth stations;

   3.2. for design, construction, acquisition or lease of the space segment;

   3.3. for launching and putting into orbit communications satellites of the Organization;

   3.4. for other purposes in connection with the activities of the Organization.

4. Prior to the establishment of the statutory fund the Organization shall conduct its activities on the basis of a special budget drawn up for each calendar year. The expenses envisaged in the budget for the maintenance of the staff of the Directorate, the holding of the Board's sessions and other administrative activities shall be met by the Members of the Organization in proportions fixed by the Contracting Parties on the recommendation of the Board and formalized by a special protocol.

5. Upon the admission of new Members to the Organization or in the case of the withdrawal from the Organization, the share of contributions of each remaining Member shall be changed accordingly.

6. The currency in which contributions are paid to the statutory fund and the Organization budget shall be determined by the Contracting Parties on the recommendation of the Board.

7. The Organization shall charge 3 per cent annually for sums which Members have failed to pay by the date fixed.

8. If a Member of the Organization fails to meet its financial obligations within one year the Board will decide on a partial or complete suspension of its rights arising from membership in the Organization.

9. The profits derived from the operation of the communications system shall be shared by the Members of the Organization in proportion to the amount of their contributions. The Members may decide to use the profits to increase the statutory fund or to set up some special funds.

10. The expenses for the maintenance of participants in conferences and meetings convened in connection with the implementation of the goals of the Organization, including the sessions of the Board, shall be met by the Contracting Parties represented on such conferences and meetings.

ARTICLE 16

1. The Organization shall operate the space segment making communications channels available to its Members and other users in accordance with the provisions of this Agreement.

2. The communications channels at the disposal of the Organization shall be distributed among the Members of the Organization on the basis of their needs for channels. Communications channels which are in excess of aggregate requirements of all Members of the Organization may be leased to other users.

3. Payment for the communications channels made available shall be charged according to rates established by the Board. The rates shall be fixed at the average world level calculated in gold francs.

   The payment for communications services shall be made in a manner determined by the Board.

ARTICLE 17

1. Any of the Contracting Parties may denounce this Agreement by notice in writing to that effect given to the Depositary Government.

   The denunciation of the Agreement by such Contracting Party takes effect upon the termination of the financial year during which a period of one year expires from the date of notification of the Depositary Government of the denunciation. Such Contracting Party shall pay within the period fixed by the Board the sum of contributions due for the financial year in which the denunciation becomes effective and shall also carry out all other financial obligations assumed.

2. The amount of the monetary compensation due to the Contracting Party which has denounced the Agreement shall be determined by the Board in accordance with the sum of contributions paid by that Contracting Party to the statutory fund of the Organization with due regard to physical and moral depreciation of the fixed assets. The monetary compensation shall be paid following the approval by the Board of the budget report for the financial year during which the denunciation takes effect.

ARTICLE 18

1. This Agreement may be terminated with the consent of all the Contracting Parties.

   The termination of the Agreement amounts to the dissolution of the Organization.

   The procedure for the dissolution of the Organization shall be determined by the Board.

2. In the event of the dissolution of the Organization its fixed assets shall be realized and the Members of the Organiza-

tion shall be paid monetary compensation according to their participation in capital expenditure for the establishment of the communications system with due regard to physical and moral depreciation of the fixed assets. The available current assets, with the exception of the part intended to meet the obligations of the Organization shall be distributed among the Members of the Organization in proportion to the monetary contributions actually paid as of the date when the Organization was dissolved.

ARTICLE 19

The languages of the Organization shall be English, French Russian, and Spanish.

The extent to which language is used shall be determined by the Board depending on the actual requirements of the Organization.

ARTICLE 20

1. This Agreement is open for signing until the 31st December, 1972 in Moscow.

   The Agreement shall be subject to ratification. Instruments of ratification shall be deposited with the Government of the USSR which is designated the Depositary Government of this Agreement.

ARTICLE 21

The Agreement shall enter into force on the deposit of six instruments of ratification.

ARTICLE 22

1. The government of any state which did not sign this Agreement may accede to it. In that case the government shall submit to the Board of the Organization a formal statement to the effect that it shares the goals and principles of the ac-

tivities of the Organization and assumes the obligations under this Agreement.

2. Instruments of accession to the Agreement shall be deposited with the Depositary Government.

ARTICLE 23

For governments whose instruments of ratification or accession are deposited subsequent to the entry into force of this Agreement, it shall enter into force on the date of the deposit of the above instruments.

ARTICLE 24

Amendments to this Agreement shall come into force for each Contracting Party accepting the amendments upon their approval by two thirds of the Contracting Parties. An amendment which has come into force shall be binding on the other Contracting Parties after their acceptance of such amendment.

ARTICLE 25

1. The Depositary Government of the Agreement shall inform all Contracting Parties of the date of each signature of the date of deposit of each instrument of ratification and accession, of the date of the entry into force of the Agreement and of all other notices it has received.

2. This Agreement shall be registered by the Depositary Government pursuant to Article 102 of the Charter of the United Nations.

ARTICLE 26

This Agreement, the English, French, Russian and Spanish texts of which are equally authentic, shall be deposited in the archives of the Depositary Government. Duly certified copies of the Agreement shall be transmitted by the Depositary Government to the Contracting Parties.

In witness whereof the undersigned, duly authorized, have signed this Agreement.

Done in Moscow on the 15th of November 1971.

PROTOCOL

ON THE AMENDMENTS TO THE AGREEMENT ON THE ESTABLISHMENT OF THE INTERSPUTNIK INTERNATIONAL SYSTEM AND ORGANIZATION OF SPACE COMMUNICATIONS

The Contracting Parties,

proceeding from the purposes and objectives of the INTERSPUTNIK International Organization of Space Communications;

recognizing the need to improve the legal basis of the activity of the INTERSPUTNIK International Organization of Space Communications and

noting INTERSPUTNIK's transition to commercial operation of the satellite communications system managed by INTERSPUTNIK;

have agreed to insert the following amendments and revisions to the Agreement dated November 15, 1971 on the Establishment of the INTERSPUTNIK International System and Organization of Space Communications (hereinafter referred to as the Agreement):

Article 1

Modify Article 1 of the Agreement as follows:

1. Include the following subparagraph in paragraph 2: "INTERSPUTNIK is an open international organization".

2. Add new paragraphs 3 and 4:

"3. For the purpose of this Agreement

"Member of the Organization" means a Government for which this Agreement has become effective;

"Operating Agreement" means the Operating Agreement of the INTERSPUTNIK International Organization of Space Communications;

"Signatory" means a telecommunications entity and/or Telecommunications Administration appointed by a Member of the Organization under Article 2 hereof, for which the Operating Agreement has become effective;

"Space segment of the Organization" means communication satellites with transponders, satellite-borne systems and ground control facilities providing normal operation of the satellites and owned or leased by the Organization;

"Share Capital" means the Organization's own capital formed by the Signatories to support the activity of the Organization.

"Property of the Organization" means anything that irrespective of its nature can be the subject of a right of ownership, inclusive contracting and other rights, revenues and interests.

4. According to the provisions hereof, there shall be concluded the Operating Agreement.

Article 2

Modify Article 2 of the Agreement as follows:

1. Exclude paragraphs 1 and 2

2. Include the following new paragraphs:

"1. Each Member of the Organization shall appoint a Signatory under its jurisdiction to sign the Operating Agreement. A

single Member of the Organization may appoint several Signatories.

2. A Member of the Organization shall notify in writing the Depositaries of this Agreement and the Operating Agreement of the Signatory or Signatories appointed by it.

3. The relations between the Member of the Organization and the Signatory shall be governed by appropriate national laws. The Member of the Organization shall give reqisite directives to the Signatory in compliance with national laws.

4. A Member of the Organization shall not be liable for any obligations of Signatories."

Article 3

Add to Article 3 of the Agreement:

"If recommended by the Operations Committee, the Board may decide to relocate the Organization's headquarters to one of the member-countries."

Article 4

Replace in paragraph 2, Article 4 of the Agreement:

"...from Members of the Organization possessing such systems" with "by the Organization".

Article 5

Replace in the first phrase of subparagraph 3, Article 5 of the Agreement:

"...from its members" with "by the Organization".

Article 6

Change Article 6 of the Agreement as follows:

"Communications satellites owned by the Organization shall be launched, positioned in orbit and controlled by the Members of the Organization having appropriate facilities or by other contractors on the basis of relevant agreements."

Article 7

Replace in paragraph 2, Article 10:

"Contracting Parties, nor the Contracting Parties shall be liable with respect to the obligations of the Organization" with "Members of the Organization and similarly the Members of the Organization shall not be liable for the Organization's obligations".

Article 8

Change Article 11 of the Agreement as follows:

1. Replace in paragraph 1: "govern" with "perform".

2. Paragraph 1: add a new hyphen between the hyphens "Board" and "Directorate":

   "the Operations Committee - a body of the Organization for immediate examination of and decision-making on different issues related to the Organization's activity."

3. Exclude the last subparagraph from paragraph 1.

4. Exclude paragraph 2.

5. Change the wording of paragraph 4 as follows: "The Board and the Operations Committee may, within the framework of their competence, establish auxiliary bodies required for the attainment of the goals of this Agreement and the Operating Agreement".

6. Modify paragraph 5:

"5. The meetings of the Organization's bodies may be held not only in the territories of the Members of the Organization but in any other place found most conducive by the Organization for its activity."

Article 9

Modify Article 12 of the Agreement:

1. Paragraph 3: add the words "the Operations Committee" after "any Member of the Organization."

2. Exclude second subparagraph from paragraph 4.

3. Word paragraph 6 as follows:

"6. The Board shall be competent to

6.1. make decisions on the Organizations's general policy and long-term goals including regulation of and non-discriminative access to the space segment;

6.2. supervise performance hereunder and under the Operating Agreement;

6.3. ensure that the Organization's activity complies with the purposes and principles of the UN Charter as well as provisions of any other international agreement binding on the Organization by its decision;

6.4. make decisions on the Operations Committee's recommendations;

6.5. review and approve annual reports of the Operations Committee on its activity;

6.6. review and approve annual reports of the Director General on the activity of the Organization;

6.7. approve its own rules of procedure;

6.8. define geographic regions, from which an adequate number of members of the Operations Committee shall be elected from each region on the basis of fair geographic representation, and

6.9. make decisions on issues related to the Organization's official relations with states, both Members and non-Members, and with international organizations;

6.10. make decisions on any amendments hereto or to the Operating Agreement;

4. Redraft paragraph 7 as follows: "The Board shall seek unanimity in approving its decisions. If this is not achieved, the decisions of the Board shall be considered adopted if voted for by no less than two thirds of the attending and voting Members of the Organization. Decisions approved shall be binding upon each Member of the Organization.

A decision shall not be binding upon any Member of the Organization if this Member does not agree to this decision and as a direct consequence withdraws from the Organization.

Any decision on the changes regarding the existing structure or major goals of the Organization may be approved only by common consent of the Members of the Organization. To determine whether the Board's decision results in the change of the structure or major goals of the Organization, the procedure set forth in the first subparagraph of paragraph 7 of this Article shall be applied."

5. Delete paragraph 9.

Article 10

Add new Article 12[bis]:

"Article 12[bis]

1. The Operations Committee is the body of the Organization set up for the purpose of prompt consideration and decision-making with regard to the Organization's activity.

   Any Signatory may be a member of the Committee.

2. The Operations Committee shall

   2.1. examine and approve issues related to the construction, procurement or lease as well as operation of the space segment;

   2.2. approve plans for the development and improvement of the communications system of the Organization;

   2.3. define specifications for the Organization's communication satellites;

   2.4. examine and approve in-orbit delivery programmes for the Organization's communication satellites;

   2.5. approve plans of communication channels allocation to the Members of the Organization and Signatories as well as the criteria applicable to the use of the Organization's space segment by other users including the procedure of authorizing such use;

   2.6. define specifications for earth stations; establish the procedure of clearing an earth station for access;

   2.7. determine whether an earth station intended for access to the Organization's communications system meets the specifications;

   2.8. if necessary, establish within the framework of its competence auxiliary bodies and hold specialized meetings;

2.9. approve the structure and staff table of the Directorate as well as the regulatory documents of the Directorate;

2.10. approve the Organization's action plan for the next calendar year;

2.11. adopt the Organization's financing policy, examine and approve finance rules, annual budgets and annual financial reports, fix tariffs for the transmission of units of information or channel lease charges associated with the use of the Organization's communication satellites as well as make decisions on any other financial issues including investment shares and their redistribution;

2.12. determine the size of the Share Capital;

2.13. make decisions to approach national or international banking institutions for credits as well as define the terms and conditions of external financing from other sources;

2.14. examine and approve reports of the Director General on the activity of the Organization;

2.15. elect the Chairperson and members of the Auditing Commission, approve the working procedure and reports of this Commission;

2.16. approve amendments to the Operating Agreement and submit them to the Board for confirmation;

2.17. annually submit to the Board reports on its activity;

2.18. appoint an arbitrator when the Organization is involved in arbitration;

2.19. lay down and pursue the Organization's policy of intellectual and industrial property protection in relation to

inventions or technological information created as a result of the Organization's activity or under contracts with the Organization;

2.20. supervise the activity of the Directorate;

2.21. approve its own rules of procedure;

2.22. perform any other functions under any other Article of this Agreement or the Operating Agreement as well as any other functions required for the attainment of the Organization's purposes."

Article 11

Change Article 13 of the Agreement as follows:

1. Delete in paragraph 2:

   "Who acts on the principles of undivided authority".

2. Word paragraph 3 as follows:

   "The Director General shall be responsible to the Board and the Operations Committee and shall act within the scope of his/her authority, and in this activity is guided by decisions of the Board and the Operations Committee."

3. Number subparagraphs of paragraph 4 as follows: 4.1., 4.2., 4.3. . . . and modify them:

   a) Add to subparagraph 1: ".....and the Operations Committee's";

   b) Remove from subparagraph 2:
   "with the telecommunications administrations, design agencies and industrial enterprises of the Members of the Organization."

c) Subparagraph 4:
add "on behalf of the Organization" after "negotiates"

d) Change in subparagraphs 5 and 7: "Board" to "Operations Committee" respectively.

e) Add to subparagraph 6: "and the Operations Committee" after "the Board"; replace "the Directorate's" with "the Organization's".

f) Add to subparagraph 8: ".....and the Operations Committee and their auxiliary bodies".

4. Add to paragraph 5:

"The Director General is jointly elected by the Board and the Operations Committee that may if necessary recall him from his post."

5. Change paragraph 6 as follows:

"The staff of the Directorate shall be composed of nationals of the states whose governments are Members of the Organization with due regard for their professional qualifications and the equitable geographical representation, and if necessary in exceptional cases of the nationals of the states whose governments are non-members of the Organization."

Article 12

Change Article 14 of the Agreement as follows:

1. Paragraph 1: change "Board" to "Operations Committee".

2. Paragraph 3: change "submitted to the Board" to "approved by the Operations Committee".

Article 13

Word Article 15 of the Agreement as follows:

"1. A Share Capital shall be established out of Signatories' contributions to support the activities of the Organization.

2. Investment shares in the share capital shall be appropriated to meet the following expenses of the Organization to the extent insomuch as the operating receipts are insufficient for this purpose:

   a) Research and development costs related to the space segment and terrestrial communication satellite control system.

   b) Costs for the designing, construction, procurement or leasing of the space segment and terrestrial communication satellite control systems.

   c) Costs for the launch and in-orbit delivery of the Organization's communication satellites.

   d) Other costs associated with the Organization's activity."

Article 14

Change Article 16 of the Agreement as follows:

1. Paragraph 1: change "Members of the Organization" to "Signatories".

2. Paragraph 2: change "Members of the Organization" to "Signatories".

3. Word paragraph 3: Payment for communications channels made available shall be charged according to rates established by the Operations Committee.

Article 15

Change the wording of Article 17 as follows:

"1. Any Member of the Organization or Signatory may voluntarily at any time withdraw from the Organization by notice in writing to that effect given to the Depositary. Upon withdrawal of a Signatory from the Organization, corresponding notice to that effect shall be given by the Member of the Organization that appointed this Signatory.

The withdrawal of a Member of the Organization shall entail simultaneous withdrawal of any Signatory appointed by this Member.

2. Upon receipt, by the Depositary, of the withdrawal notice, the Member of the Organization that gave such notice and any Signatory appointed by it or a Signatory whose withdrawal is notified shall forfeit the right of representation and the right of vote in any body of the Organization and may not assume any obligations after the date of receipt of such notice. However, upon withdrawal of any Signatory both the Organization and the Signatory shall remain liable for financial settlements. For any Member of the Organization and/or Signatory said withdrawal shall become effective, and this Agreement and/or Operating Agreement invalid upon expiry of three months as from the date of receipt, by the Depositary, of written notice as set forth in paragraph 1.

3. Whenever a Signatory withdraws from the Organization, the Member of the Organization that appointed that Signatory shall, before the effective date of withdrawal, appoint a new Signatory as from this date or withdraw from the Organization. If a Member of the Organization fails to take said measures before that date, it shall be considered to cease to be a Member as from the aforesaid date.

4. If for whatever reason a Member of the Organization wishes to appoint a new Signatory, such Member of the Organization shall give the Depositary written notice to that effect. The Operating Agreement shall become effective for the new

Signatory and invalid for the former Signatory as soon as the new Signatory assumes the obligations that its predecessor failed to meet and signs the Operating Agreement."

Article 16

Modify Article 18 of the Agreement as follows:

1. Replace in the first subparagraph of paragraph 1:

"Contracting Parties" with "Members of the Organization".

Add to the third subparagraph of paragraph 1:

"on the basis of recommendations submitted to it by the Operations Committee" after "the Board".

2. Change the wording of paragraph 2, Article 18 as follows:

"2. In the event of the dissolution of the Organization any receipts resulting from the sale of its property shall be paid after the Organization meets all its obligations to the Signatories according to their shares in the Organization's Share Capital."

Article 17

Add new paragraphs 3 and 4 to Article 22 of the Agreement:

"3. No state may continue to be or become a Member of the Organization unless any Signatory appointed by it signs the Operating Agreement."

"4. No reservations hereto and to the Operating Agreement shall be admissible".

Article 18

Change the wording of Article 24 as follows:

"1. Any Member of the Organization may propose amendments to this Agreement. Proposed text of amendments shall be forwarded to the Directorate which shall within three months upon receipt ask the Members of the Organization and its Signatories for comments and circulate such comments.

The Operations Committee shall examine and approve a recommendation concerning a given amendment at its next meeting but in no way earlier than after the expiry of a three-month period as from the date of circulation.

2. After a given amendment is examined by the Operations Committee it shall be reviewed at the next session of the Board of the Organization. If the Board approves the amendment it shall take effect as from the date of receipt by the Depositary of the last of the acceptance notices from two thirds of the Members of the Organization. An amendment which has come into force shall be binding on all Members of the Organization."

Article 19

1. This Protocol shall be accepted by each Member of the Organization according to its internal procedures. Notices of acceptance of this Protocol shall be forwarded to the Depositary of the Agreement.

2. This Protocol shall take effect as from the date of receipt by the Depositary of notices mentioned in paragraph 1 of this Article from two thirds of those governments that will be the Members of the Organization as at the date of acceptance of the text of the Protocol.

3. This Protocol becomes binding on any Member of the Organization that accepts this Protocol after it takes effect as from the date when such Member of the Organization gives corresponding notice to the Depositary.

4. Members of the Organization may declare that they accept the provisional application of the Agreement on the Establishment of the INTERSPUTNIK System and Organization of Space Communications as amended by the Protocol with corresponding notice to the Depositary.

5. For any Member of the Organization that supported the acceptance of the text of this Protocol or gave notice to the Depositary as set forth in paragraph 4 hereof, provisions of the Agreement establishing rules other than those arising out of this Protocol shall be suspended together with the Protocol of November 26, 1982 to the Agreement as from the day of the acceptance of the text of this Protocol or the date of notice by such Member to the Depositary of this Protocol.

6. No reservations to this Protocol are admissible.

Article 20

1. The Depositary of this Protocol, which shall be the Depositary of the Agreement, shall notify all the Members of the Organization of the date of each acceptance, deposition of any instruments of accession, this Protocol's entry into force or any other notices received.

2. This Protocol whose Russian, English, Spanish and French versions are equally authentic shall be deposited in the archives of the Depositary. Duly certified copies hereof shall be forwarded by the Depositary to the Members of the Organization.

OPERATING AGREEMENT

OF THE INTERSPUTNIK INTERNATIONAL ORGANIZATION OF SPACE COMMUNICATIONS

The Parties to this Agreement,

considering INTERSPUTNIK's transition to commercial operation of the satellite communications system managed by INTERSPUTNIK,

seeking further improvement and development of the activity of the INTERSPUTNIK International Organization of Space Communications,

in pursuance of the provisions of the Agreement on the Establishment of the INTERSPUTNIK International System and Organization of Space Communications of November 15, 1971 modified on the basis of the Protocol on amendments to that Agreement of November 4, 2002,

have agreed on the following:

ARTICLE I

DEFINITIONS

1. For the purpose of this Agreement:

   1) "Basic Agreement" means the Agreement on the Establishment of the INTERSPUTNIK International System and Organization of Space Communications signed on November 15, 1971 and amendments thereof;

   2) "Committee" means the Operations Committee of the INTERSPUTNIK International Organization of Space Communications established in accordance with the provisions of Article 11 of the Basic Agreement;

3) "Member of the Committee" means a Signatory to this Operating Agreement representing in the Committee one or several Members of the Organization or Signatories or a group of Signatories formed in accordance with Article 4 of this Agreement;

4) "Investment share" means the aggregate contribution of a Signatory paid to the Share Capital with Article 7 of this Agreement, which is expressed in per cent or as a certain amount;

5) "Voting share or weighted vote" means the vote expressed as a share corresponding to the value of the investment share in the Share Capital.

6) "duly licensed entity" - means a state or private entity which has a licence granted in accordance with national legislation and/or international agreements or the right to perform activities connected with the Organization's satellite capacity utilization; the national legislation means the legislation of a country in whose territory the above activity is performed or whose territory is the subject of this activity.

2. The definitions in Article 1 of the Basic Agreement shall apply to this Operating Agreement.

ARTICLE 2

RIGHTS AND OBLIGATIONS

1. Each Signatory acquires the rights provided for Signatories in the Basic Agreement and in this Operating Agreement and undertakes to fulfill the obligations placed upon it by those two documents.

2. Each Signatory shall act in accordance with all the provisions of the Basic Agreement and this Operating Agreement.

ARTICLE 3

OPERATIONS COMMITTEE

1. The Committee is the body of the Organization set up for the purpose of prompt consideration and decision making with regard to the Organization's activity within the terms of reference stipulated in Article 12 of the Basic Agreement.

2. Any Signatory as defined in paragraph 3 may be a Member of the Committee.

3. The Committee shall be composed of 17 members of the Committee including:

   a) 13 members of the Committee each one representing a Signatory or group of Signatories which have the greatest investment share in the Share Capital of the Organization; the group representation in the Committee shall be defined in the Committee's rules of procedure according to paragraph 9, Article 4 hereof.

   The initial composition of the Operations Committee shall be announced by the INTERSPUTNIK Board. To this end, the Signatories shall, prior to the effective date hereof but not later than 3 months before the next session of the Board, inform the Board of their shares in the Share Capital for the current year and, if applicable, of any group representation.

   Investment shares of the Signatories shall be revised annually and, if necessary, the membership of the Operations Committee shall be changed.

   b) 4 members of the Committee from those Signatories which are not represented in the Committee in any other way and elected by the Board irrespective of their investment share in order to observe the principle of fair geographic representation. Any Signatory elected

member of the Committee to represent a certain geographic region shall represent each Signatory of the given geographic region that is not represented in the Committee in any other manner and which agrees to this type of representation.

4. The Board shall determine geographic regions to be represented in the Committee according to paragraph 3 b).

5. Each member of the Committee shall have a weighted vote equal to the investment share or investment shares contributed to the Share Capital by the Signatory or group of Signatories represented by it. The voting share of a member of the Committee may not exceed 25 per cent of the total number of weighted votes. Should the voting share of a member of the Committee exceed 25 per cent of the total number of weighted votes, the surplus shall be distributed among the rest of the members of the Committee in proportion to their investment shares in the Share Capital.

6. The aggregate voting share of several Committee members appointed by a single Member of the Organization may not exceed 25 per cent of the total number of weighted votes. If the aggregate voting share of several Committee members appointed by a single Member of the Organization exceeds 25 per cent, the surplus shall be distributed among the rest of the Committee members in proportion to their investment shares in the Share Capital. If the aggregate voting share of several Committee members appointed by a single Member of the Organization exceeds 25 per cent, this Member of the Organization shall determine the proportion of voting share reduction for these Committee members.

7. Each Committee member shall appoint its representative and deputy representatives in the Committee and shall give written notice to that effect to the Director General of the Organization no later than before the next session of the Committee. In extraordinary cases the Committee member

shall appoint its provisional representative to participate in a single session.

Decisive votes at sessions of the Committee shall belong only to a given representative or, in his absence, to one of the deputy representatives.

8. The decisions of the Committee on the matters covered by its terms of reference in accordance with Article 12[bis] of the Basic Agreement shall be binding upon all the Signatories hereto.

9. The Director General shall submit to every session of the Committee a report on the current activity and financial status of the Organization.

10. The Committee shall seek consensus in its decision making. Should it be impossible to achieve consensus decisions shall be made as follows:

10.1. On matters of substance - by a qualified majority of votes as set forth in clause 6 of Article 4 of this Agreement.

10.2. On motions of order - by a simple majority of votes at set forth in clause 7 of Article 4 of this Agreement.

10.3. Decisions on the status of the matters under discussion shall be taken by a simple majority of votes as set forth in clause 7 of Article 4 of this Agreement.

ARTICLE 4

WORKING PRINCIPLES OF THE OPERATIONS COMMITTEE

1. The Committee shall hold at least two sessions per year, as a rule, in the host country of the Organization. Any Committee member may invite the Committee to conduct a session

in the territory of its country. In this case the Committee member shall bear expenses for the organization of the session.

An extraordinary session of the Committee may be convened at a Committee member's or the Director General's request provided that at least 4 Committee members are in favour of its convocation.

2. Any Signatory which is not a member of the Committee may participate in sessions of the Committee as an observer.

3. The Committee shall elect its Chairman and his Deputy from among its members for a term of 1 year. They may be re-elected for another term.

4. The quorum at the meeting of the Committee shall be made up of at least half plus one of its members appointed according to Article 4 of this Agreement with an aggregate voting share of at least 2/3 of the total number of weighted votes of all the members of the Committee.

5. The voting share of a member of the Committee shall be determined on the basis of the investment share of a single Signatory represented by it or investment shares of several Signatories or groups of Signatories represented by it contributed to the Share Capital as set forth in Article 6 of this Agreement.

6. A decision shall be considered to have been made by a qualified majority if voted for by at least 1/2 of the attending and voting members of the Operations Committee whose aggregate voting share is at least 2/3 of the total number of weighted votes of all the members of the Committee.

7. A decision shall be considered to have been made by a simple majority if voted for by a half plus one of the attending and voting members of the Committee. Each member of the Committee shall have one vote.

8. In extraordinary cases the Committee may take decisions without convening a session. In these cases the procedure of decision-making shall be fixed by the Committee in its Rules of Procedure.

9. The Operation Committee shall approve its Rules of Procedure.

ARTICLE 5

ESTABLISHMENT OF THE SHARE CAPITAL

1. The size of the Share Capital shall be fixed by the Committee.

2. If, in the course of the Organization's activities and improvement of the space communications system, it is deemed necessary to increase the Share Capital, it may be increased by the decision of the Committee in accordance with Article 6 of this Agreement. The size of the increase in the Share Capital shall be reflected in the finance plan and the balance sheet of the Organization. The debt to Share Capital ratio shall be determined by the Committee. Any debts receivable and credits related to the Share Capital shall be expressed in US$.

ARTICLE 6

FORMATION PROCEDURE OF THE SHARE CAPITAL

1. The Share Capital shall be made up of investment shares of the Signatories. The investment shares shall consist of:

   1) a mandatory minimum investment share;

   2) a mandatory investment share proportional to the extent to which the space segment is used;

   3) an additional mandatory investment share;

4) a voluntary investment share.

The proportion of the utilization of these sources shall be defined by the Committee.

2. The mandatory minimum investment share shall be equal to 1 per cent of the Share Capital and if necessary may be revised by the decision of the Committee whenever required by the Organization.

3. The mandatory investment shares of the Signatories shall be annually reviewed not later than on the 31st of December according to the extent to which they used the space segment within a year from November 1 of the preceding year under review to October 31 and also upon entry of new Signatories into or withdrawal from the Organization or termination of membership.

The fiscal year shall coincide with the calendar year.

The extent to which a Signatory uses the space segment is a percentage of the overall use of the space segment by all Signatories. The use of the space segment is measured by the value of receipts to be paid to the Organization according to the rates fixed for space segment utilization.

4. Should it be necessary to augment the Share Capital, an additional mandatory investment share shall be contributed according to the investment shares of the Signatories in the Share Capital in per cent.

5. In the case of entry of a new Signatory into or withdrawal from the Organization or termination of membership the investment shares of all other Signatories shall be changed in the proportion corresponding to their investment share before this change. The difference between the initial and the newly fixed investment share shall be reimbursed by the Organization to the Signatories or by the Signatories to the Organization.

ARTICLE 7

CONTRIBUTION OF INVESTMENT SHARES TO THE SHARE CAPITAL

1. Investment shares under clause 1, Article 6 hereof, may be contributed using:

   1) financial funds;

   2) if agreed by the Committee, material values, services and other resources stipulated by additional agreements between the Committee and the Signatories. The monetary value of contributed materials, services or other resources shall be determined on the basis of assessments by independent valuers.

   Shares shall be contributed to the Share Capital in a freely convertible currency to be selected by the Committee.

2. The size of the investment share, including contributed material values, services and other resources, shall be calculated as a certain amount in freely convertible currency which is selected by the Committee.

3. The mandatory investment share contributed to the Share Capital in proportion to which the space segment is used shall be paid by December 31 of the year preceding a fiscal year. All other investment shares shall be contributed according to a schedule fixed by the Committee.

4. Investment shares shall be contributed to the Share Capital only by the Signatories.

5. A penalty annually fixed by the Committee shall be charged for any overdue payment of shares taking into account internationally accepted rates.

ARTICLE 8

PROCEDURE OF TRANSFER OF INVESTMENT SHARES IN THE SHARE CAPITAL

1. The Committee may, at the request of a Signatory, reduce its investment share as compared with the share fixed for it in compliance with Article 6 of this Agreement provided that other Signatories which agree to increase their investment shares voluntarily and fully assume to recover the difference. In this case the voting share of the Signatory that buys a part of another Signatory's investment share in the Share Capital shall increase as set forth in Article 3 of this Agreement.

2. The procedure of the transfer of a part of an investment share shall be fixed by the Committee.

3. The minimum mandatory investment share shall not be subject to any transfer.

ARTICLE 9

TARIFFS

1. Space segment capacity shall be allocated for any telecommunications service according to tariffs fixed by the Committee in freely convertible currency. These tariffs should provide returns to the Organization sufficient to cover all costs resulting from its activities and to make profit.

2. The principles of the tariff policy shall be revised by the Committee at least once every two years depending on world telecommunications market fluctuations and according to the progress in upgrading the space and terrestrial segments.

3. Tariffs for each service shall normally be the same for all users of the space segment. However, in certain cases, the Committee may grant discounts.

4. Should there occur any default of or delay in payment due to the Organization for space segment utilization, the Committee shall, in accordance with recognized international practice, fix an interest rate to be charged for any overdue payment as well as apply other sanctions to be stipulated in each contract for the use of the Organization's space segment.

ARTICLE 10

USE OF RETURNS AND DISTRIBUTION OF PROFITS

1. Financial activities of the Organization shall be based on annual finance plans approved by the Committee. The financial results of the Organization's activities shall be determined on the basis of annual reports of accounts.

2. Any returns received by the Organization as a result of its activities shall, by the decision of the Committee, be used within the limits of their size for covering the expenses made to ensure the Organization's activities and provided for in the finance plan.

   They shall be used to cover the following priorities:

   a) charges for the lease, operation and maintenance of the space segment;

   b) any operation asks considered to be necessary by the Committee;

   c) dividends to the Signatories in proportion to their contributions to the Share Capital.

3. Any profits made by the Organization shall be distributed among the Signatories in proportion to their investment shares in the Share Capital.

4. If the returns received by the Organization do not cover the expenses under paragraph 2, the deficit may be offset using reserves of the Organization and/or additional mandatory investment shares and/or credits obtained according to Article 12 of this Agreement.

5. Financial activities of the Organization shall be audited by an Auditing Commission formed according to Article 13 of the Basic Agreement.

6. Account keeping in the Organization shall be performed according to the accounting standards approved by the International Accounting Standards Committee, London.

   The Committee shall use a recognized external auditor to inspect the financial activities of the Organization. The results of this audit shall be submitted to the Committee with a notification to each Signatory.

ARTICLE 11

UPGRADING OF SPACE SEGMENT

1. To develop the Organization's satellite system, the Committee shall stick to the policy of upgrading the space segment as defined in Article 4 of the Basic Agreement. Their modernization shall include the purchase or lease of necessary systems, subsystems, units, components, equipment, technologies and services with further utilization in relation to the space segment. The Committee shall announce open international tenders for this purchase or lease. The criterion to announce a specific tender and to determine the winner in this tender shall be defined by the Committee in a separate document on the basis of the principle of optimum combination of the offered quality, price and terms of delivery.

2. The Committee may decide to refrain from open international tenders for any purchase or lease aimed at any modernization whenever:

a) the estimated contract value is less than US$ 100,000;

b) any purchase or lease are caused by an urgent need in exceptional circumstances;

c) there is only one supplier who meets the specifications required by the Organization.

ARTICLE 12

USE OF EXTERNAL FINANCING

The Organization may, by the decision of the Committee, use external financing sources. These sources may be credits in relevant national or international banking institutions or other sources of external investments. The terms and conditions of external financing shall be subject to an individual agreement between the Organization and a banking instution or lender providing for the return, by the Organization, of externally invested funds and adequate dividends.

The Director General shall be authorized to conclude the above agreements unless their value is below the amount defined by the Committee; should this value exceed the amount defined by the Committee the Director General shall conclude appropriate agreements with the Committee's consent.

The reasons for using external financing and financial conditions shall be reported to the Board.

ARTICLE 13

INTERNATIONAL TELECOMMUNICATION UNION NOTIFICATION

1. The Committee may request any Member of the Organization to instruct the Telecommunications Administration under its jurisdiction to provide, jointly with the Organization, the international legal protection of the Organization's planned satellite networks.

2. In notifying the Organization's planned satellite networks with the International Telecommunication Union, the Telecommunications Administration shall be guided by the Procedures of International Telecommunication Union Notification of the Organization's Planned Satellite Networks and their International Legal Protection approved by the Committee.

3. The cooperation between the Organization and the notifying Telecommunications Administration shall be regulated by special agreements between the Organization and the Telecommunications Administration and/or an entity (entities) duly authorized by it.

ARTICLE 14

PERMISSION FOR EARTH STATIONS

1. To use the Organization's space segment, any earth station shall obtain permission from the Organization. The Committee shall determine the procedure of submitting applications to obtain permission, as well as the criteria and priorities in giving this permission.

2. A Signatory or any other duly licensed entity shall submit an application to obtain permission for the earth stations under their jurisdiction.

3. Each applicant, as defined in paragraph 2, shall be liable in relation to the earth stations covered by the request, observance by these stations of specifications determined according to paragraph 26 of Article 12[bis] of the Basic Agreement and other operating conditions approved by the Organization.

ARTICLE 15

UTILIZATION OF THE ORGANIZATION'S SPACE SEGMENT

1. Any request for the Organization's space segment capacity shall be submitted to the Organization by the Signatories or any other duly licensed entity.

2. The Committee shall determine the criteria to use the Organization's space segment and the order of priority in granting permission to use the space segment without rejecting the principle of direct access.

3. Each Signatory or duly licensed entity that have obtained permission to use the Organization's space segment shall bear responsibility for the observance of all the terms and conditions defined by the Organization in relation to this use.

ARTICLE 16

LIABILITIES

1. The liability of the Signatories related to the Organization's obligations shall be limited to the size of their investment shares in the Share Capital.

2. Should, as a result of settlement coordinated with or approved by the Committee or in accordance with a decision of a competent court, the Organization be required to pay a claim resulting from any action committed by the Organization or from any obligation assumed and implemented by the Organization in conformity or in connection with the Basic Agreement or this Operating Agreement, the Signatories shall, unless this claim is satisfied by payment, insurance or any other financial measures, pay to the Organization the uncovered amount of the claim in proportion to their investment shares as at the date of the claim.

3. Should any Signatory, as a result of settlement coordinated with or approved by the Committee or in accordance with a decision of a competent court, be required to pay a claim resulting from any action committed by the Organization or from any obligation assumed and implemented by the Organization in conformity or in connection with the Basic Agreement or this Operating Agreement, the Organization shall reimburse to it the amount paid under the claim.

4. If, in compliance with this Article, the Organization is to effect reimbursement in favour of its Signatory and if such reimbursement is not covered by payments, insurance or any other financial measures, the Signatories shall pay to the Organization the uncovered amount of the reimbursement in proportion to their investment shares as at the effective date of liability.

5. Neither the Organization nor any Signatory shall be liable to any Signatory or the Organization for any loss or damage occurred due to absence, delay in or bad quality of telecommunications which is provided or is to be provided according to the Basic Agreement and this Agreement.

6. Any contracts for or agreements on satellite communication services between the Organization and third parties should provide for a mechanism of responsibility of these parties for eventual losses that may appear in the process of doing business with the Organization.

ARTICLE 17

DISPUTES

1. Any disputes regarding interpretation or execution of this Agreement arising between Signatories or between Signatories and the Organization shall be settled by way of consultations between the disputing parties. Should a dispute remain unsettled within six months after any disputing party presents its request to settle it and should the disputing par-

ties fail to reach an agreement on any other procedure to settle the dispute, it may be submitted, by any party to the arbitration court according to the procedure provided for in the Annex to this Agreement which shall be an integral part hereof.

2. Any disputes between the Organization and any Signatory in relation to special agreements or contracts between them shall be settled according to the dispute settlement procedure provided for in these agreements and contracts. Should no procedure be provided for and should the Organization and any Signatory fail to settle a dispute relating to special agreements or contracts in any other way, it may be submitted, to the arbitration court according to the procedure provided for in the Annex to this Agreement.

3. Any Signatory that withdraws from the Organization shall continue to be bound by this Article with regard to the disputes concerning the rights and obligations resulting from the fact that it has been a Member of the Organization.

ARTICLE 18

AMENDMENTS

1. Any Member of the Organization or any Signatory may propose an amendment to this Agreement. The proposed amendments shall be submitted to the Directorate which shall enquire all the Signatories and circulate their opinions within 3 months upon receipt of the amendment. The Committee shall consider and approve the amendments at the next meeting but not earlier than 3 months upon their circulation. The amendments shall be deemed approved if voted for by a qualified majority of the Members of the Committee according to Article 4 of this Agreement.

2. After the amendment is approved by the Committee, it shall be considered at the next session of the Board of the Organization. If the Board confirms the decision of the Committee

to approve the amendment, it shall enter into force and shall be binding on all the Signatories.

ARTICLE 19

SUSPENSION OF RIGHTS AND TERMINATION OF MEMBERSHIP

1. Should any Signatory fail to fulfill any obligation under the Basic Agreement or this Operating Agreement other than the obligation provided for by paragraph 1 of Article 6 of this Operating Agreement and should this obligation remain unfulfilled within three months after the Committee notifies the Signatory on such default on obligations the Committee may suspend the rights of this Signatory. If the Committee confirms the fact of default on obligations after additional three months the Board may, by a recommendation of the Committee, make a decision to terminate the membership of the Signatory to the Operating Agreement which shall come into force as from the moment of its approval by the Board. In this case this Agreement shall cease to be valid for the Signatory.

2. Should any Signatory fail to pay a due amount according to para 1 of Article 6 of this Agreement within six months of the date of payment the rights of the Signatory under the Basic Agreement and this Operating Agreement shall be suspended. If the Signatory fails to pay a due amount within additional six months the Committee may take a decision to terminate the membership of the Signatory which comes into force as from the moment of its approval by the Committee. In this case this Agreement shall cease to be valid for the Signatory.

3. In the period of suspension of the Signatory's rights according to paragraphs 1 and 2 the Signatory shall continue to be under all its obligations under the Basic Agreement and this Operating Agreement.

4. A Signatory shall not assume any obligations after its membership is terminated. However, it shall not be released from the obligation to repay its debt to the Organization and from liabilities arising out of the actions taken before the termination of membership as well as obligations under Articles 16 and 17 of this Agreement.

ARTICLE 20

SETTLEMENT OF FINANCIAL MATTERS WHILE WITHDRAWING FROM THE ORGANIZATION OR TERMINATING MEMBERSHIP

1. The Committee shall, within three months upon the date of a Signatory's withdrawal from the Organization or termination of its membership according to Article 17 of the Basic Agreement and Article 19 of this Operating Agreement, notify the Signatory of the evaluation of the Signatory's financial status in respect of the Organization made by the Committee as at the date of the Signatory's withdrawal from the Organization or termination of its membership. This notification shall include the amount due by the Organization to the Signatory and the amount to be paid by the Signatory to the Organization as at the actual date of the withdrawal from the Organization or termination of membership including the amount being the Signatory's investment share in the Share Capital provided that the Committee took a decision that this amount should be paid before the notification concerning the Signatory's decision on the withdrawal from the Organization is received or before the date of terminating membership.

2. The Committee may decide to fully or partially release a Signatory from the obligation to contribute its investment share to the Share Capital if the decision to contribute it was taken by the Committee before the Signatory's notification to withdraw from the Organization is received or before the date of terminating its membership in the Organization as well as release it from the responsibility arising out of the

actions taken before the reception of the notification or date of terminating membership in the Organization.

ARTICLE 21

DEPOSITARY

1. The Director General of the INTERSPUTNIK International Organization of Space Communications shall be the Depositary of this Agreement.

2. The Depositary shall immediately inform the Members of the Organization and the Signatories of

   1) any signing of this Agreement;

   2) entry into force of this Agreement;

   3) the approval of any amendment to this Agreement and its entry into force;

   4) any notification of the withdrawal from the Organization;

   5) any suspension or termination of membership;

   6) any other notification or information relating to this Agreement.

3. Upon entry into force of this Agreement, the Depositary shall forward certified copies of the text of this Agreement to all the Members of the Organization and Signatories as well as send a certified copy to the Secretary General of the United Nations Organization for registration and publication according to Article 102 of the Charter of the United Nations Organization.

ARTICLE 22

ENTRY INTO FORCE

1. This Agreement shall be open for signing by the Signatories within three months after the Protocol on Amendments to the Basic Agreement takes effect. As soon as this three-month period expires provisions of paragraph 3, Article 21 shall become effective.

2. The provisions of this Agreement shall be applied provisionally by all the Signatories that signed it as from the date of signing this Agreement until it enters into force.

3. This Operating Agreement shall remain in force as long as the Basic Agreement is in force and shall cease to be in force simultaneously with it.

4. No reservations are admitted to this Agreement.

In WITNESS WHEREOF the undersigned, duly authorized representatives, have signed this Operating Agreement.

Done in one copy in the Russian, English, Spanish, German and French languages, all the texts being equally authentic. In the case of any descrepancies among the various language versions of this Agreement the Russian version shall prevail.

ANNEX

TO THE OPERATING AGREEMENT

Arbitration

1. Each Signatory shall, at least within 60 days after this Agreement is put into force, inform the Committee of two candidatures of legal experts who could act as arbitrators. On the basis of the proposed candidatures the Committee shall draw up a corresponding list and circulate it to each Signatory. In nominating the arbitrators according to paragraphs 3 and 4 the disputing parties shall be guided by this list. Should any expert included in the list be unable to act as an arbitrator for whatever reason another candidature from the list shall be proposed instead.

2. The party which applies to arbitration shall open the procedure by notifying another party hereof and the Directorate.

3. The arbitrators shall neither be citizens of the disputing countries, nor permanent residents of one of these countries, nor be contracted by them.

4. Either disputing party shall nominate an arbitrator within three months upon receipt of notifications regarding the requested arbitration.

5. Should there be more than two disputing parties either group of parties having common interests in the dispute shall nominate an arbitrator according to the procedure set forth in paragraphs 3 and 4.

6. The nominated two arbitrators shall agree upon the nomination of a third arbitrator who must meet the conditions stipulated in para 3 and besides be of a different nationality. Should the two arbitrators fail to come to an agreement in respect of the nomination of the third arbitrator either of the

former arbitrators shall nominate the third arbitrator who by no means will have any interest in the dispute. In this case the Director General shall choose the third arbitrator by drawing lots.

7. The arbitrators shall, at their own discretion, fix the procedure to stick to.

8. The decision of arbitration shall meet provisions of the Basic Agreement and this Operating Agreement as well as all other legal acts of the Organization which are approved as at the date when the dispute arises.

9. The decision taken by the majority of arbitrators' votes shall be final and binding upon the parties.

10. Either party shall pay its expenses connected with the investigation and arbitration. The arbitration costs in excess of those paid by the parties themselves shall be divided in equal shares between the disputing parties.

11. The Organization shall provide any data on the dispute that may be required by the arbitrators.

COMMENTARY

THE GENERATIONAL – TECHNOLOGICAL GAP IN AIR AND SPACE LAW - A COMMENTARY

Gbenga Oduntan[*]

I. INTRODUCTION

It has long been realised that much of western law, including international law, has developed in response to requirements of western business and civilisation.[2] Although there is generally a conspiracy of silence over this fact it occasionally receives recognition by eminent jurists and has even been expressed by judges on the bench of the of the International Court of Justice.[3] Any serious inquiry into this particular issue would

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[2] O.J.Lissitzyn, *International Law in a Divided World*, INT'L CONCILIATION (March 1963) at 37.

[3] Judge Amman in the *Barcelona Traction* Case noted that "...certain customs of wide scope became incorporated into positive law when in fact they were the work of five or six powers" Barcelona Traction (Belgium v. Spain), 1958 I.C.J. 308. For wider perspectives of this issue, *see* the following: WADE MANSELL ET AL., A CRITICAL INTRODUCTION TO LAW 1-27 *et passim* (1995); P. SINHA SURYA, LEGAL POLYCENTRICITY AND INTERNATIONAL LAW (1996); N'ZATIOULA GROVOGUSI SIBA, SOVEREIGNS, QUASI SOVEREIGNS AND AFRICANS: RACE SELF DETERMINATION IN INTERNATIONAL LAW (1996).

reveal certain indications that this is a reality even in the fields of air and space law. There are indeed numerous instances in the law and practice of airspace and outer space activities, which arguably constitute evidence of bias in legal development. Certain advantages have been secured and retained up till the present by the leading technological and political powers with respect to the contents of both bodies of law and it is envisaged that in the near future, some of these will inevitably constitute grounds for severe tensions as well as political and legal conflicts between the few space powers that exist and the newer generation of developing States. This article comments on some of the main areas of controversy that divide developed and developing States regarding the existing state and future direction of air and space law.

II. IDEOLOGICAL INTERESTS AND ACADEMIC OPINION IN AIR AND SPACE LAW

Probably the first issue to note is the vacillation of leading Western scholars on a number of issues that are of central importance in air and space law, presumably in response to perceived national or regional interests. A few examples will suffice here. Regarding the never-ending dispute as to boundary between airspace and outer space, the leading Western authors on the topics would appear to have supported two or more of the schools of thought and have indeed frequently changed their opinions presumably in line with nationalistic expectations. Thus, a writer like Bin Cheng wrote in 1960 that although spatial demarcation was hitherto unimportant in air law it had matured by that date into "one of the first and most important problems to be tackled in law".[4] Whereas, shortly afterwards in 1962 the same author stated that he would prefer that the mat-

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As one writer puts it, "a major research theme that unites this diverse anti-colonial intellectual tradition is its primary focus on arguing about the limits within which the newly independent nations of Africa would embrace an international law that was Eurocentric in its geographic origin." James Thuo Gathii, *Review Essay: International Law and Eurocentricity: Introduction*, 9 EUROPEAN JOURNAL OF INTERNATIONAL LAW 184, 187 (1997).

[4] Bin Cheng, *From Air law to Space Law*, 13 CURRENT LEGAL PROBLEMS 230 (1960).

ter be left to scientists to solve at a future date.[5] Similarly, Russian writers and legal representatives who, prior to the collapse of the Union of Soviet Socialist Republics, vehemently championed the cause of a speedy resolution of the boundary issue have very recently made a complete turn around on the matter.[6] The newly adopted Russian position is it that it would be prudent to continue to operate within the current framework until practical or legal problems arose that would demonstrate a need for such a definition and delimitation.[7] This arguably is a reflection of the close interests Russia now shares with a few other States in the exclusive club of space powers that have traditionally insisted that there is no need to address the issue in line with the wishes of many other States as it might needlessly affect outer space travel and commercial space exploration.

Another example of a learned authority rapidly changing intellectual direction, presumably in line with national or regional interest, is when Professor Cooper, one of the earliest legal commentators in this area of study, recanted quite significantly on positions he had held at the drafting stage of the Chicago Convention On International Civil Aviation (1944).[8] At the committee meetings and in an article in 1950, he considered that the definition of "State aircraft" is already contained in Article 3 (b) of the Chicago Convention (1944) and is based on a functional approach. In other words, the function for which the aircraft is designed is the crucial factor in determining its status as a military or police aircraft. Later in 1962 during a session of the ICAO legal committee that was held in relation to adoption

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[5] BIN CHENG, THE LAW OF INTERNATIONAL AIR TRANSPORT 121 (1962).

[6] The Union of Soviet Socialist Republics in 1987 suggested in a working paper to the United Nations Committee on Peaceful Uses of Outer Space (COPUOS) that 110 km above sea level should be the demarcation point between airspace and outer space. The reaction of the United Sates to this proposal was that that there is no real usefulness to the various proposals to establish a boundary. This is because the region is devoid of physically observable landmarks and most countries are not capable of accurately determining the altitude of space objects and, therefore, have no way to monitor any agreed altitude boundary. *See* COPUOS, UN Doc A/AC.105/C2/SR.316, paras. 1-7 (1987); *see also* COPUOS, UN Doc A/AC.105/C.2/7/Add.1, para.42, p.15 (1987).

[7] See Report of the 41st Session of the COPUOS Legal Subcommittee, Vienna, 2-12 April 2002 by Peter Van Fenema, *The Unidroit Space Protocol*, XXVII ANNALS OF AIR AND SPACE LAW 273-274 (2002).

[8] Also known as the Chicago Convention, 15 UNTS 295; UKTS 8 (1953).

of the Convention on Offences and Certain Other Acts Committed on Board Aircraft (1963), he denied that the definition in Article 3 (b) was restrictive and stated that other aircraft could also be State aircraft.[9] This shift in opinion may be explained as arising from the need of Western lawyers to reflect emerging threats from newer States that may not have clearly established air forces. Indeed many such States were perceived in that era to be already under the influence of the Soviet bloc and the prospect of allowing confusion to shroud certain aircraft that may be used for hostile operations even though they are not owned by regular forces was unpalatable to the Western States that already enjoyed military superiority in the air.

Ideological posturing of this nature may be said to account for much of the contribution of many authors in this area of legal studies. Writers from the Western developed States would appear to repudiate any position, which might impede the development of free market principles in air and space law. Therefore, their contributions are predominantly in favour of facilitating Western business in air and space activity. On the other hand, it is probably true to say that when it comes to matters of international resource control, writers from the developing States would also appear to instinctively adopt certain intellectual positions that favour common ownership and control. In this way it becomes difficult to conceptualise a consensus on many important issues in air and space law, just as was the case in respect of older legal regimes such as those governing the deep-sea bed and Antarctica. In fact, a closer inspection of some issues on which there appears to be consensus in all these areas would reveal that the prevailing position at any point in time is usually no more than the views of regional or ideological bedfellows who have successfully dominated international diplomacy on the issue.[10]

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[9] *See* J.C Cooper, *National Status of Aircraft* 17 J. AIR L. & COM. 292, 309 (1950). *Cf.* Coopers Comments at the session of the ICAO Legal Committee, which was held in relation to the subsequent adoption of the 1962 Tokyo Convention. 1 ICAO Doc. 8111/LC-146 at 36. *See further* Jiri Hornik, *Article 3 of the Chicago Convention*, XXVII ANNALS OF AIR AND SPACE LAW 173-174 (2002).

[10] The Antarctic Treaty 1959, for instance, was concluded before nearly half of the existing States attained independence, and the existing regime is quite exclusive. In

A second problem relates to the dearth of contribution from authors from developing States on most of the burning questions in air and space law. The bulk of their contributions are discernible only after combing through reports of various legal committees of ICAO or other relevant fora within the UN, such as the UN Committee on Peaceful Uses of Outer Space (COPUOS).[11] This may, however, prove an insufficient method of shaping air and space law considering the general suspicion in legal and political circles that many of the representatives who appear before such bodies are mere political appointees without the necessary legal expertise or experience on the highly technical matters dealt with by such bodies. This is a serious issue because most of the problems of air and space law are of such a nature that they concern all States and peoples. Additionally, no State can exist without airspace and an adjoining outer space. The fact that space law has so far developed based on respect for the "common heritage of mankind" and "province of mankind" principles also shows that there is much wisdom in collective adherence to the truth reflected in the Latin saying, "*Caveat humana dominandi, quod omnes tangit ab omnes ap-*

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order to become a consultative Party and, thus, acquire considerable decision-making powers under the treaty, a State must demonstrate an interest in Antarctica "by conducting substantial scientific research activity there" (Article IX Antarctic Treaty 1959 12 UST 794, 402 UNTS 71.). This is arguably a reflection of the intent of the early "discoverers", mostly European Nations, to establish hegemony over this important area of the world. Thus, developing States have long been challenging the Antarctic Treaty in the United Nations and other international fora. By the time of the completion of the third UN Convention on the Law of the Sea (UNCLOS III ILM 1245 (1982)) in 1982, the number of newly independent nations had increased dramatically. Not surprisingly, therefore, it was incorporated in Article 136 of the Law of the Sea Convention that, "the Area and its resources are the common heritage of mankind". However, due to massive diplomatic onslaught from many Western States, particularly the United States, which refused to ratify UNCLOS III, there have been drastic changes in the form of the Implementation Agreement of 1994 (*See* 33 ILM, 1994, p.1309) that amount to a complete turnaround on the initial regime for exploitation contained in the 1982 Convention.

[11] Set up by the General Assembly in 1959 (resolution 1472 (XIV)) to review the scope of international cooperation in peaceful uses of outer space, to devise programmes in this field to be undertaken under United Nations auspices, to encourage continued research and the dissemination of information on outer space matters, and to study legal problems arising from the exploration of outer space.

probatur." That is to say, what concerns all must be approved by all.[12]

III. CONCRETISING DOMINANCE IN THE FIELD OF AIR LAW

Those States which made the first steps towards developing the rules of air law since 1913[13] had a unique opportunity to consider at length the legal, security and political ramifications of the development of air flight at a time when most of today's States were no more than colonies and vassal States. The inclu-

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[12] Both the "common heritage" principle and the "province of all mankind" principle address space as a global commons and the rights of space actors within it. However, the "common heritage" principle is not contained in the Outer Space Treaty (Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, Including the Moon and Other Celestial Bodies, Jan. 27, 1967, 18 U.S.T. 2410, T.I.A.S. 6347, 610 U.N.T.S. 205 (effective Oct. 10,1967)), it is only contained in the Moon Treaty (Agreement Governing the Activities of States on the Moon and Other Celestial Bodies, U.N. GAOR, 34th Sess. (1979), Supp. No. 20 (Doc. A/34/20)). In addition, only the "province of mankind" principle is contained in the Outer Space Treaty. The "common heritage" and "province of mankind" principles are two different, distinct legal principles and cannot be used interchangeably. Boris Maiorsky, *A Few Reflections on the Meaning and the Interrelation of 'Province of All Mankind' and 'Common Heritage of Mankind' Notions*, PROCEEDINGS OF THE 29TH COLLOQUIUM ON THE LAW OF OUTER SPACE, 1986, 58 - 61.

[13] In 1913, France and Germany signed the first treaty on air law in the form of the Franco-German exchange of notes of 1913, which established sovereignty over the airspace primarily between both countries. In 1784 when the Montgolfier Brothers succeeded in constructing a balloon, which could take human beings up into the air and bring them back again, the law responded swiftly. On the occasion of the first ascent, on 23 April 1784 a police order was issued in Paris defining in precise terms the conditions under which balloon flights could take place. The stated objective was the protection of the civil populace. In 1889, the first International Congress of Aeronautics was held in Paris on the occasion of the International Exposition with the participation of Brazil, the United States of America (USA), France, Mexico, The United Kingdom (UK) and Russia. The following year in 1890, there was another International Congress of Aeronautics. In 1900, Fauchille, in an address to the Institute of International Law recommended that an International Air Code should be drawn up, and in 1902, he presented a set of regulations consisting of thirty-two articles to the Institute of International Law which met in Brussels. Later developments include the 1911 and 1913 Aerial Navigation Acts of the U.K, which instituted prohibited security zones along the British coasts. In 1912, Russia hurriedly proclaimed an absolute prohibition to overfly its Western frontiers. Upon the commencement of the First World War in 1914, Switzerland swiftly prohibited flights into its airspace by foreign aircraft (4 April). By November 1914, the U.S forbade overflight of the Panama Canal. Sweden, in 1916, also prohibited entrance of foreign aircraft. *See* Wybo P. Heere, *Problems of Jurisdiction in Air and Outer Space*, XXIV ANNALS OF AIR AND SPACE LAW 70-71 (1999); *see also* MODESTO SEARA VAZQUEZ, COSMIC INTERNATIONAL LAW 29 (1965).

sion of colonies in the legal definition of national territory over which airspace sovereignty was granted in the major multilateral air treaties since the Convention relating to the Regulation of Air Navigation of October 13 1919[14] stands as one of the best testimonies of the role of public international law in the legitimisation of colonial spoils. As in 1943 when the grant of complete and exclusive jurisdiction in the airspace was included in the drafting of Article 1 of the Chicago Convention (1944),[15] only Liberia was an independent State in Africa. Thus, not surprisingly, Article 2 stated uncompromisingly that "the territory of a State shall be deemed to be the land areas and territorial waters adjacent thereto under the sovereignty, suzerainty, protection or mandate of such State". It is, therefore, arguable that the general provisions of that Convention and the privileges exchanged in the Chicago Air Transit and Air Transport Agreements of 1944 were designed to facilitate the business of airspace activities for the richer States that possessed the necessary political and economic independence, flight instrumentalities and navigational infrastructure.[16]

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[14] Also known as the Paris Convention of 1919. Article 1 states, "the territory of a State shall be understood as including the national territory, both that of the mother country and of the colonies, and the territorial waters adjacent thereto". 271 LNTS 174; *see also* HUDSON, INTERNATIONAL LEGISLATIONS 359 (1989).

[15] *Supra* note 8. Article 1 of the Chicago Convention 1944 reads, "The contracting States recognize that every State has complete and exclusive sovereignty over the airspace above its territory".

[16] The Chicago International Air Services Transit Agreement 1944 (171 UNTS 387; UKTS 8) (1953) and the Chicago International Air Transport Agreement 1944 (171 UNTS 387; 148 BFSP 1). Both contain important provisions regarding obligations towards civil aircraft. It is, however, possible to question the common sense of granting the freedoms of transit for private aircraft through national airspace when most States simply do not have the technological prowess or investment capabilities to benefit from this right. Obviously, those States that own and operate large fleet of aircraft and have higher numbers of private and corporate investment in aviation have obtained valuable benefits for free. An instance of the possible financial benefits to which a sovereign State might put the exclusive rights over its airspace is displayed in the way Russia recently allowed commercial airlines to make use of its airspace in order to shorten flight routes. In one demonstration, in July 1998, the first commercial passenger flight to land at the new Hong Kong airport was a Cathay Pacific 747, which had flown non-stop from New York over the Pole. The journey took 15 1/2 hours compared with the usual 21. During the Cold War, the Russian Arctic and Far East - frontline defensive areas spiked with missile sites, naval bases and nuclear early warning stations - were forbidden zones for foreign airlines, as Korean Airlines found to its detriment in 1983 when one of its jumbo jets, apparently off-course, was shot down by Soviet fighters, killing 269 people. Pres-

It may also be noted that the crime of hijacking, which apparently disproportionately affects certain Western States, has received excessive attention in air law in comparison with other serious problems faced predominantly by developing States in the airspace; such as aerial espionage, aerial trespass and the drastic increase in other common crimes or offences committed on board aircraft. Whereas an impressive web of treaties has been put in place to combat hijacking, other important questions, such as the legality of aerial espionage, which is nearly the exclusive preserve of technologically advanced States and the scourge of developing States, continue to remain a grey area of the law.[17] The rules governing the appropriate response to

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ently a less paranoid, much poorer Russia is anxious to open up new routes and derive as much economic benefit as possible from the ownership of its airspace. With each passenger plane paying about 60 pence a mile in transit fees, Russia hopes to earn 400 million pounds a year to invest in its air-traffic control system. As Leonid Shcherbakov, head of the country's airspace allocation organisation put it, "It's just Russia's good luck to be sitting right where all the airways happen to go." *See* James Meek, *Arctic Route Set To Shrink The World For Air Travellers*, THE GUARDIAN, July 9, 1998 at 2.

[17] The thesis, as expounded by Joyner and, later, Cheng, is that there is a demonstrable connection between hijackings suffered by a State and the willingness to become parties to international conventions dealing with the crime. It is no wonder then that close attention has been given to the problem of aerial hijacking by the developed Western States. Many of the treaties that exist to regulate the problem were initiated by concerted diplomacy spearheaded by these States. Leaders of the seven major industrialized States addressed this problem specially in the form of the Bonn Declaration of 1978 (17 ILM 1285). Three main multilateral Conventions regulate jurisdiction over criminal acts against civil aviation. They are: The Convention on Offences and Certain other Acts Committed on Board Aircraft of September 14, 1963 (The Tokyo Convention, 704 UNTS 219); The Convention for the Suppression of Unlawful Seizure of Aircraft of December 16, 1970 (The Hague Convention 860 UNTS 105); and The Convention for the Suppression of Unlawful Acts against the Safety of Civil Aviation of September 23, 1971 (the Montreal Convention 10 ILM 1151). Other multilateral instruments of importance include: The United Nations Convention against the Taking of Hostages of December 18, 1979 (18 ILM 1457) The United Nations Convention on the Prevention and Punishment of Crimes Against Internationally Protected Persons, including Diplomatic Agents (1973) (1035 UNTS 167); and Annex 17 of the Chicago Convention 1944, which prescribes standards for aviation security. There is also the Protocol for the Suppression of Unlawful Acts of Violence at Airports Serving International Civil Aviation Supplementary to the Convention for the Unlawful Acts Against The Safety of Civil Aviation (1971) (Done at Montreal on Sept. 23 1971; ICAO Doc 9518); Reprint also in XVIII-II ANNALS OF AIR AND SPACE LAW 245 (1993)); and the Convention On The Marking Of Explosives for the Purpose Of Detection (1991) (XVIII-II ANNALS OF AIR AND SPACE LAW 280 (1993)). *See Further* NANAY DOUGLAS JOYNER, AERIAL HIJACKING AS AN INTERNATIONAL CRIME 4 (1974); Bin Cheng. *Aviation, Criminal Jurisdiction and Terrorism: The Hague Extradition? Prosecution Formula and Attacks At Airports*, *in* CONTEMPORARY

deliberate incursion without permission into national airspace by military and civil aircraft also remain vague creating room for manoeuvre by erring air powers.[18]

Another relevant example may be found in the allowance made in air law for the operation of pilotless aircraft over national territory.[19] Although such flights can only be undertaken with the permission of the underlying State, it may be suggested that if the matter were to be decided upon today, it would be the natural inclination of the vast majority of States to discourage such flights on the ground of security considerations by

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PROBLEMS OF INTERNATIONAL LAW; ESSAYS IN HONOUR OF GEORG SCHWARZENBERGER ON HIS EIGHTIETH BIRTHDAY 33 (Bin Cheng and E.D. Brown eds., 1988).

[18] An example of such violation of airspace rights which was of great political significance occurred in the U-2 incident. On May 1, 1960 a U-2 aircraft, a U.S. high altitude reconnaissance aircraft, was shot down at a height of 20,000 metres above the territory of the erstwhile Soviet Union. The Soviets promptly protested the flight and the United States did not justify its action in terms of seeking a defence under any principle of international law. Neither was there protest at the shooting down or the subsequent trial of the pilot. Indeed, after some hesitation, the United States government and even President Eisenhower himself accepted responsibility for the flight. When the Soviet Union brought up the matter in the Security Council to seek redress, the only justification advanced by the United States was one totally unknown to law. Its defence was that it was necessary to conduct that flight for the "free world" to protect itself against a government "well known for its expansionist activities and armed to the teeth". *See* Statement by the U.S. Ambassador Lodgee cited in D.H.N. JOHNSON, RIGHTS IN AIR SPACE (1965) 74; *See also* D.J. HARRIS, CASES AND MATERIALS ON INTERNATIONAL LAW 241 (1998).

Note also the more recent events of April 1, 2001 when an electronic surveillance United States Navy EP-3 plane collided mid air with a Chinese fighter jet shadowing it just off the Chinese Coast. The two main issues involved here were whether there was a right of overflight by reconnaissance aircraft over Exclusive Economic Zones and whether the consequential landing in China by the United States aircraft without express permission was an intrusion. For a comprehensive report of the United States' version of the incident, *see Contemporary Practice of the United States Relating to International Law: Aerial Incident off the Coast of China*, 95 AJIL 633-635 (2001).

[19] Article 8 of the Chicago Convention (1944) states, "No aircraft capable of being flown without a pilot shall be flown without a pilot over the territory of a contracting State without special authorisation by that State and in accordance with the terms of such authorisation. Each contracting State undertakes to ensure that the flight of such aircraft without a pilot in regions open to civil aircraft shall be so controlled as to obviate danger to civil aircraft." It may however be noted, that operators in the developed States conduct the vast majority of pilotless flights, including Earth satellite launches. Probably because incidents of interference with civil aviation in this manner are not common and have not led to disputes, there is also an assumption which works in the favour of the developed States that in the case of Earth satellite launches, prior permission of the underlying States is a dispensable criterion. *See generally* Bin Cheng, *From Air Law to Space Law*, 13 CURRENT LEGAL PROBLEMS 504 (1960).

imposing a complete ban on pilotless flights over any national territory. The impending possibility for misunderstanding and abuse is reflected in the current use of American pilotless, spy planes in the prosecution of the so-called "war on terror" or "Operation Enduring Freedom".[20]

Wherever disputes arise as to rights and liabilities in air law, it appears that the more advanced the military and political clout a contending State possesses, the greater its chances of having the dispute resolved in its favour. This is typified by the diplomatic and political pressures successfully applied against Libya by the United Kingdom and the United States through the United Nations as a result of the *Lockerbie* incident. Despite the fact that the primary judicial organ of the United Nations remains seised of the matter, its jurisdiction and competence has been effectively sidelined and rendered nugatory in favour of other novel means of dispute resolution which produced predictably favourable results for the two leading Western nations. Whereas Judge Bola Ajibola in his dissenting judgement in the *Lockerbie* case persuasively argued that apart from the Court's power to adjudicate the matter according to the principles contained in the Hague Treaty of 1970, the right of a State, such as Libya, to try its citizens suspected of executing heinous crimes may correctly be located within the rules of *jus cogens*.[21]

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[20] Note is taken of the shooting of suspected *Al Qaeda* terrorist suspects in Yemen via a pilotless Predator American spy plane in November 2002. The remote-controlled spy plane can lurk in an area for up to 16 hours, undetected at 15,000 feet, its cameras transmitting live video, and infrared or radar pictures to military commanders or intelligence officials anywhere in the world. Although the particular overflight may have taken place with the knowledge of the Yemeni authorities, it is envisaged that the American Central Intelligence Agency will make expanded use of these contraptions in the months following this first attack in various States in the Middle–East and beyond.

[21] *See Questions Of Interpretation And Application Of The 1971 Montreal Convention Arising From The Aerial Incident At Lockerbie (Libyan Arab Jamahiriya v. United Kingdom)* 1992 I.C.J. 82, 187 (Ajibola Dissenting), available *at* <http://www.icj-cij.org/icjwww/idocket/iluk/iluk2frame.htm>. For the judgment eventually passed on the Libyan suspects by a Scottish Court *see, Her Majesty's Advocate v. Abdelbasset Ali Mohmed Al Megrahi and Al Amin KhalifaFhimah Prisoners in the Prison of ZeistCamp Zeist (Kamp van Zeist) The Netherlands* in the High Court of Justiciary at Camp Zeist Case 1475/99, *at* <http://www.pixunlimited.co.uk/guardian/pdf/0131lockerbieverdict.pdf> (visited Apr. 8, 2003). Note also that Libyan foreign minister, Abdel Rahman Shalgham, recently announced that Libya would accept civic responsibility for the 1988 atrocity and pay the family of the victims 10 million dollars each if certain conditions are fulfilled.

Not only is there a discernible double standard in the application of air law in the practice of the international institutions, but there is also an air of impunity surrounding the practice of certain militarily developed States in their aviation practice and in relation to their actions in the airspace. On the one hand, the United States claimed recently that its conduct of reconnaissance flights over China's Exclusive Economic Zone (EEZ) is legitimate; on the other hand, it continues to maintain its self-proclaimed Air Defence Identification Zones (ADIZ) over its own EEZ and even beyond that zone. In the past, militarily powerful States such as Israel have displayed even more egregious attitudes to the rules of air law. In 1973 Israel, in clear violation of Lebanese airspace sovereignty intercepted and forcibly diverted civil aircraft away from Lebanese airspace into Israeli territory and forced them to land for the purpose of arresting suspected militants on board.[22] Reports of such violations continue. Probably no instance supports the disregard for international consensus in the shaping of air law better than the creation and expansion of the practice of so-called "no fly zones" in Iraq by the United States, United Kingdom, and France.[23]

The conditions include the lifting of United Nations sanctions against Libya after payment of an initial 4 million dollars to each family, and U.S. sanctions being taken away after another 4 million dollars payment. After the final 2 million dollars payment, Tripoli hopes to be removed from the U.S. list of States sponsoring terrorism. *See* Mark Oliver, *Libya offers cash to quit axis of evil,* THE GUARDIAN, (London) Apr. 30, 2003 at 10.

[22] *See,* ICAO, *Diversion and Seizure by Israeli Military Aircraft of a Lebanese Civil Aircraft,* ICAO Assembly Res. A20-1 *at* <http://www.icao.int/icao/en/res/a20_1.htm> (visited Apr. 15, 2002). *See also* S/RES/332 (April 21, 1973) at <http://domino.un.org/unispal.nsf/vYears1973-1981!OpenView>.

[23] The concept is essentially a creation of the Western industrialised and military powers - USA, Britain, and France. The legality of the "no fly zones" has been questioned by many legal writers, particularly those from the developing States including those States which originally stood against the invasion of Kuwait by Iraq, the occurrence of which led to the Gulf War. What the Western allies relied upon was a UN Resolution, Resolution 688, which essentially demanded that Saddam Hussein must stop repressing his own people. The resolution itself, interestingly enough, never mentioned the creation of "no fly zones". The position advanced by the Western powers was that essentially the best way to implement this resolution was to deny the Iraqi government the ability to fly planes over large areas of its own country. The zones were delineated in the North in the spring of 1991 and in the South in the summer of 1992 and were maintained up until the outbreak of the war waged on Iraq in 2003. For criticisms of the "no fly zones" *see* Richard Haass, *No Fly Zones, at*

Selective inaction of ICAO and the Security Council has allowed a certain degree of permissiveness in areas of the law in which certainty and uniformity are required. When the USSR sponsored a draft resolution to condemn the incursion of United States U2 spy aircraft into Soviet airspace as aggressive, only Poland supported it. But when Cuba shot down two Cessna aircraft which made deliberate and orchestrated forays into its maritime airspace in February 1996, the Security Council was quick to point out (correctly) that States have an obligation to refrain from shooting down civil aircraft, but did not examine the legality or propriety of the continuous operation of the so-called "Brothers to the Rescue" flights emanating from United States' territory.[24]

It may be observed that wherever the developed technological powers are divided on issues of air law or where there are principled differences among them, then the particular issue involved would usually receive the most favourable and thorough consideration leading to the most equitable solution. Thus, for instance, because the strong shipping interests of the UK were opposed by the significant benefits of abundant natural claims to a continental shelf that the United States possesses,[25] this necessitated the curtailing of the continental shelf principle to the extent that the rights over the continental shelf do not affect the overlying airspace.[26] Such differences may be found on

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<http://www.pbs.org/newshour/bb/middle_east/july-dec98/iraq_12-31.html>. (Visited 12 May 2001.)

[24] *See* Cuban Ministry of Foreign Affairs, *Cuba Defends its Sovereignty*, GRANMA INTERNATIONAL Mar. 6, 1996, at 1. This situation is best typified by referring to the long-standing series of allegations of aerial incursions made by Cuban dissident groups based in the United States into Cuban territory with small civilian aircraft that are registered in the United States. There are allegations of at least 14 of these violations in the 1990s alone.

[25] The United States was a forerunner in the area of developing a special legal status for the continental shelf and issued the Truman Proclamation on the Continental Shelf (1945) by which it proclaimed, "the continental shelf beneath the high seas but contiguous to the coasts of the United States as appertaining to the United States, subject to its jurisdiction and control'. (*See Presidential Proclamation* No. 2667 28th September 1945; 4 Whiteman 756).

[26] *See* NICHOLAS GRIEF, PUBLIC INTERNATIONAL LAW IN THE AIRSPACE OF THE HIGH SEAS 12-13 (1994); *See also* 2 YBILC, 267 (1953) Annex to comments by the Government of the United Kingdom; Lord Asquith in the *Abu Dhabi Arbitration* (1951) noted the confusion that existed in this area and stated "...there are in this field so many ragged

other issues such as the initial suspicion of the European powers to the United States' *Open Skies* agenda and the present coolness shown by the United States to the proposed Single European Skies and the European Union's drive towards a common aviation policy.[27]

IV. THE SCRAMBLE FOR SPACE PROPERTY, VANTAGE POSITIONING AND THE PARTITIONING OF OUTER SPACE

With respect to space law, a clear line may also be established linking the wishes of the technologically advanced nations to the development of legal principles and, at any rate, the practice of space law. The pre-eminent position that the advanced technological powers have in international relations and, significantly, in air law, have made it possible for them to exhibit agenda-setting functions by which they influence the development of air law. At the forefront of this "outer space neo-imperialism" is the USA's domination of both the technological and legal policy directions of outer space activities.[28] Examples

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ends and unfilled blanks, so much that is merely tentative and exploratory, that in no form can the doctrine claim as yet to have assumed hitherto the hard lineaments or the definitive status of an established rule of law" 1951, 18 ILR 144.

[27] Starting in 1978 when its own internal aviation market was deregulated, the U.S. has offered very liberal bilateral agreements to other States in furtherance of the open skies agenda. It is worthy to note that presently the U.S. still aggressively promotes the principle of "open skies". This may, however, not be in the interest of the developing States who are not strategically placed, technologically capable or have failing national airlines. The airspace over national territories is becoming freer for the big players in the international aviation business; whereas, the possibilities for exploitation of outer space resources are becoming more than ever the exclusive preserve of those very States that benefit most from the predominance of "open skies". The current European Union drive towards a common international aviation policy is calculated to reduce even further the fragmentation of both industry and market within Europe so that EU Airlines and their customers will benefit from the full potential of the EU Single Market. This would, of course, reduce the dominance of their major international rivals, particularly American ones. *See generally* Wybo P. Heere, *Problems of Jurisdiction in Air and Outer Space*, XXIV ANNALS OF AIR AND SPACE LAW 72 (1999); *Cf.* Europa, *Air Transport: Why An EU Drive Towards a Common International Aviation Policy?*, *at* <http://europa.eu.int/comm/transport/air/international/index_en.htm>; N.A. Van Antwerp, *The Single European Sky*, XXVII ANNALS OF AIR AND SPACE LAW NO.1 April (Feb. 2001); N.A. Van Antwerp, *The Single European Sky (2)*, XXVII ANNALS OF AIR AND SPACE LAW NO.2 (April 2001).

[28] Of the top 50 list of the largest space corporations in the world with a global sales figure of about 56 billion United States Dollars (USD) (USD 35 billion in 1995) in 2000,

of the competing agenda between the developed and developing States include the incessant attacks on the "common heritage of mankind" (CHM) regime by those States willing and able to exert property claims on the Moon and other celestial bodies.

The championing of commercial rights in space property through occupation and appropriation represents a disturbing trend by certain scholars who are predominantly from very few States that have attained significant advancement in outer space activities. The case for the so-called right to commercial exploitation of outer space resources is derived only through the adoption of highly innovative interpretations of existing space treaties. In reality, however, the letter and spirit of the major space treaties do not permit such a conclusion. Instead, it is more plausible to argue that a regime of common heritage has been created for outer space. Where the provisions of one treaty are clear upon the point, that treaty is maligned as irrelevant and a permissive interpretation is sought from another treaty. The problem, however, is not in the law but in the desire to introduce a principle which is against the spirit of the law. The antecedents for the current attacks on the CHM regime in outer space are to be found in similar attacks launched against the CHM concept in the law of the sea (particularly Articles 132–146 UNCLOS III (1982)) leading to the near complete turnaround in relation to the regime of deep sea mining in the 1990s.[29] The resort to the mere freezing of claims to Antarctica instead of a bold dissolution of territorial claims in the 1959 Antarctic Treaty System also testifies to the potency of certain corporate vested interests in their struggle to dictate the regulation of resource control in international spaces.[30] Developing

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27 were American. This represents 78 percent of the accumulated "Top 50" sales figures (28 in 1995 for 70 percent of total sales), 12 were from Europe with 16 percent of total sales (10 in 1995 for 22 percent of total sales). This, according to Salin, suggests "an improvement of the market share of US space corporations, a reduction of the share of the European ones and an increase of those from emerging nations". Patrick Salin, *An Overview of US Commercial Space Legislation and Policies-Present and Future*, XXVII ANNALS OF AIR AND SPACE LAW 210 (2002). *See also* 10 SPACE NEWS 15-21 (July 1996) and 8 SPACE NEWS 30 (July 2001).

[29] *Supra* note 10.

[30] The freezing of claims was for the first time applied over an international space through the means of Article IV (2) of the 1959 Antarctic Treaty, Dec. 1, 1959, 12 UST

States, therefore, have a duty to prevent myopic interests from successfully subverting *lex lata* relating to the appropriation of resources in space law and to prevent space law from suffering the fate of the international deep-sea mining regime.

It may be noted that the consistent principle that cuts across the existing multilateral space treaties is one that precludes national appropriation of outer space by use or by any means whatsoever. Therefore, nothing short of a collectively determined overall policy change in the form of a multilateral treaty of universal importance would be sufficient to change this fundamental principle. In any event, it is unnecessary to make these changes in light of the unfolding evidence of irrevocable damage to the Earth's atmosphere as a result of economic and commercial exploitation of mineral and non-renewable resources. This is not, however, to suggest that all debate on the possible directions the law may take in the future should cease. It is desirable that such discussions should continue among scholars, as well as in the relevant international fora, particularly in the COPUOS.[31]

Other concrete instances of the acute differences between developing and developed States in space law abound. In 1983, all the Western governments voted against the General Assembly Resolution 37/92 titled *Principles Governing the Use by States of Artificial Earth Satellites for International Direct Tele-*

794, 402 UNTS 71. It states: "(1) Nothing contained in the present Treaty shall be interpreted as: (a) a renunciation by any contracting party of previously asserted rights of or claims to territorial sovereignty in Antarctica; (b) a renunciation or diminution by any contracting party of any basis of claim to territorial sovereignty in Antarctica which it may have whether as a result of its activities or those of its nationals in Antarctica, or otherwise; (c) prejudicing the position of any contracting party as regards its recognition or non recognition of any other State's right of or claim or basis of claim to territorial sovereignty in Antarctica. (2) No acts or activities taking place while the present Treaty is in force shall constitute a basis for asserting, supporting or denying a claim to territorial sovereignty in Antarctica or create any rights of sovereignty in Antarctica. No new claim, or enlargement of an existing claim, to territorial sovereignty in Antarctica shall be asserted while the present Treaty is in force." This provision is, however, far from unimpeachable and is definitely not free from controversy because it does not completely forbid national claims to one of the most fragile ecosystems upon which the health of the planet Earth rests. A similar norm was included much later in Article IV of the 1980 Convention on the Conservation of Antarctic Marine Living Resources, May 20, 1980, 19 I.L.M. 837, 841, TIAS No. 10,240, 1329 UNTS 47.

[31] *Supra* note 10.

vision Broadcasting, which calls for a notification to proposed receiving States before broadcasting may be directed therein.[32] The question of remote sensing has also remained a bone of contention between developing and developed States in the regulation of space law and is likely to remain so despite the adoption since 1986 of fifteen principles by the General Assembly, which notably do not even require prior consent of States that are sensed. Questions such as the control of material broadcast by telecommunication satellites, most of which are owned by a few developed States, and the much needed protection of minority cultures from "swamping" are not only unanswered presently, but there is little hope that the concerned developing States have the necessary capabilities to shape the law in their favour.

The *de facto* appropriation of the geostationary orbit by a few Western States and the obviously inequitable policy of "first come, first serve" that has been the practice of the ITU represents a continuing injustice in space law.[33] This is in the sense that it mortgages the interests of the majority of States to have access to that orbit and may particularly affect the inherent interests of the equatorial States to that orbit. The fact that eight

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[32] These include France, West Germany, the United Kingdom, United States and Japan. M.N. SHAW, INTERNATIONAL LAW 387 (1997).

[33] The geostationary orbit is a circular orbit on the Equatorial plane in which the period of sideral revolution of the satellite is equal to the period of sideral rotation of the Earth and the satellite moves in the same direction of the Earth's rotation. When a satellite describes this particular orbit, it is said to be geostationary; such a satellite appears to be stationary in the sky, when viewed from the Earth, and is fixed on the zenith of a given point of the Equator, whose longitude is by definition that of the satellite. This orbit is located at an approximate distance of 35,871 Kilometres over the Earth's Equator. The geostationary synchronous orbit is a physical fact linked to the reality of the Earth, its existence depends exclusively on its relation to gravitational phenomena generated by the Earth and, therefore, it is reasonable to question whether it should really be considered part of outer space, particularly since the geostationary satellites quite literarily hang above equatorial States. The geostationary orbit is also a finite resource that can be "clogged up" in the sense that there is, in reality, only a few "parking spaces" in that orbit in which satellites can be placed along the same plane for efficient coverage of the Earth and without interfering or crashing into other satellites. What makes matters worse is that after a number of years some satellites wander off course and can very easily crash into nearby functioning satellites, or indeed, descend back to Earth with the possibility of causing damage to the equatorial State below. *See further* MAURICE N. ANDEM, INTERNATIONAL LEGAL PROBLEMS IN THE PEACEFUL EXPLORATION AND USE OF OUTER SPACE 162 (1992).

equatorial States adopted the *Bogotá Declaration*[34] probably stands as good reason to suggest that enough attention has not been given to the requirement in the ITU Convention 1973, which stipulates, "Members shall bear in mind that radio frequencies and geostationary orbits are limited resources."[35]

The argument that by retention of signature to any of the major space treaties a State may retain its freedom to act in any way it chooses in relation to the principles of space law, is wholly unconvincing and, indeed, misleading, particularly when principles such as that prohibiting the appropriation of outer space and its celestial bodies are concerned. It is suggested that such central principles have transcended the scope of mere treaty rules and have crystallised into customary international law. The non-appropriation rule, for instance, is not only repeated in all the major multilateral space treaties along with other central principles such as the prohibition of militarization of outer space, but also represents a logical and factual continuation of a legal principle with roots in the law of the sea, the Antarctic Treaty system and even ancient concepts of *res communis*. By virtue of this reasoning, a developing State which is a party to the Bogotá Declaration, but is not a party to any or all of the space treaties, will find that it cannot derogate from the

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[34] The Bogotá Declaration of 3rd of December 1976; ITU Document WARC-BS (1977) 81 E of 17 Jan. 1977. Text available in JOURNAL OF SPACE LAW 193-196 (1978). The parties to the declaration are Brazil, Columbia, Congo, Ecuador, Indonesia, Kenya, Uganda and Zaire. Article 3 sub. D of the Bogotá Declaration 1976 stipulates that:
Devices to be placed permanently on the segment of a geostationary orbit of an equatorial state shall require previous and expressed authorization on the part of the concerned state, and the operation of the device should conform with the national law of that territorial country over which it is placed. The substance of the argument of the equatorial states, therefore, is that the segments of geostationary synchronous orbit are part of the territory over which Equatorial states exercise their national sovereignty.

The Equatorial countries in the declaration sought to proclaim and defend on behalf of their peoples, the existence of their sovereignty over this natural resource. In qualifying this orbit as a natural resource, Equatorial States reaffirm "the right of the peoples and of nations to permanent sovereignty over their wealth and natural resources that must be exercised in the interest of their national development and of the welfare of the people of the nation concerned," as it is set forth in Resolution 2692 (XXV) of the United Nations General Assembly entitled "permanent sovereignty over the natural resources of developing countries and expansion of internal accumulation sources for economic developments".

[35] ITU Malaga – Torremolinos Convention (1973) 28 UST 2495; TIAS No. 8572.

non-appropriation rule/CHM principle by exerting any form of territorial jurisdiction over the geostationary orbit. Equally, any developed State which is not a party to any of the space treaties, will have no opportunity to derogate from the non-appropriation rule or the CHM characterization of outer space.

V. IMPENDING CONFLICTS OVER THE HIGHER GROUNDS IN THE NEAR FUTURE

A great deal of legislation both multilateral and bilateral has been passed on many crucial areas in air and space law. There is also no shortage of scholarly literature in these fields. In the interest of certainty and steady application of the law, drastic changes should not be made to the existing multilateral space treaties. Although the opportunity has arisen in the last few years for the review of virtually all the major treaties, it is more important at this stage that emphasis should be directed towards getting more States to accede to the existing treaties and increase ratification, rather than attempt to make drastic changes to them.

There are, however, certain unresolved issues and grey areas in air and space law, which require urgent attention. Some of these areas require careful conceptual analysis and re-examination by writers in the field. One such area is the legal practice of determining the nationality of aircraft in accordance with the place of registration, as opposed to the nationality of its owners as found, for example, in British shipping practice.[36] Another area is the question of a conclusive definition of what constitutes an aircraft in legal terms, taking into consideration the various craft that may need to be regulated in air law, such as balloons, seaplanes, gliders, and the *sui generis* category of the

[36] It may be suggested that adopting the nationality of the owners as the true test of nationality presents the best means of establishing a "genuine link" between the craft and its owners, thereby banishing forever the troublesome issue of flags of convenience. Indeed, there appears to be no reason why the genuine link rule under international law as enunciated by the International Court of Justice (ICJ) in the *Nottebohm case* with regard to individuals and later on extended to ships cannot be further extended to aircraft and even spacecraft. *See* the *Nottebohm case*, Second Phase (1955), (Liechtenstein v. Guatemala) 1955 ICJ 4 at 23; Materials on all ICJ cases are available online *at* <http://www.icj-cij.org>.

X15 and space shuttles. Scholars still have to resolve the question of the scope of space law in view of the ambiguity introduced by the "within the solar system" formula adopted in the Moon Agreement (1979) and the impending scenario of technological advancement making travel to other universes a possibility. Does it mean that any State technologically advanced enough to discover a celestial body outside the solar system may place it under sovereign ownership and control? [37]

On other topics there may be a pressing need for international legislation in the form of specialist treaties and for which no single economic or hegemonic interest must be allowed to prevail. These areas include the following: legality of aerial reconnaissance and intelligence gathering at high altitudes and from areas coterminous with State territory, such as from the airspace above the non-sovereign maritime zones; the militarization of outer space as, for instance, heralded by the United States' "Son of Star Wars" and other programs[38]; the regulation of damage caused by debris to space stations and satellites; the regulation of manned space flights and space stations, including international space stations. It needs to be repeated that the

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[37] The Moon Treaty in Article 1 limits the treaty's provisions to celestial bodies "within the solar system". One possible interpretation of this unnecessary limitation is that any activity which takes place outside the Earth's solar system is outside the regime of space law, or at least that part enunciated in that instrument. This suggestion of outer space activity in other solar systems may not be as far fetched as it sounds, if we consider the fact that just 50 years ago it was largely held as impossible that man would engage in space flight or step on the Moon. Indeed, a mere one hundred years ago, the first aircraft was built. Thus, only the imagination limits the possibilities of exploration beyond the Earth's solar system and the discoveries that the next 50 years might bring. The preferred interpretation would be one which recognises that that space law, particularly the provisions enunciating the CHM principle, apply not only to the solar system we exist in, but also to the entire universe of galaxies. Probably the apparent reason for the reference to the solar system in the Moon Agreement 1979 is that, as the name of the treaty suggests, the principal aim is to make legislation for the Moon, which is Earth's natural satellite and which there is only one of in this solar system.

[38] Two programs – "Son of Star Wars" and the "Vision for 2020", both designed to give the United States military dominance in outer space, are in fact the cause of much consternation to writers from both the developed and developing divide. George P. Shultz, a former United States Secretary of State, notes the inevitable result of the planned programmes, "We see that conditional sovereignty applies even to European allies if they attempt to compete with U.S. corporations for economic resources in space, such as Helium-3 on the Moon and heavy metals on the asteroids'. *See* George P. Shultz, *Terror and The States*, WASHINGTON POST, Jan. 26, 2002 at A23.

boundary between airspace and outer space requires urgent attention in the form of a definitive international agreement. It has already been suggested above that perhaps one of the main reasons this issue remains unresolved in air and space law is that the absence of a delimitation and demarcation regime is advantageous to those States most closely related to intense aerospace activities. It is hoped that the demarcation point will shortly be resolved and determined in a manner that would be accepted by the generality of States and scholars.

VI. CONCLUSION

The bias that has been evident in the development of air and space law in recent decades deserves scholarly attention. Effort must be exerted to identify those areas that are most likely to be sources of discord among States in the future. Of particular significance is the need to carefully resolve the emerging controversy surrounding ownership and property rights over space-based property, particularly commercial exploitation. On the whole, the overall direction of air and space law ought to proceed upon the notion of the general interest of mankind. As one writer correctly puts it, "This notion of 'general interest' is not to be taken for granted and requires to be re-defined in reference to the fast development of modern technology that mostly benefits those (a few hundred million people) who control them while others (billions of people) still creep in the back, fighting for their essentials in life."[39] This is precisely why technological capability or superiority in any sector (aviation, Antarctica, deep-sea bed, or outer space) must never be allowed to secure hegemonic interests for any State(s) over and above the general international interest.

[39] Salin, *supra* note 17, at 209-210.

BOOK REVIEW

ORIGINS OF INTERNATIONAL SPACE LAW AND THE INTERNATIONAL INSTITUTE OF SPACE LAW OF THE INTERNATIONAL ASTRONAUTICAL FEDERATION

By Stephen E. Doyle,
published by Univelt Inc., San Diego, CA, 2002

Reviewed by Sylvia Ospina*

How, and when did space law develop? Many persons believe that space law began after the launch of the first Soviet artificial satellite, *Sputnik* in 1957; but professionals in several fields have been concerned with "aerial law and the law of space" since the very early 1900s. Doyle's book provides a very comprehensive and detailed account of the beginnings and development of space law, a little-known field of international law, with which few lawyers and law schools are familiar, but which needs to be made better known. This book should be required reading for practitioners and teachers of space law and others involved in space activities.

Doyle has done considerable research into early writings and publications of lawyers, scientists and engineers, many from countries that were part of the former Soviet Union, and whose writings were not accessible to the non-Communist world, for a variety of reasons, among them language barriers. What is evident from the sources he quotes is that, as the French say, "the more it changes, the more it's the same". In

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* Dr. Sylvia Ospina, International consultant on space law and satellite telecommunications.

other words, many of the issues and questions debated to-day were raised nearly 100 years ago, and are still unresolved.

The definition of "outer space" and the delimitation of air space from outer space were already being questioned at a time when aviation and the use of air space were in their infancy, while the use of outer space was merely conjectural then. Lacking any delimitation, some authors questioned whether outer space should be considered a "global commons", subject to a special legal regime. Some writers also questioned which laws should apply to activities in outer space, and whether they should be subject to special laws or regulations. Even issues regarding the use and ownership of the radio frequency spectrum, (whose potential for transatlantic communications had just been discovered by Enrico Marconi), were discussed in a variety of journals, and were the topics of lengthy monographs. Today, these issues are still being debated, and no definitive answers have been provided yet.

Doyle's book can be divided into two sections: the first deals at length with the origins and background of space law, the establishment of the International Astronautical Federation (IAF) and of the International Institute of Space Law (IISL). The second part of the book, which is much shorter, focuses on the organization and management of the IISL, and includes as annexes, the statutes of the IISL, as well as lists of the yearly IAF Congresses and IISL Colloquia.

Doyle intertwines references to the early attempts to formulate some basic tenets of space law, and to distinguish it from air law, with an account of the development and formal establishment of the International Astronautical Federation (IAF), which took place in 1949. The IAF could be seen as an outgrowth of several factors: meetings of organizations such as the British Interplanetary Society and the German Society for Space Research, whose members felt that there should be greater communication and collaboration at the international level. Other factors that led to the creation of the IAF were the development of rocketry prior to and during the Second World War, and writings by influential scientists and engineers, such as Sir Arthur Clarke.

While jurists and lawyers were invited to present papers at the early IAF Congresses, their contributions began gaining in importance with the launch of the Soviet satellite, *Sputnik*, in October 1957. This event aroused the world's interest in space activities, and the need to regulate them. Shortly after *Sputnik's* launch, the United Nations General Assembly passed several resolutions aimed at maintaining the use of outer space for peaceful purposes, and established the Ad Hoc Committee on the Peaceful Uses of Outer Space (COPUOS) in 1958. A few months later, the IAF voted to set up a Permanent Legal Committee, to study legal issues related to space activities.

The first Colloquium on Space Law was convened in 1958 at The Hague, with Andrew Haley, General Counsel of the IAF at the time, as Presiding Chairman. A year later, at the Second Colloquium, in 1959, a resolution was adopted, replacing the IAF's Permanent Legal Committee with the International Institute of Space Law. Since then, the IISL Colloquia are held concurrently with, and as part of, the IAF's annual congress. The fact that membership in both the IAF and the IISL has grown throughout the years, albeit at different rates, affirms the continued interest in space activities, and in issues related to their regulation.

The IAF served, and still serves, as a forum for discussion and exchange of viewpoints on the varied aspects of space activities, and of national and international policies in their regard. The IISL's mandate is slightly narrower: it provides legal opinions to the IAF, and cooperates with the appropriate national and international organizations in the area of space law. It also promotes the teaching of space law, in cooperation with the United Nations and various institutes of air and space law around the world.

Doyle's book on the origins of the IAF and IISL is the second on this subject. The first book written by Dr. Eugène Pépin, president of the IISL from 1963 to 1973, covers the history of the IISL from 1958 to 1982, the year it was published by the American Institute of Aeronautics and Astronautics. Pépin's book includes a list of the subjects covered in the IISL Proceedings of the International Colloquia from 1958 to 1982, and an IISL Membership list. This book is in English and French.

Doyle's book is broader in scope and content, and provides quotations and translations from authors of the early 1900s on issues that have become central to space law. He also provides quotes from papers presented at the early IISL Colloquia, which have fostered discussions on certain topics, leading to the subsequent growth of this legal specialty. The annexes include the IISL membership list by country; but unlike Pépin's book, it does not provide a subject index of the IISL Colloquia.

Practitioners and teachers of space law and others involved in space activities will find the history of the development of this field very informative, and worth having in their libraries. Doyle's book is available for US $30.00, plus shipping and handling (S&H), from Univelt Publishers, P.O. Box 28130, San Diego CA 92198 (http://univelt.com/univeltpubs/index.html); or directly from the author, S. E. Doyle, 3431 Bridget Brae Road, Shingle Springs CA 95682; (sedoyle@foothill.net). Priority Mail delivery in the US is at an S&H charge of $5.00. Payment by check or money order, if ordering from the author. It is available to members of the IISL at a discounted price of US$ 25.00, plus S&H.

SKY STATIC: THE SPACE DEBRIS CRISIS

By Antony Milne
published by
Praeger Publishers
88 Post Road West
Westport, CT 06881

Reviewed by John F. Graham*

The subject matter of *Sky Static: The Space Debris Crisis*, space debris, is an important one. However, the importance of the subject is obscured by the many errors in the author's work. There are two categories of errors: major errors that better research could have prevented and minor errors that closer editing might have discovered.

The major faults in *Sky Static* begin in the acknowledgements section. The author has compiled an impressive list of space experts including Mr. Phillip Clark, Molniya Space Consultancy; Mr. Donald Kessler, formerly the head of NASA's Space Debris Section at Johnson Space Center; Dr. Walter Flury, European Space Agency Operations; Mr. Jonathan Tate, United Kingdom Spaceguard; and, Dr. Alan D. Romig, Sandia National Laboratories. The author claims "...many of whom have read parts of the [book's] manuscript." This reviewer contacted all of these people and learned that none of them had read the manuscript, had never spoken to the author, and did not know him. Mr. Clark best summed up the views expressed by all the eminent scholars in this group:

> "I am trying to remember whether I have even heard of Antony Milne. I have certainly never received a manuscript – in part or in total – from him to review, and therefore the claim which he appears to be making in this book is completely false. Of course, I would have picked up the 'howlers' which you have listed in your email, and it worries me that I am being associ-

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* John F. Graham, Professor, Space Studies, American Military University.

ated with this book." (Email reprinted with Mr. Clark's permission).

Other major errors in the book are many and varied. For example, the author refers to NORAD, the North American Aerospace Defense Command, a vitally important organization of the Canadian and United States Armed Forces for the defense of North America, as the "North American Space Defense Command." This inaccuracy is compounded further when, on a single page, the author further identifies NORAD as both the "North American Air Defense Department" and the "North American Air Defense Agency." (Pg. 28)

Another major error is a reference to the payload on *Sputnik 1*, the world's first satellite, as having a "cosmonaut" aboard. *Sputnik 1* was a satellite and did not carry a human. (Pg. 12)

The author mixes up programs and names throughout the book. One example of this is the launch of the United States' first satellite, *Explorer 1*, which was launched aboard a modified U.S. Army Redstone rocket identified as the *Jupiter-C* or *Juno*. The author claims that *Explorer 1* was launched aboard a *Vanguard* rocket. The *Vanguard* rocket was actually used to launch the second U.S. satellite into space, the *Vanguard 2*, which was a totally different satellite program. (Pg. 12)

The author also confuses NASA's civilian *Skylab* Program, with the Department of Defense's military *Manned Orbiting Laboratory (MOL)* Program. The *MOL* was planned to be a military space station launched aboard a modified Titan-3M rocket from Vandenberg Air Force Base, California. President Nixon canceled the program on June 10, 1969, about four years before *Skylab* launched. The *MOL* never flew, *Skylab* did. (Pg. 16) Mr. Milne states it was the *MOL* that flew.

Facts again become confused when the author discusses the world's first space station, *Salyut 1*. Cosmonauts Georgi Dobrovolsky, Viktor Patsayev, and Vladislav Volkov occupied it in June 1971 for 23 days. They were tragically killed on June 29, 1971, when their *Soyuz* capsule leaked out its atmosphere during descent. The author states that the mission was accomplished in 1972 and lasted 230 days. (Pg. 17)

Rocket and satellite operations are confused when the author discusses the various fuel loads aboard an *Ariane* rocket. For example, an *Ariane-5* rocket has no connections between the rocket's fuel system and the satellite. Satellite fuel is loaded on the satellite prior to launch and is inside the rocket payload. It cannot be replenished by the booster rockets. However, the author claims " ... [d]uring launch onboard satellite fuel in Ariane's booster rockets has to be used sparingly." (Pg. 35)

One of the most egregious errors made by the author is a geographical one. He states that the Russian Cosmodrome, Plesetsk, is located in the Republic of Kazakhstan. Plesetsk is located in Russia. Kazakhstan, an arid land, is located on the southern Russian border many miles from the "Arctic tundra." (Pg. 42)

In addition to the many major errors, minor errors include:

- Describing the Soviet launch vehicle, R-7, which launched *Sputnik 1* as a modified German *V-2* rocket. (Pg. 12) The *V-2* was modified by seven generations of rockets before it became an R-7. This is a minor stretch of the rocket's lineage.

- Identifying the former NASA Administrator as "Daniel Golding." His correct name is Daniel C. Goldin. (Pg 19)

- Identifying a planned nuclear power craft as the *"Europer Orbiter,"* rather than the *"Europa Orbiter"* which will explore Jupiter's moon, Europa. (Pg. 46)

- Identifying one of the space shuttle's orbiters as "The *Orbiter*." (Pg. 75) The space shuttle orbiters were named *Columbia, Challenger, Atlantis, Discovery, Endeavor,* and *Enterprise*. "Orbiter" is a generic term for the part of the vehicle that returns to Earth with the crew.

In the first 100 pages of the book, the author has 67 major errors and numerous minor ones. So, this reviewer investigated the author's sources. The major sources in the bibliography include the *Sunday Times*, the *International Herald Tribune*, the *New Scientist*, and *UFO Magazine*. These are sources based on reporters' articles for general public consumption, not upon scientific reports or books written from space debris experts' research. To his credit, the author did rely upon one excellent

source, *The Proceedings of the Third Conference on Space Debris*, but other good scientific sources such as Nicholas Johnson and Darren McKnight's book *Space Debris* were conspicuously absent.

The errors made throughout *Sky Static: The Space Debris Crisis*, eliminate it as a source of information by anyone interested in the study of space debris.

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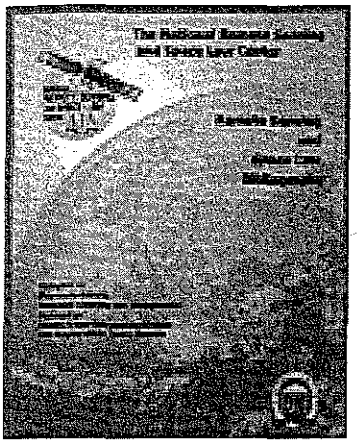

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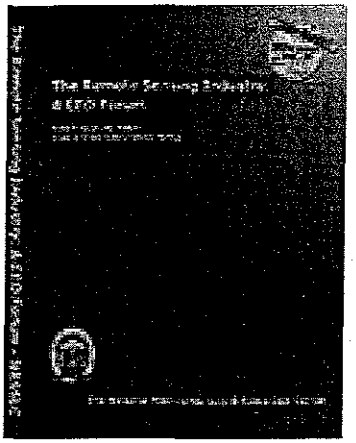

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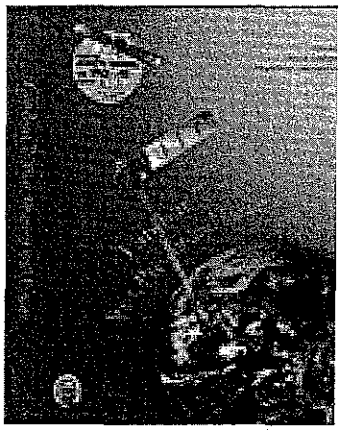

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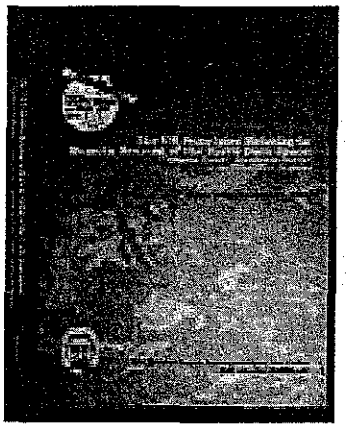

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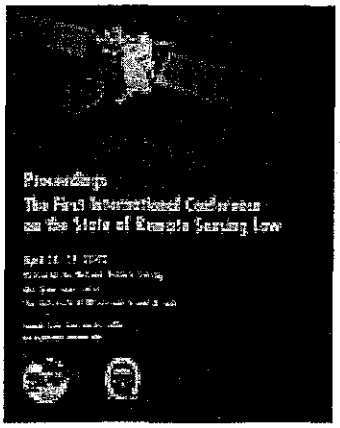

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