

DEMILITARIZATION OF OUTER-SPACE AND INTERNATIONAL LAW.

Dissertation submitted to the Jawaharlal Nehru University
in partial fulfilment of the requirements
for the award of the Degree of
MASTER OF PHILOSOPHY

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1987.

PREFACE

October 4, 1957, the date of launching Sputnik I, opened a new era of technical civilization. Since then the exploration of space is rapidly expanding. Scientific instruments applied outside the earth's atmosphere have already made possible a number of fundamental discoveries in the field of astronomy.

But with this rapid advancement of space science, the use of outer space for military purposes has been increasing day by day. We all know that space technology today is on the brink of take-off into a weaponization phase. Plans for deploying nuclear weapons in outer-space are now being discussed openly, in spite of the fact that such plans run counter to the existing international agreements - prohibiting such actions. In this study, I have tried to examine the whole question of demilitarization of outer-space as embodied in the present international law.

However, military space activity is very difficult to discuss authoritatively because of the rules of security classification. Besides, it is very difficult to tell anything accurately about the Russian activities in space as the availability of information is very little. I must acknowledge the fact that I depended wholly on the recent publications of SIPRI (Stockholm International Peace Research Institute) for the up-to-date information regarding

the military activities in outer space.

In completing this work, I have received encouragement and assistance from a number of people. In this regard, first of all, I owe my special gratitude to my guide Professor Rahmatullah Khan for his constant encouragement and valuable guidance. It is Professor Khan who advised me to choose the topic for the present work. I am deeply indebted to him. I am also highly grateful to Prof. R. P. Anand, Dr. Y. K. Tyagi and Dr. B. S. Chimni for their invaluable suggestions which were of tremendous help in organising my work.

Here I take this opportunity to pay my best regards to Dr. S. Bhatt (Director, Legal & Enforcement) of Civil Aviation Department for his precious guidance in this regard. I must admit that my academic impetus for this present study has largely come from his works in this subject. I am also highly thankful to Mr. C. Raja Mohan of the Institute for Defense Studies and Analysis, New Delhi, for his valuable help and assistance in finding out all important materials for my work. The library staff at this Institute were most helpful and invariably courteous. I pay my thanks to all of them. My thanks are also due to all the staff of Jawaharlal Nehru University, I. C. W. A., Indian Society of International Law and American Centre Library for their various cooperations.

I am highly thankful to Mr. Satish Chandra (M.Sc., LL.M.) and Ms. Shachi Kapoor of Allahabad University for their constant inspiration and encouragement.

Last but not the least, I would like to thank my colleague Tulsi and all my friends of International Legal Studies Division (SIS) for their sincere cooperation.

I must convey my thanks to Mr. Chand Sharma for having typed this work in a very short time. I owe Mr. Sharma a greater debt than mere words can convey.

4th June 1987

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Chapter - I

INTRODUCTION

I. Definition and Delimitation of Outer-Space:

The Lord God, who implanted in man's heart an insatiable desire for knowledge, did not place any limit on his efforts at conquest when He said: "Subdue the Earth" (Gen. 1:28). It was rather the whole of creation which He offered for the human spirit to penetrate and thus understood more and more profoundly the infinite greatness of the creator. (1)

(Pope Pius XII)

Space has awed humanity ever since people first noticed the stars. Man's interest in space extends back to pre-historic times. The astronomers of ancient Babylon had, by the eighth century B.C., compiled detailed charts of the movements of the stars and planets and were able to predict the precise dates of solar and lunar eclipses. Thus, it is of no wonder that when the arrival of the space age made it possible to look at the heavens from outside the thick blanket of the atmosphere, the astronomers were thrilled with the prospect of opening so many new windows.² The rapid progress of space science and technology opened far-reaching prospects for human knowledge, experience and know how. In

1 This remark was made by Pope Pius XII, in his address to the Seventh International Astronautical Congress, held in Rome, 1956. This quotation is borrowed from the book, The Law Relating to Activities of Man in Space, by S. Honston Lay and Howard J. Taubenfeld (The University of Chicago Press, 1970).

2 Yash Pal, The Forwording of a Survey, The World in Space, prepared for UNISPACE 82, published from Prentice Hall, Inc., 1982, Edited by Ralph Chipman.

1957, the first man-made object (SPUTNIK-I) was successfully launched in orbit around the earth and this very fact marked the beginning of a new era i.e. the space age.

However, the increasing scale of space exploration and the ever growing number of states taking part in international cooperation within this sphere, are bound to pose certain questions, which may not always be answered using the current norms of international space law. The first question in this regard that comes to mind is about the definition and delimitation of outer space.

Where does outer space begin? Does it have a physical boundary?

In the United Nations, the question of delimitation was first raised in the General Assembly Ad Hoc Committee on the Peaceful Uses of Outer Space in 1961. But the Committee did not make any attempt to define it. According to the Report of the UN Ad Hoc Committee -

It was generally believed 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.(3)

3 UN Ad Hoc Comm.Rep.III/A.28 Legal Problems, 1961, p.1270.

Resolution Nos.1721/XVI and 1802/XVII of the General Assembly when referring to the problems recommended to the Committee on the peaceful uses of outer space for urgent study, did not list the question of delimitation. The 1967 Space Treaty also did not make any specific attempt to define the boundary of outer space.

Recently, the Legal Sub-Committee established a working group to deal with the problem. One of the principal questions before the Legal Sub-Committee are -- whether outer space should be considered as beginning where air space ends and, at what altitude air space should be regarded as ending.

In 1979, - the Soviet Union put forward a working paper,⁴ which defined outer space as -

- (I) The region above 100(110) kms. altitude from the sea level of the earth;
- (II) 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 kms. above sea level;
- (III) Space objects or states shall retain the right to fly over the territory of other states at an altitude lower than 100(110) kms. above sea level

⁴ Approach to the solutions of the problems of the delimitation of airspace. UN Doc.A/AC-105/C.2/L.121, March, 1979.

for the purpose of reaching orbit or returning to earth in the territory of the launching state.

In 1983, this document was revised to some extent and was again discussed at the 22nd session of the Legal Subcommittee without any outcome.⁵

A number of nations favouring a 'spatial definition' supported the Soviet proposal that the boundary between outer space and air space be at an altitude not exceeding 100 kms. above sea level.

India, Bulgaria and some other Afro-Asian states expressed their views that the absence of a boundary between air and outer space opened the door to countless violations of state sovereignty.

The USA, UK and other western nations took the position that it was premature to define outer space, and were not convinced of the need for such a definition. According to the United States the establishment of a demarcation line between outer space and air space in advance of a genuine and practical need for doing so would be an inherently arbitrary exercise having unforeseeable

5 . UN Doc.A/AC.105/C.2/L 139, April 1983.

and almost certainly detrimental consequences for future outer space activities.

Here it may be submitted that, out of all these approaches no agreement appears to be in sight at the moment. The most interesting fact is that the space powers have more or less established the freedom of outer space under general international law above such a height, but by declining to confirm such a line, they have the options open for themselves, if they so wish, at some later stage, to claim either a higher or a lower limit according to the wishes, presumably, of the military.⁶

In its 25th session in 1986, the Legal Sub-Committee of the United Nations Committee on the Peaceful Uses of Outer Space again discussed the matter in detail.⁷ But nothing was achieved in regard to this question.

II. Objective of the Study

With the rapid advancement of space science and technology, the use of outer space for military purposes has

6 Bin Cheng, "Delimitation of Outer Space and Definition of Peaceful Use", Journal of Space Law, vol. II, 1983, p.95.

7 UN Doc.A/AC.105/370, 1986.

been extending day by day. Fierce rivalry and the arms race have cast a shadow over the once calm outer space. This militarization of outer space is generally connected with two aspects: first, the growing utilization of artificial satellite by the military to support and enhance the performance and efficiency of armed forces and weapon systems of earth; and secondly, the development of outer space weapons. This dangerous trend of development has aroused deep concern amongst the people of the world.

In a recent Penal Discussion on "Treaty Law and Outer Space" cosponsored by the American Society of International Law and the Association of US Members of the International Institute of Space Law - John E. O'Brien, the General Counsel of NASA aptly commented:

The world's scientists and engineers are moving very rapidly and that it was incumbent upon lawyers to devise ways not only to keep abreast but to anticipate what is likely to happen so that the generation which follows will be as comfortable as we have been and also secure in the fact that what we did in preparing the way made it infinitely better for them.(8)

This dissertation proposes to examine the question of demilitarization of outer space by special reference to

international law. The study examines the various multilateral and bilateral treaties and the role of the United Nations in formulating a new law in this regard.

The existing space treaties do not provide a fool-proof legal regime in outer space governing its peaceful uses. The existing space law would have to be reassessed and modified to reflect the new political developments and technological progress of the present day world.

III. Plan of Work

The method followed in this study is analytical in nature.

The study starts with the problem of delimitation and definition of outer space, which is still being discussed regularly at the annual meetings of the Legal Subcommittee of the United Nations Committee on the Peaceful Uses of Outer Space. It is a matter of surprise to note that even at the end of 25th session of the Legal Subcommittee in 1986, no solution was found.

The second chapter is devoted to an analytical discussion of the history of militarization of outer space. This chapter is divided into two parts. The first part deals with the history of non-weapon military uses of outer space and the later part deals with the history of space

warfare or space weapons.

Chapter III examines briefly the various existing multilateral and bilateral conventions having a bearing on arms control in space and points out the gaps that are left unplugged.

In chapter IV, the genesis of present 'Star-wars' programme is traced, with a technical and legal aspect of the whole programme.

The next chapter attempts to provide an analytical review of the two draft treaties presented by the Soviet Union in 1981 and 1983 respectively relating to the control of arms race in outer space. Finally, the study concludes with a brief survey of the role of the United Nations in this regard.

Chapter - II

MILITARIZATION OF OUTER SPACE

With the shooting down of the U-2 aerial reconnaissance flight over the Soviet Union in May 1960, the United States immediately became dependent on reconnaissance satellites as the primary source of strategic intelligence in its cold war adversary. So began a vital relationship of dependency on military satellites that has been progressively reinforced, as the use of space has played an ever-increasing role in performing and supporting other military operations. This chapter provides an overview of the evolution of the two super powers' military space programmes dividing into two categories i.e. (i) the non-weapon military uses of space, and (ii) the space warfare. The importance of such an exercise is obvious. In the words of Jerome Morehoff:

The world was dramatically awakened to the vast potentials of outer space by the orbiting of the Soviets earth satellite in 1957. Thus, man's initial penetration of outer space had been accomplished -- an achievement the magnitude of which is destined to penetrate and revolutionize man's entire context of existence. (1)

The first sputnik created a great sensation in the world and was seen in the United States as a 'technological

1 Jerome Morehoff, World Peace Through Space Law (The Michie Company, Virginia, USA, 1967).

Pearl Harbour¹. It shook the Americans out of their dream and dealt a severe blow to their international image as unrivalled leaders in terms of military capability and technological development.

The potential military application of satellites were quickly perceived by the two super powers in response to SPUTNIK I of the USSR. The United States launched their first satellite EXPLORER I within a period of four months. Thus, warranted or not, space achievement has become an index of technological and scientific prowess and, by implication, of national power. Now the only question remains -- "will space be a sea of peace or a new terrifying theatre of war"?²

The US military officials expressed the view that there are strategic areas in space vital to future scientific, military and commercial programmes, which must be occupied by the US before it goes out of its hand.³

In 1960, the then President of the United States John F. Kennedy aptly remarked that, control of space will be decided in the next decade. If the Soviets control

2 This is a remark by the ex-USA President - President Kennedy.

3 Astronautics 6, No.6, June 1961, p.36.

space, they can control Earth, as in past centuries the nation that controlled the seas dominated the continents.

Military planners have long recognised the unique geographical advantages of space. Space is the ultimate high ground. Space provides a superior view enabling coverage of large portions of the earth's surface and permits detection of any threat emanating from the earth. A state controlling certain strategic space locations would be able to permit or deny passage of all space vehicles launched from earth.

At present the military exploitation of space is predominantly carried out by the Soviet Union and the United States. France, the United Kingdom and Italy have military communications satellite programmes, and China has also launched some reconnaissance satellites. Of course, it is very difficult to draw a demarcation line between military and civilian space activities. Many programmes serve both the purposes simultaneously. The whole history of the militarisation of outer space can be divided into two parts, viz.,

- (i) The non-weapon military uses of space; and
- (ii) The plans for space warfare.

The non-weapon military uses of space include the following categories:

- (a) Surveillance and Reconnaissance,
- (b) Attack warning and Assessment,
- (c) Communication,
- (d) Meteorology,
- (f) Geodesy.

(a) Surveillance and Reconnaissance

The word 'surveillance' refers to a general monitoring activity, whereas 'reconnaissance' implies a quest for information possibly of a more specific nature.⁴ Surveillance and reconnaissance are the essential tasks and also absolutely indispensable to all countries of the world. Reconnaissance satellites, whose task is to detect, identify and pinpoint military targets account for some 40% of all military satellites. They can be divided into four types: photographic, electronic, ocean surveillance and early warning systems.

Photographic reconnaissance satellites detect, identify, and pinpoint military targets. A photographic reconnaissance satellite orbiting at an altitude of 150 kms.

4 Bhupendra, Jasani, Outer Space - Battlefield of the Future? (Taylor and Francis, London, 1978), p.

can view an area nearly 18 times larger than that seen by an aircraft flying at an altitude of about 9 kms.⁵

Both the Soviet Union and the United States launch such satellites regularly, and the Peoples Republic of China has also launched a few such satellites recently. In the late 1980's Japan also launched such satellites into the orbit.⁶

The military potentiality of space reconnaissance was first shown by the USA on 10 August 1960 with the recovery of a photographic capsule from DISCOVERER 13. The Soviet Union succeeded in this line only in 1962 by COSMOS 4 (launched on 26 April 1962). These photo-reconnaissance satellites function effectively during daylight and in good weather conditions.

Where the photo-reconnaissance satellites are the eyes of the space commander, the electronic intelligence satellites are supposed to be his ears -- they intercept and monitor radio signals generated by the opponent's military activities. These satellites also gather data on

5 Bruce, R.W., "Satellite Orbit Sustaining Techniques", American Rocket Society Journal, vol.31, 1961,p.143.

6 See, Supra note 4.

missile testing, new radars, and many other types of communications traffic.

Ocean-surveillance and oceanographic satellites detect and track naval ships and determine sea conditions which can help in forecasting the weather or detect submarines. Soviet OSSs, the first of which was launched in May 1974, carry radar sensors and perform their missions in pairs.

The early warning satellites have partially replaced the radars that were originally deployed to give warning of a surprise attack of ballistic missiles. The radars provide about 15 minutes' warning, during which a response could be worked out. The use of early warning satellites has extended this warning time to some 30 minutes. The US early warning satellites are placed in geostationary orbit 36,000 kms. above the Earth, while the Soviet satellites are put in a highly elliptical orbit. The more recent version of the US early warning satellites called Rhyolite (renamed as Argus) performs mainly the electronic reconnaissance function, particularly for monitoring telemetric signals emitted from missiles during their test flights.⁷

7 P.J.Khan, "US Monitoring Capability Impaired", Aviation Week and Space Technology, vol.110, No.20, 1979.

On 24 May 1960, the United States launched its MIDAS (Missile Defence Alarms System) satellites into orbit. The idea behind this was to employ a group of satellites carrying infra-red sensing devices in high polar orbits. The SAMOS (Satellite and Missile Observation System) satellite was another military reconnaissance system under early consideration. After the SAMOS, the United States started orbiting the KH series. The KH series which is generally known as 'Key Hole' were initially divided into two types. The KH5 series looked at area targets and the KH6 looked for details. There were almost 50 close look KH satellites put into orbit by the United States. At present, the United States is preparing to launch the KH 12 series into the orbit.

As for the Soviet reconnaissance satellite is concerned, the COSMOS series of satellites are designated with this task. Among the Soviet satellites launched in 1975, two area surveillance satellites, COSMOS 720 and COSMOS 759, were dual purpose satellites; besides performing the usual military reconnaissance missions, the satellites also conducted tasks similar to those of the US Landsat satellite.⁸ The Soviet Union generally operated their

⁸ Soviet Space Programmes, 1971-75, Staff Report, Committee on Aeronautical and Space Sciences, US Senate, 30 August 1976, vol.1.

ocean reconnaissance satellites with an active radar system powered by a nuclear reactor.⁹

The Chinese are also apparently testing or operating a reconnaissance satellite system. India has launched a photographic earth resources satellite, and Japan has also launched such satellites. In addition, France is developing a satellite system known as SPOT which will be of high military importance.¹⁰

(b) Attack Warning and Assessment

The first satellite of this kind was launched by the United States on 26 February 1960 known as MIDAS I. But the mission failed. The next satellite MIDAS-2 was successfully launched on 24 May 1960. The appropriate orbit for an early warning satellite is a synchronous equatorial orbit in which the satellite remains fixed in a relative position to the Earth. After MIDAS, the United States developed a new type of early warning satellites which was launched in 1973. The early warning satellites entitled

9 The most famous of this series was COSMOS 954 which crashed into the Canadian Northwest Territories on 24 January 1978.

10 "France Studies Reconnaissance Version of SPOT Spacecraft", Aviation Week and Space Technology, 10 August 1981, p.58.

BMEWS and the Integrated Missile Early Warning System (IMEWS) are also notable.

As for the Soviet early warning and assessment satellites are concerned, it is difficult to tell accurately as the availability of information in this respect is less. COSMOS 775 is probably the first Soviet satellite in this regard. It was launched on 8 October 1975 and placed into position over the Atlantic Ocean. In 1984-85, the Soviet Union launched COSMOS 1514, 1547, 1569, 1581, 1586, 1596, 1604 -- all of these are early warning satellites actively linked with the USSR military network.¹¹

(c) Communication Satellites

The transmission of military data generated by space - or land based surveillance systems - needs highly reliable and secure communication systems. Consequently, communication, control and command (C³) network. The fact that at present between 70 and 80 percent of all US military long-distance communications are transmitted via satellite attests the importance of space for military command and

11 For more information on attack warning satellites see, Edgen Ulsamer, "Advanced Technology in Space," Air Force Magazine, vol.64, No.6, 1981.

control.¹² All the major US military command headquarters around the world -- about twenty six of them -- are linked with the WWMCCS (The World Wide Military Command and Control System).

Communication satellites can be classified into two categories: the first category comprises both passive and active satellites. A passive satellite, which may be a large metallic skin ballon construction, acts only as a reflection of radio waves. An active satellite, on the other hand, carries a transponder system which receives communication signals transmitted from ground stations and amplifies them and retransmits them to other Earth stations. In the second category -- these satellites may be classified into three general types: (i) synchronous (ii) semi synchronous (iii) non-synchronous satellites.¹³

The first communication satellite was launched on 18 December 1958 by the US under the direction of the Advanced Research Project Agency (ARPA). The name of the satellite was SCOPE (Signal Communication by Orbitting Relay Equipment).

12 Arthur J. Downey, The Emerging Role of the US Army in Space (US Govt. Printing Office, Washington, 1985), p.29.

13 Bhupendra Jasani, Outer Space - Battle Field of the Future? (Taylor & Francis, London, 1978), p.

In 1960, three separate military communications programmes were combined into one project under Army management : project ADVENT. But the project failed. In 1963, NASA launched successfully its first geostationary satellite SYNCOM 3. By the end of 1964, the USAF established the Initial Defense Communication Satellite Programme (IDCSP). Uptil 1966 -- Seven IDCSP satellites were launched in near - synchronous orbits using a single Tital - 3C rocket. The IDCSP was renamed the Initial Defense Satellite Communication System (IDSCS). The IDSCS satellites were put into orbit at an altitude of around 34,000 kms. By 1968, a constellation of 26 small satellites were launched.

The more important US military communications systems in space are the Defense Satellite Communication, System II; the Air Force Satellite Communications System (AFSATCOM); the Fleet Satellite Communications System (FLTSAT-COM); and the Satellite Data System (SDS). Important for the future will be the new MILSTAR (Military, Strategic, Tactical and Relay Satellite Communications Programme) and the USAF's Strategic Satellite System (SSS). MILSTAR comprises seven operational satellites, four in geosynchronous orbit, and three in elliptical orbit. Their function will be to provide jam resistant extremely high-frequency (EHF) communication to both strategic and tactical users, and to

facilitate communications among the different services. It is envisaged at present that MILSTAR will achieve initial operational capability in 1987 and full operational capability in 1990.

As for the Soviet space communication programme is concerned, it is very difficult to get details, as many military programmes have been mingled with the civilian communication programme. The civilian and military Soviet communication satellite programmes are carried out under the Molniya series. By the end of 1975, a total of 51 Molniya series satellites were launched into orbit. Then in 1980, the whole pattern changed with the introduction of a new military communication system. In 1981, for example, the Soviet Union placed 24 COSMOS satellites in circular orbit. The communication system for the Soviet Union is completed by KOSMOS-1420. The formation of the Soviet communication network using synchronous orbits probably began with the launch of Statsionar I. At present, the Soviet Union is trying to achieve a high frequency communication system like the US MILSTAR. In 1984, the Soviet Union launched a complete Molniya I series into the orbit. Molniya 1-60, Molniya 1-61, Molniya 1-62, Molniya 1-63 were launched for communication purposes in 1987.

The United Kingdom, China, France and Japan are also

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being engaged in sending their own communication satellites.

(d) Navigation Satellites

Basically the function of navigation satellite is to transmit, on very stable frequencies, signals that provide a constant reference frequency, a navigation message describing the satellite's position as a function of time, and timing signals. Both the US and the Soviet Union have developed satellites for navigational purposes. The United States launched its first ocean navigation satellite TRANSIT on 13 April 1960. The Transit satellite was designed basically as an aid to navigation for missile submarines. The whole project was closed in 1964. Again, the United States launched three other experimental satellites TIMATION - I, II and III in 1967, 1969 and 1974 respectively.

A major improvement in the quality and flexibility of space-based navigational assistance for military uses is the 18 satellites NAVSTAR GPS system currently being deployed by the United States. This - NAVSTAR has already been test demonstrated for its ability to effect improvements in ICBM CEP. As the US Secretary of Defence, Weinberger, sounds optimistic:

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The user equipment is being designed to withstand feasible enemy countermeasures and the satellites will be in dispersed, high altitude orbits with a degree of hardening that provides for graceful degradation.(14)

The Soviet Union typically launches five or six COSMOS series ocean navigation satellites into marginally elliptical orbit every year. Early in 1982, the Soviet Union informed the International Telecommunications Union that it planned to deploy a global navigation satellite system - GLONASS. This GLONASS will comprise 9-12 satellites. However, the main military function of GLONASS would probably be to effect a noteworthy improvement in the accuracy of weapons delivered from mobile platforms such as aircraft, ships and overland transporters.

According to the latest available data (SIPRI Yearbook, 1986) the United States Air Force has launched three important satellites in 1984. On 13 June, NOVSTAR-9, on 8 September - NOVSTAR 10 and on 12 October -NOVA 3 were launched by the USAF, for navigational purposes. Similarly, the USSR launched COSMOS 1531 on 11 January, COSMOS 1598 on

14 Casper W. Weinberger, Annual Report to Congress, Fiscal Year 1983 (Washington, D.C., GPO, 8 February 1982).

13 September and COSMOS 1605 on 11 October 1984.¹⁵

Though the Soviet Union succeeded in sending navigational satellites early 1970, they did not announce it until 1976. According to an American expert, Geoffrey Perry (Consultant to the Congressional Research Service) the Soviet Union began their activities in 1972, but the Soviets did not announce their purpose until six years later.

(e) Meteorological Satellites

The traditional method of weather prediction relies on meteorological data collected by a worldwide network of observers. These data are very essential for both civilian and military activities. To know precisely about the weather condition it helps the strategic planners to chalk out their own defense and combat plans. Two kinds of orbits are most useful for weather satellites. One is in the geosynchronous orbit at 22,250 miles and another one is in the Sun-Synchronous orbit. Passing over the poles, at altitudes around 50 miles, these satellites see different strips of the earth at the same local time everyday. The

15 World Armament and Disarmament, SIPRI Yearbook, 1986
(Taylore Francis, London, 1985).

orbit traces a line on the ground that moves around the earth at the same rate as the line between day and night. In other words, the angle between the plane of the orbit and the line from the earth to the sun is always the same.

The first meteorological satellite launched by the USA in 1960 was Trios I. At present the US Department of Defense reportedly sustains a Defence Meteorological Satellite Programme (DMSP) comprising two satellites in circular (polar, Sun-synchronous) 500 mile altitude orbit. Visible light and infrared photographs of the entire earth are taken four times daily. The Global Weather Central reads out the taped DMSP satellite data from its two main ground stations in Maine and the state of Washington. But the satellites were also equipped with APT - Automatic Picture Transmission -- so that other terminals can get pictures directly, without going through Global Weather Central. Several US Navy aircraft carriers have terminals for that purpose. The Harris Corporation builds the latest type of mobile military weather - satellite terminal, the Mark IV.

The most noteworthy point in this context is that, like the other space support systems, the DMSP satellites play a role in US readiness to fight a nuclear war. Global Weather Central is under the Strategic Air Command (SAC). SAC wants to know at all times what weather its B-52 and

FB-111 bomber pilots would run into if they had to make their runs into the Soviet Union. And the Command also keeps its Minuteman ICBM guidance systems so precisely programmed that they can take into account the weather conditions, their nuclear warheads would encounter as they re-entered the atmosphere over the Soviet Union from space.

The next major change in the DMSP Satellites will be an even more sophisticated sounder: it will actually be a microwave imager - a sensor that can form pictures from the microwave energy passing up through cloud cover. The same instrument will gather data about rain, wind speed, soil moisture, and sea ice. On 19 December 1984, the NASA launched a more sophisticated weather satellite which is known as NOAA 9.

As for the Soviet meteorological satellite programme is concerned, this programme began in 1963 with the launching of COSMOS-14. The Soviet space-based meteorological information gathering parallels that of the US in scale and effort. Two Meteor-2 series weather satellites were launched in 1981. The orbital characteristics of Meteor satellites are similar to those of the US DMSP programme. The Soviet Meteor series now seems to consist of two types of satellites. One of these has an orbital inclination of 81.2 degrees

and an altitude around 530 miles; the other has an inclination of 97.7 degrees and an altitude around 370 miles. At present, the Soviet Union is maintaining two weather satellites at a time to obtain full daily coverage of the Earth. On 5 July 1984, the Soviet Union launched its METEOR 2-11 satellite in the orbit.

Besides the two super-powers, the UK and France also launched their meteorological satellites in the orbit. The first British meteorological satellite was Prospero and the first French satellite was Eole - both of which were launched in 1971. At present, China, Japan and some other countries are also engaged in sending their weather satellites in various orbits.

(f) Geodesy

Geodesy is the branch of applied mathematics that deals with the shape of the Earth, its gravitational field and the exact positions of various points on the Earth's surface. An accurate knowledge of the shape of the Earth and of the precise whereabouts of points on the Earth is obviously essential for mapping purposes.¹⁶

The importance of geodetic satellites for military purposes is greater. By using maps with grids accurately

16 B. Jasani, Outer Space - Battlefield of the Future? (Taylor & Francis, London, 1978), p.158.

to locate specific places, and by obtaining knowledge of the Earth's gravitational field through satellites, the military establishments are able to gain a more accurate cartographical picture (an essential requirement, for example, in the development of long-range ballistic missiles).

The Geodetic Satellite Programme of the US Defense Mapping Agency has launched a variety of satellites into low earth orbit (LLO) since the mid-1960s. The first US satellite on geodetic mission was launched in 1962 which was known as ANNA 1A. From the Soviet Union, the first such satellite was COSMOS 203 launched in 1968. The activities pursued include photographic mapping, topographical mapping by radar altimeters and measurement of the Earth's gravitational and magnetic fields. These geodetic satellites are helping the military personnel in gaining accuracy for their ballistic missiles.

From the above brief survey, it becomes quite evident that, at present, the overwhelming majority of both super powers' space effort is devoted to 'non-weapon' purposes, such as intelligence gathering, communications and navigations.

In a recent interview with F.Clifton Berry Jr. of Air Force Magazine, General Henry of USAF Space Division emphatically declared that

If we want space systems to be available in time of war for communications, weather navigation, of whatever, then we are going to have to start to buy space systems in a way that accommodates and permits combat attrition as well as peacetime attrition.(17)

Space Warfare

The review of the implications of the military space support systems showed how these systems are becoming an indispensable link in the military chain. It is true that militarization of space is an accomplished fact. But until recently, the emphasis was on nonweapons applications such as communications, navigation, and surveillance. Now a new phase is beginning, the weaponization of space. This has led to the development of techniques for disabling an opponent's satellites -- either by destroying or jamming them -- and has also led to the developments of methods of protecting satellites from enemy action. Thus, whereas space systems were formally viewed merely as a means of aiding terrestrial military operations, space is now also seen as a new theatre of actual warfare.

War in space, however, may not be simply confined to a battle between satellites. Strategic ballistic missiles

17 F.Clifton Berry, Jr., "Space is a Place : An Interview with Lt.Gen.Richard C.Henry USAF", Air Force Magazine, vol.65, No.6 (June, 1982), p.40.

travel through space on their way to their targets, and technological progress in many areas has now opened up the possibility of destroying these missiles in space.

Both the superpowers have large research programmes to assess the feasibility of a host of possible space weapons which might be suitable for the purpose. Before such weapons can be produced many technical obstacles must be overcome, but progress is being made on many fronts and some spectacular results have already been achieved.

In broad terms, space weapons can be divided into two groups: (a) kinetic energy weapons; and (b) directed energy weapons.

Kinetic energy weapons derive their destructive energy from the momentum of a propelled object, that is, from its speed. In directed energy weapons, energy in the form of beams propagated with the speed of light is itself used to destroy a target. These weapons can be earth-based or space-based.¹⁸

The US conventional ASAT weapon based on the Thor missile was first tested in 1964. In September 1964, the then US President Johnson declared that the United States had two operational ASAT systems. These were the Thor and

¹⁸ See, supra note 16, p.16.

the Nike Zews. The warheads were nuclear weapons. By the mid-1970's, the United States had abandoned its ASAT programme. But, it again resumed the programme in 1975. The latest one is known as ALMHV, Air-launched Miniature Homing Vehicle. These vehicles would be launched using small but powerful solid fuel rockets carried on fighter aircraft, such as F-15.

Here, it may be noted that space-based strike weapons which are being developed in the US appear to be intended not only for knocking out the other side's satellites and strategic missiles after their launch but also as pre-emptive weapons to be used against ground targets for performing the first strike. The Soviet Conventional ASAT programme may have begun as early as 1963. It may be recalled that when the first American photo-reconnaissance satellite began orbiting Soviet territory in the early 60s, the Soviet Union had strongly protested against this. At that time, Khrushchev had emphatically declared that the Soviet military had the capability to "hit a fly in space".¹⁹

There have been two experimentation periods with these hunter/killer satellites from 1968 to 1971, and

19 Daniel Deudney, "Space : The High Frontier in Perspective", World Watch Paper 50, August 1982, p.18.

from 1976 upto 1979, followed afterwards by spasmodic operations of the same kind. In 1982, according to western intelligence, the Soviet Union for the first time tested its satellite killer in conjunction with a ballistic missile launch exercise from silos and submarines.

It should be noted that such ASAT systems are slow. For example, the Soviet tests indicate that the time taken between the launch of an ASAT satellite and its interception of a target is atleast three hours. The US air-launched ASAT missiles may take a shorter time, but targets in geostationary orbit will still be difficult to reach in a much shorter time. In view of this, more exotic systems, such as ground or space - based high energy laser beams as ASAT weapons have recently attracted the attention of the two super powers.

LASERS

"LASER" is the acronym for Light Amplification by the Stimulated Emission of Radiation. Although the principle on which lasers are based - the stimulated emission of electromagnetic radiation -- was discovered in 1917 by Albert Einstein, the first successful laser was not produced until 1962 by T.H.Maiman and his collaborators.

Even though it is difficult to produce lasers capable of doing damage of military interest to "normal" targets, antisatellite lasers may become practical because their intended targets -- the satellites -- are flimsy and vulnerable structures. For the next decade or so, the threat from a ground-based laser of the type described is the most serious one posed to current satellites by laser technology. In the long run, however, the threats that might be caused by the existence of space-based lasers should also be considered.

A laser in space has the advantage as there is no atmosphere to distort and dissipate the power of its beam. A high energy laser in space might actually burn or punch a hole in a satellite, not just damage its sensors.

With regard to the possible development of high energy laser beam weapons, a new dimension was added to the militarization of outer space when on 23 March 1983 President Reagan called on US scientists and engineers to find "the means of rendering nuclear weapons impotent and obsolete."²⁰

20 "Text of Reagan's Address on Defense Policy",
Congressional Quarterly Weekly Reports, vol.41,
No.12 (26 March 1983), pp.629-33.

Thus, some ASAT weapons are envisaged not only for space warfare but also for ballistic missile defence (BMD) systems based in outerspace. The essential elements of any ballistic missile defence (BMD) system are target-detection, recognition, tracking and destruction systems.

Prior to 1983, the United States had already spent nearly \$ 2 billion on high-energy lasers. For fiscal year 1984, the final budget for space weapons amounts to \$ 1,195 million. Of this amount, \$ 467.9 million is for directed energy weapons, \$ 501.9 million for BMD, and \$ 225.5 million for ASAT weapons.²¹

The above brief discussion indicates the extent of the militarization of outer space. Indeed, proposals for using satellites to supplement earth-based military capabilities were first put forth seriously in the mid 1940s. But, recent developments; including anti-satellite weapons, the direct use of space assets in warfare, as well as President Reagan's Strategic Defence Initiative -- are ushering a new, more costly, and more dangerous phase in this ongoing process.

21 J.Pike, "Space Policy Update", Federation of American Scientists (FAS) 9 September 1983, p.3.

Chapter - III

THE ARMS CONTROL REGIME OF OUTER-SPACE

This chapter deals with all existing multilateral and bilateral treaties relating to arms control in outer space and also makes an appraisal of all these treaties by identifying the various flaws which need an urgent modification. It seeks to establish that the existing space treaties do not provide a foolproof legal regime in outer space with reference to the question of its peaceful uses.

The fact that space activities for more than a quarter of a century have not led to any armed conflict in outer space can be attributed to the nascent law developed by the UN. At the very dawn of the space age mankind was able to identify some potential areas of international conflicts. As S.Bhatt in his book, Studies in Aerospace Law, states:

The path of law in outer space was prepared first through customary prescriptions formed through voluntary behaviour of states and through the practice of UN Resolutions on outer space.(1)

The first stone in the path of conflict avoidance commenced with Article 1 of the Charter by virtue of which

1 S.Bhatt, Studies in Aerospace Law (Sterling Publishers Pvt.Ltd., New Delhi, 1974), p.126.

the United Nations became a centre for harmonizing the actions of nations in the attainment of their common ends in outer space. For the first time in the history of international law, a set of written principles and norms governing different aspects of space flights were developed, almost simultaneously with the progress of space exploration itself.²

By the late 1950s and early 1960s the exploration and use of outer space increasingly became a focus of international concern. During this period, exchanges about Soviet and American military/political space policy and practice found expression in multilateral forums, such as the United Nations, in which non-space powers participated. At the United Nations, the Committee for the Peaceful Uses of Outer Space (COPUOS) became the crucible in which space law was forged through the consensus method.³

In December 1961, the UN General Assembly unanimously approved a resolution entitled, "International Cooperation in the Peaceful Uses of Outer Space".⁴ The resolution

2 Vladimir Kopal, "Evolution of the Main Principles of Space Law in the Institutional Framework of the United Nations", Journal of Space Law, vol.12 (1984), p.15.

3 Michael Bourelly, "The Contribution Made by International Organisations to the Formation of Space Law", Journal of Space Law, vol.10, (1982), p.139.

4 UNGA Res.1721/XVI, 20 December 1961.

advocated the adoption of two cardinal political principles to guide the conduct of states in outer space:

- (1) that international law, including the United Nations Charter, applies to outer space and celestial bodies; and
- (2) outer space and celestial bodies are free for exploration and use by all states under international law, and are not subject to national appropriation.

In the Preamble to the UN resolution of 20 December 1961⁵ nations recognised for the first time the "common interest of mankind" in furthering the peaceful use of outer space and the "urgent need to strengthen international cooperation" in outer space, and declared their belief "that the exploration and use of outer space should be only for the betterment of mankind and to the benefit of states irrespective of the stage of their economic or scientific development".

Although this UN resolution was only a recommendation and did not impose any legal obligation on member states, it nevertheless represented a substantial political limit on the space powers' behaviour. The resolution also evidenced the progress achieved in reaching a consensus in outer space. As R.P.Anand in one of his essays emphatically

5 UNGA Res.1721/XVI, 20 December 1961.

declared:

Although these resolutions are not formally binding and no more than 'recommendations', their effects on the course of the development of international law must not be underestimated. (6)

However, as for the demilitarization of outer space is concerned, the first initiative was taken by both the two super powers, the United States and the Soviet Union, as a result of which the Limited Nuclear Test Ban Treaty was successfully negotiated late in the summer of 1963. This treaty is generally known as the 'Treaty Banning Nuclear Weapon Tests in the Atmosphere, in Outer Space and Under Water'.⁷

The treaty was signed at Moscow on 5 August 1963, and entered into force on 10 October 1963. The 'original parties' of the treaty are the Governments of the United States of America, the United Kingdom of Great Britain and the Union of Soviet Socialist Republics. The treaty has only five articles. Article I, which contains the main prohibition against nuclear tests, states:

6/ R.P.Anand, "Attitudes of the Asian African states Toward Certain Problems of International Law", International and Comparative Law Quarterly, vol.73, (1966), p.73.

7 For the text of the Treaty see, the Appendix I, at pp.91.

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. (8)

A careful reading of this provision shows that nuclear explosions are prohibited in all environments with the exception of underground tests carried out within the territorial limits of the parties to the treaty. The words "in any other environment" would seem to include underground areas too; so underground tests are subject to the provisions of subparagraph (b) of Article I.⁹

It is interesting to note that the drafters of the treaty "avoided the doctrinal question where outer space begins, since the prohibition runs within the atmosphere and beyond its limits". The prohibition contained in the 1963 treaty seems to apply to all nuclear tests carried out

8 See, Appendix I, pp. 91.

9 See, K.R.Nambiar, "The Test Ban Treaty, 1963 : Form and Content", Indian Journal of International Law, vol.3, (1963), p.317.

in outer space. Similarly, such prohibition would apply to nuclear tests conducted on celestial bodies, since they form part of outer space and since testing could result to in contamination. Of course, no provision was included with respect to verification of compliance with the treaty.

Article IV entitles every state party to withdraw from the treaty. However, notice of withdrawal must be given to all other parties to the treaty three months in advance. A state party can withdraw only if 'extraordinary events' relating to nuclear explosions have jeopardized its "supreme interests".

However, the major achievement of the treaty is the establishment of essentially favourable conditions for the peaceful uses of outer space. This treaty has certainly helped to curb the radioactive pollution caused by nuclear explosions, but it could not stop it altogether; the non-party nuclear powers, France and China, continued their testing in the atmosphere (France stopped atmospheric tests only in 1975). Moreover, underground explosions, permitted under the Treaty, often also release radioactive matter into the air. It is interesting to note that "China" called the Treaty a "big fraud to fool the people of the world" and

accused the Soviets of "selling out the communist camp."¹⁰ Both France and China continued their high altitude nuclear tests; between 1963 and 1982; France conducted 41 and China 22 such tests, and thus diminished the significance of the treaty's prohibitions.¹¹

The most vital deficiency of the provisions of this Treaty is that the treaty regulates only nuclear explosions. The anti-satellite weapons developed by the USSR and the US are not nuclear but conventional weapons, and thus are not covered by the Treaty's provisions. Moreover, the Treaty regulates only nuclear fuels as power sources for space objects. In three accidents involving spacecraft with nuclear power sources, radioactive substances have been spread in all environments.¹² Thus, in terms of the latest developments of weaponization of outer space, the utility of the Treaty is very insignificant.

The Outer Space Treaty of 1967¹³

The Treaty on Principles Governing the Activities

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- 10 J.H.Barton and L.D.Weiler, eds., International Arms Control : Issues and Agreements (Stanford University Press, California, 1976), p.71.
- 11 SIPRI 1983 Year Book, p.100.
- 12 "Nuclear Power Sources on Satellites in Outer Space", SIPRI 1983 Yearbook, p.457.
- 13 For the Text see, Appendix II, pp. 94.

of States in the Exploration and Use of Outer Space, including the Moon and other Celestial Bodies (hereafter, the Outer Space Treaty) was commended by the United Nations General Assembly in its resolution 2222 (XXI) of 19 December 1966, opened for signature on 27 January 1967, and entered into force on 10 October 1967.

The Outer Space Treaty transformed a nonbinding, international consensus on political/military conduct into legal obligations and recognised an important new principle: that space was to be the "province of all mankind". Most specifically, the Outer Space Treaty uses the same language as the 1963 declaration, including the provisions on prohibition of sovereign appropriation of space or any celestial body by any nation, as well as the obligation of states to conduct their activities in space in compliance with international law, generally, and the UN Charter in particular.

The Outer Space Treaty's arms control measures are set forth in Article 4,¹⁴ which declares that "...parties to the Treaty undertake not to place in orbit around the earth

14 For the text see, Appendix II, pp. 94.

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". This Article also provides, among other things, that "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."¹⁵

These provisions are a landmark in mankind's attempts to exclude the means of confrontation and war from the celestial realm. The American proposal to outlaw certain weapons from outer space and celestial bodies, including the moon, are reserved for peaceful purposes and demilitarized in large part. To lend some strength to these measures, a limited right of inspection of objects and installations is provided for in Article 12 with respect to the moon and other celestial bodies, but not outer space.¹⁶

15 For the Text see, Appendix II, pp. 94.

16 Paul G. Dembling and Daniel M. Arons, "The Evolution of the Outer Space Treaty", Journal of Air Law and Commerce 33 (1967), p. 425.

Article XII of the Treaty¹⁷ clearly states: "All stations, installations, equipment and space vehicles on the moon and other celestial bodies shall be open to representatives of other State parties to the Treaty on a basis of reciprocity". Several principles of the Treaty have been dedicated to furthering international cooperation and mutual assistance. A mechanism of international consultations has been provided, in order to ensure due regard to the interests of all parties to the Treaty. An agreement on informing, "to the greatest extent feasible and practicable" of the nature, conduct, locations and results of activities in the peaceful exploration and use of outer space was reached in Articles XI.

However, the Treaty's arms control provisions have many shortcomings. The ambiguous nature of the language found in Article IV is illustrated by the phrase which prohibits "nuclear weapons or any other kinds of weapons of mass destructions" from being placed in orbit around the earth.¹⁸

17 Supra n.13.

18 Hasselmann, "Article IV of Outer Space Treaty and the Relationship to General Disarmament", Proc. 25th Colloq. Law of Outer Space (1982), p.108.

The term 'weapons of mass destruction' in Article IV(1) is a dynamic one. Its content varies, following technological and political developments. To date, the only generally shared definition of the phrase was set forth in 1948 by the UN Commission for Conventional Armaments. The Commission stated that "weapons of mass destruction" should be defined to include atomic explosive weapons, radioactive material weapons, lethal chemical and biological weapons, and any weapons developed in the future which have characteristics - comparable in destructive effect to those of the atomic bomb or other weapons mentioned above.¹⁹

Although the definition specifically forbids nuclear, radioactive, chemical and biological weapons, the latest technological developments such as lasers, particle beam weapons, and micro wave devices present more difficult problems of interpretation.²⁰ Thus to keep abreast of the present situation, the Treaty should provide provisions to forbid both offensive and defensive arms in outer space so as to give true meaning to the 'peaceful purposes doctrine' and to maintain the 'balance of power' intended in ABM Treaty.²¹

19 See, UN Doc.S/C.3/30 (13 August 1948).

20 Pamela L. Meredith, "The Legality of a High Technology Missile Defense System : The ABM and Outer Space Treaties", American Journal of International Law, vol.78, No.2, (1984), p.418.

21 See, Appendix VIII, pp.142.

Banning all weapons in space, both offensive and defensive, eliminates the possibility of disrupting the present 'balance of power' between the United States and the Soviet Union. If the new frontiers of weaponry expansion are eliminated, the status quo will be much easier to maintain.

Here, it may be interesting to note that during the treaty negotiations, India proposed an amendment to the draft treaty that reserved outer space exclusively for peaceful purposes. However, there was insufficient support for this proposal and no consensus was ever reached. As a result, outer space was intentionally omitted by the draftsman of the treaty from the celestial domains to be used exclusively for peaceful purposes.²²

Agreement on the Rescue of Astronauts, the Return of Astronauts, and the Return of Objects Launched into Outer Space 1968,²³

In an effort to give concrete expression to general principles set forth in the Outer Space Treaty,²⁴ nations

22 See, for example, Comm. on the Peaceful Use of Outer Space, Legal Sub-Comm, 5th Session, 66th Meeting, 25th July, 1966, UN Doc.A/AC.105/C.2/SR.66 at 7(1966). See also *ibid* at 71st meeting, 4 August 1966, UN Doc. A/AC.105/C.2/SR.71 and Add 1 at 8-9 (1966).

23 For the text see, Appendix III, pp.102.

24 Outer Space Treaty - Article V provides that, "States shall render to astronauts all possible assistance in the event of accident distress or emergency landing, on the territory of another state or on the high seas.

concluded an agreement in 1968 on the rescue and return of astronauts and objects launched into space.²⁵ The Agreement provides that each contracting party which receives information or discovers that the personal 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.²⁶

The Agreement does not provide any specific distinction between the civilian and military use of space personnel or objects. Moreover, the rescue agreement as

25 This treaty was adopted by the UN General Assembly on 19 December 1967 (Reso.2345, XXII), and entered into force on 3 December 1968.

26 Article I of the Agreement.

the current charter of international rescue of astronauts, is not applicable to territories of states not party to the agreement. Practical steps are needed to arrange a wider acceptance of the rules.

According to Priyanta Abdurrasyid of Indonesia²⁷

problems could occur in the following situations:

- (a) When there are no diplomatic relations between the launching authority and contracting party;
- (b) If a space object has a hazardous or deleterious nature, e.g., the use of fuel or instruments which, in the case of an accident, might be dangerous to the environment;
- (c) When objects carrying nuclear weapons or other kinds of weapons of mass destruction are placed in orbit in violation of the existing space treaties.

As Dr. Vladimir Kopal clearly states, Article I deals explicitly with the personnel of a spacecraft including the astronauts, but does not elaborate on occurrences when rescue of and assistance to the personnel must be conducted together with search and recovery of the spacecraft itself.²⁸

27 Priyanta Abdurrasyid, "Certain Views on the Agreement on Rescue of Astronauts...." Maintaining Outer Space for Peaceful Uses - Paper presented in the above said Symposium held in the Hague, March, 1984.

28 Vladimir Kopal, "Problems Arising from Interpretation of Agreement on Rescue of Astronauts..." 11th Colloquium International Institute of Space Law, New York, (1968).

The 1972 Convention on International
Liability for Damage Caused by Space
Objects. (29)

This treaty was commended by the United Nations General Assembly in its resolution 2777 (XXVI) of 29 November 1971 and entered into force on 1 September 1972. The Convention provides that a launching state shall be absolutely liable to pay compensation for damage caused by the space object on the surface of the earth or to aircraft or to aircraft in flight.³⁰

Whenever two or more states jointly launch a space object, they shall be jointly and severally liable for any damage caused. The Convention provides for the establishment of a claims commission in case there is no settlement between the state which suffers damage and the launching state. (Article XV).

Perhaps most importantly, the Convention provides that such a commission can be established at the request of either party to both sides to show reasonableness and accommodation. Of course, it is quite true that the convention establishes a clear set of criteria for determining the source and measure of liability for damage on Earth, in outer space, and in between.

29 For the text see, Appendix IV, pp. 107.

30 Article II of the Convention. See supra, n.29.

In the words of Mr. Ronald F. Stowe,

Although the liability convention may not have a direct impact on mankind's decisions whether to destroy our world in a nuclear holocaust, this convention is an outstanding example of how the creativity and enlightened self-interests of nation can in fact lead to world-wide agreements to settle our differences in peaceful ways. (31)

The Convention on Registration of Objects Launched into Outer-Space, 1975 (32)

In a further multilateral effort to facilitate the orderly administration of space use, the United States and other nations entered into the 1975 Convention on Registration of Objects Launched into Outer Space. This treaty entered into force in 1975. The basis of the treaty is the Outer Space Treaty of 1967.³³

Article IV of the treaty obliges launching states to inform the UN Secretary-General about the date and location of a launch, changes in 'orbit', and the General function of the satellite. Thus, a launching state is to give the following information:

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- 31 Ronald F. Stowe, "The 1972 Convention on International Liability for Damage caused by Space Objects", paper presented in the symposium, Maintaining Outer Space for Peaceful Uses, (The Hague), March 1984.
- 32 For the text see, the Appendix, V pp. 118.
- 33 Article VIII of the Outer Space Treaty provides the detailed provisions in this regard. See the text in Appendix, II pp. 94.

- (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.

The last requirement is the crucial problem, as states are not always willing to say freely that they have launched satellites for military purposes. This is the general attitude of many states in the world.

The other notable point in this convention is that the convention is not explicit on the particular point i.e. the time when the information is to be given. Moreover, Article III, para 2, states clearly that "there shall be full and open access to the information in the Register" So once information has been given, all states can acquire it. This is also not acceptable practically to many nations.

The Convention on the Prohibition of Military or Any Other Hostile Use of Environmental Modification Techniques, 1977 (34)

Pollution of the natural environment was seen as a

universal problem, and regional and international inter-governmental organizations as well as private bodies were seeking solutions to this problem. Thus, a combination of vigorous discussions between the two super powers and a general awareness of people throughout the world, led to favourable circumstances for the adoption of the convention.

The 1977 convention which entered into force in 1980, prohibits intentional military use or any other hostile use of environmental modification techniques to cause destruction, damage, or injury in outer space. Article 1(1) of the Convention focusses on the duty not to embark on prohibited activities of courses of conduct. In order to give greater precision to the term "environmental modification techniques" -- Article II of the Convention³⁵ provides that it "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". This provision clearly identifies the means whereby environmental modification would be effected. It identifies the areas where such conduct is impermissible, namely, Earth, airspace, and outer space.

35 For the text see, Appendix VI ,pp. 124.

Article III(1) of the Convention provides that, "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."

It has been suggested that the convention was faulty in not including provisions prohibiting research activities directed towards environmental modification techniques. Critics of the convention are correct in their appraisal that it is not a total denial of the use of environmental modification techniques. Both the terms of Article 1(1) and the understandings incorporated in this paragraph support this conclusion.³⁶

The Agreement Governing the Activities of States on the Moon and Other Celestial Bodies - 1979.³⁷

Just before the first landing of man on the Moon in June 1969, the Legal Sub-Committee of the United Nations' Committee on the Peaceful Uses of Outer Space decided, on

³⁶ J. Goldblat, "The Environmental Warfare Convention: How Meaningful Is It?", Ambio 6, No. 4 (Stockholm, 1973), p. 217.

³⁷ For the text see, Appendix VII, p. 130.

the proposal of Argentina, France and Poland, that an item be included on its agenda to deal with new activities on the Moon and other celestial bodies, including the legal regime governing their natural resources.³⁸

The wider questions, including military uses, were introduced into the discussions by a draft treaty proposal made by the Soviet Union in 1971.³⁹ After this proposal, the General Assembly placed the subject as a separate item on the agenda of the Legal Sub-Committee for Priority consideration at its 1972 session.⁴⁰ Thus, after long debate inside and outside the United Nations, the Agreement Governing the Activities of States on the Moon and Other Celestial Bodies (hereafter, the Moon Treaty) was finally adopted by the General Assembly in December 1979.⁴¹

The United States and the USSR has not yet ratified the Moon Treaty. This has delayed the entry into force of the Treaty, but considering that only five ratifications

38 A joint proposal was made by Argentina, France and Poland which was adopted by the Legal Sub-Committee (A/AC.105/C.2/L.69).

39 UN Doc.A/83/91.

40 General Assembly Res. 2779 (XXVI), 29 November 1971.

41 General Assembly Res. 34/68, 5 December 1979.

are required for it to come into force, and that four countries -- Chile, the Philippines, the Netherlands and Uruguay -- have already ratified it, the Treaty could enter into force at any time.

The Moon Treaty represents an admirable and farsighted effort on the part of the international community to establish conditions promoting the peaceful uses of the Moon and other celestial bodies.

Article II of the Moon Treaty states that all states shall have the right of exploration and use of the Moon without discrimination of any kind, on the basis of equality and in accordance with international law and the provisions of the Agreement.

As to the exploitation of the natural resources of the Moon, states parties to the Agreement will "undertake to establish an international regime, including appropriate procedures, to govern the exploitation of the natural resources of the Moon, as such exploitation is about to become feasible."

Article 4, para I, states that the 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, irrespective of their degree of economic or scientific development. The most interesting part of the

Treaty is Article II, para I, which declares that the Moon and its resources are the common heritage of mankind.⁴²

Article 14, para. I, states that states parties to the Agreement shall bear international responsibility for national activities on the Moon, whether such activities are carried out by governmental agencies or by non-governmental agencies, and for assuring that national activities are carried out in conformity with the provisions of this Agreement.

The Moon Treaty, as it stands, therefore, represents a solid basis upon which further space exploration can continue.

Vladimir Kopal (Chief, Outer Space Affairs Division, United Nations) very aptly stated that - "the Moon Agreement has become not only instrumental in establishing the legal status for the Earth's only natural satellite, but it also contributes to building up the principles of interplanetary law that should specifically govern our solar system within the general framework of space law."⁴³

42 K.Narayana Rao, "Common Heritage of Mankind and the Moon Treaty", Indian Journal of International Law, vol.21 (1981), p.275.

43 Vladimir Kopal, "Evolution of the Main Principles of Space Law", Journal of Space Law, vol.12, (1984), p.19.

Chapter - IV

THE "STAR-WARS" PROGRAMME OF THE UNITED
STATES AND ITS LEGAL IMPLICATION

The ABM Treaty of 1972⁴⁴

In the bilateral sphere, both the super powers -- the USA and the USSR -- signed four bilateral accords. Two of these agreements -- namely, the agreements on Measures to Reduce the Risk of Nuclear War and the Prevention of Nuclear War, which became effective in 1971 and 1973 respectively - only incidentally limit the military use of space.

In 1972, the two super powers signed the SALT I Interim Agreement and Anti-Ballistic Missile Treaty that contributed a lot in preventing the military uses of space. The SALT-I Agreement proceeds on some basic premises that "nuclear war will have devastating consequences for all mankind", "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". The ABM Treaty was signed at Moscow on 26 May 1972 and entered into force on 3 October 1972.

Article V of the ABM Treaty provides that "each party undertakes not to develop, test, or deploy ABM systems or components which are sea-based, air based, space

44 For the text see, Appendix, VIII, pp. 142.

based, or mobile land based."⁴⁵ Thus, the Treaty prohibits the development, testing or deployment of anti-ballistic missile systems which are not both fixed and land based. In addition, the Treaty prohibits the deployment of futuristic ABM systems (such as lasers) based on components "capable of substituting" for the ABM components defined in the Treaty.

This Treaty provision would be a legal impediment to the space-based missile defenses proposed in the wake of President Reagan's "Star Wars" speech of March 1983, unless the United States withdraws from the Treaty pursuant to Article 15.⁴⁶ However, the Treaty does not prohibit the research and laboratory testing of such weapons. Nor does the Treaty prohibit the testing and use of weapons presently under development for anti-satellite purposes, so long as there is no upgrading of those weapons to a ballistic missile defense capability. Thus, there remain substantial gaps in the existing arms control regime with respect to missile and satellite defense in space.

45 For the text see, Appendix VIII, p.142.

46 The ABM Treaty provides for withdrawal by a party on six months' notice if it decides that extraordinary events related to the subject matter of this Treaty have jeopardized its supreme interests.

Nevertheless, in its broadest dimension the ABM Treaty is an early milestone of the political approach to avoiding nuclear war and its consequences. It is a "realpolitik" approach, not an idealistic one.

In 1979, the Soviet Union and the United States made another agreement which is known as SALT-II though later on, the United States denied as having ratified it. The SALT-II Agreement (Article IX) contains a relatively unnoticed expansion of the provisions of the Outer Space Treaty by forbidding development, testing and deployment of systems for placing in orbit nuclear weapons, etc.

Thus, in conclusion, it may be submitted that the existing treaties apparently do not provide a foolproof legal regime to completely prohibit the use of outer space, including the Moon and other celestial bodies, for military purposes. The prevention of an arms race and hostilities in outer space, however, is an essential condition for the promotion and continuation of international cooperation in the exploration and use of outer space for peaceful purposes. The maintenance of peace and security in outer space is of great importance for international peace and security.

This chapter is divided into two separate parts.

In the first part, it deals with the genesis of the present strategic Defense Initiative Programme of the United States, and the second part deals with the legality of the said programme by reference to the existing multilateral and bilateral treaties dealing with arms control in outer space.

On 23 March 1983, President Reagan took a dramatic step towards the militarization of space. In his address to the nation he announced a "decision which offers new hope... in the 21st century". Appealing to the scientific community he invoked his dream of a new defensive system, and added: "I believe there is a way ... It is that we embark on a program to counter the awesome Soviet missile threat with measures that are defensive I call upon the scientific community in our country, those who gave us nuclear weapons, to turn their great talents now to the cause of mankind and world peace, to give us the means of rendering these nuclear weapons impotent and obsolete". The President concluded by characterizing his decision as one "which holds the promise of changing the course of human history".¹ This programme of President Reagan is

1 For the text of President Reagan's speech of 23 March 1983, see, Appendix ,pp.

popularly known as the "Star Wars" programme.² Officially, the plan is named the Strategic Defense Initiative (SDI).

The SDI aims at developing a defensive shield capable of protecting the United States and its allies against ballistic missile attack, thereby theoretically reducing Soviet incentives to attack. Unlike the anti-ballistic missile systems of the 1960's, which were designed to destroy warheads during their latter phase of flight, when they begin to re-enter the atmosphere, the SDI aims to hit strategic missiles shortly after their launch, in the boost phase, and throughout the flight of the missiles and warheads.³

As of date, SDI consists only of ideas and classified research. No one knows definitively whether a defensive system will work. The present SDI research seems to concentrate on determining exactly what is technologically feasible, at what cost, and with what strategic implications.

2 James Ionson, the SDI organisation's Director of Innovative Science and Technology said, "originally we thought it was unfortunate; now we like it - it's almost a cult now". John A. Adam, "What's in a Name: 'SDI' on 'Star Wars'?", IEEE Spectrum, vol.22 (1985), p.96.

3 Defense Against Ballistic Missiles : An Assessment of Technologies and Policy Implications (Washington, D.C.: U.S.D.O.D., 6 March 1984), p.29.

According to Herold Brown, Chairman of the Foreign Policy Institute, the Johns Hopkins University, U.S.A.:

"The programme (SDI) includes research on a variety of technologies -- many aimed at distinct phases of the ballistic missile flight path. For each phase - boost, post-boost, mid-course and terminal - a defense would require successful surveillance, target acquisition, tracking and kill mechanisms. Are the objectives of SDI technically feasible?"⁴ The technical aspects of SDI are divided into three steps:⁵

First Step: Early warning of an attack, through geostationary satellites equipped with sensors to detect emissions from rockets in the boost phase. The requisite sensors could be installed on aircraft, on satellites or on space platforms. Such warnings would be detected when missiles rise through the lower atmosphere.

Second Step: Assess the magnitude of the threat, determine the number of rockets, their nature and positions. This would be followed by tracking of objects in the "threat

4 Herold Brown, "Is SDI Technically Feasible?" Foreign Affairs, vol.64, No.3 (1986), p.435.

5 John A.Adam and Paul Wallich, "Mind Boggling Complexity", IEEE Spectrum, vol.22, No.9 (September, 1985).

cloud", determining their trajectory, velocity and position. This step also includes discrimination between real and fake targets (decoys). Interceptors and beam weapons would be deployed accordingly. One estimate is that the "Star Wars" system would have to trace about 30,000 objects with the use of several hundred sensors.

Third Step: Assessment of damage to find out how many targets have been wrecked and to rectify the faults in defence, wherever possible. The maximum time available for the boost interception - separation of the booster from the missile - would be three minutes. The time available for all the three steps of interception would not be more than half an hour in any case.

It is believed that most of the ICMBs would be destroyed within five minutes after they are launched. Some space-based SDI proposals are receiving a great deal of attention. These include the High Frontier Proposal of General Daniel Graham (Retd); the laser and mirror policy endorsed by George Keyworth, President Reagan's Science Advisor; and Directed Energy Weapons (DEW).

The High Frontier Plan consists of a ring of 432 satellites placed in permanent earth orbit. Each satellite would be armed with 40 to 45 interceptors missiles. These missiles

would be guided by infrared sensors to home in on enemy boosters and to destroy ballistic missiles by high velocity impact.⁶

The Keyworth BMD proposal requires construction of several hundred laser stations across the United States. In case of ballistic missile attack, these lasers would be fired at large orbiting mirrors, which would reflect and redirect the laser beams into approaching missiles.⁷ The mirrors could either be placed in permanent orbit or be launched on warning of attack.

The most promising lines of Directed Energy Weapons (DEW) research consist of High Energy Lasers (HEL) and Particle Beam Weapons (PBW). High Energy Lasers consist of a straight beam of laser light, moving at the speed of light.⁸ Particle Beam Weapons fire a magnetically-guided beam of charged or neutral subatomic particles at a target. The beam travels at sublight-speed, but still moves quickly enough to effectively attack moving targets such as BM or high performance aircraft.

6 SIPRI Yearbook 1984: World Armaments and Disarmament, (London, 1984), p. 361.

7 Ibid., p. 361.

8 Ibid.

Thus, from the above discussion, it becomes clear that the SDI is looking at a number of sensing techniques that would use lasers and particle beams to discriminate between warheads and decoys based on their reaction to a hit. The promise of this technique is so great, according to Gardner, "that credible penetration aids would be very, very difficult to build".

Current SDI battle-management projects includes funding research for parallel processing and optical computing as well as developing protocols for a network that is to provide "arbitrary connectivity between any pair of points" in a multilayered defense. The SDI organization also plans to build a ground based test facility for checking data processing and communications for the proposal's defensive systems. It would be akin to the Bell Laboratories tactical software control site, in Madison, N.J., which tested software for antiballistic missile systems. It would also try to stimulate nuclear attacks within models of star wars environments.

Critics of the SDI programme argue that developing reliable software for battle management is not feasible for several reasons:

- 1) Since the task is not clearly defined, it would be impossible to write accurate specifications for the system.

- ii) The magnitude of the system means that there would be errors in the software when it is delivered.
- iii) SDI software could never be fully tested without a nuclear attack. (9)

The most immediate job facing SDI officials is squeezing enough money out of US Congress to meet near-term technical goals. In all, the Pentagon is asking for about 26 billion dollars for the SDI from 1985 to 1989. Although this would be less than 2 percent of the total defense budget, according to Pentagon, the appropriations would consume about 15 percent of DOD's research funds. One area of concern in Congress is the lack of calculations on the ultimate costs of deploying on the source, from several hundred billion dollars to over \$ 1 trillion. The SDI officials themselves are reluctant to estimate the cost. The official SDI position is that because research is still preliminary and no system has been decided upon, any discussion of cost is premature. Moreover, according to them, the cost of such a system would be spread out over many years.

The Legality of SDI

At the very outset it is necessary to note that SDI would inevitably be an aggressive system, as the

capability for defence could not be divorced from the capability for aggression. If total defence against a second strike could be achieved, it would amount to a first strike capability. That is why, even if SDI were technically feasible, the adversary could not permit its implementation and would undoubtedly be prepared to take extreme risks to prevent it.¹⁰

However, if one goes through the text of SDI, it would be quite evident that this activity of the United States clearly violates the legal obligations assumed by it under various multilateral and bilateral treaties. The legal issues that arise are -- (1) whether the development, testing and deployment of a high technology missile defense system is consistent with the ABM Treaty, and if not, whether the terms of the Treaty provide for renegotiation or withdrawal; and (ii) whether the establishment of such a system would constitute a violation of all other treaties relating to outer space.

The Treaty on the limitation of Anti-Ballistic Missile Systems,¹¹ which took effect in 1972, is the only

10 Fred Hiatt, "Air Force Manual Seeks Space Superiority", Washington Post, 15 January 1985.

11 For the text see, Appendix VIII ,pp. 142.

bilateral agreement in full force between the two countries i.e., the United States of America and the Soviet Union, limiting the armaments of the two countries. The main purpose of this Treaty is to eliminate defensive - that is, anti-ballistic missile - systems from the arsenals of the two countries.

The SDI goals set by President Reagan are impossible to achieve without violating the Treaty. According to Article 1(2) of the Treaty: "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..." It is absolutely true that the only purpose of the Treaty is to prevent the parties from even acquiring the capability to establish the nation wide defense against strategic ballistic missiles that the US President seeks. Article V(1) of the Treaty bans testing, development, and deployment of all ABM Systems other than the fixed land based systems. It clearly states:

Each party undertakes not to develop, test, deploy ABM Systems or components which are sea based, air based, space based, or mobile land based.

Article II of the Treaty clearly defines the ABM Systems:

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, (b) ABM launchers (c) ABM Radars... (12)

Despite the clarity of these provisions, in October 1985, the Reagan administration proposed a sweeping new interpretation of the Treaty.¹³ According to this new interpretation, the United States can develop any test space-based anti-ballistic missile systems without violating the Treaty provided they are based on "Other Physical Principles" than those employed by the systems in use when the treaty was concluded in 1972.

As against this new interpretation, it needs to be stated that Article II can not be read so narrowly. The language "to insure fulfilment of the obligation not to deploy ABM Systems and their components except as provided in Article III makes it clear that the statement applies only to those deployments permitted by Article III, i.e., fixed land based systems. Replacement of these by 'Systems

12 For the text see, Appendix VIII, pp. 142.

13 Robert Mc Farlane, Assistant to the President for National Security Affairs, said during an interview that "the terms of the ABM Treaty make clear that on research involving new physical concepts, that activity as well as testing, as well as deployment, indeed, are approved and authorized by the Treaty". 85, Deptt. of State Bulletin, No. 2105, (1985), p. 32.

based on other physical principles' is permitted only by amendments of the Treaty after a consultation between the two parties.

This straight forward meaning of the language of the Treaty is fully supported by the legislative history including the speech of President Reagan in the Senate. Statements made by the President and his officials in presenting the Treaty to the Senate have a great bearing on this interpretation.

The report of Secretary Rogers is most notable in this context. He emphatically stated that "Article 11(1) defines an ABM system in terms of its function as a system to counter strategic ballistic missiles or their elements in flight trajectory", noting that such systems "currently" consists of ABM interceptor missiles, ABM launchers, and ABM radars.¹⁴ This view has been reinforced by executive and congressional commentary since ratification.

In the floor debate on the Treaty, the absolute ban on space activities was accepted without question, as was the ban on deployment of 'exotic' ABM systems, even at permissible fixed land-based ABM sites.¹⁵

14 Report by Secretary of State Rogers, 67 Deptt. of State Bulletin, 3 (1972).

15 See, Congressional Record, August 3, 1972, 92nd Congress, 2nd Session, S.26703 (Statement of Sen Buckley asserting that the Treaty banned all space development of laser ABMS).

Here, it is interesting to note that, the announcement of this broad interpretation of the Treaty by the United States brought a considerable reaction from the NATO European countries, and within the United States as well. There had to be a face-saving retreat from this stand, in which the Secretary of State said that the USA would remain within the narrow interpretation of the Treaty at least for the time being.

There are two other provisions clearly available in this Treaty which are relevant to the SDI programme. Article IX of the ABM Treaty reads: "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".¹⁶

The Treaty thus would not permit the United States to deploy an ABM system in Europe.

Another interesting point is that the Reagan Administration assured the people by saying that "SDI will be non-nuclear and an effective alternative to the nuclear arms race".

Notwithstanding this rhetoric, nuclear technology is becoming increasingly prominent in SDI, posing a

16 See, supra n.12, p.

demonstrable hazard to populations on land. In addition to the X-ray laser and other proposed directed-energy weapons which require a nuclear explosion to operate, the US Administration is funding the development of high power nuclear reactors for use in Star Wars orbiting battle stations. The use of nuclear power in space poses serious public health and safety hazards.

The Limited Nuclear Test Ban Treaty of 1963,¹⁷ prohibits, in Article I, nuclear weapons test-explosions in space. This prohibition protects both life on earth and national assets in space.

Article 4 of the Outer Space Treaty¹⁸ of 1967 requires parties to refrain from placing nuclear weapons or weapons of mass destruction in outer space.

The 1979 Moon Agreement¹⁹ makes further provision for demilitarization of the Moon and other celestial bodies. It prohibits any kind of threat or use of force on the Moon, or the use of Moon in order to commit any such

17 See Appendix I, p. 91.

18 See Appendix II, p. 94.

19 See Appendix VII, p. 130.

act in relation to the earth, the Moon space craft, the personnel of spacecraft or man-made space objects. It also forbids the placing in orbit around or other trajectory to or around the Moon objects carrying nuclear weapons or any other kinds of weapon of mass destruction. According to Article I the reference to the Moon is also meant to include other celestial bodies as well as orbits around them.

Besides, the 1977 Convention on the Prohibition of Environmental Modification Techniques²⁰ obliges each party not to engage in military or any other hostile use of environmental modification techniques having widespread, long lasting or severe effects, and the term 'environmental modification techniques' refers to any technique used for the deliberate manipulation of natural process for changing the dynamics, composition or structure of the earth or of outer space.²¹

Thus, from the above analytical discussion of all multilateral and bilateral treaties it becomes clear that the strategic Defence Initiative Programme of the United

20 See Appendix VI, p. 124.

21 Carl Q. Christol, "The Convention on the Prohibition of Military and Any other Hostile Use of Environmental Modification Techniques" - paper presented to the Hague Symposium, 12 March 1984.

States is in contradiction to all the existing treaties.²² The SDI represents a radical departure from the existing outer space policies of the world community declared in various treaties and UN resolutions i.e. to maintain the outerspace for peaceful purpose in the interest of safety and security of all mankind. Moreover, SDI poses a serious technological and political challenge to the Soviet Union, which the Soviet Union will be forced to respond, precipitating thus a new arms race in outer space. (According to the latest edition of Jane's Weapons System, published at the end of November 1986, the Soviet Union has made notable progress in "Star Wars" research and could soon overtake the US in the field.) The escalation in the super power rivalry does not bode well for world peace and security.

The mutual suspicions of the super powers in the current cold war atmosphere will also lead to the questioning of the good faith of both about their expressions of desire to avoid nuclear war and maintain peaceful co-existence. Each finds evidence of pursuit of strategic

22 Senator Joseph R. Biden Jr., criticized the SDI by saying that "the President wants to have it both ways. He wants to pretend to the American people that he continues to adhere to the notion of arms control while at this very moment doing every thing to undermine arms control", Congressional Quarterly, 28 March 1987, p.558.

superiority or of preparation for a first strike in the strategic modernization and deployment plans and programmes of other. Each is eyed suspiciously by the other as preparing to break out of the treaty restraints for ominous purposes. In the circumstances, it is essential to act to keep emerging technology and its application within agreed bounds of existing treaty provisions where possible, and to reach new understandings and measures where necessary. Both the US and the USSR should abide by all the provisions of the existing treaties and, that only can help the world to remain free from any nuclear war in future.

Chapter - V

RECENT PROPOSALS

The present chapter deals with the two draft treaties proposed by the Soviet Union, in 1981 and 1983, to the General Assembly of the United Nations. These two documents represent the first major statements by one of the super powers since the Soviet-American ASAT talks had broken off in 1979.

The Super power arms competition is reaching out to embrace the heavens because the competitors derive great benefit from space deployments for military purposes.¹ Fierce rivalry and the arms race have cast a shadow over the once calm outer space. This dangerous development has aroused deep concern among the people of the whole world.

Thus prevention of an arms race in outer space is of utmost urgency because, after some space weapons have been tested, restraint of their deployment will become immensely difficult - if not possible. The United Nations General Assembly has repeatedly appealed to the leaders of the Soviet Union and the United States to provide decisive momentum for negotiations on nuclear and space armaments in order to achieve effective agreements on halting

1 Colin S.Gray, "Space and Arms Control : A Skeptical View", America Plans for Space (National Def.Univ. Press, Washington, 1986), p.133.

the arms race, reducing nuclear arsenals and preventing an arms race in outer space.

A number of arms control measures have recently been proposed by numerous governmental and non-governmental agencies. Out of all these - two recent draft proposals made by the Soviet Union are mostly notable. The present chapter will concentrate on these Soviet initiatives.

On 12 August 1981, the Soviet Union tabled at the United Nations a Draft Treaty on the prohibition of the stationing of weapons of any kind in outer space.² The document represented the first major statement by one of the super powers since the Soviet-American ASAT talks had broken off in 1979. The proposal was welcomed on the floor of the General Assembly by the majority of members of the United Nations.

Article I(1) of the Draft Treaty³ provides that - States Parties should undertake not to place in orbit around the earth objects carrying weapons of any kind, install such weapons on celestial bodies, or station such

2 See, UN Doc.A/36/192.

3 For the text of the Draft Treaty of 1981, see the Appendix IX , pp. 148.

weapons in outer space in any other manner, including on reusable manned space vehicles of an existing type or of other types which States Parties may develop in the future.⁴

This obligation is intended to supplement the above mentioned norm in the Outer Space Treaty (prohibiting the placing in orbit around Earth of any objects carrying nuclear weapons or any other kinds of weapons of mass destruction) and make it a universal norm covering weapons of any kind.

Article 2 of the Draft Treaty declares that states parties shall use space objects in strict accordance with international law, including the Charter of the United Nations, in the interest of maintaining international peace and security.

Article 3 provides that each party to the treaty would undertake "not to destroy, damage, disturb 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 I, Para I.

4 Ibid., see Art.1(1).

Finally, Article 4 allows parties to verify the provisions of the Treaty using national technical means and enjoins them from "placing obstacles" in the way of such monitoring.

Clearly, this Draft Treaty is designed to accomplish a basic task -- that of keeping space free from weapons of any kind by establishing a legal regime which excludes the possibility that weapons might be placed in outer space. At the same time it seeks to protect space objects from hostile action.

One may detect some drawbacks in this proposal too. First, the proposal fails to require the destruction of current ASAT systems, leaving open their possible future use. Secondly, the proposal does not ban the testing and deployment of ASATs or other weapon systems. Finally, Article I of the Draft Treaty does not propose any restriction on other potential ground-based systems, including lasers.

The Draft Treaty was transmitted to the Committee on Disarmament (now the Conference on Disarmament) more than four years ago, but yet has not been considered. Thus, it appears that the first initiative by the Soviet Union in this regard has failed.

The 1983 Soviet Proposal

In August 1983, the Soviet Union submitted to the United Nations a new proposal to take a further step immediately by concluding a treaty on the prohibition of the use of force in outer space and from space against the Earth.⁵

In the preparation of the draft for such a treaty, the Soviet Union re-examined and took account of the existing norms of international law applicable to the question of preventing an arms race in outer space and its militarization and also took account of the suggestions and considerations put forward by other states during the discussion of the question at sessions of United Nations organs and the Committee on Disarmament.

Article I of the 1983 Draft Treaty⁶ provides:

"It is prohibited to resort to the use or threat of force in outer space and the atmosphere and on the Earth through the utilization, as instruments of destruction, of space

5 See, UN Doc. A/38/194.

6 For the text see Appendix X ,pp.151.

objects in orbit around the Earth, on celestial bodies or stationed in space in any other manner". It further prohibits the use or threat of force against space objects in orbit around the Earth, on celestial bodies or stationed in outer space in any other manner.

Article 2 makes this provision concrete by calling for a comprehensive ban on the testing, deployment, and use of "space objects orbiting the earth, stationed on celestial bodies, or deployed in space in any other manner as a means for hitting any targets on the Earth, in the atmosphere, and in space." It urges states: "Not to test or create any anti-satellite systems and to destroy any anti-satellite systems that they may already have". Again it specifically calls upon states "not to test or use manned spacecraft for military, including any anti-satellite purposes".⁷

Article 4 of the 1983 Draft Treaty clarifies that "for the purpose of providing assurance of compliance with the provisions of this Treaty, each State Party shall use the national technical means of verification at its disposal in a manner consistent with generally recognized

7 See Article 2, paras 4 and 5 of the draft as given in Appendix.

principles of international law".⁸

The Soviet 1983 Draft Treaty contains a few provisions which the United States and other Western nations should find objectionable. First, it is uncertain how either the United States or the Soviet Union could verify the dismantling of current ASAT systems. Second, it contains a provision compelling signatories "not to test or use manned space craft for military, including any anti-satellite purposes". This stipulation could unduly restrict use of the shuttle and other manned craft for defensive and nonaggressive missions. Third, Article 6 of the 1983 proposal allows parties to "adopt any internal measures which it considers necessary ... to prohibit and prevent any activity contravening the provisions of this treaty which comes under its jurisdiction or control, wherever it may be". Although it speaks of 'internal measures', Article 6 could provide a loophole for all kinds of broad self-defense actions justified as exercises of state sovereignty.

It should be further noted that in submitting the Draft Treaty in August 1983, the Soviet Union declared

8 Supra note 6.

at the highest level that it was undertaking not to be the first to place any anti-satellite weapons in outer space. The USSR delegations to the thirty-seventh and thirty-eighth sessions of the United Nations General Assembly also declared that the USSR was ready, if they would be helpful, to conduct separate negotiations on anti-satellite systems, including bilateral negotiations with the United States, as a step towards solving the general problem of prohibiting the use of force in or from outer space.⁹

On 14 April 1983 the delegation of France also submitted a draft entitled, "Prevention of an Arms Race in Outer Space" which also provided certain provisions like the Soviet draft of 1983.¹⁰ Indeed, the Soviet Draft Treaty of 1983 was welcomed by many delegates of various countries of the world at the thirty-eighth session of the UN General Assembly.

In resolution 38/70, the General Assembly requested the then Committee on Disarmament to intensify its

9 Doc.CD/476, dt. 20/3/1984, submitted by the delegation of the USSR entitled, "Draft Treaty on the Prohibition of the Use of Force in Outer Space and from Space against the Earth".

10 Doc.CD/375, dt. 14/4/1983.

consideration of the question of the prevention of an arms race in outer space taking into account the Soviet draft. Only one delegation, that of the United States of America, voted against the resolution.

Chapter - VI

CONCLUSION

"Peace cannot be kept by force.
It can only be achieved by
understanding". - Albert Einstein

We are living in a complicated and uneasy world. Nothing is more important these days than to ward off the threat of nuclear war hanging over mankind, to stop the arms race on Earth, and to prevent its spreading to Outer Space. At this dangerous juncture what is imperative is a basic re-conceptualization of peace and security. We must change the focus away from the military imperative and the predominance of organised violence, towards the satisfaction of basic human needs, material and spiritual, as the most fundamental asset of a peaceful world. In reordering of our priorities and our understanding of the required change, both the military and the human-political dimensions of peace and security have to be taken into consideration.

At the end of World War II, the need for effective solutions to guarantee peace indicated that the survival of mankind was at stake. In the 1960's, in view of the gradual relaxation of international tension, a number of arms control and disarmament agreements were concluded. The United Nations Charter contains the main provisions for maintaining international peace and security. It is

the framework for all subsequent treaties and other international instruments and documents concerning collective measures for the prevention and removal of threats to peace. International cooperation in the exploration and use of outer space is implemented, both within the framework of international organisations that are most directly responsible for pooling the efforts of states in space exploration (the UN and some of its specialised agencies); and within the framework of international organisations whose principal objective is to develop cooperation in the most diverse area of exploration and use of outer space for peaceful purposes.

Since 1958, one year after the first man-made satellite was launched into outer space, the question of outer space and its potential uses has been actively discussed in various fora of the United Nations. The General Assembly continues to be the main 'deliberative' organ of the United Nations in the field of disarmament.

On 13 December 1958, the General Assembly adopted a 20-nation sponsored resolution (1348 (XIII)) on the Question of the Peaceful Uses of Outer Space. On the basis of the report of the Ad Hoc Committee, the permanent UN Committee on the Peaceful Uses of Outer Space

was created on 12 December 1959 when the General Assembly adopted Resolution 1472 (XIV) with 24 members to serve until 31 December 1961.

On 22 December 1960, President Eisenhower addressed the General Assembly and proposed for outer space no claims of sovereignty, no warlike activities, no weapons of mass destruction, but rather a regime of international cooperation in peaceful benefits so that outer space would not be "another fearful dimension of the arms race..." (Deptt. of State Bulletin, 10/10/1960, p.554).

When the United Nations Committee on the Peaceful Uses of Outer Space began functioning in 1961, it worked through two sub committees: the Scientific and Technical, and the Legal Subcommittee. The Outer Space Affairs Division became the permanent professional secretariat which has steadily grown so that it now represents 53 nations. This institutional structure was used in negotiating the basic Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies (10 October 1977) and four subsequent space treaties expanded its provisions concerning astronauts and space objects, liability for damage, registration, and the Moon. Thus, between the

years of 1966 and 1979, the present multilateral legal basis for the exploration and peaceful uses of outer space was established by international agreements negotiated primarily by COPUOS and its Legal Sub-committee. Out of these five treaties, four have already entered into force.

In the agenda of the thirty sixth session (1981) of the General Assembly, an item called Conclusion of a Treaty on the Prohibition of Stationing of Weapons of any kind in outer space was also included.¹ It was done so on the initiative of the Soviet Union which also provided the text of a draft treaty on the subject. At its thirty-seventh session, the General Assembly succeeded in adopting a single resolution 37/83 of 9 December 1982, requesting the Geneva Committee on Disarmament to consider the question of preventing an arms race in outer space as a matter of priority. In 1983, the Soviet Union submitted a Draft Treaty on the prohibition of the use of force in outer space and from space against the Earth. In its resolution 38/80, the General Assembly called upon all states, in particular those with major space capabilities, "to undertake prompt negotiations under the auspices of the United Nations with a view to reaching agreement or agreements designed to halt the militarization of outer space

1 UN Doc. A/36/192, 20 August 1981.

and to prevent an arms race in outer space, thus contributing to this achievement of the internationally accepted goal of ensuring the use of outer space exclusively for peaceful purposes".

In 1985, the Conference on Disarmament (CD) established an Ad Hoc Committee on the Prevention of an Arms Race in Outer Space for the purpose of looking into the matter of international concern. On 29 August 1986, the Ad Hoc Committee concluded its work on the issue. In its report, the Committee stressed the importance of strict compliance with existing agreements. The importance and urgency of preventing an arms race in outer space and readiness to contribute to that objective were recognized, and it was consequently agreed that no effort should be spared to ensure that substantive work on the item should continue at the next session of the conference.

In the 1986 conference of the Ad Hoc Committee on the Prevention of an Arms Race in Outer Space, some delegates noted with concern that there was a real threat that research and development programmes of the two major powers and the dynamics of their military competition were being extended into outer space, leading to an irreversible competition in the field of space weaponry. Furthermore, they emphasized that an arms race in outer space

would undermine existing agreements relating to outer space as well as arms limitation, apart from jeopardizing the disarmament process as a whole. Accordingly, they stressed the urgency of the task of preventing the 'weaponization' of space. The Committee is still continuing its work in this regard. In the 1986 report of the Committee on the Peaceful Uses of Outer Space, no specific decision has been taken in stopping the arms race in outer space.² The twenty-fifth session of the Legal Subcommittee in 1986 discussed only on the topic of delimitation and definition of outer space, but there was no mention on arms race in its agenda.

The United Nations General Assembly has repeatedly appealed to the leaders of the USSR and the United States to provide decisive momentum for negotiations on nuclear and space armaments in order to achieve effective agreements on halting the arms race, reducing the nuclear arsenals and preventing an arms race in outer space.

In November 1985, the heads of states of the US and the USSR met at Geneva for the purpose of making an effective arms control agreement. But the meeting failed

2 COPUOS, GAOR, 41st Session, Suppl.20 (A/41/20).

to do anything in regard to the present race in outer space.

Again on 11 and 12 October 1986 a meeting was held between Ronald Reagan and Mikhail Gorbachev in Reykjavik, Iceland. Although no final agreement was achieved, reportedly substantive progress on a broad spectrum of arms limitation and disarmament issues was made during the talks.

A great deal, it is true, depends upon the United States and the USSR in matters relating to disarmament and security. But, it is also true that what is required in order to achieve progress in disarmament is not only the efforts of the Soviet Union and the United States, but also a purposeful work on the part of the entire international community, whose political will is expressed in the United Nations.

The matter requires action, not merely lofty speeches which are not followed by concrete action. The world is tired of talk. At present what the world needs is real progress in disarmament in all the fields.

"The world today is at a crossroads; one road leads to utter hopelessness and despair, the other road leads to utter destruction and extinction. God grant us the wisdom to chose the right road". (Woody Allen).

A P P E N D I C E S

APPENDIX-I

Treaty Banning Nuclear Weapon Tests in the
Atmosphere, In Outer Space, and Under Water

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 radio-active 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 explosions, at any place under its jurisdiction or control;

(a) in the atmosphere; beyond its limits, including outer space; or underwater, 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 Governments 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

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 Governments 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 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 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.

For the Government of the United Kingdom of Great Britain and Northern Ireland.

For the Government of the Union of Soviet Socialist Republics.

APPENDIX-II

TREATIES ADOPTED BY THE GENERAL ASSEMBLY

Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies*

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 11 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 11 October 1963,

* Adopted by the General Assembly at its 1499th plenary meeting, on 11 December 1966 (resolution 2222 (XXI), annex).

Taking account of United Nations General Assembly resolution 110 (II) of 2 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 cooperation 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 of 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 international 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 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 Party 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 connection 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 organizations 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 an 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 triplicate, at the cities of London, Moscow and Washington, the twenty-seventh day of January, one thousand nine hundred and sixty-seven.

Appendix-IIIAgreement on the Rescue of Astronauts, the Return of Astronauts and the Return of Objects Launched into Outer Space*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 I

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;

* Adopted by the General Assembly at its 1640th plenary meeting on 19 December 1967 (resolution 2345 (XXII), annex).

(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 affect 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 the launching authority and with assistance from that authority if requested, to 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 intergovernmental organization is responsible for launching, that organization, provided 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 Depositary Governments.

3. This Agreement shall enter into force upon the deposit of instruments of ratification by five Governments including the Governments designated as Depositary 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 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 an accession to this Agreement, the date of its entry into force and other notices.

6. This Agreement shall be registered by the Depositary 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 State 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 Depositary 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 Depositary Governments. Duly certified copies of this Agreement 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 Agreement.

DONE in triplicate, at the cities of London, Moscow and Washington, the twenty-second day of April, one thousand nine hundred and sixty-eight.

Appendix-IVConvention on International Liability
for Damage Caused by Space Objects*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 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.

Relieving that the establishment of such rules and procedures will contribute to the strengthening of international co-operation 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;

* Adopted by the General Assembly at its 1998th plenary meeting, on 11 November 1971 (resolution 2777 (XXVI), annex).

(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 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 apportioned 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 Nation 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 areas 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 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 XVII

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 Commission 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 centres, 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 XXIX 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 State 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. 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 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 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 of 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 State 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 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 Convention shall be transmitted by the Depositary Governments to the Governments of the signatory and acceding States.

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

DONE in triplicate, at the cities of London, Moscow and Washington, this twenty-ninth day of March, one thousand nine hundred and seventy-two.

Convention on Registration of Objects
Launched into Outer Space *

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 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 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

* Adopted by the General Assembly at its 2280th plenary meeting, on 11 November 1974 (resolution 3235 (XXIX), annex.).

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 a 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 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 the 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 of and 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 the 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 in the fourteenth day of January, one thousand nine hundred and seventy-five.

Appendix- VIConvention on the Prohibition of Military
or any other Hostile Use of Environmental
Modification Techniques

Signed at Geneva on 18 May 1977
Entered into force on 5 October 1978
Depositary : UN Secretary-General

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 inter-relationship 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 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 cooperation 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 cooperate 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 cooperation pursuant in 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 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 cooperate 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 Depositary, 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 Depositary of instruments of acceptance by a majority of States parties. Thereafter it shall enter in 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 Depositary 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 Depositary, the convening of a conference with the same objectives.

3. If no conference has been convened pursuant to paragraph 2 of this article within ten years following the conclusion of a previous conference, the Depositary shall solicit the views of all States Parties to this Convention, concerning the convening of such a conference. If one third or ten of the States Parties, whichever number is less, respond affirmatively, the Depositary shall take immediate steps to convene the conference.

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 Depositary 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 of the receipt of other notices.

6. This Convention shall be registered by the Depositary 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

Consultative Committee of Experts

1. The Consultative Committee of Experts shall undertake to make appropriate findings of fact and provide expert view, 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.

Agreement Governing the Activities of
States on the Moon and Other Celestial
Bodies*

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 cooperation 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 Astronauts and 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 relation 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:

* Adopted by the General Assembly at its 89th plenary meeting, on 5 December 1979 (resolution 34168, annex).

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 on 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 2

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, a/ 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 3

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 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

a/ General Assembly resolution 2625 (XXV), annex.

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 4

1. The 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, 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 and 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 cooperation 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 inter-governmental organizations.

Article 5

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 the 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.

3. In carrying out activities under this Agreement, States Parties shall promptly inform the Secretary-General, as well as the public and the international scientific community, of any phenomena they discover in outer space, including the Moon, which could endanger human life or health, as well as of any indication of organic life.

Article 6

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.

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 7

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, by 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 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 upon in consultation with the competent bodies of the United Nations.

Article 8

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 15, paragraphs 2 and 3, of this Agreement.

Article 9

1. States Parties may establish manned and unmanned stations on the Moon. A State Party establishing a station shall use only that areas 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 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 on Principles Governing the activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies.

Article 10

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 in 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 11

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, international inter-governmental 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 its surface or subsurface, shall not create a right of ownership over the surface or the subsurface of the Moon or any other areas thereof. The foregoing provisions are without prejudice to the international regime 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 the 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 regime, 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 18 of this Agreement.

6. In order to facilitate the establishment of the international regime 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 regime 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;
- (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 exploration of the Moon, shall be given special consideration.

8. 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 6, paragraph 2, of this Agreement.

Article 12

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 5 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 the State Party concerned.

Article 13

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.

Article 14

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 18 of this Agreement.

Article 15

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, 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 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 States Parties, the Parties concerned shall take all measures to settle the dispute by other peaceful means of their choice appropriate to the circumstances and the nature of the dispute. If difficulties arise in connection 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.

Article 16

With the exception of articles 17 to 21, references in this Agreement to States shall be deemed to apply to any international intergovernmental organisation 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 17

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 18

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 Parties to review this Agreement. A review conference shall also consider the question of the implementation of the provisions of article 11, 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 19

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 20

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.

Article 21

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 WHEREOF the undersigned, being duly authorized thereto by their respective Governments, have signed this Agreement, opened for signature at New York on the eighteenth day of December, one thousand nine hundred and seventy-nine.

Treaty Between the USA and the USSR on the
Limitation of Anti-Ballistic Missile Systems
(ABM Treaty)

Signed at Moscow on 26 May 1972

Entered into force on 3 October 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 favourable 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 towards 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 purposes 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 entered 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, not 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 as 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.

3. Each party undertakes not to use deliberate concealment measures which impede verification by national technical means of compliance with the provisions of this Treaty. This obligation shall not require changes in current construction, assembly, conversion, or overhaul practices.

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.

Article XVI

1. This Treaty shall be subject to ratification in accordance with the constitutional procedures of each Party. The Treaty shall enter into force on the day of the exchange of instruments of ratification.

2. This Treaty shall be registered pursuant to Article 102 of the Charter of the United Nations.

Appendix-IX

Draft Treaty on the Prohibition of the
Stationing of Weapons of Any Kind in
Outer Space

August 12, 1981

The States Parties to this treaty,

Motivated by the goals of strengthening peace and international security,

Proceeding on the basis of their obligations under the Charter of the United Nations to refrain from the threat or use of force in any manner inconsistent with the Purposes of the United Nations,

Endeavouring not to allow outer space to become an arena for the arms race and a source of strained relations between States.

Have agreed on the following:

Article I

1. 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 on reusable manned space vehicles of an existing type or of other types which States Parties may develop in the future.

2. Each State Party to this 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.

Article 2

States Parties shall use space objects in strict accordance with international law, including the Charter of the United Nations, in the interest of maintaining international peace and security and promoting international cooperation and mutual understanding.

Article 3

Each State Party undertakes not to destroy, damage, disturb 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 1, of this treaty.

Article 4

1. In order to ensure compliance with the provisions 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.

2. Each State Party undertakes not to place obstacles in the way of the national technical monitoring facilities of other States Parties performing their functions in accordance with paragraph 1 of this article.

3. In order to promote the implementation of the purposes and provisions of this treaty, the States Parties shall, when necessary, consult each other, make inquiries and provide information in connection with such inquiries.

Article 5

1. Any State Party to this treaty may propose amendments to this treaty. The text of each proposed amendment shall be submitted to the depositary, who shall immediately transmit it to all States Parties.

2. The amendment shall enter into force for each State Party to this treaty accepting the amendment when the instruments of acceptance of the amendment by the majority of States Parties have been deposited with the depositary. Thereafter, for each remaining State Party, the amendment shall enter into force on the date when that Party deposits its instrument of acceptance.

Article 6

This treaty shall be of unlimited duration.

Article 7

Each State 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 notify the Secretary-General of the United Nations of the decision adopted six months before withdrawing from the treaty. Such notice shall include a statement of the extraordinary events which the notifying State Party considers to have jeopardized its supreme interests.

Article 8

1. This treaty shall be open for signature by all States at the United Nations Headquarters in New York. 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 Secretary-General of the United Nations.

3. This treaty shall enter into force between the States which have deposited instruments of ratification upon the deposit with the Secretary-General of the United Nations 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 treaty, it shall enter into force on the date of the deposit of their instruments of ratification or accession.

5. The Secretary-General of the United Nations 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, the date of entry into force of this treaty and other notices.

Article 9

This treaty, 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 transmit duly certified copies thereof to the Governments of the signatory and acceding States.

Appendix - X

Draft Treaty on the Prohibition of the
Use of Force in Outer Space and from
Space Against the Earth

August 19, 1983

The States Parties to this Treaty,

Guided by the principle whereby Members of the United Nations shall refrain in their international relations from the threat or use of force in any manner inconsistent with the purposes of the United Nations,

Seeking to avert an arms race in outer space and thus to lessen the danger to mankind of the threat of nuclear war,

Desiring to contribute towards attainment of the goal whereby the exploration and utilization of outer space, including the Moon and other celestial bodies, would be carried out exclusively for peaceful purposes,

Have agreed on the following:

Article 1

It is prohibited to resort to the use of threat of force in outer space and the atmosphere and on the Earth through the utilization, as instruments of destruction, of space objects in orbit around the Earth, on celestial bodies or stationed in space in any other manner.

It is further prohibited to resort to the use or threat of force against space objects in orbit around the Earth, on celestial bodies or stationed in outer space in any other manner.

Article 2

In accordance with the provisions of Article 1, States Parties to this Treaty undertakes

1. Not to test or deploy by placing in orbit around the Earth or stationing on celestial bodies or in any other manner any space-based weapons for the destruction of objects on the Earth, in the atmosphere or in outer space,

2. Not to utilize space objects in orbit around the Earth, on celestial bodies or stationed in outer space in any other manner as means to destroy any targets on the Earth, in the atmosphere or in outer space.

3. Not to destroy, damage, disturb the normal functioning or change the flight trajectory of space objects of other States.

4. Not to test or create new anti-satellite systems and to destroy any anti-satellite systems that they may already have.

5. Not to test or use manned spacecraft for military, including anti-satellite, purposes.

Article 3

The States Parties to this Treaty agree not to assist, encourage or induce any State, group of States, international organization or natural or legal person to engage in activities prohibited by this Treaty.

Article 4

1. For the purpose of providing assurance of compliance with the provisions of this Treaty, each State Party shall use the national technical means of verification at its disposal in a manner consistent with generally recognised principles of international law.

2. Each State Party undertakes not to interfere with the national technical means of verification of other States Parties operating in accordance with paragraph 1 of this article.

Article 5

1. The States Parties to this Treaty undertake to consult and cooperate with each other in solving any problems

that may arise in connection with the objectives of the Treaty or its implementation.

2. Consultations and cooperation as provided in paragraph 1 of this article may also be undertaken by having recourse to appropriate international procedures within the United Nations and in accordance with its Charter. Such recourse may include utilization of the services of the Consultative Committee of States Parties to the Treaty,

3. The Consultative Committee of States Parties to the Treaty shall be convened by the depositary within one month after the receipt of a request from any State Party to this Treaty. Any State Party may nominate a representative to serve on the Committee.

Article 6

Each State Party to this Treaty undertakes to adopt such internal measures as it may deem necessary to fulfil its constitutional requirements in order to prohibit or prevent the carrying out of any activity contrary to the provisions of this Treaty in any place whatever under its jurisdiction or control.

Article 7

Nothing in this Treaty shall affect the rights and obligations of States under the Charter of the United Nations.

Article 8

Any dispute which may arise in connection with the implementation of this Treaty shall be settled exclusively by peaceful means through recourse to the procedures provided for in the Charter of the United Nations.

Article 9

This Treaty shall be of unlimited duration.

Article 10

1. This Treaty shall be open to all States for signature at the United Nations Headquarters in New York. 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 accession shall be deposited with the Secretary-General of the United Nations.

3. This Treaty shall enter into force between the States which have deposited instruments of ratification upon the deposit with the Secretary-General of the United Nations of the fifth instrument of ratification, provided that such instruments have been deposited by the Union of Soviet Socialist Republics and the United States of America.

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 Secretary-General of the United Nations 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, the date of entry into force of this Treaty as well as other notices.

Article 11

This Treaty, 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 duly certified copies thereof to the Governments of the signatory and acceding States.

Pravda, August 22, 1983

Note: The Draft Treaty was submitted to the UN Secretary-General on August 19, 1983.

Appendix-XIThe Conclusion of President Reagan's Speech
on Defense Spending and Defensive Technology*

Administration of Ronald Reagan, March 23, 1983

Now, thus far tonight I've shared with you my thoughts on the problems of national security we must face together. My predecessors in the Oval Office have appeared before you on other occasions to describe the threat posed by Soviet power and have proposed steps to address that threat. But since the advent of nuclear weapons, those steps have been increasingly directed toward deterrence of aggression through the promise of retaliation.

This approach to stability through offensive threat has worked. We and our allies have succeeded in preventing nuclear war for more than three decades. In recent months, however, my advisers, including in particular the Joint Chiefs of Staff, have underscored the necessity to break out of a future that relies solely on offensive retaliation for our security.

Over the course of these discussions, I've become more and more deeply convinced that the human spirit must be capable of rising above dealing with other nations and human beings by threatening their existence. Feeling this way, I believe we must thoroughly examine every opportunity for reducing tensions and for introducing greater stability into the strategic calculus on both sides.

One of the most important contributions we can make is, of course, to lower the level of all arms, and particularly nuclear arms. We're engaged right now in several negotiations with the Soviet Union to bring about a mutual reduction of weapons. I will report to you a week from tomorrow my thoughts on that score. But let me just say, I'm totally committed to this course.

If the Soviet Union will join with us in our effort to achieve major arms reduction, we will have succeeded

* "Weekly Compilation of Presidential Documents",
March 28, 1983, vol.19, no.12, pp.423-66.

in stabilizing the nuclear balance. Nevertheless, it will still be necessary to rely on the specter of retaliation, on mutual threat. And that's a sad commentary on the human condition. Wouldn't it be better to save lives than to avenge them? Are we not capable of demonstrating our peaceful intentions by applying all our abilities and our ingenuity to achieving a truly lasting stability? I think we are. Indeed, we must.

After careful consultation with my advisers, including the Joint Chiefs of Staff, I believe there is a way. Let me share with you a vision of the future which offers hope. It is that we embark on a program to counter the awesome Soviet missile threat with measures that are defensive. Let us turn to the very strengths in technology that spawned our great industrial base and that have given us the quality of life we enjoy today.

What if free people could live secure in the knowledge that their security did not rest upon the threat of instant U.S. retaliation to deter a Soviet attack, that we could intercept and destroy strategic ballistic missiles before they reached our own soil or that of our allies?

I know this is a formidable, technical task, one that may not be accomplished before the end of this century. Yet, current technology has attained a level of sophistication where it's reasonable for us to begin this effort. It will take years, probably decades of effort on many fronts. There will be failures and setbacks, just as there will be successes and breakthroughs. And as we proceed, we must remain constant in preserving the nuclear deterrent and maintaining a solid capability for flexible response. But isn't it worth every investment necessary to free the world from the threat of nuclear war? We know it is.

In the meantime, we will continue to pursue real reductions in nuclear arms, negotiating from a position of strength that can be ensured only by modernizing our strategic forces. At the same time, we must take steps to reduce the risk of a conventional military conflict escalating to nuclear war by improving our non-nuclear capabilities.

America does possess -- now -- the technologies to attain very significant improvements in the effectiveness

of our conventional, non-nuclear forces. Proceeding boldly with these new technologies, we can significantly reduce any incentive that the Soviet Union may have to threaten attack against the United States or its allies.

As we pursue our goal of defensive technologies, we recognize that our allies rely upon our strategic offensive power to deter attacks against them. Their vital interests and ours are inextricably linked. Their safety and ours are one. And no change in technology can or will alter that reality. We must and shall continue to honour our commitments.

I clearly recognize that defensive systems have limitations and raise certain problems and ambiguities. If paired with offensive systems, they can be viewed as fostering an aggressive policy, and no one wants that. But with these considerations firmly in mind, I call upon the scientific community in our country, those who gave us nuclear weapons, to turn their great talents now to the cause of mankind and world peace, to give us the means of rendering these nuclear weapons impotent and obsolete.

Tonight, consistent with our obligations of the ABM treaty and recognizing the need for closer consultation with our allies, I'm taking an important first step. I am directing a comprehensive and intensive effort to define a long-term research and development program to begin to achieve our ultimate goal of eliminating the threat posed by strategic nuclear missiles. This could pave the way for arms control measures to eliminate the weapons themselves. We seek neither military superiority nor political advantage. Our only purpose -- one all people share -- is to search for ways to reduce the danger of nuclear war.

My fellow Americans, tonight we're launching an effort which holds the promise of changing the course of human history. There will be risks, and results take time. But I believe we can do it. As we cross this threshold, I ask for your prayers and your support.

Thank you, good night, and God bless you.

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