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**A REPORT ON**

**ARMS CONTROL AND OUTER SPACE: A STUDY  
OF THE ISSUE FROM THE ASPECT OF EXISTING  
AGREEMENTS AND INTERNATIONAL LAW**

**TO**

**THE DEPARTMENT OF EXTERNAL AFFAIRS  
OTTAWA, ONTARIO**

**BY**

**MCGILL UNIVERSITY  
CENTRE OF AIR AND SPACE LAW  
MONTREAL, QUEBEC**

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PRELIMINARY REMARKS

This study examines the law of outer space applicable to military activities. An analysis is undertaken of existing international law, both general and specifically relating to space, with particular consideration given to the issue of arms control or disarmament in outer space. In a further part of the study the concept of monitoring the reduction of arms by a satellite agency is examined. Existing proposals for the establishment of an international satellite monitoring agency will be assessed from the perspective of applicable international law. As well, alternatives to such an agency will be advanced. Finally, the study considers the desirability and prospects of future international treaty law to regulate military activities in outer space.

Included as an appendix is a collection of the more often mentioned international treaties and other texts.

McGill University  
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Montreal

March 1983

PART I. MILITARY ACTIVITIES IN OUTER SPACE

## Introduction

The following survey of military activities in outer space serves to place in context the significant role that space plays and can fulfil in this area. Not intended to be an exhaustive enumeration of all military ventures given the paucity of reliable information, this Part is meant to underscore the advanced and pervasive level of outer space militarization.

a) Remote Sensing (Reconnaissance) Satellites

Photographic reconnaissance satellites serve a wide range of military purposes including arms control verification, crisis monitoring, early warning of attack, and weapon targetting. There are two basic types of reconnaissance missions. Area surveillance missions allow large areas of a particular country to be scanned for objects of potential military interest using a wide angle, low resolution camera. The second type of mission permits the closer view of areas of particular interest detected during the area surveillance mission, using cameras with a high resolution and a narrower field of vision. These satellites are equipped with recoverable capsules or digital photographic transmission systems capable of transmitting images in real time in digital form to a ground station. This rapid transmission of information facilitates the detection and description of enemy targets. The quality of details which can be detected by such satellites is extremely accurate: it is estimated that ground resolutions of about 5-15 cm. can now be obtained.

In sum, factors such as the altitude of the satellite, and the availability and advancement of technology increase the potential role that photographic reconnaissance satellites may play in a country's defence strategy and planning.

Electronic reconnaissance satellites

Electronic reconnaissance spacecraft carry equipment designed to detect and monitor radio signals transmitted by a state's military forces both within its borders and throughout the world. The signals are detected by what are commonly referred to as "Ferrets", electronic objects attached to the satellite. These satellites are also used to gather data on missile testing and on various other types of communication traffic, as well as to locate precisely the sources of the signals which they intercept. "Ferrets" may thus be used to direct photographic reconnaissance satellites over areas of any electronic distortion which may be caused by increased military activity.

Ocean surveillance satellites

Military applications of ocean surveillance satellites are of importance as such spacecraft permit the identification of both surface vessels and submarines. A state may thus monitor continuously the activities of another state's navy. In the near future, it is expected that technological advancements will permit both day and night ocean surveillance regardless of climatic conditions existing at the time.

### Early warning satellite systems

Early warning satellites were initially developed to detect enemy missiles as soon as they were launched. These missiles are detected through the use of sensors able to detect the infra-red radiation emitted by the hot plume of a rocket. With the rapid developments in thermal imaging sensor technology, it is foreseeable that the missions of early warning satellites will extend to the detection of ASAT missiles and cruise missiles aboard tactical aircraft.

### Nuclear explosion detection satellites

Nuclear explosion detection satellites are used to verify compliance with nuclear test-ban agreements, by both signatory and non-signatory states. They are equipped with infra-red sensors capable of detecting even underground nuclear explosions.

### Conclusion

Reconnaissance satellites are used by both super-powers to monitor the military activities of each other as well as those of other states. The information and images obtained through the use of such satellites is of the highest military importance to both space powers. The interpretation and perception that each country may have of these images contributes to the establishment of state strategic planning.

b) Communications Satellites

Introduction

Communications satellites play a vital role in the coordination of all super-power military activities. The United States depends far more on the use of these satellites than does the Soviet Union which has an extensive conventional communication system. For this reason, U.S. communications are particularly vulnerable to interception, both electronic and anti-satellite. An integrated and coordinated command system is facilitated by the use of these satellites which link overseas military bases, different naval posts, aircraft command stations and inter-continental ballistic missile bases. Moreover, communications satellites complement the information and images obtained from reconnaissance satellites by transmitting strategic data to the relevant ground stations.

Air Force Satellite Command System (AFSATCOM)

Both the U.S. and the U.S.S.R. have taken active steps in developing military navigation satellites. The U.S. Navy was initially concerned with the development of navigation satellites under the Navy Navigation Satellite System (NNSS) program. A series of satellites designated Transit were launched as early as 1959. Basically, the function of navigation satellites is to transmit signals that permit constant

information with respect to the position of vessels. These satellites are also used as an aid to navigation for submarines.

Both space powers have also established a series of more sophisticated satellites stationed in circular orbits, which emit signals using special transmission codes that are highly resistant to enemy interference. Navigation satellites permit correction of the trajectories and paths of both ICBMs and bomber forces, by transmitting information to a central ground station. It is worthy of note that the American NAVSTAR system is expected to allow a navigator to obtain continuous position fixes in three dimensions within about 10 m. and enable him to determine his velocity to within about 6 cm.

#### Conclusion

The use of navigational satellites enables armed units to accomplish their missions notwithstanding the distance which may separate the unit from its headquarters, and thus eliminate what may be referred to as the "isolation" factor. These satellites can also play a vital tactical role in military strategy.

c) Meteorological Satellites

Along with reconnaissance satellites, meteorological satellites play a key role in the accomplishment of military missions. Wind direction and weather patterns may be determined by such satellites. The infra-red sensors on board can estimate temperature patterns at different altitudes. This meteorological data is of great importance to photography by reconnaissance satellites and to the penetration of laser beams towards earth-based targets. The launching of ICBMs may be disturbed by cloud-covered skies and high winds which would alter the missiles' trajectory. Thus, meteorological satellites play a supporting role in military satellite activities.

Basic concepts

Meteorological satellites are launched in polar, sun-synchronous or geostationary orbits. Those placed in the geostationary orbit may alter their position in order to obtain a more complete view.

At present, mobile receiving stations are being designed in order to acquire data which will improve weapon performance and satellite functions.

During combat, these satellites may play an important role in aerial operations and attack forces. For example, an American satellite, the MK-4, was used during the Bright Star Tactical Deployment Exercises in Egypt. This system allowed the tactical commanders to draw up schedules and make tactical decisions based on the data obtained from the satellites. All data was processed and transmitted and then forwarded to the AF Global Weather Center in Nebraska and the Navy Fleet Numerical Oceanic Center.

#### Conclusion

Meteorological satellites can be used extensively for tactical purposes. Data can be obtained immediately and assists in improving the use of other satellites and of weapons in general.

#### d) Geodetic Satellites

##### Introduction

Geodesy is that branch of applied mathematics which deals with the shape of the earth, its gravitational field and the exact position of various points on the earth's surface. The data acquired through the use of such satellites is essential for mapping purposes and for the location of specific points

on the earth. Laser reflectors for tracking as well as radio beams are used to collect data.

#### Basic concepts

The knowledge of target positions and of the values of the earth's gravitational field between the launching point and the target are vital to missile accuracy. Changes in the gravitational field may be calculated by studying the changes undergone by satellites in orbit. The knowledge of target positions may enable experts to correct the trajectory of missiles, while a knowledge of the earth's gravitational field may help improve the accuracy of delivery vehicles used for warheads.

#### Conclusion

Geodetic satellite data is as important as that of meteorological and communications satellites. However, receiving stations are not as mobile as those of other satellites. Nevertheless, by always having up-to-date and detailed maps, the military may use these in the field and more accurately target missiles.

e) Space Based and Space Directed Weapons

The development of weapon systems has now been extended to outer space.

Space based and space directed weapons may be grouped as follows: laser beam weapons, particle beam weapons and anti-satellite weapons.

Laser is the acronym for Light Amplification by Stimulated Emission of Radiation. Lasers are light-energy sources which emit a highly focussed and concentrated beam that can be re-directed and recharged in a minimal amount of time, and can then destroy a specific target. With the use of reconnaissance satellites, the laser may be placed above the probable launching point of a missile and thus intercept it before the nuclear warheads separate.

Particle beam weapons consist of a stream of highly accelerated atomic or subatomic particles such as electrons, protons, neutrons or heavy ions. They can be distinguished by the kind of radiation they emit, which is capable of vaporizing metals.

Anti-satellite weapons can be aimed at a satellite from the ground, the air space or outer space. If aimed from space, the anti-satellite weapon can act in two ways. For example,

a system called the Miniature Homing Intercept Vehicle (MHLV), which uses a small vehicle carrying an infra-red sensor for guidance, can ram and destroy the target by scattering small metal particles which collide with the target. A missile could also be launched from an aircraft; the missile would be self-guided and would destroy the satellite upon impact. Missiles can thus be launched from any position, and would be less vulnerable than a laser weapon placed in outer space. The space shuttle could easily transport nuclear weapons, and move from orbit to orbit to attack other satellites.

f) Aerospace Transportation Systems and Space Stations

The importance of the space shuttle system lies in the fact that it will enhance the effectiveness of military satellites. Compared with the existing expendable boosters, the shuttle will be able to launch greater payload weights and volumes. The shuttle system not only allows the recovery of satellites for re-use but also enables satellites to undergo repairs in orbit.

Among its most important tasks, one could mention:

- 1) Satellite servicing, i.e., inspection, examination, repairs, neutralization and destruction of satellites;
- 2) Placing combat equipped platforms for anti-satellite systems or anti-ASAT systems.

- 3) Space Operation Centre. The Centre would be installed aboard an orbiting vehicle and would help control troop movements and ICBM movement. It would also provide satellite maintenance services. A modified "Spacelab" located in the belly could be equipped with a high resolution telescope for surveillance and reconnaissance purposes.
- 4) Inertial Upper Stage (I.U.S.). This vehicle could be incorporated in the shuttle so as to place charges in high orbits.

The space shuttle along with the boosters could also be used to launch space stations. The boosters could easily place the heavy modules in orbit, while the shuttle could assemble the station. The station could eventually become a "Space Operation Centre" which could be replenished by the space shuttle. These stations could also control and monitor the use of satellites and eventually decrease the role played by ground stations by themselves becoming "processing centres".

g) Other Military Applications

Space-based radar placed in orbit could furnish more information concerning surprise attacks since, unlike ground stationed radar, it would not be affected by climatic conditions. Targets could be pinpointed by the electromagnetic energy that they emit. Such radar could also detect intercontinental missiles. The comparison between space segment data and earth segment data will enable military strategists to more easily assess the enemy's military forces.

PART II. INTERNATIONAL LAW APPLICABLE TO MILITARY  
ACTIVITIES IN OUTER SPACE

## 1. General International Law

### a) Introduction

There is no express proscription of military activities recognized in international law. While the United Nations pursues the maintenance of international peace and security, this is done in a world with a prodigious military presence. Consequently, international law must be examined from the perspective of the regulation of military activities particularly through treaty law.

### b) International Treaty Law

Any consideration of international treaty law should be undertaken on the basis of the principles enumerated in the Vienna Convention on the Law of Treaties.<sup>1</sup>

Article 31 provides the following general rule of interpretation:

1. A treaty shall be interpreted in good faith in accordance with the ordinary meaning to be given to the terms of the treaty in their context and in the light of its object and purpose.
2. The context for the purpose of the interpretation of a treaty shall comprise, in addition to the text,

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1. In force 27 Jan.1980; reproduced in (1969), 63 Am.Jl of Int'l L. 875.

including its preamble and annexes:

(a) any agreement relating to the treaty which was made between all the parties in connexion with the conclusion of the treaty;

(b) any instrument which was made by one or more parties in connexion with the conclusion of the treaty and accepted by the other parties as an instrument related to the treaty.

3. There shall be taken into account, together with the context:

(a) any subsequent agreement between the parties regarding the interpretation of the treaty or the application of its provisions;

(b) any subsequent practice in the application of the treaty which establishes the agreement of the parties regarding its interpretation;

(c) any relevant rules of international law applicable in the relations between the parties.

4. A special meaning shall be given to a term if it is established that the parties so intended.

i. Charter of the United Nations

The preamble to the U.N. Charter states that the peoples of the United Nations will "unite [their] strength to maintain international peace and security", and pledge that "armed force shall not be used, save in the common interest...". This provision clearly gives the U.N. a mandate to function in the area of disarmament.

Article 1 states:

The Purposes of the United Nations are:

1. To maintain international peace and security, and to that end: to take effective collective measures for the prevention and removal of threats to the peace, and for the suppression of acts of aggression or other breaches of peace.

This Charter was drafted before the significance of nuclear weapons was universally appreciated. Consequently, the solution it proposes to an act of aggression, namely, collective suppression by force, is relevant only to conventional weapons. Nuclear and bacteriological warfare, because of their potential for relatively effortless mass

destruction, require a well thought-out strategy for attack, in terms of timing, precision of targets, and an anticipation of a first strike. In other words, this provision, if viewed in the context of nuclear and bacteriological warfare, is now obsolete, and does not contribute to "international peace and security" via disarmament or arms control.

Article 11 states:

1. The General Assembly may consider the general principles of cooperation in the maintenance of international peace and security, including the principles governing disarmament and the regulation of armaments, and make recommendations with regard to such principles to the Members or to the Security Council or to both.

Again reference is made to collective security, a concept not central to arms control negotiations. In addition, if one interprets this provision in its context and in the light of its object and purpose, reference must be made to conditions which prevailed after World War II. In reality, the U.N. was organized as a structure of allies intent on preserving peace by keeping in check the expansionist policies

of the primary aggressors of the War. It was thought that this Allied initiative would consolidate the balance of power in favour of the West, and thereby ensure peace. This viewpoint cannot apply to nuclear arms control because one isolated act of aggression on the part of a single nation is capable of toppling in an instant that balance of power.

Most importantly, however, it should be noted that this provision does not confer any extraordinary powers upon the General Assembly. Rather, it allows the General Assembly to exercise only two functions: the Assembly "may consider", and it "may make recommendations to the Members or to the Security Council or to both". These two functions are passive and are incapable of directly steering a determined course of action.

Article 26 states:

In order to promote the establishment and maintenance of international peace and security with the least diversion for armaments of the world's human and economic resources, the Security Council shall be responsible for formulating, with the assistance of the Military Staff Committee referred to in Article 47, plans to be

submitted to the Members of the U.N. for the establishment of a system for the regulation of armaments.

This provision is weak for at least two reasons. First, the Security Council has been entrusted with the passive task of formulating plans which may be freely vetoed by member states, while there is no corresponding obligation on the part of member states to establish a system for the regulation of armaments. Second, systems for the regulation of armaments, unless they provide for eventual complete disarmament, can never be anything more than temporary palliatives for the reason that advances in technology are producing new weapons at a faster pace than there are treaties being signed to limit these weapons.

Article 47 states:

1. There shall be established a Military Staff Committee to advise and assist the Security Council on all questions relating to the Security Council's military requirements for the maintenance of international peace and security, the employment and command of

forces placed at its disposal, the regulation of armaments, and possible disarmament.

Once more, it is obvious that this provision was drawn up within a conventional armament framework although it may be applicable to nuclear arms control. The "employment and command of forces" would not serve as an effective deterrent. However, the Military Staff Committee could provide a real service of advice and assistance to the Security Council regarding "the regulation of armaments, and possible disarmament", primarily by collecting and interpreting information on the quality and quantity of arms deployed by any given state. This information could significantly alter the course of arms control negotiations, especially if it was found to be inconsistent with the claims of a state.

There are no provisions in the Charter which impose sanctions on states for creating a threat to peace and security or for failure to advance towards disarmament. There are also no sanctions for failure or refusal to participate in disarmament negotiations.

However, there is one effective sanction often employed in connection with, but not specifically enumerated in, the Charter: the force of public opinion, often accompanied by

ostracism from the general international community, with resultant loss of trading privileges, scientific exchanges, and the like. Nevertheless, it is questionable whether or not this sanction would be as effective in the context of disarmament, as a relatively small number of nuclear weapons could wipe out a vast portion of the international community.

ii. Antarctic Treaty (1961)<sup>1</sup>

During the International Geophysical Year (IGY) of 1957<sup>2</sup> the international scientific community conducted a number of studies of man's environment - the earth, the oceans, the atmosphere and outer space. The guidelines for the IGY contained several ideas which were later incorporated in the Antarctic Treaty of 1961, and some of these basic provisions were later carried over into treaties particularly the 1967 Outer Space Treaty and the 1979 Moon Treaty.

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1. 402 U.N.T.S. 71 (1961). Opened for signature 1 Dec. 1959; entered into force 13 June 1961.
  2. The International Geophysical Year (IGY) was organized under the auspices of the International Council of Scientific Unions (ICSU) in 1957-58 and was planned and carried out by more than 50 states. Each participating state planned and developed its own programs, which were coordinated by a special Committee for the International Geophysical Year of the ICSU. See, Buedeler, The International Geophysical Year, UNESCO, (1957); Chapman, IGY-Year of Discovery, (1959).

The main purpose of the Antarctic Treaty was to continue the status which Antarctica had enjoyed during the IGY and in particular to rule out that the numerous disputes as to sovereignty over portions of the Antarctic could escalate to greater political dimensions. Furthermore, the possible suitability of Antarctica for nuclear tests and the testing of other military equipment was a strong incentive to limit the military use of Antarctica.

The preamble to the Antarctic Treaty recognized "that it is in the interest of all mankind that Antarctica shall continue forever to be used exclusively for peaceful purposes and shall not become the scene or object of international discord", and leaves no doubt that the parties intended to create a legal regime for this area which would serve the cause of peace and facilitate international cooperation.

In its operative part, the Treaty seeks to preserve a demilitarized status of the Antarctic by prescribing in article I(1) that it shall be used "for peaceful purposes only" and prohibits "inter alia any measures of a military nature, such as the establishment of military bases and fortifications, the carrying out of military manoeuvres, as well as the testing

of any type of weapons".<sup>3</sup> Although the term "peaceful purposes" is not defined in the treaty, it is said to indicate that the parties meant to exclude all military activities.<sup>4</sup> On the other hand, the Treaty, according to paragraph 2 of article 1, "shall not prevent the use of military personnel or equipment for scientific research or for any other peaceful purpose". This provision is said to have been included in recognition of the importance of the support rendered, for example, to U.S. scientific activities by naval vessels and personnel.<sup>5</sup>

The extent of the freedom of scientific investigation, as established in article II of the Treaty is determined in article III. Freedom of scientific investigation is granted to the extent to which it was actually exercised during the

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3. See also art.IX(1)(a): "use of Antarctica for peaceful purposes only" and the first and fourth preambular paragraphs.
  4. Stein, Legal Restraints in Modern Arms Control Agreements (1972), 66 Am.Jl of Int'l L., 255, 259; Vlastic, Disarmament Decade, Outer Space and International Law (1981), 26 McGill L.Jl 173.
  5. Hanessian, The Antarctic Treaty, 1959, Int'l & Comp.L. Q. 436, 468.

IGY.<sup>6</sup> Furthermore, one of its important elements is that of international cooperation.<sup>7</sup> The parties to the Treaty agree that to the greatest extent feasible and practicable, exchanges shall take place concerning plans for scientific programmes, or scientific personnel between expeditions and stations, and of scientific observations and results. Close

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6. Art. II states: "Freedom of scientific investigation in Antarctica and cooperation toward that end, as applied during the International Geophysical Year, shall continue, subject to the provisions of the present Treaty."

7. Art. III states:

"1. In order to promote international cooperation in scientific investigation in Antarctica as provided for in Article II of the present Treaty, the contracting Parties agree that, to the greatest extent feasible and practicable: a) information regarding plans for scientific programmes in Antarctica shall be exchanged to permit maximum economy and efficiency of operations; b) scientific personnel shall be exchanged in Antarctica between expeditions and stations; c) scientific observations and results from Antarctica shall be exchanged and made freely available.

2. In implementing this Article, every encouragement shall be given to the establishment of cooperative working relations with those specialized agencies of the United Nations and other international organizations having a scientific or technical interest in Antarctica."

cooperation with the specialized agencies of the United Nations and other international organizations having a scientific or technical interest in Antarctica is also provided for.<sup>8</sup>

Article V specifically prohibits "any nuclear explosions" in Antarctica and the disposal of radioactive waste material.<sup>9</sup> To ensure the observance of the Treaty's provision, the principle of mutual inspection was established in article VII of the Treaty.<sup>10</sup> Under paragraph 3 of article VII, all areas of Antarctica, including all stations, installations and equipment shall be open at all times to inspection by any observers designated by state parties.<sup>11</sup> Each of these observers designated shall have complete freedom of access at any time to any or all areas of Antarctica. Aerial observation is also permitted. In order to facilitate observation, information is

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8. See art. II(2).

9. According to art.V(2), if all the contracting parties were to adhere to any broader international agreements concerning the use of nuclear energy, including nuclear explosions and the disposal of radioactive waste material, those agreements would apply to Antarctica.

10. Art.VII(2). This provision was the first time that the two super-powers agreed on an on-site inspection system to ensure against unauthorized military activity.

11. Art.VII(3).

exchanged between the parties as to expeditions to and within Antarctica on all stations therein and any military personnel or equipment intended to be introduced into Antarctica.<sup>12</sup>

No sanctions are provided for non-compliance with the Treaty's provisions.

Article IX and following of the Treaty contain important elements for the joint administration of Antarctica. In particular, representatives of contracting parties shall meet at suitable intervals for the purpose of exchanging information and for consultation on matters of common interest pertaining to Antarctica, and for formulating and considering as well as recommending to their governments measures to further the principles and objectives of the Treaty.

Prior to the beginning of international joint scientific cooperation for scientific research a number of states had already made claims of sovereignty over part of Antarctica. Article IV of the Treaty basically "freezes" the claims to sovereignty and jurisdiction of interested states.<sup>13</sup> Under this provision, the Treaty does not have the effect of a renunciation by any contracting party of previously asserted

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12. Art. IX(1).

13. Art. IV.

rights or claims to territorial sovereignty. Furthermore, no new claims or enlargement of any existing claims shall be asserted while the Treaty is in force.<sup>14</sup>

It is worthy of note that despite the escalating global arms race, Antarctica has not been affected by this trend. Fundamental concepts embodied in the Antarctic Treaty, such as the use of this area for peaceful purposes only, the freedom of scientific investigation, the promotion of international cooperation and the exchange of information and scientific personnel are of particular relevance to the law of outer space. The Antarctic Treaty is an outstanding example of the material contribution that international law can make in ensuring a safer world.<sup>15</sup>

iii. Treaty Banning Nuclear Weapon Tests in the Atmosphere, in Outer Space and Under Water (The Limited Test Ban Treaty) (1963)<sup>16</sup>

Concern for radioactive fallout caused by nuclear testing was one of the strongest motivating forces behind the Limited Test Ban Treaty.

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14. Art.IV(2).

15. Antarctica: 10th Meeting of Treaty Consultative Parties, 79 Dep't State Bull., Nov. 1979, 21.

16. 480 U.N.T.S. 43 (1963).

Article 1 states:

1. Each of the parties to this Treaty undertakes to prohibit, to prevent, and not to carry out any nuclear weapon test explosion, or any other nuclear explosion, at any place under its jurisdiction or control;
  - (a) in the atmosphere; beyond its limits, including outer space;...

Article 2 adds:

2. Each of the parties to this Treaty undertakes furthermore to refrain from causing, encouraging, or in any way participating in, the carrying out of any nuclear weapon test explosion, anywhere which would take place in any of the environments described, or have the effect referred to, in paragraph 1 of this Article.

While the prohibitions enumerated in articles 1 and 2 seem impressive, they are subject to a provision which could render them useless in a very short period of time. Article 4 permits a party to withdraw from this Treaty if it decides that its supreme interests are being jeopardized, simply by

giving three months notice. Because the test for the evaluation of a crisis situation is subjective, arbitrary withdrawal is facilitated.

The cumulative effect of articles 1 and 2 is such that it is not possible to test weapons in outer space under simulated war conditions. Only the component parts of a weapon may be tested in the laboratory. As a result, technological progress is considerably slowed.

One negative effect is that while Soviet and American testing in outer space has ceased, testing on earth by other countries, notably Great Britain, France, and China, has sharply increased from 1964 onwards.<sup>17</sup>

Although over 100 states have ratified this Treaty, two emerging nuclear powers, France and mainland China, have refused to accede and do not consider themselves bound.

Nevertheless the importance of this Treaty should not be underestimated as there are sound arguments alleging its inestimable contribution to customary international law:

The Moscow Test Ban Treaty of 1963 may itself have started or at least acknowledged, a general rule of customary international law

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17. SIPRI Yearbook 1972, 408.

dating approximately from 1963 to the effect that all atmospheric tests of nuclear weapons are illegal. The nearly universal acceptance of this treaty indicated an international consensus of overwhelming force in favour of the principles contained therein. Any claim to the contrary must be a claim of special interest against community interest. Additionally, the treaty and subsequent practice under it (i.e. restraint from conducting atmospheric tests and restraint from withdrawing from the treaty under its withdrawal clause) can be argued to be the equivalent of the practice and acquiescence of states to a rule banning atmospheric nuclear tests even in the absence of a treaty. As in any area in which a customary principle is claimed, the basic importance of the Test-Ban Treaty here is the overwhelming (not necessarily universal) expectation of the peoples of the world about the unlawfulness of atmospheric nuclear testing.<sup>18</sup>

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18. d'Amato, *Legal Aspects of the French Nuclear Tests* (1967), 61 *Am.Jl. Int'l L.* 66, 76-7.

The Treaty itself contains no provisions to regulate compliance, no sanctions for non-compliance, and no provisions for monitoring non-compliance.

iv. Treaty on the Non-Proliferation of Nuclear Weapons (The Non-Proliferation Treaty) (1970)<sup>19</sup>

Article 1 of the Non-Proliferation Treaty prohibits the transfer, from a nuclear-weapon state "to any recipient whatsoever, nuclear weapons or other nuclear explosive devices or control over such weapons or explosive devices directly, or indirectly; and not in any way to assist, encourage, or induce any non-nuclear-weapon state to manufacture or otherwise acquire nuclear weapons or other nuclear explosive devices, or control over such weapons or explosive devices".

This is the active prohibition. The corollary is found in article 2 which prohibits the corresponding activities on the part of the non-nuclear receiving state.

The effectiveness of these two provisions in limiting the arms race to that of the two super-powers is questionable. For instance, it provoked a disturbing asymmetry in the alignment of the lesser powers:

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19. 729 U.N.T.S. 161 (1970).

Among the non-nuclear powers that have or are planning significant nuclear industries, only Australia, Canada, Iran, Mexico, Sweden, and most of the nations of Europe, including the Federal Republic of Germany, ratified the treaty by the time of the Review Conference. Japan's Diet voted to ratify the treaty in 1976. Most of the other nations with comparable programs had not yet signed: Argentina, Brazil, India,... Israel, Pakistan, Saudi Arabia, and South Africa....Egypt had signed but not ratified, and it appeared unlikely that it would ratify. Thus the treaty failed to obtain the support of many of the nations whose support was the most important. <sup>20</sup>

The end result could only mean that certain states, capable of possessing nuclear force of international magnitude now, or sometime in the future, would not be bound by the provisions of this Treaty, and could ultimately be the ones to instigate a first attack.

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20. Barton & Weiler, International Arms Control, (1976), 302.

This observation acquires added significance in light of the fact that the Chinese refused to sign or ratify the treaty, while France, although not a party, declared it would abide by the provisions of this Treaty.

Article 3 provides for verification using safeguards established by the International Atomic Energy Agency. In real life, however, most European states, members of EURATOM, notably West Germany, only signed after a formal verification agreement had been reached between the IAEA and EURATOM.

Numerically, the record of ratification is good (approximately 100 parties), in spite of the fact that the safeguard system actually discouraged wider acceptance of the Treaty.

If a non-nuclear nation joined the NPT it had to submit all its peaceful nuclear facilities to IAEA safeguards. But if a nation stayed out of the NPT, only those facilities supplied internationally would generally be subject to IAEA safeguards.<sup>21</sup>

Perhaps one of the most unfortunate weaknesses of this Treaty is found in article 4. It gives the right to all parties

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21. Ibid., 303.

to develop research, produce and use nuclear energy for peaceful purposes. Often, it is very difficult, if not impossible, to distinguish between peaceful and military purposes in verification procedures. As has already been pointed out:

It would be very difficult to verify an agreement that permits PNEs [Peaceful Nuclear Explosives] but bans tests for military purposes; weapons development tests could be carried out under the guise of peaceful explosions...<sup>22</sup>.

Another factor which the Treaty did not take into account was the potential of lesser states. It has been stated:

Behind the original policy of nuclear exclusion was a limited and sensible objective, to delay the technical advance of weapons in the hands of other nations, both friends and enemies. The policy became pathological when it refused to face the fact that no nation could perpetuate indefinitely a monopoly of scientific knowledge. The secrets of nature are open to all who look. The first nation to probe these secrets will inevitably force all of the nations of the world

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22. Ibid., 114.

that can afford it to take a look for themselves. Thus it was that the greatest secret of the atomic bomb was that its construction was feasible. That secret was given away at Hiroshima - not by spies or careless scientists, but as an official act of the American government. After Hiroshima, nuclear exclusiveness could never become a long-term policy, only a temporary tactical maneuver. Unfortunately, it soon became the central element of American foreign policy and to some extent continues today.<sup>23</sup>

Thus, it is only a matter of time and money before the lesser nations acquire nuclear parity with the super-powers and the Treaty becomes obsolete.

Finally, article 6 creates a legal obligation for states to "pursue negotiations in good faith on effective measures relating to cessation of the nuclear arms race at an early date and to nuclear disarmament..." (emphasis added). Needless to say, this obligation has not been fulfilled.

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23. Nieburg, Nuclear Secrecy & Foreign Policy, (1964), 232-3.

In conclusion, it is evident that this Treaty contains far too many loopholes to be considered a totally effective disarmament measure. Nevertheless, it has achieved wide acceptance, and, consequently, carries some weight if applied to arms control violations.

v. Treaty on the Prohibition of the Emplacement of Nuclear Weapons and Other Weapons of Mass Destruction on the Seabed and the Ocean Floor and in the Subsoil Thereof (The Seabed Treaty (1971))<sup>24</sup>

Prior to the drafting of the Seabed Treaty, the U.S.S.R. (at the ENDC in March 1969) submitted a draft treaty which banned all military uses of the seabed. However, this proposal, which, if accepted, would have put an end to the arms race in that area of this planet known as the seabed, was categorically rejected by the United States. The present Treaty is largely an adaptation of the American proposal.

This Treaty prohibits the emplanting or emplacing on the seabed and the ocean floor and in the subsoil thereof beyond the outer limit of a seabed zone any nuclear weapons or any other types of weapons of mass destruction as well as structures, launching installations or any other facilities especially designed for storing, testing or using such weapons.<sup>25</sup>

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24. (1972), Can. T.S., No. 20.

25. Art. 1, para. 1.

Special considerations, though, are afforded coastal states in that the undertakings of paragraph 1 of the article apply to the seabed zone except that, within such seabed zone, they do not apply either to the coastal state or to the seabed beneath its territorial waters. It is interesting to note that the Depository Governments of this Treaty, namely the U.S., Great Britain, and the U.S.S.R. are all coastal states.

The reasons given by the U.S. for the rejection of the Soviet draft are very revealing. The U.S. claimed that because the term "military uses" as opposed to "peaceful uses" was not defined, complete demilitarization was difficult to envision. Oddly enough, the U.S. did not object to a similar provision in the Antarctic Treaty. Perhaps this is evidence of a growing awareness on the part of the U.S. as to the aforementioned overlap of interest. In addition, the current U.S. definition of "peaceful purposes" did not include defensive measures. Since the U.S. considered defence to be of paramount concern, and since defensive retaliation requires military force, it is not difficult to see why the Soviet draft was rejected.

One of the main weaknesses of the Seabed Treaty is the relative ease with which the states parties may withdraw.

Article VIII states that three months notice must be given along with a "statement of extraordinary events it considers to have jeopardized its supreme interests". This subjective test is not open to objective evaluation. Consequently, in time of crisis it is predictable that such a withdrawal could take place. As a matter of fact, nothing prevents states parties from building weapons specifically designed in derogation of this Treaty, to store them elsewhere, and to emplace them immediately upon withdrawal in time of crisis.

The importance of this Treaty for disarmament in outer space lies principally in serving as an example of the problems encountered when attempting to eliminate, in one fell swoop, an entire segment of the earth from an arms race. In addition, it points to the desirability of approaching the question of disarmament by prohibiting certain classes or families of weapons at a time, as opposed to awkward prohibition of activities in geographical areas.

vi. The Convention on the Prohibition of Military and Other Hostile Uses of Environmental Modification Techniques (1977)<sup>26</sup>

The ENMOD Convention as its title suggests aims at prohibiting the hostile use of potentially disastrous en-

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26. (1977), 16 Int'l Legal Mat. 1988, entered into force 5 Oct. 1978.

ronmental modification techniques and represents yet another attempt in the field of arms control. This Convention is relevant to outer space because of the capability of space science and technology for use in environmental modification either for peaceful or hostile uses. The dual-purpose nature of these technologies is explicitly referred to in the preamble of the Convention which recognizes that the use of such techniques for peaceful purposes could "contribute to the preservation and improvement of the environment for the benefit of present and future generations", while their military application "could have effects extremely harmful to human welfare".

Article I(1) of this Convention prohibits "military or any other hostile use of environmental modification techniques having widespread, long-lasting or severe effects as the means of destruction, damage or injury to any other state party". Environmental modification techniques are defined as those which can be used "for changing through the deliberate manipulations of natural processes - the dynamics, composition or structure of the earth, including its lithosphere, hydrosphere, and atmosphere, or of outer space".<sup>27</sup>

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27. Art. II, (emphasis added).

The Convention has the serious limitation of not establishing a ban on all environmental modification technologies for military or hostile purposes, but only for those which have widespread, long-lasting or severe effects. No definition of these terms may be found in the Convention itself. However, the understandings which accompany the ENMOD Convention and form part of its negotiating record, define "widespread" as encompassing an area of several hundred square kilometers; "long-lasting" as lasting approximately a season; and "severe" as involving significant disruption or harm to human life, natural and economic resources or other assets.<sup>28</sup> These broad and legally non-binding provisions do not alter the largely agreed upon consequence that whatever is not prohibited verbis expressis by the Convention is implicitly permitted.<sup>29</sup> Thus, non-hostile techniques are not prohibited, regardless of their effects, nor are techniques

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28. Understanding to art. I reproduced in Agreement Governing the Activities of States on the Moon and other Celestial Bodies, Committee on Commerce, Science, and Transportation, 95th Cong., 2nd Session, May 1980, 250.

29. Dolman, Resources, Regimes, World Order, (1981), 322.

which produce destructive effects below a certain threshold.<sup>30</sup> Furthermore, until these terms are more clearly defined, states party to the Convention may reserve themselves the right to interpret these terms themselves.<sup>31</sup> Thus, the Convention offers a limited solution to arms control and has been classified as a "law of war" rather than a disarmament measure.<sup>32</sup>

Another serious limitation of the ENMOD Convention derives from the dual-purpose character of environmental modification technologies. The Convention states that its provisions "shall not hinder the use of environmental modification techniques for peaceful purposes".<sup>33</sup> As a result of their dual-purpose character, the distinction between peaceful and military applications becomes very difficult to draw.

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30. Krieger, Disarmament and Development. The Challenge of the International Control and Management of Dual-Purpose Technologies, (1981), 41.

31. As was the case when Turkey became a signatory to the ENMOD Convention.

32. Goldblat, The Prohibition of Environmental Warfare (1975), IV Ambio, 186.

33. Art. III.

Peaceful applications include changing rainfall patterns, dissipating fog, and the diversion of hurricanes and earthquakes to name but a few.<sup>34</sup> Warlike applications include triggering of earthquakes, upsetting the ecological balance of a region and destroying crops. The purpose of using environmental modification techniques in warfare also includes interfering with communications. It is equally important to note that nowhere does the Convention prohibit research and development of environmental modification technologies for war-like purposes. This omission is justified by both superpowers who argue that the "dual applicability of civilian and military ends of much research and development in this field" makes verification very difficult.<sup>35</sup> A recent study has also indicated that military and civilian weather satellites could be used to verify compliance with the provisions of the ENMOD Convention, though it would be difficult to

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34. In 1975, Canada submitted a working paper to the Conference of the Committee on Disarmament (CCD) which groups 19 technologies within three main categories: atmospheric modification; modification of the oceans; and modification of the land masses and water systems associated with them. U.N. Doc. CCD/463, 1975; see also U.N. Doc. CCD/465, 1975 for the Swedish delegation's study.

35. U.N. Doc. CCD/PV684, (1975), 11.

determine the cause of any unusual developing weather pattern which may have been detected.<sup>36</sup>

Since techniques for peaceful purposes are not to be hindered, it has been said that solar power satellites could therefore be used for peaceful purposes but would require any controls deemed necessary for avoiding harmful consequences.<sup>37</sup> No specific controls are, in fact, suggested.

Article III(2) states that parties to the Convention undertake to facilitate, and have the right to participate in, the fullest possible exchange of scientific and technological information on the use of environmental modification techniques for peaceful purposes. Article IV provides that a party to the Convention may undertake any measure it considers necessary in accordance with its constitutional process to prohibit and prevent activities in violation of the provisions of the Convention. Such a provision has very little practical significance since no definition is given as to what constitutes "activities in violation". Furthermore, recourse to different national laws precludes the establishment of a uniform and objective set of sanctions in

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36. Jasani, Outer Space and a New Dimension of the Arms Race, (SIPRI), (1982), 111.

37. Supra, note 28, 76.

case of non-compliance. No means of verification are provided for in the Convention.

States may consult each other and cooperate in solving problems which may arise in relation to the objectives or application of the Convention.<sup>38</sup> Five years after entry into force of the Convention a conference shall be convened to review the operation of the Convention and to examine the effectiveness of article I(1) in eliminating the dangers of military or any other hostile use of environmental techniques.<sup>39</sup>

There is as yet no international instrument which regulates the development of environmental modification technologies for peaceful purposes, no global environmental standards and no machinery for enforcing such standards.

c) U.N. General Assembly Resolutions

i. Declaration on Principles of International Law Concerning Friendly Relations and Cooperation Among States in Accordance with the Charter of the United Nations<sup>40</sup>

This U.N. General Assembly resolution provides:

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38. Art. V.

39. Art. X(1).

40. U.N.G.A. Res. 2625(XXV), 24 Oct. 1970.

All states shall pursue in good faith negotiations for the early conclusion of a universal treaty on general and complete disarmament under effective international control and strive to adopt appropriate measures to reduce international tensions and strengthen confidence among states.

While this resolution has no legal or moral binding force, it is indicative of an important body of international opinion. Of greatest significance are the words: "international control" which implies some sort of international disarmament regime.

ii. Resolution on the Definition of Aggression<sup>41</sup>

The General Assembly adopted a definition of aggression in the hope that this would contribute to the strengthening of international peace and security. After a lengthy series of preambular paragraphs, eight articles set out the constituent elements of aggression. The general definition provides that

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41. U.N.G.A. Res. 3314 (XXIX), 14 Dec. 1974.

aggression is the use of armed force by a state against the sovereignty, territorial integrity or political independence of another state, or in any other manner inconsistent with the U.N. Charter. There follows an enumeration of specific acts of aggression which are not considered exhaustive. While the efforts of the Assembly are laudable, it is noteworthy that the definition it has adopted is predicated solely on the territorial integrity of the state as such. Apparently no acts of hostility against nationals of a state or against state instrumentalities (such as space objects) would be countenanced by the definition where such acts occurred outside the sovereign territory of a nation. The essence of the definition, it must be recalled, is the use of armed force against the "sovereignty, territorial integrity or political independence" of a state.

d) Other International Texts

i. Declaration of the United Nations Conference on the Human Environment (The Stockholm Declaration)<sup>42</sup>

While resolutions of the U.N. General Assembly are not considered legally binding, nevertheless, a strong case may

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42. U.N. Doc. A/Conf. 48/14, 3 July 1972.

be made for the proposition that the Stockholm Declaration, like the comparable Declaration on Human Rights, has a strong moral binding force.

Principle 26, of the Stockholm Declaration states:

"Man and his environment must be spared the effects of nuclear weapons. States must strive to reach prompt agreement... on the elimination and complete destruction" of nuclear arms and other weapons of mass destruction.

This Resolution was unanimously accepted and received wide recognition thereafter. Within six months, the U.N. General Assembly reiterated its commitment and created an improved environmental agency, which in turn, gave birth to the prestigious United Nations Environment Program.

As this is not a treaty, no sanctions or systems of verification have been imposed. Nevertheless, the impressive moral weight of this document cannot be denied.

ii. Treaty Between the United States of America and the Union of Soviet Socialist Republics on the Anti-Ballistic Missile System (The ABM Treaty) (1972)<sup>43</sup>

This Treaty is, by far, the most important of the SALT I Agreements. It is an example of an unprecedented renunciation,

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43. (1972), reproduced in (1979), 18 Int'l Legal Mat. 1112.

on the part of both the U.S. and the U.S.S.R., of the right to build certain defences, i.e. a nation-wide ABM defence system and the radar base for such a system. Specific reference is made in article V to outer space-based components: "1. Each party undertakes not to develop, test or deploy ABM systems or components which are sea-based, air-based, space-based, or mobile land-based." Another important and innovative provision is article IX: "To assure the viability and effectiveness of this Treaty, each party undertakes not to transfer to other states, and not to deploy outside its national territory, ABM systems or their components limited by this Treaty." In effect, therefore, neither the U.S. nor the U.S.S.R. is allowed to establish an ABM system or components of it in a covert manner. The phrase "outside its national territory" would easily include space-based ABM systems or components.

Article XV is an improvement over similar provisions found in prior agreements. Instead of the usual three months notice prior to withdrawal, this article provides for six months notice to be given - presumably enough time for the disadvantaged party to make arrangements for interim defence measures.

In negotiating the ABM Treaty, both the U.S. and the U.S.S.R. adopted the doctrine of deterrence. This doctrine consists essentially of one state being discouraged from striking another state first because the former would be unable to successfully withstand the latter's retaliation, and vice versa. Vulnerability to a second strike was the key. Under the ABM Treaty, the few permitted weapons systems could be easily targeted and would provide no effective protection. In other words, the vulnerability to a second strike would be greatly increased, while the military significance of a first strike would be greatly diminished. Consequently, it was thought, the result would be a more stable deterrent relationship.

The ABM Treaty was successful in limiting the arms race with respect to at least some improvements in ABM missiles. An example is article VI(a) which provides for the prohibition against giving ABM missiles "capabilities to counter strategic ballistic missiles", by equipping them with, for instance, multiple warheads, or other as yet undiscovered technology. For the first time in history, the super-powers agreed to arrest the development of a new weapons system.

Perhaps the most chilling result of the SALT I negotiations has been the heretofore unprecedented declaration of military equality between the U.S. and the U.S.S.R., as enunciated in an agreement entitled: Basic Principles of Relations Between the United States of America and the Union of Soviet Socialist Republics. It stated:

Both sides recognize that efforts to obtain unilateral advantage at the expense of the other, directly or indirectly, are inconsistent with these objectives maintaining peaceful relations. The prerequisites for maintaining and strengthening peaceful relations between the U.S.A. and the U.S.S.R. are the recognition of the security interests of the parties based on the use of threat of force.<sup>44</sup>

However, what the two super-powers did not realize at the time was that a restriction on ABMs would seriously weaken their defensive capacity vis-a-vis emerging nuclear powers.

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44. Barton & Weiler, International Arms Control, (1976), 206.

Finally, this Treaty does not provide for verification procedures. As a matter of fact, there is considerable evidence to suggest a reckless non-compliance with all provisions of the Treaty.<sup>45</sup> Subsequently its legal weight has been undermined by irresponsible state practice.

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45. Levitt, Note, (1981), 22 Harv. Int'l L. J1 379.

2. International Space Law

a) UN General Assembly Resolutions Applicable to Outer Space

The evolution of space law has closely followed space exploration. It should be noted that even prior to the first launchings, it was thought that on the basis of international law, outer space was res communis.<sup>1</sup> Thus, as was the case with the high seas, space was understood to be free for all to use beyond sovereign claims. Even while the use of outer space was at an experimental stage, the need for its regulation was strongly defended. Initial efforts of the United States in early 1957<sup>2</sup> to ban the use of cosmic space for military purposes did not meet with a favourable response from the Soviet Union.<sup>3</sup> However, the twelfth session of the United Nations General Assembly adopted a resolution over the Soviet bloc's objections, calling for the "joint study of an inspection system designed to ensure that the sending of

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1. Brownlie, Principles of Public International Law, (3rd ed.), (1979), 266-7.

2. In its Memorandum submitted to the First Committee of the United Nations General Assembly on January 12, 1957, the United States proposed that "the first step toward the objective of assuring that future developments in outer space would be devoted exclusively to the peaceful and scientific purposes would be to bring the testing of such objects under international inspection and participation". U.N. Doc. A/C.1/783.

3. For the position of the Soviet Union see U.N. Doc. DC/SC.1 49 (18 Mar. 1957) and DC/SC/1/55 (30 Apr. 1957).

objects through outer space should be exclusively for peaceful and scientific purposes".<sup>4</sup>

Soon after the launching of the first American and Soviet satellites<sup>5</sup> a specific body of international law began to develop. In 1958, the United Nations General Assembly created an ad hoc Committee on Peaceful Uses of Outer Space by a resolution entitled "Question of the Peaceful Use of Outer Space".<sup>6</sup> Already at this early stage the Assembly resolved to "promote energetically the fullest exploration and exploitation of outer space for the benefit of mankind".<sup>7</sup> This was to be achieved on the basis of sovereign equality by international cooperation in the study and utilization of space for peaceful purposes. It was thought that the implementation of these aims could best be carried out by the establishment of an appropriate international body within the framework of the United Nations. Consequently, an ad hoc Committee was formed composed of eighteen members and charged with reporting to the General Assembly at its next session, on: the activities

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4. U.N.G.A. Res. 1148(XII), 14 Nov. 1957.

5. The first Sputnik was launched on 4 October 1957, followed closely by Explorer 1 on 31 January 1958.

6. U.N.G.A. Res. 1348(XIII), 15 Dec. 1958.

7. Ibid.

and resources of the U.N. and other international bodies relating to the peaceful uses of outer space; the area of international cooperation and programs in the peaceful uses of outer space which could appropriately be undertaken within the U.N.; the future organizational arrangements to facilitate international cooperation in space activities; and the nature of legal problems which might arise in carrying out space programs.

The ad hoc Committee obtained permanent status, by resolution, as a Standing Committee<sup>8</sup> almost one full year later.<sup>9</sup> This resolution again recognized as the fundamental basis for space exploration the common interest of mankind and, significantly, made mention of the paramount aim to benefit all states "irrespective of their economic or scientific development" through space exploration. The Assembly also noted that the U.N. should promote international cooperation in outer space. The next significant resolution, adopted unanimously in December 1961,<sup>10</sup> would serve to guide the subsequent evolution of space law. In addition to re-

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8. The Committee on the Peaceful Uses of Outer Space or COPUOS as it is commonly termed.

9. U.N.G.A. Res. 1472(XIV), 12 Dec. 1959.

10. U.N.G.A. Res. 1721(XVI), 20 Dec. 1961, "International Cooperation in the Peaceful Uses of Outer Space".

iterating the afore-mentioned principles, the Assembly adopted the guiding principle that outer space and celestial bodies would be "free for exploration and use by all States in conformity with international law and would not be subject to national appropriation".<sup>11</sup> The Assembly called upon states launching objects to furnish COPUOS with information regarding launch details and acquired scientific and technological knowledge. This information was to be communicated through the Secretary-General who was requested to maintain a public registry of all furnished details. COPUOS was instructed to maintain close links with the Secretariat in order to ensure full cooperation and interaction between government and non-governmental organizations concerned with outer space matters.

Thus by 1961 three important principles were established:

- 1) that exploration was to be according to international law;
- 2) that all states would be free to explore and use the outer space environment;
- 3) that space could not be subject to claims of sovereignty.

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11. Ibid.

These principles were further elaborated upon by the very important resolution of 1963 entitled "Declaration of Legal Principles Governing the Activities of States in the Exploration and Use of Outer Space".<sup>12</sup> The following guiding principles were propounded:

- 1) the exploration and use of outer space should be carried on for the benefit and in the interest of all mankind;
- 2) outer space and celestial bodies should be free for exploration and use by all states on a basis of equality and in accordance with international law;
- 3) outer space and celestial bodies should not be subject to national appropriation;
- 4) the activities of states in the exploration and use of outer space should be carried on in accordance with international law, including the Charter of the United Nations;
- 5) states should bear international responsibility for national activities in outer space, this responsibility to be borne by the states alone or by the international organizations and by the states participating in them; it was also set forth that national activities should require continuing supervision by the state concerned;

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12. U.N.G.A. Res. 1962 (XVIII), 13 Dec. 1963.

- 6) in the exploration and use of outer space, states should be guided by certain principles of responsibility, as well as request consultation between interested parties;
- 7) the state on whose registry an object launched in outer space is carried should retain jurisdiction and control over such object and its component parts;
- 8) each state which launches or procures a launching of the object into outer space should be internationally liable for damage to a foreign state by such object or its component parts on the earth, in air space or in outer space;
- 9) states should regard astronauts as envoys of mankind in outer space and should render to them all possible assistance; the principle of the return of astronauts and their space vehicles to the state of registry was also laid down.<sup>13</sup>

The Declaration of Legal Principles, as well as its precursor Resolution 1721(XVI), did not contain any specific controls on military uses of outer space and/or celestial bodies, but did make reference to the general principle that the exploration and use of outer space should be carried on for peaceful purposes.

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13. Matte, Aerospace Law, (1969), 106-7.

Another factor which favoured progress in the enhancement of public order in space during this period could be broadly classified as community concerns. In 1962, within the Eighteen-Nation Committee on Disarmament (E.N.D.C.) Canada, supported by Mexico and Italy, pressed for priority in the question of the Peaceful Uses of Outer Space.<sup>14</sup> During 1963, a joint draft resolution to ban nuclear and other weapons of mass destruction from outer space was initiated in the E.N.D.C. Following private negotiation and agreement between the United States and the Soviet Union, the draft was referred to the General Assembly. On 13 October 1963, the General Assembly approved the draft as Resolution 1884 (XVIII). In its operative part, the resolution calls upon all states: "(a) to refrain from placing in orbit around the earth any objects carrying nuclear weapons or any other kinds of weapons of mass destruction, installing such weapons on celestial bodies, or stationing such weapons in outer space" or in any way participating in the conduct of the foregoing activities. Although certain authors have opined that this resolution was merely an informal bilateral understanding lacking the force of a legal obligation,<sup>15</sup> it is significant in so far as it represents the first concrete step taken toward curbing the arms race in outer space.

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14. United Nations Department of Political and Security Affairs, The United Nations and Disarmament, 1945-1970, 19.

15. Vlastic, Disarmament Decade, Outer Space and International Law (1981), 26 McGill L.Jl 135, 168.

These important principles would form the basis for conduct in outer space and future space law conventions. It is worthy of note that Resolution 1962 was adopted unanimously. Nevertheless, the adoption of the significant provisions in all the afore-mentioned General Assembly resolutions, while welcomed, were considered provisional steps in establishing outer space law.<sup>16</sup> From a legal point of view, General Assembly resolutions do not necessarily constitute binding international law, especially as regards states not voting in favour of their adoption, being qualified as recommendations only. However, certain resolutions, which are concerned with general norms of international law, may provide a basis for the progressive development of the law and the speedy consolidation of customary rules.<sup>17</sup> Particularly where resolutions are adopted unanimously, the General Assembly may be considered to have enunciated existing customary international law. Thus, the United Nations may, according to certain authors, restate and clarify by unanimously adopted resolutions, general international understanding as to what constitutes existing customary international law.<sup>18</sup>

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16. Kopal, *Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, Including the Moon and Other Celestial Bodies* (1966), McGill Yrbk of Air and Sp. L. 463, 467.

17. Brownlie, *supra*, note 1, 14, who considers the 1963 Resolution (no. 1962 (XVIII)) as an expression of such general norms (at p.15).

18. Cooper, in Vlastic (ed.), Explorations in Aerospace Law, (1968), 348.

It is noteworthy that as regards Resolution 1962 many states declared, before its adoption, that their governments would consider the resolution as legally binding, or would at least agree to comply with its principles.<sup>19</sup>

However one characterizes the legal import of General Assembly resolutions, it is evident that subsequent space treaty law has reflected many principles embodied in these resolutions.

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19. Kopal, supra, note 12, 467.

b) Treaties Governing Outer Space Activities

i) Outer Space Treaty (1967)

The Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space including the Moon and Other Celestial Bodies,<sup>1</sup> commonly known as the Outer Space Treaty is regarded as the cornerstone international space law convention. As is evident from its full title, the treaty propounds a number of fundamental principles which establish the basic framework for general space exploration and utilization. Being the first international convention relating to an environment regulated by, at best, nebulous customary international law principles, its significance cannot be underestimated. Its adoption brought about substantive changes in the legal regime of outer space. What had merely been before a set of non-binding guidelines, with the exception of the principle of freedom which came to be regarded as a principle of customary law,<sup>2</sup> now became a legal obligation.

However, while looked upon as a "Magna Carta" for space use, many notable space jurists have decried the lack of

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1. Adopted in U.N.G.A. Res. 2222 (XXI), 19 Dec. 1966, 601 U.N.T.S. 206 (1967); 18:3 U.S.T. 2410 (1967) Can.T.S. No.19. Opened for signature 27 Jan. 1967; entered into force 10 Oct. 1967.
  2. McDougal, Lasswell & Vlasic, Law and Public Order in Space, (1963), 200 et seq; Goedhuis, The Present State of Space Law, in International Law Association. The Present State of International Law (1973), 207.

precision and definition in its use of terms.<sup>3</sup>

In order to understand the reason for this, one must keep in mind two important considerations. First, at the time the Treaty was negotiated the use of space was still nascent. Moreover, its potential was recognized to be enormous, but how great was unclear. Second, the assurance of the Treaty's success was predicated on the willingness of the two great space powers, the U.S. and the U.S.S.R., to support the promulgation of some kind of space charter.<sup>4</sup> The U.S. sought to avoid the inclusion of provisions which would overly fetter its use of space so that it could maintain its pre-dominance in the area. The U.S.S.R. originally sought a more restrictive use of space,<sup>5</sup> though gradually

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3. Matte, Aerospace Law, (1969), 106-7.

4. For a thorough analysis, see Matte, Space Policy and Programmes: Today and Tomorrow, the Vanishing Duopole, (1980), especially at 41 et seq. Goedhuis has noted the views of some commentators who characterize the Treaty as "essentially a bilateral agreement between the United States and the Soviet Union to which 80 States had dutifully acceded". International Law Association, Report of the 54th Conf., The Hague (1970), 422, 425.

5. E.g., its Draft Proposal for an Outer Space Treaty includes a provision proscribing the use of satellites "for the collection of intelligence information in the territory of a foreign state" (art. 9). Original proposal in U.N. Doc. A/AC.105/C.2/L. (6 June 1962) and A/AC.105/C.2/3 (20 June 1962).

changed its policy as its technology began to keep pace with American advances. The final outcome must be considered in this light to be understood.

Since the Treaty holds the central position within the legal framework governing all activities carried out in space, it is necessary to examine those provisions which are relevant to military activities in outer space.

In seeking to interpret the provisions of the Outer Space Treaty, or for any other space treaty outlined hereinafter, one might keep in mind the rules of interpretation noted in the Vienna Convention on the Law of Treaties.<sup>6</sup> Article 31 provides a general rule of interpretation.<sup>7</sup>

This general rule of interpretation has not always been applied to the Outer Space Treaty, which includes substantive articles and a preamble. If it is applied

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6. The Treaty is reproduced in (1969), 63 Am. JI of Int'l L. 875.

7. The article has been reproduced, supra.

to the preamble, it becomes clear that the essential purpose of the Outer Space Treaty was to allow for the peaceful and beneficial uses of the space environment as the "province of mankind". The Treaty's language "embodies the international spirit and intent, as well as broad guiding principles of cooperation and restraint in exploring outer space in a more elevated fashion than history characterizes exploration and exploitation on Earth".<sup>8</sup> Though the parties to this agreement were not all inspired by such motivation, the wording of the preamble does not reflect their expectation. Other jurists have expressed the opinion that a provision of this kind in the preamble of the Treaty does not create any legal obligation.<sup>9</sup>

In the operative part of the Treaty, article I reiterates the primary interests of the international community:

The exploration and use of outer space,  
including the Moon and other celestial  
bodies, shall be carried out for the

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8. Robinson, *The Militarization of Outer Space - Time for a Restatement of "Space Law"*, *Astronautics and Aeronautics*, Feb. 1978, 26.
  9. Goedhuis, *What Additional Arms Control Measures Related to Outer Space Could be Proposed?*, in Jasani (ed.), *Outer Space - A New Dimension of the Arms Race*, (1982), 297, 299.

benefit and in the interests of all countries, irrespective of their degree of economic or scientific development, and shall be the province of all mankind. Outer Space, including the Moon and other celestial bodies, shall be free for exploration and use by all States without discrimination of any kind, on a basis of equality and in accordance with international law, and there shall be free access to all areas of celestial bodies. There shall be freedom of scientific investigation in outer space, including the Moon and other celestial bodies, and States shall facilitate and encourage international cooperation in such investigation.

This article establishes the basic principle of space law: space shall be free for exploration and use by all states.

According to article II, outer space is not subject to national appropriation by claims of sovereignty, by means of use or occupation, or by any other means. This article enshrines the notion of res communis already granted substantial recognition by customary international law. Article III obliges states to undertake space activities "in accordance with international law, including the UN Charter, in the

interest of maintaining international peace and security and promoting international cooperation and understanding". As regards the UN Charter, article 2 is of particular relevance since it sets out a number of principles according to which member states must act. The first two principles provide that the UN is based on the principle of the sovereign equality of all members, and that all members, in order to ensure to all of them the rights and benefits resulting from membership, shall fulfil in good faith the obligations assumed by them in accordance with the Charter. The primacy of the common interest of all nations<sup>10</sup> is stressed again in article IX which states that parties to the convention shall be guided by the principle of cooperation and mutual assistance in the exploration and use of outer space, and shall conduct all their activities with due regard to the corresponding interests of all other states parties to the Treaty. It is worthy of note that in the first three articles of the operative part of the Outer Space Treaty in which the guiding principles governing space activities have been laid down, no mention of the use of the whole of outer space for peaceful purposes has been made.<sup>11</sup> It is only with respect to the moon and other celestial bodies that this concept has been accepted.<sup>12</sup>

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10. Vlastic, *Disarmament Decade, Outer Space and International Law* (1981), 26 McGill L.Jl, 135, 170.

11. Goedhuis, *supra*, note 9, 299.

12. Art. IV(2).

Article IV contains the only provision of the Outer Space Treaty addressed specifically to military activities and reads as follows:

States Parties to the Treaty undertake not to place in orbit around the Earth any objects carrying nuclear weapons or any other kinds of weapons of mass destruction, install such weapons on celestial bodies, or station such weapons in outer space in any other manner.

The Moon and other celestial bodies shall be used by all States Parties to the Treaty exclusively for peaceful purposes. The establishment of military bases, installations and fortifications, the testing of any type of weapons and the conduct of military manoeuvres on celestial bodies shall be forbidden. The use of military personnel for scientific research or for any other peaceful purposes shall not be prohibited. The use of any equipment or facility necessary for peaceful exploration of the Moon and other celestial bodies shall also not be prohibited.

Paragraph 1 of this article codifies the policy set forth in a bilateral pledge by the United States and the Soviet Union, later unanimously adopted as a resolution

of the United Nations General Assembly.<sup>13</sup> Within its admitted limits it contributed affirmatively to the stabilization of international relations through the imposition of some restraints on the military use of the space environment.<sup>14</sup>

Article IV, second paragraph, of the Outer Space Treaty contains one of the most controversial provisions of the Treaty and has often been cited in support of the claim that the Treaty forbids only those military activities that are enumerated in the above-mentioned article.<sup>15</sup> Thus, the Treaty stipulation that was to prescribe non-militarization of outer space has had the opposite effect in practice. Major space powers have been acting on the premise that whatever is not prohibited verbis expressis by the Treaty is permissible and therefore lawful.<sup>16</sup> While an argument has been advanced that article IV, in conjunction with other provisions of the Treaty, imposes

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13. Res. 1884.

14. Christol, Article Four and 1967 Principles Treaty: Its Meaning and Prospects for its Clarification, Paper submitted at the XXIXth Congress of the International Institute of Space Law of the IAF, held in Dubrovnik, 1-8 Oct. 1978, 6.

15. Stein, Legal Restraints in Modern Arms Control Agreements (1972), 66 Am. Jl Int'l L. 255, 260.

16. Vlastic, supra, note 10, 171.

"complete demilitarization of outer space",<sup>17</sup> the muddled text of article IV can and has been used to undermine this legally and politically sounder interpretation.

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17. Marcoff, *Traité de droit international public de l'espace*, (1973), 357.

ii) Rescue and Return Agreement(1968)

The Agreement on the Rescue of Astronauts, the Return of Astronauts, and the Return of Objects Launched into Outer Space<sup>18</sup> as its title suggests provides for the tendering of assistance and the rescue of astronauts in distress whether on sovereign territory or from areas outside of state jurisdiction.<sup>19</sup>

The present Agreement does not define the extent of the term "astronaut" which raises the question of whether military personnel in space are entitled to the protection and assistance made available to astronauts under this Agreement.

In the substantive provisions of the Agreement the persons covered by the Agreement are referred to as "the personnel of a spacecraft". It has been said that the use of such broad terms eliminates the possibility of making a distinction between military and civilian personnel.<sup>20</sup> Thus, it appears that even if military personnel were carrying out an internationally prohibited activity, in the event of accident, distress, emergency or unintended landing,

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18. Adopted in U.N.G.A. Res. 2345 (XXII), 19 Dec. 1967; 672 U.N.T.S. 120 (1969). Opened for signature 22 Apr. 1968; entered into force 3 Dec. 1968.

19. Arts. 2, 3 and 4.

20. Reed & Norris, Military Uses of the Space Shuttle (1980), 13 Akron L. Rev. 665, 687.

the contracting party would nevertheless be obliged to immediately undertake all steps to rescue and assist such personnel, as provided for by article 1 of the Agreement. Military personnel would equally benefit from the provisions of article 4 which states that

If owing to accident, distress, emergency or unintended landing, the personnel of a spacecraft land in territory under the jurisdiction of a Contracting Party or have been found on the high seas or in any other place not under the jurisdiction of any State, they shall be safely and promptly returned to representatives of the launching authority.

iii) The Registration Convention (1976)

The Convention on Registration of Objects Launched into Outer Space<sup>21</sup> entered into force on 13 September 1976. The Treaty establishes a mandatory system of registration of space objects launched into orbit and beyond. It is based on the voluntary system established by General Assembly Resolution 1721 of 1961.<sup>22</sup> The resolution calls

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21. Adopted in U.N.G.A. Res. 3235 (XXII), 12 Nov. 1974; 28:1 U.S.T. 695 (1976-77); (1976) Can.T.S. No. 36. Opened for signature 14 Jan. 1975. Hereinafter, the Registration Convention.

22. U.N.G.A. Res. 1721 (XVI), 20 Dec. 1961.

upon states launching objects to furnish information for the registration of launchings. There was no delineation of what details should be provided. Consequently, the information furnished by countries was not uniform and was not reported promptly and on a regular basis.

The Registration Convention is a reflection of the general principles established by the Outer Space Treaty and elaborated through the Rescue Agreement and Liability Convention. While the prior treaties do not refer to a central registry system, the Outer Space Treaty does countenance national registries.<sup>23</sup>

Three reasons have been posited for the establishment of a central registry; effective management of traffic, enforcement of safety standards, and imputation of liability for damage.<sup>24</sup> While the central registry is the most significant feature of the Treaty, it fulfils several other important objectives. Launching countries must maintain a national registry.<sup>25</sup> Article IV of the Registration Convention requires mandatory reporting to the Secretary-General of the United Nations of information on a number of data, such as the date and location of the launch,

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23. In arts. V and VIII.

24. Matte, Aerospace Law: From Scientific Exploration to Commercial Utilization, (1977), 159 and authorities therein cited.

25. Art. II.

changes in orbital parameters after the launch, and the recovery date of the spacecraft. States are not obliged to disclose the true function of the satellite, but only the "general function of the space objects".<sup>26</sup> Furthermore, the Registration Convention does not require a launching state to provide appropriate identification markings for its spacecraft and its component parts. Such markings could greatly facilitate the establishment of the state bearing international responsibility for injury or damage caused by a space object.<sup>27</sup>

It is worthy of note that, notwithstanding the fact that over half of the US and Soviet satellites launched serve military purposes,<sup>28</sup> not one of the launchings registered has ever been described as having a military function.

Although it does not contain any specific arms control measures, the Registration Convention could, if it were interpreted in the right way, play a confidence-building role in the military sphere.<sup>29</sup> This Treaty has, as its predecessors have, avoided controversial issues by resorting to general provisions. It represents "another hesitant step forward in the formation of space law"<sup>30</sup> and should be viewed

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26. Art. IV 1(e).

27. Vlasic, supra, note 10, 190.

28. Goedhuis, supra, note 9, 298.

29. Ibid.

30. Matte, supra, note 24, 184.

as a constructive basis on which a more complete and binding Convention could be formulated.<sup>31</sup>

iv) Moon Treaty (1979)

The Agreement Governing the Activities of States on the Moon and Other Celestial Bodies<sup>32</sup> is the most recent agreement. It was adopted by consensus in the UN General Assembly on 5 December 1979 and is not yet in force.<sup>33</sup>

The result of lengthy discussion and compromise, the Moon Treaty is a composite of general principles and specific provisions outlining permissible activity on the moon and other celestial bodies.<sup>34</sup> As with the preceding conventions, the Treaty is a further elaboration of certain principles in the Outer Space Treaty. While it does not apply to the earth or earth orbits, the principles it contains regarding space conduct are of great interest.

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31. Ibid.

32. U.N. Doc. A/RES/34,68,14 14.Dec. 1979. Hereinafter, the Moon Treaty.

33. For an analysis of the development of the Treaty, see Matte, Treaty Relating to the Moon, in Jasentuliyana and Lee (eds.), Manual on Space Law, vol. I (1979), 253; Reijnen, The History of the Draft Treaty on the Moon (1975), 19th Collog. on the Law of Outer Space 357.

34. Reference to the moon hereinafter shall include other celestial bodies as well. Art. 1, para. 1 states that provisions of the agreement relating to the moon shall also apply to the other celestial bodies within the solar system, other than the earth, except in so far as specific legal norms enter into force with respect to any of these celestial bodies.

The entire course of negotiation has been divided into three periods of time each characterized by various motivations reflecting the state of space exploration then prevalent.<sup>35</sup>

The importance of a Moon Treaty was first made evident as a result of the American and Soviet space programs culminating in the US moon landing in 1969 and the Soviet recovery of lunar samples by mechanical means at the same time. The second period involved less emphasis by the space powers on moon exploration and the intensification of efforts by developing countries to ensure compliance with the notion of the common heritage of mankind. The final period prior to approval of the draft treaty witnessed substantial frustration over lack of a consensus. There were a number of dominant issues that had to be settled. All involved complex considerations. The first was basic; whether the Treaty should apply solely to the moon or extend to other celestial bodies as well. Also of concern was how activities on the moon were to be regulated. There was a need to strike a balance between totally unfettered use, exclusive of common heritage considerations, and over regulation which would impede fruitful scientific exploration and commercial use. Linked with this was the issue of resource management. To what extent could space resources be exploited and how would the benefits be allocated. The heart of the matter thus

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35. Galloway, Agreement Governing the Activities of States on the Moon and Other Celestial Bodies (1980), V Annals of Air and Space L. 481, 491-2.

related to what emphasis would be placed on the common heritage principle.<sup>36</sup> The final agreement was in keeping with the principles of common benefit and cooperation underlying all the past conventions. The Moon Treaty is modelled on the Outer Space Treaty; space activities are to be carried out in accordance with international law in the interest of maintaining peace and security and promoting international cooperation and understanding. Exploration and use is to be carried out for the benefit and in the interests of all nations. All of these principles, while general, are fundamental to space law today.

There are three key articles in the Moon Treaty which serve to establish state conduct for the moon and other celestial bodies. Article 4 provides that exploration and use of the moon shall be the province of all mankind and shall be carried out for the benefit and in the interests of all countries regardless of their degree of economic or scientific development.<sup>37</sup>

In carrying out activities, states shall be guided by the principle of cooperation and mutual assistance.<sup>38</sup>

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36. See Galloway, ibid., 487 et seq.

37. Para. 1.

38. Para. 2. It is stressed that international cooperation in pursuance of the agreement "should be as wide as possible".

Secondly, freedom of scientific investigation must be carried out without discrimination and on the basis of equality and in accordance with international law.

While arms control was not a major focus of discussion during the negotiations, some nations did express concern over the military implications of certain space activities. Article III of the Moon Treaty contains the only provision addressed to military activities. Paragraph I provides that the moon and other celestial bodies shall be used "exclusively for peaceful purposes". While in this case the language is virtually identical to that found in article IV(2) of the Outer Space Treaty, the effect is to expand the area of application of the peaceful purposes admonition.<sup>39</sup> Under the Outer Space Treaty only the moon and celestial bodies was specifically limited to peaceful purposes. Because of the definitional concept contained in article I of the Moon Treaty, orbits around and other trajectories to and around the moon and other celestial bodies must also be devoted to peaceful purposes.<sup>40</sup> With regard to article III(2) some nations wanted to assure that this provision did not differ in effect from

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39. Norris and Bridge, Some Implications of the Moon Treaty with Regard to Public Order in Space (1979) 23rd Colloq. on the Law of Outer Space 57,57.

40. See supra, note 34. Art. I para. 2 states that reference in the Agreement to the Moon shall include orbits around or other trajectories to or around it.

article 2(4) of the UN Charter<sup>41</sup> and did not derogate from the right of self-defence under article 51 of the UN Charter. Article III(2) prohibits "any threat or use of force or any other hostile act or threat of hostile act". Since there is no definition of the term "hostile act", there is no firm understanding as to how a hostile act might differ from the use force. In this regard, it should be noted that when France signed the Moon Treaty it reported a clarification to the United Nations as follows:

France is of the view that the provisions of article 3, paragraph 2 of the agreement relating to the use or threat of force cannot be construed as anything other than a reaffirmation, for the purposes of the field of endeavour covered by the agreement, of the principle of the prohibition of the threat or use of force, which states are obliged to observe in their international relations, as set forth in the UN Charter.<sup>42</sup>

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41. Art. 2(4), U.N. Charter: "All members shall refrain in their international relations from the threat or use of force against the territorial integrity or political independence of any state, or in any other manner inconsistent with the purposes of the United Nations."

42. See supra, note 40, 58.

Paragraph 3 of article III prohibits orbiting of nuclear and other kinds of mass destructive weapons around the moon and any other trajectory to or around the moon. It also denies use of such weapons on the moon.

Thus, the Moon Treaty provides only a modest advancement over existing law with respect to arms control. The most significant contribution occurs in the extension of the peaceful purposes admonition to large areas above the surfaces of the moon and other celestial bodies.

v) International Telecommunication Convention (1973)

The presently applicable International Telecommunication Convention was adopted in 1973 in Malaga-Torremolinos.<sup>43</sup> The purposes of the I.T.U. are to maintain and extend international cooperation for the improvement and rational use of telecommunications, to ensure the efficient use of the radio spectrum and to harmonize the actions of states in the attainment of these ends.<sup>44</sup> The I.T.U. is also responsible for the allocation of radio frequencies for all outer space activities and for ensuring that the radio

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43. International Telecommunication Convention, Malaga-Torremolinos, (1973), published by the General Secretariat of the I.T.U., Geneva, (1973). Important provisions of this Convention are also printed in Jasentuliyana and Lee (eds.), Manual on Space Law, vol. 1, (1979), 195.

44. See generally art. 4 of the Convention.

spectrum is utilized without harmful interference. With respect to the use of the geostationary orbit, provision is made requesting states to undertake efficient and economical utilization to ensure equitable access for all members.<sup>45</sup>

However, the opportunities for an equitable and rational allocation of orbital positions are reduced by article 38(1) of the Convention which states:

Members retain their entire freedom with regard to military radio installations of their army, naval and air forces.

Thus, it would appear that the Convention grants virtually unrestricted freedom to military radio installations, regardless of the fact that military satellites cause interference with civilian uses of the radio spectrum, even when not operating from the geostationary orbit.<sup>46</sup>

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45. Art. 33 of the Convention.

46. Av. Wk & Space Tech., 10 July 1978, 23.

c) Consideration of Specific Terms in Space Law

Freedom of Use

The wording of article I, paragraph 2 of the Outer Space Treaty includes the freedom of both "exploration and use" of outer space. This wording finds its origins in Resolution 1721 (XVI) of the General Assembly.<sup>1</sup>

The legislative history of Resolution 1721 and of the Outer Space Treaty<sup>2</sup> does not provide much guidance as to the meaning of the terms "exploration" and "use". In particular, it is not quite clear if the terms were to be used in a cumulative sense, or if "exploration" was merely to appear as the most important example of "use". Furthermore, it is questionable if the term "use" of outer space was to have a wide meaning, embracing all activities making use of space in some way or another, or if it was to have an a priori limited meaning.

Some authors do, however, attempt to clarify the scope of the terms. Three "positive" aspects of the principle of freedom of outer space have been distinguished:

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1. U.N.G.A. Res. 1721 (XVI), 20 Dec. 1961, "International Cooperation in the Peaceful Uses of Outer Space".
  2. U.N. Docs. A/C.1/PV 1210-1214 (Dec.1961); A/C.1/SR. 1210-1214 (Dec.1961); see also Stevenson, International Cooperation in the Peaceful Uses of Outer Space (1962), 46 Dept. of State Bull. 180.

1. the right of free access;
2. the right of free exploration;
3. the right of free use.<sup>3</sup>

Leaving aside for a moment the right of free access, the distinction between the right of free exploration and the right of free use is mainly concerned with the substance of the respective activity. According to Marcoff, the right of free exploration applies to scientific research activities.<sup>4</sup> Such exploration activities do not always have to remain wholly within the spatial limits of outer space; they may also comprise activities on earth connected with scientific space research.

The "free use" principle provides the international legal basis for all activity in outer space. In contrast to the restrictions imposed by other sections of the Outer Space Treaty, article I, paragraph 2 affirmatively authorizes space activities, and hence serves as the point of departure for any argument in favour of a particular use of outer space.

Thus, although the "free use" principle is one of the key provisions of the Outer Space Treaty and is sufficiently

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3. Marcoff, *Traité de droit international public de l'espace*, (1973), 330, 332.

4. Ibid., 331.

broad to sustain the right of states to conduct activities in outer space free from claims of sovereignty of subjacent states, it is not unlimited.

As suggested above, article I, paragraph 2 must be read in the context of the "common interests" clause of article I, paragraph 1 with the result that the advantages to be derived from rapid development of outer space must be balanced against the requirement that it be carried out in a manner beneficial to all members of the international community.

With regard to the "common interests" clause, some authorities take the position that the express requirement to use outer space for the benefit of all members of the international community constitutes no more than a duty upon each member not to misuse outer space in a way which could diminish the value of space activities to other members.<sup>5</sup>

Others have taken the closely related position that the phrase means that the use of space objects should not be detrimental to the interests of other countries, including national security and public order.<sup>6</sup>

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5. Ibid., 333.

6. Marcoff, Implementing the Contractual Obligation of Article I, Paragraph 1 of the Outer Space Treaty of 1967 (1973), 17th Colloq. on the Law of Outer Space 136, 137.

In that combination, the "free use" claim creates a tendency to limit the potential inhibiting effect of a restrictive construction of article I, paragraph 1. In addition, the "free use" principle is subject to the following limitation: the non-appropriation clause;<sup>7</sup> the international law clause;<sup>8</sup> the "denuclearization clause";<sup>9</sup> the "responsibility" and "liability" clauses;<sup>10</sup> the "cooperation and mutual assistance" clause;<sup>11</sup> and the "consultation", "observation" and "information" clauses.<sup>12</sup>

Moreover, the right of free use would be subject to several other limitations such as: the "corresponding interests" clause; the "first come, first served" rule with respect to satellite and space object positioning; and limitations on the use of all finite or specially valuable space resources.

A justification for this view can be found in article I, paragraph 3 of the Outer Space Treaty which spells out

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7. Art. II of the Outer Space Treaty.
  8. Art. III.
  9. Art. IV, para. 1.
  10. Arts. VI and VII.
  11. Arts. IX and V.
  12. Art. XV.

the principle of freedom of scientific investigation without the limitations contained in article I, paragraph 2, namely non-discrimination, equality and accordance with international law.<sup>13</sup> It can be concluded that activities solely devoted to scientific investigation enjoy a somewhat "privileged" status in comparison to application and use.<sup>14</sup>

Applying the requirement that space activities be conducted "for the benefit and in the interests of all countries" to the question of military action in outer space, some authorities conclude that space activities can be conducted in the interests of all countries only if they are "peaceful" in nature.<sup>15</sup> In addition, it may be argued that since the term "peaceful" is ambiguous and subject to conflicting interpretations, especially in the context of a general statement of desirable purposes of

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13. See the wording of art. I, para. 3: "There shall be freedom of scientific investigation in outer space, including the moon and other celestial bodies and States shall facilitate and encourage international cooperation in such investigation."
  14. Staff Report on the Treaty of 1967, prepared for the use of the U.S. Senate Committee on Aeronautical and Space Sciences, 90th Cong., 1st Sess., 1967, 23.
  15. Ibid.

space initiatives, the drafters chose to substitute the concept of use "in the interests of all countries".<sup>16</sup> Finally, proponents of the view that article I, paragraph 1 implicitly incorporates the "peaceful use" requirement maintain that since article IV and other provisions of the Treaty did not completely prohibit placement of weapons in outer space, the term "peaceful uses" was omitted from article I to avoid ambiguity.<sup>17</sup>

The case for the opposite position is based on the formulation of article IV, paragraph 2 which expressly limits activities on the moon and other celestial bodies to exclusively peaceful purposes, but in paragraph 1 omits any such limitation. Although some advocates of the "peaceful use" interpretation of article IV, paragraph 1 explain the omission as the result of imprecise drafting<sup>18</sup> the omission must be considered intentional since an attempt

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16. Marcoff, Disarmament and "Peaceful Purposes" Provisions in the 1967 Outer Space Treaty (1976), 4 JI of Space L. 3, 21.
  17. Niciu, What is the Meaning of the Use of Cosmos Exclusively for Peaceful Purposes (1973), 17th Colloq. on the Law of Outer Space 224, 228.
  18. Ibid., 299.

to apply the phrase "exclusively for peaceful purposes" to all areas of outer space was defeated.<sup>19</sup>

#### Concept of Peaceful Uses: Conflicting Interpretations

Since the conclusion of the Outer Space Treaty, the interpretation of the term "peaceful purposes" has given rise to fundamental controversies. Two different approaches can be discerned in the continuing debate. First a group of states led by the United States has consistently espoused the view that this term prohibits only "aggressive" uses of outer space while permitting "non-aggressive military activities".<sup>20</sup> The contrary view, uniformly accepted in socialist jurisprudence but not followed in practice by the Soviet Union, equates "peaceful" with non-military use.<sup>21</sup> However, the official position of

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19. Marcoff, supra, note 16, 10.

20. Stein, Legal Restraints in Modern Arms Control Agreements (1972), 66 Am. JI of Int'l L. 255, 262-4. See also U.N. Doc. A/AC.105/PV 203, 22 (16 July 1979) the U.S. delegate declared: "Art. III /of the Moon Treaty/ is a clear statement that celestial bodies and those orbits around them are to be only for peaceful - that is non-aggressive - purposes."

21. Gal, Space Law, (1969), 164, 180-1.

the U.S.S.R. has undergone a gradual change during the 1970s. As had been validly stated in the past, the Soviet view "seems to be that the military use of space is without legal characterization, and will remain so until agreement is reached on general and complete disarmament".<sup>22</sup>

Attention was drawn to the damaging consequences of this interpretation. It was pointed out that during the deliberations in COPUOS prior to the conclusion of the Space Treaty, the vast majority of delegates insisted that the word "peaceful" should be interpreted in the sense of "non-military".<sup>23</sup> The inspiration for this came from the Antarctic Treaty which states in the opening sentence of article I(1) that "Antarctica shall be used for peaceful purposes only", the founding premise of the Treaty being that military purposes, defensive as well as offensive, were not "peaceful".<sup>24</sup>

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22. Lay & Taubenfeld, The Law Relating to Activities of Man in Space, (1970), 99.

23. Goedhuis, An Evaluation of the Leading Principles of the Treaty of Outer Space Legislation (1968), Netherlands Int'l L. Rev. 25.

24. Goedhuis, What Additional Arms Control Measures Related to Outer Space Could be Proposed? in Jasani, (ed.), Outer Space - A New Dimension of the Arms Race (1982), 300. See also, art. II of the Statute of the International Atomic Energy Agency (1956).

In 1958, the American Bar Association's (ABA) Committee on the Law of Outer Space suggested a systematic survey of the growing body of space law literature. In a section on "The Legal Status of Space" a discussion was included on "The Problem of 'Peaceful Purposes': Military Uses". In part it stated: "One difficulty is that the word 'peaceful' is used in various contexts. In the sense of the United Nations Charter, and in international law generally, it is employed in contradiction to 'aggressive'." Further, the report states:

For the time being it seems that the only uses of space that are prohibited are those within the prohibition of the Charter, and that until a disarmament agreement dealing with space activities can be arrived at, the United States is justified in using space for non-aggressive military uses consistent with the terms of the Charter ...<sup>25</sup>

Furthermore, the National Aeronautics and Space Act (NASAct) of 1958 contains a declaration of policy and purpose proclaiming that the "Congress hereby declares that it is the policy of the United States that

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25. Report by the American Bar Foundation, July 1961, 25-6.

activities in space shall be for peaceful purposes for the benefit of all mankind". The NASAct also states that "activities peculiar to or primarily associated with the development of weapons systems, military operations, or the defence of the United States ... shall be the responsibility of, and shall be directed by the Department of Defence ...".<sup>26</sup> Thus it would appear that as early as 1958, space activities associated with weapons systems, military operations or the defence of the United States were considered to be "for peaceful purposes".<sup>27</sup>

According to the "non-aggressive" theory, the lack of prohibitive provisions (except for the nuclear and mass destruction weapons) in the Outer Space Treaty indicates that "peaceful" could not signify "non-military". In point of fact, such an interpretation is in accord with the actual practice of the major space powers.

The "non-aggressive" interpretation of "peaceful" has its background in the failure of the early talks on complete disarmament in outer space and tends to justify the development of the space military potential and the deploy-

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26. Sec. 102 (a) and (b), 72 Stat. 426, 42 U.S.C. 2451.

27. Menter, *Peaceful Uses of Outer Space and National Security* (1981), 25th Colloq. on the Law of Outer Space 1, 3.

ment of non-nuclear weapons in outer space, including the use of reconnaissance satellites.<sup>28</sup>

According to a second school of thought supported by the Soviet Union, as well as by many authors,<sup>29</sup> "peaceful" is intended as "non-military". In light of the semantic sense of "peaceful", a military activity could never be "peaceful" since there is an underlying threat of actual or potential violence. The proponents of this interpretation further submit that the "common interests" clause contained in article I, paragraph 1 of the Outer Space Treaty can only mean that without being expressly prohibited, military activities with non-nuclear weapons in outer space, even if "defensive" in nature are not lawful, since no military activity could be carried out "in the interests of all countries".<sup>30</sup>

The opposite view is based on the contention that "non-aggressive" uses are permitted, first, by article IV (1)

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28. Marcoff, Disarmament and "Peaceful Purposes" Provisions in the 1967 Outer Space Treaty (1976), 4 JI of Space L. 3, 8.
  29. Chaumont, Le droit de l'espace, (1970), 96; Woetzel, Sovereignty and National Rights in Outer Space (1961), 5th Colloq. on the Law of Outer Space 1, 44; Goedhuis, General Questions on the Legal Regime of Space, in Int'l Law Ass'n (I.L.A.), (1960), 50th Report 72, 77.
  30. Marcoff, supra, note 28, 7.

which prohibits the stationing of weapons of mass destruction in outer space but omits the express requirement of peaceful uses applied by article IV(2) to the celestial bodies, and second, by article III which requires states to conduct space activities in accordance with international law, including the United Nations Charter. Neither prohibits defensive or non-aggressive military activity. Support for this approach is also found in the practice of states. Both major space powers use outer space for military communications and reconnaissance. Although these activities are "military" in nature, they are "non-aggressive".

Balancing these arguments and the underlying policy considerations leads to the following conclusions:

1. although article I(1) requires states to conduct space activities "for the benefit and in the interests of all countries", it does not prohibit all military activity in outer space; and
2. articles I(1), III and IV combine to limit any military activity in outer space to "non-aggressive" conduct.

### Military Activities

Yet another difficulty which arises with the use of the term "peaceful purposes" is the virtual impossibility of making a clear-cut distinction between military and non-military activities since "like almost all atomic activities, nearly every activity in space has a possible military connotation".<sup>31</sup> This has two implications: some non-military activities have far-reaching military relevance such as data-gathering or resource exploitation, while some activities are overlapping or dual-purpose, such as meteorological satellites and satellites which are components of communications systems which both have military and pure scientific uses. Certain authors have expressed the view that

any use of space which does not itself constitute an attack upon, or stress against, the territorial integrity and independence of another state, would be "permissible". Military manoeuvres in peacetime, the use of reconnaissance satellites, the testing of weapons, the establishment of Military Orbiting Laboratories (MOLs), etc., would therefore be

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31. McMahon, *Legal Aspects of Outer Space* (1962), 38 Br. Yrbk of Int'l L. 339, 399.

also permissible in Outer Space. These activities belong to the so-called "peaceful" military activities.<sup>32</sup>

Such an interpretation is said to be in keeping with the normal meaning of "peaceful". It is also believed that because the high seas and the air space above the high seas have always been considered available under international law for peaceful military uses, which include manoeuvres, weapons testing and surveillance, the same should apply to outer space.<sup>33</sup>

If the term "peaceful" is viewed from the angle of the aggressive/non-aggressive dichotomy, then it may include not only non-military uses but also military, non-aggressive uses. This view is endorsed by American strategists who feel that "the test of any space activity must not be whether it was military or non-military but whether it was consistent with the Charter and other obligations of international law".<sup>34</sup> According to the U.S. interpretation, the use of spacecraft for reconnaissance,

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32. Meyer, Interpretation of the Term "Peaceful" in Light of the Space Treaty (1967), 11th Colloq. on the Law of Outer Space 24, 27.
  33. Bridge, International Law and Military Activities in Outer Space (1980), 13 Akron L. Rev. 649, 658.
  34. Statement made by U.S. Senator Gore before the United Nations General Assembly on 2 Dec. 1962. See (1963), 48 Dept. of State Bull. 21, 23.

early warning and military communications does not violate either general international law, including the U.N. Charter and the Outer Space Treaty.<sup>35</sup>

From a realistic standpoint, however, this terminological debate may be meaningless since both space powers have demonstrated an unwillingness to have the development of their defence systems determined by such legal arguments. The mere fact that the Soviet Union has never admitted carrying out any military activity in space is an indication that it is still striving to augment its military capabilities in outer space.

#### National Security

Article III of the Outer Space Treaty provides that states activities in the use of outer space shall be carried on in accordance with international law, including the U.N. Charter "in the interest of maintaining international peace and security ...". Article 2(4) of the United Nations Charter states that all members shall refrain in their international relations from any actions inconsistent with the purposes of the United Nations, the first purpose recited in article 1 being "to maintain peace and security". The maintenance of international peace

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35. Gatland, *Legal Aspects of Reconnaissance in Air and Outer Space* (1961), 61 Col. L. Rev. 1074.

and security has been said to require fully armed forces as a deterrent and to defend against attack by hostile powers. By proceeding with the development of anti-satellite and other military satellite systems, the two super-powers have extended the use of space for defence purposes.<sup>36</sup> As underlined by President Carter: "We have greatly strengthened our national security through defence space applications. We will continue to develop these capabilities."<sup>37</sup> More recently, on the occasion of the return landing on 4 July 1982 of the Space Shuttle "Columbia", President Reagan stated that the United States space goals included "cooperating with other nations to maintain the freedom of space for all activities that enhance the security and welfare of mankind, and strengthening our own security by exploring new methods of using space as a means of maintaining the peace".<sup>38</sup>

On that same occasion, the basic goals of the U.S. Space Policy were announced and included, among other

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36. Reed, Legal Aspects of Military Peaceful Uses of Space, The Reporter (1978), 7 Office of the J.A.G. of Air Force.

37. White House Press Release, 1 Oct. 1978.

38. White House Press Release, 4 July 1982.

things, a commitment to the exploration and use of space by all nations "for peaceful purposes and for the benefit of mankind". The term "peaceful purposes" was said "to allow activities in pursuit of national security goals".<sup>39</sup> Furthermore, the national security space program is stated to support such functions as command and control, communications, navigation, early warning, surveillance and space defence, and includes the development of an anti-satellite (ASAT) capability "within such limits imposed by international law, to deny any adversary the use of space-based systems that provide support to hostile military forces".<sup>40</sup>

This policy is consistent with the American view that the defence and protection of national security is a peaceful use of outer space. The development of a country's capability to protect objects in space indicates that space powers feel that a perceived threat to their security permits them to negate the effectiveness of potential enemy space vehicles.<sup>41</sup>

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39. Menter, Peaceful Uses of Outer Space and National Security (1979), 23rd Colloq. on the Law of Outer Space 1, 3.

40. Ibid.

41. Jones, Earth Satellite Telecommunications Systems and International Law, (1970), 30.

The national security of a state would seem to dictate that available space systems be utilized to enhance military readiness and capability. Such ready forces have been recognized as "non-aggressive" and consistent with international law and the United Nations Charter.<sup>42</sup>

Deterrence is another important factor in establishing a country's national security policy. The ability to maintain an effective response capability to an enemy attack is said to help achieve peace in the world.<sup>43</sup>

However, there is a growing uneasiness among nations about their adversary's increased military offensive readiness. It is felt that traditional notions such as "balance of power" or "deterrence" which to date have been considered essential in maintaining international peace and security, should be rejected since under this guise both the super-powers keep on increasing their arsenal of deadly weapons, the very presence of which threatens international peace and security. The chairman of the twenty-fifth session of COPUOS, in his opening statement, reminded delegates that "outer space has profited from an understanding that nobody would gain by the use of space

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42. Menter, supra, note 39, 2.

43. Menter, supra, note 39, 4.

science and technology for military purposes and that the security of all would be best served by mutual restraints rather than by creating new zones of international confrontation".<sup>44</sup>

This view has been espoused by several legal experts who underline that under a self-serving interpretation, military space technology has grown from an essentially non-offensive instrument into an instrument threatening peace both on earth and in space.<sup>45</sup> It is thus submitted that national security cannot be invoked to justify the development of military space technology in light of the clear terms of the Outer Space Treaty, and of the oft-quoted declarations made by both major space powers regarding the "peaceful" and "cooperative" goals their respective countries seek in outer space.<sup>46</sup>

#### Legitimate Self-Defence

Articles I and III of the Outer Space Treaty provide that international law, including the Charter of the United Nations, is applicable to activities in the exploration

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44. U.N. Doc. A/AC.105/PV, 230, 23 Mar. 1982, 8-10.

45. Vlastic, *Disarmament Decade, Space Law and International Law* (1981), 26 McGill L. J1 135, 174.

46. Ibid.

and use of outer space. Article 51 of the United Nations Charter acknowledges the inherent right of self-defence as follows: "Nothing in the present Charter shall impair the inherent right of individual or collective self-defence if an armed attack occurs against a member of the United Nations."

In the view of some authorities, the U.N. Charter limits the right of self-defence to situations involving "armed attacks" which "occur" rather than against one which may be in the making.<sup>47</sup> In other words, military action would be justified in the case of self-defence to an actual attack, but would not be justifiable when used as a preventive measure in a forthcoming attack. However, such an interpretation does not seem to be in conformity with that of American legal experts. As one writer states:

Clearly there is a ... principle which must be added to the rule of law in outer space, namely the basic right of national self-preservation, as embodied in Article 51 of the Charter of the United Nations. In brief, a nation is justified in protecting itself from attack no matter where

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47. Kittrie, *Aggressive Uses of Space Vehicles - The Remedies in International Law* (1960), 4th Colloq. on the Law of Outer Space 198, 204.

the staging area of the attack may be, including on the high seas or in outer space, and a national may carry its defensive forces to such areas. The great unresolved problem, so far as defensive measures in space are concerned, is to translate the general recognition of this right of self-defence into some workable criteria for distinguishing between the defensive and offensive uses of space. <sup>48</sup>

Thus, the traditionally recognized rights to act in self-defence in the face of a threat of an armed attack would be included within the ambit of article 51 of the U.N. Charter.<sup>49</sup> Still others have argued that anticipatory self-defence is a right which must be recognized, particularly since in this age, weapons are capable of inflicting destruction within minutes of the launching of the attack.<sup>50</sup>

In order to exercise the right of self-defence

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48. Haley, Space Law and Government, (1963), 157.

49. McDougal & Feliciano, Law and Minimum World Public Order - The Legal Regulation of International Coercion, (1961), 227.

50. DeSaussure & Reed, Self-Defense - A Right in Outer Space (1965), 7 A.F. J.A.G. Rev.40.

a nation must be in a danger of such an immediate and overwhelming nature that it has no choice but to act.<sup>51</sup> Furthermore, this conduct must not be an act of reprisal. As has been rightly pointed out, however, the right of self-defence in outer space interacts with rapidly changing military space technologies. Consequently, the activities undertaken to assure an effective means of self-defence run the risk of being confused with militarization.<sup>52</sup>

The extent to which self-defence can justify the development of space weapon systems in general international law is open to doubt. The Outer Space Treaty limits the use of outer space for military purposes by emphasizing the peaceful orientation which space activities should have. For these reasons, it is submitted that, in any case, the principle of self-defence cannot justify the development of space weapon systems in light of the spirit and clear terms of the Outer Space Treaty.<sup>53</sup>

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51. Ibid., 43.

52. Almond, Military Activities in Outer Space - The Emerging Law (1979), 23rd Colloq. on the Law of Outer Space 149, 150.

53. Matte, Space Policies and Programmes: Today and Tomorrow, (1980), 68.

## Weapons of Mass Destruction

Article IV, paragraph 1 prohibits placing nuclear or other kinds of weapons of mass destruction in earth orbit, the installation of such weapons on celestial bodies, or the stationing of such weapons in outer space in any other manner. The generally accepted position is that a weapon of mass destruction is not a typical non-nuclear device, and includes nuclear, chemical and biological weapons.<sup>54</sup> The question of interpretation of the phrase came up in the Senate Foreign Relations Committee hearings on the Outer Space Treaty, where it was stated that "this is a weapon of comparable capability of annihilation to a nuclear weapon, bacteriological. It does not relate to a conventional weapon."<sup>55</sup>

A slightly broader view was expressed during the same hearings where it was stated that a weapon of mass destruction would include chemical and biological weapons, or "any weapon which might be developed in the future which would have the capability of mass destruction such as that which would be wreaked by nuclear weapons".<sup>56</sup> Such a conclusion is equally supported by the U.N. Commission for Conventional Armaments which defined weapons of mass destruction

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54. Mallison, *The Laws of War and the Juridical Control of Weapons of Mass Destruction in General and Limited Wars* (1967), 36 Geo. Wash. L. Rev. 308.

55. Hearings on the Outer Space Treaty before the Senate Foreign Relations Committee, 90th Cong., 1st Sess. 76 (1967), statement made by U.N. Ambassador Goldberg.

56. Ibid ., 100.

to include lethal chemical and biological weapons developed in the future which have "characteristics comparable in destructive effect to those of the atomic bomb or some other weapons mentioned above".<sup>57</sup> Thus, it would appear that the meaning which has been attributed to weapons of mass destruction in article IV, paragraph 1 of the Outer Space Treaty is in keeping with the current standard in the Committee on Disarmament. Overall, there seems to exist a consensus that chemical and biological weapons are included in the definition of weapons of mass destruction, while conventional weapons are excluded. The standard seems to be the destructiveness of a nuclear bomb.<sup>58</sup>

It has generally been recognized that article IV, paragraph 1 was not intended to outlaw any weapon which fails to complete one full orbit.<sup>59</sup> Thus, the use of ICBMs with nuclear warheads is not restricted by this provision. Opponents of such an interpretation suggest that since the Outer Space Treaty does not define the term "orbit", other sources should be analysed to determine its definition. One such source is the NASAct

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57. U.N. Doc. 3/C.3/32 (1948). In 1977, the General Assembly expressly reaffirmed this definition, U.N.G.A. Res. 32/84 B, 3 Dec. 1977 .

58. Mallison, supra, note 54, 326.

59. Note, The Treaty on Outer Space: An Evaluation of the Arms Control Provisions (1968), 7 Colum. J1 Transnat'l L. 454, 465.

which defines orbit as the path followed by a body under gravitational or other forces. Since this is a directional definition, it would not require the completion of a full orbit.<sup>60</sup> However, the use of the word "station" in article IV, paragraph 1 would tend to indicate that even if a weapon does not complete a full orbit, the mere fact that it is positioned in outer space would make it contrary to the Outer Space Treaty.<sup>61</sup> Consequently, the location of the weapon would not matter since stationing is related to time, and any directed-energy weapon vehicle which would spend a comparable length of time to that of an ICBM, would be permissible.<sup>62</sup> Such a far-reaching conclusion is contrary to the plain meaning of the words used in article IV, paragraph 1 and the true intent of the Outer Space Treaty.<sup>63</sup> This position is in keeping with the second paragraph of article IV which reserves the moon and other celestial bodies for peaceful purposes.

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60. Stein, *Legal Restraints in Modern Arms Control Agreements* (1972), 66 Am. J1 Int'l L. 255, 263.

61. Ibid.

62. Zedalis & Wade, *Anti-satellite Weapons and the Outer Space Treaty of 1967* (1978), 8 Cal. Western Int'l L. J1 454, 465.

63. Bridge, *International Law and Military Activities in Outer Space* (1980), 13 Akron L. Rev. 649, 656.

Other commentators have attempted to distinguish between conventional and unconventional weapons.<sup>64</sup> The first group consists of those weapons "whose lethal mechanism employs gunpowder and other conventional components",<sup>65</sup> and are not weapons of mass destruction. Unconventional weapons (such as nuclear, chemical and bacteriological) are, regardless of their destructiveness, weapons of mass destruction. If one cannot characterize a weapon as conventional or unconventional, it will be banned if its destructive impact is one of catastrophic proportions.<sup>66</sup> Such a classification based both on the effect a particular weapon causes and on the mechanism of the weapon may prove to be counterproductive, since there exists no reason why a "conventional" weapon which can cause mass destruction could not be constructed.<sup>67</sup>

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64. St. James, *The Legality of Antisatellites* (1980), 3 B.C. Int'l and Com. L. Rev. 467, 470.

65. Ibid.

66. Ibid., 479.

67. Hasselman, *Weapons of Mass Destruction, Article IV Outer Space Treaty and the Relationship to General Disarmament* (1980), 24th Colloq. on the Law of Outer Space 1, 9.

The question has been asked whether anti-satellites may be considered to be weapons of mass destruction. The fact that the U.S. and U.S.S.R. had entered into negotiations about the prohibition of anti-satellites and that the resumption without delay of these negotiations was strongly urged by other nations led observers to the conclusion that anti-satellites are not covered by the prohibition of article IV, paragraph 1.<sup>68</sup> This conclusion is further substantiated by the terms used in the letter of the Soviet foreign minister requesting the inclusion on the agenda of the General Assembly the proposal to conclude an international treaty on the prohibition of stationing weapons of any kind in outer space.<sup>69</sup> According to this letter such a treaty is required since the Limited Test Ban Treaty, the Outer Space Treaty and the Moon Treaty do not preclude the possibility of the stationing of those kinds of weapons which are not covered by the definition of weapons of mass destruction.<sup>70</sup>

Yet another school of thought is based on the premise that the delimitation between conventional weapons and

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68. Goedhuis, supra, note 24, 301-2.

69. Letter dated 10 Aug. 1981.

70. U.N. Doc. A/36/192.

weapons of mass destruction is guided by the criterion of destructive effects of ABC-weapons (atomic, bacteriological and chemical weapons).<sup>71</sup> Thus, if the destructive effects are of comparable magnitude and intensity as ABC-weapons, anti-satellites would be considered as weapons of mass destruction. The destructive effect, that is the meaning of the term "mass", is subject to interpretation and has not as yet been legally defined.<sup>72</sup>

An ancillary problem to the interpretation of article IV, paragraph 1 is the question of whether this provision forbids only the emplacement in orbit of objects carrying nuclear weapons while still permitting these weapons to be orbited alone.<sup>73</sup> The generally accepted view is that since article IV, paragraph 1 prohibits the stationing of "such weapons in outer space, in any other manner", without reference to "objects" there can be no such distinction.<sup>74</sup> Thus, it seems that nuclear weapons and weapons of mass destruction are covered by the prohibition of article IV regardless of whether they are carried by objects or not.

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71. Bueckling, *Der Weltraumvertrag* (1980), 3 *Studies in Air and Space Law*, Köln 34.

72. Hasselman, *supra*, note 67, 4.

73. Gorove, *Arms Control Provisions in the Outer Space Treaty: A Scrutinizing Reappraisal* (1973), 3 *Ga J1 Int'l & Comp. L.* 114, 115.

74. Hasselman, *supra*, note 67, 5.

The term "weapons of mass destruction" in article IV, paragraph 1 is a dynamic one, varying according to technological and political developments. As yet, no systematic approach to an interpretation of weapons of mass destruction has been undertaken, though there exists a certain consensus on a few basic features of weapons of mass destruction.

d) Use of Military Personnel for Outer Space Activities

As has been previously mentioned, two major interpretations are given to the term "peaceful" as applied in space law: that of non-military and that of non-aggressive. In international law, "non-military" is defined as the prohibition to use outer space for military activities in times of peace, whereas the term "non-aggressiveness" includes the possibility of carrying military activities lawfully as long as these activities do not involve direct attack in the sense of the United Nations definition of "aggression".<sup>1</sup>

It becomes difficult for those wishing to adopt a position in favour of peace both on earth and in space, since nearly all outer space activities, scientific or not, have been carried out by military personnel.<sup>2</sup> Thus, as has been pointed out, if the "non-military were to be barred from space, no research as it stands would be possible."<sup>3</sup> It is

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1. Reijnen, The Term "Peaceful" in Space Law, paper submitted at the XXIIIrd Congress of the International Institute of Space Law, (1982), 6.
  2. As an example, it may be mentioned that all six U.S. astronauts who flew in the Mercury program were military officers. Similarly, of the six Vostok cosmonauts of the U.S.S.R. only the pilot of Vostok-6 was non-military.
  3. Reijnen, supra, note 1, 5.

then generally agreed upon that the Outer Space Treaty provides that the use of military personnel for scientific research or for any other peaceful purposes shall not be prohibited.<sup>4</sup> Thus, since most activities in outer space could be used for military purposes, writers have submitted that the important factor is not whether a particular space activity is carried out by military or non-military personnel, but whether the activity is consistent with the requirements of international law and the U.N. Charter.<sup>5</sup>

The governing factor would therefore be the conduct of such personnel as tested against the prohibition of the U.N. Charter.<sup>6</sup>

Another question which arises concerns the status of military personnel in space. In the 1963 Declaration of Legal Principles, astronauts were regarded as envoys of mankind and were to be given all possible assistance in case

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4. Art. IV Outer Space Treaty.

5. Reed, *Legal Aspects of Military Peaceful Uses of Space*, *The Reporter*, (1978), 7 *Office of the J.A.G. of Air Force*, 2.

6. Reed-Norris, *Military Uses of the Space Shuttle*, (1980), 13 *Akron L. Rev.* 665, 686.

of accident, distress or emergency.<sup>7</sup> This same concern was also expressed in article V of the Outer Space Treaty which provides that astronauts shall be the envoys of mankind. However, neither document defines the term "astronaut".

With regard to the Rescue and Return Agreement, it is significant that the term "astronaut" only appears in the title. The substantive part of the Agreement refers to "the personnel of a spacecraft". Such language is said to be designed to avoid any uncertainty inherent in the word "astronaut". It is also thought that by using the term "all personnel" no distinction exists between military and civilian personnel.<sup>8</sup>

It is worthy of note that article 3, paragraph 4 of the Moon Treaty, which reiterates article V, paragraph 2 of the Outer Space Treaty, provides that the use of military personnel for scientific research or for any other peaceful purposes shall not be prohibited and that the use of any equipment or facility necessary for the peaceful exploration of the Moon and other celestial bodies shall not be prohibited.

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7. U.N.G.A. Res. 1962.

8. Reed-Norris, supra, note 6, 687.

e) The Question of the Definition and/or the Delimitation of Outer Space

The 1967 Outer Space Treaty laid down for outer space an international legal status quite different from the status of air space, the latter being under the sovereignty of the underlying state. However, as yet, there has never been any agreement as to where the regime of air space ends and that of outer space begins. In the text of the Outer Space Treaty the term "outer space" occurs 37 times but neither its text nor any other international agreement contains a disposition defining this rudimental term. Though the adoption by way of a multilateral treaty or convention of a precise, universally binding definition of outer space is considered to be urgently needed by many jurists,<sup>1</sup> and has spawned considerable discussion in all international forums for a substantial period of time, this issue does not appear closer to resolution today than when it first arose.

By Resolution 1348(XIII) of 13 December 1959, establishing the ad hoc Committee on the Peaceful Uses of Outer Space, the United Nations General Assembly requested the Committee

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1. Marcoff, Traité de droit international public de l'espace, (1973), 277-80; Reijnen, Legal Aspects of Outer Space, (1976), 76 et seq.; Rosenfield, The Need to Distinguish Air Space from Outer Space (1976), 20th Colloq. on the Law of Outer Space 61.

to report, inter alia, on "the nature of legal problems which may arise in the carrying out of programs to explore outer space".

The ad hoc Committee in its report of 14 July 1959 stated that "the determination of precise limits for air space and outer space did not present a legal problem calling for priority consideration at this moment" and that "the solution of the problems which it had identified as susceptible of priority treatment was not dependent upon the establishment of such limits".<sup>2</sup> The Committee considered a number of proposals, including those based upon the physical characteristics of air and of aircraft, and concluded that, based on current knowledge and experience, an international agreement would be premature.<sup>3</sup>

During discussions at the fifth Sub-Committee's session in 1966 on the elaboration of a draft treaty on outer space, the Mexican delegate declared that before the negotiation concerning this draft was concluded, it was essential to determine exactly where outer space began so as to avoid the difficulties encountered in delineating territorial waters.<sup>4</sup>

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2. U.N. Doc. A/4141, 14 July 1959, 25.

3. Ibid.

4. U.N. Doc. A/AC.105/C.2/SR.71, Add. 1, 20.

The same year in the United Nations General Assembly's First (Political) Committee, during the discussion on the text of the draft treaty in question, the French delegate indicated that difficulties might arise in the implementation of such a treaty unless the realm of outer space was distinguished as quickly as possible from that of atmospheric space. In consequence, the General Assembly, by Resolution 2222 (XXI) adopted on 19 December 1966, requested the Committee on the Peaceful Uses of Outer Space to begin "the study of the question relative to the definition of outer space and the utilization of outer space and celestial bodies, including the various implications of space communications".

Following some discussion, the Scientific and Technical Outer Space Sub-Committees were invited to draw up a list of scientific criteria that could be helpful in the study relative to the definition of outer space, to give a selection of criteria which might be adopted, and to indicate on scientific and technical grounds, the advantages and disadvantages of each of them in relation to the possibility of a definition which would be valid for the long-term future. The urgency of the need to delineate outer space was greatly emphasized by France, which felt that with the number of space objects and launching states increasing it would rapidly become necessary to know exactly what was

meant by the term "outer space" particularly as regards objects carrying weapons, the return of objects found beyond the limits of the launching state, possible damage and the allowance of frequencies.<sup>5</sup> Other countries argued that the problem of definition required no solution for the time being.<sup>6</sup>

In its report, the Scientific and Technical Sub-Committee declared "that it is not possible at the present time to identify scientific or technical criteria which would permit a precise and lasting definition of outer space".<sup>7</sup>

At its twenty-second session (1967), the United Nations General Assembly instructed COPUOS to pursue actively its work on questions relative to the definition of outer space.<sup>8</sup> The question of the need for a definition has been on the agenda of the Legal Sub-Committee of COPUOS for sixteen years and views have varied widely.

Some jurists attempted to seek a solution by interpreting the terms of the 1919 Paris Convention for Regulation of Aerial Navigation and its Protocols<sup>9</sup> and of the 1944

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5. U.N. Doc. A/AC.105/C.1/SR.44, 4-5.

6. U.N. Doc. A/AC.105/C.1/SR.45, 5.

7. U.N. Doc. A/6804, Annex II, 36.

8. U.N. Doc. A/6716, Supplement 16, 12.

9. Convention Relating to the Regulation of Aerial Navigation (Paris 1919), 11 L.N.T.S. 173 (1922).

Convention on International Civil Aviation,<sup>10</sup> which recognized the "complete and exclusive sovereignty" of the subjacent state over the air space above its territory, and the right of the subjacent state to exclude foreign aircraft from that air space.

Many other theories were explored and advocated and are still being discussed today. They are based either upon completely arbitrary distances from earth<sup>11</sup> or distances which are a function of the height at which a human can live without breathing aids (two miles) or the limit of atmospheric lift (fifty-two miles). Andrew Haley long advocated adoption of the "von Karman line theory, which is described as a median measurement of the distance from earth where an aeronautical vehicle no longer may perform and where molecular oxygen dissociates and air space no longer exists " (roughly 275,000 feet).<sup>12</sup>

Other demarcation proposals have been based on the division of the atmosphere into layers,<sup>13</sup> on the maximum

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10. Convention on International Civil Aviation (Chicago 1944) T.I.A.S. No. 1591, 15 U.N.T.S. 295 (1947).

11. 30 miles, 500 miles, infinity.

12. Haley, Space Law and Government, (1963), 78.

13. The atmosphere has been dissected into the following layers, each possessing particular scientific features; the troposphere (from sea level to about 10 kms.), the stratosphere (from 10 to 40 kms.), the ionosphere (from 40 to 375 kms.), and the exosphere (375 kms. and beyond). Any one may serve as a random delimitation point.

altitude of aircraft flight, on aerodynamic characteristics of flight instrumentalities, on the lowest perigee of an orbiting satellite, on the earth's gravitational effects, on the division of space into zones<sup>14</sup> and on various combinations of these approaches.<sup>15</sup>

Another approach to the problem of the definition of outer space is to consider the nature of the activity of a particular vehicle to determine whether it is space-oriented or more terrestrially related. This notion has come to be known as the "functional" approach. This proposal obviates the need for clear delimitation of air and outer space by its very premise. Since the functional theory is predicated on the purpose of the activity conducted rather than the physical location of its occurrence, an arbitrary demarcation is both artificial and unnecessary.<sup>16</sup>

Yet another approach to the problem of the definition of outer space supported by some jurists is the notion of

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14. An approach similar to that existing in the law of the sea has been suggested for air/outer space. Accordingly, the sky would be divided into zones in much the same way that the sea has been divided into territorial seas and high seas.

15. U.N. Doc. A/AC.105/C.2/7, Add. 1, 21 Jan. 1977.

16. Matte, Aerospace Law, (1969), 70.

"mesospace". The term<sup>17</sup> was coined to describe an intermediate zone between the upper reaches of the air space and the beginning of outer space. The air space would be defined as extending to the lowest altitude at which satellites could viably orbit the earth. The mesospace would consist of a zone approximately 50 kms. wide within which the underlying state would exercise partial jurisdiction. Again, the utility of delineating a boundary is open to question. As mentioned above, the state of space technology may be such as to permit the placing of satellites in lower orbits.<sup>18</sup> Furthermore, one may question the purpose of ascribing partial jurisdiction, the nature of which would have to be clearly defined.<sup>19</sup>

The position of the United States is that it would be premature to attempt to draw a line between the two areas at this time. This view has been supported by a number of Western states, including the United Kingdom, the Federal Republic of Germany, Sweden and Canada. On the other hand,

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17. The term was introduced by de Jaeger and Reijnen, *Mesospace, the Regime Between Air Space and Outer Space* (1974), 18th Colloq. on the Law of Outer Space 160, 161.

18. This point is considered by Haanappel, *Air Space, Outer Space and Mesospace* (1975), 19th Colloq. on the Law of Outer Space 160, 161.

19. For further discussion, see Haanappel, *ibid.*, and, *Definition of Outer Space and Outer Space Activities* (1977), 20th Colloq. on the Law of Outer Space 53.

a large number of countries have favoured international efforts to set a boundary, including Austria, Belgium Brazil, France, Mexico and the Eastern European states.<sup>20</sup> As a result of these differences of view, discussions in the Legal Sub-Committee have not proved productive. The theories<sup>21</sup> propounded for the delimitation of air and outer space are many and varied. Even among those favouring a definition there is no unanimity on whether a scientific/technical (spatial) approach or a legal or a functional approach should be adopted, or some combination of the three.

The suspicion that military considerations underlie the Soviet-American stand appears to be well-founded. The earliest and most important military devices used in outer space were satellites for surveillance and electronic intelligence, which best operate in orbits between 100 and 250 miles above the earth. Improvements in satellite technology have led to a reduction of the lowest altitude at which spacecraft can survive in orbit. For example, a number of "close-look" satellites launched in recent years have been able to complete at least one orbit at altitudes of less

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20. U.N. Doc. A/AC.105/C.2/7, Add. 1, 21 Jan. 1977, Secretariat background paper on the Question of the Definition and/or the Delimitation of Outer Space, 27-31.

21. The Legal Sub-Committee of COPUOS has grouped the various theories and proposals under two broad rubrics, the spatial approach and the functional approach. U.N. Doc. A/AC.105/C.2/7 (7 May 1970), The Question of the Definition and/or the Delimitation of Outer Space, 36 et seq.

than one hundred miles.<sup>22</sup> Furthermore, the altitudes of U.S. and Soviet reconnaissance satellites may, depending on the specific type of satellites used, be as low as 180 km.<sup>23</sup> More recently, Martin Marietta has developed what is known as the tethered satellite. These satellites will be used to "troll" the upper atmosphere approximately 80 miles above the earth, where neither aircraft nor satellites can operate for extended periods using conventional flight concepts.<sup>24</sup> Thus, it has rightly been pointed out that a boundary at too high an altitude might not only impede existing military programmes, but also preclude some future, as yet undefined, low-orbit defence activity.<sup>25</sup>

At the Legal Sub-Committee of COPUOS in 1979, the U.S.S.R. proposed<sup>26</sup> that "the region above 100 (110) kilo-

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22. Certain U.S. high-resolution spacecraft are launched into orbits ranging from 77 to 215 miles and occasionally operate as low as 69 miles above the earth's surface. *Aviation Week and Space Technology* (hereinafter A.W.S.T.), 6 Oct. 1980, 18.
23. Jasani, ed., Outer Space - A New Dimension of the Arms Race, (1982), 45.
24. A.W.S.T., 20 Dec. 1982, 60.
25. A recent Report of the Legal Sub-Committee of COPUOS notes that in view of some delegations an arbitrary boundary "could lead to complications" and "could impede further developments in space science and technology". See Report of the Legal Sub-Committee on the Work of its Nineteenth Session, 10 March - 3 April, 1980, U.N. Doc. A/AC.105/271, 10 Apr. 1980, 8, for a catalogue of various factors advanced by the opponents of a boundary.
26. U.N. Doc. A/AC.105/L.112, 20 June 1979; also U.N. Doc. A/AC.105/C.2/L.121, and discussion at the Legal Sub-Committee at its 19th Session in 1980 (U.N. Doc. A/AC.105/271).

meters is outer space" and that "the boundary between air space and outer space shall be subject to agreement among states and shall subsequently be established by a treaty at an altitude not exceeding 100 (110) kilometers above sea level."<sup>27</sup> The proposal further reads that "space objects of states shall retain the right to fly over the territory of other states at altitudes lower than 100 (110) kilometers above sea level for the purpose of reaching orbit or returning to earth in the territory of the launching state".<sup>28</sup> Presumably the figure of 100 kms. represents the point where, according to the current state of art in space technology, a satellite can be placed without being subject to rapid orbital decay. This approach typifies the attitude towards the delimitation question. Also, it has the potential of causing a vacuum juris. This lacuna is apparent when one considers that the proposal countenances the possibility of an international agreement which could set the boundary below 100 kms. However, the proposal also states that the area above 100 kms. must be considered as outer space. The question then arises as to how the space in between would be characterized. While France, Belgium and some Latin American

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27. U.N. Doc. A/AC.105/C.2/L.121.

28. Ibid.

states reiterated their support for delimitation, the United States<sup>29</sup> and the United Kingdom, in turn, argued, on the basis of studies by COSPAR,<sup>30</sup> that previous estimates of altitudes at which satellites could survive was too high and that, in point of fact, several viable satellites have perigees of less than 100 kilometers.

It is probably safe to conclude that though there is as yet no rule of positive international law by which a precise limit has been drawn between air space and outer space there is a consensus on the part of an overwhelming majority of states that to allow individual states to exercise sovereignty at the lowest height at which satellites are put in orbit would unacceptably invalidate the principle of freedom

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29. The three main arguments put forward by the U.S. delegate were that: 1. the space region is devoid of physically observable milestones and very few countries have the ability to determine with any accuracy the altitude of space objects and therefore now have no capability to monitor an altitude boundary. 2. setting up an arbitrary outer space boundary substantially affects not only a state's sovereign rights but also its ability to cooperate toward its common good. 3. setting up a boundary could "inhibit and perhaps even stifle future efforts to explore and use outer space". See U.S. Statement to the Legal Sub-Committee of COPUOS on the Definition of Outer Space, 4 Apr. 1979.
30. See paper prepared by COSPAR "Study on the Altitudes of Artificial Earth Satellites" in U.N. Doc. A/AC.105/164, 6 Jan. 1976.

of use and non-appropriation of outer space.<sup>31</sup> Such a practice would in effect see the line of demarcation drawn not at a fixed level but according to the lowest perigee of an orbiting satellite.<sup>32</sup>

It can also be argued that the need for an acceptable solution becomes all the more necessary with the advent of the space shuttle. Where expendable rocket launches were the rule of the day, the boundary issue was not as pressing since the period of time the launch vehicle spent in air space was not significant. Yet with the shuttle returning to earth as a glider, time spent in the air is no longer negligible. The mere fact that a vehicle passes through sovereign air space does not immediately trigger the air space regime regulation. For example, the Chicago Convention recognizes the general principle of state sovereignty over air space. Its more specific provisions apply only to aircraft. This term is defined as "any machine that can derive support in the atmosphere from the reactions of the air other than the reactions

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31. Goedhuis, *The Changing Legal Regime of Air and Outer Space* (1978), 27 *Int'l Comp. L. Q.* 576, 590-1. See also Gorove, *Geostationary Orbit: Issues of Law and Policy* (1979), *Am. JI of Int'l L.* 444, 447.

32. See COSPAR paper supra, note 30.

of the air against the earth's surface".<sup>33</sup> The development of the space shuttle may strengthen arguments in favour of a right of access of satellites through the adjacent air space of neighbouring states,<sup>34</sup> that is, a recognition of a right to send space objects through the air of other states for the purpose of putting them in orbit or bringing them back to earth.<sup>35</sup> A vehicle like the space shuttle if used exclusively for civilian purposes would likely be granted the right of innocent passage. However, the U.S. Air Force has suggested it should have more control over the future activities of the space shuttle.<sup>36</sup> It has also been suggested that the space shuttle be used to carry out manned photo-reconnaissance to supplement intelligence from unmanned spacecraft.<sup>37</sup>

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33. Chicago Convention, Annex I "Rules of the Air" (ICAO Doc. 7th ed., 1981), chap. 1, "Definitions".

34. See Background paper, supra, note 20, 4.

35. For a discussion of the right of access, see Goedhuis, supra, note 31, 592-3, as well as a suggestion by the Soviet delegate at the 185th meeting of COPUOS, U.N. Doc. A/AC.105/PB, 185, 42, 30 June 1978.

36. U.S.A.F. Needs Space Command for Shuttle, Flight International, vol. 120, 5 Dec. 1981, 1674.

37. A.W.S.T., 4 June 1979, 11.

As was rightly pointed out, the need for a demarcation line between air space and outer space is not of principal concern; but the fact that the military interests of a few powers have delayed for more than twenty years any serious discussion of an issue important to the legal regulation of both air navigation and outer space activities<sup>38</sup> becomes all the more obvious.

#### The Geostationary Orbit

Geostationary satellites<sup>39</sup> (or satellites in geostationary orbit) are satellites which, when in orbit, "have velocities and characteristics such that they remain constantly in a fixed position in relation to the surface of the celestial body around which they revolve".<sup>40</sup> The orbital belt is located 23,300 miles or 35,000 kilometers above the equator.

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38. Vlastic, *Disarmament Decade, Outer Space and International Law* (1981), 26 McGill L.Jl 135, 186.

39. See ITU Radio Regulations.

"A geosynchronous satellite is an earth satellite whose period of revolution is equal to the period of rotation of the earth about its axis, and a geostationary satellite is a satellite, the circular orbit of which lies in the plane of the earth's equator and which turns about the polar axis of the earth in the same direction and with the same period as those of the earth's rotation. The orbit in which a satellite should be placed to be a geostationary satellite is called the geostationary orbit."

40. U.N. Doc. A/AC.105/203, 29 Aug. 1977, "Physical Nature and Technical Attributes of the Geostationary Orbit", 7.

The positioning of artificial earth satellites in the geostationary orbit is of great practical importance in particular for telecommunications.<sup>41</sup> However, the geostationary orbit is also used for meteorological purposes,<sup>42</sup> and for earth-resource sensing, although the current experimental systems such as Landsat use lower orbits.<sup>43</sup> Satellites in geostationary orbit are also used for military reconnaissance. The first geostationary satellite placed in orbit was Syncom-2 launched by NASA in July 1963. The principal constraint on the number of satellites<sup>44</sup> that can be placed in orbit is the electromagnetic radio frequency spectrum,

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41. As regards the details concerning the utilization of the geostationary orbit for radiocommunication satellites, see the Report of the International Telecommunication Union, Joint Meeting of International Radio Consultative Committee Study Groups Special Preparatory Meeting for the World Administrative Radio Conference 1979, Geneva 1978.
  42. A number of states and international organizations are cooperating in a research programme organized to monitor rapidly changing meteorological conditions, including weather, ice and sea conditions, see U.N. Doc. supra, note 40.
  43. Ibid.
  44. The number of satellites continues to grow so that today there is a concern about eventual crowding.

though there are other constraints.<sup>45</sup> Satellites that are positioned too closely will transmit radio signals that interfere with each other. There are however a number of technical means<sup>46</sup> of increasing the number of orbital "slots" for use by geostationary satellites; these factors have given rise to great disparities as to the number of satellites that the geostationary orbit can accommodate. Estimates vary by a factor of 10- from 180 to 1800.<sup>47</sup> The belief in the accuracy of the lower figure has given rise to complaints about "overcrowding" or "saturation" of what has been called in the International Telecommunication Convention of 1973, a "limited natural resource".<sup>48</sup> Furthermore, the difficulties in accommodating an ever-increasing number of users of this limited natural resource could be aggravated by the most

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45. These are defined as follows in para. 20 of U.N. Doc. supra, note 40

- "a) saturation of the orbit;
- b) saturation of the frequency spectrum for communications between the satellite and a ground station or between satellites;
- c) interruption of communications due to solar interference;
- d) cut off of solar power;
- e) lack of fuel for station-keeping."

46. See U.N. Doc. supra, note 40, para. 32.

47. Christol, *The Geostationary Orbital Positions as a Natural Resource of the Space Environment* (1979), 26 *Netherlands Int'l L. Rev.* 5.

48. *International Telecommunication Convention (Malaga-Torremolinos)* 25 Oct. 1973, art. 33(2) which states that "radio frequencies and the geostationary orbit are limited natural resources".

significant of this orbit's new applications which will be for energy purposes. These applications will require satellites of a greater size than the relatively small ones currently deployed for communication and observation purposes,<sup>49</sup> and will clearly place a substantial demand on the use of the geostationary orbit.

The use of the geostationary orbit has given rise to one of the most contentious issues in the law of outer space. The issue stems from the shortage of exploitable radio frequencies and the resulting radio interference. The conflict is between the technologically advanced states, both existing and future space powers, and the great majority of states which see no prospect that they can derive, directly and without international mediation, benefits for themselves. The issue translates itself into a conflict between a "free use" and "first-come - first-served" approach to outer space, or an approach based on "sharing" and "equitable access".<sup>50</sup> As has been suggested, these claims are "a strong response... in retaliation for the continuing infringements of the rights

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49. Gorove, *Solar Power Satellites and the ITU: Some U.S. Policy Options* (1979), IV *Annals of Air and Space L.* 505.

50. See Gorove, *supra*, note 31, 448-9.

of these states by the space powers".<sup>51</sup>

Fearful of losing all the available positions in the geostationary orbit to the technically advanced states, a number of equatorial states (Brazil, Colombia, Congo, Ecuador, Indonesia, Kenya, Uganda and Zaire) have declared that the geostationary orbit's existence depends exclusively on its relation to gravitational phenomena generated by the earth and that consequently it could not be considered part of outer space. As a result, the declarants claimed that the orbit segments constituted part of the territory over which equatorial states exercised their national sovereignty. This claim was based on the absence of a definition or demarcation in the Outer Space Treaty. As a result, it was argued that the non-appropriation principle in article II should not apply to the geostationary orbit and consequently did not affect the right of the equatorial states that had already ratified the Treaty. While the position of the equatorial states has been widely rejected, it is indicative of the legal uncertainty surrounding the actual definition of outer space. Had there been an international agreement, it might have been more difficult for states to advance legal

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51. Marcoff, *The International Space Agency Project, the Declaration of Bogota and the "Common Interests" Rule* (1976), 15 *Diritto Aereo* 166, 181.

arguments in favour of appropriation of parts of the geostationary orbit.

The Declaration has resulted in an outpouring of doctrinal refutations alleging that use of the geostationary orbit is within the purview of the Outer Space Treaty in particular and international law in general.<sup>52</sup> The common conclusion is that the legal status of the geostationary orbit cannot be different from that of the whole of outer space. As a result, claims of appropriation must be considered invalid;<sup>53</sup> and the orbit being inseparable from outer space would be fully governed by the principle of freedom established in the Outer Space Treaty. It has also been underlined that no state has ever protested against the great number of launchings into geostationary orbit, by INTELSAT for example,

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52. Busak, *The Geostationary Satellite Orbit - International Cooperation or National Sovereignty?* (1978), 45 *Telecom. JI* 167, especially at 171; Christol, *Satellite Power Systems, White Paper on International Agreements*, U.S. Dept. of Energy, Office of Energy Research, Satellite Power Systems Project Office, Wash., (1978), 104 *et seq*; Finch, *The Geostationary Orbit and 1967 Outer Space Treaty* (1976), 20th *Colloq. on the Law of Outer Space* 219, especially at 221; Gorbiel, *The Legal Status of Geostationary Orbit: Some Remarks* (1978), 6 *Jl of Space L.* 171; Gorove, *supra*, note 31.

53. Gorbiel, *ibid.*, 177.

the sole exception being the general reservation made in the Bogota Declaration of 1976.<sup>54</sup>

There has been a call for special regulation of the orbit given its advantages.<sup>55</sup> Already existing international organizations have granted themselves some authority to regulate the geostationary orbit. As an example, one may cite the International Telecommunication Union (I.T.U.) which was established to maintain and extend international cooperation for the improvement and rational use of telecommunications.<sup>56</sup> In order to achieve a more efficient use of the radio spectrum, the I.T.U. seeks to ensure harmonization and coordination of state efforts and foster collaboration among members.<sup>57</sup> The Union has made specific provision for the regulation of the geostationary orbit. States are obliged to undertake efficient

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54. The equatorial states declared that they do not condone existing satellites or the position they occupy in the geostationary orbit and the existence of these satellites does not confer any rights of placement of satellites or use of the segments unless expressly authorized by the state exercising sovereignty, (sec. 3(e) of the Bogota Declaration).

55. Dudakov, *International Legal Problems on the Use of Geostationary Orbit* (1975), 19th Colloq. on the Law of Outer Space 406, especially at 409; Cocca, *Towards Adequate Legal Regulation of the Geostationary Orbit* (1976), 20th Colloq. on the Law of Outer Space 193.

56. Subpara. 4(1)(b) of the International Telecommunication Convention (Malaga-Torremolinos, 1973).

57. Art. 4 of the Convention.

and economical utilization of the orbit to ensure equitable access for all members. However, as one legal writer has stated, states are rarely willing to withdraw territorial claims even if it is proven that their interests could be better served through a regime of sharing.<sup>58</sup> While military activities cannot be said to be the principal cause of the crowding of the geostationary orbit, their growing presence tend to substantiate the conclusion that an agreement or lack of one is largely due to the key role played by military considerations in the law-making process for outer space.<sup>59</sup>

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58. Vlastic, supra, note 38, 189.

59. Ibid.

f) International Law and Remote Sensing

The Technology and its Uses

The advent of space technology triggered the beginning of a new era in earth-surveying techniques. This new technique allows the viewing of the earth's surface and its environment by means of sensing devices affixed to a platform orbiting the earth from outer space, and constitutes a new means of data acquisition. Remote sensing from the earth has been defined as a methodology to assist in characterizing the nature and conditions of natural resources, natural features and phenomena, and the environment of the earth by means of observation and measurements from space platforms.<sup>1</sup> It should be noted that remote sensing of the earth by satellites is only one form of remote sensing of the earth. Aircraft remain an important instrument for remote sensing; however, since an aircraft operates from a fairly low altitude and cannot remain in flight for prolonged periods of time, it can cover but a limited area and cannot easily offer a continuous view of the surface covered.<sup>2</sup>

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1. U.N. Doc. A/AC.105/111, 2 (14 Feb. 1973).
  2. Vlasic, Remote Sensing of the Earth by Satellites, in Jasentuliyana and Lee (eds.), Manual of Space Law, vol. 1, (1979), 311.

The first earth observation satellite, the TIROS-I, was launched by N A S A on 1 April 1960. Its impact on the field of meteorology was overwhelming.<sup>3</sup> It is, however, generally agreed that remote sensing by spacecraft of natural and human resources was initiated by the American LANDSAT system. In 1977, the United States launched its first earth resources technology satellite (ERTS). Renamed LANDSAT-1, it was followed in 1975 by LANDSAT-2 and by LANDSAT-3 in 1978. A fourth remote sensing satellite, LANDSAT-D (renamed LANDSAT-4 after launch) was launched in the third quarter of 1982 as part of the space shuttle program, and in the future will be operated by the National Oceanic and Atmospheric Administration (N.O.A.A.). This newer generation of LANDSAT has the capacity for a far sharper spatial and spectral resolution. It has about 30 meters spatial resolution and 10 times the information content of the first generation satellites.

The LANDSAT satellites circle the earth every 103 minutes, and are equipped with infra-red sensors which constantly monitor the changing environment through multispectral,

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3. 1975 N A S A Authorization, Hearings before the Subcommittee on Space Science and Applications of the Committee on Science and Astronautics, U.S. House of Representatives, 93rd Cong., 2nd Sess., HR. 12689, superseded by HR. 3998, 26, 27, 28 Feb., 5, 6, 7, 14, 19 Mar. 1974, Part. 3, 72 et seq.

repetitive images which are transmitted to the network of ground receiving states through electromagnetic radio frequency systems. The LANDSAT spacecraft circles the globe 14 times a day, from a 913 kilometer (567 miles) circular sun-synchronous orbit. The satellites pass over almost the entire globe every eighteen days and can view each cloud-free area repetitively at the same local time of day and thus at the same sun angle. The raw data collected by LANDSAT satellites are received by ground stations in the United States, Canada, Italy, Brazil, Sweden, Japan, India and Argentina.<sup>4</sup> The LANDSAT system is open to individuals, states and foreign institutions; information is available at nominal cost from the various receiving stations.<sup>5</sup> The U.S. "open door" policy is reflected in different bilateral agreements such as the ones it has

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4. Ambrosetti, *The Relevance of Remote Sensing to Third World Economic Development: Some Legal and Political Aspects* (1980), 12 N.Y.U. JI of Int'l L. and Pol. 569, 570-1.
  5. Under the current experimental system, satellite images from everywhere in the world can be purchased from the Earth Resources Observation System (E.R.O.S.) Data Centre at Sioux Falls, South Dakota; no international agreement is actually required. The cost of the imaging is small, being the cost of reproduction. For further information see DeSaussure, *Remote Sensing by Satellite: What Future for an International Regime?* (1977), 71 Am. JI of Int'l L. 707, 709 and authorities therein cited.

entered into with Japan<sup>6</sup> and Canada.<sup>7</sup> This policy is equally reflected in section 102(a) of the NASAct which provides:

The Congress...hereby declares...that it is the policy of the United States that activities in space should be devoted to peaceful purposes for the benefit of all mankind.

Among the objectives of the Act is "cooperation by the United States with other nations and groups of nations in work done pursuant to this Act and the peaceful application of the results thereof". Furthermore, the Administration is directed to "provide for the widest practicable and appropriate dissemination of information concerning its (aeronautical and space) activities and the results thereof".

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6. Ambrosetti, supra, note 4, note 12, 570.

7. Exchange of Notes between the Government of Canada and the Government of the United States of America constituting an Agreement concerning a Joint Program in the Field of Experimental Remote Sensing from Satellites and Aircraft. Signed at Washington, 14 May 1971. 22 U.S.T. 684, T.I.A.S. 7125. The information received by N.A.S.A. and the Canadian tracing stations is to be made available as soon as practicable to the international community (annex to the Canada - U.S. Exchange of Notes, para. (c)). Other provisions provide for the free exchange of all data and technical information mutually agreed to be necessary for the conduct of the joint program (annex, para. I).

The data gathered so far by LANDSAT satellites have underlined the benefits of remote sensing by spacecraft in the fields of geology, oceanography, forestry, hydrology, crop production, off-shore pollution control, urban planning and other environmental applications.<sup>8</sup> Some fifty countries have so far participated in the LANDSAT program. Furthermore, it is widely recognized that while remote sensing by satellite cannot directly identify the location of mineral resources, satellite-derived data can facilitate prospecting.<sup>9</sup> Thus, the synoptic repetitive coverage afforded by remote sensing imaging has provided oil and mineral exploration companies with geophysical information of considerable value.<sup>10</sup>

In 1978, France decided to expand its space program and to undertake the development of its own remote sensing spacecraft the "Satellite probatoire d'Observation de la Terre" (SPOT). SPOT-1 will be placed in sun-synchronous orbit in 1984, and is being designated as a multimission platform. It will be useful for specialized missions, adding its data

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8. NASA News No. 78-22, 13-28, 22 Feb. 1978.

9. DeSaussure, supra, note 5, 714.

10. Ibid.

to that of LANDSAT's broader baseline system.<sup>11</sup>

With the advent of the space shuttle, which will probably carry remote sensing instrumentation, the continued improvements in the capacity to scan the earth and to increase the definition of what is observed, and the growing need to find new sources of food and energy, states may be expected to express concern about the impact upon them of earth resource sensing. Paradoxically, notwithstanding the de facto existence of international cooperation in this field, international efforts to arrive at specific rules for the operation of such a system have not been successful. In so far as the use of remote sensing satellites is concerned, the basic debates have been between the technologically advanced states which favour the free dissemination of information, and the technological have-nots which prefer a regime of "prior consent".

#### International Law and Remote Sensing

##### The Legal Problem Defined

Remote sensing from outer space is unique in that, while the activity itself is carried out in outer space, its results are of the utmost importance for developments on earth.

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11. Fouquet, "The Spot Satellite", paper presented at the American Astronautical Society, 19th Goddard Memorial Symposium, 26, 27 Mar. 1981, 1-2. Significantly SPOT is expected to serve as future French military reconnaissance satellites planned for the 1980s.

Consequently, the legal regimes applicable to remote sensing activities are equally of a hybrid nature. The legal regime which governs outer space could apply to the space segment, that is the remote sensing satellite, while the data obtained may be governed by the general principles applicable to earth-based activities, such as the principle of sovereignty.

As a result of the technological peculiarities of the present remote sensing techniques, information on the earth is gathered by the space segment and then transmitted to a ground station; the ground station receives and stores the recorded information without making any distinctions as to the different countries which were sensed.

As might be expected, the basic debates once again have by and large been between the technological haves and have-nots, the potentially "data-rich" and "data-poor" countries. Essentially, the debate has been in these terms: between space powers with the technology to derive economic advantages from earth-resource sensing from satellites, and those who will only be recipients of data or information. This at times is expressed as a conflict between the proponents of the "free

flow of information"<sup>12</sup> and the proponents of national sovereignty over natural resources<sup>13</sup> and the extension of national sovereignty to information about natural resources.

The United States' position can be formulated as follows:

States receiving data directly from satellites designed for remote sensing of the natural environment of the earth shall make these data available to interested states, international organizations, individuals, scientific communities and others on an equitable, timely

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12. As set out in art. 19 of the International Covenant on Civil and Political Rights, and provides:
    1. Everyone shall have the right to hold opinions without interference;
    2. Everyone shall have the right to freedom of expression; hence this right shall include freedom to seek, receive and impart information and ideas of all kinds, regardless of frontiers, either orally, in writing or in print, in the form of art, or through any other media of his choice;
    3. The exercise of the rights provided for in paragraph 2 of this article carries with it special duties and responsibilities. It may therefore be subject to certain restrictions, but these shall only be such as are provided by law and are necessary:
      - a) for respect of the rights or reputations of others;
      - b) for the protection of national security or of public order, (ordre public), or of public health or morals.
  13. As set out in particular in U.N.G.A. Res. 1803 and U.N.G.A. Res. 2158.

and non-discriminatory basis.<sup>14</sup>

This free and open dissemination policy advocated by the U.S.A. is supported by American writers for mainly technical and practical reasons. Some writers have expressed the view that remote sensing satellites are not able to detect political boundaries, and the technical problem of devising and operating a system separating data along political boundaries would be financially prohibitive and scientifically disadvantageous.<sup>15</sup> Others have stated that it is unlikely that countries with ground stations could effectively operate under a restrictive dissemination system since normal coverage by a ground station extends to a radius of approximately 3000 kms. Thus, if one country was given a veto power over the data of other countries, the ground station would probably have to be shut down.<sup>16</sup> A restrictive dissemination system is equally

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14. U.N. Doc. A/AC.105/C.2/L.103, (1975).

15. Leigh, United States Policy of Collecting and Disseminating Remote Sensing Data, in Legal Implications of Remote Sensing from Outer Space, Matte and DeSaussure (eds.), (1976), 149. See also the statement of W. Topley Bennett Jr. made before Committee I (Political and Security) of the United Nations General Assembly on 13 Oct. 1975 in McDowell, Digest of United States Practice in International Law, Dept. of State Publication 8865, (1975), 478.

16. Leigh, ibid., 149.

thought of as a means of exacerbating the division between technologically advanced and less advanced countries, since the former countries would always be able to operate remote sensing satellites and use the data collected by such satellites.<sup>17</sup> Finally, it has also been pointed out that the international community has been operating under an open dissemination of data policy since 1972.<sup>18</sup>

To these practical and technological factors one can easily add an economic factor that has given the U.S.A. a virtual monopoly in launching civilian remote sensing satellites,<sup>19</sup> the result being that no other country has received any remote sensing data collected by the U.S.A. without its express permission. The economic value of remote sensing is also reflected in a recent announcement made by the American industry for plans to develop future remote sensing systems which are based on the LANDSAT concept.<sup>20</sup>

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17. Ibid.

18. Hosenball, Current Issues of Space Law before the United Nations (1974), 2 JI of Space L. 17.

19. Jasani, Military Space Technology and its Implications, in Outer Space - A New Dimension of the Arms Race, Jasani (ed.), (1982), 42.

20. Aviation Week and Space Technology (hereinafter A.W.S.T.), 26 Mar. 1979, 46-53.

The U.S.S.R. and Latin American countries are staunchly opposed to the "free dissemination" policy. Fearing that remote sensing data of their territories could be used to their disadvantage (the discovery of mineral deposits or the withholding of information regarding a bad crop),<sup>21</sup> these countries advocate a different regime for remote sensing activities. The Latin American position may be summarized as follows:

Parties shall refrain from undertaking activities of remote sensing of natural resources belonging to another state party, including the resources located in maritime areas under national jurisdiction without the consent of the latter.<sup>22</sup>

The Soviet position (as supported by France) is slightly less stringent, since it does not demand prior consent for the act of remote sensing, but calls for strict controls over the dissemination of information:

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21. Bogdanov, Legal Problems of the Use of the Data of Remote Sensing (1975), 19th Colloq. on the Law of Outer Space 240.
  22. U.N. Doc. A/C.1/1647, "Treaty on Remote Sensing of Natural Resources by Means of Space Technology", presented by Brazil and Argentina, 15 Oct. 1974.

A State which obtains information concerning the natural resources of another State as a result of remote sensing activities shall not be entitled to make it public without the clearly expressed consent of the State to which the natural resources belong or to use it in any other manner to the detriment of such State. Documentation resulting from remote sensing activities may not be communicated to third parties, whether Governments, international organizations or private persons, without the consent of the State whose territory is affected.<sup>23</sup>

#### 1. The Legal Status of Remote Sensing in International Law

It is quite clear that international law and even space law have not directly dealt with the problem of remote sensing. Before the space age, the matter was simple; in order to gather information about the earth, one had to enter the territory of a given country. Even when remote sensing was first carried out by the use of aircraft, this situation

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23. U.N. Doc. A/AC.105/C.2/L.99, "Draft Principles Governing the Activities of States in the Field of Remote Sensing of Earth Resources by Means of Space Technology", presented jointly by the U.S.S.R. and France on 27 May 1974.

did not create much difficulty since states extended the sovereignty principle to the air space above their territory.<sup>24</sup>

When the first satellite was launched, United Nations Resolution 1721(XVI)<sup>25</sup> as well as the Outer Space Treaty<sup>26</sup> incorporated the principle that outer space should be free for exploration and use by all states. Although remote sensing satellites were in use at the time this resolution and the Outer Space Treaty were concluded, they were not explicitly discussed during the negotiation of these legal instruments because they did not have a prominent role at the time. Consequently the only way space law can be made applicable to remote sensing is by way of analogy. With this caveat in mind, it will now be possible to discuss how international law can be made applicable to remote sensing.

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24. See art. 1 of the 1944 Chicago Convention. History shows us that, in the beginning, air space was also considered to be used freely. See Goedhuis, *The Changing Legal Regime of Air and Outer Space* (1978), 27 *Int'l and Comp. L.Q.* 576.

25. U.N.G.A. Res. 1721(XVI), 20 Dec. 1961; U.N.G.A. Res. 1962 (XVIII), 13 Dec. 1963.

26. Art. I of the Outer Space Treaty.

## Treaty Law

### Arguments in Favour of an Open System of Remote Sensing

Some writers argue that international law in general does not support the principle of sovereignty over natural resources. As has been stated:

To conclude from the examination of the relevant documents it can be stated with a considerable degree of certainty that neither general law nor the Outer Space Treaty nor any other authoritative text support the contention that the observation of the Earth's environment by satellites is subject to restrictions such as advocated by some states.<sup>27</sup>

Brooks submits that even in the case of natural disasters no obligation exists under international law to disclose any information to a sensed state.<sup>28</sup>

A more moderate and acceptable opinion is that international law is ambiguous about the dissemination of data obtained by remote sensing satellites; and the best that

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27. Vlastic, supra, note 2.

28. Brooks, New Developments in Earth Satellite Law (1970), 65 Northwestern U.L. Rev. 774.

could be said is that there is no general rule, except in emerging situations, to transmit information to a sensed state. Furthermore, no prohibition can be derived from the principle of national sovereignty over natural resources, to make such information available to third states, international organizations or the general public.<sup>29</sup>

The most appropriate article of the Outer Space Treaty to regulate remote sensing from outer space is article XI which states:

In order to promote international cooperation in the peaceful exploitation and the use of outer space, States Parties to the Treaty conducting activities in outer space including the moon and other celestial bodies agree to inform the Secretary General of the United Nations as well as the public and the international scientific community to the greatest extent feasible and practicable, of the nature, conduct, locations and results of such activities. On receiving the said information, the Secretary General of the United Nations should be prepared

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29. Dausges, National Sovereignty and Remote Sensing of Earth Resources by Satellites (1972), 16th Colloq. on the Law of Outer Space 131.

to disseminate it immediately and effectively.

(emphasis added).

This provision is said to permit data collection and calls for dissemination of the information gained. The U.S. approach would then be in accordance with the intent and purpose of the above provision, while the proposals submitted by the Latin American countries and by France and the Soviet Union would be contrary to them "unless an interpretation of the wording" to the greatest extent feasible and "practicable" would show that the proposed restricted data dissemination is the broadest dissemination feasible and practicable".<sup>30</sup> Other legal scholars are of the opinion that the drafting history of this article indicates that no obligation was imposed on states to report activities; "the better premise is that nothing in the Outer Space Treaty prohibits open dissemination and that its general provisions encourage it".<sup>31</sup>

#### Arguments in Favour of a Restricted System of Remote Sensing

The most radical proposition is the one which unites the legality of remote sensing with the place from which it is

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30. Polter, Remote Sensing and State Sovereignty (1976), 4 JI of Space L. 107.

31. Moore, Remote Sensing and International Law (1976), 20th Colloq. on the Law of Outer Space 370.

conducted, rather than the nature of the data collected or the location of the data. Such a proposition entails that the principle of territorial sovereignty applies to remote sensing activities, and no such activity could be carried out without the express consent of the sensed state. Consequently, any state whose satellites would be sensing another state's territory would be acting against a rule of international law.<sup>32</sup>

Moreover, it is argued that the sovereignty principle is not abandoned in the Outer Space Treaty. As stated by a leading Soviet jurist, the Outer Space Treaty also established the duty of states to conduct their activity to explore and utilize outer space in conjunction with international law, including the U.N. Charter. The U.N. Charter is based on the principles of sovereign equality and non-intervention in the internal affairs of states.<sup>33</sup> Additional support for this position is found in General Assembly resolutions affirming a country's permanent sovereignty over its natural resources.<sup>34</sup>

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32. Vereshchetin, State Sovereignty and Use of Outer Space for Applied Purposes, in Soviet Law and Government, (1976), XV, 79.

33. Ibid.

34. U.N.G.A. Res. 1803(XVII), 14 Dec. 1962 on "Permanent Sovereignty over Natural Resources". The substance of this resolution has been re-stated many times including in the Declaration on the Establishment of a New International Economic Order, U.N.G.A. Res. 3201 (S-VII), 1 May 1974.

Yet another question which arises is whether the principle of national sovereignty over natural resources ought to be extended to the information and data obtained over these resources, which would thus imply that no data could be disseminated without the prior consent of the sensed state. This view is espoused by Soviet writers.<sup>35</sup>

Of the other space treaties, only the Liability Convention could have a bearing on remote sensing activities, but the general consensus is that this Convention does not apply to remote sensing.<sup>36</sup>

There exists only one multilateral convention concluded outside the scope of the United Nations which favours a limited regime for the dissemination of data. This is the Convention on the Transfer and Use of Data of the Remote Sensing of the Earth from Outer Space.<sup>37</sup> This Convention was

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35. Vereshchetin, Legal Regulation of Investigation of Natural Environment from Outer Space (1970), 14th Colloq. on the Law of Outer Space 110. See also Cocca, Legal Problems Relating to the Evaluation, Conservation and Development of Earth Resources by Means of Space Objects (1970), 14th Colloq. on the Law of Outer Space 108; Cocca, Remote Sensing of Natural Resources by Means of Space Technology, a Latin American Point of View (1971), 15th Colloq. on the Law of Outer Space 14.
  36. Gorove, Sovereign Rights in Outer Space (1976), 20th Colloq. on the Law of Outer Space 244.
  37. U.N. Doc. A/33/162, (1978).

signed by Bulgaria, Hungary, the German Democratic Republic, Cuba, Mongolia, Poland, Romania, Czechoslovakia and the U.S.S.R. Article 4 of the Convention provides that a "Contracting Party in possession of initial data of the remote sensing of the Earth from outer space, with a better resolution than 50 meters on the terrain, relating to the territory of another Contracting Party shall not disclose or make them available to anyone except with an explicit consent thereto of the Contracting Party to which the sensed territories belong, nor shall it use them or any other data in any way to the detriment of that Contracting Party". This proposal has also found its way to the Legal Sub-Committee but only as a working paper.<sup>38</sup>

#### The Development of Legal Principles in the U.N. Framework United Nations Discussions

COPUOS through its Legal Sub-Committee is today firmly established as the principal organ for the drafting of international agreements pertaining to outer space activities. In view of the universal interest in remote sensing by satellites, it was to be expected that the U.N. would express a

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38. U.N. Doc. WG/RS (1982/WP/4), (1982), in A/AC.105/305, annex I, 18.

need to study and debate the possibilities of international regulation of remote sensing activities. The 1968 U.N.-sponsored International Conference on the Exploration and Peaceful Uses of Outer Space, held in Vienna, represents the "birth" of active U.N. concern with satellite remote sensing. This renewed attention given to remote sensing techniques saw the 1969 report of the sixth session of the COPUOS Scientific and Technical Sub-Committee call attention to remote sensing techniques as means suited to the planning of global resources.<sup>39</sup> Then U.N. General Assembly Resolution 2600(XXIV) of 16 December 1969, entitled "International Cooperation in the Peaceful Uses of Outer Space" expressed the desire that "earth resources survey satellite programs be available to produce information for the world community as a whole", and requested COPUOS:

to continue its studies with regard to the possibilities of further international cooperation, in particular in the framework of the United Nations system, in connection with the development and use of remote earth resources surveying techniques so as

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39. U.N. Doc. A/AC.105/55 and Add., (1969).

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

By July 1970, the Committee had already received a proposal from Argentina for a draft agreement on activities carried out through remote sensing satellite surveys of earth resources.<sup>40</sup>

Pursuant to General Assembly Resolution 2733C(XXV) of 16 December 1970 a "Working Group on Remote Sensing of the Earth by Satellites" was created as an organ of the Scientific and Technical Sub-Committee, and whose main objective would be to promote the optimum utilization of this space application including the monitoring of the total earth environment for the benefit of individual states and of the international community, taking into account, as may be relevant, the sovereign rights of states and the provisions of the Treaty on the Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies.<sup>41</sup>

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40. U.N. Doc. A/AC.105/85, Annex I, (1970).

41. U.N. Doc. A/AC.105/118, (1973).

Between 1972 and 1974 the Working Group held three additional sessions but it did not discuss the legal issues in depth. In May 1974, for the first time the subject of remote sensing was considered by the Legal Sub-Committee. The Working Group prepared a report including a list of topics based in part on questions raised during previous debates. The conclusion of the report is that in any future work in this field, including elaboration of internationally agreed guidelines, principles or any binding legal instrument, the following different principal factors should be taken into account: the rights, interests and obligations of states, the sovereign rights of states, the need for maximum dissemination of remote sensing data in order to promote equitable access by states to such data and to ensure for all states those particular important benefits of remote sensing derived only from the study of data on a regional and global scale, the common interest of mankind in resources and environmental information, the interdependence between organizational aspects and international legal arrangements, and the nature of the data derived from remote sensing activities.<sup>42</sup>

In 1975, the Legal Sub-Committee was asked by the General

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42. Report of the Working Group on Remote Sensing of the Earth by Satellites on the work of its third session U.N. Doc. A/AC.105/125, (1974), para. 82.

Assembly to explore "the legal implications of remote sensing of the earth from space, taking into account the various views of states expressed on the subject, including proposals for draft international instruments". For these purposes, Working Group III was established.<sup>43</sup>

As preparations for the first meeting of Working Group III were being carried out, the following countries presented working papers: Argentina,<sup>44</sup> Brazil,<sup>45</sup> France,<sup>46</sup> the U.S.S.R.,<sup>47</sup> France/U.S.S.R.,<sup>48</sup> the U.S.A.,<sup>49</sup> and Argentina/Brazil, co-sponsored by Chile, Mexico and Venezuela.<sup>50</sup>

A comparison of the above-mentioned proposals makes it possible to divide them according to the following important aspects:<sup>51</sup> international cooperation, sovereignty, responsibility for activities concerning remote sensing, access to data, authorization to use data, consultation, and the role

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43. U.N.G.A. Res. 3234 (XXIX), 12 Nov. 1974.

44. U.N. Doc. A/AC.105/C.2/L.73.

45. U.N. Doc. A/AC.105/122.

46. U.N. Doc. A/AC.105/L.69.

47. U.N. Doc. A/AC.105/C.2/L.88.

48. U.N. Doc. A/AC.105/C.2/L.99.

49. U.N. Doc. A/C.1/1047.

50. U.N. Doc. A/AC.105/C.2/L.103.

51. Reijnen, Legal Aspects of Outer Space, (1976), 100-5.

of the United Nations.

With regard to sovereignty, all proposals, except that of the United States, stated that national sovereignty and independence had to be respected. The proposals submitted by Brazil and by France indicated that no remote sensing could be carried out without the prior consent of the state to be sensed. The Franco-Soviet proposal, while in favour of strict control over the dissemination of information, did not however require prior consent to the act of sensing.

As to access to data, the Argentine proposal was in favour of a databank, while the Brazilian proposal emphasized full and unrestricted access to all data for the sensed state. The U.S. proposal suggested that data should be made available to interested states, international organizations, individuals, scientific groups and others.

Finally, with respect to the need of obtaining authorization to use data, only the Argentine/Brazilian proposal contained a provision stating that authorization should be obtained from the state whose natural resources were being sensed.

In 1976, the Working Group succeeded in formulating the text of five draft principles,<sup>52</sup> and also agreed on a pro-

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52. U.N. Doc. A/AC.105/171, Annex III, (1976).

visional definition of the terms "data" and "information".<sup>53</sup> Several subsequent contributions were grouped as eleven principles in 1977.<sup>54</sup> Finally, Austria in an effort to identify common ground among the welter of proposals, identified 17 principles.<sup>55</sup> Principles XIII to XVI dealt with the sovereign rights of states and the dissemination of data and information. However, no consensus could be reached for their adoption. Discussions at the 18th through 20th sessions of the Legal Sub-Committee and its Working Group in between 1979 and 1981<sup>56</sup> on guiding principles failed to reduce the larger number of conflicting principles. For these reasons, principles XIV to XVII are still completely within brackets indicating that no agreement has been reached.

Clearly the most controversial provisions are those embodied in principles XV and XVI. The prior consent issue can be expected to remain the most controversial issue facing

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53. U.N. Doc. A/AC.105/195, (1977).

54. U.N. Doc. A/AC.105/196, Annex III, (1977).

55. Proposal by Austria U.N. Doc. A/AC.105/C.1/WG.III, (1978) WP.4.

56. See U.N. Doc. A/AC.105/240 Annex I, Appendix 1 (1979); U.N. Doc. A/AC.105/271, 1980; U.N. Doc. A/AC.105/288, (1981) and Annex I.

COPUOS Working Group III. States possess diametrically opposed views on this question which pits states supporting a policy of free and open dissemination of data and information against those states opposed on grounds of national economic and military security. The former argue that the principle of freedom of exploration and use of outer space set out in the Outer Space Treaty, together with the Treaty's article XI prescription that states inform the Secretary-General of the U.N. as well as the public and the international scientific community to the extent feasible and practicable of the nature, conduct, locations and results of outer space activities, condone free and open dissemination of remote sensing data and information.

Those opposed argue that the Outer Space Treaty applies only to activities in outer space. The "ground segment" of remote sensing activities is argued to be governed by principles of territorial sovereignty applicable not only to a state's wealth and natural resources, creating an inalienable right to dispose of such resources, but to information concerning those natural resources. For economic, military<sup>57</sup> and political reasons, these states seek to control the use of resources through control of access to data and information relating to them. Prepared to concede to sensing states

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57. Though the text refers to "natural resources", military security is at issue where "spatial resolution" is a criterion for distinguishing between data on natural resources and data on the natural environment.

implicit rights to sense and disseminate freely data and information relating to "international" areas and the natural environment of the earth, they seek to restrict access by third states, international organizations and public or private entities to all "sensitive" data pertaining to a sensed state's territory.

Both views antedate the first Working Group III enunciation of common elements, articles IX and II of the Argentina-Brazil and U.S.S.R.-France drafts respectively forwarding the former, and articles IV and V of the U.S. draft forwarding the latter, proposition.

The text of the present prior consent principle, which states only the restrictive position, evolved from the text of a working paper submitted by Chile, Nigeria and Sierra Leone to the 1978 Working Group III session, together with informal compromise proposals. No consensus was reached at that time.

The 1978 session continued discussion of the sovereignty principle first appearing in the 1977 text<sup>58</sup> as an un-numbered "compromise" wording after extensive discussion of a Mongolian proposal,<sup>59</sup> and reproduced in the 1978 text as Principle XIII

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58. U.N. Doc. A/AC.105/196 Annex III, (1977).

59. U.N. Doc. A/AC.105/171 Annex IV, (1976).

after discussion of a Mongolian "compromise" proposal.<sup>60</sup> The three viewpoints presented ranged from full support of the Principle as stated, through support for a "sovereignty" statement without reference to information, to opposition to inclusion of any sovereignty statement at all due to its lack of relevance to remote sensing from space. While the 1978 Mongolian proposal did not include a reference to information, states continued to oppose inclusion of any such provision.

In 1979, a Romanian proposal<sup>61</sup> dropped the reference to sovereignty over information in favour of a formulation referring to sovereignty as including the right of access to information relating to wealth and natural resources.<sup>62</sup> Agreement was not forthcoming and the previous textual formulation was retained. The 1980 session referred again to the Romanian proposal but no further discussion ensued. The provision remained unchanged in 1981.

Discussion of the prior consent provision in 1979, 1980 and 1981 saw a full range of arguments presented. On the

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60. U.N. Doc. A/AC.105/C.2/413, (1978).

61. U.N. Doc. A/AC.105/C.2/L123 as set out in U.N. Doc. A/AC.105/240 Annex IV, (1979).

62. Thus linking the provision to access as opposed to prior consent.

premise that there should be no international restriction on dissemination of remote sensing primary data or analysed information, proponents of an open-dissemination regime pointed out that, given the absence of provisions restricting the act of sensing itself, sensing states would have data relating to sensed states regardless of the imposition of the proposed dissemination restrictions. These delegations argued that placement of mandatory constraints on dissemination would result in administrative, financial and technical burdens detrimental to development of programs of remote sensing of the earth. They also suggested that legal difficulties could arise from a declaration limiting the dissemination of certain data in light of classical international law.<sup>63</sup> As regards classification of certain types of data these states argued that the U.S.S.R.'s "spatial resolution" criterion was neither a reliable nor a standard reference because of practical and technical difficulties in establishing the actual spatial resolution in each instance. Reference was made to the Scientific and Technical Subcommittee's assessment of this criterion.<sup>64</sup>

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63. A reference perhaps to obligations arising out of military alliances.

64. Particularly U.N. Doc. A/AC.105/238 Annex 1, (1979), 1-2, paras. 3, 8 and 9.

Certain proponents of prior consent to dissemination of certain types of data that could be used to the detriment of sensed states, faced with the need to distinguish between data concerning natural resources and that concerning the environment, and generally of the opinion that the issue involved the sovereignty of states, moved towards the U.S.S.R. classification criterion of spatial resolution. Others expressed the opinion that the criteria upon which to base any classification should be studied further.

The 1979 session had before it a new Soviet prior consent proposal<sup>65</sup> introducing several new concepts.

It should be noted, firstly, that the proposal encompassed data and information on both the natural resources of the earth and its environment. Secondly, as opposed to the present Principle XV formulation which related to dissemination to third states, international organizations and public or private entities, this proposal related only to third states, their natural and juridical persons.

The proposal would seem to have raised more questions than it answered. In referring to "certain types" of data and information while implying that "type" may be seen in

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65. W.G. III (1979)/W.P.1/Rev.1, reproduced as Appendix B to U.N. Doc. A/AC.105/240 Annex 1, (1979).

terms of spatial resolution, the proposal would allow states to declare any and all dissemination subject to their prior consent. One foresees tremendous difficulties of interpretation arising as states formulate their declarations in differing terms. Nor did the proposal address the question of states altering the content of their declaration over time.

Although the 1980 and 1981 Working Group III reports do not specifically refer to the Soviet proposal, they cannot be presumed dead. They might best be described as one more attempt in the Soviet line of proposals aimed at resolution of the prior consent issue on a basis generally consistent with the U.S.S.R.'s broadly supported stance in favour of prior consent. Their tacit endorsement of dissemination within the sensing state evidences willingness to profit from its own sensing activities while conceding certain ground to those favouring open dissemination. To the extent that the proposal broadens restrictive possibilities, however, it appears a retrograde step surely unacceptable to certain states.

#### Conclusion

From the foregoing it may be concluded that international law and outer space law are somewhat in a state of confusion.

Globally, the only provision more or less applicable to remote sensing is article XI of the Outer Space Treaty which seems to favour an open system of dissemination. While some commentators hold the view that the principle of sovereignty has been abolished by space law, others feel that this principle may still receive a limited application in law.

Though agreement has been reached on certain principles embodied in the latest text of the Legal Sub-Committee of COPUOS, the agreed upon principles involve restatements, with minor modifications, of principles already set out in the Outer Space Treaty, and are thus of limited value. In this category fall the principles of the common interest of mankind (Principle II), the conduct in accordance with international law and the United Nations Charter as well as the Outer Space Treaty (Principle III), the requirement for international cooperation (Principle IV), protection of the natural environment (Principle V), making technical assistance available (Principle VI), the requirement for activity in a manner compatible with the legitimate rights and interests of states (Principle X) and on international responsibility (Principle XI).<sup>66</sup>

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66. See U.N. Doc. A/AC.105/288, (1981).

Unfortunately, the question regarding an open system of dissemination has not yet been solved. Since neither treaty law nor customary international law expressly prohibit the act of remote sensing, one can assume that such an activity is presently allowed.

The only regional agreement concerning remote sensing is the East European Convention on the Transfer and Use of Data of the Remote Sensing of the Earth from Outer Space signed by a few countries. This Convention limits the freedom of dissemination in certain aspects, and only applies between signatories to the Convention. Thus, it has no bearing on the behaviour of other countries involved in remote sensing.

g) Legal Aspects of Remote Sensing with Respect to Military Uses (Reconnaissance Satellites)

The majority of military satellites launched between 1957 and 1981 have been reconnaissance satellites.<sup>1</sup> Military satellites represent approximately three-quarters of all satellites launched,<sup>2</sup> making it therefore obvious that reconnaissance satellites are of the utmost importance to states.

Most reconnaissance satellites are launched by the U.S.A. and the U.S.S.R., the latter taking the biggest share since the American satellites have a longer lifespan. With respect to photographic reconnaissance satellites, the U.S.S.R. has launched between 34 to 37 satellites a year, while the U.S.A. has only launched 2 to 4 satellites a year.<sup>3</sup>

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1. Of the 1917 satellites launched between 1957 and 1981, 1099 have been reconnaissance satellites or 57.3%; Jasani, Contribution of Space Technology to the Arms Race, Outer Space - A New Dimension of the Arms Race, Jasani (ed.), (1982), 94-5. Other satellites included navigation satellites (97) communications satellites (495), meteorological satellites (134), geodetic satellites (40), fractional orbital bombardment system satellites (17) and interceptor destructor satellites (33).
  2. Jasani, ibid., 41-2.
  3. Ibid.

Reconnaissance satellites can be divided into four types: photographic, electronic, ocean surveillance and early-warning. Each type has a different function and its orbit is adjusted to that specific function.<sup>4</sup>

Photographic reconnaissance satellites have a low orbit around the earth (100-290 km for the Big Bird, of which four were launched between 1977 and 1980, 240-530 km of the KH-11 series of which four were launched between 1977 and 1981 and 180-350 km of the Cosmos series of which 20 were launched between 1977 and 1981).<sup>5</sup> These satellites use return-beam television cameras, multispectral cameras and microwave radar.

Electronic reconnaissance satellites have equipment designed to detect and monitor radio signals generated by enemy military activity. Their orbits are slightly higher than the orbits of photographic reconnaissance satellites (400 km for U.S. satellites and between 500 and 650 km for Soviet satellites).<sup>6</sup>

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4. Ibid.

5. Ibid., 45. See also Appendix IA, 331.

6. Ibid. 50-1.

Ocean surveillance satellites, as their name indicates, monitor the ocean including military surface vessels. Their orbit is not comparable to that of civil remote sensing satellites, namely 1100 km for U.S. satellites. Soviet satellites use the same technique and orbit as photographic reconnaissance satellites, that is, about 250 km.<sup>7</sup>

Early warning satellites are used to detect enemy missiles through the use of sensors sensitive to the infra-red radiations emitted by the hot plume of a rocket. American satellites circle in an orbit of 36,000 km around the earth, while Soviet satellites orbit between 600 and 39,000 km.<sup>8</sup>

The U.S. has also launched 12 nuclear explosion monitoring satellites which have an orbit of 100,000 km.<sup>9</sup>

Reconnaissance satellites<sup>10</sup> differ in several ways from

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7. Ibid. 54.

8. Ibid. 57.

9. Ibid. 58.

10. The comparison will basically be between remote sensing satellites and photographic reconnaissance satellites since the latter represent the majority of all reconnaissance satellites.

remote sensing satellites. Firstly, the number of reconnaissance satellites launched vastly exceeds the number of remote sensing satellites launched. Between 1957 and 1981 20 remote sensing satellites were launched for civilian purposes,<sup>11</sup> while 1099 military reconnaissance satellites were launched. Secondly, while remote sensing satellites in most cases study the natural processes of the earth or its natural resources, military satellites are solely designed to study man-made structures, objects and human activities.<sup>12</sup> Since the man-made military objects are of a different nature and scale than those of the earth's natural processes, the demands for spatial resolution are different and consequently the achievements are greater. Military satellites need to have a spatial resolution of at least 30 meters while in some circumstances less than a meter might be required. The achievements in this field are stunning, and resolutions of up to 15 cm have been

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11. Of these 20 satellites, only 8 were specifically designed for remote sensing, namely Nimbus 5,6,7, 6 for microwave data and Landsat I, II, III and D for photographic and multispectral data. The other remote sensing activities were conducted as additional experiments to projects such as Viking, Mercury and Gemini. The same can be said for the Apollo 6,7,9 and 17 missions and the Skylab mission.

12. Jasani, supra, note 1, 47.

mentioned.<sup>13</sup> Remote sensing satellites have had achievements of 30 meters for the Landsat D satellites and 25 meters for the Seasat satellite.<sup>14</sup>

The extremely precise results obtained by the use of military satellites stems from the fact that they are placed in a much lower orbit (250 km) than remote sensing satellites (between 600 and 1,100 km).

Another difference between remote sensing and reconnaissance satellites is the mode of dissemination of information. Remote sensing still operates under an open system of dissemination, while in the reconnaissance sphere the flow of information is very limited. The U.S.A. and the U.S.S.R. basically keep the information to themselves, although one might expect that some data is made available to their respective allies.

Finally, while Landsat satellites more or less indiscriminately record data from every conceivable place on earth, the military satellites most probably concentrate their ef-

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13. Santhanam, *Use of Satellites in Crises Monitoring*, in Jasani, *supra*, note 1, 266.

14. *Aviation Week and Space Technology*, (hereinafter A.W.S.T.), 3 May 1982, 56-7; 14 June 1982, 87-94; and 2 Aug. 1982, 17.

forts on the territories of their respective enemies and places where a crisis situation occurs, which in most cases is less frequent than when remote sensing data is acquired.<sup>15</sup>

The result of this difference is that the flow of remote sensing data is not seen by a majority of countries as strategically significant as that of reconnaissance satellites which have been considered an important stabilizing factor in world affairs in the monitoring of arms control agreements, and to contributing to the security of all nations.<sup>16</sup> They are thus viewed as a means to provide for world peace and security.<sup>17</sup>

In the near future, it might be expected that the division between sensing satellites and reconnaissance satellites will become blurred. Remote sensing satellites might very well be-

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15. Jasani, supra, note 1, 105.

16. Remarks of President Carter at the Congressional Space Metals Awards Ceremony, 14 Weekly Com. of Pres. Doc. 1686 (1 Oct. 1978), cited in Reed and Norris, Military Use of the Space Shuttle (1980), 13 Akron L. Rev. 665, 670.

17. Santhanam, supra, note 13, 265.

come more useful for civil man-made activities like urban planning and monitoring traffic. Furthermore, it is expected that the achievements of remote sensing satellites are expected to come close to those of military reconnaissance satellites (the SPOT satellite is expected to reach a resolution of 5 or even 25 meters).

As one might expect, the development of a legal regime for reconnaissance satellites or a lack thereof took a different path than the discussions regarding remote sensing satellites. Although the principle is basically the same, namely whether or not the sovereignty principle can be applied to information concerning resources or activities happening within the territorial boundaries of a state, in the case of military remote sensing security interests rather than economic interests are the key factor. This fact combined with the quite different nature, objectives and achievements of reconnaissance satellites makes it hardly surprising that the opinions regarding the use of reconnaissance satellites differ from those relating to remote sensing.

The use of reconnaissance aircraft over state territory is not allowed in international law, since this is considered a violation of the sovereignty principle embodied in the 1944 Chicago Convention.<sup>18</sup> The U2 affair makes this abundantly clear.

Although from the beginning of the space age, the use of outer space was considered unrestricted, it was clear that the free use of reconnaissance satellites would cause serious problems. Early Soviet writings criticized the United States for conducting space espionage by satellite:

From the view-point of the security of a state it makes absolutely no difference from what altitude espionage over its territory is conducted. Any attempt to use satellites for espionage is just as unlawful as attempts to use aircraft for similar purposes.<sup>19</sup>

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18. See arts 1 and 36 of the Chicago Convention, (1947) T.I.A.S. 1591.

19. Zhukov, Space Espionage Plans and International Law, in (1960), *International Affairs*, (Moscow), 55-6. See also Tunkin, Theory of International Law, (1974), 439.

Another legal argument put forward by Soviet writers was that the use of reconnaissance satellites would contravene the letter and spirit of several early U.N. resolutions which called for the use of outer space for peaceful purposes.<sup>20</sup> The Soviet interpretation of "peaceful" is "non-military" which implies that all military activities in outer space are banned, including the use of military satellites, even if such an activity does not represent an act of aggression or war.<sup>21</sup> In 1962, the U.S.S.R. even made a proposal to the United Nations for a ban on military activities in outer space, including reconnaissance.<sup>22</sup>

However, though the Russian legal writers kept insisting on the illegality of reconnaissance satellites, the viewpoint of their political leaders changed quite abruptly after 1963. During the discussions concerning the Declaration of Legal Principles,<sup>23</sup> the Soviet draft provided for the banning

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20. U.N.G.A. Res. 1348(XIII), 13 Dec. 1958, "Question of the Peaceful Use of Outer Space", U.N.G.A. Res. 1472(XIV), "International Cooperation and the Peaceful Uses of Outer Space", 12 Dec. 1959.

21. Matte, Aerospace Law, (1969), 271.

22. Ibid.

23. U.N.G.A. Res. 1962(XVIII), 13 Dec. 1963.

of satellites "incompatible with the objectives of mankind in its conquest of outer space".<sup>24</sup> Such a provision was not to be found in the final Declaration. During these discussions the Soviet delegate stated:

This Declaration could not be applied to the military use of outer space since the problem was closely related to that of global disarmament under international control which would result in the destruction of all types of weapons.<sup>25</sup>

This opinion reflected the attitude of the Soviet Union that it no longer protested against the use of outer space for military purposes. Presumably, the reason for the change was that the Soviets themselves found important benefits in satellite based photography but criticized the U.S. until acquisition of the proper technology to produce equipment of the same quality as that of the U.S.A.<sup>26</sup>

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24. U.N. Doc. A/AC.105/C.2/L1.

25. U.N. Doc. A/AC.105/C.2/SR.7, 4.

26. Mostafa, *Disarmament in Outer Space and the Outer Space Treaty* (1971), 37 *Rev. Egyptienne de droit int'l* 51. See also Frye, *Soviet Space Activities - A Decade of Pyretic Politics*, in Bloomfield, *Outer Space Prospects for Man and Society*, (1960), 181.

The United States' position was stated by Senator Gore during the 1962 General Assembly session:

The test of any activity must not be whether it is military or non-military but whether or not it is consistent with the U.N. Charter and other obligations of international law - observation from space is consistent with international law, just as observation from the High Seas.<sup>27</sup>

Although the Declaration of Principles has important moral and legal value, it does not have the same binding effect as a treaty. Article IV of the Outer Space Treaty deals specifically with military activities in outer space.

The problem of reconnaissance was not brought up and the consensus was that article IV does not fully demilitarize outer space. Of the activities not excluded, reconnaissance is one of the most important.<sup>28</sup> In this context, the following comment is indicative:

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27. U.N. Doc. A/C.1/N 1289.

28. Other activities allowed are: space objects equipped with conventional weapons; satellites which carry nuclear weapons but do not complete an orbit around the earth; all ballistic missiles.

The development of prohibited orbital vehicles could have some serious implications. ... this threat can be answered only through intensified United States efforts to develop capabilities to detect and verify the orbiting of nuclear weapons or those threatening mass destruction.<sup>29</sup>

The extent to which the Soviet legal attitude has changed regarding reconnaissance satellites is clearly illustrated by the opinion of a Soviet writer who has expressed the view that the 1972 Soviet-American SALT I Treaty recognizes the use of inspection by satellites to ensure observance of obligations under the Agreement.<sup>30</sup> Article XII of the Agreement states:

In order to ensure compliance with the provision of this treaty, each State Party shall use the national technical monitoring facilities available to it, in a manner consistent with generally recognized principles of international law.

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29. Hearings on the Treaty of Outer Space before the Committee on Foreign Relations, United States Senate, 19th Cong., 1st Sess., (1967), 84.
  30. Kolosov, Space and International Law, (1977), International Affairs, (Moscow), 57.

### Conclusion

The U.S.S.R. and U.S.A. have been conducting reconnaissance missions from outer space for over two decades. Although no explicit provision allows such an activity, the negotiations surrounding the drafting of the Outer Space Treaty and the interpretation of this Treaty indicate that reconnaissance is not excluded.

However, recently some doubt regarding this type of space activity has emerged during a SIPRI sponsored symposium in Stockholm between 17-20 November 1981; speakers from third world countries voiced their objections to the present method of military data gathering, as conducted by the space powers. Their arguments, although not expressed in legal terms, seem to resemble the arguments used in the remote sensing debate, namely the violation of the independence and sovereignty of non-space powers.<sup>31</sup>

It seems therefore that in this respect the circle has closed. Third world countries are starting to use the same objections against military remote sensing as they have done for years against remote sensing.

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31. Santhanam, supra, note 13, 271-3. See also Abdul-Hady & Sadeki, Verification Using Satellites - Feasibility of an International or Multinational Agency, in Jasani, supra, note 1, 275-7.

The distinction between remote sensing and reconnaissance satellites is also becoming less clear. As already mentioned, achievements and objectives of both types of satellites for the study of earthbound events are becoming similar. Some satellites are already used for both purposes. Remote sensing satellites are increasing their spatial resolution so dramatically that remote sensing satellites will be able to fulfil the functions of reconnaissance satellites.

A rapprochement between reconnaissance and remote sensing satellites has also occurred in a legal sense. The discussion on "peaceful purposes" of outer space between the U.S.A and U.S.S.R. has become obsolete, since both super-powers presumably consider reconnaissance a "peaceful" use of outer space, even in the strict interpretation given to this term by Soviet commentators. Thus COPUOS, which has the authority to consider the interpretation of the term "peaceful purposes", would also be entitled to discuss the reconnaissance problem.

One can note, furthermore, that the solution proposed by the aforementioned third world scholars is the establishment of an International Satellite Monitoring Agency (ISMA).<sup>32</sup> This is a different trend than the one suggested in COPUOS with respect to remote sensing.

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32. France made a similar proposal in 1978. See U.N. Doc. A/S - 10/AC.1 17, (1978).

h) International Law and Anti-Satellites

One of the most serious developments in space weapon systems has involved the concept of anti-satellites, also described as killer satellites, hunter-satellites, satellite interceptors and inspector-destroyer satellites.<sup>1</sup> Anti-satellites (ASATs) are "space-based" and "space-directed" weapons. The purpose of an ASAT is to destroy or render inoperative satellites of a hostile state. Anti-satellites can be directed at "passive" military support satellites (reconnaissance, telecommunications), they can be directed to neutralize satellites whose purpose is to verify arms limitation agreements, or they can be used to destroy satellite systems with more "aggressive potential".<sup>2</sup> ASATs could just as easily be used to interfere with satellites intended for peaceful uses. Activities that might be harmed include communications of all kinds, such as commercial navigation, weather,

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1. Vlastic, Disarmament Decade, Outer Space and International Law (1981), 26 McGill L. J1 135, 158.
  2. For example, the U.S. Navstar Ground Positioning Satellite systems that can position missiles and aircraft within an accuracy of 10 meters in three dimensions anywhere on earth can easily be seen as an inviting target for destruction. Scoville, Can Space Remain a Peaceful Environment?, The Stanley Foundation, 1978, 18.

and air traffic.<sup>3</sup> Civilian remote sensing and direct broadcast satellites could also be destroyed.

Both the Soviet Union and the United States are developing ASAT systems. Observers of the Soviet space program suggest that the Soviets began carrying out tests of anti-satellites around 1971,<sup>4</sup> and continued at an increasing pace until 1978 after which there was a two year moratorium on testing which ended around April 1980.<sup>5</sup> The Soviet Union launched three test satellites in 1981. These tests were of the co-orbital type in which the interceptors were almost in the same orbital plane as the target. It is worthy of note that on 14 March 1981 it was reported that the USSR had "scored a success" in its first operational test of a satellite-killing space weapon in more than three years.<sup>6</sup>

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3. Christol, Article IV and 1967 Principles Treaty: Its Meaning and Prospects for its Clarification, paper submitted at the XXIXth Congress of the International Institute of Space Law of the IAF held in Dubrovnik, 1-8 Oct. 1978, 5.
  4. Stockholm International Peace Research Institute (SIPRI), Outer Space - Battlefield of the Future (1978), 115.
  5. Vlasic, supra, note 1, 158 and references cited therein.
  6. According to U.S. Defense Department sources the satellite caught up with a target satellite over Eastern Europe and blew itself up damaging the target satellite, The New York Times, 19 March 1981, 1.

The United States took the initiative to limit the development of ASATs after it became clear that the Soviet Union had begun to test such weapons. President Carter, in his policy statement of 20 June 1978, made it clear that the U.S. preferred limitations on the deployment of ASATs but, at the same time, warned that if an appropriate verifiable agreement to this effect could not be attained, the U.S. would rigorously pursue the development of its own ASAT system.<sup>7</sup> The U.S. is planning to begin operational testing of its ASAT system in 1983 which may achieve operational status by 1985.<sup>8</sup> Informal talks aimed at the "control and elimination of anti-satellite capabilities" were held in 1978 and 1979, all with inconclusive results.<sup>9</sup> However, a significant move made by the Soviet Union in 1981 appears to have removed the discussion from the bilateral forum to the multilateral one. In August 1981, the U.S.S.R. proposed a new treaty, before the U.N., banning the placement of any kind of weapon into orbit around the earth.<sup>10</sup>

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7. White House Press Release, 20 June 1978.

8. Ulsamer, "Go-ahead on USAF's ASAT Programe", Air Force Magazine, vol. 64, no.10, Oct. 1981, 16.

9. Aviation Week & Space Technology (hereinafter A.W.S.T.), 9 July 1979, 18.

10. U.N. Doc. A/36/192, (1981).

To date, six treaties have been concluded which contain provisions aimed at some form of arms control in outer space and offer some protection to satellites: 1) the Treaty Banning Nuclear Weapon Tests in the Atmosphere in Outer Space and Under Water (1963) which bans nuclear detonations in outer space;<sup>11</sup> 2) the Outer Space Treaty (1967) which bans nuclear weapons and other weapons of mass destruction from orbit and obliges the signatories to explore and use outer space "for the benefit and in the interests of all countries";<sup>12</sup> 3) the International Telecommunication Convention, which establishes general regulations to minimize radio-frequency interference with satellite systems;<sup>13</sup> 4) the Accident Measures Agreement<sup>14</sup> in conjunction with the Prevention of Nuclear War Agreement<sup>15</sup> which together oblige both the United States

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11. Art. I.

12. Art. I.

13. Art. 38(1).

14. Agreement on Measures to Reduce the Risk of Outbreak of Nuclear War (1972), 22 U.S.T. 1590, TIAS 7186, 807 U.N.T.S. 57; opened for signature 30 Sept. 1971, entered into force 30 Sept. 1971.

15. Agreement on the Prevention of Nuclear War (1973), 24 U.S.T. 1478, TIAS 7654; opened for signature 22 June 1973, entered into force 22 June 1973.

and the Soviet Union to refrain from interfering with the attack early warning systems of either side, and which would encompass satellites that are components of such warning systems; 5) the Treaty Between the U.S.A. and the U.S.S.R. on the Limitation of Anti-Ballistic Missile Systems (1972), which in article XII obliges the United States and the Soviet Union not to interfere with the national technical means of verification of the other party (this would include satellites that are components of such verification systems); this Treaty also prohibits the development, testing or deployment of ABM systems which are space-based;<sup>16</sup> 6) the Interim Agreement between the U.S.A. and the U.S.S.R. on Certain Measures with Respect to the Limitation of Strategic Arms which provides in article V(2) that "each party undertakes not to interfere with the national technical means of verification of the other Party operating in accordance with paragraph 1 of this Article".

Although the obligations of these agreements are substantial, they alone cannot curb a competition in ASAT weaponry by the two space powers. The major drawback of each of these agreements is that they do not fully limit the testing, acquisition and deployment of such weapons, the corollary being that each side must anticipate that the weapon will in fact be used, and must therefore take appropriate measures.

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16. Art. V.

The essential question which must be asked is whether the United States and the Soviet Union, by developing such space weapons, are on the verge of "massive violations"<sup>17</sup> of international law. Article IV of the Outer Space Treaty, read alone, makes certain legal conclusions clear. First, weapon systems of any kind including conventional weapon systems cannot be lawfully employed on the moon or other celestial bodies.<sup>18</sup> Second, on a strict reading of article IV, anti-satellites "would not be prevented from being placed in outer space, per se".<sup>19</sup> The justifications for this conclusion are that there is no specific stipulation in article IV that space shall be used "exclusively for peaceful purposes" and anti-satellites are not prima facie weapons of mass destruction, but are rather conventional weapons. However, the meaning and the content of the prohibition against placing weapons of mass destruction in outer space has led to disputes. Regarding the suggestion that ASAT weapons may be considered to be included in the prohibition, the negotiations between the United States and the Soviet Union on this matter<sup>20</sup> indicate that they reject

17. Robinson, *The Militarization of Outer Space - Time for a Restatement of Space Law*, *Astronautics & Aeronautics*, Feb. 1978, 26.

18. Christol, supra, note 3, 26.

19. Ibid.

20. Asbeck, *The Militarisation of Space, Armament and Disarmament Information Unit*, vol. 2, no. 3, April/May 1980.

the view that, under the terms of the Outer Space Treaty, the emplacement of anti-satellite devices in outer space is prohibited. This attitude is further emphasized by the Soviet proposal for banning all weapons in space. Furthermore, during discussions of COPUOS, several delegates made a strong appeal to the two space powers to resume without delay their negotiations on a ban of ASAT weapons.<sup>21</sup> Thus, it would appear that the term "weapon of mass destruction" does not cover the emplacement in outer space of ASAT weapons. The same analysis applies to laser and particle-beam weapon systems with one reservation: the incipient nature of such systems makes it difficult to conclude whether such weapon systems would be for the purpose of mass destruction. This would probably depend on the type of system and its designed objectives. Fractional orbital bombardment missiles, although clearly weapons of mass destruction, may also not be prohibited because they are in "outer space" (as yet undefined in international law) for less than one full orbit around the earth. It should be noted that these legal conclusions are based on a "strict" and "narrow" interpretation of such words in article IV as "mass destruction", "celestial bodies", and "in orbit".<sup>22</sup>

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21. U.N. Doc. A/AC.105/EV.220, 27.

22. Vlasic, supra, note 1, 171-2.

This "strict" interpretation of article IV is not necessarily the better view. While it may be fair to ask whether "just because one class of weapons was specifically prohibited based on existing technology in 1967 does ... [this] mean that all other weapons and components of weapon systems would be countenanced?"<sup>23</sup> a substantial majority of legal comentators have answered no to this question. It has been suggested that article IV be read in the light of the whole Treaty, including its preamble which specifies its object and purpose. The real test to judge the permissibility of ASATs should be whether their use promotes international peace and understanding or not.

Articles I and III of the Outer Space Treaty underline the requirement that activities carried out in space be conducted in accordance with international law. International law prohibits aggressive activities. These prohibitions can be found in the Charter of the United Nations. Article 1 states that the first purpose of the United Nations is "to maintain international peace and security" and to that end to take "effective collective measures for the prevention and removal of threats to the peace, and for the suppression of acts of aggression or other breaches of the peace, and to bring about by peaceful means, and in conformity with

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23. Robinson, supra, note 17, 29.

the principles of justice and international law, adjustment or settlement of international disputes or situations which might lead to a breach of the peace". The aggressive nature of ASATs has been admitted by legal commentators: "Since [its] function would be military and potentially aggressive, it must be differentiated from the peacefully-oriented and multipurposed communications and reconnaissance satellites."<sup>24</sup> These aggressive weapons therefore constitute a real threat to international peace and security, and are in breach of the United Nations Charter. Furthermore, it has been concluded by some that the use of physical and electromagnetic means of intercepting and interfering with objects in orbit is fundamentally destabilizing.<sup>25</sup> This conclusion stems from the fact that the development of capabilities by which one nation can interfere with or destroy the satellites of another in space could open up a new arena for the arms race and could lead to hostilities that might spread and escalate.<sup>26</sup> The extent to which self-defence can justify the development of space weapon systems in general international law is of some doubt. It is submitted that, in any case, the principle of self-defence cannot justify the development of space weapon systems

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24. Christol, supra, note 3, 28.

25. Meeker, The De-Militarizing of Outer Space, in Arms Limitation and Disarmament, 17th Strategy for Peace Conference Report, The Stanley Foundation, 1976, 42, 46.

26. Ibid.

in light of the spirit and clear terms of the Outer Space Treaty.<sup>27</sup>

It has been argued that the development of new weapons to create fear and ultimately security is an old idea which is becoming unacceptable.<sup>28</sup> In the same vein, a recent U.N. document on disarmament contains the following and inescapable fact about nuclear weapons:

The very existence of nuclear weapons poses a grave threat to the survival of mankind, because so long as nuclear weapons are allowed to remain in the armoury of any nation the danger of the use of such weapons by design, accident or miscalculation will be ever present, with the grim prospect of a nuclear holocaust.<sup>29</sup>

This fact is true not only of nuclear weapons but also space weapons which have rather more destructive effects

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27. Vlastic, supra, note 1, 174.

28. Solomon, "Security Through Fear is an Old Idea Wearing Thin", The Gazette, Montreal, 4 Aug. 1982, 1-3.

29. U.N. Doc. A/AC.206/19, (1982), 11.

such as ASATs. Member states of the U.N. have increasingly been critical of such weapons and have expressed their concerns about them. Nigeria, for example, during the twenty-first session of the Legal Sub-Committee of

COPUOS, expressed its concern about the development of anti-satellite weapons, high-energy lasers and particle-beam weapons, the deployment of which could make outer space a battlefield of the future.<sup>30</sup>

Since ASAT systems are capable of destroying satellites and possibly earth-based installations, they cannot be in the interest of all mankind. As was recently underlined by the delegate from Chile:

It was to be concluded from the basic instruments that space like the moon and other celestial bodies, was to be used for peaceful purposes, a conclusion that was inherent in the very concept of the common heritage of mankind, one which legally speaking, was the forerunner of space law. There was no room for subtle distinctions between aggressive and non-aggressive military purposes.<sup>31</sup>

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30. U.N. Doc. A/AC.105/C.2/SR.368, (1982), 7.

31. U.N. Doc. A/AC.105/PV.230, (1982), 8-10.

As has been rightly pointed out, "tacit acceptance of the use of contemporary unsophisticated space technology for military surveillance and telecommunications has been interpreted by the super-powers as a licence for an almost unrestricted arms race in outer space".<sup>32</sup> This is clearly contrary to the letter and spirit of the 1967 Outer Space Treaty.<sup>33</sup>

In June 1979, the Soviet Union and the United States terminated their negotiations on arms control measures for anti-satellite weapons. The U.S.S.R. had used these negotiations to attack the Americans' current space priority: the Shuttle. The U.S.S.R. insisted on labelling the Shuttle an anti-satellite weapon.<sup>34</sup>

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32. Vlastic, supra, note 1, 174.

33. Ibid., 204-5. It is equally interesting to note the following remarks made by the Chinese delegation to the twenty-first session of the Legal Sub-Committee of COPUOS:

It was disturbing that the super-powers had now begun to conduct tests of new weapons in outer space and were accelerating the arms race for their attitude constituted a menace to world security and was contrary to international law.

U.N. Doc. A/AC.105/C.2/SR.372, (1982).

34. A.W.S.T., 17 Apr. . 1978, 17.

The Space Shuttle is the first step in the evolution of a reusable spacecraft, which may operate both in air space and outer space. The Shuttle will provide the military services routine access to space with more reliability and at lower cost.<sup>35</sup> From its inception, a significant percentage of the Shuttle's payload capacity has been reserved for military purposes.<sup>36</sup> Due to its offensive and defensive versatility, the military potential of the Shuttle is far-reaching. It not only has the ability of destroying hostile satellites but is also able to launch new satellites, to inspect, repair and refuel old satellites or to retrieve them for return to earth for repair or modifications not possible in space.<sup>37</sup> It has been suggested that the Shuttle will be capable of incapacitating and even "stealing" objectionable space vehicles.<sup>38</sup> This vehicle may also perform tests and experiments in orbit

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35. Mark, *The Impact of Our Enterprise in Space* (1979), 1 *Tech. in Soc'y* 47, 47-50.
  36. According to a recent report, 30% would be reserved for military purposes, *A.W.S.T.*, 6 Oct. 1980, 19.
  37. Reed & Norris, *Military Use of the Space Shuttle* (1980), 13 *Akron L. Rev.* 665, 671.
  38. Scoville & Tsipis, *Can Space Remain a Peaceful Environment?*, *Stanley Foundation Occasional Paper*, no. 18, 1978, 16.

or assemble large structures, such as orbiting space stations, as well as future beam-weapon "battle stations".<sup>39</sup>

Internationally, a controversial aspect of the Shuttle is the perceived possibility of its use in an ASAT role. This is conceivable, since the Shuttle has been developed to serve the requirements of the U.S. space military program as much as, if not more than civilian space needs. As has accurately been pointed out, "many of the operations of the U.S. space shuttle have many similar technical requirements and overt characteristics as has an anti-satellite mission and therefore could be confused with a program to develop an anti-satellite capability".<sup>40</sup> The Department of Defense has, however, consistently stated that the Shuttle will not be used to interfere with any other nation's space program, and was designed to serve as a transporter and not as an anti-satellite.<sup>41</sup> These efforts to label the Shuttle as an ASAT system were viewed by many Americans as an attempt to delay the U.S. space program and to tarnish its image.<sup>42</sup> The

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39. A.W.S.T., 16 Oct. 1978, 42, 43, 48.

40. Scoville & Tsipis, supra, note 38, 16.

41. Washington Post, 4 June 1979, 3.

42. Jasani (ed.), Outer Space - A New Dimension in the Arms Race, (1982), 319.

Soviet Union, as part of its draft treaty regarding weapons in orbit, has expressly stated that: "States Parties undertake not to place in orbit around the earth objects carrying weapons of any kind, install such weapons on celestial bodies, or station such weapons in outer space in any other manner, including any reusable manned space vehicles of an existing type or of other types which States Parties may develop in the future."<sup>43</sup> This proposal clearly embraces several conceivable activities. As underlined by a Soviet commentator:

A whole string of scientific publications exists to show the potential possibility for converting such reusable space vehicles into carriers of different kinds of weapon. This is a dangerous trend in the arms race and merits specific mention in the draft.<sup>44</sup>

This condemnation of manned reusable space vehicles such as the Space Shuttle was quoted as being "tantamount to disabling the United States from using the shuttle for any mission by fraudulent identification of the Shuttle

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43. Art. 1, Draft Treaty on the Prohibition of the Stationing of Weapons of any Kind in Outer Space, U.N. Doc. A/36/192, 20 Aug. 1981.

44. Bogdanov, in Jasani (ed.), supra, note 42, 327.

as a military object".<sup>45</sup>

Military Shuttle activities have been classified under two categories: first, activities that represent a continuation of current military space programs, such as communications, meteorology, navigation, mapping and geodesy, early-warning, surveillance and photo-reconnaissance. These are passive applications in that they do not possess a direct offensive capability.<sup>46</sup> Second, activities that may be classified as defensive measures that have so far been impracticable because of weight and cost, and includes applications designed to protect satellites not included in the first category.<sup>47</sup> The American position is that even though the Shuttle may possess the capability to provide more survivable satellites, it does not alter the passive nature of these satellites. Thus, the nature and extent of military activities of the Space Shuttle will also be limited by the legal regime of space, and uses which may be totally for military purposes so long as they meet the U.S. test of peaceful, that

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45. Almond, Arms Control, International Law and Outer Space, paper submitted to the International Security Studies Program, The Fletcher School of Law and Diplomacy, Tufts University, 27-9 Apr. 1982, 24.

46. Reed & Norris, supra, note 37, 684.

47. Ibid.

is, non-aggressive.<sup>48</sup> Since one of the main functions of the Space Shuttle is satellite inspection, in the absence of an international agreement, even the harmless interception of another country's spacecraft could give rise to serious conflicts. The apparent willingness of the U.S. to have the Space Shuttle play an increasing active military role is indicative once again of a breach of the spirit of the Outer Space Treaty.

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48. Ibid., 657.

PART III. THE USE OF SPACECRAFT FOR MONITORING  
ARMS CONTROL AND DISARMAMENT AGREEMENTS

1. Introduction

As a general proposition, from the perspective of international law, including the law of outer space, there is no provision prohibiting the establishment of an international monitoring agency using satellites to verify compliance with arms control and disarmament agreements. This proposition is borne out by the following discussion.

## 2. International Law and Satellite Monitoring

### a) The U.N. Charter and Space Treaties

The maintenance of international peace and security constitutes one of the expressed purposes of the U.N. Charter. The framework for the establishment of an international monitoring agency to further the causes of peace and security is thus readily reconcilable with the Charter. The various existing space treaties, which have been the subject of substantial analysis above, can also easily accommodate an international agency to monitor arms reduction agreements. The treaties recognize the common interest of all mankind in the progress of the use of outer space for peaceful purposes. Furthermore, one of the most important principles of space law is the recognized freedom of exploration and use without discrimination of any kind, on a basis of equality and in accordance with international law. Space activities are to be carried on in the interest of maintaining international peace and security. Consequently, space treaties countenance the permissibility of satellite monitoring having as its purpose the furtherance of peace and security. As a general proposition, therefore, monitoring by satellite accords with existing space law treaties.

b) The Role of the United Nations

We the Peoples of the United Nations  
determined to save succeeding generations  
from the scourge of war...<sup>1</sup>

With these, the opening words of the Charter of the United Nations began the role of the United Nations in world disarmament. Article 1(1) of the Charter makes it a fundamental purpose of the United Nations to maintain peace and "to take effective collective measures for the removal of threats to the peace".<sup>2</sup> Further specific responsibilities in the field of disarmament are established for the General Assembly and Security Council by articles 11, 26, and 47. Recognizing this role and responsibility the United Nations has expended a good deal of its resources to this end. The primary means by which it has fulfilled its role has been by providing a forum where nations can come together and attempt to debate and negotiate disarmament issues. The principal vehicle of this forum is the General Assembly.

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1. Preamble to Charter of the United Nations.

2. Charter of the United Nations, article 1(1).

## The United Nations General Assembly

Article 11 of the Charter of the United Nations confers upon the General Assembly the responsibility to consider, inter alia, the principles governing disarmament and the regulation of armaments. This responsibility was exercised in the very first General Assembly resolution. Resolution 1(I) 1946 dealt with the question of eliminating atomic weapons as well as all other major weapons of mass destruction from national armaments.

The first session of the General Assembly also saw the adoption of a resolution<sup>3</sup> recognizing the importance of disarmament to world peace and security. The resolution contained recommendations on the formulation of measures for general regulation and reduction of armaments and the complete elimination of nuclear weapons and those of mass destruction. It also recommended the creation of systems of control and inspection to ensure uniform compliance. With this beginning the General Assembly directed its efforts towards an ultimate goal of general and complete disarmament.

The goal of general and complete disarmament as well as the responsibility to achieve that goal has been reaffirmed on an almost yearly basis by the General Assembly.

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3. U.N.G.A. Res. 41(I), 1946.

Considerable difficulties have arisen over the years to deny achievement of this ultimate goal. Consequently, while never losing sight of that goal, the General Assembly has tended to shift the focus of its responsibility to more specific disarmament measures. The focus is on smaller more attainable goals that are more desirable. General Assembly Resolution 2028(XX) 1965, for example, urges urgent consideration of measures to curb the proliferation of nuclear weapons.

The shift in the manner the General Assembly exercises its role in disarmament may also be seen in a recent General Assembly resolution on General and Complete Disarmament.<sup>4</sup> No longer is the form of the resolution that of a sweeping recommendation urging specifically for nations to take measures to bring about general and complete disarmament. Instead, the resolution is divided into eleven parts, each addressing an important smaller issue on disarmament and making recommendations. The issues addressed include prohibitions of radiological weapons and the production of fissionable material for weapons, the strategic arms limitation talks, and conventional disarmament - difficult issues, but perhaps manageable.

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4. U.N.G.A. A/RES/35/156, 1981.

The responsibility of the General Assembly to play a significant role in the attainment of general and complete disarmament has not disappeared, however. The General Assembly is aware that despite some notable successes on more specific issues of disarmament,<sup>5</sup> the role it has been playing in general and complete disarmament is far from adequate. General Assembly Resolution 3448(XXX) 1975 recognized this inadequacy, especially in comparison with existing world needs. An ad hoc committee was set up to review the role of the United Nations in the field of disarmament. Its recommendations included procedural changes to streamline organization of work and the improvement of information services to help keep governments and world public opinion informed on the urgency of disarmament. The General Assembly recognizes that most of its role in disarmament is to improve its own effectiveness.

The General Assembly itself provides a forum for deliberation of disarmament issues; but its attention must also be focused on other issues of world importance. In recognition of the special urgency of disarmament, however,

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5. For example, the Convention on the Prohibition of the Development, Production and Stockpiling of Bacteriological and Toxin Weapons and on their Destruction, of 1975, commended for signature and ratification by U.N.G.A. Res. 2826(XXVI).

the General Assembly has set up two main bodies under its auspices to deliberate and negotiate only on disarmament. These bodies then make recommendations to the General Assembly for further consideration. The two bodies are the Disarmament Commission and the Committee on Disarmament.

c) The Role of the Disarmament Commission and the Committee on Disarmament

The Disarmament Commission

The Disarmament Commission is a subsidiary organ of the General Assembly, reconstituted at the Tenth Special Session of the General Assembly in 1978.<sup>6</sup> It is a deliberative body whose function is to consider and make recommendations on issues in the field of disarmament. It was also specifically entrusted with the task of considering the elements of comprehensive disarmament to make recommendations for action by the General Assembly. Further it was to follow up the decisions and recommendations of the special session on disarmament. The recommendations of the Disarmament Commission are to be submitted to the General Assembly and through it to the negotiating body, the Committee on Disarmament. The membership of the Disarmament Commission consists of all the members of the United Nations.

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6. See, Final Document on the Special Session of the General Assembly on Disarmament, A/RES/S.10/2, 1978, art. 118.

The current Disarmament Commission is a product of the Tenth Special Session of the General Assembly, but this was only a reconstitution. The Commission finds its roots with the beginnings of the United Nations and has had a greater or lesser role in disarmament since then.

The original parent of the Disarmament Commission was created on 24 January 1946 in the first resolution of the General Assembly.<sup>7</sup> It was a body subsidiary to the General Assembly known as the Atomic Energy Commission (AEC). It was composed of the member nations of the Security Council and Canada. The purpose of the AEC was to deliberate and negotiate proposals for the control and utilization of atomic power for peaceful purposes and the elimination of atomic and other mass destruction weapons.

Initial progress was made by the AEC on basic issues, the results of which included General Assembly Resolution 41(I) 1946 recognizing inter alia the need for arms control. The resolution also sharpened the distinction between conventional and atomic weapons disarmament. This led to the establishment of the Commission for Conventional Armaments, by a Security Council resolution of 13 February 1947. This was the second parent body of the Disarmament Commission.

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7. U.N.G.A. Res. 1(I), 1946.

The division of disarmament into categories of conventional and nuclear weapons became a major stumbling block to further progress on disarmament. The Western nations saw the two as separate and independent. The Soviets, however, considered that any reductions in conventional forces should be essentially linked to the elimination of atomic weapons.

The differences could not be resolved and led to a deadlock in deliberations within the AEC in March 1948. Despite General Assembly resolutions<sup>8</sup> urging a resumption of deliberations and more cooperation, the deadlock led to a total breakdown; the activities of the AEC were discontinued in January 1950. Similarly, the Commission for Conventional Armaments became stalemated. The result was a hiatus of two years during which no disarmament discussions took place.

In January of 1952 the General Assembly, by resolution,<sup>9</sup> moved to reestablish its role in disarmament. It abolished the inactive AEC and Commission for Conventional Armaments, then created a new subsidiary body, the Disarmament Commission.

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8. U.N.G.A. Res. 191(III), 1948; U.N.G.A. Res. 299(IV), 1949.

9. U.N.G.A. Res. 502(VI), 1952.

Its membership was to be the same as that of the AEC, that is, the Security Council members plus Canada. The role it was to fulfil was that of a deliberative body working to prepare proposals that would become treaties on general and complete disarmament. Its jurisdiction was over both nuclear and conventional type weapons.

The Disarmament Commission failed to make any significant progress towards its goal by 1954. In light of this and under the recommendations of the General Assembly,<sup>10</sup> the Disarmament Commission established a Sub-Committee. It was composed only of Canada, France, the U.S.S.R., the U.K., and the U.S. in an effort to get the most directly concerned nations seriously discussing the issues. The Sub-Committee became the principal forum for substantive disarmament talks from May 1954 until September 1957. Its main focus was on a comprehensive disarmament plan; but this presented considerable difficulties and partial disarmament measures were also considered. Though there was substantial political pressure for the Sub-Committee to achieve results, and it met 157 times, little came out of it.

In November of 1958 the General Assembly again inter-

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10. U.N.G.A. Res. 715(VIII), 1954.

vened and restructured the Disarmament Commission.<sup>11</sup> Its membership was expanded to include all member nations of the United Nations. Charged with the task of deliberating and submitting to the General Assembly constructive proposals on disarmament, it became a forum of general disarmament discussion giving up its role as a negotiating body. Meetings were irregular during the 1960s, usually preceding General Assembly debates on disarmament. Once again concrete results were beyond the Disarmament Commission. During the 1970s this body was virtually dormant.

This situation existed until the Tenth Special Session of the General Assembly in 1978. The Session was called in recognition of the need for greater efforts by the United Nations on disarmament. One of the results of this Session was the revitalization and strengthening of the disarmament machinery. In doing this, new life was given to the Disarmament Commission by reconstituting it as one of the two main bodies that provide the current framework within the United Nations for disarmament discussions.

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11. U.N.G.A. Res. 1252(XIII), 1958.

### Committee on Disarmament

The Committee on Disarmament as now constituted arose out of the Tenth Special Session of the General Assembly in 1978.<sup>12</sup> Its purpose is to serve as a multinational disarmament negotiating forum of limited size. As a subsidiary organ of the General Assembly, it is composed of forty members including the nuclear weapons states and a balance made up of other representative nations. A special relationship exists with the General Assembly; the Assembly makes requests to it and it reports annually to the Assembly. It is the central forum for multilateral arms control negotiations.

To assist it the Committee on Disarmament receives recommendations on programs of comprehensive disarmament from the Disarmament Commission. It may also set up subsidiary bodies to study specific disarmament issues. The negotiations in the Committee and its bodies are to follow the principles, priorities and procedures established at the Tenth Special Session.<sup>13</sup> These negotiations are to

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12. See, Final Document of the Special Session of the General Assembly on Disarmament, A/RES/S.10/Z, 1978, art. 120.

13. Ibid., "Programme of Action", arts. 43-112.

consider both comprehensive disarmament and partial means of disarmament. To this end, the Committee in 1980 set up an ad hoc working group to study a comprehensive disarmament plan for consideration at the Second Special Session of the General Assembly on Disarmament held in 1982.

The current form of the Committee on Disarmament evolved over the twenty years preceding the Tenth Special Session. The history begins in 1959 at a time when the Disarmament Commission was making little or no progress on disarmament. In an attempt to rectify the situation, France, the U.S.S.R., the U.K., and the U.S. proposed the formation of a limited membership negotiating body to be known as the Ten-Nation Disarmament Committee. On September 10, 1959 the Disarmament Commission passed a resolution accepting the four-power proposals.

The purpose of the Committee was to provide a negotiating forum consisting only of the major powers and a few representatives of the other nations. Reports were to be made on a regular basis to the Disarmament Commission on the Committee's progress, although the Committee was not an official United Nations organ. The concurrent decline in the activities of the Commission also made the Ten-Nation Disarmament Committee the principal forum on disarmament.

The Committee was not long-lived. It broke up in June 1960 over East-West disagreement on the manner in which to proceed towards comprehensive disarmament. The U.S. and the U.S.S.R., however, conferred privately and came to an agreement on "joint principles" to guide negotiations on disarmament. These were presented to the General Assembly in September 1961<sup>14</sup> and led to the re-establishment of a negotiating body.

General Assembly Resolution 1722(XVI) 20 Dec. 1961, created the Eighteen-Nation Disarmament Committee (ENDC). This was not technically a subsidiary organ of the General Assembly. It was to be a negotiating body of limited membership<sup>15</sup> and was to use the "joint principles" to work toward the goal of general and complete disarmament under international control recently reaffirmed by the General Assembly.<sup>16</sup>

The 1964 report of the Conference of the ENDC made the following self-critical statement:

24. Thus far, the Committee has not reached any specific agreement either on questions of general and complete disarmament or on

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14. Whiteman, (1968), 2 Digest of International Law 682.

15. France, as one of the nuclear weapon states, is a member but has never taken the seat.

16. U.N.G.A. Res. 1378(XIV), 1959.

measures aimed at the lessening of international tension.<sup>17</sup>

Once again progress on comprehensive disarmament had slowed to a crawl. Realizing this, though, the ENDC, under the urging of the General Assembly, shifted the emphasis of its negotiations to consider specific disarmament measures. Thus General Assembly Resolution 2028(XX) 19 Nov. 1965 urged the ENDC to give urgent consideration to non-proliferation of nuclear weapons which led to successful negotiations as a draft treaty on non-proliferation, in August 1967.

With the growth of the United Nations, in 1969 the ENDC increased its membership and also changed its name to "Conference of the Committee on Disarmament" (CCD). This action also coincided with the declaration by the General Assembly of the 1970s as the Disarmament Decade.<sup>18</sup> It continued to serve as before with the area of priority being negotiation of specific disarmament issues that gave greater promise of resolution. This approach allowed a large number of post World War II arms control agreements to be negotiated entirely or partially within this body.

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17. "Report of the Conference of the ENDC", U.N. Disarmament Commission, Off. Rec., Supp. for Jan. to Dec. 1964, at 4.

18. U.N.G.A. Res. 2602 E(XXIV), 1969.

The quest for a comprehensive plan of disarmament has never been abandoned, however. World disappointment and frustration as well as the realization by the United Nations of its inadequate role in this area led to the Tenth Special Session of the General Assembly. This session sought to revitalize the comprehensive approach by consideration of substantive questions of disarmament and improvement of the United Nations machinery to deal with the issue. In pursuit of this the CCD was reconstituted in its present form as the forty member Committee on Disarmament. Following the approach as outlined in the Final Document of the Special Session<sup>19</sup> the Committee on Disarmament is the principal negotiating organ of the General Assembly for disarmament.

#### General Assembly Achievements in Disarmament

The General Assembly has not adequately fulfilled its role to assist in achieving a comprehensive world disarmament agreement. There has been some limited success, however. The Assembly has been able to provide nations the forum to discuss and negotiate arms control. Such a

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19. Supra, note 12, art. 109.

framework at least allows nations channels of communication on this important and dangerous issue. Thus, notwithstanding the absence of substantial results, the United Nations plays an important part in arms control supply by providing a forum for discussion and deliberation.

Lack of progress on comprehensive disarmament has also not precluded the signing of a number of important disarmament agreements of a more limited scope. These have been made possible through the machinery of the General Assembly. Important examples, which have been analysed in another part of this study, are:

**Treaty Banning Nuclear Weapon Tests in the Atmosphere,  
In Outer Space and Under Water**

This treaty was signed on 5 August 1963 and came into force on 10 October 1963. It developed through negotiations between 1958 and 1962 which were conducted initially within the ENDC. Lack of progress in this forum led to private negotiations which eventually resulted in the treaty. The ENDC and its successors have considered but failed to conclude an agreement extending the scope of this treaty.

### Treaty on the Non-Proliferation of Nuclear Weapons

Open for signature on 1 July 1968, the Treaty came into force on 5 March 1970. This treaty was negotiated and drafted by the ENDC pursuant to General Assembly Resolution 2028(XX) 1965 requesting the ENDC to give urgent consideration to the problem of nuclear weapons proliferation.

### Treaty on the Prohibition of the Emplacement of Nuclear Weapons and Other Weapons of Mass Destruction on the Seabed and the Ocean Floor and in the Subsoil thereof

This treaty was open for signature on 11 February 1971 and came into force on 18 May 1972. A product of the General Assembly it was commended for signature and ratification by Resolution 2660(XXV). It was the first major arms control agreement in the Disarmament Decade.

### Convention on the Prohibition of the Development, Production and Stockpiling of Bacteriological and Toxin Weapons and on Their Destruction

Open for signature on 10 April 1972, this Treaty came into force on 26 March 1975. Negotiations were carried out within the Conference of the Committee on Disarmament. It was commended for signature and ratification by General Assembly Resolution 2826(XXVI). This treaty was of great significance as it was the first agreement calling for

the destruction and elimination of an existing weapon system.

The above are examples of significant, if limited, accomplishments by the United Nations in the field of disarmament. Another area where the United Nations has achieved some important arms control results is outer space.

#### The Role of the General Assembly in Outer Space Arms Control

The first artificial satellite entered orbit in October 1957 and with it Man entered the space age. Even before this event, however, concern had been expressed in the General Assembly about the possibility of weapons in outer space. On 12 January 1957 the U.S. submitted to the General Assembly a disarmament proposal that, inter alia, suggested controls were necessary to assure that space would be exclusively peaceful.<sup>20</sup> From this point on the exclusion of weapons from outer space became an important issue in disarmament.

While the issue of exclusion of weapons from outer space is important it has always seemed to be a secondary

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20. Supra, note 14, 814.

issue in disarmament, always linked to some other proposal or part of a larger plan. The U.S.S.R. for instance, in its first memorandum to the General Assembly on peaceful uses of outer space, linked banning of military weapons in cosmic space to elimination of foreign military bases in the territory of other countries.<sup>21</sup> This trend has continued.

The General Assembly has also developed its role in keeping outer space peaceful differently from its role in general disarmament. The mechanism became divided. First, the issue is still handled as part of the general disarmament question and is deliberated over and studied by the main disarmament bodies - the Disarmament Commission and the Committee on Disarmament. In addition the General Assembly formed a new separate body to consider outer space issues - the Committee on the Peaceful Uses of Outer Space.

The original disarmament organs have considered the issue of the peaceful use of outer space along with all other aspects of arms control. They began as the predominant forum. In 1960, the Ten-Nation Committee on Disarmament received disarmament plans from both the U.S. and U.S.S.R. that included proposals for a ban on the orbiting or stationing in outer space of weapons capable of mass destruction, and

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21. Ibid.

for controls over launchings. In 1962 equivalent proposals were again made by the U.S. and the U.S.S.R. in the ENDC. 1963 saw discussions in the ENDC lead to a resolution in the General Assembly<sup>22</sup> calling on all states to refrain from placing in orbit nuclear or other mass destruction weapons.

1963 also saw the adoption of the Declaration of Legal Principles Governing the Activities of States in the Exploration and Use of Outer Space by the General Assembly.<sup>23</sup> The negotiations for this had been conducted in the Committee on the Peaceful Uses of Outer Space (COPUOS) and this marked a shift in the principal forum. COPUOS became the principal forum for deliberations and negotiations on the peaceful uses of outer space. This culminated, as will be seen later, in a number of significant treaties that included arms control provisions.

The renewal of the arms race and the urgent threat that an arms race could start in outer space has reduced the role COPUOS had been playing as a negotiating body. COPUOS has many issues before it and cannot provide all the attention that the urgency of the situation requires. The other forums are available and are being used, in particular the General Assembly itself.

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22. U.N.G.A. Res. 1884 (XVIII), 1963.

23. U.N.G.A. Res. 1962 (XVIII), 1963.

Two special sessions of the General Assembly have been called on the disarmament issue. The first in 1978 recognized, in its Final Document,<sup>24</sup> the inherent dangers of a potential arms race in outer space and called for further measures to be taken and appropriate international negotiations to be held in order to prevent such an arms race. The second special session, held in 1982, again reaffirmed international concern over a potential arms race in space but nothing new of a substantive nature came out of it on the issue.

The regular sessions of the General Assembly are being utilized as a forum on this urgent issue. 1981 saw the U.S.S.R. introduce into the Assembly a draft Treaty on the Prohibition of the Stationing of Weapons of any kind in Outer Space.<sup>25</sup> The General Assembly also adopted two resolutions on the issue. One is entitled "Prevention of an Arms Race in Outer Space".<sup>26</sup> The Second<sup>27</sup> addressed the same subject and also requested the Committee on Disarmament to consider and negotiate a treaty to prevent such an arms race.

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24. Supra, note 12, at art. 80.

25. U.N. Doc. A/C.1/36/L8, 11 Nov. 1981.

26. U.N.G.A. Res. 36/97c.

27. U.N.G.A. Res. 36/99.

Thus, with new fears of an arms race extending to outer space the disarmament bodies are once again taking up the role as forums for this arms control related issue.

#### The Role of COPUOS in Arms Control in Outer Space

Concern over the peaceful use of outer space expressed itself immediately as the space age dawned. The United Nations was foremost among those expressing that concern. As a result the General Assembly established by resolution<sup>28</sup> an ad hoc Committee on the Peaceful Uses of Outer Space (COPUOS), on 18 December 1958. The resolution stated that the common aim should be to use outer space in a peaceful manner and asked the Committee to report on optimum forms of international cooperation in space research and about legal problems that might arise from space exploration. The General Assembly had recognized that the peaceful use of outer space was a separate question from that of disarmament.

The establishment of COPUOS as an effective Committee was not without its problems. The usual East-West tension and mistrust was present and had to be overcome. One problem resulting from this was over procedure - whether the Committee would proceed by majority vote or consensus. This

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28. U.N.G.A. Res. 1348(XIII), 1958.

was settled in favour of majority vote, but the working reality of the Committee became consensus. This is still true today because progress can only be made on an issue if both the major space powers, the U.S. and the U.S.S.R., concur.

By 1961, COPUOS had become a permanent committee of 28 members and had solved its development problems. COPUOS remains the same today, except that it now has 53 members. The structure is that of a main committee, the Outer Space Committee, and two sub-committees. The Outer Space Committee is the titular head committee that meets once a year to review the work of the sub-committees and submit an annual report to the General Assembly.

The sub-committees are the real working organs of COPUOS. The first of these is the Scientific and Technical Sub-Committee. The organ concerns itself with technical space problems and considers solutions in areas where co-operation is necessary. It is quite successful because there is a need to cooperate so as to make the science and technical aspects effective.

The second sub-committee is the Legal Sub-Committee. Here discussion of the legal implications of actions in outer space take place. More importantly, however, this is where issues on the peaceful use of outer space are

deliberated and negotiated.

A major achievement of COPUOS was the "Declaration of Legal Principles Governing the Activities of States in the Exploration and Use of Outer Space"<sup>29</sup> adopted by the General Assembly, 13 December 1963. This led, four years later, to the signing of the Outer Space Treaty.<sup>30</sup>

The Outer Space Treaty, inter alia, specifically prohibits the placing in orbit or stationing in outer space of any objects carrying nuclear or other mass destruction weapons. It also demilitarizes the moon and other celestial bodies. COPUOS does not have a mandate to specifically negotiate matters concerning arms control, but has achieved a measure of arms control in outer space. It was achieved because arms control is a natural by-product of negotiations on the peaceful uses of outer space; weapons are not peaceful. This has allowed COPUOS to be involved in arms control in outer space.

The role of COPUOS in arms control in outer space has diminished somewhat in recent years. Its attention has shifted from space exploration to space application. With

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29. U.N.G.A. Res. 1962(XVIII), 1963.

30. Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies.

this shift have come several difficult issues which occupy much of the Committee's energies. Consideration of peaceful applications takes priority over arms control. Also the areas where COPUOS achieved arms control agreements were those in which there was little contention over implementing such controls. Nuclear arms in space, while ominous, are seen by the significant powers as inefficient and expensive to deploy. The banning of non-existent systems is good public relations and causes no real problems for the concurring states. Issues on arms control in space are now more contentious, because the weapons systems are more feasible. A committee that provides a forum on negotiations on such issues needs to concern itself full time with the issue. Thus the role of COPUOS now is such that it does not directly concern itself with arms control issues, though they may be deliberated as secondary issues.

#### UNISPACE '82: Considerations of an Arms Race in Outer Space

The Second United Nations Conference on the Exploration and Peaceful Uses of Outer Space was held in August 1982. Its prime focus was the rapid progress made in peaceful uses of space technology since the First Conference in 1968. Concern was also expressed on the issue of a potential arms race in outer space as outlined by the following paragraphs

from the Conference's Report.<sup>31</sup>

522. During the course of the general debate, the potential danger implicit in the use of outer space for military purposes was mentioned with concern by most delegations, and the international community was urged to give urgent consideration to measures to ban an arms race in outer space. In this connexion, some delegations urged that negotiations be started within the Committee on Disarmament on the proposed treaty on the prohibition of stationing of weapons of any kind in outer space. While many delegations felt that the Committee on Disarmament was the most appropriate forum for discussing such concerns, others stated that the issue of the military uses of space should simultaneously be considered in COPUOS and in its Legal Sub-Committee. A few delegations expressed the view that the current

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31. Report of the Second United Nations Conference on the Exploration and Peaceful Uses of Outer Space, U.N. Doc. A/Conf. 101/10, 1982.

Conference was an inappropriate forum for discussing the question. The view was also expressed that the responsibility for demilitarizing space rested with the two major space Powers.

523. Several delegations cited the need to negotiate an effective and verifiable agreement to prohibit anti-satellite systems. Some delegations stressed the need to resolve the problem of preventing the arms race in outer space as a whole. The view was also expressed that those space activities characterized as essentially defensive or as contributing to the avoidance of war should not be restricted, except in the context of some general or balanced disarmament programmes.

524. Many delegations felt that an arms race in space would be costly as well as dangerous, and it was noted that the redistribution of the vast resources devoted to military purposes could solve many pressing economic and social problems of the developing countries. Finally, the view was expressed that the banning of weapons of mass destruction from outer space was not enough; space technology must be actively used to promote peace.

3. The Proposal for an International Satellite Monitoring Agency (ISMA)

At its thirty-fourth session, the General Assembly adopted Resolution 34/83 E, in which it requested the Secretary-General to carry out an in-depth study with the assistance of a Group of Experts previously constituted, on the technical, legal and financial implications of establishing an international satellite monitoring agency (ISMA).

The report was to be submitted no later than June 1981 to the Preparatory Committee for the Second Special Session of the General Assembly devoted to Disarmament.

The Group of Experts was able to adopt a unanimous report covering all aspects of the area under consideration. The technical, legal and financial implications underlying the establishment of an ISMA will be considered herein.

**Historical Background**

At the First Special Session of the General Assembly devoted to Disarmament, held in New York in May-June 1978, the delegation of France proposed, in a note verbale, the establishment of an international monitoring agency which, within the framework of current disarmament efforts, would place observation satellites at the service of the international community.

This proposal was referred for further studying to the thirty-third regular session of the General Assembly which adopted Resolution 33/71 J, requesting the Secretary-General to undertake, with the assistance of a group of qualified governmental experts, a study on the technical, legal and financial implications of establishing an agency such as ISMA.

In pursuance of this resolution, the preliminary conclusions reached by the Group of Experts were submitted to the thirty-fourth session of the General Assembly. Following the recommendations of the Group of Experts, the General Assembly adopted Resolution 34/83 E in which it requested the Secretary-General to carry out an in-depth study on the subject and to submit a comprehensive report on the subject in time for the General Assembly to take a decision at its second special session on disarmament in 1982. This same resolution underlined the fact that the study should be submitted no later than June 1981 to the Preparatory Committee for the second special session of the General Assembly devoted to disarmament.

On 10 June 1981, the Chairman of the Group of governmental experts, submitted its study to the Secretary-General of the United Nations.

A global review of the present state of the technology of civilian and military satellite systems, as well as a study of the technical elements required by an ISMA were the first questions to be dealt with. It was recognized that certain technical requirements had to be met if a monitoring agency was to contribute to the verification and implementation of arms control and disarmament agreements. Limitations which would influence the effectiveness of satellite verification were considered in light of existing international agreements. The contribution of an ISMA to the monitoring of international crises was also countenanced though no technical guidelines were specified.

The technical facilities needed for the establishment of an ISMA were divided into three components: a space segment, a ground station and an Image Processing and Interpretation Centre (IPIC). As well, three evolutionary phases were envisioned, commencing with the agency using imagery data from national satellite systems, to the establishment of ground stations to receive data, and finally to the development of an operational ISMA space segment.

It is worthy of note that the proposals for "general and complete disarmament" submitted by the U.S.S.R. and the United States in 1962 to the Eighteen-Nation Committee on Disarmament assigned a central role in the implementation of the disarmament programme to an International Disarmament Organization (IDO).

Other states have also, at different times, expressed their interest in or support for the idea of an impartial, international organization entrusted with the monitoring of multilateral disarmament agreements.

In the light of recent developments in the field of arms regulation, the need for institutionalization of the verification process has become more and more important.

The need for the establishment of an international satellite monitoring agency is well recognized. Global interest in such an organization was evinced by the large majority of states in the General Assembly which favoured Resolution 33/71 J, of 14 December 1978, which called for a study of the implications of establishing an ISMA.

Since activities of an ISMA would cover both outer space and the earth, they would be governed by the principles and rules of international law, including the Charter of the United Nations and international space law.

The 1967 Outer Space Treaty, the 1975 Registration Convention, the 1968 Agreement on the Rescue and Return of Astronauts, the Moon Treaty adopted by the General Assembly and the International Telecommunication Convention and its Administrative Regulations constitute the most important international agreements which would govern the activities of an ISMA.

It is worthy of note that no provisions in general international law, including space law, prohibit an international organization such as ISMA from carrying out monitoring activities by satellite.

The verification of disarmament and arms limitation agreements can serve several purposes. It may help to detect violations of an agreement, act as a deterrent to violation and enhance mutual confidence among the parties. During the past two decades verification has represented one of the greatest obstacles to progress in negotiations of disarmament and arms limitation agreements. It may, therefore, be of interest to consider such agreements from the perspective of monitoring compliance.

Protocol for the Prohibition of the Use in War of Asphyxiating, Poisonous or Other Gases, and of Bacteriological Methods of Warfare

The "Geneva Protocol" signed at Geneva on 17 June 1925, entered into force on 8 February 1928. This agreement makes no reference to verification. An agency such as an ISMA could play an important role in the verification process to the extent that monitoring by satellite with the Geneva Protocol is technically feasible.

Antarctic Treaty

This Treaty entered into force on 23 June 1961. Its effect is not only the internationalization of Antarctica but also its demilitarization. The Antarctic Treaty provides for an extensive system of inspection based on national means of verification (article VII) which is carried out by designated observers who enjoy "a complete freedom of access at any time to any and all areas of Antarctica".

Articles VII, IX and XII of the Treaty make it difficult to introduce an ISMA. The proposal by a contracting party for the establishment of an ISMA would become effective only "when approved by all" the consultative parties. The requirement of unanimity could delay and perhaps even prevent the introduction of an ISMA to the Antarctic

monitoring system, unless the approval of all thirteen consultative parties was first obtained.

Treaty Banning Nuclear Weapon Tests in the Atmosphere,  
in Outer Space and Under Water

The "Partial Test Ban Treaty" entered into force on 10 October 1963 and contains no verification provisions, the original parties having agreed to monitor compliance by their national means only. No amendments or modifications to the Treaty would be required for the introduction of an ISMA in the verification process.

Treaty on Principles Governing the Activities of States  
in the Exploration and Use of Outer Space, Including the  
Moon and Other Celestial Bodies

This Treaty, which entered into force on 10 October 1967, does not ban the use of military personnel in scientific research and for other peaceful purposes. The Treaty provides for inspection, on a basis of reciprocity, by representatives of the contracting parties of all stations, installations, equipment and spacecraft on the moon and other celestial bodies. Notwithstanding the fact that states parties to the Outer Space Treaty are to verify its implementation, and provided that the monitoring is technically feasible, the introduction of an ISMA as a

national technical means of verification ought to be possible.

#### Agreement Governing the Activities of States on the Moon and Other Celestial Bodies

This Agreement was adopted by the General Assembly on 5 December 1979 and is not yet in force. Parties to the Agreement are allowed to inspect all space vehicles, equipment, facilities stations and installations belonging to any other party. Pursuant to article 15(1), the Agreement authorizes every contracting state to conduct such inspection "on its own behalf or with the full or partial assistance of any other state party or through appropriate international procedures within the framework of the United Nations and in accordance with the Charter".

One may assume that by referring to "appropriate international procedures", verification by an ISMA would be countenanced.

#### Treaty for the Prohibition of Nuclear Weapons in Latin-America with additional Protocols I and II

The "Treaty of Tlatelolco" which entered into force on 22 April 1968, is the only international agreement concluded which has established a nuclear-weapon free zone in a densely populated area. Verification of compliance

with the treaty's provisions is assigned to the Agency for the Prohibition of Nuclear Weapons in Latin America (OPANAL) and to the International Atomic Energy Agency (IAEA). The Treaty does not specify whether contracting parties may enter into separate bilateral arrangements with an agency such as ISMA, for purposes of verification. Though article 23 of the Treaty seems to allow bilateral arrangements, observation by ISMA might have to be limited to the territory of the state which has concluded the agreement.

#### Treaty on the Non-Proliferation of Nuclear Weapons

This Treaty entered into force on 5 March 1970. The verification of compliance with the undertakings of the parties has been assigned to the International Atomic Energy Agency (IAEA). While technically speaking a ISMA could conceivably assist the IAEA, such assistance does not seem legally feasible without prior arrangements between such an ISMA and the IAEA.

An amendment to the Treaty would allow for the full participation of an ISMA in the process of verification, though the procedure for amending the Treaty is quite rigorous.

An ISMA could also conceivably enter into a bilateral

arrangement with a contracting party independently of the IAEA but in this case, monitoring would probably have to be confined to the territory of such a contracting party.

Treaty on the Prohibition of the Emplacement of Nuclear Weapons and Other Weapons of Mass Destruction on the Seabed and the Ocean Floor and Subsoil Thereof

The Treaty, which entered into force on 18 May 1972, set out verification procedures in article III.

Verification may be conducted by the contracting parties through the use of their own means with the assistance of other parties, or through appropriate international procedures within the framework of the United Nations and in accordance with its Charter. From a legal point of view, ISMA could qualify as an international agency competent to carry out verification of the Treaty.

Convention on the Prohibition of the Development, Production and Stockpiling of Bacteriological (Biological) and Toxin Weapons and on their Destruction

The Convention entered into force on 27 March 1975 and contains no provisions concerning verification. Instead, the contracting parties undertake to consult one another and to cooperate in solving any problems which may arise in the implementation of the Convention. If a breach of obligation occurs, a party may lodge a complaint with the

Security Council of the United Nations.

The Security Council could use the assistance of an ISMA in carrying out its investigations. Such an arrangement would probably not require amendment of the Convention.

Convention on the Prohibition of Military or any Other Hostile Use of Environmental Modification Techniques (ENMOD Convention)

This Convention entered into force on 5 October 1978, and contains no specific provisions on verification. Instead, it provides for mutual consultation among the parties and for their cooperation "in solving any problems that might arise" in the application of the Convention.

Article 1 provides that such consultation and cooperation can be sought through appropriate international procedures within the framework of the United Nations, including the "services of appropriate international organizations" as well as of a "Consultative Committee of Experts", established by the Convention.

In case of breach of obligation, parties may lodge a complaint with the Security Council of the United Nations. In carrying out its investigations, the Security Council could consider the use of an ISMA.

Member states of the United Nations are presently discussing a number of new arms regulation measures and agreements. Since verification is of importance to all of these agreements, it is suggested that an explicit reference to an ISMA as an instrument for verification of compliance be incorporated in these agreements.

Assuming that states can use their national technical means to monitor existing agreements to which they are parties, a provision could be included in the constitutive act of an ISMA which could allow its members to use the Agency as if it were their own national technical verification means.

ISMA could equally provide a useful service in monitoring compliance with bilateral and regional arms control and disarmament agreements. From a legal point of view, there is no reason why two or more states willing to enter into such an agreement could not designate ISMA as one of the instruments of verification.

The establishment of an ISMA would greatly contribute towards developing a climate of international confidence, as well as in the observation from space of military aspects related to the development of conflicts. It would equally contribute to monitoring international crises by satellite. Pursuant to its investigative powers under article 34 of

the United Nations Charter, the Security Council could legally request the services of an ISMA for the monitoring of a particular crisis situation.

Whatever the ambit of its authority, certain legal issues would have to be addressed in the establishment and functioning of an ISMA.

An international satellite monitoring agency should carry out its functions in accordance with international law, including the United Nations Charter, the Outer Space Treaty and any other relevant international agreements.

Its founding principle should be the sovereign equality of all its members. The ultimate goal of an ISMA should be universality of membership as well as the control and elimination of the arms race and other threats to peace.

There was a consensus among states that the Agency should be an independent body, closely linked with the United Nations.

The legal instrument creating an ISMA ought to be a treaty or a convention. Its establishment through a less formal legal instrument would be inappropriate in light of its sensitive mission, concerning the security interests of states.

The Agency must be endowed with an "international legal personality". This would enable ISMA to enjoy various

privileges and immunities, as well as give it the right to conclude treaties.

Once the legal status of an ISMA was established, the legal implications of its activities would have to be considered. The possible evolution of an ISMA would extend over three phases. In Phase I, the Agency would establish an Image Processing and Interpretation Centre (IPIC) which would work on data and information from various sources, acquired by existing satellite systems, but which would also require auxiliary data and information. The acquisition of such data and information could be done by a simple contract of purchase.

In Phase II, an ISMA would commence operating its own ground stations for access to national satellite systems. Agreements would have to be negotiated between the Agency and the state on whose territory those facilities are to be located.

In Phase III, ISMA would be expected to own and operate its own space segment.

Existing international law contains no specific provision prohibiting the dissemination and free flow of information collected by satellite. ISMA reports could be made accessible to:

- all members of the United Nations
- only to the members of the Agency
- only to the Security Council

- only to the states directly concerned and to the executive organ of the Agency.

The Group of Experts, which examined these alternatives, preferred delegating the task of ultimately deciding which of these options would be most suitable to the negotiators concerned with the establishment of ISMA.

The proposed Agency would also have to take into consideration a variety of specific issues regarding its activities. Thus, for example, there should be provision made authorizing an ISMA to acquire and archive data on a periodic and continuous basis. The Agency should respond promptly to all requests by the Security Council for assistance in the investigation of any dispute or any situation which might lead to international friction or give rise to a dispute. Upon request by any intergovernmental organization, an ISMA could undertake monitoring activities, provided that such activities are consistent with its constitution. Any member could request that all or part of its national territory be monitored by the Agency in case of an international crisis, of a violation of an international agreement or in any other circumstance provided for in an ISMA's constitutive act. In principle, a non-member could have recourse to the services of the Agency in a "crisis situation" in which no member state is involved, or for the monitoring of areas not

subject to the sovereignty of any member state.

Consideration of the membership in and organization of ISMA also formed the basis of analysis. Regular membership, associate membership and observer status could be considered for formal participation in ISMA. Any member of the United Nations or one of its specialized agencies would be entitled to a regular membership in ISMA. The organizational structure of an ISMA would be analogous to that of other specialized agencies and would be comprised of an Assembly, a Council and a Secretariat.

Provision for the settlement of disputes within ISMA was studied. The dispute-settlement machinery should be expeditious and not compromise the *raison d'être* of the Agency. A special machinery for the settlement of disputes would have to be established within an ISMA.

The solution most likely to satisfy the needs of ISMA would be the establishment of a relatively large panel of arbitrators. The panel should be composed of persons competent in either the technical field of the Agency or in the law governing its activities. A certain number of arbitrators should be ready at a moment's notice to assume their duty on the tribunal so as to ensure the uninterrupted

functioning of an ISMA. The tribunal's award would be final and binding, with no right of appeal.

Estimates of costs for a project such as establishing an ISMA are extremely difficult to make. It is thought that the implementation of Phase I would entail an initial capital investment of approximately 8 million dollars and operational costs in the range of 25 to 30 million dollars per year.

Phase II would require an initial investment in the range of 60 to 80 million dollars and annual operational costs of about 20 million dollars.

Phase III would be the costliest one since the Agency may have to establish its own space segment. The total cost of launching a single satellite varies between 300 to 400 million dollars. The cost of satellite renewal may vary from 50 - 200 million dollars per year.

All these costs could be substantially reduced if the ISMA could develop its own instruments, equipment and satellite platforms under national programs.

### Conclusion

Monitoring of compliance with disarmament and arms control agreements, and monitoring of crisis situations are the most important missions which an ISMA would be required to perform. Such an Agency would also greatly contribute towards developing a climate of international confidence.

Presently, it is technically feasible to establish a satellite monitoring agency for the acquisition of data and information needed to verify compliance with international agreements and to monitor crises.

From a legal point of view, there are no provisions in existing international law, including space law, which prohibit an international organization such as ISMA carrying out monitoring activities by satellite.

4. The Legal Implications of International Satellite Monitoring

a) The Rights of Sensed States

b) The Dissemination of Information

The creation of an ISMA raises a variety of questions of a legal and political nature. Three points will be considered here:

1. the rights of sensed states;
2. the dissemination of information;
3. enforcement provisions.

The first two points are different sides of the same coin, for if one concludes that states have rights which extend to the control of sensing their territories by satellite, one must conclude that the dissemination of information has to be limited. These issues will, therefore, be discussed together.

The third point, enforcement provisions, is also an offshoot of the first, but will be discussed separately with particular reference being made to the mechanisms found in the SALT I and II Agreements.

In order to discuss the rights of sensed states, one must first briefly review the law applicable to air space and outer space. In broad terms, the Chicago Convention divides the air space into two principle categories, that

which is over the sovereign territory of states and is subject to the absolute authority of the subjacent state,<sup>1</sup> and that which is over the high seas where certain limitations on freedom exist. By contrast, it is now firmly established that in outer space the regime is one of freedom.<sup>2</sup>

Inasmuch as satellite reconnaissance and remote sensing takes place from outer space, it is tempting to conclude without further study and on the basis of freedom in outer space, that remote sensing is legal and that the sensed states have few if any rights in this connection. A better view would be that the regime of freedom in outer space only establishes an a priori case for freedom to conduct unlimited remote sensing. The issue must be further examined in light of the actions and positions taken by states over the years.

When remote sensing was in its infancy and only the Soviet Union and the United States possessed satellite technology, world legal opinion polarized around two views. The United States, in keeping with its socio-economic traditions opined that remote sensing was in accordance with

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1. Convention on International Civil Aviation, art. 1.
  2. Matte, Aerospace Law: From Scientific Exploration to Commercial Utilization, (1977), 116

international law. In contrast, the Soviet Union took the view that when the object of remote sensing was to discover "state secrets" such reconnaissance was "spying" and hence contrary to established international law.<sup>3</sup> Other states, if they chose to comment at all, tended to recite the arguments used by either one of the two super-powers.

The Soviet view can be justifiably criticized on a number of grounds. First and foremost the emphasis on the nature of the activity means that the sensed state has total, arbitrary control over the definition of "state secret". Thus, routine agricultural remote sensing could become spying should a country wish to conceal a poor crop yield for political or economic reasons. Furthermore, this emphasis on what is being sensed is hard to justify on technical grounds, for satellites fly pre-ordained and regular paths and cannot simply detour around forbidden areas within the territory of a state.

Another early argument voiced by the U.S.S.R. pertained to the non-peaceful use of outer space. Early remote sensing satellites were invariably of a military nature, and the

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3. Soraghan, Reconnaissance Satellites: Legal Characterization and Possible Uses for Peacekeeping, (1967), 13 McGill L. J1 470.

Soviet Union equated "military" with "non-peaceful" and thus contrary to the principle of peaceful use of outer space.<sup>4</sup> The Americans, on the other hand, equate "peaceful" with "non-aggressive".<sup>5</sup> Remote sensing satellites do not have direct offensive capabilities, and as they permit states to obtain up-to-date information on the activities of others, they can be said to have a stabilizing influence.

In addition, a strong American argument in favour of the legality of remote sensing comes from an analogy drawn from the regime applicable to the air space over the high seas. It now appears to be a well-established fact of international law that a state may not interfere with another's activities over the high seas, even if these activities include remote sensing of the nearby shoreline or territorial waters.<sup>6</sup> Thus in the aftermath of the RB-47 incident in the 1960s, the argument between the U.S.S.R. and the U.S.A. revolved around penetration of Soviet air

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4. Ibid., 463.

5. Ibid., 463-464.

6. Morenoff, World Peace Through Space Law, 150.

space. At no time did the Soviet Union claim the right to shoot down an American plane over the high seas, even if such a plane was engaged in remote sensing activities.<sup>7</sup>

Since the early sixties, remote sensing has become more sophisticated and accessible through American programs such as LANDSAT. In keeping with clearly enunciated national policies, remote sensing raw data and imagery analysis has been made available to an ever increasing number of states.<sup>8</sup> While some states have expressed reservations on dissemination of information from within organisms such as COPUOS,<sup>9</sup> no state has, to date, lodged formal protests with regard to remote sensing of its territory. Even the Soviet Union, which early on expressed reservations with regard to satellite reconnaissance, now participates in such activities at a level comparable to that of the Americans.<sup>10</sup> Furthermore, as other states acquire and develop space capabilities, remote sensing from satellites will become routine and accepted by all, because it will be accessible to all.

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7. Ibid., 151.

8. Galloway, *Remote Sensing From Outer Space*, in Matte and DeSaussure, eds, Legal Implications of Remote Sensing, (1976), 91, 91-3.

9. Jakhu and Trecroce, *International Satellite Monitoring*, (1980), V *Annals Air & Sp. L.*, 524.

10. Ibid., 512.

When drawn to its inevitable conclusion, the regime of freedom in outer space, within the present conventional limits, must include the freedom to conduct remote sensing. To argue otherwise would be to shackle technology within unacceptable limits and indeed deny in many ways the laws of physics. Satellites must be free to orbit the earth in order to fulfil the expectations of the peoples of the world. This does not imply that they may not be regulated; for the multiplicity of satellites requires regulation pertaining to orbital slots and registration of space objects. Once it is established that remote sensing is in accordance with international law, it would appear incongruous and impracticable to distinguish between types of remote sensing.

By its nature, a remote sensing satellite sees all within its field of vision with whatever precision technology permits. Even at the resolutions of today's satellites, little remains hidden. Thus, a satellite capable of monitoring natural phenomena can just as easily observe military or industrial installations.

When seen in this light, there seems to be little point in establishing a legal regime governing the rights of sensed states. Remote sensing is now widely accepted in one way or another and the present rate of technological

progress would outstrip attempts to curb it through any form of legislation.

In a similar vein, the issue of the dissemination of information, the other side of the coin, must be viewed in light of present state practice with regard to remote sensing of the earth for geophysical purposes. That practice has been one of openness and widespread dissemination of data. Under the LANDSAT program at least six states have concluded agreements with the U.S.A. for the building of ground stations. A great number of states have also benefitted from LANDSAT data under the American policy of international cooperation.<sup>11</sup>

A restriction on the dissemination of data as proposed by the Argentina-Brazil and France-U.S.S.R. draft treaties pertaining to remote sensing does not seem to be consistent with the present state of international law and, moreover, raises problems of a technical nature.<sup>12</sup>

Satellites are themselves apolitical and make no distinctions pertaining to national boundaries when they take their

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11. Hosenball, Free Acquisition and Dissemination of Data through Remote Sensing, in Matte and DeSaussure, supra, note 8, 105, 106-8.

12. Ibid., 110-1.

photographs. From a practical perspective, it is unlikely that a satellite survey of one state will not include some overlap of contiguous states. Thus, a priori, a restriction of the dissemination of information leads to difficulties.

At a different level, restriction of dissemination would do nothing but frustrate regional or international cooperation and deny the benefits of remote sensing to those states which do not have the technological means to conduct surveys themselves. As a practical consideration, would one state need the permission of neighbouring states to buy remote sensing data of its territory just because the "photograph" overlapped the territory of those states? Such restrictions would clearly be in contradiction with articles I and XI of the Outer Space Treaty whereby states are to facilitate and encourage international cooperation and agree to inform the public and international scientific community of the nature of activities in space.<sup>13</sup>

The issue of dissemination of data of course calls into play the leading principle of international law, that of absolute and exclusive sovereignty of a state over its territory. However, the traditional legal concept of sovereignty

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13. Ibid., 105.

has according to some authors been rendered obsolete by the technology of remote sensing satellites.<sup>14</sup> The so-called "Global Village", the shrinking of time and distance around the world, requires a restructuring of concepts such as sovereignty. States instinctively recognize this, and while they strive for the maintenance of a cultural and national identity, they become drawn into mutual interdependence through trade, commerce, cultural and even military exchanges.

Thus in spite of the opposition of some countries to the disclosure of sensed data, state practice in today's world has tended to reflect the opposite view.

The issue of the dissemination of data in the context of an ISMA is somewhat different, however, for the data collected by an ISMA would be of a military or strategic nature as opposed to geophysical, scientific data. Here again, however, it can be argued that open dissemination would not violate international law.

An ISMA acting under the aegis of the United Nations would be disseminating information for the purposes of the "prevention and removal of threats to peace". In addition,

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14. Robinson, For a World Wide Utilization and Dissemination of Data Acquired through Remote Sensing, in Matte and DeSaussure, supra, note 8, 113, 116-7.

all member states of the UN, must assist it in actions taken in accordance with the Charter.<sup>15</sup> The open dissemination of information has the added advantages of reducing the technological edge held by developed space powers and placing states which have transgressed disarmament treaties in the glare of the spotlight of world opinion - surely the most effective coercive force available short of armed intervention.<sup>16</sup>

Thus is broached the final issue of verification and enforcement. The Strategic Arms Limitation Talks agreements can serve as a framework or basis of discussion on this issue. These and similar agreements refer to "National Technical Means" a catch-all for the intelligence gathering apparatus of states to ensure compliance.<sup>17</sup> Unfortunately, the sophisticated national technical means needed to police compliance with treaty provisions are at the disposal of very few states, thus effectively preventing the majority of states from meaningful participation in disarmament. The ISMA proposes to bridge this gap by placing verification at the disposal of all states.

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15. Charter of the United Nations, articles 1 and 2.

16. Jakhu & Trecroce, supra, note 9, 513.

17. SALT II Treaty and Related Documents, President Carter's address to the Joint Session of Congress, 1117.

For an ISMA to be effective, the data and subsequent interpretative mechanisms must be free of ambiguity and untainted by bias. The ISMA would therefore fill only the technical gap and supplant the national technical means found in the SALT agreements. A different system would be required when it comes to enforcement.

c) Enforcement Provisions

Enforcement or policing can be accomplished in a number of ways. At present, governmental and non-governmental bodies or organizations exist which could to a greater or lesser extent act as enforcers. For it must be remembered that enforcement need not be accomplished through sanctions and similar punishment. It can also be ensured through the weight of world opinion, the pressures to conform and by dangling incentives to guarantee conformity.

Thus, if the information gathered by an ISMA was widely disseminated and unimpeachable the weight of public opinion might be a more effective incentive to conform than the threats issuing from a specialized and possibly politicized enforcement body.

The SALT agreements, by reason of their privacy and the secrecy of national technical means cannot rely on the weight of popular opinion to ensure conformity. As a result,

the Soviet Union and the United States have created the Standing Consultative Commission (SCC). This body considers compliance questions, discusses ambiguous situations and develops procedures for implementing agreements.<sup>18</sup>

As a result of the complexity of modern disarmament agreements a mechanism is needed which permits states to maintain open lines of communication in order to better address the frequent problems encountered in any disarmament process. This is the role of the SCC; and for an ISMA to be effective, a similar body would have to be created. Thus, any future regime concerning satellite monitoring would involve a two or three part process. The ISMA itself would be an impartial collector and interpreter of raw data, a second body would be an impartial arbiter of disputes and a communications facilitator and at the end of the line world opinion or the suasion of a body such as the UN Security Council would wield the stick of enforcement.

In conclusion, the creation of an ISMA can find support and justification in current international law and practice. Satellite reconnaissance is an accepted fact of life in the world community. The concept of freedom in outer space is now a part of international law; and as it is accepted

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18. SALT II and Related documents, 1135-36.

that a state may conduct remote sensing from over the high seas, the same would hold from outer space. The issue of dissemination of information, while problematic and contentious is also a non-starter. At least two nations on earth possess all the information available. To deny the free flow of information in an ISMA would merely accentuate the technological or north-south gap. Furthermore, restriction of information denies the realities of modern technology, hinders its development and largely defeats the purpose of an ISMA. Such restrictions would also hamper enforcement provisions and might create a climate of mutual distrust.

Finally, the impartiality required of an ISMA means that it can have no enforcement powers which inevitably lead to political wrangling. An ISMA's strength is in the undisputed accuracy of its data and interpretations, and enforcement would of consequence be best left to another body.

## 5. Alternatives to an International Satellite Monitoring Agency

### Introduction

The need to institutionalize the verification of arms control and disarmament agreements has become increasingly important in recent times. Indeed, verification is a crucial factor in any arms regulation proposal and represents the underlying requisite assurance for any state considering arms reduction.

The supporters of an international monitoring agency are of the view that, through the instrumentality of satellite observation, such an agency could contribute to the cause of international security by verifying compliance with arms control or disarmament agreements and monitoring situations endangering peace. The notion of an ISMA has generated substantial discussion, particularly in the United Nations. A comprehensive study on the implications of establishing an international agency was prepared for the Second Special Session of the General Assembly devoted to disarmament. The study did not provide detailed provisions for a set International Satellite Monitoring Agency, but rather restricted itself to setting out broad, though copious, parameters for any future international agreement. It also stipulated the considerations which the envisioned international body would have to take into account. Consequently, the alternatives to an ISMA proposed here-

inafter are not contrasted to a specifically delineated model agency. Such a model has yet to be constituted. Nevertheless, the UN alternative confronts the basic issues in international law which must be dealt with.

The alternatives discussed below are presented with a view to providing a system of satellite verification of arms control or disarmament agreements which might be more acceptable to states in the world community than an ISMA following the guidelines established by the UN study. These alternatives are arrayed from unilateral or state monitoring to variations of international monitoring. Unilateral, or state monitoring, places the onus of arms control verification on the states party to an agreement. Institutionalized bilateral monitoring countenances the creation of a monitoring agency separate from the parties to an arms control agreement (whether made up of the representatives from the parties or completely independent). The parties to bilateral agreements would be ordinarily adverse in interest and may be either states or blocs of allied states (e.g. NATO or the Warsaw Pact). Regional monitoring organizations could be established on the basis of geographic proximity or common political ideology. The final part of the discussion relating to monitoring agencies will consider universal agencies which would represent some modification of the UN ISMA proposal.

The common point in all these alternatives is the use of satellites to monitor compliance. This was the essence of the French proposal which first suggested the creation of an ISMA. The delegation from France was of the view that observation satellites represented a technological advance which could be placed at the service of the international community within the framework of current and future arms control and disarmament efforts.

Observation by satellite as it relates to arms control verification is considered to involve three types of outer space activities. The first involves photographic reconnaissance. There are two kinds of reconnaissance based on the detail or resolution of the area surveyed. Thus, area surveillance permits the identification of broad areas of interest meriting further investigation. The second kind of reconnaissance involves "close-look" satellites which provide the detailed information required as a consequence of area surveillance. Photo-reconnaissance satellites may also be used for specific purposes such as, for example, the monitoring of a particular crisis situation in a given region or for maritime observation.

The second type of space activity of importance to arms control verification involves the monitoring by satellite of electro-magnetic radiation including radar signals and radio communications. This provides

active information serving to complete the reconnaissance picture which may be considered passive monitoring.

Satellites equipped for early warning and nuclear radiation detection are capable of monitoring the launching of ballistic missiles as well as detecting the occurrence of nuclear explosions on earth and in outer space. This constitutes the third type of activity relevant to arms control. For example, detection of nuclear radiation by satellite is of importance as a means of monitoring compliance with the Partial Test Ban Treaty.

Observation satellites, therefore, are ideally suited to provide the monitoring required for the purposes of arms control.

The information that observation satellites could provide would fulfil a number of purposes. First, and foremost, monitoring would provide verification of compliance with arms control and disarmament agreements. The assurance offered by highly accurate satellite observation would act as an inducement to enter into agreements and would deter surreptitious violations. The ability of satellites to provide early warning of impending attack enhances the policy concepts of mutual deterrence and preventive diplomacy. Information provided by satellites which constitutes evidence of aggression by one state against another may assist in bringing international

pressure to bear against the aggressor. Global censure represents an effective sanction available in international law.

As the use of observation satellites constitutes the underlying point of commonality of all the proposed alternatives to the UN international monitoring agency, each of these alternatives also must face the issue of the legality of remote sensing by satellites. The rights of a sensed state are predicated on two related issues. The first issue is whether a state must seek the prior consent of another state before it may undertake remote sensing activities. As a corollary to this, the second issue relates to the requirement of state consent to the dissemination by another state of any information it has obtained. Any system of satellite monitoring must face these fundamental issues whose resolution has evaded COPUOS for many years. The Legal Sub-Committee has been unable to reach agreement on a set of legal principles to guide states in remote sensing activities, particularly Principle 15 which pertains to natural resources and requires that a sensing state obtain the prior approval of a sensed state to disseminate or dispose of any information it has obtained.

For the purposes of the instant discussion, the following conclusion is submitted regarding the rights of a sensed state. Observation of the earth by satellite has

existed since the advent of the space age. A marked absence of formal protest evinces tacit acceptance of such activities. A far greater problem from the viewpoint of the establishment of a monitoring agency is the issue of dissemination of information. Thus, while a state may passively accept the fact that it is being sensed, it may be quite reluctant to partake in an international agency which is free to compile information and distribute it to the world community. This is the essence of the problem with the creation of a world agency. It is considered against state interest and contrary to national security for information of a military nature to be available to any multi-state organization notwithstanding pledges of confidentiality. In conclusion, the notion of satellite monitoring of arms control and disarmament agreements is not objectionable per se. It is the pervasiveness of the dissemination of information which results in a reluctance of states to partake in a body composed of numerous non-state representatives. This is made patently clear when one considers the SALT Agreements for example. The essence of the Agreements is that each state is expressly permitted the right to verify compliance by its own "national technical means". Thus, both the United States and the Soviet Union grant the right of one to sense the territory of the other. However, it is quite unlikely that either state would readily agree

to permit sensing by an independent agency. Therefore, any proposed alternative to the UN ISMA must be considered from the perspective of its likely acceptance by states in view of its requisite power to obtain and disseminate information relating to the verification of arms control and disarmament agreements.

a) Unilateral Monitoring

The common theme pervading the alternatives grouped together under the heading of unilateral monitoring is that the onus of verifying compliance is placed on the individual state party to an arms control or disarmament agreement. The agreement may be either bipartite or multilateral. This type of verification is the most readily acceptable by states because the state would have control over the information gathered. Access to any monitored data would be restricted to states party to the agreement.

As may be anticipated, alternatives falling under this rubric resemble most closely the status quo.

The prime example of unilateral monitoring would be an undertaking by a state party to an arms control agreement to take its own measures within its territory to ensure compliance. In essence, this is no more than a recognition of the principle of international law that treaties are binding on the parties: pacta sunt servanda. This principle is recognized in the Vienna

Convention on the Law of Treaties, of 1980, in article 26:

Every treaty in force is binding upon the parties to it and must be performed by them in good faith.

An arms control agreement may expressly require that a party undertake to make provision in its national legislation obligating itself to comply with the agreement. This may include the establishment of a national body to verify the control of arms and to be charged with reporting on a regular basis. Provision could be made that reports be exchanged between the parties and include suitable satellite imagery as evidence of compliance. Such a system would solve the problem of prior consent and dissemination of information. However, its substantial disadvantage is that it is predicated on considerable trust - a factor obviously lacking where the parties are adversaries. This may be overcome, in part, by the elaboration of compliance provisions. For example, the national supervising body could be required to be independent of government control (admittedly difficult for socialist states) or be composed of members considered to be impartial. Furthermore, where there exists concern over the adequacy or veracity of information furnished, provision could be made for consultation and ultimately for on-site inspections. The right of a state to verify

by observation may be unrestricted or conditional upon reasonable belief of non-compliance. Local inspection could be undertaken by the dissatisfied party or a designated person, either a state or agency, extraneous to the agreement. A precedent for this type of arrangement may be found in the Treaty on the Prohibition of the Emplacement of Nuclear Weapons and Other Weapons of Mass-Destruction on the Sea-Bed and the Ocean Floor and in the Subsoil Thereof, of 1972 (the Sea-Bed Treaty). This Treaty provides, in article III, paragraph 1, that in order to ensure compliance, each state party has the right to verify, through observation, the activities of other parties on the ocean floor provided only that such observation does not interfere with such activities. Should such state be dissatisfied with its inspection and reasonable doubts remain concerning the fulfilment of obligations assumed under the Treaty, the parties shall consult with a view to removing such doubts (article III (2)). If doubts still persist, the state questioning compliance may notify the other parties to the Treaty with a view to co-operating on further procedures for verification including appropriate inspection of installations (article III (3)). Finally, if satisfaction is still lacking, the state may refer the matter to the UN Security Council which is empowered to take any action in accordance with the Charter (article III (4)).

Therefore, in addition to the "pacta sunt servanda" assurance of compliance, a state may verify through observation, by consultation with the state, by co-operation with other states on further procedures for verification, and finally by referring the matter to the Security Council.

A further precedent is the Convention on the Prohibition of Military or any Other Hostile Use of Environmental Modification Techniques, of 1977 (the ENMOD Convention). Where a state questions compliance with provisions of the treaty, it may request consultation with another state in accordance with article V (1). Consultation may also take place through suitable international procedures within the framework of the UN, including the services of appropriate international organizations. Furthermore, a consultative committee of experts may be convened composed of representatives of any state party wishing to participate. The committee is charged with transmitting a report of its findings which shall be distributed to all state parties. Finally, any party having reason to believe that another party is in breach of its treaty obligations, may lodge a complaint with the UN Security Council. The Council is empowered to initiate its own investigation.

Consultations and recourse to the Security Council by way of lodged complaint is also countenanced by the Convention on the Prohibition of the Development,

Production and Stockpiling of Bacteriological (Biological) and Toxin Weapons and on Their Destruction, of 1972 (the Biological Weapons Convention).

The Agreement Governing the Activities of States on the Moon and Other Celestial Bodies, (the Moon Treaty), not in force, provides that the moon and other celestial bodies shall be used by all parties exclusively for peaceful purposes (article III (1)). In order to assure itself that a state is complying with the Treaty, a party may visit the installations of another party upon giving reasonable advance notice (article XV (1)). A similar provision is included in 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 1967 (the Outer Space Treaty). If a party believes another state party is not fulfilling the obligations incumbent upon it pursuant to the Moon Treaty, the party may request consultations with a view to arriving at a mutually acceptable resolution of any controversy (article XV (2)). Should no settlement be forthcoming, the parties may take measures to solve their dispute by any other peaceful means. The assistance of the Secretary-General may be sought by either party in order to resolve the controversy (article XV (3)).

In conclusion, an alternative to the UN international satellite monitoring agency for verifying arms control or

disarmament would be to ensure compliance with agreements using measures already acceptable to states. Verification in its most basic form would be reflected in an agreement whereby states expressly bind themselves to comply with control provisions. With such an agreement having the force of international law, a party seeking to contravene its provisions would risk international public censure - one of the few sanctions available to international law. This sanction may prove inadequate for many states. Consequently, provision may be made establishing a national supervisory body charged with making regular reports regarding compliance and maintaining a channel of communications with its counterpart designated by another state party. Such reports may include satellite imagery which could be verifiable by an unsatisfied state through on-site inspections. Further assurances of compliance could be established by providing for consultation procedures and, in the absence of a resolution of differences, the interposition of a third party such as the designated representative of an international organization. It must be recalled that the basic onus of compliance rests with the individual party. Therein may lie its greatest objectionability. While it is ideal from the perspective of ensuring limited dissemination of information regarding matters of national security, it is predicated on considerable trust not only on the part of the other contracting

party or parties, but all other states as well. It is clear that the need for global assurance of compliance with arms control was a motivating factor for the creation of an international monitoring agency. Nevertheless, unilateral monitoring of this type has been accepted in certain treaties (for example the Sea-Bed Treaty and the ENMOD Convention). While this may be so due to a lack of interest in developing weapons contemplated by these conventions, there may be merit in establishing internationally agreed standard guidelines for verification - placing the onus on the state, though providing for consultation and the right to inspection or ultimately calling upon a third party to verify compliance.

A further unilateral monitoring alternative for arms control agreements would be the provision for a right to verify the compliance of one state by another using its own surveillance methods. This represents the essence of the SALT Agreements between the United States and the Soviet Union which attracted support because they made adequate provision for monitoring compliance. The principal method of verification is specified to be "national technical means" which are to be used in accordance with generally recognized principles of international law. "National technical means" is

defined as assets under national control for monitoring compliance including photo-reconnaissance satellites, aircraft based systems (such as radar and optical apparatus) and ground and sea-based systems. Observation satellites represent the essential component of verification. Both parties agree not to interfere with each other's national technical means and not to use deliberate concealment measures to impede verification.

Adequate verification was the crucial element to the conclusion and ratification of the SALT Agreements. The monitoring methods the agreements allow provide the requisite assurance needed to satisfy the parties that its provisions would be complied with. The added advantage, which is of considerable importance, is that the necessary monitoring does not entail dissemination of acquired information. This may reflect the reality of the situation since neither state need fear for its security should the other disclose the results of its monitoring efforts. Nevertheless, the SALT arrangements, which place the onus of verification on the state party, provide an alternative to international monitoring. A network of bilateral agreements between states possessing adequate national technical means of verification may serve the purposes of arms control and disarmament, which is the ultimate goal sought. By keeping the agreements bipartite, the divulgation of and dissemination of information present in multi-

lateral arrangements would be avoided. The SALT agreements may thus serve as useful precedents of disarmament proposals predicated on unilateral monitoring since they provide for adequate verification provisions affording acceptable risks to the parties. However, until such time as most states possess adequate national technical means, the few bilateral agreements which exist will not provide the assurance of arms control and disarmament sought by the world community.

b) Institutionalized Bilateral Monitoring

As compared with unilateral monitoring, institutionalized bilateral monitoring countenances the creation of a body extraneous to a bipartite arms control agreement to fulfil the role of verifying compliance with the agreement. Bilateral agreements which provide for a separate satellite monitoring agency to verify compliance may be an attractive alternative to unilateral agreements supervised by an international monitoring body. As with unilateral monitoring, bilateral monitoring by an agency provided for in the arms control agreement would serve to restrict the dissemination of intelligence information.

It is more likely that parties to an agreement would seek to establish a supervising monitoring body composed of representatives of the parties as opposed to establishing a completely independent body. Thus, for example, two states could appoint representatives to a joint

monitoring agency who would partake equally in ensuring proper and adequate compliance by both sides. This is, effectively, only one step beyond the national technical means of verification countenanced in the SALT Agreements since in joint monitoring the information existing is the same, only the flow between both parties is enhanced. The advantage is that there would be greater mutual assurance of compliance since the means available to both parties would be similar. As the ultimate goal is compliance, no advantage would be gained by one state unilaterally pursuing more effective verification methods. Moreover, joint operation would result in reduced duplication of monitoring equipment, particularly in the space segment.

Should there still exist mutual distrust, or fear of disadvantage, the joint satellite monitoring agency could be constituted to include representatives from a third party selected by consensus to act either as observers or more actively with the party representatives. For example, the parties may choose a non-aligned state to contribute personnel. Such representatives may simply act as mutual observers to ensure that the monitoring agency is acting impartially submitting regular reports to this effect. A more active role could be envisioned particularly where one of the parties considers itself lacking in necessary technical expertise. One finds a precedent for representatives of parties to an agreement charged with seeking compliance

with arms restrictions in the ENMOD Convention. The Convention provides for the establishment of a consultative committee of experts which may be convened to collect facts and present a report of its findings. However, the committee does not fulfil a regular role in verification but is convened at the request of a state in the event of a controversy.

A further alternative would be the creation by the parties of a completely independent satellite monitoring agency. Such an alternative is particularly advantageous where the parties do not possess the resources or capabilities to provide their own satellite observation systems. Thus, for example, two contiguous states having traditional enmities may decide to secure an arms control or disarmament agreement and appoint a mutually acceptable third party to act as the monitoring agency.

A final variant to the above alternatives which may be envisioned exists where blocs of states possessing similar interests enter into an agreement on a bilateral basis with another bloc of states. The most obvious example would be a bilateral agreement between NATO and the Warsaw Pact. Again, both blocs may appoint representatives of their own states to constitute a joint satellite monitoring agency, with or without observers or representatives from other states.

Should bilateral agreements with joint monitoring agencies proliferate, there may be cause to establish a set of internationally agreed guidelines according to which the joint agency would operate. Such guidelines, which could be devised in the UN, may establish the composition of the group, the information to be obtained and communicated between the parties, and procedures for dispute settlement.

In conclusion, institutionalized bilateral satellite monitoring may encourage states to enter into arms control agreements since such states can be assured of adequate and equal verification means with limited dissemination of information.

c) Regional Monitoring

A regional satellite monitoring agency would be charged with verifying compliance with arms agreements within a specified area of the world which may include a number of countries that may or may not have common interests. A regional agreement may be constituted by representatives from the specific area or may be composed of one or more representatives from states outside the region.

The advantages of a regional monitoring agency are apparent where participating states have a common interest in controlling the proliferation of arms in the area. A precedent for regional control is contained in the Treaty for the Prohibition of Nuclear Weapons in Latin

America, of 1967 (the Treaty of Tlatelolco). As is evident from its title, the Treaty applies to states in the region of Latin America and is noteworthy as representing the first agreement on arms limitation to create an effective regional system of control under a permanent supervisory organ, the Agency for the Prohibition of Nuclear Weapons in Latin America (OPANAL). The Agency is charged with ensuring compliance with the Treaty. Specifically, the Agency has the authority to verify that devices intended for peaceful uses of nuclear energy are not used to manufacture nuclear weapons and that explosions for peaceful purposes are compatible with the Treaty. Measures are prescribed in the event of violation. OPANAL is also empowered to enter into relations with any international organization or body, including any future body established to supervise disarmament or measures for the control of armaments in any part of the world.

OPANAL may serve as a model of regional cooperation for the control of arms, particularly considering that the area comprises states having different political ideologies. It is given enforcement powers and the flexibility to deal with any future arms control body.

Any regional monitoring agency is likely to represent states whose interests are more in common and therefore may be more attractive than an international

agency. Consequently, it may be expected to have more substantial powers and enforcement measures. There are clear financial advantages to establishing a regional agency which would be comprised of a number of states. Finally, satellite monitoring of a large geographic region would require the same resources as the surveillance of a single state. An apparent disadvantage would be the unlikelihood of regional cooperation in the reduction of arms where the states have widely differing interests. In such circumstances it would be unrealistic to expect any consensus on disarmament. Moreover, in a region comprising a large number of states, the likelihood increases that any arms reduction agreement would tend to be of more limited scope and deficient in its enforcement provisions. Nevertheless, regional agreements are well-suited to verification by satellite surveillance.

d) Universal Monitoring

Discussions in the UN regarding the creation of an international satellite monitoring agency resulted in the establishment of broad parameters for the eventual constitution of the agency. The prime function envisioned was the monitoring of existing and future international arms regulation and disarmament agreements as well as bilateral and other accords. As well, the agency was to monitor

areas of international crisis, such as early warning of attacks, evidence of border violations and compliance with cease-fire agreements.

The basic objection to an international satellite monitoring body, as mentioned above, involved the reticence of many states to have surveillance information dealing with national security analysed and disseminated by others. Yet, it may be argued that only a universal monitoring agency can help strengthen international confidence and provide global security by ensuring world-wide compliance with treaties. Consequently, it is particularly meritorious to seek universal alternatives to the UN proposed international monitoring agency which may be more readily acceptable to states. It may also be important to bear in mind that a universal agency of even the most circumscribed of powers may constitute a significant first step towards a wider jurisdiction since acceptance of international monitoring of even the most limited nature serves as a meaningful precedent.

The first universal alternative to the UN ISMA may be a monitoring agency with jurisdiction to monitor international crises exclusively and not be involved in verification of arms control or disarmament agreements. It will be recalled that the jurisdiction of ISMA was contemplated to extend to two types of technical missions;

the monitoring of compliance with disarmament or arms control agreements and the monitoring of crisis situations. It is the first type of activity which is the most controversial as it would require regular and pervasive sensing of party states.

Even with its role limited to crisis monitoring, the universal agency would still fulfil a valuable function. Any state which may be subject to scrutiny by an international body may well be reluctant to be characterized as the aggressor in any international conflict. Global public censure constitutes an effective sanction available in international law.

A second alternative to ISMA would be a universal satellite monitoring agency restricted to verifying compliance with multilateral treaties either dealing with specified types of weapons, prescribed types of activities, or applicable to certain delineated areas.

The Treaty on the Non-Proliferation of Nuclear Weapons, of 1970 (the Nuclear Non-Proliferation Treaty) may be cited as a precedent of a multilateral treaty with its scope of application limited to a specific type of weapon. The Treaty countenances the establishment of an international system whereby a state party undertakes to accept safeguards as prescribed by agreement to be negotiated and concluded with the International Atomic Energy Agency (IAEA). The agreement is to provide

for verification of the fulfilment of the state's obligations assumed under the Treaty with a view to preventing the diversion of nuclear energy from peaceful uses to nuclear weapons. IAEA inspectors have the authority to make regular on-site inspections. The IAEA, therefore, is an international body given powers to inspect individual states to verify compliance with the Treaty and individual state agreements.

The Nuclear Non-Proliferation Treaty, therefore, serves as a precedent for the establishment of an international body empowered to monitor compliance with a multilateral convention dealing with a specific type of weapon.

An international satellite monitoring agency may be set up to deal with a prescribed type of activity. For example, the Treaty Banning Nuclear Weapon Tests in the Atmosphere, in Outer Space and Under Water, of 1963 (the Partial Test Ban Treaty) prohibits any nuclear explosion in the atmosphere, underwater or in outer space. Thus, a universal satellite monitoring agency could be established with the authority to ensure that the type of activity proscribed by the Treaty has not been undertaken.

Finally, an international agency may be established to monitor compliance with international conventions applicable to a specific area. For example, the Antarctic Treaty, of 1961 provides that the continent shall be used exclusively for peaceful purposes. The Treaty prohibits military activity and the testing of nuclear

devices. While the Treaty makes provision for verification by designated nationals of contracting parties, amendment may permit the use of an international monitoring agency to take over the role of ensuring compliance.

As a further alternative to the UN ISMA , an international satellite monitoring agency may be created with its role limited to verifying compliance with bilateral or regional arms control treaties. Reference has been made above regarding the establishment of a body extraneous to a bilateral agreement which would be designated by the parties to undertake the role of verifying compliance. An international agency could be established which would consent to fulfil this role upon the request of the parties. The bilateral or regional treaty may make specific provision circumscribing or defining the duties of the international agency and perhaps requesting exclusion of certain agency members who would be considered as representing interests adverse to the parties. Furthermore, the parties could request that only prescribed surveillance be undertaken and that the frequency of its occurrence accord with a specific schedule or as the need for verification arises (for example, where national means prove inadequate).

Finally, an alternative universal satellite monitoring agency may be established to undertake compliance duties countenanced only by existing international agreements which could accommodate verification by satellite observation without breaching treaty provisions.

For example, the Partial Test Ban Treaty did not make express provision for monitoring leaving it to states parties to use their own national technical means of verification. There can thus be no objection to using an international monitoring agency to effect this same result. The same holds true as regards the Sea-Bed Treaty of 1972 according to which parties may conduct verification using their own means or through appropriate international procedures within the framework of the UN. (It should be noted, however, that satellite monitoring of this Treaty would not be possible at this time considering the current state of space technology). The ENMOD Convention as well as the Biological Weapons Convention both countenance recourse to the United Nations to investigate alleged breaches. Where such contraventions are detectable by satellite observation, the international monitoring agency could play a role in the verification process. The IAEA, which is established by the Non-Proliferation Treaty, could be assisted in its functions by an international satellite monitoring agency. This would, of course, require amendment of the Treaty, but this would not seem to be objectionable in principle given the broad powers of the IAEA. Finally, amendment would also be required as regards the Antarctic Treaty, though, again, such amendment may be acceptable given the right of inspection granted to designated nationals of the contracting parties.

In conclusion, there are a number of universal satellite monitoring alternatives to the international monitoring agency proposed by the UN. An international agency may be established exclusively to monitor crisis situations existing at a given moment. The authority of an international agency may be limited to only certain types of weapons, activities, or geographic areas. Alternatively, a universal monitoring agency may be created to ensure compliance with bilateral or regional agreements which expressly designate it as the verifying body. Finally, an international satellite monitoring agency may be established with jurisdiction only over existing international agreements which countenance its authority either implicitly or with minor amendment. It should be reiterated that the creation of an international agency, no matter how limited its powers, is significant of itself and may lead to an eventual broadening of authority as its credibility is established in the pursuit of international security and global disarmament.

PART IV. THE FUTURE REGULATION OF MILITARY  
ACTIVITIES IN OUTER SPACE

1. The Desirability and Prospects of Future Treaties to Demilitarize Outer Space

Outer space, which is declared to be the province of all mankind, may provide the best possibilities for establishing a global trend towards arms reduction and eventual disarmament. Yet, notwithstanding world opinion decrying the militarization of space, it has already become the latest forum for arms competition. Current and envisioned space military activities are wide-ranging. Moreover, these activities are not limited to the two super-powers. When countries such as China, which are lacking in technological development, gain a space capability one can expect that the more advanced industrialized countries will seek to establish a military presence in outer space. Research and development of space-craft weapon systems, such as directed-energy satellites, raises the ominous specter of active space conflicts as opposed to the more passive role played by surveillance satellites.

While it cannot be denied that states are making use of space for military purposes, the substantial increase in such activities makes their regulation and control all the more urgent. Such control may necessitate the promulgation of new international treaty law since existing law has proven inadequate.

It is the Outer Space Treaty which is of prime relevance to the use of space for military activities. The preamble makes it abundantly clear that outer space is to be used for peaceful purposes, to contribute to broad international cooperation and the development of mutual understanding and the strengthening of friendly relations between states. Article III provides that activities in outer space shall accord with international law, including the UN Charter, in the interest of maintaining peace and security. Both these provisions make evident that the prime governing consideration regarding space use is peaceful co-existence in its broadest form. Greater specificity is provided by article IV which states that parties to the Treaty undertake not to place in orbit around the earth any objects carrying nuclear weapons or similar kinds of weapons of mass destruction, install such weapons on celestial bodies, or station such weapons in outer space. This same article proscribes any use of the moon and other celestial bodies other than for exclusively peaceful purposes. Read on its own, this article, by necessary implication, does not exclude the placing of weapons of mass destruction in non-earth orbit. As well, only the moon and other celestial bodies must be used for peaceful purposes exclusively. Nevertheless, it would certainly

do injustice to the spirit of the Treaty to interpret article IV restrictively.

The Moon Treaty also sets out broad parameters of peaceful use. In the preamble, the parties have expressed their desire to prevent the moon from becoming an area of international conflict. Article III resembles article IV of the Outer Space Treaty, providing that the moon shall be used by all parties exclusively for peaceful purposes. The Moon Treaty, however, delineates with substantial specificity what non-peaceful activity is considered to be. Thus, any threat or use of force or any other hostile act on the moon is prohibited. In addition, the moon cannot be used as a staging ground for such threats in relation to the earth, spacecraft or other man-made space objects. Paragraph 3 of article III fills the lacuna of the Outer Space Treaty regarding the placing in non-earth orbit of weapons of mass destruction by extending the proscription to the moon and other celestial bodies. Finally, the establishment of military installations, the testing of any type of weapons and the conduct of military manoeuvres on the moon are all prohibited. While it must be recalled that the Moon Treaty is not in force, it can be stated that the reason for its lack of support is not due to its provisions relating to peaceful activities. Consequently,

it may be argued that the principles mentioned in article III represent customary international law and are thus binding on all states.

Other international law relating to military activity in outer space exists. For example, the Nuclear Test Ban Treaty proscribes the testing of nuclear weapons in space. The ENMOD Convention also expressly applies to outer space.

Consequently, in addition to general principles of international law upholding the pursuit of international peace and security (as evinced, for example, in the UN Charter), there is a specific body of Treaty law establishing generally that space must be used for peaceful purposes and specifically that certain types of activity are expressly prohibited.

As may be expected, the greatest difference of opinion relates to the definition of the more general terms, specifically the words "peaceful purposes". Essentially, it is the view of certain states that the term "peaceful" implies all activities which are not military in nature. Others are of the view that the term prohibits only aggressive uses. This lack of consensus has, therefore, undermined any broad approach to the constraint of increased militarization of outer space.

The growth of military activities in space, therefore,

would seem to make evident that existing law is inadequate to restrict such activities. However, it must be stated that such law has not been totally ineffectual. It has, for example, obliged states with military pursuits either to act clandestinely (a course of action which is becoming more difficult in a media-conscious world) or to constantly seek justification in law (which does injustice to the spirit of most treaties). In sum, while existing international law has proved incapable of de-militarizing outer space, it has had limited success in circumscribing what might otherwise have been an unbounded arms race in space.

In view of the inadequacies of existing law, many states have called for a comprehensive new treaty delineating with specificity what would constitute non-peaceful use of outer space. A caveat should be entered immediately regarding the promulgation of such a treaty. Any specific attempt to define peaceful activities may serve to legitimize all those activities not expressly or impliedly countenanced thereby. It may be, therefore, that a treaty which attempts to define permissible activities will prove less useful and perhaps far worse, than the existing broad proscriptions contained in the Outer Space Treaty and the Moon Treaty.

An example of a draft proposal for a new treaty is that of the Soviet Union.<sup>1</sup> The Soviet Draft Treaty on the Prohibition of the Stationing of Weapons of Any Kind in Outer Space of 11 August 1981 proposed at the thirty-sixth session of the United Nations General Assembly represents an attempt to halt the growing militarization of space in a limited fashion. Article 1 reads, in part:

'States Parties undertake not to place  
in orbit around the earth objects carrying  
weapons of any kind.'

This is similar to article IV of the Outer Space Treaty. The sole improvement in the Soviet draft is that it extends the prohibition to all weapons, and not only to weapons of mass destruction.

The crucial weakness in both provisions is that mention is made of "orbit around the earth" which implies a complete orbit. However, as early as 1967, the fractional orbital ballistic system (FOBS) was being deployed.<sup>2</sup> More recent advances allow each FOBS to carry multiple re-entry pods of rockets, multiplying the targeting capacity of each FOBS fired. In other words, full orbital weapons systems have become less commercially viable and effective

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1. The proposal is included as an appendix.

2. See, Los Angeles Times, 7 Nov. 1967.

as a result of these FOBS advances. Yet, fourteen years later, the Soviets continue to choose to omit any reference to this weapons system.

Article I of the Soviet Draft continues:

States Parties undertake not to ...  
install such weapons on celestial bodies  
or station such weapons in outer space in  
any other manner, including reusable manned  
space vehicles of an existing type or of  
other types which States Parties may develop  
in the future.

Article IV of the Outer Space Treaty continues along much the same vein:

States Parties to the Treaty undertake  
not to ... install such weapons on celestial  
bodies, or station such weapons in outer  
space in any other manner.

The newer Soviet draft has the advantage of being somewhat more specific, although the generality of the Outer Space Treaty provision would seem to include the specific examples enumerated in the Soviet draft. Nevertheless, it is conceivable that a state party could argue that reusable manned space vehicles are not, strictly speaking, installed or stationed, as they are not

necessarily permanent fixtures. Certainly, in such a case, precision is preferable to ambiguity.

The second paragraph of article I states that

Each State Party to the Treaty undertakes not to assist, encourage or induce any State, group of States or international organization to carry out activities contrary to the provisions of paragraph 1 of this article..

This language was borrowed from article I of the Non-Proliferation Treaty, albeit transplanted to a different context.

It is a well-known fact that the West European countries are seeking to become less dependent on the United States for nuclear defence in case of Soviet attack. The growing prestige of the European Space Agency and the success of the Ariane launch point towards the expected emergence of a third space super-power. Since the U.S. and the West European countries are, in spite of their differences, allies the possibility of continued technological assistance and encouragement is not remote. However, since paragraph 1 omits any mention of FOBS, defensive efforts using this weapons system would be not only decisive but also condoned.

Article 2 of the Soviet Draft, which makes reference to international law and the UN Charter, is practically a verbatim repetition of article III of the Outer Space Treaty, with the addition of two significant words: "... in strict accordance with international law, ..." and "... mutual understanding." The only tangible effect these additions might have would be to reinforce the impression of genuine sincerity on the part of the USSR.

Article 3 states:

Each State Party undertakes not to destroy, damage, distort the normal functioning or change the flight trajectory of space objects of other States Parties, if such objects were placed in orbit in strict accordance with article 1, paragraph I.

An interesting but unanswered issue which comes to mind is whether or not an unintentional error would constitute a violation of this Treaty. After all, it is not always possible to be certain, in advance, whether or not a particular foreign satellite is carrying weapons until after it is too late. In addition, satellites may have multiple uses, which would further serve to disguise their ultimate purpose.

Article 4 allows states parties to employ "national technical monitoring facilities" available to them for purposes of verification of compliance. This provision is unfair towards non-space powers which would not be expected to possess such facilities. The words "national" and "available to it" are particularly unjust as they would preclude such a state from contracting with a foreign state to borrow equipment or assistance.

Article 5 describes the amending formula. Its main weakness is that if a state refuses to accept an amendment, it is not bound by it. This provision will serve to create differing standards for different states - a situation which does not promote "international peace and security", or even less, "mutual understanding".

Article 6 which states: "This Treaty shall be of unlimited duration" reiterates identical provisions found in recent arms control agreements.

Article 7 empowers each state party

to withdraw from this Treaty if it decides that extraordinary events related to the subject matter of this Treaty have jeopardized its supreme interests.

This article also reiterates almost identical provisions found in recent arms control agreements. As has been the case previously, the test of whether or not a state's supreme interests have been jeopardized remains subjective. Most previous treaties adhered to the three-month time limit, with the exception of the ABM Treaty which extended the limit to six months - a more reasonable delay.

U.N.G.A. Resolution A/37/669, in its original form, was sponsored by Communist or Socialist states. The second preambular paragraph refers to "peaceful purposes" without defining this expression. Interpretations of this phrase vary among members of the international legal community, but, as mentioned above, these interpretations may be narrowed down to two schools of thought: those who consider defensive purposes to be peaceful; and those who consider only civilian activity as being peaceful. The gap between these two schools of thought is indeed very wide, and unless concrete measures are taken to define the parameters of this phrase, serious controversy could result.

In addition, it is a well-known fact that peaceful and military technology overlap. Any attempt to stifle all potentially military activity would have the effect

of curtailing civilian development as well. It would be well-nigh impossible to draw the line of demarcation between one type of activity and another.

Paragraph 2 of the Draft Resolution calls upon the two super-powers "to renew bilateral talks on the question of anti-satellite systems". The reference to bilateral talks is indeed unfortunate, as it does not take into account the emerging space powers, such as China and Western Europe. Even if these bilateral talks were to reach a successful conclusion, they would have only temporary relevance, up to the time when new space powers, not bound by these bilateral agreements, would be free to act.

Two subsequent amendments to the original Resolution add the phrase: "Reaffirms the will of all States ...". As was observed earlier, the amendments were proposed exclusively by Communist or Socialist states. This is a significant attempt on their part to bridge the East-West gap by concentrating on a desire common to both camps - the achievement of peace in outer space.

Positive reaction to the Soviet proposal came from its allies, which, at the same time, either directly or indirectly blamed the West for the escalation of nuclear armaments.

Nevertheless, while support was indeed broad, (118 to 1 in favour, with 8 abstentions) it is questionable whether it was in fact the Draft Treaty in itself that states approved of, or whether the support was merely indicative of a general desire to move on towards complete disarmament. Close scrutiny of UN documents series A/AC.206/2 and following, especially A/AC.206/19, reveals a desire on the part of a majority of states to work towards comprehensive disarmament, with many states submitting extensive, step-by-step proposals. Furthermore, the list of states abstaining, taken together with the American vote against, makes up a fair percentage of important Western states. Quantity is not synonymous with quality.

The Soviet Draft Treaty and appended Resolution are a significant departure from previous super-power attempts in the area of arms control, notably the very comprehensive and thorough USSR Draft Treaty on General and Complete Disarmament under Strict International Control (as amended in 1964)<sup>3</sup> and the corresponding U.S. Outline of Basic Provisions of a Treaty on General and Complete Disarmament in a Peaceful World (as amended in 1963).<sup>4</sup> Indeed,

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3. DC/203, DC/205, DC/207, DC/209, annex I, section A, ENDC/2/Rev.1/Add.1.

4. ENDC/30/Add.3.

one can detect a shift of focus over the past twenty years, (excluding 1982), from a general to partial demilitarization of outer space. There may be merit in this approach since total elimination of military space activities is unrealistic.

Any proposal for the partial demilitarization should be based on the following considerations. First, certain space systems, such as satellite observation and communications systems, while having clearly military implications, have proven their potential usefulness to the maintenance of peace. Second, when an agreement can prohibit specific activities which have not yet been effected by any state or whose utility is not envisioned to be strategically important in the immediate future, there would be greater likelihood of acceptance of such prohibition. As an example, the provisions in the Antarctic Treaty prohibiting military activities prove that where such activities are denied from the start, they may be constrained indefinitely. The reference in the Moon Treaty regarding installations on the moon also serves as an example. In the present doctrine of mutual deterrence, one side cannot be given a strategic advantage over the other. If both sides abstain from a given military activity the equilibrium will be maintained.

With these two considerations taken into account, a treaty providing partial demilitarization may meet with the approval of many states.<sup>5</sup> Such a treaty should first recognize those specific provisions regarding military activities that have already been accepted or are acceptable to states. The Non-Proliferation Treaty and the ENMOD Convention are examples. More importantly, the specific proscriptions in article III of the Moon Treaty, which relate to hostile acts and the establishment of military installations should also be incorporated in the proposed treaty. Since the aforementioned provisions represent activities in which no state is involved, the likelihood of their acceptance in a separate treaty is high. The proposed treaty should also make mention of other space military activities which are either untried, nascent or experimental. These activities may be grouped under the

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5. It is noteworthy that the notion of partial demilitarization of space was espoused by a number of states during the 1978 U.N. Special Session on Disarmament. In para.80 of the Program of Action, Italy, with the support of other delegations, set forth a draft additional protocol and explanatory memorandum to the Outer Space Treaty which advanced the proposition that certain types of satellites (those aimed at damaging, destroying or interfering with the operation of any space object) be proscribed.

rubric of "hostile" activities. Hostile activities may be defined as those activities whose prime purpose is the destruction of, or interference with other space objects, whether such activities originate on earth, in the air space or in outer space.<sup>6</sup> Also included would be those space objects which would threaten the use of force on the earth or in the air space. As is the case with the Moon Treaty, express provision may be made prohibiting the establishment of military space stations and the conduct of military manoeuvres in space. Since it can be expected that this provision would be met with opposition from the super-powers, which envision the establishment of space stations, there may be a need to define with some specificity what may come within the meaning of the term. It will be recalled that the Moon Treaty permits the use of military personnel for scientific research or for any other peaceful purpose. A similar inclusion may be appropriate in the draft treaty. It may also be made more elaborate to countenance the stationing of troops and their use in military manoeuvres.

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6. It is worthy of note that, upon the initiative of the United States, informal talks with the Soviet Union have taken place respecting the control and elimination of anti-satellite weapons. Begun in June 1978 in Helsinki, further discussions in February 1979 in Berne and May-June 1979 in Vienna proved inconclusive.

The proposed treaty may expressly provide that satellites used for observation, guidance and telemetry, and communications are not prohibited. The inclusion of such a provision is both a reflection of current reality and a recognition that such satellites also play a role in maintaining peace and international security. It is the case that most of these types of satellite systems do not contribute to arms escalation but rather provide a more efficient instrumentality for what could otherwise be effected using conventional means (for example, terrestrial communications networks, or reconnaissance aircraft). Proper surveillance and early warning may, as well, act as an effective deterrent and thereby promote peace. Moreover, it would be essential to permit observation satellite systems to allow for any future international satellite monitoring agency.

In conclusion, there may be merit in proposing a treaty for the partial demilitarization of outer space. Such a treaty would incorporate existing international law which affects specific military activity in space. Article III of the Moon Treaty, which elaborates specific proscribed uses, may be broadened to encompass outer space in general. The types of activity which would be prohibited would be predicated on the hostile nature

of the act or space object. Provision may be made banning any space object having, as its prime purpose the destruction and/or interference with another space object. Also prohibited would be the use of any instrumentality not located in space which would harm a space object. This would countenance such weapons as aircraft-launched anti-satellite missiles. Finally, provision would be necessary banning the use of space objects which could be used against earth. Military space stations, which could perhaps be defined in accordance with the nature of the personnel manning them, would also be prohibited. Observation and communication satellites would be permitted either by express terms or by necessary implication (since these would not have as their prime purpose the destruction and/or interference with other satellites).

It is evident that great care must be taken in formulating the specific articles of a partial demilitarization treaty. However, in view of current realities, such a treaty is an attractive alternative to any attempt to ban all military activities from outer space. The initiatives taken at the 1978 Special Session should be pursued.

Any treaty limiting military activities in space can only be effective and acceptable if compliance can somehow be monitored. Verification can be undertaken in a number of ways. The treaty may seek to establish a separate international monitoring agency expressly applicable to space. Alternatively, should a general international satellite monitoring agency be constituted to verify arms control and disarmament on earth, its authority may be extended to include space as well. Should the establishment of an agency be impracticable, the Registration Convention may be amended to require specifically delineated details regarding the nature and purpose of satellite launches. The Convention as it now exists, obligates parties to provide only the broadest of information regarding space objects and makes no reference to their intended use.

There may be another method of effecting the demilitarization of space, whether partial or total, short of preparing a new treaty. A protocol may be made to the Outer Space Treaty clarifying what is meant by the term "peaceful purposes". The protocol may follow the notion of only partial demilitarization set out above. This avenue may simplify procedures and expedite the aim of controlling the escalation of arms in space. It

will be recalled that the initiative at the U.N. Special Session on Disarmament held in 1978 proposed a draft additional protocol and explanatory memorandum.

It is clear that any proposal, whether a treaty or a protocol seeking pervasive regulation of military activities in outer space will require lengthy and arduous negotiation, whether the aim is partial or total demilitarization. Therefore, it may be more favourable to pursue a policy of indirectly regulating space military activities. A prime example would be to provide a treaty prohibiting the use of nuclear power satellites. The Soviet Union makes use of nuclear power to run most of its military satellites. While the United States does not use nuclear energy, there is growing interest in such sources of power since planned military satellites may not be adequately powered by solar energy. The use of nuclear powered satellites (NPS) has been of special interest to Canada. The Registration Convention contains only general provisions obliging the launching state to inform the Secretary-General of the launching and, if applicable, disintegration of space objects. The most critical stage of notification in cases of malfunction is prior to the point of re-entry. The next most critical stage is when the debris has fallen to the earth. Special precautions, in addition to the ones enumerated in this

Treaty, are warranted in the case of NPS, primarily because their radioactive properties increase their potential to cause damage to the environment. There is, at present, no legal régime or even specific mention of NPS in multilateral agreements.

The first Canadian initiatives with respect to NPS which were taken shortly after Cosmos 954 spread its debris over Canadian territory on 24 January 1978, occurred on 13 February 1978 at the 15th Session of the Scientific and Technical Sub-Committee, and on 14 March 1978 at the 17th Session of the Legal Sub-Committee, where applicable principles of international law were discussed and found inadequate. The Canadian representative stressed the need to develop special safety standards, safeguards and limitations specifically relevant to NPS.

More specific provisions were found in a Working Paper submitted by Canada and sixteen other states<sup>7</sup> on the use of NPS in outer space. Article 2(B) of this paper expands the four-step notification system of the Registration Convention to a five-step notification system especially geared to NPS: (1) prior to the launching,

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7. A/AC.105/218, Annex IV, 13 Apr. 1978.

(2) on launching, (3) when orbit decays and there is a reasonable possibility of re-entry, (4) prior to impact, and (5) after impact - with the primary responsibility on notification placed on the launching state or state of registration.

This notification procedure was amended in a later Canadian Working Paper<sup>8</sup> to: (1) notification at least one month prior to launching, and (2) notification prior to re-entry.

In a special report of 20 May 1978,<sup>9</sup> attention was focussed on the desirability of developing alternative power sources such as solar arrays, batteries, fuel cells and flywheels for energy storage. It was pointed out that Canadian scientists had already designed a more efficient array, suitable for high earth orbits and longer missions for up to seven years and had substituted new nickel hydrogen and silver hydrogen batteries at the cost of reduced life, however, which would make them suitable only for short duration or low total energy requirement missions.

Additional Canadian efforts included document A/AC.105/C.2/L.135 entitled: "Assistance to States", and document

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8. A/AC.105/C.2/L.129.

9. A/AC.105/220.

A/AC.105/C.2/L.134 entitled, "Safety Measures".

In addition, Canada proposed a listing of facilities around the world that might be available for use in accidents caused by space objects containing nuclear power sources.

Addressing its comments primarily to the American and Soviet delegations, the Canadian report of 20 May 1978, recommended the establishment of restrictions based on altitude and predicted lifetime of orbit. In the Canadian view, it would have been both desirable and feasible to limit the use of nuclear energy sources to satellites with longer predicted orbits, so that their level of radiation upon re-entry would have a greater probability of being reduced to a lower, safer level.

While the Canadian position favoured (and continues to favour) zero radioactive dispersion of deposits, it was suggested that safety standards for radiation levels be established according to whether the power pack is designed to be recovered intact under abortive launching or re-entry conditions, or whether it is designed to burn and be dispersed on re-entry.

In the intact re-entry situation, in order to assure this level of safety, it would be necessary to design indestructible leak-proof housings for NPS.

The Canadian delegation urged that the establishment of a system of location and identification once re-entry commenced would greatly minimize radiation exposure time. The use of radio beacons, flotation devices and dye markers could be of great benefit. Above all, it was stressed that the cooperation of the launching state regarding information on core size and power output would be an indispensable requirement.

It is praiseworthy that Canada was willing to let other states learn from the Cosmos 954 incident. Paragraphs 15 and 16 of the Canadian Report elaborated further:

15. In responding to the risk of injury and contamination, the Canadian authorities required: (1) knowledge of the trajectory of the satellite both on and following re-entry; (2) ability to survey a vast area under controlled conditions with air-borne radiation detection equipment, to fly at known and controlled elevation above ground, to determine actual location on the ground, and to land for material recovery purposes; (3) the capability of moving men and material across areas of the northern terrain under mid-winter conditions and of setting up base camps for remote operations; and (4) the means

of safely recovering fragments and transporting them to a central handling and storage facility.

16. Effective search and recovery operations involved co-ordinated efforts for two main agencies, one responsible for operations and logistics, the other responsible for health and safety aspects of radioactive contamination.

Mention was also made of the invaluable assistance provided by U.S. specialists.

In light of the practical knowledge Canada has gained as a result of the Cosmos experience, it has an undeniable moral duty to play an active role in preventing or minimizing the hazards of radiation escaping from NPS. Its geographical position between the two super-powers coupled with its practical experience would serve to make its contributions invaluable. Compared to the statements made by other states in the Report and elsewhere, the Canadian proposals have been, by far, the most precise and constructive. This is indeed an impressive record that should be maintained. The indirect advantage, of course, would be the reduction of military satellites particularly in the future where larger space objects are

envisioned, which will require greater energy.

The Canadian proposal which has made provision for stringent safety standards has been met with opposition. It may be that if Canada continues to adhere to these standards, international agreement on the issue may never be reached. While the Canadian standards are fair and realistic, it is unlikely that greater support can be gained for their full implementation. On the other hand, the chances for a majority acceptance of lesser standards are encouraging. However, it may be unwise to wait and hope for broad acceptance. NPS. are, after all, but one facet of the arms development network.

#### Conclusion

Existing international law provides that space activities be peaceful and should be carried out for the benefit of all peoples on the basis of international cooperation. Notwithstanding more specific provisions banning certain types of weapons in a limited area of space (earth orbit) there is no consensus of opinion as regards what type of activity is non-peaceful. Those seeking to limit or prohibit all military activity in space express the view that new international law is required. Before pursuing this course three considerations are worthy of note. First, existing law must not be discounted out of

hand. There may be an advantage to maintaining a broad concept such as "peaceful purposes" since any state seeking to justify its outer space exploits, most of which have at least partial military implications, would be obliged to interpret the term "peaceful purposes" restrictively; such a legalistic approach may be considered inappropriate as regards the law of nations. This leads to the second consideration which is that any attempt to define "peaceful" or "military" activities may serve only to exacerbate the problem. By providing a detailed definition there is a greater likelihood that significant military applications, some of which are not foreseeable, may not be countenanced by the definition. Third, the political realities of today may dictate that a treaty providing a comprehensive proscription of military space activities will not gain wide acceptance. In sum, the desirability and likelihood of a future treaty to demilitarize space is by no means certain.

Nevertheless, a treaty providing for partial demilitarization may still prove attractive if it would take into account a number of points. If the treaty applied to those military activities which are either nascent or not currently strategically attractive, it is more likely

that states will agree to their prohibition. Furthermore, it would not be objectionable to include those military activities which have already been recognized in international law as forbidden, grouping them together into one document and thus establishing a clearer framework of permissible military activities. The treaty should provide an express proscription of hostile space objects, a hostile space-craft being defined as one which has as a prime purpose the destruction of, or interference with another space object or installation. Proscribed actions should include; 1) any destruction of a space object from the earth or air space; and 2) the use of a space object against the earth or air space. Finally, certain military uses of space would be permissible. These would include satellite observation and communications, both because their exclusion would be totally unacceptable to most space users given their pervasive use, and because these activities also play a role in ensuring peace and international security.

An alternative method of demilitarizing outer space would be by indirectly impeding military space activities. A prime example, though not necessarily the motivating factor, is the proposed treaty to eliminate or regulate the use of nuclear powered satellites. As military

satellites increase in size and strength recourse to nuclear power may prove necessary since solar energy would be an inadequate source.

A necessary component of any proposed treaty would be adequate verification of compliance. This will be investigated below.

## 2. The Establishment of an Agency to Monitor Peaceful Activities in Outer Space

In anticipation of the elaboration of a future treaty specifically governing military activities in space, the issue arises concerning the establishment of an agency to monitor peaceful activities in outer space.

It may be advisable to suggest a simple monitoring agency with authority over earth-based activities as well as activities in outer space. The UN proposed international satellite monitoring agency was intended to apply to the territorial environment though envisions that outer space will be a potential future field of operation once the agency has established its own satellite system. There is, perhaps, a greater likelihood that states would accept outer space monitoring more readily than earth-based observance. This is because issues of sovereignty and the right to prior consent do not arise in outer space, which is, of course, beyond any claim of sovereignty. A second reason for the more likely acceptance of an international monitoring agency exclusively for outer space is based on existing space treaty law which countenances the right of states to visit any existing installations on the moon and other celestial bodies. Article XII of the Outer Space Treaty states that "All stations, installations and equipment and space vehicles ... shall be open to representatives of other States Parties to the Treaty on the basis of reciprocity." Provision is also made for

reasonable advance notice. The Moon Treaty provides greater detail regarding visitation rights. It provides, in article XV, that a state may assure itself that the activities of other states are compatible with the agreement by visiting the installations of any state. Furthermore, where any state has reason to believe that another state is not fulfilling its Treaty obligations or is interfering with its own activities, it may request consultation with that state and ultimately seek the assistance of the Secretary-General of the UN where no mutually acceptable settlement ensues. As a result, a state is granted substantial rights to ensure that the Treaty is being complied with. Consequently, there can be no objection in principle to establishing an international agency composed of state representatives charged with verifying compliance with the Moon Treaty.

An alternative to establishing an international satellite monitoring agency to ensure that space objects comply with international space law may be to provide for a more elaborate Registration Convention. Thus, should the proposal to provide for a monitoring agency meet with opposition, states may agree to amend the Registration Convention making the launch of military space objects more difficult. The Convention presently obliges states to furnish the following information; the name of the launching state, the registration number of the space object, the date and location of launch, and basic orbital

parameters. Clearly, the details required are most exiguous. A state may thus launch objects without any obligation to disclose their purpose, which is often purely military. If, however, the Registration Convention was amended obliging a state to furnish specific details regarding the object, public attention could focus on a state's motives in space. For example, if a state was required to provide a delineated series of items relating to the purpose of the object, the type of activities envisioned and the kind of equipment on board, it would quickly become apparent whether or not the object was to be used for peaceful purposes. The Convention provides that there is to be full and open access to the register of satellite launches which is maintained by the Secretary-General. Consequently, where a state is precluded from disguising the nature of each launch, its activities will be subject to closer global scrutiny. In this way, the use of outer space exclusively for peaceful purposes could be better assured.

CONCLUDING REMARKS

This study has concentrated on two principal themes. The first related to the use of outer space for the purposes of arms control and disarmament. The permissibility of this type of activity according to international law was examined. Model alternatives for the establishment of a satellite monitoring agency were proposed. The second theme was the desirability and prospects for future international treaty law proscribing or circumscribing military activity in outer space. Again, alternatives were posited for the reduction of a growing military presence in space.

Outer space exploration and use has grown substantially since the launching of the first space objects in 1957. The prospects for mankind seem limitless. Yet, to assure mankind's continual advancement in space, efforts must be made to ensure international peace and security both on earth and in outer space.

APPENDIX

APPENDIX

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TREATY ON PRINCIPLES GOVERNING THE ACTIVITIES OF  
STATES IN THE EXPLORATION AND USE OF OUTER SPACE,  
INCLUDING THE MOON AND OTHER CELESTIAL BODIES

adopted in U.N.G.A. Res. 2222 (XXI) (19 Dec.1966)  
610 U.N.T.S. 206 (1967); 18:3 U.S.T. 2410 (1967);  
(1967) Can. T.S. no.19  
entered into force 10 Oct. 1967

TREATY ON PRINCIPLES GOVERNING THE ACTIVITIES  
OF STATES IN THE EXPLORATION AND USE OF OUTER  
SPACE, INCLUDING THE MOON AND OTHER CELESTIAL  
BODIES.

(The Outer Space Treaty of 1967).

*The General Assembly,*

*Having considered* the report of the Committee on the Peaceful Uses of Outer Space covering its work during 1966, and in particular the work accomplished by the Legal Sub-Committee during its fifth session, held at Geneva from 12 July to 4 August and at New York from 12 September to 16 September,

*Noting further* the progress achieved through subsequent consultations among States Members of the United Nations.

*Reaffirming* the importance of international co-operation in the field of activities in the peaceful exploration and use of outer space, including the Moon and other celestial bodies, and the importance of developing the rule of law in this new area of human endeavour,

1. *Commends* the Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies, the text of which is annexed to the present resolution;

2. *Requests* the Depositary Governments to open the Treaty for signature and ratification at the earliest possible date;

3. *Expresses its hope* for the widest possible adherence to this Treaty;

4. *Requests* the Committee on the Peaceful Uses of Outer Space:

(a) *To continue* its work on the elaboration of an agreement on liability for damages caused by the launching of objects into outer space and an agreement on assistance to and return of astronauts and space vehicles, which are on the agenda of the Committee;

(b) *To begin* at the same time the study of questions relative to the definition of outer space and the utilization of outer space and celestial bodies, including the various implications of space communications;

(c) *To report* on the progress of its work to the General Assembly at its twenty-second session.

*The States Parties to this Treaty,*

*Inspired* by the great prospects opening up before mankind as a result of man's entry into outer space,

*Recognizing* the common interest of all mankind in the progress of the exploration and use of outer space for peaceful purposes,

*Believing* that the exploration and use of outer space should be carried on for the benefit of all peoples irrespective of the degree of their economic or scientific development,

*Desiring* to contribute to broad international co-operation in the scientific

as well as the legal aspects of the exploration and use of outer space for peaceful purposes,

*Believing* that such co-operation will contribute to the development of mutual understanding and to the strengthening of friendly relations between States and peoples,

*Recalling* resolution 1962 (XVIII), entitled "Declaration of Legal Principles Governing the Activities of States in the Exploration and Use of Outer Space", which was adopted unanimously by the United Nations General Assembly on 13 December 1963,

*Recalling* resolution 1884 (XVIII), calling upon States to refrain from placing in orbit around the Earth any objects carrying nuclear weapons or any other kinds of weapons of mass destruction or from installing such weapons on celestial bodies, which was adopted unanimously by the United Nations General Assembly on 17 October 1963,

*Taking account* of United Nations General Assembly resolution 110 (II) of 3 November 1947, which condemned propaganda designed or likely to provoke or encourage any threat to the peace, breach of the peace or act of aggression, and considering that the aforementioned resolution is applicable to outer space,

*Convinced* that a Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies, will further the purposes and principles of the Charter of the United Nations,

*Have agreed* on the following:

#### *Article I*

The exploration and use of outer space, including the Moon and other celestial bodies, shall be carried out for the benefit and in the interests of all countries, irrespective of their degree of economic or scientific development, and shall be the province of all mankind.

Outer space, including the Moon and other celestial bodies, shall be free for exploration and use by all States without discrimination of any kind, on a basis of equality and in accordance with international law, and there shall be free access to all areas of celestial bodies.

There shall be freedom of scientific investigation in outer space, including the Moon and other celestial bodies, and States shall facilitate and encourage international co-operation in such investigation.

#### *Article II*

Outer space, including the Moon and other celestial bodies, is not subject to national appropriation by claim of sovereignty, by means of use or occupation, or by any other means.

#### *Article III*

States Parties to the Treaty shall carry on activities in the exploration and use of outer space, including the Moon and other celestial bodies, in accordance with international law, including the Charter of the United Nations, in the

interest of maintaining international peace and security and promoting international co-operation and understanding.

*Article IV*

States Parties to the Treaty undertake not to place in orbit around the Earth any objects carrying nuclear weapons or any other kinds of weapons of mass destruction, install such weapons on celestial bodies, or station such weapons in outer space in any other manner.

The Moon and other celestial bodies shall be used by all States Parties to the Treaty exclusively for peaceful purposes. The establishment of military bases, installations and fortifications, the testing of any type of weapons and the conduct of military manoeuvres on celestial bodies shall be forbidden. The use of military personnel for scientific research or for any other peaceful purposes shall not be prohibited. The use of any equipment or facility necessary for peaceful exploration of the Moon and other celestial bodies shall also not be prohibited.

*Article V*

States Parties to the Treaty shall regard astronauts as envoys of mankind in outer space and shall render to them all possible assistance in the event of accident, distress, or emergency landing on the territory of another State Party or on the high seas. When astronauts make such a landing, they shall be safely and promptly returned to the State of registry of their space vehicle.

In carrying on activities in outer space and on celestial bodies, the astronauts of one State Party shall render all possible assistance to the astronauts of other States Parties.

States Parties to the Treaty shall immediately inform the other States Parties to the Treaty or the Secretary-General of the United Nations of any phenomena they discover in outer space, including the Moon and other celestial bodies, which could constitute a danger to the life or health of astronauts.

*Article VI*

States Parties to the Treaty shall bear international responsibility for national activities in outer space, including the Moon and other celestial bodies, whether such activities are carried on by governmental agencies or by non-governmental entities, and for assuring that national activities are carried out in conformity with the provisions set forth in the present Treaty. The activities of non-governmental entities in outer space, including the Moon and other celestial bodies, shall require authorization and continuing supervision by the appropriate State Party to the Treaty. When activities are carried on in outer space, including the Moon and other celestial bodies, by an international organization, responsibility for compliance with this Treaty shall be borne both by the international organization and by the States Parties to the Treaty participating in such organization.

*Article VII*

Each State Party to the Treaty that launches or procures the launching of an object into outer space, including the Moon and other celestial bodies, and

each State Party from whose territory or facility an object is launched, is internationally liable for damage to another State Party to the Treaty or to its natural or juridical persons by such object or its component parts on the Earth, in air space or in outer space, including the Moon and other celestial bodies.

#### *Article VIII*

A State Party to the Treaty on whose registry an object launched into outer space is carried shall retain jurisdiction and control over such object, and over any personnel thereof, while in outer space or on a celestial body. Ownership of objects launched into outer space, including objects landed or constructed on a celestial body, and of their component parts, is not affected by their presence in outer space or on a celestial body or by their return to the Earth. Such objects or component parts found beyond the limits of the State Party to the Treaty on whose registry they are carried shall be returned to that State Party, which shall, upon request, furnish identifying data prior to their return.

#### *Article IX*

In the exploration and use of outer space, including the Moon and other celestial bodies, States Parties to the Treaty shall be guided by the principle of co-operation and mutual assistance and shall conduct all their activities in outer space, including the Moon and other celestial bodies, with due regard to the corresponding interests of all other States Parties to the Treaty. States Parties to the Treaty shall pursue studies of outer space, including the Moon and other celestial bodies, and conduct exploration of them so as to avoid their harmful contamination and also adverse changes in the environment of the Earth resulting from the introduction of extraterrestrial matter and, where necessary, shall adopt appropriate measures for this purpose. If a State Party to the Treaty has reason to believe that an activity or experiment planned by it or its nationals in outer space, including the Moon and other celestial bodies, would cause potentially harmful interference with activities of other States Parties in the peaceful exploration and use of outer space, including the Moon and other celestial bodies, it shall undertake appropriate international consultations before proceeding with any such activity or experiment. A State Party to the Treaty which has reason to believe that an activity or experiment planned by another State Party in outer space, including the Moon and other celestial bodies, would cause potentially harmful interference with activities in the peaceful exploration and use of outer space, including the Moon and other celestial bodies, may request consultation concerning the activity or experiment.

#### *Article X*

In order to promote international co-operation in the exploration and use of outer space, including the Moon and other celestial bodies, in conformity with the purposes of this Treaty, the States Parties to the Treaty shall consider on a basis of equality any requests by other States Parties to the Treaty to be afforded an opportunity to observe the flight of space objects launched by those States.

The nature of such an opportunity for observation and the conditions under which it could be afforded shall be determined by agreement between the States concerned.

*Article XI*

In order to promote international co-operation in the peaceful exploration and use of outer space, States Parties to the Treaty conducting activities in outer space, including the Moon and other celestial bodies, agree to inform the Secretary-General of the United Nations as well as the public and the international scientific community, to the greatest extent feasible and practicable, of the nature, conduct, locations and results of such activities. On receiving the said information, the Secretary-General of the United Nations should be prepared to disseminate it immediately and effectively.

*Article XII*

All stations, installations, equipment and space vehicles on the Moon and other celestial bodies shall be open to representatives of other States Parties to the Treaty on a basis of reciprocity. Such representatives shall give reasonable advance notice of a projected visit, in order that appropriate consultations may be held and that maximum precautions may be taken to assure safety and to avoid interference with normal operations in the facility to be visited.

*Article XIII*

The provisions of this Treaty shall apply to the activities of States Parties to the Treaty in the exploration and use of outer space, including the Moon and other celestial bodies, whether such activities are carried on by a single State Party to the Treaty or jointly with other States, including cases where they are carried on within the framework of international intergovernmental organizations.

Any practical questions arising in connexion with activities carried on by international intergovernmental organizations in the exploration and use of outer space, including the Moon and other celestial bodies, shall be resolved by the States Parties to the Treaty either with the appropriate international organization or with one or more States members of that international organization, which are Parties to this Treaty.

*Article XIV*

1. This Treaty shall be open to all States for signature. Any State which does not sign this Treaty before its entry into force in accordance with paragraph 3 of this article may accede to it at any time.

2. This Treaty shall be subject to ratification by signatory States. Instruments of ratification and instruments of accession shall be deposited with the Governments of the Union of Soviet Socialist Republics, the United Kingdom of Great Britain and Northern Ireland and the United States of America, which are hereby designated the Depositary Governments.

3. This Treaty shall enter into force upon the deposit of instruments of ratification by five Governments including the Governments designated as Depositary Governments under this Treaty.

4. For States whose instruments of ratification or accession are deposited subsequent to the entry into force of this Treaty, it shall enter into force on the date of the deposit of their instruments of ratification or accession.

5. The Depositary Governments shall promptly inform all signatory and acceding States of the date of each signature, the date of deposit of each instrument of ratification of and accession to this Treaty, the date of its entry into force and other notices.

6. This Treaty shall be registered by the Depositary Governments pursuant to Article 102 of the Charter of the United Nations.

*Article XV*

Any State Party to the Treaty may propose amendments to this Treaty. Amendments shall enter into force for each State Party to the Treaty accepting the amendments upon their acceptance by a majority of the States Parties to the Treaty and thereafter for each remaining State Party to the Treaty on the date of acceptance by it.

*Article XVI*

Any State Party to the Treaty may give notice of its withdrawal from the Treaty one year after its entry into force by written notification to the Depositary Governments. Such withdrawal shall take effect one year from the date of receipt of this notification.

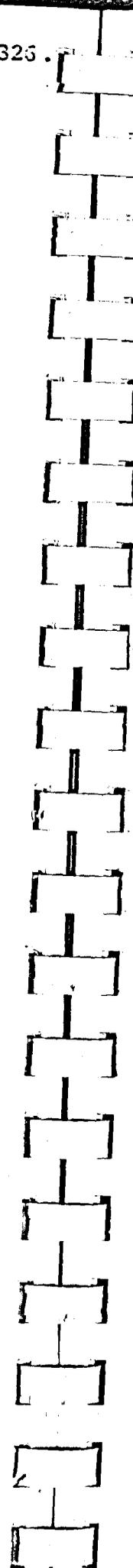
*Article XVII*

This Treaty, of which the Chinese, English, French, Russian and Spanish texts are equally authentic, shall be deposited in the archives of the Depositary Governments. Duly certified copies of this Treaty shall be transmitted by the Depositary Governments to the Governments of the signatory and acceding States.

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

Done in ..... , at the cities of London, Moscow and Washington, the ..... day of ..... one thousand nine hundred and ..... (1).

(1) The Treaty was signed in London, Moscow and Washington on January 27, 1967.



AGREEMENT ON THE RESCUE OF ASTRONAUTS, THE RETURN  
OF ASTRONAUTS AND THE RETURN OF OBJECTS LAUNCHED  
INTO OUTER SPACE

adopted in U.N.G.A. Res. 2345 (XXII) (19 Dec. 1967)  
672 U.N.T.S. 120 (1969)  
entered into force 3 Dec. 1968

AGREEMENT ON THE RESCUE OF ASTRONAUTS, THE RETURN  
OF ASTRONAUTS AND THE RETURN OF OBJECTS LAUNCHED  
INTO OUTER SPACE.

328.

(The Rescue Agreement of 1967).

*The General Assembly,*

*Bearing in mind* its resolution 2260 (XXII) of 3 November 1967, which calls upon the Committee on the Peaceful Uses of Outer Space to continue with a sense of urgency its work on the elaboration of an agreement on liability for damage caused by the launching of objects into outer space and an agreement on assistance to and return of astronauts and space vehicles,

*Referring to* the addendum to the report of the Committee on the Peaceful Uses of Outer Space,

*Desiring to give further concrete expression to the rights and obligations contained in the Treaty of Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies,*

1. *Commends* the Agreement on the Rescue of Astronauts, the Return of Astronauts and the Return of Objects Launched into Outer Space, the text of which is annexed to the present resolution;

2. *Requests* the Depositary Governments to open the Agreement for signature and ratification at the earliest possible date;

3. *Expresses its hope* for the widest possible adherence to this Agreement;

4. *Calls upon* the Committee on the Peaceful Uses of Outer Space to complete urgently the preparation of the draft agreement on liability for damage caused by the launching of objects into outer space and, in any event, not later than the beginning of the twenty-third session of the General Assembly, and to submit it to the Assembly at that session.

*The Contracting Parties,*

*Noting* the great importance of the Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies, which calls for the rendering of all possible assistance to astronauts in the event of accident, distress or emergency landing, the prompt and safe return of astronauts, and the return of objects launched into outer space,

*Desiring to develop and give further concrete expression to these duties,*

*Wishing to promote international co-operation in the peaceful exploration and use of outer space,*

*Prompted by sentiments of humanity,*

*Have agreed* on the following:

#### Article 1

Each Contracting Party which receives information or discovers that the personnel of a spacecraft have suffered accident or are experiencing conditions of distress or have made an emergency or unintended landing in territory under its jurisdiction or on the high seas or in any other place not under the jurisdiction of any State shall immediately:

(a) Notify the launching authority or, if it cannot identify and immediately communicate with the launching authority, immediately make a public announcement by all appropriate means of communication at its disposal;

(b) Notify the Secretary-General of the United Nations, who should disseminate the information without delay by all appropriate means of communication at his disposal.

#### Article 2

If, owing to accident, distress, emergency or unintended landing, the personnel of a spacecraft land in territory under the jurisdiction of a Contracting Party, it shall immediately take all possible steps to rescue them and render them all necessary assistance. It shall inform the launching authority and also the Secretary-General of the United Nations of the steps it is taking and of their progress. If assistance by the launching authority would help to effect a prompt rescue or would contribute substantially to the effectiveness of search and rescue operations, the launching authority shall co-operate with the Contracting Party with a view to the effective conduct of search and rescue operations. Such operations shall be subject to the direction and control of the Contracting Party, which shall act in close and continuing consultation with the launching authority.

#### Article 3

If information is received or it is discovered that the personnel of a spacecraft have alighted on the high seas or in any other place not under the jurisdiction of any State, those Contracting Parties which are in a position to do so shall, if necessary, extend assistance in search and rescue operations for such personnel to assure their speedy rescue. They shall inform the launching authority and the Secretary-General of the United Nations of the steps they are taking and of their progress.

#### Article 4

If, owing to accident, distress, emergency or unintended landing, the personnel of a spacecraft land in territory under the jurisdiction of a Contracting Party or have been found on the high seas or in any other place not under the jurisdiction of any State, they shall be safely and promptly returned to representatives of the launching authority.

#### Article 5

1. Each Contracting Party which receives information or discovers that a space object or its component parts has returned to Earth in territory under its

jurisdiction or on the high seas or in any other place not under the jurisdiction of any State, shall notify the launching authority and the Secretary-General of the United Nations.

2. Each Contracting Party having jurisdiction over the territory on which a space object or its component parts has been discovered shall, upon the request of the launching authority and with assistance from that authority if requested, take such steps as it finds practicable to recover the object or component parts.

3. Upon request of the launching authority, objects launched into outer space or their component parts found beyond the territorial limits of the launching authority shall be returned to or held at the disposal of representatives of the launching authority, which shall, upon request, furnish identifying data prior to their return.

4. Notwithstanding paragraphs 2 and 3 of this article, a Contracting Party which has reason to believe that a space object or its component parts discovered in territory under its jurisdiction, or recovered by it elsewhere, is of a hazardous or deleterious nature may so notify the launching authority, which shall immediately take effective steps, under the direction and control of the said Contracting Party, to eliminate possible danger of harm.

5. Expenses incurred in fulfilling obligations to recover and return a space object or its component parts under paragraphs 2 and 3 of this article shall be borne by the launching authority.

#### Article 6

For the purposes of this Agreement, the term "launching authority" shall refer to the State responsible for launching, or, where an international inter-governmental organization is responsible for launching, that organization, provided that that organization declares its acceptance of the rights and obligations provided for in this Agreement and a majority of the States members of that organization are Contracting Parties to this Agreement and to the Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies.

#### Article 7

1. This Agreement shall be open to all States for signature. Any State which does not sign this Agreement before its entry into force in accordance with paragraph 3 of this article may accede to it at any time.

2. This Agreement shall be subject to ratification by signatory States. Instruments of ratification and instruments of accession shall be deposited with the Governments of the Union of Soviet Socialist Republics, the United Kingdom of Great Britain and Northern Ireland and the United States of America, which are hereby designated the Depository Governments.

3. This Agreement shall enter into force upon the deposit of instruments of ratification by five Governments including the Governments designated as Depository Governments under this Agreement.

4. For States 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 their instruments of ratification or accession.

5. The Depository Governments shall promptly inform all signatory and acceding States of the date of each signature, the date of deposit of each instrument of ratification of and accession to this Agreement, the date of its entry into force and other notices.

6. This Agreement shall be registered by the Depository Governments pursuant to Article 102 of the Charter of the United Nations.

#### Article 8

Any State Party to the Agreement may propose amendments to this Agreement. Amendments shall enter into force for each State Party to the Agreement accepting the amendments upon their acceptance by a majority of the States Parties to the Agreement and thereafter for each remaining State Party to the Agreement on the date of acceptance by it.

#### Article 9

Any State Party to the Agreement may give notice of its withdrawal from the Agreement one year after its entry into force by written notification to the Depository Governments. Such withdrawal shall take effect one year from the date of receipt of this notification.

#### Article 10

This Agreement, of which the Chinese, English, French, Russian and Spanish texts are equally authentic, shall be deposited in the archives of the Depository Governments. Duly certified copies of this Agreement shall be transmitted by the Depository Governments to the Governments of the signatory and acceding States.

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

CONVENTION ON INTERNATIONAL LIABILITY FOR DAMAGE  
CAUSED BY SPACE OBJECTS

adopted in U.N.G.A. Res. 2777 (XXVI), (29 Nov. 1971)  
24:3 U.S.T. 2389 (1973)  
entered into force 9 Oct. 1973

CONVENTION ON INTERNATIONAL LIABILITY FOR  
DAMAGE CAUSED BY SPACE OBJECTS.

(The Liability Convention of 1973).

*Signed at WASHINGTON, LONDON and MOSCOW, March 29, 1972*

The States Parties to this Convention,

Recognizing the common interest of all mankind in furthering the exploration and use of outer space for peaceful purposes,

Recalling the Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies,

Taking into consideration that, notwithstanding the precautionary measures to be taken by states and international intergovernmental organizations involved in the launching of space objects, damage may on occasion be caused by such objects,

Recognizing the need to elaborate effective international rules and procedures concerning liability for damage caused by space objects and to ensure, in particular, the prompt payment under the terms of this Convention of a full and equitable measure of compensation to victims of such damage,

Believing that the establishment of such rules and procedures will contribute to the strengthening of international cooperation in the field of the exploration and use of outer space for peaceful purposes,

Have agreed on the following:

*Article I*

For the purposes of this Convention:

(a) The term "damage" means loss of life, personal injury or other impairment of health; or loss of or damage to property of states or of persons, natural or juridical, or property of international intergovernmental organizations;

(b) The term "launching" includes attempted launching;

(c) The term "launching state" means:

(i) A state which launches or procures the launching of a space object;

(ii) A state from whose territory or facility a space object is launched;

(d) The term "space object" includes component parts of a space object as well as its launch vehicle and parts thereof.

*Article II*

A launching state shall be absolutely liable to pay compensation for damage caused by its space object on the surface of the earth or to aircraft in flight.

*Article III*

In the event of damage being caused elsewhere than on the surface of the earth to a space object of one launching state or to persons or property on board such a space object by a space object of another launching state, the latter shall be

liable only if the damage is due to its fault or the fault of persons for whom it is responsible.

#### *Article IV*

1. In the event of damage being caused elsewhere than on the surface of the earth to a space object of one launching state or to persons or property on board such a space object by a space object of another launching state, and of damage thereby being caused to a third state or to its natural or juridical persons, the first two states shall be jointly and severally liable to the third state, to the extent indicated by the following:

(a) If the damage has been caused to the third state on the surface of the earth or to aircraft in flight, their liability to the third state shall be absolute;

(b) If the damage has been caused to a space object of the third state or to persons or property on board that space object elsewhere than on the surface of the earth, their liability to the third state shall be based on the fault of either of the first two states or on the fault of persons for whom either is responsible.

2. In all cases of joint and several liability referred to in paragraph 1 of this article, the burden of compensation for the damage shall be apportioned between the first two states in accordance with the extent to which they were at fault; if the extent of the fault of each of these states cannot be established, the burden of compensation shall be appointed equally between them. Such apportionment shall be without prejudice to the right of the third state to seek the entire compensation due under this Convention from any or all of the launching states which are jointly and severally liable.

#### *Article V*

1. Whenever two or more states jointly launch a space object, they shall be jointly and severally liable for any damage caused.

2. A launching state which has paid compensation for damage shall have the right to present a claim for indemnification to other participants in the joint launching. The participants in a joint launching may conclude agreements regarding the apportioning among themselves of the financial obligation in respect of which they are jointly and severally liable. Such agreements shall be without prejudice to the right of a state sustaining damage to seek the entire compensation due under this Convention from any or all of the launching states which are jointly and severally liable.

3. A state from whose territory or facility a space object is launched shall be regarded as a participant in a joint launching.

#### *Article VI*

1. Subject to the provisions of paragraph 2 of this article, exoneration from absolute liability shall be granted to the extent that a launching state establishes that the damage has resulted either wholly or partially from gross negligence or from an act or omission done with intent to cause damage on the part of a claimant state or of natural or juridical persons it represents.

2. No exoneration whatever shall be granted in cases where the damage has resulted from activities conducted by a launching state which are not in conformity with international law including, in particular, the Charter of the United Nations 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.

#### Article VII

The provisions of this Convention shall not apply to damage caused by a space object of a launching state to:

- (a) Nationals of that launching state;
- (b) Foreign nationals during such time as they are participating in the operation of that space object from the time of its launching or at any stage thereafter until its descent, or during such time as they are in the immediate vicinity of a planned launching or recovery area as the result of an invitation by that launching state.

#### Article VIII

1. A state which suffers damage, or whose natural or juridical persons suffer damage, may present to a launching state a claim for compensation for such damage.
2. If the state of nationality has not presented a claim, another state may, in respect of damage sustained in its territory by any natural or juridical person, present a claim to a launching state.
3. If neither the state of nationality nor the state in whose territory the damage was sustained has presented a claim or notified its intention of presenting a claim, another state may, in respect of damage sustained by its permanent residents, present a claim to a launching state.

#### Article IX

A claim for compensation for damage shall be presented to a launching state through diplomatic channels. If a state does not maintain diplomatic relations with the launching state concerned, it may request another state to present its claim to that launching state or otherwise represent its interests under this Convention. It may also present its claim through the Secretary-General of the United Nations, provided the claimant state and the launching state are both Members of the United Nations.

#### Article X

1. A claim for compensation for damage may be presented to a launching state not later than one year following the date of the occurrence of the damage or the identification of the launching state which is liable.
2. If, however, a state does not know of the occurrence of the damage or has not been able to identify the launching state which is liable, it may present a claim within one year following the date on which it learned of the aforementioned facts; however, this period shall in no event exceed one year following the date on which the state could reasonably be expected to have learned of the facts through the exercise of due diligence.
3. The time-limits specified in paragraphs 1 and 2 of this article shall apply even if the full extent of the damage may not be known. In this event, however, the claimant state shall be entitled to revise the claim and submit additional documentation after the expiration of such time-limits until one year after the full extent of the damage is known.

#### Article XI

1. Presentation of a claim to a launching state for compensation for damage under this Convention shall not require the prior exhaustion of any local remedies

which may be available to a claimant state or to natural or juridical persons it represents.

2. Nothing in this Convention shall prevent a state, or natural or juridical persons it might represent, from pursuing a claim in the courts or administrative tribunals or agencies of a launching state. A state shall not, however, be entitled to present a claim under this Convention in respect of the same damage for which a claim is being pursued in the courts or administrative tribunals or agencies of a launching state or under another international agreement which is binding on the states concerned.

#### *Article XII*

The compensation which the launching state shall be liable to pay for damage under this Convention shall be determined in accordance with international law and the principles of justice and equity, in order to provide such reparation in respect of the damage as will restore the person, natural or juridical, state or international organization on whose behalf the claim is presented to the condition which would have existed if the damage had not occurred.

#### *Article XIII*

Unless the claimant state and the state from which compensation is due under this Convention agree on another form of compensation, the compensation shall be paid in the currency of the claimant state, or if that state so requests, in the currency of the state from which compensation is due.

#### *Article XIV*

If no settlement of a claim is arrived at through diplomatic negotiations as provided for in Article IX, within one year from the date on which the claimant state notifies the launching state that it has submitted the documentation of its claim, the parties concerned shall establish a Claims Commission at the request of either party.

#### *Article XV*

1. The Claims Commission shall be composed of three members: one appointed by the claimant state, one appointed by the launching state and the third member, the Chairman, to be chosen by both parties jointly. Each party shall make its appointment within two months of the request for the establishment of the Claims Commission.

2. If no agreement is reached on the choice of the Chairman within four months of the request for the establishment of the Commission, either party may request the Secretary-General of the United Nations to appoint the Chairman within a further period of two months.

#### *Article XVI*

1. If one of the parties does not make its appointment within the stipulated period, the Chairman shall, at the request of the other party, constitute a single-member Claims Commission.

2. Any vacancy which may arise in the Commission for whatever reason shall be filled by the same procedure adopted for the original appointment.

3. The Commission shall determine its own procedure.

4. The Commission shall determine the place or places where it shall sit and all other administrative matters.

5. Except in the case of decisions and awards by a single-member Commission, all decisions and awards of the Commission shall be by majority vote.

*Article XVII*

No increase in the membership of the Claims Commission shall take place by reason of two or more claimant states or launching states being joined in any one proceeding before the Commission. The claimant states so joined shall collectively appoint one member of the Commission in the same manner and subject to the same conditions as would be the case for a single claimant state. When two or more launching states are so joined, they shall collectively appoint one member of the Commission in the same way. If the claimant states or the launching states do not make the appointment within the stipulated period, the Chairman shall constitute a single-member Commission.

*Article XVIII*

The Claims Commission shall decide the merits of the claim for compensation and determine the amount of compensation payable, if any.

*Article XIX*

1. The Claims Commission shall act in accordance with the provisions of Article XII.
2. The decision of the Commission shall be final and binding if the parties have so agreed; otherwise the Commission shall render a final and recommendatory award, which the parties shall consider in good faith. The Commission shall state the reasons for its decision or award.
3. The Commission shall give its decision or award as promptly as possible and no later than one year from the date of its establishment, unless an extension of this period is found necessary by the Commission.
4. The Commission shall make its decision or award public. It shall deliver a certified copy of its decision or award to each of the parties and to the Secretary-General of the United Nations.

*Article XX*

The expenses in regard to the Claims Commissions shall be borne equally by the parties, unless otherwise decided by the Commission.

*Article XXI*

If the damage caused by a space object presents a large-scale danger to human life or seriously interferes with the living conditions of the population or the functioning of vital centers, the States Parties, and in particular the launching state, shall examine the possibility of rendering appropriate and rapid assistance to the state which has suffered the damage, when it so requests. However, nothing in this article shall affect the rights or obligations of the States Parties under this Convention.

*Article XXII*

1. In this Convention, with the exception of Articles XXIV to XXVII, references to states shall be deemed to apply to any international intergovernmental organization which conducts space activities if the organization declares its acceptance of the rights and obligations provided for in this Convention and if a majority of the states members of the organization are States Parties to this Convention and to the Treaty

on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies.

2. States members of any such organization which are States Parties to this Convention shall take all appropriate steps to ensure that the organization makes a declaration in accordance with the preceding paragraph.

3. If an international intergovernmental organization is liable for damage by virtue of the provisions of this Convention, that organization and those of its members which are States Parties to this Convention shall be jointly and severally liable; provided, however, that:

(a) Any claim for compensation in respect of such damage shall be first presented to the organization;

(b) Only where the organization has not paid, within a period of six months, any sum agreed or determined to be due as compensation for such damage, may the claimant state invoke the liability of the members which are States Parties to this Convention for the payment of that sum.

4. Any claim, pursuant to the provisions of this Convention, for compensation in respect of damage caused to an organization which has made a declaration in accordance with paragraph 1 of this article shall be presented by a state member of the organization which is a State Party to this Convention.

#### *Article XXIII*

1. The provisions of this Convention shall not affect other international agreements in force in so far as relations between the States Parties to such agreements are concerned.

2. No provision of this Convention shall prevent states from concluding international agreements reaffirming, supplementing or extending its provisions.

#### *Article XXIV*

1. This Convention shall be open to all states for signature. Any state which does not sign this Convention before its entry into force in accordance with paragraph 3 of this article may accede to it at any time.

2. This Convention shall be subject to ratification by signatory states. Instruments of ratification and instruments of accession shall be deposited with the Governments of the United States of America, the United Kingdom of Great Britain and Northern Ireland and the Union of Soviet Socialist Republics, which are hereby designated the Depositary Governments.

3. This Convention shall enter into force on the deposit of the fifth instrument of ratification.

4. For states whose instruments of ratification or accession are deposited subsequent to the entry into force of this Convention, it shall enter into force on the date of the deposit of their instruments of ratification or accession.

5. The Depositary Governments shall promptly inform all signatory and acceding states of the date of each signature, the date of deposit of each instrument of ratification and accession to this Convention, the date of its entry into force and other notices.

6. This Convention shall be registered by the Depositary Governments pursuant to Article 102 of the Charter of the United Nations.

#### *Article XXV*

Any State Party to this Convention may propose amendments to this Convention. Amendments shall enter into force for each State Party to the Convention accepting the amendments upon their acceptance by a majority of the States Parties

to the Convention and thereafter for each remaining State Party to the Convention on the date of acceptance by it.

*Article XXVI*

Ten years after the entry into force of this Convention, the question of the review of this Convention shall be included in the provisional agenda of the United Nations General Assembly in order to consider, in the light of past application of the Convention, whether it requires revision. However, at any time after the Convention has been in force for five years, and at the request of one third of the States Parties to the Convention, and with the concurrence of the majority of the States Parties, a conference of the States Parties shall be convened to review this Convention.

*Article XXVII*

Any State Party to this Convention may give notice of its withdrawal from the Convention one year after its entry into force by written notification to the Depositary Governments. Such withdrawal shall take effect one year from the date of receipt of this notification.

*Article XXVIII*

This Convention, of which the English, Russian, French, Spanish and Chinese texts are equally authentic, shall be deposited in the archives of the Depositary Governments. Duly certified copies of this Convention shall be transmitted by the Depositary Governments to the governments of the signatory and acceding states.

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

DONE in triplicate, at the cities of Washington, London and Moscow, this twenty-ninth day of March, one thousand nine hundred and seventy-two.

[Signed on behalf of Argentina, Austria, Belgium, Botswana, Bulgaria, Burundi, Byelorussian S.S.R., Republic of China, Colombia, Costa Rica, Czechoslovakia, Dahomey, El Salvador, Finland, German Democratic Republic, Guatemala, Haiti, Honduras, Hungary, Iceland, Iran, Ireland, Italy, Khmer Republic, Republic of Korea, Laos, Lebanon, Mexico, Morocco, Nepal, Nicaragua, Norway, Panama, Poland, Rumania, Ruanda, Spain, South Africa, Switzerland, Tunisia, Ukrainian S.S.R., United Kingdom, U.S.S.R., United States, Venezuela and Zaire. Subsequent signatories were Denmark, Ghana, Greece, Mali, Mongolia, Peru, Senegal and Togo.]

CONVENTION ON REGISTRATION OF OBJECTS LAUNCHED  
INTO OUTER SPACE

adopted in U.N.G.A. Res. 3235 (XXIX) (12 Nov. 1974)  
28:1 U.S.T. 695 (1976-7); (1976) Can. T.S. no.36  
entered into force 15 Sept. 1976

CONVENTION ON REGISTRATION OF OBJECTS LAUNCHED  
INTO OUTER SPACE.

(The Registration Convention of 1976)

*The States Parties to this Convention,*

*Recognizing the common interest of all mankind in furthering the exploration and use of outer space for peaceful purposes,*

*Recalling that 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 27 January 1967 affirms that States shall bear international responsibility for their national activities in outer space and refers to the State on whose registry an object launched into outer space is carried,*

*Recalling also that the Agreement on the Rescue of Astronauts, the Return of Astronauts and the Return of Objects Launched into Outer Space of 22 April 1968 provides that a launching authority shall, upon request, furnish identifying data prior to the return of an object it has launched into outer space found beyond the territorial limits of the launching authority,*

*Recalling further that the Convention on International Liability for Damage Caused by Space Objects of 29 March 1972 establishes international rules and procedures concerning the liability of launching States for damage caused by their space objects,*

*Desiring, in the light of the Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies, to make provision for the national registration by launching States of space objects launched into outer space,*

*Desiring further that a central register of objects launched into outer space be established and maintained, on a mandatory basis, by the Secretary-General of the United Nations,*

*Desiring also to provide for States Parties additional means and procedures to assist in the identification of space objects,*

*Believing that a mandatory system of registering objects launched into outer space would, in particular, assist in their identification and would contribute to the application and development of international law governing the exploration and use of outer space,*

*Have agreed on the following:*

*Article I*

*For the purposes of this Convention:*

*(a) The term "launching State" means:*

- (i) A State which launches or procures the launching of a space object;*
- (ii) A State from whose territory or facility a space object is launched;*

*(b) The term "space object" includes component parts of a space object as well as its launch vehicle and parts thereof;*

*(c) The term "State of registry" means a launching State on whose registry a space object is carried in accordance with article II.*

#### Article II

1. When a space object is launched into earth orbit or beyond, the launching State shall register the space object by means of an entry in an appropriate registry which it shall maintain. Each launching State shall inform the Secretary-General of the United Nations of the establishment of such a registry.

2. Where there are two or more launching States in respect of any such space object, they shall jointly determine which one of them shall register the object in accordance with paragraph 1 of this article, bearing in mind the provisions of article VIII of the Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies, and without prejudice to appropriate agreements concluded or to be concluded among the launching States on jurisdiction and control over the space object and over any personnel thereof.

3. The contents of each registry and the conditions under which it is maintained shall be determined by the State of registry concerned.

#### Article III

1. The Secretary-General of the United Nations shall maintain a Register in which the information furnished in accordance with article IV shall be recorded.

2. There shall be full and open access to the information in this Register.

#### Article IV

1. Each State of registry shall furnish to the Secretary-General of the United Nations, as soon as practicable, the following information concerning each space object carried on its registry:

- (a) Name of launching State or States;
- (b) An appropriate designator of the space object or its registration number;
- (c) Date and territory or location of launch;
- (d) Basic orbital parameters, including:
  - (i) Nodal period,
  - (ii) Inclination,
  - (iii) Apogee,
  - (iv) Perigee;
- (e) General function of the space object.

2. Each State of registry may, from time to time, provide the Secretary-General of the United Nations with additional information concerning a space object carried on its registry.

3. Each State of registry shall notify the Secretary-General of the United Nations, to the greatest extent feasible and as soon as practicable, of space objects concerning which it has previously transmitted information, and which have been but no longer are in earth orbit.

#### Article V

Whenever a space object launched into earth orbit or beyond is marked with the designator or registration number referred to in article IV, paragraph 1 (b), or both, the State of registry shall notify the Secretary-General of this fact when submitting the information regarding the space object in accordance with article IV. In such case, the Secretary-General of the United Nations shall record this notification in the Register.

*Article VI*

Where the application of the provisions of this Convention has not enabled a State Party to identify a space object which has caused damage to it or to any of its natural or juridical persons, or which may be of hazardous or deleterious nature, other States Parties, including in particular States possessing space monitoring and tracking facilities, shall respond to the greatest extent feasible to a request by that State Party, or transmitted through the Secretary-General on its behalf, for assistance under equitable and reasonable conditions in the identification of the object. A State Party making such a request shall, to the greatest extent feasible, submit information as to the time, nature and circumstances of the events giving rise to the request. Arrangements under which such assistance shall be rendered shall be the subject of agreement between the parties concerned.

*Article VII*

1. In this Convention, with the exception of articles VIII to XII inclusive, references to States shall be deemed to apply to any international intergovernmental organization which conducts space activities if the organization declares its acceptance of the rights and obligations provided for in this Convention and if a majority of the States members of the organization are States Parties to this Convention and to the Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies.

2. States members of any such organization which are States Parties to this Convention shall take all appropriate steps to ensure that the organization makes a declaration in accordance with paragraph 1 of this article.

*Article VIII*

1. This Convention shall be open for signature by all States at United Nations Headquarters in New York. Any State which does not sign this Convention before its entry into force in accordance with paragraph 3 of this article may accede to it at any time.

2. This Convention shall be subject to ratification by signatory States. Instruments of ratification and instruments of accession shall be deposited with the Secretary-General of the United Nations.

3. This Convention shall enter into force among the States which have deposited instruments of ratification on the deposit of the fifth such instrument with the Secretary-General of the United Nations.

4. For States whose instruments of ratification or accession are deposited subsequent to the entry into force of this Convention, it shall enter into force on the date of the deposit of their instruments of ratification or accession.

5. The Secretary-General shall promptly inform all signatory and acceding States of the date of each signature, the date of deposit of each instrument of ratification or accession to this Convention, the date of its entry into force and other notices.

*Article IX*

Any State Party to this Convention may propose amendments to the Convention. Amendments shall enter into force for each State Party to the Convention accepting the amendments upon their acceptance by a majority of the States Parties to the Convention and thereafter for each remaining State Party to the Convention on the date of acceptance by it.

*Article X*

Ten years after the entry into force of this Convention, the question of the review of the Convention shall be included in the provisional agenda of the United Nations General Assembly in order to consider, in the light of past application of the Convention, whether it requires revision. However, at any time after the Convention has been in force for five years, at the request of one third of the States Parties to the Convention and with concurrence of the majority of the States Parties, a conference of the States Parties shall be convened to review this Convention. Such review shall take into account in particular any relevant technological developments, including those relating to the identification of space objects.

*Article XI*

Any State Party to this Convention may give notice of its withdrawal from the Convention one year after its entry into force by written notification to the Secretary-General of the United Nations. Such withdrawal shall take effect one year from the date of receipt of this notification.

*Article XII*

The original of this Convention, of which the Arabic, Chinese, English, French, Russian and Spanish texts are equally authentic, shall be deposited with the Secretary-General of the United Nations, who shall send certified copies thereof to all signatory and acceding States.

IN WITNESS WHEREOF the undersigned, being duly authorized thereto by their respective Governments, have signed this Convention, opened for signature at New York on . . .

AGREEMENT GOVERNING THE ACTIVITIES OF STATES ON  
THE MOON AND OTHER CELESTIAL BODIES

U.N. Doc. A/RES/34,68 (14 Dec. 1979)

AGREEMENT GOVERNING THE ACTIVITIES OF STATES  
ON THE MOON AND OTHER CELESTIAL BODIES.

(The Moon Agreement of 1979)

The States Parties to this Agreement

Noting the achievements of States in the exploration and use of the moon and other celestial bodies,

Recognizing that the moon, as a natural satellite of the earth, has an important role to play in the exploration of outer space,

Determined to promote on the basis of equality the further development of co-operation among States in the exploration and use of the moon and other celestial bodies,

Desiring to prevent the moon from becoming an area of international conflict,

Bearing in mind the benefits which may be derived from the exploitation of the natural resources of the moon and other celestial bodies,

Recalling the Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies, the Agreement on the Rescue of Astronauts, the Return of Objects Launched into Outer Space, the Convention on International Liability for Damage Caused by Space Objects, and the Convention on Registration of Objects Launched into Outer Space,

Taking into account the need to define and develop the provisions of these international instruments in rela-

*Les États parties au présent Accord.*

*Notant les succès obtenus par les États dans l'exploration et l'utilisation de la Lune et des autres corps célestes.*

*Reconnaissant que la Lune, satellite naturel de la Terre, joue à ce titre un rôle important dans l'exploration de l'espace.*

*Fermement résolu à favoriser dans des conditions d'égalité le développement de la coopération entre États aux fins de l'exploration et de l'utilisation de la Lune et des autres corps célestes.*

*Désireux d'éviter que la Lune ne puisse servir d'arène à des conflits internationaux.*

*Tenant compte des avantages qui peuvent être retirés de l'exploitation des ressources naturelles de la Lune et des autres corps célestes.*

*Rappelant que le Traité sur les principes régissant les activités des États en matière d'exploration et d'utilisation de l'espace extra-atmosphérique, y compris la Lune et les autres corps célestes, l'Accord sur le sauvetage des astronautes, le retour des astronautes et la restitution des objets lancés dans l'espace extra-atmosphérique, la Convention sur la responsabilité internationale pour les dommages causés par des objets spatiaux et la Convention sur l'immatriculation des objets lancés dans l'espace extra-atmosphérique,*

*Présentant en considération la nécessité d'appliquer concrètement et de développer, en ce qui concerne la Lune*

tion to the moon and other celestial bodies, having regard to further progress in the exploration and use of outer space.

Have agreed on the following:

#### Article I

1. The provisions of this Agreement relating to the moon shall also apply to other celestial bodies within the solar system, other than the earth, except in so far as specific legal norms enter into force with respect to any of these celestial bodies.

2. For the purposes of this Agreement reference to the moon shall include orbits around or other trajectories to or around it.

3. This Agreement does not apply to extraterrestrial materials which reach the surface of the earth by natural means.

#### Article II

All activities on the moon, including its exploration and use, shall be carried out in accordance with international law, in particular the Charter of the United Nations, and taking into account the Declaration on Principles of International Law concerning Friendly Relations and Co-operation among States in accordance with the Charter of the United Nations, adopted by the General Assembly on 24 October 1970, in the interest of maintaining international peace and security and promoting international co-operation and mutual understanding, and with due regard to the corresponding interests of all other States Parties.

#### Article III

1. The moon shall be used by all States Parties exclusively for peaceful purposes.

2. Any threat or use of force or any other hostile act or threat of hostile act on the moon is prohibited. It is likewise

et les autres corps célestes, les dispositions de ces documents internationaux, eu égard aux progrès futurs de l'exploration et de l'utilisation de l'espace.

Sont convenus de ce qui suit:

#### Article I

1. Les dispositions du présent Accord relatives à la Lune s'appliquent également aux autres corps célestes à l'intérieur du système solaire, excepté la Terre, à moins que des normes juridiques spécifiques n'entrent en vigueur en ce qui concerne l'un de ces corps célestes.

2. Aux fins du présent Accord, toute référence à la Lune est réputée s'appliquer aux orbites autour de la Lune et aux autres trajectoires en direction ou autour de la Lune.

3. Le présent Accord ne s'applique pas aux matières extra-terrestres qui atteignent la surface de la Terre par des moyens naturels.

#### Article II

Toutes les activités sur la Lune, y compris les activités d'exploration et d'utilisation, sont menées en conformité avec le droit international, en particulier la Charte des Nations Unies, et compte tenu de la Déclaration relative aux principes du droit international touchant les relations amicales et la coopération entre les États conformément à la Charte des Nations Unies, adoptée par l'Assemblée générale le 24 octobre 1970, dans l'intérêt du maintien de la paix et de la sécurité internationales et pour encourager la coopération internationale et la compréhension mutuelle, les intérêts respectifs de tous les autres États parties étant dûment pris en considération.

#### Article III

1. Tous les États parties utilisent la Lune exclusivement à des fins pacifiques.

2. Est interdit tout recours à la menace ou à l'emploi de la force ou à tout autre acte d'hostilité ou menace

prohibited to use the moon in order to commit any such act or to engage in any such threat in relation to the earth, the moon, spacecraft, the personnel of spacecraft or man-made space objects.

3. States Parties shall not place in orbit around or other trajectory to or around the moon objects carrying nuclear weapons or any other kinds of weapons of mass destruction or place or use such weapons on or in the moon.

4. The establishment of military bases, installations and fortifications, the testing of any type of weapons and the conduct of military manoeuvres on the moon shall be forbidden. The use of military personnel for scientific research or for any other peaceful purposes shall not be prohibited. The use of any equipment or facility necessary for peaceful exploration and use of the moon shall also not be prohibited.

#### Article IV

1. The exploration and use of the moon shall be the promu of all mankind and shall be carried out for the benefit and in the interests of all countries, irrespective of their degree of economic or scientific development. Due regard shall be paid to the interests of present and future generations as well as to the need to promote higher standards of living conditions of economic and social progress and development in accordance with the Charter of the United Nations.

2. States Parties shall be guided by the principle of co-operation and mutual assistance in all their activities concerning the exploration and use of the moon. International co-operation in pursuance of this Agreement should be as wide as possible and may take place on a multilateral basis, on a bilateral basis, or through international intergovernmental organizations.

d'acte d'hostilité sur la Lune. Il est interdit de même d'utiliser la Lune pour se livrer à un acte de cette nature ou recourir à une menace de cette nature à l'encontre de la Terre, de la Lune, d'engins spatiaux, de l'équipage d'engins spatiaux ou d'objets spatiaux créés par l'homme.

3. Les États parties ne mettent sur orbite autour de la Lune, ni sur une autre trajectoire en direction ou autour de la Lune, aucun objet porteur d'armes nucléaires ou de tout autre type d'armes de destruction massive, ni ne placent ou n'utilisent de telles armes à la surface ou dans le sol de la Lune.

4. Sont interdits sur la Lune l'aménagement de bases et installations militaires et de fortification, les essais d'armes de tous types et l'exécution de manoeuvres militaires. N'est pas interdite l'utilisation de personnel militaire à des fins de recherche scientifique ou à tout autre fin pacifique. N'est pas interdite non plus l'utilisation de tout équipement ou installation nécessaire à l'exploration pacifique de la Lune.

#### Article IV

1. L'exploration et l'utilisation de la Lune sont l'apanage de toute l'humanité et se font pour le bien et dans l'intérêt de tous les pays, quel que soit leur degré de développement économique ou scientifique. Il est dûment tenu compte des intérêts de la génération actuelle et des générations futures, ainsi que de la nécessité de favoriser le relèvement des niveaux de vie et des conditions de progrès et de développement économique et social conformément à la Charte des Nations Unies.

2. Dans toutes leurs activités concernant l'exploration et l'utilisation de la Lune, les États parties se fondent sur le principe de la coopération et de l'assistance mutuelle. La coopération internationale en application du présent Accord doit être la plus large possible et peut se faire sur une base multilatérale, sur une base bilatérale ou par l'intermédiaire d'organisations inter-gouvernementales internationales.

## Article V

1. States Parties shall inform the Secretary-General of the United Nations as well as the public and the international scientific community, to the greatest extent feasible and practicable, of their activities concerned with the exploration and use of the moon. Information on the time, purposes, locations, orbital parameters and duration shall be given in respect of each mission to the moon as soon as possible after launching, while information on the results of each mission, including scientific results, shall be furnished upon completion of the mission. In case of a mission lasting more than sixty days, information on conduct of the mission including any scientific results shall be given periodically at thirty-day intervals. For missions lasting more than six months, only significant additions to such information need be reported thereafter.

2. If a State Party becomes aware that another State Party plans to operate simultaneously in the same area of or in the same orbit around or trajectory to or around the moon, it shall promptly inform the other State of the timing of and plans for its own operations.

## Article VI

1. There shall be freedom of scientific investigation on the moon by all States Parties without discrimination of any kind, on the basis of equality and in accordance with international law.

## Article V

1. Les États parties doivent faire connaître au Secrétaire général de l'Organisation des Nations Unies, ainsi qu'au public et à la communauté scientifique mondiale, autant qu'il est possible et praticable, leurs activités d'exploration et d'utilisation de la Lune. Des renseignements concernant le calendrier, les objectifs, les lieux de déroulement, les paramètres d'orbites et la durée de chaque mission vers la Lune doivent être communiqués le plus tôt possible après le début de la mission, et des renseignements sur les résultats de chaque mission, y compris les résultats scientifiques, doivent être communiqués dès la fin de la mission. Au cas où une mission durerait plus de 60 jours, des renseignements sur son déroulement, y compris éventuellement sur ses résultats scientifiques, doivent être donnés périodiquement, tous les 30 jours. Si la mission dure plus de six mois, il n'y a lieu de communiquer par la suite que des renseignements complémentaires importants.

2. Si un État partie apprend qu'un autre État partie envisage de mener des activités simultanément dans la même région de la Lune, sur la même orbite autour de la Lune ou sur une même trajectoire en direction ou autour de la Lune, il informe promptement l'autre État du calendrier et du plan de ses propres activités.

3. Dans les activités qu'ils exercent en vertu du présent Accord, les États parties informent promptement le Secrétaire général, ainsi que le public et la communauté scientifique internationale, de tout phénomène qu'ils ont constaté dans l'espace extra-atmosphérique, y compris la Lune, qui pourrait présenter un danger pour la vie et la santé de l'homme, et également de tous signes de vie organique.

## Article VI

1. Tous les États parties ont, sans aucune discrimination, dans des conditions d'égalité et conformément au droit international, la liberté de recherche scientifique sur la Lune.

2. In carrying out scientific investigations and in furtherance of the provisions of this Agreement the States Parties shall have the right to collect on and remove from the moon samples of its mineral and other substances. Such samples shall remain at the disposal of those States Parties which caused them to be collected and may be used by them for scientific purposes. States Parties shall have regard to the desirability of making a portion of such samples available to other interested States Parties and the international scientific community for scientific investigation. States Parties may in the course of scientific investigations also use mineral and other substances of the moon in quantities appropriate for the support of their missions.

3. States Parties agree on the desirability of exchanging scientific and other personnel on expeditions to or installations on the moon to the greatest extent feasible and practicable.

#### Article VII

1. In exploring and using the moon, States Parties shall take measures to prevent the disruption of the existing balance of its environment, whether by introducing adverse changes in that environment, its harmful contamination through the introduction of extra-environmental matter or otherwise. States Parties shall also take measures to avoid harmfully affecting the environment of the earth through the introduction of extraterrestrial matter or otherwise.

2. States Parties shall inform the Secretary-General of the United Nations of the measures being adopted by them in accordance with paragraph 1 of this article and shall also, to the maximum extent feasible, notify him in advance of all placements by them of radio-active materials on the moon and of the purposes of such placements.

3. States Parties shall report to other States Parties and to the Secretary-General concerning areas of the moon having special scientific interest in

2. Dans leurs recherches scientifiques exécutées en application des dispositions du présent Accord, les États parties ont le droit de recueillir sur la Lune et d'en enlever des échantillons de minéraux et autres substances. Ces échantillons restent sous la garde des États parties qui les ont fait recueillir et qui peuvent les utiliser à des fins pacifiques. Les États parties ne perdent pas de vue qu'il est souhaitable de mettre une partie desdits échantillons à la disposition d'autres États parties intéressés et de la communauté scientifique internationale aux fins de recherche scientifique. Les États parties peuvent, au cours de leurs recherches scientifiques, utiliser aussi en quantités raisonnables pour le soutien de leurs missions des minéraux et d'autres substances de la Lune.

3. Les États parties conviennent qu'il est souhaitable d'échanger autant qu'il est possible et praticable du personnel scientifique et autre, au cours des expéditions vers la Lune ou dans les installations qui s'y trouvent.

#### Article VII

1. Lorsqu'ils explorent et utilisent la Lune, les États parties prennent des mesures pour éviter de perturber l'équilibre existant du milieu en lui faisant subir des transformations nocives, en le contaminant dangereusement par l'apport de matière étrangère ou d'une autre façon. Les États parties prennent aussi des mesures pour éviter toute dégradation du milieu terrestre par l'apport de matière extra-terrestre ou d'une autre façon.

2. Les États parties informent le Secrétaire général de l'Organisation des Nations Unies des mesures qu'ils prennent en application du paragraphe 1 du présent article et, dans toute la mesure du possible, lui notifient à l'avance leurs plans concernant le placement de substances radioactives sur la Lune et l'objet de cette opération.

3. Les États parties communiquent aux autres États parties et au Secrétaire général des renseignements au sujet des régions de la Lune qui présentent un intérêt scientifique par-

order that, without prejudice to the rights of other States Parties, consideration may be given to the designation of such areas as international scientific preserves for which special protective arrangements are to be agreed in consultation with the competent organs of the United Nations.

#### Article VIII

1. States Parties may pursue their activities in the exploration and use of the moon anywhere on or below its surface, subject to the provisions of this Agreement.

2. For these purposes States Parties may, in particular:

(a) Land their space objects on the moon and launch them from the moon;

(b) Place their personnel, space vehicles, equipment, facilities, stations and installations anywhere on or below the surface of the moon.

Personnel, space vehicles, equipment, facilities, stations and installations may move or be moved freely over or below the surface of the moon.

3. Activities of States Parties in accordance with paragraphs 1 and 2 of this article shall not interfere with the activities of other States Parties on the moon. Where such interference may occur, the States Parties concerned shall undertake consultations in accordance with article XV, paragraphs 2 and 3, of this agreement.

#### Article IX

1. States Parties may establish manned and unmanned stations on the moon. A State Party establishing a station shall use only that area which is required for the needs of the station and shall immediately inform the Secretary-General of the United Nations of the location and purposes of that station. Subsequently, at annual intervals that State shall likewise inform the Secretary-General whether the station

particulier, afin qu'on puisse, sans préjudice des droits des autres États parties, envisager de désigner lesdites régions comme réserves scientifiques internationales pour lesquelles on conviendra d'accords spéciaux de protection, en consultation avec les organes compétents des Nations Unies.

#### Article VIII

1. Les États parties peuvent exercer leurs activités d'exploration et d'utilisation de la Lune en n'importe quel point de sa surface ou sous sa surface, sous réserve des dispositions du présent Accord.

2. A cette fin, les États parties peuvent notamment:

a) Faire atterrir leurs engins spatiaux sur la Lune et les lancer à partir de la Lune;

b) Placer leur personnel ainsi que leurs véhicules, matériel, stations, installations et équipements spatiaux en n'importe quel point à la surface ou sous la surface de la Lune.

Le personnel, ainsi que les véhicules, le matériel, les stations, les installations et l'équipement spatiaux, peuvent se déplacer ou être déplacés librement à la surface ou sous la surface de la Lune.

3. Les activités menées par les États parties conformément aux paragraphes 1 et 2 du présent article ne doivent pas gêner les activités menées par d'autres États parties sur la Lune. Au cas où elles risqueraient de leur causer une gêne, les États parties intéressés doivent procéder à des consultations conformément aux paragraphes 2 et 3 de l'article XV.

#### Article IX

1. Les États parties peuvent installer des stations habitées ou inhabitées sur la Lune. Un État partie qui installe une station ne doit utiliser que la surface nécessaire pour répondre aux besoins de la station et doit faire connaître immédiatement au Secrétaire général de l'Organisation des Nations Unies l'emplacement et les buts de ladite station. Il doit de même, chaque année, faire savoir au Secrétaire général si

continues in use and whether its purposes have changed.

2. Stations shall be installed in such a manner that they do not impede the free access to all areas of the moon of personnel, vehicles and equipment of other States Parties conducting activities on the moon in accordance with the provisions of this Agreement or of article 1 of the Treaty of Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies.

#### Article X

1. States Parties shall adopt all practicable measures to safeguard the life and health of persons on the moon. For this purpose they shall regard any person on the moon as an astronaut within the meaning of article V of the Treaty on Principles Governing the Activities of States on the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies and as part of the personnel of a spacecraft within the meaning of the Agreement on the Rescue of Astronauts, the Return of Astronauts and the Return of Objects Launched into Outer Space.

2. States Parties shall offer shelter in their stations, installations, vehicles and other facilities to persons in distress on the moon.

#### Article XI

1. The moon and its natural resources are the common heritage of mankind, which finds its expression in the provisions of this Agreement, in particular in paragraph 5 of this article.

2. The moon is not subject to national appropriation by any claim of sovereignty, by means of use or occupation, or by any other means.

3. Neither the surface nor the subsurface of the moon, nor any part thereof or natural resources in place, shall become property of any State, interna-

cette station continue d'être utilisée et si ses buts ont changé.

2. Les stations doivent être disposées de façon à ne pas empêcher le libre accès à toutes les parties de la Lune, du personnel, des véhicules et du matériel d'autres États parties qui poursuivent des activités sur la Lune conformément aux dispositions du présent Accord ou de l'article premier du Traité sur les principes régissant les activités des États en matière d'exploration et d'utilisation de l'espace extra-atmosphérique, y compris la Lune et les autres corps célestes.

#### Article X

1. Les États parties prennent toutes les mesures praticables pour sauvegarder la vie et la santé des personnes se trouvant sur la Lune. A cette fin, ils considèrent toute personne se trouvant sur la Lune comme étant un astronaute au sens de l'article V du Traité sur les principes régissant les activités des États en matière d'exploration et d'utilisation de l'espace extra-atmosphérique, y compris la Lune et les autres corps célestes, et comme étant un membre de l'équipage d'un engin spatial au sens de l'Accord sur le sauvetage des astronautes, le retour des astronautes et la restitution des objets lancés dans l'espace extra-atmosphérique.

2. Les États parties recueillent dans leurs stations, leurs installations, leurs véhicules et leur équipement les personnes en détresse sur la Lune.

#### Article XI

1. La Lune et ses ressources naturelles constituent le patrimoine commun de l'humanité, qui trouve son expression dans les dispositions pertinentes du présent Accord, en particulier le paragraphe 5 du présent article.

2. La Lune ne peut faire l'objet d'aucune appropriation nationale par proclamation de souveraineté, ni par voie d'utilisation ou d'occupation, ni par aucun autre moyen.

3. La surface et le sous-sol de la Lune

tional intergovernmental or non-governmental organization, national organization or non-governmental entity or of any natural person. The placement of personnel, space vehicles, equipment, facilities, stations and installations on or below the surface of the moon, including structures connected with their surface or subsurface, shall not create a right of ownership over the surface or the subsurface of the moon or any areas thereof. The foregoing provisions are without prejudice to the international régime referred to in paragraph 5 of this article.

4. States Parties have the right to exploration and use of the moon without discrimination of any kind, on a basis of equality, and in accordance with international law and the provisions of this Agreement.

5. States Parties to this Agreement hereby undertake to establish an international régime, including appropriate procedures, to govern the exploitation of the natural resources of the moon as such exploitation is about to become feasible. This provision shall be implemented in accordance with article XVIII of this Agreement.

6. In order to facilitate the establishment of the international régime referred to in paragraph 5 of this article, States Parties shall inform the Secretary-General of the United Nations as well as the public and the international scientific community, to the greatest extent feasible and practicable, of any natural resources they may discover on the moon.

7. The main purposes of the international régime to be established shall include:

- (a) The orderly and safe development of the natural resources of the moon;
- (b) The rational management of those resources;
- (c) The expansion of opportunities in the use of those resources; and
- (d) An equitable sharing by all States Parties in the benefits derived from those resources, whereby the interests and needs of the developing countries, as well as the efforts of those countries which have contributed either directly or indirectly to the ex-

ne peuvent être la propriété d'États, d'organisations internationales intergouvernementales ou non gouvernementales, d'organisations nationales, qu'elles aient ou non la personnalité morale, ou de personnes physiques. L'installation à la surface ou sous la surface de la Lune de personnel, ou de véhicules, matériel, stations, installations ou équipements spatiaux, y compris d'ouvrages reliés à sa surface, ne crée pas de droits de propriété sur une partie de la surface ou du sous-sol de la Lune. Les dispositions qui précèdent s'entendent sous réserve du régime international visé au paragraphe 5 du présent article.

4. Les États parties ont le droit d'explorer et d'utiliser la Lune, sans discrimination d'aucune sorte, sur un pied d'égalité, conformément au droit international et aux dispositions du présent Accord.

5. Les États parties au présent Accord s'engagent à établir un régime international, y compris des procédures appropriées, régissant l'exploitation des ressources naturelles de la Lune lorsque cette exploitation sera sur le point de devenir possible.

La disposition qui précède sera appliquée conformément à l'article XVIII du présent Accord.

6. Pour faciliter l'établissement du régime international visé au paragraphe 5 du présent article, les États parties informent le Secrétaire général de l'Organisation des Nations Unies, ainsi que le public et la communauté scientifique internationale, autant qu'il est possible et praticable, de toutes ressources naturelles qu'ils peuvent découvrir sur la Lune.

7. Le dit régime international a notamment pour buts principaux:

- a) D'assurer la mise en valeur méthodique et sans danger des ressources naturelles de la Lune;
- b) D'assurer la gestion rationnelle de ces ressources;
- c) De développer les possibilités d'utilisation de ces ressources; et
- d) De ménager une répartition équitable entre tous les États parties des avantages qui en résulteront.

Une attention spéciale étant ac-

place on the moon, shall be given special consideration.

2. All the activities with respect to the natural resources of the moon shall be carried out in a manner compatible with the purposes specified in paragraph 7 of this article and the provisions of article VI, paragraph 2, of this Agreement.

#### Article XII

1. States Parties shall retain jurisdiction and control over their personnel, space vehicles, equipment, facilities, stations and installations on the moon. The ownership of space vehicles, equipment, facilities, stations and installations shall not be affected by their presence on the moon.

2. Vehicles, installations and equipment or their component parts found in places other than their intended location shall be dealt with in accordance with article V of the Agreement on the Rescue of Astronauts, the Return of Astronauts and the Return of Objects Launched into Outer Space.

3. In the event of an emergency involving a threat to human life, States Parties may use the equipment, vehicles, installations, facilities or supplies of other States Parties on the moon. Prompt notification of such use shall be made to the Secretary-General of the United Nations or State Party concerned.

#### Article XIII

A State Party which learns of the crash landing, forced landing or other unintended landing on the moon of a space object, or its component parts, that were not launched by it, shall promptly inform the launching State Party and the Secretary-General of the United Nations.

cordée aux intérêts et aux besoins des pays en développement, ainsi qu'aux efforts des pays qui ont contribué, soit directement, soit indirectement, à l'exploration de la Lune.

2. Toutes les activités relatives aux ressources naturelles de la Lune seront exercées d'une manière compatible avec les buts énoncés au paragraphe 7 du présent article et avec les dispositions du paragraphe 2 de l'article VI du présent Accord.

#### Article XII

1. Les États parties conservent la juridiction ou le contrôle sur leur personnel, ainsi que sur leurs véhicules, matériel, stations, installations et équipements spatiaux se trouvant sur la Lune. La présence sur la Lune desdits véhicules, matériel, stations, installations et équipement ne modifient pas les droits de propriété les concernant.

2. Les dispositions de l'article V de l'Accord sur le sauvetage des astronautes, le retour des astronautes et la restitution des objets lancés dans l'espace extra-atmosphérique sont applicables aux véhicules, aux installations et au matériel trouvés dans des endroits autres que ceux où ils devraient être.

3. Dans les cas d'urgence mettant en danger la vie humaine, les États parties peuvent utiliser le matériel, les véhicules, les installations, l'équipement ou les réserves d'autres États parties se trouvant sur la Lune. Le Secrétaire général de l'Organisation des Nations Unies ou l'État partie intéressé en est informé sans retard.

#### Article XIII

Tout État partie qui constate qu'un objet spatial ou des éléments constitutifs d'un tel objet qu'il n'a pas lancé se sont posés sur la Lune à la suite d'une panne ou y ont fait un atterrissage forcé ou imprévu en avise sans tarder l'État partie qui a procédé au lancement et le Secrétaire général de l'Organisation des Nations Unies.

## Article XIV

1. States Parties to this Agreement shall bear international responsibility for national activities on the moon, whether such activities are carried out by governmental agencies or by non-governmental entities, and for assuring that national activities are carried out in conformity with the provisions of this Agreement. States Parties shall ensure that non-governmental entities under their jurisdiction shall engage in activities on the moon only under the authority and continuing supervision of the appropriate State Party.

2. States Parties recognize that detailed arrangements concerning liability for damage caused on the moon, in addition to the provisions of the Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies and the Convention on International Liability for Damage Caused by Space Objects, may become necessary as a result of more extensive activities on the moon. Any such arrangements shall be elaborated in accordance with the procedure provided for in article XVIII of this Agreement.

## Article XV

1. Each State Party may assure itself that the activities of other States Parties in the exploration and use of the moon are compatible with the provisions of this Agreement. To this end, all space vehicles, equipment, facilities, stations and installations on the moon shall be open to other States Parties. Such States Parties shall give reasonable advance notice of a projected visit, in order that appropriate consultations may be held and that maximum precautions may be taken to assure safety and to avoid interference with normal operations in the facility to be visited. In pursuance of this article,

## Article XIV

1. Les États parties au présent Accord ont la responsabilité internationale des activités nationales sur la Lune, qu'elles soient menées par des organismes gouvernementaux ou par des entités non gouvernementales, et doivent veiller à ce que lesdites activités soient menées conformément aux dispositions énoncées dans le présent Accord. Les États parties s'assurent que les entités non gouvernementales relevant de leur juridiction n'entreprennent des activités sur la Lune qu'avec l'autorisation de l'Etat partie intéressé et sous sa surveillance continue.

2. Les États parties reconnaissent que des arrangements détaillés concernant la responsabilité en cas de dommages subis sur la Lune venant s'ajouter aux dispositions du Traité sur les principes régissant les activités des États en matière d'exploration et d'utilisation de l'espace extra-atmosphérique, y compris la Lune et les autres corps célestes, et à celles de la Convention relative à la responsabilité concernant les dommages causés par des objets spatiaux, pourraient devenir nécessaires par suite du développement des activités sur la Lune. Lesdits arrangements seront élaborés conformément à la procédure décrite à l'article XVIII du présent Accord.

## Article XV

1. Chaque État partie peut s'assurer que les activités des autres États parties relatives à l'exploration et à l'utilisation de la Lune sont compatibles avec les dispositions du présent Accord. A cet effet, tous les véhicules, le matériel, les stations, les installations et l'équipement spatiaux se trouvant sur la Lune sont accessibles aux autres États parties au présent Accord. Ces États parties notifient au préalable toute visite projetée, afin que les consultations voulues puissent avoir lieu et que le maximum de précautions puissent être prises pour assurer la sécurité et éviter de gêner les opérations nor-

any State Party may act on its own behalf or with the full or partial assistance of any other State Party or through appropriate international procedures within the framework of the United Nations and in accordance with the Charter.

2. A State Party which has reason to believe that another State Party is not fulfilling the obligations incumbent upon it pursuant to this Agreement or that another State Party is interfering with the rights which the former State Party has under this Agreement may request consultations with that State Party. A State Party receiving such a request shall enter into such consultations without delay. Any other State Party which requests to do so shall be entitled to take part in the consultations. Each State Party participating in such consultations shall seek a mutually acceptable resolution of any controversy and shall bear in mind the rights and interests of all States Parties. The Secretary-General of the United Nations shall be informed of the results of the consultations and shall transmit the information received to all States Parties concerned.

3. If the consultations do not lead to a mutually acceptable settlement which has due regard for the rights and interests of all the States Parties, the parties concerned shall take all measures to settle the dispute by other peaceful means of their choice and appropriate to the circumstances and the nature of the dispute. If difficulties arise in connexion with the opening of consultations or if consultations do not lead to a mutually acceptable settlement, any State Party may seek the assistance of the Secretary-General, without seeking the consent of any other State Party concerned, in order to resolve the controversy. A State Party which does not maintain diplomatic relations with another State Party concerned shall participate in such consultations, at its choice, either itself or through another State Party or the Secretary-General as intermediary.

males sur les lieux de l'installation à visiter. En exécution du présent article, un État partie peut agir en son nom propre ou avec l'assistance entière ou partielle d'un autre État partie, ou encore par des procédures internationales appropriées dans le cadre de l'Organisation des Nations Unies et conformément à la Charte.

2. Un État partie qui a lieu de croire qu'un autre État partie ou bien ne s'acquiesce pas des obligations qui lui incombent en vertu du présent Accord, ou bien porte atteinte aux droits qu'il tient du présent Accord, peut demander l'ouverture de consultations avec cet autre État partie. L'État partie qui reçoit cette demande de consultations doit engager lesdites consultations sans tarder. Tout autre État partie qui en fait la demande est en droit de participer également à ces consultations. Chacun des États parties qui participent à ces consultations doit rechercher une solution mutuellement acceptable au litige et tient compte des droits et intérêts de tous les États parties. Le Secrétaire général de l'Organisation des Nations Unies est informé des résultats des consultations et communique les renseignements reçus à tous les États parties intéressés.

3. Si les consultations n'ont pas permis d'aboutir à un règlement mutuellement acceptable et tenant compte des droits et intérêts de tous les États parties, les parties intéressées prennent toutes les dispositions nécessaires pour régler ce différend par d'autres moyens pacifiques de leur choix adaptés aux circonstances et à la nature du différend. Si les difficultés surgissent à l'occasion de l'ouverture de consultations, ou si les consultations n'aboutissent pas à un règlement mutuellement acceptable, un État partie peut demander l'assistance du Secrétaire général, sans le consentement d'aucun autre État partie intéressé, afin de régler le litige. Un État partie qui n'entretient pas de relations diplomatiques avec un autre État partie intéressé prend part auxdites consultations, à sa préférence, soit par lui-même, soit par l'intermédiaire d'un autre État partie ou du Secrétaire général.

## Article XVI

With the exception of articles XVII to XXI, references in this Agreement to States shall be deemed to apply to any international intergovernmental organization which conducts space activities if the organization declares its acceptance of the rights and obligations provided for in this Agreement and if a majority of the States members of the organization are States Parties to this Agreement and to the Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies. States members of any such organization which are States Parties to this Agreement shall take all appropriate steps to ensure that the organization makes a declaration in accordance with the provisions of this article.

## Article XVII

Any State Party to this Agreement may propose amendments to the Agreement. Amendments shall enter into force for each State Party to the Agreement accepting the amendments upon their acceptance by a majority of the States Parties to the Agreement and thereafter for each remaining State Party to the Agreement on the date of acceptance by it.

## Article XVIII

Ten years after the entry into force of this Agreement, the question of the review of the Agreement shall be included in the provisional agenda of the General Assembly of the United Nations in order to consider, in the light of past application of the Agreement, whether it requires revision. However, at any time after the Agreement has been in force for five years, the Secretary-General of the United Nations, as depositary, shall, at the request of one third of the States Parties to the Agreement and with the concurrence of the majority of the States Parties, convene a conference of the States

## Article XVI

Dans le présent Accord, à l'exception des Articles XVII à XXI, les références aux États s'appliquent à toute organisation internationale intergouvernementale qui se livre à des activités spatiales, si cette organisation déclare accepter les droits et les obligations prévus dans le présent Accord et si la majorité des États membres de l'organisation sont des États parties au présent Accord et au Traité sur les principes régissant les activités des États en matière d'exploration et d'utilisation de l'espace extra-atmosphérique, y compris la Lune et les autres corps célestes. Les États membres d'une telle organisation qui sont des États parties au présent Accord prennent toutes les mesures voulues pour que l'organisation fasse une déclaration en conformité des dispositions du présent article.

## Article XVII

Un État partie au présent Accord peut proposer des amendements à l'Accord. Les amendements prendront effet à l'égard de chaque État partie à l'Accord acceptant les amendements dès qu'ils auront été acceptés par la majorité des États parties à l'Accord, et par la suite, pour chacun des autres États parties à l'Accord, à la date de son acceptation desdits amendements.

## Article XVIII

Dix ans après l'entrée en vigueur du présent Accord, la question de l'examen de l'Accord sera inscrite à l'ordre du jour provisoire de l'Assemblée générale des Nations Unies afin de déterminer, eu égard à l'expérience acquise en ce qui concerne l'application de l'Accord, si celui-ci doit être révisé. Toutefois, cinq ans au moins après la date d'entrée en vigueur du présent Accord, le Secrétaire général de l'Organisation des Nations Unies, en sa qualité de dépositaire de l'Accord, pourra, sur la demande d'un tiers des États parties à l'Accord et avec l'assentiment de la majorité d'entre eux, convoquer une con-

Parties to review this Agreement. A review conference shall also consider the question of the implementation of the provisions of article XI, paragraph 5, on the basis of the principle referred to in paragraph 1 of that article and taking into account in particular any relevant technological developments.

#### Article XIX

1. This Agreement shall be open for signature by all States at United Nations Headquarters in New York.

2. This Agreement shall be subject to ratification by signatory States. Any State which does not sign this Agreement before its entry into force in accordance with paragraph 3 of this article may accede to it at any time. Instruments of ratification or accession shall be deposited with the Secretary-General of the United Nations.

3. This Agreement shall enter into force on the thirtieth day following the date of deposit of the fifth instrument of ratification.

4. For each State depositing its instrument of ratification or accession after the entry into force of this Agreement, it shall enter into force on the thirtieth day following the date of deposit of any such instrument.

5. The Secretary-General shall promptly inform all signatory and acceding States of the date of each signature, the date of deposit of each instrument of ratification or accession to this Agreement, the date of its entry into force and other notices.

#### Article XX

Any State Party to this Agreement may give notice of its withdrawal from the Agreement one year after its entry into force by written notification to the Secretary-General of the United Nations. Such withdrawal shall take effect one year from the date of receipt of this notification.

férence des Etats parties afin de réexaminer le présent Accord. La conférence d'examen étudiera aussi la question de l'application des dispositions du paragraphe 5 de l'article XI, sur la base du principe visé au paragraphe 1 dudit article et compte tenu, en particulier, de tout progrès technique pertinent.

#### Article XIX

1. Le présent Accord est ouvert à la signature de tous les États au Siège de l'Organisation des Nations Unies, à New York.

2. Le présent Accord est soumis à la ratification des États signataires. Tout État qui n'a pas signé le présent Accord avant son entrée en vigueur conformément au paragraphe 3 du présent article peut y adhérer à tout moment. Les instruments de ratification ou d'adhésion seront déposés auprès du Secrétaire général de l'Organisation des Nations Unies.

3. Le présent Accord entrera en vigueur le trentième jour qui suivra le dépôt du cinquième instrument de ratification.

4. Pour chaque État dont l'instrument de ratification ou d'adhésion sera déposé après l'entrée en vigueur du présent Accord celui-ci entrera en vigueur le trentième jour qui suivra la date du dépôt dudit instrument.

5. Le secrétaire général informera sans délai tous les États qui auront signé le présent Accord ou y auront adhéré de la date de chaque signature, de la date du dépôt de chaque instrument de ratification ou d'adhésion, de la date d'entrée en vigueur du présent Accord ainsi que de toute autre communication.

#### Article XX

Tout État partie au présent Accord peut, un an après l'entrée en vigueur de l'Accord, communiquer son intention de cesser d'y être partie par voie de notification écrite adressée au Secrétaire général de l'Organisation des Nations Unies. Cette notification prend effet un an après la date à laquelle elle a été reçue.

**Article XXI**

The original of this Agreement, of which the Arabic, Chinese, English, French, Russian and Spanish texts are equally authentic, shall be deposited with the Secretary-General of the United Nations, who shall send certified copies thereof to all signatory and acceding States.

IN WITNESS WHERE OF the undersigned, being duly authorised thereto by their respective governments, have signed this Agreement, opened for signature at New York...

**Article XXI**

L'original du présent Accord, dont les textes anglais, arabe, chinois, espagnol, français et russe font également foi, sera déposé auprès du Secrétaire général de l'Organisation des Nations Unies, qui en adressera des copies certifiées à tous les États qui auront signé l'Accord ou qui y auront adhéré.

EN FOI DE QUOI les soussignés, à ce dûment habilités par leurs gouvernements respectifs, ont signé le présent Accord, ouvert à la signature à New York le ....

CHARTER OF THE UNITED NATIONS (extracts)  
DONE AT SAN FRANCISCO, 26 June 1945

*Article 1*

Each Contracting Party which receives information or discovers that the personnel of a spacecraft have suffered accident or are experiencing conditions of distress or have made an emergency or unintended landing in territory under its jurisdiction or on the high seas or in any other place not under the jurisdiction of any State shall immediately:

(a) Notify the launching authority or, if it cannot identify and immediately communicate with the launching authority, immediately make a public announcement by all appropriate means of communication at its disposal;

(b) Notify the Secretary-General of the United Nations, who should disseminate the information without delay by all appropriate means of communication at his disposal.

*Article 2*

If, owing to accident, distress, emergency or unintended landing, the personnel of a spacecraft land in territory under the jurisdiction of a Contracting Party, it shall immediately take all possible steps to rescue them and render them all necessary assistance. It shall inform the launching authority and also the Secretary-General of the United Nations of the steps it is taking and of their progress. If assistance by the launching authority would help to effect a prompt rescue or would contribute substantially to the effectiveness of search and rescue operations, the launching authority shall co-operate with the Contracting Party with a view to the effective conduct of search and rescue operations. Such operations shall be subject to the direction and control of the Contracting Party, which shall act in close and continuing consultation with the launching authority.

*Article 3*

If information is received or it is discovered that the personnel of a spacecraft have alighted on the high seas or in any other place not under the jurisdiction of any State, those Contracting Parties which are in a position to do so shall, if necessary, extend assistance in search and rescue operations for such personnel to assure their speedy rescue. They shall inform the launching authority and the Secretary-General of the United Nations of the steps they are taking and of their progress.

*Article 4*

If, owing to accident, distress, emergency or unintended landing, the personnel of a spacecraft land in territory under the jurisdiction of a Contracting Party or have been found on the high seas or in any other place not under the jurisdiction of any State, they shall be safely and promptly returned to representatives of the launching authority.

*Article 5*

1. Each Contracting Party which receives information or discovers that a space object or its component parts has returned to Earth in territory under its

jurisdiction or on the high seas or in any other place not under the jurisdiction of any State, shall notify the launching authority and the Secretary-General of the United Nations.

2. Each Contracting Party having jurisdiction over the territory on which a space object or its component parts has been discovered shall, upon the request of the launching authority and with assistance from that authority if requested, take such steps as it finds practicable to recover the object or component parts.

3. Upon request of the launching authority, objects launched into outer space or their component parts found beyond the territorial limits of the launching authority shall be returned to or held at the disposal of representatives of the launching authority, which shall, upon request, furnish identifying data prior to their return.

4. Notwithstanding paragraphs 2 and 3 of this article, a Contracting Party which has reason to believe that a space object or its component parts discovered in territory under its jurisdiction, or recovered by it elsewhere, is of a hazardous or deleterious nature may so notify the launching authority, which shall immediately take effective steps, under the direction and control of the said Contracting Party, to eliminate possible danger of harm.

5. Expenses incurred in fulfilling obligations to recover and return a space object or its component parts under paragraphs 2 and 3 of this article shall be borne by the launching authority.

THE ANTARCTIC TREATY

402 U.N.T.S. 72 (1961)

## THE ANTARCTIC TREATY

The Governments of Argentina, Australia, Belgium, Chile, the French Republic, Japan, New Zealand, Norway, the Union of South Africa, the Union of Soviet Socialist Republics, the United Kingdom of Great Britain and Northern Ireland, and the United States of America,

Recognizing that it is in the interest of all mankind that Antarctica shall continue forever to be used exclusively for peaceful purposes and shall not become the scene or object of international discord;

Acknowledging the substantial contributions to scientific knowledge resulting from international cooperation in scientific investigation in Antarctica;

Convinced that the establishment of a firm foundation for the continuation and development of such cooperation on the basis of freedom of scientific investigation in Antarctica as applied during the International Geophysical Year accords with the interests of science and the progress of all mankind;

Convinced also that a treaty ensuring the use of Antarctica for peaceful purposes only and the continuance of international harmony in Antarctica will further the purposes and principles embodied in the Charter of the United Nations;[<sup>1</sup>]

Have agreed as follows:

## ARTICLE I

1. Antarctica shall be used for peaceful purposes only. There shall be prohibited, *inter alia*, any measures of a military nature, such as the establishment of military bases and fortifications, the carrying out of military maneuvers, as well as the testing of any type of weapons.

2. The present Treaty shall not prevent the use of military personnel or equipment for scientific research or for any other peaceful purpose.

## ARTICLE II

Freedom of scientific investigation in Antarctica and cooperation toward that end, as applied during the International Geophysical Year, shall continue, subject to the provisions of the present Treaty.

**ARTICLE III**

1. In order to promote international cooperation in scientific investigation in Antarctica, as provided for in Article II of the present Treaty, the Contracting Parties agree that, to the greatest extent feasible and practicable:

- (a) information regarding plans for scientific programs in Antarctica shall be exchanged to permit maximum economy and efficiency of operations;
- (b) scientific personnel shall be exchanged in Antarctica between expeditions and stations;
- (c) scientific observations and results from Antarctica shall be exchanged and made freely available.

2. In implementing this Article, every encouragement shall be given to the establishment of cooperative working relations with those Specialized Agencies of the United Nations and other international organizations having a scientific or technical interest in Antarctica.

**ARTICLE IV**

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.

**ARTICLE V**

1. Any nuclear explosions in Antarctica and the disposal there of radioactive waste material shall be prohibited.

2. In the event of the conclusion of international agreements concerning the use of nuclear energy, including nuclear explosions and the disposal of radioactive waste material, to which all of the Contracting Parties whose representatives are entitled to participate in the meetings provided for under Article IX are parties, the rules established under such agreements shall apply in Antarctica.

#### ARTICLE VI

The provisions of the present Treaty shall apply to the area south of 60° South Latitude, including all ice shelves, but nothing in the present Treaty shall prejudice or in any way affect the rights, or the exercise of the rights, of any State under international law with regard to the high seas within that area.

#### ARTICLE VII

1. In order to promote the objectives and ensure the observance of the provisions of the present Treaty, each Contracting Party whose representatives are entitled to participate in the meetings referred to in Article IX of the Treaty shall have the right to designate observers to carry out any inspection provided for by the present Article. Observers shall be nationals of the Contracting Parties which designate them. The names of observers shall be communicated to every other Contracting Party having the right to designate observers, and like notice shall be given of the termination of their appointment.

2. Each observer designated in accordance with the provisions of paragraph 1 of this Article shall have complete freedom of access at any time to any or all areas of Antarctica.

3. All areas of Antarctica, including all stations, installations and equipment within those areas, and all ships and aircraft at points of discharging or embarking cargoes or personnel in Antarctica, shall be open at all times to inspection by any observers designated in accordance with paragraph 1 of this Article.

4. Aerial observation may be carried out at any time over any or all areas of Antarctica by any of the Contracting Parties having the right to designate observers.

5. Each Contracting Party shall, at the time when the present Treaty enters into force for it, inform the other Contracting Parties, and thereafter shall give them notice in advance, of

(a) all expeditions to and within Antarctica, on the part of its ships or nationals, and all expeditions to Antarctica organized in or proceeding from its territory;

(b) all stations in Antarctica occupied by its nationals; and

(c) any military personnel or equipment intended to be introduced by it into Antarctica subject to the conditions prescribed in paragraph 2 of Article I of the present Treaty.

#### ARTICLE VIII

1. In order to facilitate the exercise of their functions under the present Treaty, and without prejudice to the respective positions of the Contracting Parties relating to jurisdiction over all other persons in Antarctica, observers designated under paragraph 1 of Article VII and scientific personnel exchanged under subparagraph 1(b) of Article III of the Treaty, and members of the staffs accompanying any such persons, shall be subject only to the jurisdiction of the Contracting

Party of which they are nationals in respect of all acts or omissions occurring while they are in Antarctica for the purpose of exercising their functions.

2. Without prejudice to the provisions of paragraph 1 of this Article, and pending the adoption of measures in pursuance of subparagraph 1(e) of Article IX, the Contracting Parties concerned in any case of dispute with regard to the exercise of jurisdiction in Antarctica shall immediately consult together with a view to reaching a mutually acceptable solution.

#### ARTICLE IX

1. Representatives of the Contracting Parties named in the preamble to the present Treaty shall meet at the City of Canberra within two months after the date of entry into force of the Treaty, and thereafter at suitable intervals and places, for the purpose of exchanging information, consulting together on matters of common interest pertaining to Antarctica, and formulating and considering, and recommending to their Governments, measures in furtherance of the principles and objectives of the Treaty, including measures regarding:

- (a) use of Antarctica for peaceful purposes only;
- (b) facilitation of scientific research in Antarctica;
- (c) facilitation of international scientific cooperation in Antarctica;
- (d) facilitation of the exercise of the rights of inspection provided for in Article VII of the Treaty;
- (e) questions relating to the exercise of jurisdiction in Antarctica;
- (f) preservation and conservation of living resources in Antarctica.

2. Each Contracting Party which has become a party to the present Treaty by accession under Article XIII shall be entitled to appoint representatives to participate in the meetings referred to in paragraph 1 of the present Article, during such time as that Contracting Party demonstrates its interest in Antarctica by conducting substantial scientific research activity there, such as the establishment of a scientific station or the despatch of a scientific expedition.

3. Reports from the observers referred to in Article VII of the present Treaty shall be transmitted to the representatives of the Contracting Parties participating in the meetings referred to in paragraph 1 of the present Article.

4. The measures referred to in paragraph 1 of this Article shall become effective when approved by all the Contracting Parties whose representatives were entitled to participate in the meetings held to consider those measures.

5. Any or all of the rights established in the present Treaty may be exercised as from the date of entry into force of the Treaty

whether or not any measures facilitating the exercise of such rights have been proposed, considered or approved as provided in this Article.

#### ARTICLE X

Each of the Contracting Parties undertakes to exert appropriate efforts, consistent with the Charter of the United Nations, to the end that no one engages in any activity in Antarctica contrary to the principles or purposes of the present Treaty.

#### ARTICLE XI

1. If any dispute arises between two or more of the Contracting Parties concerning the interpretation or application of the present Treaty, those Contracting Parties shall consult among themselves with a view to having the dispute resolved by negotiation, inquiry, mediation, conciliation, arbitration, judicial settlement or other peaceful means of their own choice.

2. Any dispute of this character not so resolved shall, with the consent, in each case, of all parties to the dispute, be referred to the International Court of Justice for settlement; but failure to reach agreement on reference to the International Court shall not absolve parties to the dispute from the responsibility of continuing to seek to resolve it by any of the various peaceful means referred to in paragraph 1 of this Article.

#### ARTICLE XII

1. (a) The present Treaty may be modified or amended at any time by unanimous agreement of the Contracting Parties whose representatives are entitled to participate in the meetings provided for under Article IX. Any such modification or amendment shall enter into force when the depositary Government has received notice from all such Contracting Parties that they have ratified it.

(b) Such modification or amendment shall thereafter enter into force as to any other Contracting Party when notice of ratification by it has been received by the depositary Government. Any such Contracting Party from which no notice of ratification is received within a period of two years from the date of entry into force of the modification or amendment in accordance with the provisions of subparagraph 1(a) of this Article shall be deemed to have withdrawn from the present Treaty on the date of the expiration of such period.

2. (a) If after the expiration of thirty years from the date of entry into force of the present Treaty, any of the Contracting Parties whose representatives are entitled to participate in the meetings provided for under Article IX so requests by a communication addressed to the depositary Government, a Conference of all the Contracting Parties shall be held as soon as practicable to review the operation of the Treaty.

(b) Any modification or amendment to the present Treaty which is approved at such a Conference by a majority of the Contracting Parties there represented, including a majority of those whose representatives are entitled to participate in the meetings provided for under Article IX, shall be communicated by the depositary Government to all the Contracting Parties immediately after the termination of the Conference and shall enter into force in accordance with the provisions of paragraph 1 of the present Article.

(c) If any such modification or amendment has not entered into force in accordance with the provisions of subparagraph 1(a) of this Article within a period of two years after the date of its communication to all the Contracting Parties, any Contracting Party may at any time after the expiration of that period give notice to the depositary Government of its withdrawal from the present Treaty; and such withdrawal shall take effect two years after the receipt of the notice by the depositary Government.

#### ARTICLE XIII

1. The present Treaty shall be subject to ratification by the signatory States. It shall be open for accession by any State which is a Member of the United Nations, or by any other State which may be invited to accede to the Treaty with the consent of all the Contracting Parties whose representatives are entitled to participate in the meetings provided for under Article IX of the Treaty.

2. Ratification of or accession to the present Treaty shall be effected by each State in accordance with its constitutional processes.

3. Instruments of ratification and instruments of accession shall be deposited with the Government of the United States of America, hereby designated as the depositary Government.

4. The depositary Government shall inform all signatory and acceding States of the date of each deposit of an instrument of ratification or accession, and the date of entry into force of the Treaty and of any modification or amendment thereto.

5. Upon the deposit of instruments of ratification by all the signatory States, the present Treaty shall enter into force for those States and for States which have deposited instruments of accession. Thereafter the Treaty shall enter into force for any acceding State upon the deposit of its instrument of accession.

6. The present Treaty shall be registered by the depositary Government pursuant to Article 102 of the Charter of the United Nations.

#### ARTICLE XIV

The present Treaty, done in the English, French, Russian and Spanish languages, each version being equally authentic, shall be deposited in the archives of the Government of the United States of America, which shall transmit duly certified copies thereof to the Governments of the signatory and acceding States.

TREATY BANNING NUCLEAR WEAPON TESTS IN THE ATMOSPHERE,  
IN OUTER SPACE AND UNDER WATER

480 U.N.T.S. 431 (1963)  
entered into force 10 Oct. 1963

TREATY BANNING NUCLEAR WEAPON TESTS  
IN THE ATMOSPHERE, IN OUTER SPACE  
AND UNDER WATER (The Test Ban Treaty  
of 1963)

The Governments of the United States of America, the United Kingdom of Great Britain and Northern Ireland, and the Union of Soviet Socialist Republics, hereinafter referred to as the "Original Parties",

Proclaiming as their principal aim the speediest possible achievement of an agreement on general and complete disarmament under strict international control in accordance with the objectives of the United Nations which would put an end to the armaments race and eliminate the incentive to the production and testing of all kinds of weapons, including nuclear weapons,

Seeking to achieve the discontinuance of all test explosions of nuclear weapons for all time, determined to continue negotiations to this end, and desiring to put an end to the contamination of man's environment by radioactive substances,

Have agreed as follows:

*Article I*

1. Each of the Parties to this Treaty undertakes to prohibit, to prevent, and not to carry out any nuclear weapon test explosion, or any other nuclear explosion, at any place under its jurisdiction or control:

(a) in the atmosphere; beyond its limits, including outer space; or under water, including territorial waters or high seas; or

(b) in any other environment if such explosion causes radioactive debris to be present outside the territorial limits of the State under whose jurisdiction or control such explosion is conducted. It is understood in this connection that the provisions of this subparagraph are without prejudice to the conclusion of a treaty resulting in the permanent banning of all nuclear test explosions, including all such explosions underground, the conclusion of which, as the Parties have stated in the Preamble to this Treaty, they seek to achieve.

2. Each of the Parties to this Treaty undertakes furthermore to refrain from causing, encouraging, or in any way participating in, the carrying out of any nuclear weapon test explosion, or any other nuclear explosion, anywhere which would take place in any of the environments described, or have the effect referred to, in paragraph 1 of this Article.

*Article II*

1. Any Party may propose amendments to this Treaty. The text of any proposed amendment shall be submitted to the Depositary Governments which shall circulate it to all Parties to this Treaty. Thereafter, if requested to do so by one-third or more of the Parties, the Depositary Government shall convene a conference, to which they shall invite all the Parties, to consider such amendment.

2. Any amendment to this Treaty must be approved by a majority of the votes of all the Parties to this Treaty, including the votes of all of the Original Parties. The amendment shall enter into force for all Parties upon the deposit of instruments of ratification by a majority of all the Parties, including the instruments of ratification of all of the Original Parties.

*Article III*

1. This Treaty shall be open to all States for signature. Any State which does not sign this Treaty before its entry into force in accordance with paragraph 3 of this Article may accede to it at any time.

2. This Treaty shall be subject to ratification by signatory States. Instruments of ratification and instruments of accession shall be deposited with the Governments of the Original Parties—the United States of America, the United Kingdom of Great Britain and Northern Ireland, and the Union of Soviet Socialist Republics—which are hereby designated the Depositary Governments.

3. This Treaty shall enter into force after its ratification by all the Original Parties and the deposit of their instruments of ratification.

4. For States whose instruments of ratification or accession are deposited subsequent to the entry into force of this Treaty, it shall enter into force on the date of the deposit of their instruments of ratification or accession.

5. The Depositary Governments shall promptly inform all signatory and acceding States of the date of each signature, the date of deposit of each instrument of ratification of and accession to this Treaty, the date of its entry into force, and the date of receipt of any requests for conferences or other notices.

6. This Treaty shall be registered by the Depositary Governments pursuant to Article 102 of the Charter of the United Nations.

*Article IV*

This Treaty shall be of unlimited duration.

Each Party shall in exercising its national sovereignty have the right to withdraw from the Treaty if it decides that extraordinary events, related to the subject matter of this Treaty, have jeopardized the supreme interests of its country. It shall give notice of such withdrawal to all other Parties to the Treaty three months in advance.

*Article V*

This Treaty, of which the English and Russian texts are equally authentic, shall be deposited in the archives of the Depository Governments. Duly certified copies of this Treaty shall be transmitted by the Depository Governments to the Governments of the signatory and acceding States.

IN WITNESS WHEREOF the undersigned, duly authorized, have signed this Treaty.

DONE in triplicate at the city of Moscow the fifth day of August, one thousand nine hundred and sixty-three.

*For the Government  
of the United States  
of America:*

Dean Rusk

*For the Government  
of the United Kingdom  
of Great Britain and  
Northern Ireland:*

HOME

*For the Government  
of the Union of  
Soviet Socialist  
Republics:*

A. GROMYKO

TREATY ON THE NON-PROLIFERATION OF NUCLEAR WEAPONS

729 U.N.T.S. 161 (1970)  
entered into force 5 Mar. 1970

TREATY ON THE NON-PROLIFERATION OF  
NUCLEAR WEAPONS (The Non-Prolifera-  
tion Treaty of 1970)

373..

The States concluding this Treaty, hereinafter referred to as the "Parties to the Treaty".

Considering the devastation that would be visited upon all mankind by a nuclear war and the consequent need to make every effort to avert the danger of such a war and to take measures to safeguard the security of peoples,

Believing that the proliferation of nuclear weapons would seriously enhance the danger of nuclear war,

In conformity with resolutions of the United Nations General Assembly calling for the conclusion of an agreement on the prevention of wider dissemination of nuclear weapons,

Undertaking to cooperate in facilitating the application of International Atomic Energy Agency safeguards on peaceful nuclear activities,

Expressing their support for research, development and other efforts to further the application, within the framework of the International Atomic Energy Agency safeguards system, of the principle of safeguarding effectively the flow of source and special fissionable materials by use of instruments and other techniques at certain strategic points,

Affirming the principle that the benefits of peaceful applications of nuclear technology, including any technological by-products which may be derived by nuclear-weapon States from the development of nuclear explosive devices, should be available for peaceful purposes to all Parties to the Treaty, whether nuclear-weapon or non-nuclear-weapon States,

Convinced that, in furtherance of this principle, all Parties to the Treaty are entitled to participate in the fullest possible exchange of scientific information for, and to contribute alone or in cooperation with other States to, the further development of the applications of atomic energy for peaceful purposes.

Declaring their intention to achieve at the earliest possible date the cessation of the nuclear arms race and to undertake effective measures in the direction of nuclear disarmament,

Urging the cooperation of all States in the attainment of this objective,

Recalling the determination expressed by the Parties to the 1963 Treaty banning nuclear weapon tests in the atmosphere in outer space and under water in its Preamble to seek to achieve the discontinuance of all test explosions of nuclear weapons for all time and to continue negotiations to this end,

Desiring to further the easing of international tension and the strengthening of trust between States in order to facilitate the cessation of the manufacture of nuclear weapons, the liquidation of all their existing stockpiles, and the elimination from national arsenals of nuclear weapons and the means of their delivery pursuant to a treaty on general and complete disarmament under strict and effective international control,

Recalling that, in accordance with the Charter of the United Nations, States must refrain in their international relations from the threat or use of force against the territorial integrity or political independence of any State, or in any other manner inconsistent with the Purposes of the United Nations, and that the establishment and maintenance of international peace and security are to be promoted with the least diversion for armaments of the world's human and economic resources,

Have agreed as follows:

Article I

Each nuclear-weapon State Party to the Treaty undertakes not to transfer to any recipient whatsoever nuclear weapons or other nuclear explosive devices or control over such weapons or explosive devices directly, or indirectly; and not in any way to assist, encourage, or induce any non-nuclear-weapon State to manufacture or otherwise acquire nuclear weapons or other nuclear explosive devices, or control over such weapons or explosive devices.

Article II

Each non-nuclear-weapon State Party to the Treaty undertakes not to receive the transfer from any transferor whatsoever of nuclear weapons or other nuclear explosive devices or of control over such weapons or explosive devices directly, or indirectly; not to manufacture or otherwise acquire nuclear weapons or other nuclear explosive devices; and not to seek or receive any assistance in the manufacture of nuclear weapons or other nuclear explosive devices.

### Article III

1. Each non-nuclear-weapon State Party to the Treaty undertakes to accept safeguards, as set forth in an agreement to be negotiated and concluded with the International Atomic Energy Agency in accordance with the Statute of the International Atomic Energy Agency and the Agency's safeguards system, for the exclusive purpose of verification of the fulfillment of its obligations assumed under this Treaty with a view to preventing diversion of nuclear energy from peaceful uses to nuclear weapons or other nuclear explosive devices. Procedures for the safeguards required by this article shall be followed with respect to source or special fissionable material whether it is being produced, processed or used in any principal nuclear facility or is outside any such facility. The safeguards required by this article shall be applied on all source or special fissionable material in all peaceful nuclear activities within the territory of such State, under its jurisdiction, or carried out under its control anywhere.

2. Each State Party to the Treaty undertakes not to provide: (a) source or special fissionable material, or (b) equipment or material especially designed or prepared for the processing, use or production of special fissionable material, to any non-nuclear-weapon State for peaceful purposes, unless the source or special fissionable material shall be subject to the safeguards required by this article.

3. The safeguards required by this article shall be implemented in a manner designed to comply with article IV of this Treaty, and to avoid hampering the economic or technological development of the Parties or international cooperation in the field of peaceful nuclear activities, including the international exchange of nuclear material and equipment for the processing, use or production of nuclear material for peaceful purposes in accordance with the provisions of this article and the principle of safeguarding set forth in the Preamble of the Treaty.

4. Non-nuclear-weapon States Party to the Treaty shall conclude agreements with the International Atomic Energy Agency to meet the requirements of this article either individually or together with other States in accordance with the Statute of the International Atomic Energy Agency. Negotiation of such agreements shall commence within 180 days from the original entry into force of this Treaty. For States depositing their instruments of ratification or accession after the 180-day period, negotiation of such agreements shall commence not later than the date of such deposit. Such agreements shall enter into force not later than eighteen months after the date of initiation of negotiations.

### Article IV

1. Nothing in this Treaty shall be interpreted as affecting the inalienable right of all the Parties to the Treaty to develop research, production and use of nuclear energy for peaceful purposes without discrimination and in conformity with articles I and II of this Treaty.

2. All the Parties to the Treaty undertake to facilitate, and have the right to participate in, the fullest possible exchange of equipment, materials and scientific and technological information for the peaceful uses of nuclear energy. Parties to the Treaty in a position to do so shall also cooperate in contributing alone or together with other States or international organizations to the further development of the applications of nuclear energy for peaceful purposes, especially in the territories of non-nuclear-weapon States Party to the Treaty, with due consideration for the needs of the developing areas of the world.

### Article V

Each Party to the Treaty undertakes to take appropriate measures to ensure that, in accordance with this Treaty, under appropriate international observation and through appropriate international procedures, potential benefits from any peaceful applications of nuclear explosions will be made available to non-nuclear-weapon States Party to the Treaty on a non-discriminatory basis and that the charge to such Parties for the explosive devices used will be as low as possible and exclude any charge for research and development. Non-nuclear-weapon States Party to the Treaty shall be able to obtain such benefits, pursuant to a special international agreement or agreements, through an appropriate international body with adequate representation of non-nuclear-weapon States. Negotiations on this subject shall commence as soon as possible after the Treaty enters into force. Non-nuclear-weapon States Party to the Treaty so desiring may also obtain such benefits pursuant to bilateral agreements.

**Article VI**

Each of the Parties to the Treaty undertakes to pursue negotiations in good faith on effective measures relating to cessation of the nuclear arms race at an early date and to nuclear disarmament, and on a treaty on general and complete disarmament under strict and effective international control.

**Article VII**

Nothing in this Treaty affects the right of any group of States to conclude regional treaties in order to assure the total absence of nuclear weapons in their respective territories.

**Article VIII**

1. Any Party to the Treaty may propose amendments to this Treaty. The text of any proposed amendment shall be submitted to the Depositary Governments which shall circulate it to all Parties to the Treaty. Thereupon, if requested to do so by one-third or more of the Parties to the Treaty, the Depositary Governments shall convene a conference, to which they shall invite all the Parties to the Treaty, to consider such an amendment.

2. Any amendment to this Treaty must be approved by a majority of the votes of all the Parties to the Treaty, including the votes of all nuclear-weapon States Party to the Treaty and all other Parties which, on the date the amendment is circulated, are members of the Board of Governors of the International Atomic Energy Agency. The amendment shall enter into force for each Party that deposits its instrument of ratification of the amendment upon the deposit of such instruments of ratification by a majority of all the Parties, including the instruments of ratification of all nuclear-weapon States Party to the Treaty and all other Parties which, on the date the amendment is circulated, are members of the Board of Governors of the International Atomic Energy Agency. Thereafter, it shall enter into force for any other Party upon the deposit of its instrument of ratification of the amendment.

3. Five years after the entry into force of this Treaty, a conference of Parties to the Treaty shall be held in Geneva, Switzerland, in order to review the operation of this Treaty with a view to assuring that the purposes of the Preamble and the provisions of the Treaty are being realized. At intervals of five years thereafter, a majority of the Parties to the Treaty may obtain, by submitting a proposal to this effect to the Depositary Governments, the convening of further conferences with the same objective of reviewing the operation of the Treaty.

**Article IX**

1. This Treaty shall be open to all States for signature. Any State which does not sign the Treaty before its entry into force in accordance with paragraph 3 of this article may accede to it at any time.

2. This Treaty shall be subject to ratification by signatory States. Instruments of ratification and instruments of accession shall be deposited with the Governments of the United States of America, the United Kingdom of Great Britain and Northern Ireland and the Union of Soviet Socialist Republics, which are hereby designated the Depositary Governments.

3. This Treaty shall enter into force after its ratification by the States, the Governments of which are designated Depositaries of the Treaty, and forty other States signatory to this Treaty and the deposit of their instruments of ratification. For the purposes of this Treaty, a nuclear-weapon State is one which has manufactured and exploded a nuclear weapon or other nuclear explosive device prior to January 1, 1967.

4. For States whose instruments of ratification or accession are deposited subsequent to the entry into force of this Treaty, it shall enter into force on the date of the deposit of their instruments of ratification or accession.

5. The Depositary Governments shall promptly inform all signatory and acceding States of the date of each signature, the date of deposit of each instrument of ratification or of accession, the date of the entry into force of this Treaty, and the date of receipt of any requests for convening a conference or other notices.

6. This Treaty shall be registered by the Depositary Governments pursuant to article 102 of the Charter of the United Nations.

#### Article X

1. Each Party shall in exercising its national sovereignty have the right to withdraw from the Treaty if it decides that extraordinary events, related to the subject matter of this Treaty, have jeopardized the supreme interests of its country. It shall give notice of such withdrawal to all other Parties to the Treaty and to the United Nations Security Council three months in advance. Such notice shall include a statement of the extraordinary events it regards as having jeopardized its supreme interests.

2. Twenty-five years after the entry into force of the Treaty, a conference shall be convened to decide whether the Treaty shall continue in force indefinitely, or shall be extended for an additional fixed period or periods. This decision shall be taken by a majority of the Parties to the Treaty.

#### Article XI

This Treaty, the English, Russian, French, Spanish and Chinese texts of which are equally authentic, shall be deposited in the archives of the Depositary Governments. Duly certified copies of this Treaty shall be transmitted by the Depositary Governments to the Governments of the signatory and acceding States.

TREATY ON THE PROHIBITION OF THE EMPLACEMENT OF  
NUCLEAR WEAPONS AND OTHER WEAPONS OF MASS DESTRUCTION  
ON THE SEABED AND THE OCEAN FLOOR AND IN THE SUBSOIL  
THEREOF

(1972) Can. T.S. no. 20  
entered into force 18 May 1972

TREATY ON THE PROHIBITION OF THE EMPLACEMENT  
OF NUCLEAR WEAPONS AND OTHER WEAPONS OF MASS  
DESTRUCTION ON THE SEABED AND THE OCEAN FLOOR  
AND IN THE SUBSOIL THEREOF (The Seabed Treaty  
of 1972)

The States Parties to this Treaty,

Recognizing the common interest of mankind in the progress of the exploration and use of the sea-bed and the ocean floor for peaceful purposes,

Considering that the prevention of a nuclear arms race on the sea-bed and the ocean floor serves the interests of maintaining world peace, reduces international tensions, and strengthens friendly relations among States,

Convinced that this Treaty constitutes a step towards the exclusion of the sea-bed, the ocean floor and the subsoil thereof from the arms race,

Convinced that this Treaty constitutes a step towards a treaty on general and complete disarmament under strict and effective international control, and determined to continue negotiations to this end,

Convinced that this Treaty will further the purposes and principles of the Charter of the United Nations, in a manner consistent with the principles of international law and without infringing the freedoms of the high seas,

Have agreed as follows:

Article I

1. The States Parties to this Treaty undertake not to explant or emplace on the sea-bed and the ocean floor and in the subsoil thereof beyond the outer limit of a sea-bed zone as defined in Article II any nuclear weapons or any other types of weapons of mass destruction as well as structures, launching installations or any other facilities specifically designed for storing, testing or using such weapons.
2. The undertakings of paragraph 1 of this Article shall also apply to the sea-bed zone referred to in the same paragraph, except that within such sea-bed zone, they shall not apply either to the coastal State or to the sea-bed beneath its territorial waters.
3. The States Parties to this Treaty undertake not to assist, encourage or induce any State to carry out activities referred to in paragraph 1 of this Article and not to participate in any other way in such actions.

## Article II

For the purpose of this Treaty the outer limit of the sea-bed zone referred to in Article I shall be coterminous with the twelve-mile outer limit of the zone referred to in Part II of the Convention on the Territorial Sea and the Contiguous Zone, signed in Geneva on 29 April 1958, and shall be measured in accordance with the provisions of Part I, Section II, of this Convention and in accordance with international law.

## Article III

1. In order to promote the objectives of and ensure compliance with the provisions of this Treaty, each State Party to the Treaty shall have the right to verify through observation the activities of other States Parties to the Treaty on the sea-bed and the ocean floor and in the subsoil thereof beyond the zone referred to in Article I, provided that observation does not interfere with such activities.
2. If after such observation reasonable doubts remain concerning the fulfilment of the obligations assumed under the Treaty, the State Party having such doubts and the State Party that is responsible for the activities giving rise to the doubts shall consult with a view to removing the doubts. If the doubts persist, the State Party having such doubts shall notify the other States Parties, and the Parties concerned shall co-operate on such further procedures for verification as may be agreed, including appropriate inspection of objects, structures, installations or other facilities that reasonably may be expected to be of a kind described in Article I. The Parties in the region of the activities, including any coastal State, and any other Party so requesting, shall be entitled to participate in such consultation and co-operation. After completion of the further procedures for verification, an appropriate report shall be circulated to other Parties by the Party that initiated such procedures.

3. If the State responsible for the activities giving rise to the reasonable doubts is not identifiable by observation of the object, structure, installation or other facility, the State Party having such doubts shall notify and make appropriate inquiries of States Parties in the region of the activities and of any other State Party. If it is ascertained through these inquiries that a particular State Party is responsible for the activities, that State Party shall consult and co-operate with other Parties as provided in paragraph 2 of this Article. If the identity of the State responsible for the activities cannot be ascertained through these inquiries, then further verification procedures, including inspection, may be undertaken by the inquiring State Party, which shall invite the participation of the Parties in the region of the activities, including any coastal State, and of any other Party desiring to co-operate.

4. If consultation and co-operation pursuant to paragraphs 2 and 3 of this Article have not removed the doubts concerning the activities and there remains a serious question concerning fulfilment of the obligations assumed under this Treaty, a State Party may, in accordance with the provisions of the Charter of the United Nations, refer the matter to the Security Council, which may take action in accordance with the Charter.

5. Verification pursuant to this Article may be undertaken by any State Party using its own means, or with the full or partial assistance of any other State Party, or through appropriate international procedures within the framework of the United Nations and in accordance with its Charter.

6. Verification activities pursuant to this Treaty shall not interfere with activities of other States Parties and shall be conducted with due regard for rights recognized under international law including the freedoms of the high seas and the rights of coastal States with respect to the exploration and exploitation of their continental shelves.

#### Article IV

Nothing in this Treaty shall be interpreted as supporting or prejudicing the position of any State Party with respect to existing international conventions, including the 1958 Convention on the Territorial Sea and the

Contiguous Zone, or with respect to rights or claims which such State Party may assert, or with respect to recognition or non-recognition of rights or claims asserted by any other State, related to waters off its coasts; including inter alia territorial seas and contiguous zones, or to the sea-bed and the ocean floor, including continental shelves.

#### Article V

The Parties to this Treaty undertake to continue negotiations in good faith concerning further measures in the field of disarmament for the prevention of an arms race on the sea-bed, the ocean floor and the subsoil thereof.

#### Article VI

Any State Party may propose amendments to this Treaty. Amendments shall enter into force for each State Party accepting the amendments upon their acceptance by a majority of the States Parties to the Treaty and thereafter for each remaining State Party on the date of acceptance by it.

#### Article VII

Five years after the entry into force of this Treaty, a conference of Parties to the Treaty shall be held in Geneva, Switzerland, in order to review the operation of this Treaty with a view to assuring that the purposes of the preamble and the provisions of the Treaty are being realized. Such review shall take into account any relevant technological developments. The review conference shall determine in accordance with the views of a majority of those Parties attending whether and when an additional review conference shall be convened.

#### Article VIII

Each State Party to this Treaty shall in exercising its national sovereignty have the right to withdraw from this Treaty if it decides that extraordinary events related to the subject matter of this Treaty have jeopardized the supreme interests of its country. It shall give notice of such withdrawal to all other States Parties to the Treaty and to the United Nations Security Council three months in advance. Such notice shall include a statement of the extraordinary events it considers to have jeopardized its supreme interests.

Article IX

The provisions of this Treaty shall in no way affect the obligations assumed by States Parties to the Treaty under international instruments establishing zones free from nuclear weapons.

Article X

1. This Treaty shall be open for signature to all States. Any State which does not sign the Treaty before its entry into force in accordance with paragraph 3 of this Article may accede to it at any time.
2. This Treaty shall be subject to ratification by signatory States. Instruments of ratification and of accession shall be deposited with the Governments of the Union of Soviet Socialist Republics, the United Kingdom of Great Britain and Northern Ireland and the United States of America, which are hereby designated the Depositary Governments.
3. This Treaty shall enter into force after the deposit of instruments of ratification by twenty-two Governments, including the Governments designated as Depositary Governments of this Treaty.
4. For States whose instruments of ratification or accession are deposited after the entry into force of this Treaty it shall enter into force on the date of the deposit of their instruments of ratification or accession.
5. The Depositary Governments shall promptly inform the Governments of all signatory and acceding States of the date of each signature, of the date of deposit of each instrument of ratification or of accession, of the date of the entry into force of this Treaty, and of the receipt of other notices.
6. This Treaty shall be registered by the Depositary Governments pursuant to Article 102 of the Charter of the United Nations.

Article XI

This Treaty, the Chinese, English, French, Russian and Spanish texts of which are equally authentic, shall be deposited in the archives of the Depositary Governments. Duly certified copies of this Treaty shall be transmitted by the Depositary Governments to the Governments of the States signatory and acceding thereto.

In witness whereof the undersigned, being duly authorized thereto, have signed this Treaty.

CONVENTION ON THE PROHIBITION OF MILITARY OR ANY  
OTHER HOSTILE USES OF ENVIRONMENTAL MODIFICATION  
TECHNIQUES

(1977), 16 Int'l Legal Mat. 1688  
entered into force 5 Oct. 1978

The States Parties to this Convention,

Guided by the interest of consolidating peace, and wishing to contribute to the cause of halting the arms race, and of bringing about general and complete disarmament under strict and effective international control, and of saving mankind from the danger of using new means of warfare,

Determined to continue negotiations with a view to achieving effective progress towards further measures in the field of disarmament,

Recognizing that scientific and technical advances may open new possibilities with respect to modification of the environment,

Recalling the Declaration of the United Nations Conference on the Human Environment, adopted at Stockholm on 16 June 1972,

Realizing that the use of environmental modification techniques for peaceful purposes could improve the interrelationship of man and nature and contribute to the preservation and improvement of the environment for the benefit of present and future generations,

Recognizing, however, that military or any other hostile use of such techniques could have effects extremely harmful to human welfare,

Desiring to prohibit effectively military or any other hostile use of environmental modification techniques in order to eliminate the dangers to mankind from such use, and affirming their willingness to work towards the achievement of this objective,

Desiring also to contribute to the strengthening of trust among nations and to the further improvement of the international situation in accordance with the purposes and principles of the Charter of the United Nations,

Have agreed as follows:

#### *Article I*

1. Each State Party to this Convention undertakes not to engage in military or any other hostile use of environmental modification techniques having widespread, long-lasting or severe effects as the means of destruction, damage or injury to any other State Party.

2. Each State Party to this Convention undertakes not to assist, encourage or induce any State, group of States or international organization to engage in activities contrary to the provisions of paragraph 1 of this article.

#### *Article II*

As used in article I, the term "environmental modification techniques" refers to any technique for changing—through the deliberate manipulation of natural processes—the dynamics, composition or structure of the earth, including its biota, lithosphere, hydrosphere and atmosphere, or of outer space.

#### *Article III*

1. The provisions of this Convention shall not hinder the use of environmental modification techniques for peaceful purposes and shall be without prejudice to the generally recognized principles and applicable rules of international law concerning such use.

2. The States Parties to this Convention undertake to facilitate, and have the right to participate in, the fullest possible exchange of scientific and technological information on the use of environmental modification techniques for peaceful purposes. States Parties in a position to do so shall contribute, alone or together with other States or international organizations, to international economic and scientific co-operation in the preservation, improvement and peaceful utilization of the environment, with due consideration for the needs of the developing areas of the world.

#### *Article IV*

Each State Party to this Convention undertakes to take any measures it considers necessary in accordance with its constitutional processes to prohibit and prevent any activity in violation of the provisions of the Convention anywhere under its jurisdiction or control.

#### *Article V*

1. The States Parties to this Convention undertake to consult one another and to co-operate in solving any problems which may arise in relation to the objectives of, or in the application of the provisions of, the Convention. Consultation and co-operation pursuant to this article may also be undertaken through appropriate international procedures within the framework of the United Nations and in accordance with its Charter. These international procedures may include the services of appropriate international organizations, as well as of a Consultative Committee of Experts as provided for in paragraph 2 of this article.

2. For the purposes set forth in paragraph 1 of this article, the Depositary shall, within one month of the receipt of a request from any State Party to this Convention, convene a Consultative Committee of Experts. Any State Party may appoint an expert to the Committee whose functions and rules of procedure are set out in the annex, which constitutes an integral part of this Convention. The Committee shall transmit to the Depositary a summary of its findings of fact, incorporating all views and information presented to the Committee during its proceedings. The Depositary shall distribute the summary to all States Parties.

3. Any State Party to this Convention which has reason to believe that any other State Party is acting in breach of obligations deriving from the provisions of the Convention may lodge a complaint with the Security Council of the United Nations. Such a complaint should include all relevant information as well as all possible evidence supporting its validity.

4. Each State Party to this Convention undertakes to co-operate in carrying out any investigation which the Security Council may initiate, in accordance with the provisions of the Charter of the United Nations, on the basis of the complaint received by the Council. The Security Council shall inform the States Parties of the results of the investigation.

5. Each State Party to this Convention undertakes to provide or support assistance, in accordance with the provisions of the Charter of the United Nations, to any State Party which so requests, if the Security Council decides that such Party has been harmed or is likely to be harmed as a result of violation of the Convention.

*Article VI*

1. Any State Party to this Convention may propose amendments to the Convention. The text of any proposed amendment shall be submitted to the Depository, who shall promptly circulate it to all States Parties.

2. An amendment shall enter into force for all States Parties to this Convention which have accepted it, upon the deposit with the Depository of instruments of acceptance by a majority of States Parties. Thereafter it shall enter into force for any remaining State Party on the date of deposit of its instrument of acceptance.

*Article VII*

This Convention shall be of unlimited duration.

*Article VIII*

1. Five years after the entry into force of this Convention, a conference of the States Parties to the Convention shall be convened by the Depository at Geneva, Switzerland. The conference shall review the operation of the Convention with a view to ensuring that its purposes and provisions are being realized, and shall in particular examine the effectiveness of the provisions of paragraph 1 of article I in eliminating the dangers of military or any other hostile use of environmental modification techniques.

2. At intervals of not less than five years thereafter, a majority of the States Parties to this Convention may obtain, by submitting a proposal to this effect to the Depository, the convening of a conference with the same objectives.

*Article IX*

1. This Convention shall be open to all States for signature. Any State which does not sign the Convention before its entry into force in accordance with paragraph 3 of this article may accede to it at any time.

2. This Convention shall be subject to ratification by signatory States. Instruments of ratification or accession shall be deposited with the Secretary-General of the United Nations.

3. This Convention shall enter into force upon the deposit of instruments of ratification by twenty Governments in accordance with paragraph 2 of this article.

4. For those States whose instruments of ratification or accession are deposited after the entry into force of this Convention, it shall enter into force on the date of the deposit of their instruments of ratification or accession.

5. The Depository shall promptly inform all signatory and acceding States of the date of each signature, the date of deposit of each instrument of ratification or accession and the date of the entry into force of this Convention and of any amendments thereto, as well as

6. This Convention shall be registered by the Depository in accordance with Article 102 of the Charter of the United Nations.

*Article X*

This Convention, of which the English, Arabic, Chinese, French, Russian and Spanish texts are equally authentic, shall be deposited with

the Secretary-General of the United Nations, who shall send duly certified copies thereof to the Governments of the signatory and acceding States.

IN WITNESS WHEREOF, the undersigned, being duly authorized thereto by their respective Governments, have signed this Convention, opened for signature at Geneva on the eighteenth day of May, one thousand nine hundred and seventy-seven.

**Annex to the Convention**  
**Consultative Committee of Experts**

1. The Consultative Committee of Experts shall undertake to make appropriate findings of fact and provide expert views relevant to any problem raised pursuant to paragraph 1 of article V of this Convention by the State Party requesting the convening of the Committee.
2. The work of the Consultative Committee of Experts shall be organized in such a way as to permit it to perform the functions set forth in paragraph 1 of this annex. The Committee shall decide procedural questions relative to the organization of its work, where possible by consensus, but otherwise by a majority of those present and voting. There shall be no voting on matters of substance.
3. The Depositary or his representative shall serve as the Chairman of the Committee.
4. Each expert may be assisted at meetings by one or more advisers.
5. Each expert shall have the right, through the Chairman, to request from States, and from international organizations, such information and assistance as the expert considers desirable for the accomplishment of the Committee's work.

DECLARATION ON PRINCIPLES OF INTERNATIONAL LAW  
CONCERNING FRIENDLY RELATIONS AND CO-OPERATION  
AMONG STATES IN ACCORDANCE WITH THE CHARTER OF  
THE UNITED NATIONS, 24 Oct. 1970.

U.N.G.A. Res. 2625 (XXV)  
(1970), Int'l Legal Mat. 1292

U.N. GENERAL ASSEMBLY RESOLUTION ON FRIENDLY  
RELATIONS BETWEEN STATES

PREAMBLE

THE GENERAL ASSEMBLY,

*Reaffirming* in the terms of the Charter that the maintenance of international peace and security and the development of friendly relations and co-operation between nations are among the fundamental purposes of the United Nations,

*Recalling* that the peoples of the United Nations are determined to practise tolerance and live together in peace with one another as good neighbours,

*Bearing in mind* the importance of maintaining and strengthening international peace founded upon freedom, equality, justice and respect for fundamental human rights and of developing friendly relations among nations irrespective of their political, economic and social systems or the levels of their development,

1. *Solemnly proclaims* the following principles:

*The principle that States shall refrain in their international relations from the threat or use of force against the territorial integrity or political independence of any State, or in any other manner inconsistent with the purposes of the United Nations.*

Every State has the duty to refrain in its international relations from the threat or use of force against the territorial integrity or political independence of any State, or in any other manner inconsistent with the purposes of the United Nations. Such a threat or use of force constitutes a violation of international law and the Charter of the United Nations and shall never be employed as a means of settling international issues.

A war of aggression constitutes a crime against the peace, for which there is responsibility under international law.

In accordance with the purposes and principles of the United Nations, States have the duty to refrain from propaganda for wars of aggression.

Every State has the duty to refrain from the threat or use of force to violate the existing international boundaries of another State or as a means of solving international disputes, including territorial disputes and problems concerning frontiers of States.

Every State likewise has the duty to refrain from the threat or use of force to violate international lines of demarcation, such as armistice lines, established by or pursuant to an international agreement to which it is a party or which it is otherwise bound to respect. Nothing in the foregoing shall be construed as prejudicing the positions of the parties concerned with regard to the status and effects of such lines under their special régimes or as affecting their temporary character.

States have a duty to refrain from acts of reprisal involving the use of force.

Every State has the duty to refrain from any forcible action which deprives peoples referred to in the elaboration of the principle of equal rights and self-determination of their right to self-determination and freedom and independence.

Every State has the duty to refrain from organizing or encouraging the organization of irregular forces or armed bands, including mercenaries, for incursion into the territory of another State.

Every State has the duty to refrain from organizing, instigating, assisting or participating in acts of civil strife or terrorist acts in another State or acquiescing in organized activities within its territory directed towards the commission of such acts, when the acts referred to in the present paragraph involve a threat or use of force.

The territory of a State shall not be the object of military occupation resulting from the use of force in contravention of the provisions of the Charter. The territory of a State shall not be the object of acquisition by another State resulting from the threat or use of force. No territorial acquisition resulting from the threat or use of force shall be recognized as legal. Nothing in the foregoing shall be construed as affecting:

- (a) Provisions of the Charter or any international agreement prior to the Charter régime and valid under international law; or
- (b) The powers of the Security Council under the Charter.

All States shall pursue in good faith negotiations for the early conclusion of a universal treaty on general and complete disarmament under effective international control and strive to adopt appropriate measures to reduce international tensions and strengthen confidence among States.

All States shall comply in good faith with their obligations under the generally recognized principles and rules of international law with respect to the maintenance of international peace and security, and shall endeavour to make the United Nations security system based upon the Charter more effective.

States should co-operate in the economic, social and cultural fields as well as in the field of science and technology and for the promotion of international cultural and educational progress. States should co-operate in the promotion of economic growth throughout the world, especially that of the developing countries.

*The principle of equal rights and self-determination of peoples*

By virtue of the principle of equal rights and self-determination of peoples enshrined in the Charter, all peoples have the right freely to determine, without external interference, their political status and to pursue their economic, social and cultural development, and every State has the duty to respect this right in accordance with the provisions of the Charter.

Every State has the duty to promote, through joint and separate action, the realization of the principle of equal rights and self-determination of peoples, in accordance with the provisions of the Charter, and to render assistance to the United Nations in carrying out the responsibilities entrusted to it by the Charter regarding the implementation of the principle in order:

- (a) To promote friendly relations and co-operation among States; and
- (b) To bring a speedy end to colonialism, having due regard to the freely expressed will of the peoples concerned;

and bearing in mind that subjection of peoples to alien subjugation, domination and exploitation constitutes a violation of the principle, as well as a denial of fundamental human rights, and is contrary to the Charter of the United Nations.

Every State has the duty to promote through joint and separate action universal respect for and observance of human rights and fundamental freedoms in accordance with the Charter.

The establishment of a sovereign and independent State, the free association or integration with an independent State or the emergence into any other political status freely determined by a people constitute modes of implementing the right of self-determination by that people.

Every State has the duty to refrain from any forcible action which deprives peoples referred to above in the elaboration of the present principle of their right to self-determination and freedom and independence. In their actions against and resistance to such forcible action in pursuit of the exercise of their right to self-determination, such peoples are entitled to seek and to receive support in accordance with the purposes and principles of the Charter of the United Nations.

The territory of a colony or other non-self-governing territory has, under the Charter of the United Nations, a status separate and distinct from the territory of the State administering it; and such separate and distinct status under the Charter shall exist until the people of the colony or non-self-governing territory have exercised their right of self-determination in accordance with the Charter, and particularly its purposes and principles.

Nothing in the foregoing paragraphs shall be construed as authorizing or encouraging any action which would dismember or impair, totally or in part, the territorial integrity or political unity of sovereign and independent States conducting themselves in compliance with the principle of equal rights and self-determination of peoples as described above and thus possessed of a government representing the whole people belonging to the territory without distinction as to race, creed or colour.

Every state shall refrain from any action aimed at the partial or total disruption of the national unity and territorial integrity of any other State or country.

*The principle of sovereign equality of States*

All States enjoy sovereign equality. They have equal rights and duties and are equal members of the international community, notwithstanding differences of an economic, social, political or other nature.

Nothing in the foregoing paragraphs shall be construed as enlarging or diminishing in any way the scope of the provisions of the Charter concerning cases in which the use of force is lawful.

*The principle that States shall settle their international disputes by peaceful means in such a manner that international peace and security and justice are not endangered*

Every State shall settle its international disputes with other States by peaceful means, in such a manner that international peace and security, and justice, are not endangered.

States shall accordingly seek early and just settlement of their international disputes by negotiation, inquiry, mediation, conciliation, arbitration, judicial settlement, resort to regional agencies or arrangements or other peaceful means of their choice. In seeking such a settlement, the parties shall agree upon such peaceful means as may be appropriate to the circumstances and nature of the dispute.

The parties to a dispute have the duty, in the event of failure to reach a solution by any one of the above peaceful means, to continue to seek a settlement of the dispute by other peaceful means agreed upon by them.

States parties to an international dispute, as well as other States, shall refrain from any action which may aggravate the situation so as to endanger the maintenance of international peace and security, and shall act in accordance with the purposes and principles of the United Nations.

International disputes shall be settled on the basis of the sovereign equality of States and in accordance with the principle of free choice of means. Recourse to, or acceptance of, a settlement procedure freely agreed to by States with regard to existing or future disputes to which they are parties shall not be regarded as incompatible with sovereign equality.

Nothing in the foregoing paragraphs prejudices or derogates from the applicable provisions of the Charter, in particular those relating to the pacific settlement of international disputes.

*The principle concerning the duty not to intervene in matters within the domestic jurisdiction of any State, in accordance with the Charter*

No State or group of States has the right to intervene, directly or indirectly, for any reason whatever, in the internal or external affairs of any other State. Consequently, armed intervention and all other forms of interference or attempted threats against the personality of the State or against its political, economic and cultural elements, are in violation of international law.

No State may use or encourage the use of economic, political or any other type of measures to coerce another State in order to obtain from it the subordination of the exercise of its sovereign rights and to secure from it advantages of any kind. Also, no State shall organize, assist, foment, finance, incite or tolerate subversive, terrorist or armed activities directed towards the violent overthrow of the régime of another State, or interfere in civil strife in another State.

The use of force to deprive peoples of their national identity constitutes a violation of their inalienable rights and of the principle of non-intervention.

Every State has an inalienable right to choose its political, economic, social and cultural systems, without interference in any form by another State.

Nothing in the foregoing paragraphs shall be construed as affecting the relevant provisions of the Charter relating to the maintenance of international peace and security.

*The duty of States to co-operate with one another in accordance with the Charter*

States have the duty to co-operate with one another, irrespective of the differences in their political, economic and social systems, in the various spheres of international relations, in order to maintain international peace and security and to promote international economic stability and progress, the general welfare of nations and international co-operation free from discrimination based on such differences.

(a) States shall co-operate with other States in the maintenance of international peace and security.

(b) States shall co-operate in the promotion of universal respect for and observance of human rights and fundamental freedoms for all, and in the elimination of all forms of racial discrimination and all forms of religious intolerance.

(c) States shall conduct their international relations in the economic, social, cultural, technical and trade fields in accordance with the principles of sovereign equality and non-intervention;

(a) States are juridically equal;

(b) Each State enjoys the rights inherent in full sovereignty;

(c) Each State has the duty to respect the personality of other States;

(d) The territorial integrity and political independence of the State are inviolable;

(e) Each State has the right freely to choose and develop its political, social, economic and cultural systems;

(f) Each State has the duty to comply fully and in good faith with its international obligations and to live in peace with other States.

*The principle that States shall fulfil in good faith the obligations assumed by them in accordance with the Charter*

Every State has the duty to fulfil in good faith the obligations assumed by it in accordance with the Charter of the United Nations.

Every State has the duty to fulfil in good faith its obligations under the generally recognized principles and rules of international law.

Every State has the duty to fulfil in good faith its obligations under international agreements valid under the generally recognized principles and rules of international law.

Where obligations arising under international agreements are in conflict with the obligations of Members of the United Nations under the Charter of the United Nations, the obligations under the Charter shall prevail.

*General part.*

**2. Declares that:**

In their interpretation and application the above principles are interrelated and each principle should be construed in the context of the other principles.

Nothing in this Declaration shall be construed as prejudicing in any manner the provisions of the Charter or the rights and duties of Member States under the Charter or the rights of peoples under the Charter taking into account the elaboration of these rights in this Declaration.

**3. Declares further that:**

The principles of the Charter which are embodied in this Declaration constitute basic principles of international law, and consequently appeals to all States to be guided by these principles in their international conduct and to develop their mutual relations on the basis of their strict observance.

RESOLUTION ON THE DEFINITION OF AGGRESSION,  
14 Dec. 1974

U.N.G.A. Res. 3314 (XXIX)  
(1975), 13 Int'l Legal Mat. 710

U.N. GENERAL ASSEMBLY RESOLUTION ON THE DEFINITION  
OF AGGRESSION

THE GENERAL ASSEMBLY,

*Having considered* the report of the Special Committee on the Question of Defining Aggression, established pursuant to its resolution 2330 (XXII) of 18 December 1967, covering the work of its seventh session held from 11 March to 12 April 1974, including the draft Definition of Aggression adopted by the Special Committee by consensus and recommended for adoption by the General Assembly,

*Deeply convinced* that the adoption of the Definition of Aggression would contribute to the strengthening of international peace and security,

1. *Approves* the Definition of Aggression, the text of which is annexed to the present resolution;

2. *Expresses its appreciation* to the Special Committee on the Question of Defining Aggression for its work which resulted in the elaboration of the Definition of Aggression.

3. *Calls upon* all States to refrain from all acts of aggression and other uses of force contrary to the Charter of the United Nations and the Declaration on Principles of International Law concerning Friendly Relations and Co-operation among States in accordance with the Charter of the United Nations;

4. *Calls the attention* of the Security Council to the Definition of Aggression, as set out below, and recommends that it should, as appropriate, take account of that Definition as guidance in determining, in accordance with the Charter, the existence of an act of ag-

ANNEX. DEFINITION OF AGGRESSION

THE GENERAL ASSEMBLY

*Basing itself* on the fact that one of the fundamental purposes of the United Nations is to maintain international peace and security and to take effective collective measures for the prevention and removal of threats to the peace, and for the suppression of acts of aggression or other breaches of the peace.

*Recalling* that the Security Council, in accordance with Article 39 of the Charter of the United Nations, shall determine the existence of any threat to the peace, breach of the peace or act of aggression and shall make recommendations, or decide what measures shall be taken in accordance with Articles 41 and 42, to maintain or restore international peace and security.

*Recalling also* the duty of States under the Charter to settle their international disputes by peaceful means in order not to endanger international peace, security and justice,

*Bearing in mind* that nothing in this Definition shall be interpreted as in any way affecting the scope of the provisions of the Charter with respect to the functions and powers of the organs of the United Nations,

*Considering also* that, since aggression is the most serious and dangerous form of the illegal use of force, being fraught, in the conditions created by the existence of all types of weapons of mass destruction, with the possible threat of a world conflict and all its catastrophic consequences, aggression should be defined at the present stage,

*Reaffirming* the duty of States not to use armed force to deprive peoples of their right to self-determination, freedom and independence, or to disrupt territorial integrity.

*Reaffirming also* that the territory of a State shall not be violated by being the object, even temporarily, of military occupation or of other measures of force taken by another State in contravention of the Charter, and that it shall not be the object of acquisition by another State resulting from such measures or the threat thereof,

*Reaffirming also* the provisions of the Declaration on Principles of International Law concerning Friendly Relations and Co-operation among States in accordance with the Charter of the United Nations,

*Convinced* that the adoption of a definition of aggression ought to have the effect of deterring a potential aggressor, would simplify the determination of acts of aggression and also facilitate the protection of the rights and lawful interests of, and the rendering of assistance to, the victim,

*Believing that*, although the question whether an act of aggression has been committed must be considered in the light of all the circumstances of each particular case, it is nevertheless desirable to formulate basic principles as guidance for such determination,

*Adopts* the following Definition of Aggression:

*Article 1.* Aggression is the use of armed force by a State against the sovereignty, territorial integrity or political independence of another State, or in any other manner inconsistent with the Charter of the United Nations, as set out in this Definition.

*Article 2.* The first use of armed force by a State in contravention of the Charter shall constitute *prima facie* evidence of an act of aggression although the Security Council may, in conformity with the Charter, conclude that a determination that an act of aggression has been committed would not be justified in the light of other relevant circumstances, including the fact that the acts concerned or their consequences are not of sufficient gravity.

*Article 3.* Any of the following acts, regardless of a declaration of war, shall, subject to and in accordance with the provisions of article 2, qualify as an act of aggression:

(a) The invasion or attack by the armed forces of a State of the territory of another State, or any military occupation, however temporary, resulting from such invasion or attack, or any annexation by the use of force of the territory of another State or part thereof;

(b) Bombardment by the armed forces of a State against the territory of another State or the use of any weapons by a State against the territory of another State;

(c) The blockade of the ports or coasts of a State by the armed forces of another State;

(d) An attack by the armed forces of a State on the land, sea or air forces, or marine and air fleets of another State;

(e) The use of armed forces of one State which are within the territory of another State with the agreement of the receiving State, in contravention of the conditions provided for in the agreement or any extension of their presence in such territory beyond the termination of the agreement;

(f) The action of a State in allowing its territory, which it has placed at the disposal of another State, to be used by that other State for perpetrating an act of aggression against a third State;

*Article 4.* The acts enumerated above are not exhaustive and the Security Council may determine that other acts constitute aggression under the provisions of the Charter.

*Article 5.* (1) No consideration of whatever nature, whether political, economic, military or otherwise, may serve as a justification for aggression.

(2) A war of aggression is a crime against international peace. Aggression gives rise to international responsibility.

(3) No territorial acquisition or special advantage resulting from aggression is or shall be recognized as lawful.

*Article 6.* Nothing in this Definition shall be construed as in any way enlarging or diminishing the scope of the Charter, including its provisions concerning cases in which the use of force is lawful.

*Article 7.* Nothing in this Definition, and in particular article 3, could in any way prejudice the right to self-determination, freedom and independence, as derived from the Charter, of peoples forcibly deprived of that right and referred to in the Declaration on Principles of International Law concerning Friendly Relations and Co-operation among States in accordance with the Charter of the United Nations, particularly peoples under colonial and racist régimes or other forms of alien domination; nor the right of these peoples to struggle to that end and to seek and receive support, in accordance with the principles of the Charter and in conformity with the above-mentioned Declaration.

*Article 8.* In their interpretation and application the above provisions are interrelated and each provision should be construed in the context of the other provisions.

TREATY BETWEEN THE UNITED STATES OF AMERICA AND THE  
UNION OF SOVIET SOCIALIST REPUBLICS ON THE LIMITATION  
OF ANTI-BALLISTIC MISSILE SYSTEMS

(1979), 18 Int'l Legal Mat. 1112

TREATY BETWEEN THE U.S. AND THE U.S.S.R. ON  
THE LIMITATION OF ANTI-BALLISTIC MISSILE  
SYSTEMS (The ABM Treaty of 1972)

The United States of America and the Union of Soviet Socialist Republics, hereinafter referred to as the Parties,

Proceeding from the premise that nuclear war would have devastating consequences for all mankind,

Considering that effective measures to limit anti-ballistic missile systems would be a substantial factor in curbing the race in strategic offensive arms and would lead to a decrease in the risk of outbreak of war involving nuclear weapons,

Proceeding from the premise that the limitation of anti-ballistic missile systems, as well as certain agreed measures with respect to the limitation of strategic offensive arms, would contribute to the creation of more favorable conditions for further negotiations on limiting strategic arms,

Mindful of their obligations under Article VI of the Treaty on the Non-Proliferation of Nuclear Weapons,

Declaring their intention to achieve at the earliest possible date the cessation of the nuclear arms race and to take effective measures toward reductions in strategic arms, nuclear disarmament, and general and complete disarmament,

Desiring to contribute to the relaxation of international tension and the strengthening of trust between States,

Have agreed as follows:

Article I

1. Each Party undertakes to limit anti-ballistic missile (ABM) systems and to adopt other measures in accordance with the provisions of this Treaty.

2. Each Party undertakes not to deploy ABM systems for a defense of the territory of its country and not to provide a base for such a defense, and not to deploy ABM systems for defense of an individual region except as provided for in Article III of this Treaty.

Article II

1. For the purpose of this Treaty an ABM system is a system to counter strategic ballistic missiles or their elements in flight trajectory, currently consisting of:

- (a) ABM interceptor missiles, which are interceptor missiles constructed and deployed for an ABM role, or of a type tested in an ABM mode;
- (b) ABM launchers, which are launchers constructed and deployed for launching ABM interceptor missiles; and
- (c) ABM radars, which are radars constructed and deployed for an ABM role, or of a type tested in an ABM mode.

2. The ABM system components listed in paragraph 1 of this Article include those which are:

- (a) operational;
- (b) under construction;
- (c) undergoing testing;
- (d) undergoing overhaul, repair or conversion; or
- (e) mothballed.

### Article III

Each Party undertakes not to deploy ABM systems or their components except that:

(a) within one ABM system deployment area having a radius of one hundred and fifty kilometers and centered on the Party's national capital, a Party may deploy: (1) no more than one hundred ABM launchers and no more than one hundred ABM interceptor missiles at launch sites, and (2) ABM radars within no more than six ABM radar complexes, the area of each complex being circular and having a diameter of no more than three kilometers; and

(b) within one ABM system deployment area having a radius of one hundred and fifty kilometers and containing ICBM silo launchers, a Party may deploy: (1) no more than one hundred ABM launchers and no more than one hundred ABM interceptor missiles at launch sites, (2) two large phased-array ABM radars comparable in potential to corresponding ABM radars operational or under construction on the date of signature of the Treaty in an ABM system deployment area containing ICBM silo launchers, and (3) no more than eighteen ABM radars each having a potential less than the potential of the smaller of the above-mentioned two large phased-array ABM radars.

### Article IV

The limitations provided for in Article III shall not apply to ABM systems or their components used for development or testing, and located within current or additionally agreed test ranges. Each Party may have no more than a total of fifteen ABM launchers at test ranges.

### Article V

1. Each Party undertakes not to develop, test, or deploy ABM systems or components which are sea-based, air-based, space-based, or mobile land-based.

2. Each Party undertakes not to develop, test, or deploy ABM launchers for launching more than one ABM interceptor missile at a time from each launcher, nor to modify deployed launchers to provide them with such a capability, nor to develop, test, or deploy automatic or semi-automatic or other similar systems for rapid reload of ABM launchers.

### Article VI

To enhance assurance of the effectiveness of the limitations on ABM systems and their components provided by this Treaty, each Party undertakes:

(a) not to give missiles, launchers, or radars other than ABM interceptor missiles, ABM launchers, or ABM radars, capabilities to counter strategic ballistic missiles or their elements in flight trajectory, and not to test them in an ABM mode; and

(b) not to deploy in the future radars for early warning of strategic ballistic missile attack except at locations along the periphery of its national territory and oriented outward.

### Article VII

Subject to the provisions of this Treaty, modernization and replacement of ABM systems or their components may be carried out.

### Article VIII

ABM systems or their components in excess of the numbers or outside the areas specified in this Treaty, as well as ABM systems or their components prohibited by this Treaty, shall be destroyed or dismantled under agreed procedures within the shortest possible agreed period of time.

### Article IX

To assure the viability and effectiveness of this Treaty, each Party undertakes not to transfer to other States, and not to deploy outside its national territory, ABM systems or their components limited by this Treaty.

#### Article X

Each Party undertakes not to assume any international obligations which would conflict with this Treaty.

#### Article XI

The Parties undertake to continue active negotiations for limitations on strategic offensive arms.

#### Article XII

1. For the purpose of providing assurance of compliance with the provisions of this Treaty, each Party shall use national technical means of verification at its disposal in a manner consistent with generally recognized principles of international law.

2. Each Party undertakes not to interfere with the national technical means of verification of the other Party operating in accordance with paragraph 1 of this Article.

#### Article XIII

1. To promote the objectives and implementation of the provisions of this Treaty, the Parties shall establish promptly a Standing Consultative Commission, within the framework of which they will:

(a) consider questions concerning compliance with the obligations assumed and related situations which may be considered ambiguous;

(b) provide on a voluntary basis such information as either Party considers necessary to assure confidence in compliance with the obligations assumed;

(c) consider questions involving unintended interference with national technical means of verification;

(d) consider possible changes in the strategic situation which have a bearing on the provisions of this Treaty;

(e) agree upon procedures and dates for destruction or dismantling of ABM systems or their components in cases provided for by the provisions of this Treaty;

(f) consider, as appropriate, possible proposals for further increasing the viability of this Treaty, including proposals for amendments in accordance with the provisions of this Treaty;

(g) consider, as appropriate, proposals for further measures aimed at limiting strategic arms.

2. The Parties through consultation shall establish, and may amend as appropriate, Regulations for the Standing Consultative Commission governing procedures, composition and other relevant matters.

#### Article XIV

1. Each Party may propose amendments to this Treaty. Agreed amendments shall enter into force in accordance with the procedures governing the entry into force of this Treaty.

2. Five years after entry into force of this Treaty, and at five-year intervals thereafter, the Parties shall together conduct a review of this Treaty.

#### Article XV

1. This Treaty shall be of unlimited duration.

2. Each Party shall, in exercising its national sovereignty, have the right to withdraw from this Treaty if it decides that extraordinary events related to the subject matter of this Treaty have jeopardized its supreme interests. It shall give notice of its decision to the other Party six months prior to withdrawal from the Treaty. Such notice shall include a statement of the extraordinary events the notifying Party regards as having jeopardized its supreme interests.

CONCLUSION OF A TREATY ON THE PROHIBITION OF THE  
STATIONING OF WEAPONS OF ANY KIND IN OUTER SPACE

U.N.G.A. A/37/669  
Report of the First Committee,  
37th Session, General Assembly

DRAFT TREATY ON THE PROHIBITION OF STATIONING WEAPONS IN  
OUTER SPACE

I. INTRODUCTION

1. The item entitled "Conclusion of a treaty on the prohibition of the stationing of weapons of any kind in outer space: report of the Committee on Disarmament" was included in the provisional agenda of the thirty-seventh session in accordance with General Assembly resolution 36/99 of 9 December 1981.
2. At its 4th plenary meeting, on 24 September 1982, the General Assembly, on the recommendation of the General Committee, decided to include the item in its agenda and to allocate it to the First Committee.
3. At its 2nd meeting, on 29 September, the First Committee decided to hold a combined general debate on the items allocated to it relating to disarmament, namely items 39 to 57, 133 and 136. The general debate on these items and on items 138 and 139, which were allocated to the the First Committee by the General Assembly at its 24th plenary meeting, on 8 October 1982, took place at the 3rd to 28th meetings, from 18 October to 5 November (see A/C.1/37/PV.3-28).
4. In connection with item 57, the First Committee had before it the following documents:
  - (a) Report of the Committee on Disarmament; 1/

1/ Official Records of the General Assembly, Thirty-seventh Session, Supplement No. 27 (A/37/27 and Corr.1).

II. CONSIDERATION OF PROPOSALS

A. Draft resolution A/C.1/37/L.8

5. On 27 October, Bulgaria, the German Democratic Republic, Mongolia and the Ukrainian Soviet Socialist Republic submitted a draft resolution (A/C.1/37/L.8), which was later also sponsored by the Byelorussian Soviet Socialist Republic, Cuba, Czechoslovakia, Hungary and Viet Nam. The draft resolution, which was introduced by the representative of Mongolia at the 38th meeting, on 19 November, read as follows:

"The General Assembly,

"Guided by the objectives of strengthening peace and international security,

"Expressing the general interest of all mankind in the further exploration and use of outer space for peaceful purposes for the benefit of all States and in the interests of developing friendly relations and mutual understanding among them,

"Recognizing the danger threatening mankind in the event of outer space becoming an arena for the arms race,

"Endeavouring to keep outer space from becoming an arena for the arms race and a source of tension in relations among States.

"Taking into account the draft Treaty on the prohibition of the stationing of weapons of any kind in outer space, submitted to the General Assembly by the Soviet Union, and also the views and considerations put forward in the course of the discussion of this question at the thirty-seventh session,

"Referring to its resolution 36/99 of 15 January 1982 on the conclusion of a treaty on the prohibition of the stationing of weapons of any kind in outer space,

"Noting the discussion at the session of the Committee on Disarmament held in 1982 on the question of the agenda item entitled 'Prevention of an arms race in outer space',

"Recalling that the States parties to the Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies, 2/ undertook in article III to carry out activities in the exploration and use of outer space, including the Moon and other celestial bodies, in accordance with international law, including the Charter of the United Nations, in the interests of maintaining peace and security and developing international co-operation and mutual understanding,

"Recalling paragraph 80 of the Final Document of the Tenth Special Session of the General Assembly, 3/ in which it is stated that in order to prevent an arms race in outer space, further measures should be taken and appropriate international negotiations held in accordance with the spirit of the Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies,

"Stressing the need to prevent an arms race in outer space,

"Recognizing the threat that would be represented by the stationing in outer space of weapons of any kind, including anti-satellite systems, which would exert a destabilizing influence on international peace and security,

"Convinced of the need for further measures to keep outer space from being converted into an area of military confrontation contrary to the spirit of the 1967 Treaty on outer space, 2/

"Considering it imperative for the international community to give attention to concrete measures for the prevention of an arms race in outer space and, in this context, to the question of anti-satellite systems in the Committee on Disarmament,

"1. Requests the Committee on Disarmament to activate work on the preparation of an international agreement, including the establishment of an ad hoc working group, to begin discussions of substance, with a view to the adoption of effective measures to prevent the spread of an arms race in outer space;

"2. Calls upon the Union of Soviet Socialist Republics and the United States of America to renew bilateral talks on the question of anti-satellite systems;

"3. Decides to include in the provisional agenda of its thirty-eighth session an item entitled "Conclusion of a treaty on the prohibition of the stationing of weapons of any kind in outer space."

6. At the 43rd meeting, on 24 November, the representative of Mongolia indicated that the sponsors would not press draft resolution A/C.1/37/L.8 to a vote, as its main elements and ideas had been reflected in draft resolution A/C.1/37/L.64/Rev.1.

B. Draft resolution A/C.1/37/L.64 and Rev.1

7. On 18 November, Algeria, Argentina, Bangladesh, Brazil, Cuba, Egypt, India, Indonesia, Mexico, Morocco, Nigeria, Peru, Sri Lanka, the Sudan, Viet Nam and Yugoslavia submitted a draft resolution entitled "Prevention of an arms race in outer space" (A/C.1/37/L.64), which was later also sponsored by Colombia, the Congo, Ecuador, Ghana, Maldives, Romania, Singapore and Venezuela. The draft resolution was introduced by the representative of Sri Lanka at the 38th meeting, on 19 November.

8. On 23 November, Algeria, Argentina, Bangladesh, Brazil, Colombia, the Congo, Cuba, Ecuador, Egypt, Ghana, India, Indonesia, Liberia, Maldives, Mexico, Morocco, Nigeria, Peru, Romania, Singapore, Sri Lanka, the Sudan, Venezuela, Viet Nam and Yugoslavia submitted a revised text of the draft resolution (A/C.1/37/L.64/Rev.1), which was later also sponsored by Benin, Bulgaria, the Byelorussian Soviet Socialist Republic, Czechoslovakia, the German Democratic Republic, Hungary, Ireland, Mongolia, Sweden and the Ukrainian Soviet Socialist Republic, and in which the following changes had been introduced:

(a) The third preambular paragraph, which read:

"Reaffirming that exploration and use of outer space, including the Moon and other celestial bodies, shall be exclusively for peaceful purposes and shall be carried out for the benefit and in the interest of all countries, irrespective of their degree of economic or scientific development, and shall be the province of all mankind,"

was replaced by the following:

"Reaffirming that exploration and use of outer space, including the Moon and other celestial bodies, shall be carried out for the benefit and in the interest of all countries, irrespective of their degree of economic or scientific development, and shall be the province of all mankind,";

(b) A new preambular paragraph, which read:

"Reaffirming further the will of all States that exploration and use of outer space, including the Moon and other celestial bodies, shall be exclusively for peaceful purposes,"

was added after the third preambular paragraph;

(c) Operative paragraph 1, which read:

"Reaffirms that outer space shall be used exclusively for peaceful purposes and shall not become an arena for an arms race;"

was replaced by the following:

"Reaffirms the will of all States that outer space shall be used exclusively for peaceful purposes and that it shall not become an arena for an arms race;"

9. At its 45th meeting, on 26 November, the Committee adopted draft resolution A/C.1/37/L.64/Rev.1 by a recorded vote of 118 to 1, with 8 abstentions (see para. 10). The voting was as follows: 4/

In favour: Afghanistan, Algeria, Angola, Argentina, Austria, Bahamas, Bahrain, Bangladesh, Benin, Bhutan, Bolivia, Brazil, Bulgaria, Burma, Burundi, Byelorussian Soviet Socialist Republic, Central African Republic, Chad, Chile, China, Colombia, Congo, Cuba, Cyprus, Czechoslovakia, Democratic Yemen, Denmark, Djibouti, Dominican Republic, Ecuador, Egypt, Ethiopia, Fiji, Finland, France, Gabon, German Democratic Republic, Germany, Federal Republic of, Ghana, Greece, Guatemala, Guinea, Guyana, Hungary, Iceland, India, Indonesia, Iran (Islamic Republic of), Iraq, Ireland, Italy, Ivory Coast, Jamaica, Japan, Jordan, Kenya, Kuwait, Lao People's Democratic Republic, Lebanon, Liberia, Libyan Arab Jamahiriya, Madagascar, Malawi, Malaysia, Mali, Malta, Mauritania, Mexico, Mongolia, Morocco, Mozambique, Nepal, New Zealand, Nicaragua, Nigeria, Norway, Oman, Pakistan, Panama, Papua New Guinea, Paraguay, Peru, Philippines, Poland, Portugal, Qatar, Romania, Rwanda, Sao Tome and Principe, Saudi Arabia, Senegal, Sierra Leone, Singapore, Somalia, Spain, Sri Lanka, Sudan, Suriname, Sweden, Syrian Arab Republic, Thailand, Togo, Trinidad and Tobago, Tunisia, Turkey, Uganda, Ukrainian Soviet Socialist Republic, Union of Soviet Socialist Republics, United Arab Emirates, United Republic of Cameroon, United Republic of Tanzania, Uruguay, Venezuela, Viet Nam, Yemen, Yugoslavia, Zaire, Zambia.

Against: United States of America.

Abstaining: Australia, Belgium, Canada, Israel, Luxembourg, Netherlands, Niger, United Kingdom of Great Britain and Northern Ireland.

### III. RECOMMENDATION OF THE FIRST COMMITTEE

10. The First Committee recommends to the General Assembly the adoption of the following draft resolution:

The General Assembly,

Inspired by the great prospects opening up before mankind as a result of a man's entry into outer space twenty-five years ago,

Recognizing the common interest of all mankind in the exploration and use of outer space for peaceful purposes,

Reaffirming that exploration and use of outer space, including the Moon and other celestial bodies, shall be carried out for the benefit and in the interest of all countries, irrespective of their degree of economic or scientific development, and shall be the province of all mankind,

Reaffirming further the will of all States that exploration and use of outer space, including the Moon and other celestial bodies, shall be exclusively for peaceful purposes,

Recalling that the States parties to the Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies, 5/ undertook in article III to carry on activities in the exploration and use of outer space, including the Moon and other celestial bodies, in accordance with international law and the Charter of the United Nations, in the interest of maintaining international peace and security and promoting international co-operation and understanding,

Reaffirming, in particular, article IV of the said Treaty which stipulates that States parties to the Treaty undertake not to place in orbit around the earth any objects carrying nuclear weapons or any other kinds of weapons of mass destruction, to install such weapons on celestial bodies, or to station such weapons in outer space in any other manner,

Reaffirming paragraph 80 of the Final Document of the Tenth Special Session of the General Assembly, 6/ in which it is stated that, in order to prevent an arms race in outer space, further measures should be taken and appropriate international negotiations held in accordance with the spirit of the Treaty,

Recalling its resolutions 36/97 C of 9 December 1981 and 36/99 of 9 December 1981,

Gravely concerned at the danger posed to all mankind by an arms race in outer space

Mindful of the widespread interest expressed by Member States in the course of the negotiations on and following the adoption of the above-mentioned Treaty to ensure that the exploration and use of outer space should be for peaceful purposes, and taking note of proposals submitted to the General Assembly at its tenth special session devoted to disarmament, and at its regular sessions and to the Committee on Disarmament,

Noting the grave concern expressed by the Second United Nations Conference on the Exploration and Peaceful Uses of Outer Space over the extension of an arms race into outer space and the recommendations made to the competent organs of the United Nations, in particular the General Assembly, and also to the Committee on Disarmament,

Convinced that further measures are needed for the prevention of an arms race in outer space,

Recognizing that, in the context of multilateral negotiations for preventing an arms race in outer space, the resumption of bilateral negotiations between the Union of Soviet Socialist Republics and the United States of America can play a positive role,

Taking note of the report of the Committee on Disarmament, //

Noting that in the course of its session in 1982 the Committee on Disarmament considered this subject both at its formal and informal meetings as well as through informal consultations,

Aware of the various proposals submitted by Member States to the Committee on Disarmament, particularly concerning the establishment of a working group on outer space as well as the draft mandate,

Noting, in particular, the express wishes of the overwhelming majority of members of the Committee on Disarmament for the establishment, without delay, of a working group on outer space,

1. Reaffirms the will of all States that outer space shall be used exclusively for peaceful purposes and that it shall not become an arena for an arms race;
2. Declares that any use other than for exclusively peaceful purposes of outer space runs counter to the agreed objective of general and complete disarmament under effective international control;
3. Emphasizes that further effective measures to prevent an arms race in outer space should be adopted by the international community;
4. Calls upon all States, in particular those with major space capabilities, to contribute actively to the objective of peaceful uses of outer space and to take immediate measures to prevent an arms race in outer space;
5. Requests the Committee on Disarmament to consider as a matter of priority the question of preventing an arms race in outer space;
6. Further requests the Committee on Disarmament to establish an ad hoc working group on the subject at the beginning of its session in 1983 with a view to undertaking negotiations for the conclusion of an agreement or agreements, as appropriate, to prevent an arms race in outer space in all its aspects;
7. Requests the Committee on Disarmament to report on its consideration of this subject to the General Assembly at its thirty-eighth session;
8. Requests the Secretary-General to transmit to the Committee on Disarmament all documents relating to the consideration of this subject by the General Assembly at its thirty-seventh session;
9. Decides to include in the provisional agenda of its thirty-eighth session an item entitled "Prevention of an arms race in outer space".

DECLARATION OF THE FIRST MEETING OF EQUATORIAL  
COUNTRIES

3 Dec. 1976

I.T.U. doc't WARC-BS (1977) 81-E, 17

Jan. 1977

DECLARATION OF THE FIRST MEETING OF EQUATORIAL  
COUNTRIES.

(The Bogota Declaration of 1976).

The undersigned representatives of the States traversed by the Equator met in Bogota, Republic of Colombia, from 29 November through 3 December, 1976 with the purpose of studying the geostationary orbit that corresponds to their national terrestrial, sea, and insular territory and considered as a natural resource. After an exchange of information and having studied in detail the different technical, legal, and political aspects implied in the exercise of national sovereignty of States adjacent to the said orbit, have reached the following conclusions:

1. The Geostationary Orbit as a Natural Resource

The geostationary orbit is a circular orbit on the Equatorial plane in which the period of sidereal revolution of the satellite is equal to the period of sidereal 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 Km. over the Earth's Equator.

Equatorial countries declare that the geostationary synchronous orbit is a physical fact linked to the reality of our planet because its existence depends exclusively on its relation to gravitational phenomena generated by the earth, and that is why it must not be considered part of the outer space. Therefore, the segments of geostationary synchronous orbit are part of the territory over which Equatorial states exercise their national sovereignty. The geostationary orbit is a scarce natural resource, whose importance and value increase rapidly together with the development of space technology and with the growing need for communication; therefore, the Equatorial countries meeting in Bogota have decided to proclaim and defend on behalf of their peoples, the existence of their sovereignty over this natural resource. The geostationary orbit represents a unique facility that it alone can offer for telecommunication services and other uses which require geostationary satellites.

The frequencies and orbit of geostationary satellites are limited natural resources, fully accepted as such by current standards of the

International Telecommunications Union. Technological advancement has caused a continuous increase in the number of satellites that use this orbit, which could result in a saturation in the near future.

The solutions proposed by the International Telecommunications Union and the relevant documents that attempt to achieve a better use of the geostationary orbit that shall prevent its imminent saturation, are at present impracticable and unfair and would considerably increase the exploitation costs of this resource especially for developing countries that do not have equal technological and financial resources as compared to industrialized countries, who enjoy an apparent monopoly in the exploitation and use of its geostationary synchronous orbit. In spite of the principle established by Article 33, sub-paragraph 2 of the International Telecommunications Convention, of 1973, that in the use of frequency bands for space radiocommunications, the members shall take into account that the frequencies and the orbit for geostationary satellites are limited natural resources that must be used efficiently and economically to allow the equitable access to this orbit and to its frequencies, we can see that both the geostationary orbit and the frequencies have been used in a way that does not allow the equitable access of the developing countries that do not have the technical and financial means that the great powers have. Therefore, it is imperative for the equatorial countries to exercise their sovereignty over the corresponding segments of the geostationary orbit.

## 2. Sovereignty of Equatorial States over the Corresponding Segments of the Geostationary Orbit

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".

Furthermore, the charter on economic rights and duties of states solemnly adopted by the United Nations General Assembly through Resolution 3281 (XXIX), once more confirms the existence of a sovereign right of nations over their natural resources, in Article 2 subparagraph i, which reads:

"All states have and freely exercise full and permanent sovereignty, including possession, use and disposal of all their wealth, natural resources and economic activities".

Consequently, the above-mentioned provisions lead the equatorial states to affirm that the synchronous geostationary orbit, being a natural resource, is under the sovereignty of the equatorial states.

### 3. Legal status of the Geostationary Orbit

Bearing in mind the existence of sovereign rights over segments of geostationary orbit, the equatorial countries consider that the applicable legal consultations in this area must take into account the following:

- (a) The sovereign rights put forward by the equatorial countries are directed towards rendering tangible benefits to their respective people and for the universal community, which is completely different from the present reality when the orbit is used to the greater benefit of the most developed countries.
- (b) The segments of the orbit corresponding to the open sea are beyond the national jurisdiction of states will be considered as common heritage of mankind. Consequently, the competent international agencies should regulate its use and exploitation for the benefit of mankind.
- (c) The equatorial states do not object to the free orbital transit of satellites approved and authorized by the International Telecommunications Convention, when these satellites pass through their outer space in their gravitational flight outside their geostationary orbit.
- (d) The 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. It must be understood that the said authorization is different from the co-ordination requested in cases of interference among satellite systems, which are specified in the regulations for radiocommunications. The said authorization refers in very clear terms to the countries' right to allow the operation of fixed radiocommunications stations within their territory.
- (e) Equatorial states do not condone the existing satellites or the position they occupy on their segments of the Geostationary Orbit nor does the existence of said satellites confer any rights of placement of satellites or use of the segment unless expressly authorized by the state exercising sovereignty over this segment.

#### 4. Treaty of 1967

The Treaty of 1967 on "The Principles Governing the Activities of States in the Exploration and Use of Outer Space, Including the Moon and Other Celestial Bodies", signed on 27 January, 1967, cannot be considered as a final answer to the problem of the exploration and use of outer space, even less when the international community is questioning all the terms of international law which were elaborated when the developing countries could not count on adequate scientific advice and were thus not able to observe and evaluate the omissions, contradictions and consequences of the proposals which were prepared with great ability by the industrialized powers for their own benefit.

There is no valid or satisfactory definition of outer space which may be advanced to support the argument that the geostationary orbit is included in the outer space. The legal affairs sub-commission which is dependent on the United Nations Commission on the Use of Outer Space for Peaceful Purposes, has been working for a long time on a definition of outer space, however, to date, there has been no agreement in this respect.

Therefore, it is imperative to elaborate a juridical definition of outer space, without which the implementation of the Treaty of 1967 is only a way to give recognition to the presence of the states that are already using the geostationary orbit. Under the name of a so-called non-national appropriation, what was actually developed was technological partition of the orbit, which is simply a national appropriation, and this must be denounced by the equatorial countries. The experiences observed up to the present and the development foreseeable for the coming years bring to light the obvious omissions of the Treaty of 1967 which force the equatorial states to claim the exclusion of the geostationary orbit.

The lack of definition of outer space in the Treaty of 1967, which has already been referred to, implies that Article II should not apply to geostationary orbit and therefore does not affect the right of the equatorial states that have already ratified the Treaty.

#### 5. Diplomatic and Political Action

While Article 2 of the aforementioned Treaty does not establish an express exception regarding the synchronous geostationary orbit, as an integral element of the territory of equatorial states, the countries that have not ratified the Treaty should refrain from undertaking any procedure that allows the enforcement of provisions whose juridical omission has already been denounced.

The representatives of the equatorial countries attending the meeting in Bogota, wish to clearly state their position regarding the declarations of Colombia and Ecuador in the United Nations, which affirm that they consider the geostationary orbit to be an integral part of their sovereign territory; this declaration is a historical background for the defense of the sovereign rights of the equatorial countries. These countries will endeavour to make similar declarations in international agencies dealing with the same subject and to align their international policy in accordance with the principles elaborated in this document.

Signed in Bogota 3 December 1976 by the Heads of Delegations.

Bresil, Colombia, Congo, Ecuador, Indonesia, Kenya, Uganda,  
Zaire .

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