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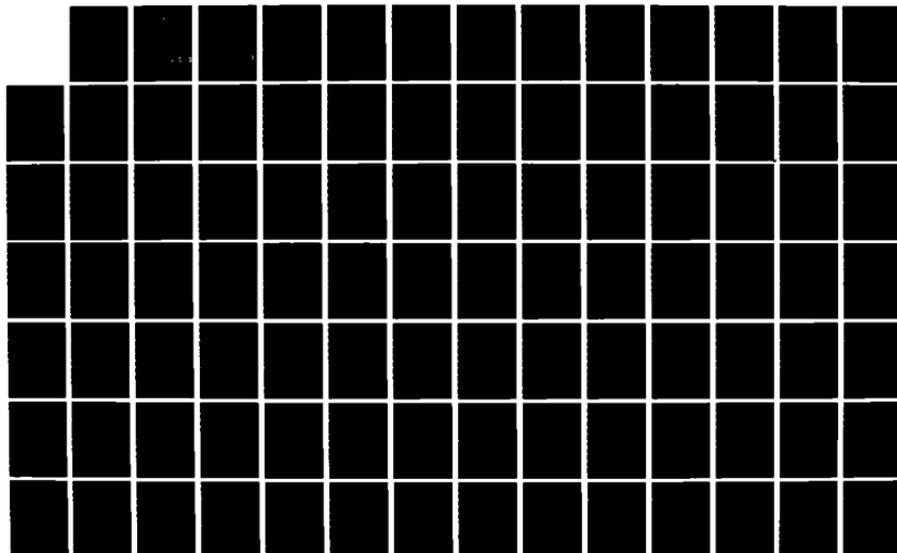
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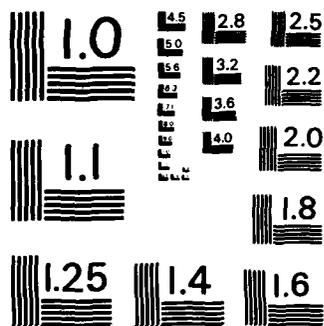
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DEVELOPMENT OF  
SPACE LAW

THESIS

Gregory T. Noble  
First Lieutenant, USAF

AFIT/GLM/ LSM/85S-57

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USE OF SPACE DEPENDENT ON DEVELOPMENT  
OF SPACE LAW

THESIS

Presented to the Faculty of the School of Systems and Logistics  
of the Air Force Institute of Technology  
Air University  
In Partial Fulfillment of the  
Requirements for the Degree of  
Master of Science in Logistics Management

Gregory T. Noble, B.S.  
First Lieutenant, USAF

September 1985

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Gregory T. Noble

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Abstract

This research effort presents a brief background of the international law and legal bodies that exist for regulating the activities of man in space. This research additionally identifies specific areas where specified space law does not apply or where serious questions about legal applicability exist. One specific area, space militarization, is highlighted with the current legal deficiencies pertaining to this activity discussed in detail. Proposals are presented for dealing with the question of legal regulations over space militarization. These proposals, from the Soviet Union, United States, France and other lesser proposals, are evaluated in light of the problems they purport to solve. Recommendations are presented on what legal actions should be pursued in the space militarization issue, from the international and the U.S. national perspectives. Although recommendations are made, the overall conclusion is that legal control of space militarization in most respects is infeasible and the future of arms in space is unlikely to differ significantly from the history of arms on earth.

# USE OF SPACE DEPENDENT ON DEVELOPMENT OF SPACE LAW

## I. Introduction

Space has become and is expected to continue to be an area busy with human activity. With many different nations, or even private groups, conducting a multitude of tasks for self benefit, the very real potential exists for conflict of interests over the proper uses of space. These conflicts could hamper continued exploitation of space or even worse, they could lead to hostile confrontation between nations. The general issue to be confronted is how the use of space can be best realized through some legal order.

### Problem Statement

Contrary to popular belief, there are many legal precedents, binding treaties and the actions of international organizations which already form what might be called a legal infrastructure and which significantly impact activities in space. However, the specific problem that must be resolved is whether this legal infrastructure is sufficient to perform the jurisdictional duties that are required in the face of growing space activities. If it is not, what legal rules or bodies should be incorporated? The goals in this research effort are to determine the need for a comprehensive legal order in space, to determine what legal deficiencies exist in space law and to determine what alternatives exist for correcting them. The scope of this research is

meant to include identifying the components of the existing legal infrastructure, determining their capabilities, contrasting these laws or international bodies against specific problems, assessing the need for new or modified legal regulations or bodies and presenting proposals for their creation. This research will be limited to an examination of legal principles applicable only to man's use of space. No attempt will be made to examine the potential impact of earth originated laws on other life, should it ever be encountered, nor will any discussion be made concerning the theoretical need for laws which would justify man's activities in space to other civilizations that might be encountered extraterrestrially. Understanding the present need for law in space first requires some background concerning existing legal arrangements.

#### Background

Before proceeding with a review of current literature, some key terms must be defined:

a. geostationary orbit--an orbit above the earth over the equator at an altitude of 22,300 nm. Objects in geostationary (also referred to as stationary) orbit move around the earth at a velocity sufficient enough relative to the earth's rotation to allow them to remain fixed above a given point on the earth at all times.

b. legal infrastructure--legal framework embodied either by binding treaties or regulatory international agencies with authority to oversee space activity.

c. orbit/spectrum--combination of geostationary orbital position and radio spectrum frequency being used by a satellite.

d. space debris--in international legal terms, this is largely undefined. It is used here to mean inactive, disabled or abandoned spacecraft or the various parts of such craft which may become detached or ejected into space by accident or design.

Treaties.

International. The primary legal document for all space law and the foundation for all international arrangements dealing with space is the 1967 "Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, Including the Moon and Other Celestial Bodies." (This treaty is also referred to as the Outer Space Treaty or the 1967 OST. A copy of the text of this treaty may be found in Appendix A). This treaty provides some very fundamental principles which have influenced the direction of space law. As its primary principle, the 1967 OST stresses freedom of space and celestial bodies from national sovereignty. Article II of the treaty states that "outer space, the moon and other celestial bodies are not subject to national appropriation by claim of sovereignty, by means of use or occupation, or by any other means." Another key principle is the prohibition against placement of "weapons of mass destruction" in orbit. Following very closely to this is the general concept of the peaceful use of space for the benefit of all nations (24:56).

Four other space treaties have been adopted by the General Assembly of the United Nations, three of which find their origins in specific articles of the 1967 OST. (Copies of the texts of all four of these treaties may also be found in Appendix A). The "Agreement on the Rescue of Astronauts, the Return of Astronauts, and the Return of

Objects Launched into Outer Space" was adopted in 1968 and was an outgrowth of Article V (22:90). This agreement pledges aid and assistance to all astronauts in distress by any party to the treaty able to render it. Signatory nations are also under agreement to recover and return space objects which accidentally reenter territory under their control to the launching state if their return is requested (13:407). Article VII of the 1967 OST was expanded and in 1973 the "Convention on International Liability for Damage Caused by Space Objects" was adopted (22:90). This treaty establishes the requirement for payment of claims for damages caused by the space objects of launching states who are parties to the convention (13:407) to claimant states (60:51-56). Finally, Article VIII of the Outer Space Treaty led to the "Convention on Registration of Objects Launched into Outer Space" in 1976 (22:90). This agreement requires launching states to "register launches and to notify the U.N. Secretary-General" of basic spacecraft orbital element information and spacecraft "function" (13:407). Each of the three treaties derived from the 1967 OST covers important functional areas and provides critical bases for international agreement on space activity. The fourth treaty is much more recent, controversial and has been ratified by only five nations. The "Agreement Governing the Activities of States on the Moon and Other Celestial Bodies," known as the Moon Treaty, was adopted in 1979 and went into force only in July 1984. Its major provisions call for totally peaceful uses of the moon, declare "the Moon and its natural resources are the 'common heritage of mankind'," and require establishment of an "international agency to manage lunar resources" at the time of exploitation (13:406-407).

These five treaties represent the core of international space law. The 1967 OST and the three treaties following from it have been widely ratified and are binding on many nations; significantly they have been ratified by both the Soviet Union and the United States. Even the Moon Treaty, which has not been widely ratified and therefore is not binding on more than a handful of nations, represents approval of an "emerging legal concept." The process of treaty adoption requires that the terms of any proposed treaty, convention or agreement must "reach unanimous consensus" in the United Nations Committee on the Peaceful Uses of Outer Space (UNCOPUOS) before it can even be presented to the General Assembly of the United Nations (U.N.) for a vote. If it is passed in the General Assembly, it then must be signed and ratified by each nation before that nation is bound by the terms of the treaty (13:406). Although neither the United States nor the Soviet Union has ratified the Moon Treaty, its "unanimous consensus" in committee (and in the General Assembly (13:406)), especially when taken together with the ratified treaties, indicates a significant willingness to work towards achieving an international legal structure which is not based on unilateral benefits. The importance of the superpowers reaching agreement on international legal principles for space can be overemphasized, but it certainly should not be underestimated and should be regarded as a measure of the importance attached to the building of space law (22:89). This superpower acceptance is crucial but it must be remembered that these treaties are international in scope. Added to this body of international space law are three bilateral treaties affecting the space environment.

Bilateral. The first of these treaties, the Nuclear Test Ban Treaty, initially a bilateral agreement, was an early attempt to free space from the presence and use of nuclear weapons. This treaty was a step toward stability and peaceful use of outer space, but it was also an early effort to show responsibility for the protection of the space environment. In effect, this pollution control treaty sought to limit damage and contamination of the upper atmosphere and space (38:189). The second treaty, the "Interim Agreement Between the United States of America and the Union of Soviet Socialist Republics on Certain Measures With Respect to the Limitation of Strategic Offensive Arms," or SALT I, ratified a principle between the superpowers that later became part of International Telecommunications Union regulations. That principle was the non-"interference with the others' 'national technical means'" for arms control monitoring (10:19). This principle, in a larger context, is crucial to the proper operation of international communications satellites. The third treaty, actually co-negotiated with the SALT I Accord, is the "Limitation of Anti-Ballistic Missile Systems," or the ABM Treaty of 1972. (A copy of the text of this treaty may be found in Appendix A). The ABM Treaty also ensured the free use of "national technical means" as well as incorporating measures to maintain peace in space by prohibiting the deployment of space based anti-ballistic missile systems (6:59-60).

Taken together these treaties constitute the bulk of specified space law as it now exists. While these documents form a valuable legal framework, much room exists for improvement as will be discussed later.

## Organizations.

United Nations. Within the U.N. structure, staff organizations fall into two basic divisions: those "that are connected with the General Assembly" and those that are "specialized agencies and other organizations." Although the former organizations receive much attention and are generally better known and recognized, it is the latter which are responsible for more "operational" programs (23:107). Of the two significant U.N. structures active in monitoring international space activities, one falls into each of these divisions.

The Committee on the Peaceful Uses of Outer Space (UNCOPUOS) has already been mentioned. The UNCOPUOS is a consultative committee of the General Assembly which is responsible for developing principles for international space activities that would enhance the use of space (22:89). The committee had 53 members as of February 1985 (43:14), including all the space powers. The committee has two subcommittees: the Legal Subcommittee, in which the 1967 OST was originally formulated (22:89), and the Scientific and Technical Subcommittee. Although it has no regulatory capability over space activities, the UNCOPUOS is an important source of space law and legal guidelines.

The other formal structure is the International Telecommunications Union (ITU) which is a specialized agency of the U.N. The ITU is a regulatory agency in that it does pass binding regulations which member states are expected to adhere to (14:297). The ITU, which actually predates space flight (38:115), is responsible for "governance (of) the radio spectrum" and, since the 1973 reordering of its Convention, for maintaining records on geostationary satellites. The ITU is composed

of 155 member nations and is a critical body in the smooth functioning of the orbit/spectrum resource (14:295-296). The regulatory operations of the ITU are considered significant enough to world communications to keep the United States in the body even despite recent movements by third world nations which threaten basic principles of allotment important to the U.S. Without the ITU, it is widely believed that there would be a degeneration of radio communications at both the national and international levels (14:299).

The ITU has dealt with "radio communication systems" issues through its International Frequency Registration Board (IFRB) and its International Radio Consultative Committee (CCIR) (14:295), both of which are "permanent organs" of the ITU (58:149-150). The CCIR is responsible for providing "recommendations concerning technical and operational radio matters" while the IFRB is responsible for examining "notifications of frequency assignments from member-nations for conformity with . . . radio regulations" (58:149-150). Since the 1973 Convention, the IFRB has also been "allowed to engage in an orderly 'recording of the positions assigned by countries to geostationary satellites'" (14:296). Issues of concern to the ITU are dealt with at periodic World Administrative Radio Conferences (WARC) where new regulations may be passed or existing ones modified. The most recent WARC was held in July 1985 and held discussions concerning "international arrangements for planning and implementing the use of communications satellites in the geosynchronous orbit" (56:18).

Non-United Nations. Outside of the U.N. structure, many international space organizations exist which promote community rather

than unilateral interests. The most significant of these is the International Telecommunication Satellite Organization (INTELSAT), founded "in 1964 to provide for an international communication satellite system" (51:39). This organization has had a "monopoly status" in international communications, at least in the West, for over 20 years (56:15) and at present comprises 109 member states (51:39). Even if it does not maintain the same official legal status of organizations such as the ITU, INTELSAT is nevertheless an important example of international cooperation; proof that "countries with political differences can cooperate to pursue common social, political, and economic goals in space" (56:11). Although not a member of INTELSAT, the Soviet Union does make use of the network (51:40).

Two other non-U.N. related international organizations are worth mentioning. The first, the International Maritime Satellite Organization (INMARSAT), formed in 1979, has 35 member nations, including both the Soviet Union and the United States, and serves as a specialized communications satellite network for maritime purposes. The second is the KOPAS/SARSAT system, a space based search and rescue aid which pinpoints ships or aircraft in distress by means of emergency signal transmissions. This system was established in 1984 in an agreement between the Soviet Union, United States, Canada, France and Britain (51:41,44-45). Both of these international organizations, like INTELSAT, remain outside the international legal structure in that they have no authority to regulate. They are, however, important structures for laying the groundwork of international cooperation and over time, their operations may become institutionalized over their restrictive

functional areas so that they may eventually acquire a de facto official status.

These international organizations, both within and outside the United Nations framework, along with the space treaties discussed earlier, form the heart of international controls relating to space activities. Against this backdrop of existing legal entities, some of the current problem areas in space law will be contrasted.

### Problems

Jurisdiction. When discussing problem areas facing space law, one of the first questions requiring resolution is that of jurisdiction. The issue of jurisdiction must further be subdivided into at least three distinct levels of applicability. What legal entity has jurisdictional authority over space, from a terrestrial view only, over the objects placed in space or over space activities affecting the surface of the earth (i.e., remote sensing, direct broadcast)? Many of the legal arguments of space activities are really subsets of the problem of jurisdiction, or lack of jurisdiction.

Realm of Space. The first level at which jurisdictional authority must be addressed is the level of outer space as an entity. As has previously been stated, the primary thrust of the Outer Space Treaty is to prohibit the "national appropriation by claim of sovereignty, by means of use or occupation, or by any other means" of outer space, the moon or celestial bodies. The treaty is "unequivocal" in denying nations jurisdiction "over outer space and space bodies" (7:89). The treaty goes on to state that "outer space, including the moon and

other celestial bodies . . . shall be the province of all mankind" and that outer space will be open for "exploration and use by all States . . . in accordance with international law" (60:25-26).

The 1967 OST clearly then not only restricts nations from claiming jurisdiction over space but actually places space and activities there under the aegis of international law. Jurisdiction in space would then appear to rest with all mankind operating through the forum of international law. Signatories to the Outer Space Treaty have renounced their right to claim jurisdiction in the regions of outer space, to "exercise ultimate and exclusive control," and have recognized space as "common property" (13:407), at least according to one authority.

Although the principle of international jurisdiction is clearly established, its actual operation is less well defined. No specific international structure exists which legislates or governs outer space as such. The United Nations can serve as the generator of law only after virtually unanimous consent of the nations of the world and on particularly sensitive issues, principles of agreement can remain in committee indefinitely (the remote sensing issue has been in UNCOPUOS since 1958) (13:409). Even the ITU, which through its WARC's passes binding regulations for use of the radio spectrum in satellite communications, only has authority over member nations and cannot prevent non-members from disregarding its rules or members from defecting. There is, in effect, no sovereign authority in space but only an accumulation of mutually agreed upon principles which require the goodwill and cooperation of all space capable nations in order to be effective.

Having established the theoretical right of jurisdiction over outer space, the next problem is determining what is considered space. Despite the fact that the first satellite was orbited nearly 30 years ago and that even the Outer Space Treaty has been in force for nearly 20 years, the term "outer space" has never been defined (32:80-81). The need for a "definition and/or delimitation of outer space" is necessary because airspace and outer space represent different legal environments, each with its own characteristics and jurisdictional implications (53:140-141).

There have been two traditional approaches in defining the region of outer space. The first, the functional approach, seeks to define space in terms of the conduct of specific space activities. The purpose is not to designate an arbitrary boundary for space but rather to seek meaningful "regulations to avoid possible interferences among space activities and adverse consequences for human life on earth." The second approach, the spatial, seeks to establish "an easily determinable boundary . . . at a certain altitude above sea level." Supporters view this action as necessary due to the applicability of "different regimes" in airspace and outer space (29:10-11).

According to Stephen Gorove, a preeminent space law expert, a third approach has come into being in recent years and this can be regarded as the "pragmatic" approach. This viewpoint holds that a distinctive "boundary between . . . (air and space) . . . would not be responsive to any practical need now evident" but might produce "negative effects" on continuing space development (29:12). The entire question of the demarcation of space, in Gorove's opinion, may be resolved by

the development of what may be regarded as a customary rule of international law that regards the area where satellites orbit the earth as outer space appears to make a precise physical determination no longer of immediate urgency (29:14).

However, with the advent of earth based transatmospheric vehicles (TAV), particularly those armed for interdiction missions or military reconnaissance, the question of which legal environment to classify them could easily be revived. Such vehicles, unlike the U.S. Space Shuttle, would have the capability to fly in the atmosphere as an aircraft or to move outside the atmosphere as a satellite at will (54:30) and could, therefore, theoretically be classified as either a space object or an aircraft. The importance of the distinction would certainly become apparent if a nation decided a TAV was an aircraft and therefore subject to legitimate sovereign airspace regulations or air defense actions.

Objects in Space. This discussion of classification of "space" vehicles is closely related to the second level of jurisdictional authority, that of jurisdiction over objects in space launched from earth. The 1967 OST specifically grants the right of jurisdiction and control over any space object to the nation "on whose registry an object launched into outer space is carried," regardless of its location (including a return to earth) (60:29). The problem with granting this jurisdiction is that no where in the treaty is jurisdiction defined and the concept has now become the subject of diversified interpretations (7:89).

The question of jurisdiction is tied up tightly to another problem area, the whole issue of liability for damages caused by space objects. Article VII of the 1967 OST places responsibility for liability of

space objects with the "launching state." The 1972 Liability Convention further elaborates this principle and declares that "a launching state shall be absolutely liable to pay compensation for damage caused by its space object" (60:28,54). The launching state is furthermore defined as a nation launching an object, procuring for a launch or allowing a launch from its national territory. Article VI of the Outer Space Treaty also requires each national signatory to the treaty to "bear international responsibility for national activities in outer space" whether or not such activities are carried out by governmental agencies (60:28).

While it is clear that a launching state is responsible for its space objects and that governments are held accountable for regulating national space activities of a private nature, it is not clear how private ventures which operate outside legal norms will be held liable. A case in point is the private West German firm ORTAG. This company is owned by West Germans who operate it outside of the country despite official West German condemnation. Its "testing and launching facilities had been in Zaire and presently are in Libya." Libya is a party to the 1967 OST but not to the Liability Convention (42:125-126) and is furthermore not necessarily to be regarded as a responsible member of the international community or a respecter of international law. West Germany can hardly be held accountable for ORTAG launches while Libya may be too irresponsible to fulfill its obligations. Proper application of international liability in this case would be problematic.

Equally troublesome to the question of liability is the exact liability of international organizations which conduct space operations.

While Article XXII of the Liability Convention specifically provides a mechanism for international intergovernmental organizations to become a party to the convention, as is the case with the 11 member European Space Agency (ESA) (26:15-16), again it is unclear how international liability might be apportioned in the case where such an organization was not a party. This would be particularly true for cases where some of the member nations of the organization were non-signatories of the 1967 OST or 1972 Liability Convention.

In the same line of thought, the question of liability for non-party states to the international treaties has never been fully addressed. This particular problem was very real, at least through 1982, in the case of the People's Republic of China which, as a space capable nation, had not signed the 1967 OST (9:3). The exact liability of a state who does not, in effect, recognize "international law" has not been clarified by that law.

But even where nations recognize their international responsibilities, there is much that is unclear with respect to the extent of liability. At the center of one controversy is the lack of definition of what constitutes debris and what liability extends over damage causing debris. There is some "tendency in international organizations to regard an object as debris when all the fuel has been used up." Because such an object is no longer controllable, it is felt by some liability at that point is limited or that it actually ceases (16:2-3). Whether or not launching states are intended to be responsible or liable for debris is under question. At any rate, in the case of debris in the traditional sense (i.e., "generally taken to mean 'scattered

fragments' or 'wreckage'" (16:1)), identification of ownership of an offending object could prove impossible without the owning states' cooperation (28:64). Enforcing liability for space debris, however, is really only treating a symptom rather than the disease. Dealing directly with the debris issue brings up another problem area in space control structures which is the lack of jurisdiction to regulate harmful or potentially harmful activities.

The extent of the danger represented by space debris has hardly been recognized in the international community. According to one study, as of 1980, of the 4600 trackable objects only 1000 were classified as "payloads" and only 235 of these were deemed still "operation." In addition to these objects, an estimated 5000 to 10,000 "fragments" were estimated to also be in orbit but too small to be detected and tracked by earth-based sensors. The majority of these debris are believed to be found in the 300 to 2300 km altitude range, the area where most orbital space missions take place, and are the results of accidental rocket explosions, intentional explosions, launching shrouds, discarded spacecraft parts and "secondary debris" caused by collisions of space objects. The current rate of growth in orbiting debris is increasing at about 11 percent per year and could give unacceptably high probabilities of collision with manned spacecraft within the next 20 years if it continues at this level (36:37-39). The well publicized crash of COSMOS 954, which was "in low orbit, (and) suffered a sudden depressurization," may have been the outcome of a collision with an untracked piece of debris in 1978 (36:37).

Despite a present and growing threat to space activities presented by the space debris problem, no international legal structure exists which would seek to either control the growth of space debris or to remove the current threat. Different launch techniques, advanced spacecraft design, and pre-planned disposition of useless spacecraft or components could all be used to control the growth of debris. But at present the problem is lack of "national or international concern . . . for space debris management" (42:130).

Not only is there an absence of legal authority to control the buildup of additional space debris but the existing language in the international treaties could actually work to prevent efforts at removing debris from orbit. Both the 1967 OST and the 1968 Return and Rescue Agreement stipulate that a launching state retains control over objects it launches indefinitely, regardless of condition or location. Attempts to remove from orbit what might otherwise be termed debris without prior consent of the owner are illegal and could prove to be provocative (16:2-3). The debris problem is a catch-22 situation in international treaties. The language ensures indefinite ownership, which could retard debris cleanup. The concept of "abandoned" property found in maritime law was specifically overruled in space law. The "Outer Space Treaty firmly establishes that . . . objects in space are not to be viewed as abandoned or subject to salvage or interference by other States" (61:366). Yet the Liability Convention is not definitive in its discussion of debris such that it is possible states could limit their liability to space objects that are not debris. Once an object becomes debris (inactive) states may claim their liability (though not

ownership) is at an end. Debris could then theoretically remain in orbit and carry no liability to the owner yet be untouchable by any other state (16:2).

Similar in nature to the space debris threat is the growing congestion in space traffic and the need for a regulatory mechanism to formulate traffic rules. At one time in the recent past there were only two space capable nations and most space objects were of a communications variety. However, in 1984, five nations and one international organization had a launch capability and together they launched 164 payloads, 159 successfully (51:xx). Space objects now include communications, meteorological, navigation, remote sensing, geodetic, search and rescue, space science and a variety of military satellites (51:39-47). In addition, the future promises huge solar power satellites, large manned space stations, and orbiting automated factories engaged in industrial productions (44:39-40). The problem which now exists is that each nation launches its payload and reports the launch and orbit to the Secretary-General of the U.N., as stipulated in the Registration Convention (13:407), but there is no order over the orbits selected or the flight paths used (other than for orbital mechanics). It has been stated that

The time will come . . . when space traffic will have to be regulated for two purposes: to assure safety by preventing collisions and restricting other forms of harmful interference between space objects and to protect the environment (44:37).

That time is not too far in the future given the rapid growth in potentially profitable space ventures and the increasing number of space capable nations.

The increasingly lucrative opportunities now opening up for business activities brings up another problem in space law, which is the lack of regulatory authority over such concerns. Commercial enterprises in the past have been relatively restrained and restricted to the communications industry. However, one estimate "calculates that commercial space operations could be a \$65 billion-a-year market" by the year 2000 (25:62). This new commercial expansion will be fundamentally different than previous activities. There will be development

of an industry that does not merely use the vantage point of space, as communications do, but which will use the environment of space in order to bring about the next step (33:8).

That step could include the processing in space of "unique high-value, low-volume products for the pharmaceutical, electronics, chemical, 'specialty' glass and advanced alloys industries" (57:15).

The potential growth in space based business activities is fairly clear. But what is not clear from the legal structures that currently exist is how such commercial applications are intended to be governed. Specifically, although each nation is charged with responsibility over its nongovernmental space activities under the 1967 OST, since these commercial production activities will take place in an "internationalized" environment (34:51) there should be some international standards of conduct. The alternative is for each nation to allow commercial enterprises as it sees fit irrespective of international impact. In the case of continuing and possibly large scale activities it is necessary for a structure to exist which will clearly delineate liabilities involved and which can intervene before questionable or dangerous

activities are executed. A determination should be made concerning what will be allowed to be produced in space, how activities can be conducted, and where certain activities might take place.

Another issue of considerable concern is the regulation of nuclear power sources (NPS) in outer space. To date there have been at least three unscheduled reentries of space vehicles with nuclear power systems; the first in April 1964 by a "U.S. Navy satellite" which released Plutonium 238 into the atmosphere, the second in January 1978 when COSMOS 954 reentered over and impacted on Canadian territory and the third in February 1983 when COSMOS 1402 spread "nuclear fuel in the upper atmosphere" (40:2-3). Despite these repeated occurrences and despite the severity of the potential damage which could result from an uncontrolled NPS reentry, there are no international guidelines concerning NPS's in outer space.

One other problem area exists in space operations which may require international regulation and that is the problem of atmospheric pollution. The problems of NPS reentry contamination and the continuing threat posed by debris have already been discussed. As has been previously stated, the Nuclear Test Ban Treaty was an early and successful attempt to protect the atmosphere from continued radioactive contamination (38:189). But one issue of concern which has not been addressed is the very continuation and increase in space flights. In the 1979 International Aeronautics Federation (IAF) report to the UNCOPUOS titled "international Implications of New Space Transportation Systems," the following recommendation was made.

A further consideration in the expanded use of new transportation systems, whether or not they themselves are reusable, is the inevitable increase in the quantity of propellant combustion products which are deposited in the atmosphere . . . (these) . . . clearly have global effects, and therefore the consequences of their disposition in the atmosphere should be considered by an international body (42:130).

Clearly there could be a threat to the world environment. What is required, should such a determination of damage be made, is an international regulatory body to limit continued space flights within environmentally safe boundaries.

Impacts over Earth. The third level of jurisdictional authority relates to the rights of space users to impose or usurp rights over nations on the earth. What is at question is the conflict of privileges granted to space objects by the 1967 OST with the rights of sovereign nations over their own populations and natural resources. The specific activities in the controversy are direct broadcast satellites (DBS) and remote sensing of earth resources by satellite. In the case of the DBS,

Many countries feel that unregulated transnational radio and . . . TV broadcasts direct to home receivers will undermine their sovereignty and their cultural values. Direct transmissions would also provide unwelcome competition for national broadcast monopolies (57:23).

This view from nations who consider their sovereign powers to be threatened is opposed by the view that sees the common property principle embodied in the 1967 OST as "the right . . . 'to broadcast radio or television signals from orbit.'" This point of view also believes that the "Universal Declaration of Human Rights" upholds their case in providing freedom for anyone to "seek, receive, and impart information through any medium, regardless of frontiers." The issue has degenerated

to basically an ideological clash concerning who will be allowed to present communications to the populations of closed societies (13:409). The problem remains one concerned with the proper interaction of states' rights under the 1967 OST with the rights of sovereignty.

In the case of remote sensing of the earth, the debate originally centered on primarily lesser-developed country (LDC) claims that unauthorized sensing of a nation's natural resources constituted a violation of sovereignty. The debate has now shifted more toward the question of how such sensed data should be used or made available to the world at large rather than the issue of actual data collection. The LDC's object to the "uncontrolled dissemination of space imagery" of earth resources and insist that their "legitimate rights" of sovereignty entitle them to

timely and preferential access at nominal cost to data obtained by remote sensing of (their) territory and, second, that such data should not be disseminated to third states without (their) prior authorization (29:6).

Again, what is left to be worked out is the proper balance between national sovereignty and international freedom of information. In the meanwhile the remote sensing activities in space continue to cause discord among the nations of earth.

#### Resource Allocation.

Treaty Provisions. Another problem area in international space law which is causing considerable discord is the issue of space resource allocations among nations. In the last 10 to 20 years, corresponding to the rise of vocal third world nations, there has been a growing movement to proclaim everything outside immediate national control as the common property of all nations, with a concomitant feeling

that the proceeds of all exploitation of this "property" should likewise belong to all nations.

The 1967 OST supports the claim that outer space is the common property of mankind (13:407). Article I of the treaty states that

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 (60:25).

The explanation of how all nations are to benefit or how much the "province of mankind" encompasses by way of resource allocation was left undefined by the treaty.

The 1979 Moon Treaty takes this concept a bit further by inclusion of the phrase "common heritage of mankind" (CHM) in reference to lunar resources (30:69). This phrase, and the concept behind it, has been seen recently in the 1970 Sea-Bed Treaty and the Law of the Sea Treaty but like the Moon Treaty, in none "of these documents (is) a definition or principle of CHM to be found" (15:181). These vague concepts have given the LDC's ammunition to supply their growing claims to distribution of space resources.

Resources. The resources that are in contention include most prominently the geostationary orbit and the radio spectrum of frequencies. Because of the increasing use of communications satellites, the radio spectrum of frequencies is rapidly filling up. Additionally, because of the unique properties of the geostationary orbit which is the best suited orbit for the positioning of communications satellites, it too is becoming filled. This situation has led to fears by third world countries that when they finally attain the technical capability

to use these resources there will be no room left (30:67). Similar arguments have been promoted by LDC's to assert rights to proposed solar power satellites (SPS), which would generate electricity from solar energy, and for a share in the output of business ventures in space. This same attitude was present at the Law of the Sea Conference (11:17) and is reflective of the growing strength of this "emerging legal concept" (30:69) of CHM. The resources of the moon have also fallen under the claim of CHM through the Moon Treaty; however, since no exploitation of this body is expected in the near future the controversy here is at a low key.

Controversy. The debate over the proper allocation of space resources is best exemplified by the litigation over the orbit/spectrum at the ITU. The ITU Convention of 1973 declares both the "radio spectrum" and "geostationary orbital positions" to be "limited natural resources" (14:295). Much of the activities of the ITU in the last few years has been concerned with attempts to determine how those resources can best be distributed. The historical approach has been the "first-come, first-served" doctrine. The IFRB only registered the orbit/spectrum as submitted by using states and coordinated such assignments to ensure no interference between users (14:296).

The 1977 WARC however introduced the possibility of ITU responsibilities being increased to include "making 'a priori' allotments of the orbit/spectrum resource to members." That is, allotments based on a "right" to them rather than a need for or ability to use them. Such allotments would rely "upon specialized administrative conferences to subdivide and allot radio channels or satellite orbit positions to

countries in advance of present need or capacity to use them'" (14:296). The 1979 WARC continued this momentum by passing a recommendation "that 'a conference should be convened entitled World Administrative Radio Conference on the Use of the Geostationary Satellite Orbit and the planning of Space Services Utilizing It.'" This conference was scheduled for two sessions: one in July 1985 and the other in September 1987 (14:297). The thrust of these efforts was an attempt by third world or lesser developed countries (LDC) to have orbit/spectrum slots reserved for them until such time as they need and/or can use them (30:68).

The United States, representing more prevalent attitudes among space capable states, "has expressed opposition to the 'warehousing' of frequencies" (14:196). It has been the view of the United States: (1) that the "first-come, first-served" allocation procedure has not proven to be a liability thus far (i.e., no one with a need has been denied); (2) that "no proprietary right to the radio spectrum" or orbital slots accrues to nations enjoying "first-served" status; (3) that over-planning of the orbit/spectrum will "lead to inefficient use of these resources"; (4) that "allocations should be made only where there is a need to use a frequency"; and (5) that there are alternative means to ensure "equitable access to frequencies and space positions" other than absolute allotments (14:296-298). This could be accomplished through advances in science and technology or through participation in "joint programs" rather than individual allocations (14:298-299).

The controversial intent of the general concept of the "common heritage of mankind" (CHM) has been addressed by one Russian authority. Referencing the presence of the concept in the Sea-Bed Treaty, the Law

of the Sea and the Moon Treaty, R. Dekanozov insists that the CHM does not grant specific ownership of resources to any nation (15:183-185).

In fact, he points out that M. Menter has noted

that under the 1979 Agreement neither mankind nor all states are entitled to share in the benefits of exploitation, and that the 'equitable sharing' is provided only for states parties to the Agreement (15:182).

The principle in the Moon Treaty is therefore very restrictive in at least one respect.

Dekanozov further states that the CHM does not indicate the moon is "the common property of states or mankind." In fact, the concept of common property implies that a division of such property would "make them (the moon and other celestial bodies) the property of national or international organizations" which is clearly illegal under the 1967 OST. The concept of CHM, in his opinion, is intended to mean that the resources in question "are subject to international protection" so that all nations can enjoy some benefit both now and later (15:183-184). The provision in the Moon Treaty for establishment of an international regime to oversee lunar resource exploitation should be regarded treaty specific rather than indicative of a broader concept for CHM (15:183-186).

#### Militarization.

Treaty Intent. One final problem area in space law is the legal status of military spacecraft in outer space. Although military uses of space were not prohibited in the 1967 OST or subsequent treaties, there is little doubt about the intent for a weapons-free space environment. Article III of the Outer Space Treaty states, "Parties to the

Treaty shall carry on activities in the exploitation and use of outer space . . . in the interest of maintaining international peace and security." Article IV specifically prohibits placement "in orbit around the Earth any objects carrying nuclear weapons or any other kinds of weapons of mass destruction." It also goes on to forbid their placement on celestial bodies and additionally mandates "The Moon and other celestial bodies shall be used by all States parties to the Treaty exclusively for peaceful purposes" (60:26-27).

As in other areas, one of the biggest problems with these provisions is the lack of definition of terminology. Specifically, although nuclear weapons have been unconditionally banned and are identified as "weapons of mass destruction," there has been no international definition, or more importantly bilateral U.S.-Soviet accord, on what other weapons might be included in this category. Even the term "peaceful purposes" has never been defined and is therefore subject to debate (32:80-81).

The banning of only nuclear weapons has been regarded by many as a large loophole which

left the way open for the launching of all manner of space-borne weapons systems, as long as they contained no nuclear explosives (47:71-72).

Others see the militarization of space in a much more pessimistic view.

They believe

We should harbor no illusions that space can be limited to 'peaceful uses' any more than could previous arenas on land, sea, or in the air (31:6).

The problem with banning space weapons is even more difficult than the case in other mediums. Even by removing all "weapons" from space

the problem cannot be solved because

space weapons can be controlled from the ground and from planes. Furthermore, it is extremely difficult, if not impossible, to define weapons in this context because space objects can be destroyed or impaired by means not usually identified as 'weapons' (22:91).

A further complication in maintaining a "peaceful" environment in space, free from "military" activities, is the extensive use by both the U.S. and the Soviet Union of many different satellite types in various military support roles (i.e., communication, early warning, reconnaissance, navigation, mapping and targeting). Since these assets are not weapons systems as such and since the 1967 OST does not define peaceful, these objects could be interpreted as "defensive" weapons (as opposed to "offensive") and therefore considered "peaceful" (13:407-408).

Actual Situation. At any rate, regardless of treaty provisions at this point, it is unlikely that either superpower will remove its military assets from outer space. One problem area in space law concerning these space objects that should be addressed is the exact "legal status of spacecraft and the adjacent (sic) to them zone" (18:100). The Soviets have voiced fears of space piracy in the absence of international law to prevent such activities. The primary impetus for their apparent alarm is the demonstrated capability of the U.S. space shuttle to disable, examine, or even retrieve satellites in orbit (18:97-98). The Soviet reaction stems from their belief that the U.S. intends to use the shuttle for such tasks against suspect Soviet satellites.

Regardless of how groundless their fears may prove to be, the Soviets have addressed a valid point of law needing to be covered. Best expressed by Diederiks-Verschoor of the Netherlands, it is

most desirable that the legal status of space objects be adequately defined and established. To this end, more consensus and uniformity in defining 'artificial space objects' are an essential prerequisite (17:94).

Furthermore, distinct and defined "zones of security" should be created for space objects. Such zones would provide for actions to be undertaken by other "space objects finding themselves in such zones" (7:90). The value of an agreement on these items is obvious considering the actions the Soviets feel justified in taking if their space objects are approached too closely: "the state concerned has the right to take protective measures to remove this threat" (7:90). Those who doubt the implications of this statement would do well to remember Korean flight KAL 007. Obviously a specific space law on this matter would not eliminate potential confrontation, but it could provide both parties with full information beforehand of the point at which confrontation might occur.

One other important problem in the area of space militarization is the current development of anti-satellite weapons (ASAT). The development of a capability to shoot down satellites is nearly as old as the ability to place them in orbit. The first ASAT test was believed to have been conducted in 1962 by the Soviets using the rendezvous of two manned Vostok space capsules in orbit. The first known ASAT test involving the explosion of the "killer" near the target occurred on 19 October 1968 when COSMOS 249 was sent up after target satellite

COSMOS 248 (48:6). Since 1968 the Soviets have conducted at least 20 additional ASAT tests, several resulting in an intentional satellite explosion in orbit (35:149-150), and in 1978 then U.S. Secretary of Defense Brown declared the Soviet system operational (48:10). The United States by contrast did not seek an ASAT capability until motivated by Soviet capabilities. The current U.S. system, launched from an F-15 fighter aircraft, has encountered "technical glitches" and has yet to be successfully demonstrated (4:4).

Like most other space weapons systems, ASATs are not specifically banned under current international law. Their use against satellites would clearly be a violation of the 1967 OST which provides for the unimpeded access to space for all nations. But development and even deployment of such systems is apparently left open under the treaties. Bilateral U.S.-Soviet negotiations have met with little success. Previous to Soviet development of an ASAT they resisted efforts to "outlaw the use of weapons above the Earth's atmosphere" (5:21); currently there is a U.S. reluctance to outlaw a weapon system which the Soviets have in their inventory while the U.S. does not. Such action is viewed as locking the Soviets into a permanent position of superiority on this issue.

Again it must be stated, the existing treaties clearly do not prohibit these weapons or the testing of them in orbit (even the intentional detonations of "hunter" satellites). However, in the case of ASATs at least, the world community needs to decide what is acceptable. The development of ASAT weapons, if it continues to entail explosive tests, may severely restrict the free and safe use of space

even in time of peace. With each test which results in a collision or detonation, hundreds to thousands of particles of debris are created which continue in orbit at speeds up to 23,000 mph. This debris is a threat to both manned and unmanned space flights of all nations (36:39). The threat posed by many ASAT weapons in time of war is equally sobering.

Conceivably, the fragments produced by many antisatellite explosions could start a chain reaction of events, ending in the fragmentation of so many satellites that much of near-Earth space would be unusable (36:39).

Although this arms control problem is essentially a bilateral issue, its resolution interests the entire international community.

Coming quickly on the heels of the ASAT issue and inextricably bound up with it is the Reagan Strategic Defense Initiative (SDI). The concept of placing nonnuclear battle stations around the globe is going to severely tax existing international legal agreements. This entire issue is a growing problem area which requires treatment of the same intensity as the difficulties it is going to produce if left unresolved.

These are but a few of the problem areas that confront the existing framework of treaties and international bodies. While a foundation exists for dealing with these problems there is a void that requires filling.

#### Space Law Deficiencies

It should be apparent from the preceding discussions that the body of space law is extensive and has addressed many serious issues of concern in space activities. But it should also be apparent that there are many problem areas in space development which existing treaties and international bodies do not adequately address; problems that range

from relatively minor disagreement over terminology to questions which could impact the future free access to space for all nations. Research for identifying legal components which can meet the challenge of solving these problems is needed.

#### Methodology

Various legal entities, treaties, and proposals have already been formed as part of emerging space law but a need persists for a correlation between emerging problems, standing structures and valid proposals. The method for conducting research into this problem is: (1) to focus on one of the emerging problems in space use. Such study will be confined to the subject area of space militarization; (2) to review current literature by legal experts concerning space law and restricted to that which is applicable to the problem area identified above; and (3) to determine what modifications to space law or what new legal regulations or bodies should be created by forming a consensus of expert opinion and historical precedent. Of particular interest here is the possible applicability of historic approaches to dealing with international questions (such as the development of maritime law for example).

This method is justified because it offers the opportunity to build on existing treaties, to accumulate and digest varied opinions for new legal documents, and to provide an aggregate proposal based on these inputs plus historic precedent. It is this combination of not only the present and future but the lessons of the past that makes this research effort both unique and valuable.

## II. Problem Analysis

With five United Nations space treaties in force, numerous international space organizations both within and outside the U.N. framework active, and several bilateral U.S.-Soviet agreements in effect or under negotiation, the specified law relating to man's activities in space is both substantial and growing. To those unfamiliar with this infrastructure, it may come as a surprise to find so much legal activity in the realm of space. But as has been previously pointed out, to those working on the legal problems of space usage, the law which exists represents only the beginning of the jurisprudence that must come into being if space is to be successfully exploited with a minimum of confrontation, chaos or danger to the earth environment (including space). Specified law does determine the status of many issues. Issues which are already settled include, importantly, the exclusion of space and celestial bodies from national appropriation and the right of sovereignty over space objects for the launching state. The safe return of astronauts and space objects to the launching state by states in whose territory such may accidentally enter, the liability of the launching state for damage caused by space objects and the freedom of space from nuclear weapons are also significant legal principles already established. But there are many more problems which have not been resolved.

### Focus

Many problems were discussed briefly in Chapter I in respect to areas not addressed adequately by current space law. Each of these

problems must eventually be addressed by some legal application. However, it is beyond the scope of this research to try and confront all of the issues mentioned, each of which could fill volumes. Instead, this effort will focus on one specific problem area, that of the militarization of outer space. Research will be presented in this chapter concerning this problem, its status under existing law and proposals for possible resolution or alleviation of the problem. Chapter III will present recommendations and conclusions.

Justification. The focus on the topic of space militarization is justified because this problem, unless resolved above all others, is potentially the most directly damaging activity to the continued peaceful use of space. The use of space for military support roles (e.g., communications, navigation, meteorology) has been well established from the very beginning of the space age. But the introduction of "kill-mechanisms" into outer space has been a typical recent development which, unless it is arrested, bodes ill for the long range future of a peaceful space environment (27:24).

Current Threat. The threat posed by space weapons is already great. This threat includes an operational Soviet antisatellite (ASAT) system capable of destroying satellites in low earth orbits (3100 miles altitude) (49:3), a Soviet tested Fractional Orbital Bombardment System (FOBS--this system places a nuclear warhead in a long range, suborbital trajectory which would allow an attack on the U.S. via the South Pole) (50:8), and "two groundbased test lasers that could have ASAT capabilities" (49:4).

These systems pose a very grave threat to virtually all space systems in low earth orbit because all are vulnerable to attack with limited ability to defend themselves or to evade hostile action. Space objects are easily detected and tracked due to the very defined, restricted orbits in which they naturally remain (48:11-12). But the greatest threat of space militarization is not found in these systems per se but in the threat of escalation which they promise to inaugurate through the expansion of capabilities and through the addition of players in the military space arena.

Potential Threat. Already the United States is developing an ASAT system of its own to counter the Soviet system. Both nations are in the process of developing "space-based" antisatellite (ASAT) laser capabilities with the Soviets possibly having the ability to deploy a prototype by the early 1990's. Both nations could modify existing ASAT systems to give them greater striking altitude, possibly even reaching into the geostationary orbit. Additionally, the U.S. has embarked on a long range research program to develop a space-based ballistic missile defense (BMD) system under the Strategic Defense Initiative (SDI) (49:5-10). Although this "arms race" is currently restricted to only the two superpowers, a future without legal constraints in this area could lead to several nations engaging in space militarization or weapons activities. China has already placed military related spacecraft in orbit with France, India and Japan expressing interest and possessing technical capability to do likewise (50:9). Some experts believe that possibly seven nations could possess ASAT capability by 1990 (27:23).

The time to confront the problem of military uses of space is now. This area is still relatively new to the military establishments on earth and it may yet be possible to place limitations on their space activities now, before they become too entrenched to relinquish those capabilities. Preventing space weapons development by agreement will be much easier to accomplish than restricting or prohibiting activities once new systems have been developed.

Potential Benefits. Successful resolution of the militarization problem of space presents significant benefits to the peaceful use of space on its own. But an additional impetus for focusing on this issue is that a resolution here could provide important spin off benefits for other problem areas as well. If the problem of arms control in space can be solved, then a vehicle will have been created by which the other problems of space law might be rectified. No other subject is more sensitive or central to the self-interests of states than their efforts to achieve security through military affairs. The threat of confrontation and contamination of the space environment because of armed warfare can be directly averted; the dangers posed by other threats might be indirectly averted by using the formula of arms control as the basis for proceeding with other controls. Before proceeding to proposals for establishing legal policies for space militarization, it is necessary to understand some basic problems facing all international space law policies on military uses.

## Difficulties in the Militarization Issue

Term Definitions. Attempts to resolve the militarization issue in space law meet with several fundamental problems not necessarily related to any specific proposals. The first of these is one which has already been alluded to and that is the lack of consensus on definitions. Specific terms which are not defined in space treaties and which pertain specifically to this discussion are "weapons of mass destruction," other "weapons," "military uses" and "peaceful purposes."

In the case of "weapons of mass destruction," which are banned from space and celestial bodies by the Outer Space Treaty, there has come to be a general agreement between the major space powers that this term includes "biological, chemical and radiation" devices. What has not been specifically identified is whether lasers and ASAT weapons also fall under this category. Current development programs in both the U.S. and Soviet Union tend to suggest that neither power considers them banned by the 1967 Outer Space Treaty (OST) provision (27:18) but this has not been explicitly agreed upon in any forum. The term "weapons," when applied to the space environment, has also failed to be defined adequately up to this point. As was mentioned earlier, "weapons," in space, can take the form of many nonweapon devices, in a traditional sense, because of the extreme vulnerability of space objects to many different forms of interference (22:91). Any hope of resolving the militarization of space issue through international law must first define the specifics and assumptions of these terms if it is to have any impact.

Of even greater relevance is the need to determine what is actually meant by "military uses" and "peaceful purposes." At issue is a determination of whether or not the two terms are incompatible and, should they prove to be so, in distinguishing what activities should be considered military related. There are two basic lines of thought concerning this question.

The first notion, which is held by the United States, is that "peaceful purposes" implies nonaggressive devices and activities (27:16). The distinction to be drawn is that nonaggressive systems, such as force multipliers (i.e., navigation, communication, etc.), are inherently peaceful and present no threat while aggressive systems, which include "weapons use," are "nonpeaceful" (50:14). This argument holds

that there is a continuum between peace and aggression, and that the critical issue is as to the amount of force that can be employed while still not crossing the line separating peaceful conduct from aggressive or unacceptable coercive conduct (12:283).

This reasoning is by its very nature very subjective and dependent on a determination of intent.

The second opinion, which is espoused by the Soviet Union and many nonspace capable states, is that the term "peaceful purposes" implies nonmilitary (27:17). This viewpoint postulates that all military activities are both aggressive and nonaggressive and are by nature "nonpeaceful" (50:14). This position seeks support through analysis of the Moon Treaty which reserves the moon for "exclusively peaceful purposes" and prohibits "establishment of military bases" while allowing for the "use of military personnel for scientific research" and other peaceful activities. Proponents of the "nonmilitary" view claim that a

"nonaggressive" only interpretation of peaceful purposes in this context could lead to military bases or armaments on the moon, both of which have been specifically banned. The argument holds that "deterrent" forces could be regarded as "defensive" and inherently nonaggressive. If peaceful is interpreted as nonaggressive it would allow for "deterrent," peaceful weapons to be placed on the moon (17;27).

Assuming that the definition for peaceful purposes does or should mean nonmilitary, it becomes necessary to determine what is considered military use. A significant problem with the nonmilitary view is that if strictly applied this definition of peaceful purposes could include prohibitions on national reconnaissance efforts in space which are viewed by legal "scholars" as both peaceful and stabilizing influences in international relations (12:282). And as with the use of military reconnaissance spacecraft, the support vehicles of military establishments would necessarily be banned by a broad military uses definition. Careful consideration would have to be given to detailed definitions on how to distinguish between civilian versus military space applications to ensure civilian communication or navigation satellites were not being used militarily. Without such attention, the eventuality could arise where enacted provisions would either ban all or nothing (61:367-368).

Goal Determination. Another fundamental problem which faces jurists working on the space militarization issue is the exact specification of the goals that are being sought. Assuming adequate definition can be made concerning military uses, peaceful purposes and space weapons, it must then be determined what goals space law will strive to achieve. That is, will the law seek prohibition or regulation of

military systems, and in either case, which systems will be effected? The 1967 OST contains both a provision for complete demilitarization of the moon and celestial bodies, military prohibition, and a provision for "partially demilitarized" outer space, military regulation (see Article IV of the Outer Space Treaty, Appendix A). The Moon Treaty, in Article III, specifically prohibits all military activities and declares that the moon is to be used "exclusively for peaceful purposes" (27:16). Future space agreements must choose similar goals concerning military activities in space. It must be determined if military activities as a whole are to be regulated or prohibited entirely, or which activities should be regulated or prohibited. Each of these goals carries with it specific verification implications which will be discussed later.

Determination of Focus. The third basic problem in dealing with space militarization is closely related to the formulation of goals. This problem is determining the scope of military activities which will be covered by law, the focus for negotiations. Specifically, this problem, which has plagued arms negotiations in other spheres, is whether "space militarization" can be separated from other armaments discussions, such as nuclear weapons. Assuming that space could be dealt with free from other arms matters, further accord must be reached on whether space law should cover the whole area of "space militarization" or whether legal instruments should be designed for specific items and activities, such as ASATs (12:281-285). United States-Soviet attitudes toward this latter determination fluctuated over the period of 1981 through mid-1984. Originally the Soviets sought to discuss all space issues at one time while the U.S. chose to seek an ASAT agreement

alone. By mid-1984 it appeared that the two would converge to a similar opinion and pursue ASAT negotiations solitarily (12:285).

Verification. The fourth structural problem underlying all attempts to legally control international space militarization activities is that of adequate verification of compliance with treaty provisions. The extent of this problem is a function of the activities that are to be included in the legal instrument and of the extent of limitation being sought. Using ASATs as an example, the main "obstacle" preventing a negotiated settlement on restrictions is the verification problem. Prevention of ASAT development is already impossible for both the United States and the Soviet Union as both have progressed beyond that stage. Legal prohibitions on use, testing or deployment would all be nearly impossible to completely verify. Cloaking surreptitious ASAT activities could be accomplished by using the same ASAT launch vehicle for other launch activities, changing observed launch patterns and locations, encoding telemetry, and concealing the actual ASAT kill mechanism (49:14-15).

A specific problem with ASAT prohibition or limitation is that the verification process would need to be 100 percent effective which would be even more strenuous than verification associated with other armaments. Even a relatively few ASATs which escaped observation could be capable of crippling the "U.S. strategic posture" due to the great reliance the U.S. now places on its military satellites (49:15). The lack of adequate verification will preclude consequential legal agreement. There is no reason to expect any nation to enter into binding "arrangements" impacting national security without satisfactory assurance of compliance

by adversaries. Treaty observance cannot be based totally on a concept of mutual trust because "it is the lack of trust that leads to" acquiring arms in the first place (61:368).

The desire for such adequate verification has been demonstrated by both superpowers through United Nations General Assembly resolutions. But a major problem of international verification is the disagreement on who should monitor the process. Many nations feel that an international monitoring agency should be established, which is the basis of a French proposal to be discussed later. The U.S. and Soviet Union object to this for primarily security reasons and prefer to rely on "national technical" means. This in turn is objected to by less space capable states on the grounds that only the two major space powers possess such capabilities (27:22-23).

While these verification problems were discussed relative to ASAT systems, similar difficulties would be encountered if all military related space objects were banned or regulated. Verification has proven to be a difficult issue in the limiting of strategic nuclear weapons and prohibiting chemical warfare agents. Because of the peculiar nature of the space environment, which is both restricted and vulnerable, verification has proven to be and will continue to remain a major stumbling block on the path of space militarization discussions.

Nature of Treaties. The final fundamental problem in establishing international legal control over space military activities is the very nature of international treaties. The "law," the space treaties, is in the first place applicable only to states who sign it (8:279). Nations with no desire to take part are not legally bound by the law and no

mechanism within the law presently exists to account for this. The "law" is also only applicable in time of peace; that is, in time of war the treaties, based on the history of "freedom of the high seas," are either suspended or ignored by virtually everyone. Even in time of peace the existence of "freedom of the high seas," like freedom of space for peaceful uses, has never prevented the development of weapons devoted exclusively to the purpose of breaking the law by destroying "vessels" (i.e., the submarine at sea or the ASAT in space) (61:368). The nature of international treaties also includes a limitation of effectiveness when dealing with widely different cultures. Differences in background, value systems and language lead to different perceptions of treaty intent, different conclusions of treaty accomplishment and different interpretations regarding compliance. With highly divergent perceptions of reality, the existence of a treaty can cause increased rather than diminished tensions leading to conflict (2:149-154). And finally, treaties fail to fulfill one other basic requirement; they address "covered weapons, but not . . . aggression." The root causes of armaments are the fear of aggression or an intent for aggression, neither of which is addressed by treaty (2:149).

In spite of the underlying problems opposing the building of space law to regulate or prohibit military space activities, it is necessary to attempt to deal with this issue in the interests of maintaining a peaceful outer space environment. The problems presented should not be used as an excuse to discontinue efforts to resolve the space militarization problem but should be borne in mind while considering or reviewing

specific proposals. Several of the most prominent proposals in this area will not be presented.

### Proposals

Soviet Treaty Proposals. The first proposals which will be given consideration here are the Soviet draft treaties presented to the United Nations. (The texts of both may be found in Appendix B). In "a continuation of Soviet efforts to achieve demilitarization of space," the Soviet Union presented to the 34th session of the United Nations General Assembly, in August 1981, a "Draft Treaty on the Prohibition of the Stationing of Weapons of Any Kind in Outer Space." This treaty was proposed as an extension to the 1967 OST (52:85).

Content. The major provision of this treaty called for a ban on all space-based weapons and not just nuclear or "mass destruction" weapons (52:85-85). This proposal was widely criticized and was considered critically flawed in several areas. First, it covered only weapons actually "stationed" in space. Since both the U.S. and Soviet ASAT systems are ground-based and are launched at the time of attack this treaty proposal held no prospect of impacting either system (51:77). Second, the treaty contained no provision for destroying ASAT systems already built. Third, it placed responsibility for verification of compliance on the "national technical control facilities" at the disposal of each state party to the treaty, a provision which was rejected by most countries because of their lack of such facilities (27:21). Fourth, this proposal singled out "reusable manned space vehicles," i.e., the U.S. space shuttle, for prohibiting the conduct of military

activities (12:284). And finally, a major flaw was thought to have been detected in the wording of Article III of the draft treaty. It states that

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 I, paragraph 1, of this treaty (32:116) (underlining added).

Article 1 deals with the prohibition of placing spacecraft in orbit with "weapons of any kind" on board. The apparent implication of Article III is that if a state feels Article I has been violated, there is a right to interfere with or destroy the object in question (52:87). Whether this was intended by the Soviets or whether it was a result of difficulties in language translations is not known. This treaty proposal received little serious attention by the international community.

Following the general criticism of its 1981 proposal the Soviet Union submitted a second treaty in August 1983, to the United Nations which was "substantially different" from the previous submission (49:13). This proposal, a "Draft Treaty on the Prohibition of the Use of Force in Outer Space and from Outer Space Against the Earth," a much broader concept, included several improvements over the 1981 draft. The stated "goal was 'to prevent the arms race from spreading to outer space . . .'" First, it sought to prohibit all space militarization and was not directed at ASATs only. It proposed a prohibition against new "testing or the creation of new anti-satellite weapons, (and) the destruction" of those already existing (12:286). The treaty's major provision, according to the Soviets, was that it would fill a void now missing from the 1967 OST, an "international legal regime of the nonuse of force in outer

space and from space against the earth" (45:349). That is, this treaty would establish legal prohibitions in which objects in space would be protected from attacks from space, celestial bodies and the earth and which would also protect space, celestial bodies and earth from attacks by space objects. The Soviets felt that this treaty, "if consistently applied--(would) ensure a situation completely ruling out the possibility of making outer space a springboard for the use of force . . ." (45:350). This treaty proposal was "referred to the Committee on Disarmament" (49:13) and while it has received some attention, it too has been faulted on several counts.

The first criticism has been directed again at the prohibition of "the use of any manned spacecraft for military purposes" which is felt to be a deliberate limitation aimed at the U.S. space shuttle. Furthermore, the exact definition of "military purposes" has not been specified (49:13). A second criticism from many nations is again an inclusion of reliance for verification on "national technical" means (19:14). Finally, the U.S. views the proposal as an "insufficient" approach "to the goal of a peaceful" space environment primarily

since the Soviet proposals seemed designed to accord to the Soviet Union special benefits resulting from its earlier and extended development, testing, deployment, and use of ASATs (12:293).

The U.S. fears locking the Soviets into a position of permanent advantage in technical expertise related to ASAT development.

Intent. Additional concerns about Soviet intent behind their proposals revolve around two issues. The first involves primarily U.S. and Western perceptions of Soviet sincerity and results from the history

of Soviet ASAT testing relative to the treaty proposals. The Soviets conducted two ASAT tests in 1981, the same year the first proposal was submitted, and followed the August 1981 submission with another test in June 1982. Skeptics perceived a certain apparent hypocrisy in stated Soviet desire and actual behavior (52:86-87). The second issue is the history of Soviet compliance with treaty provisions. In June 1984, the U.S. General Advisory Committee on Arms Control reported to the President "that during the past 25 years the Soviet Union 'has continually violated existing agreements with the United States.'" This finding led Congressman J. Courter to comment

that the report demonstrated that 'there has been a conscious, premeditated, planned violation of many arms control agreements by the Soviet Union. And it's this clear pattern of attempting to take unilateral advantage of the difficulty of corroborating arms control that is most disturbing' (12:290).

In fact, it has been stated that

historically, the Soviet behavior while under international legal constraint has reflected an attitude of 'caveat emptor.' (sic) Soviet officials not only act on the principle that all that is not explicitly prohibited is permitted when it serves their interests, they also believe (as reflected by their actions) that it is their duty to violate agreements when it is in the Soviet interest so to do, if they can get away with it (32:75-76).

While these attitudes may reflect biased perceptions of Soviet actions, the perceptions are real enough to inhibit support of legal negotiations even if reality should prove them unfounded (2:154).

U.S. Proposal. Unlike the Soviet Union, the United States has not even proposed an alternative to the drift towards space militarization nor has a comprehensive U.S. conception of space use been enunciated. In fact, the entire U.S. space policy has been characterized as

"confused" and, at least until the Reagan Strategic Defense Initiative (SDI), lacking in direction. United States military policy is in reality the product of incremental escalation in military space uses and is without a strategic or theoretical basis (32:93-96). Even with the SDI program, no explanation has been presented concerning how this ballistic missile defense (BMD) system would fit into an international space legal structure or what goals the U.S. would like to see pursued in the building of future legal frameworks. Analysis of the U.S. position can therefore be approached best by an examination of actual military space developments and a review of official arms control initiatives or propositions.

Weaponization. United States military activity in space has accelerated significantly in the past seven years. President Carter initiated a basic research effort on ASAT development in 1977 and formally initiated an active acquisition program in 1978 as a response to Soviet ASAT efforts (12:284). On July 4, 1982, President Reagan declared that U.S. space policy included making space assets more survivable and continuing efforts to acquire an operational antisatellite. The stated ASAT purpose in this declaration was to develop a system which would serve to "deter threats" and which would provide the United States with a space denial capability against hostile space objects (50:5). In September 1982, the United States Air Force established a Space Command and accorded it with an "operational mandate . . . to 'develop space defense doctrine and strategy'" (32:98). Finally, in March 1983, President Reagan called for "research into technologies" which could effectively create a ballistic missile defense (BMD) capable of protecting

the United States and its allies from strategic nuclear attack. (A partial copy of the Reagan SDI speech may be found in Appendix B). Further elaboration of the concept revealed that key elements of this defense system were envisioned as being space-based (51:77). Funding of this SDI research program has proceeded steadily in the two years since its proposal and has already reached a total of \$1.4 billion (49:11). These programs relate to the actual "weaponization" of space and do not include the very extensive reliance of the U.S. military establishment on its nonweapon, military, space assets. The conclusion to be drawn from these activities is that the United States appears to intend to move into a more intense use of space for military purposes in the interest of national security. Although these efforts represent a significant portion of the structure of American space policy, another important portion which cannot be excluded is the arms control provisions which the U.S. has expressed interest in enacting.

Arms Control. Concurrent with the commencement of an anti-sattelite program in 1978, President Carter initiated bilateral "negotiations aimed at maintaining outer space free from antisatellite systems." Three meetings were subsequently held with the Soviets, one in 1978 and two in early 1979, before the talks broke down over several "stumbling blocks." These included refusal by the Soviets to include non-U.S./U.S.S.R. owned satellites in the talks, Soviet refusal to include objects which were deemed to be "performing 'hostile or pernicious acts (sic)'" (27:19), and Soviet intransigence on the issue of including the space shuttle in the talks as a "potential killersat" weapon (5:164-165). Following a diplomatic hiatus brought on by a

cooling of relations, in August 1982, the U.S. Department of Defense issued a fact sheet which stated that ASAT development would proceed in accordance with international law and that the U.S. was willing to "' consider verifiable and equitable arms control measure(s)'" which seek to limit ASAT deployments (50:6). In June 1984, the U.S. "expressed itself as being unconditionally willing to enter into negotiations on the militarization of the space environment, including ASATs, with the Soviets" (12:293).

In addition to this official government policy, the Congress has recently become very active and vociferous on the militarization issue. Congressional actions have included numerous resolutions calling for an end to arms developments in space and for new U.S.-Soviet negotiations on the issue. On September 24, 1983, the Congress went beyond resolutions and attached an amendment to the 1983 Defense Authorization Bill which prohibited expenditure of funds for antisatellite testing until the President "certifies" to Congress that the U.S. is seeking a negotiated settlement with the Soviets and that such testing in the interim is vital to national security interests (12:288).

In the absence of a clearly stated "national military policy," (32:95) the combination of systems development and arms control solicitations together make up the apparent current U.S. military space policy. In sum, this policy involves a continuing effort to field an operational ASAT weapon and to develop space-based BMD technologies while simultaneously seeking legal arrangements which would limit some arms deployments in space, at least in the case of antisatellite weapons. No formulation of policy for integrating a workable BMD system

into arms control negotiations or the international legal fabric has been forthcoming however.

One significant problem in U.S. space policy is the lack of direction, strategy or purpose which is allowing the focus on "narrow . . . individual military problems" (32:94) to force space policy decisions. While the world may be drifting toward militarization in space so too is the United States drifting into a position in which it must weaponize space or face grave security risks. This situation has arisen because of the great dependence of the U.S. military establishment on its space assets. Not only does this intense reliance on space incite the Soviets to develop weapons systems to destroy these satellites but it feeds the U.S. need to actively defend them in order to safeguard national security (32:97). The reliance on these assets did not develop because of a strategic doctrine but came about in a short-sighted, piecemeal fashion resulting from two converging factors. The first was the economy and utility associated with these assets, the second was an unfounded assumption (32:94) that these assets were and would remain invulnerable. Dependence on these systems is now a fact and it appears that this fact drives the current space militarization arms race, at least in respect to antisatellite weapons (32:93-105), and that it serves as the current basis for U.S. military space policy. All proposals dealing with military uses of space must take into account this U.S. position if they are to be acceptable to the United States.

French Proposal. In the spring of 1978, at the "first session of the General Assembly of the United Nations, devoted to disarmament," (1:171) the French delegation proposed the creation of an International

Satellite Monitoring Agency (ISMA), whose purpose was to "make an important contribution to the verification of arms control agreements" (27:20). This would be accomplished by making available the data from "observation satellites . . . placed at the service of the international community." The Secretary-General established a "Group of Experts" to study this proposal and their report was submitted on August 6, 1981 (1:171).

Content. The French proposal, which was entitled the "Memorandum from the French Government Concerning an International Satellite Monitoring Agency," (a copy of this memorandum may be found in Appendix B) included the following provisions: (1) It called for setting up an international agency as part of the United Nations structure which would use the data "collected by the satellites of the States that possess them" until the ISMA possessed its own satellites. It requires that ISMA be able to independently "interpret the data" immediately. (2) The justification for this agency would be "to meet the demands and requirements imposed by effective arms control and disarmament agreements" by providing independent monitoring of agreements (a principle demand of many states who object to relying on the "national technical means" of the two major powers for arms control compliance). The ISMA is foreseen to possibly become an important factor in all future arms limitation negotiations and agreements providing independent verification to all concerned parties. (3) The agency is envisioned to have "two major functions." The first is "to monitor the implementation of international disarmament and security agreements . . .," pursuant to the permission of the parties involved and second, the agency could be called upon to look into a "'specific situation'" which would exist if

one party felt another was cheating. However, both parties would still have to grant permission before an investigation could be initiated by the agency. (4) The "settlement of disputes . . . between contestants" would be handled by "peaceful means" or "submitted for arbitration" to a committee which would be established for the purpose. (5) The proposal contained a method of providing for the finances of the ISMA and with "further details on its technical resources and capabilities" (1:171,182).

The French proposal is an attempt to resolve two of the problems outlined earlier in respect to international space law agreements. The proposal seeks to increase verification of agreements thus removing a major impediment to their conclusion. It also seeks to address the helplessness and frustration of the majority of nations in having to rely on the two superpowers for verification information. Since neither party can be believed to be wholly impartial in their interpretation of data and subsequent reaction, an unbiased international monitoring agency could provide a third party view for the international community allowing it to decide for itself who might be violating agreements.

The potential benefits of a successful ISMA are great. It has been said that

Success in these efforts would lead to two desirable outcomes: the effectiveness of arms control measures and policies would improve and grow, and the foundation would be laid for a supportive legal order--including a constitutive order--with respect to arms control matters (1:172).

Criticisms. In spite of the potential benefits though, there are criticisms with the French proposal. Although it received widespread support from many nations, it was rejected, significantly, by both the

United States and the Soviet Union for reasons "apparently . . . based on the possible risks involved in the transfer to and control of the data gathered by their military reconnaissance satellites" to such an agency (27:20-23). This of course is understandable as only these two possess such assets and both would regard them as some of their most sensitive technologies.

Also at issue was the perceived effectiveness such an agency could actually achieve. Specifically, if parties to the agreement have to give permission for an investigation to be made, even when a violation is believed to have occurred, serious doubts are raised as to the usefulness of the agency. It has also been questioned whether space-based reconnaissance can truly meet the needs of verification for many arms control agreements (1:172-173). The ASAT issue is a case in point. The threat of hiding such weapons in spite of a ban would probably not be detectable from space-based means alone.

Also in question is the planned method of dissemination of data collected by the agency. At dispute already in the international community is the proper rights to be established in regards to distribution and use of remote sensing, resources data. The collection and international availability of data relating to sensitive defense establishments would surely present an even greater legal debate than that still swirling over remote sensing (1:173).

Closely related to the question of the agency's ability to determine treaty violations if the violator refuses to give permission for an investigation, the additional question has been raised as to agency impotence in the face of known violations. Since the proposal is

"intended to be part of the process of 'control' with regard to disarmament" the French proposal should exhibit some "control" ability. However, it, like all present international legal arrangements, requires party participation and compliance. Enforced compliance, "control," is outside the range of capabilities of the proposal and therefore minimizes the potential impact of the concept (1:174-175).

A final criticism of the French proposal is the enormous expense estimated to be associated with the planned agency in which the acquisition of satellites, data control facilities and operations costs would all be significant. The U.S. position maintains that the total cost for the agency could easily "exceed the entire present United Nations budget." Insufficient financial backing has been identified to meet the costs of this proposal (1:180).

Other Proposals. There are many other proposals which have been made dealing with military uses of space arrangements. Many are specific to a particular problem, such as the ASAT issue, while others are more general in nature. A few of the more meritorious are discussed below.

Modified Traffic Control/Weapons Ban Proposal. The first proposal worth mentioning is based on the combination of three independent concepts. The first concept involves the desire and need to ban ASAT weapons. The problems of verification for this action have been previously elaborated; however, in the context of this verification problem, a distinction has been made concerning these weapons. On the one hand there are "dedicated" antisatellite weapons, designed for the sole purpose of the ASAT mission. On the other hand are

"nondedicated systems of potential weapons;" that is, space vehicles performing legitimate functions which could be used in various forms as ASAT systems (41:37).

The second concept is the idea of making existing target satellites more "survivable" if attacked. Such methods would be purely defensive in nature and could include giving such targets "maneuvering capability" to evade attacks, placing "spare" satellites in higher shelf orbits to be called down if the primary is eliminated, using decoys, "hardening" satellites or equipping them "with defensive systems" (49:19-20).

The third concept is that of establishing specific rules for space operations, i.e., "traffic rules" (44:37), which would be created and monitored by an "Outer Space Agency" (44:42). This agency could be modeled perhaps on the Inter-Governmental Maritime Consultative Organization (IMCO) which performs similar functions at sea (44:38). While this concept has not been proposed to deal specifically with military issues, but rather with normal business being pursued for peaceful purposes, it is still applicable to the current situation. The idea is to regulate "space traffic" to accomplish at least two goals. They are "to assure safety by preventing collisions and restricting other forms of harmful interference between space objects and to protect the environment" (44:37).

The modified traffic control proposal would seek to place a ban on all "dedicated" ASAT activities. While compliance with this provision would be difficult to enforce for reasons already cited, verification of nontesting and nonuse would be feasible. In the meantime, the threat posed by "nondedicated" systems, which would be much more

difficult to define, identify or monitor, could be alleviated by development of specific "rules of the road" which would minimize the danger such systems could present in the ASAT role (27:24). In addition to this ban and traffic rule formulation, an additional protection could be obtained by increasing the survivability of satellites which might be considered potential targets. This would further minimize the danger presented by a few "dedicated" ASATS eluding a ban or of "nondedicated" ASAT capabilities to destroy such targets.

While such a formulation probably cannot deal with the wider space militarization issue as a whole, specifically the need to address placing military assets in space or developing space-based BMD, it can address the ASAT issue. Even if not fully effective, this proposal could serve to prevent states from completely testing ASAT technologies and thus force them to accept a higher degree of system uncertainty in combat than would otherwise be necessary (61:369).

Treaty Modification Proposals. Many proposals are continually announced which seek to upgrade or expand some provision of current space law. The provision most often cited for such reform is Article IV of the Outer Space Treaty. In regard to this, the Italian government has been advocating since 1968 the need to declare all space weaponry prohibited from space and from even being "parked" on earth. The Italian demand elaborates only to the degree of including all "offensive and defensive" weaponry but does not define the extent of such terms (39:222).

Another recent candidate for upgrading is the Registration Convention. Several calls have been made for increasing the reporting provisions under the Convention to include more specific information about

space vehicle functions and purposes (21:316). Of particular interest is the fact that despite the heavy emphasis of military payloads in U.S. and Soviet space activities, nearly 70 percent of combined launches, not one mission has so far been registered as being military in nature (27:15). Increasing the reporting provisions is not viewed by proponents as an end in itself, however, but rather as a means of increasing verification of arms control agreements.

Other proposals have also focused on the general perspective of current treaties and have advocated changing that perception. One suggestion advocates changing the focus from treaties containing prohibitions to treaties containing permissions. That is, rather than prohibiting "certain kinds of activities," which "implies that everything . . . not prohibited is allowed," treaties should declare "certain activities (that) would be allowed" leaving all else prohibited. This would eliminate the search for loopholes and would eradicate the technological time lapse which makes many prohibitions valid for only limited periods (27:25).

These ideas are not sufficient in themselves to deal with the militarization problem but they do provide possibly valuable additions to other measures which are more comprehensive.

Central Control Proposal. Another proposal, somewhat nebulous in concept, for dealing not only with but here limited to space militarization, is the call for "an international law transcending, to a realistic degree, the classical concept of state sovereignty which the past two centuries have rendered quasi-absolute" (37:243). This is the idea that some international body should in effect have control over,

or run, all national space programs in the interest of world peace and protection of the environment. The attitude contained here is often found to be implicit in many calls for more multilateral negotiations and agreements (27:23). While no specific proposal has been found to explicitly apply this concept, the underlying desire has been voiced in many generalized, philosophical arguments (46:29).

Although many fallacies could be identified in this concept, three specific reasons can be cited as to why no central body has come into existence to oversee space activity. The first is the "political/military rivalry" of the superpower confrontation. The second revolves around the "failure of advocates of such a regime to carry the burden of showing that it is indeed necessary." And third, there is a "lack of confidence in international organizations to fulfill their intended functions" (28:63).

Maritime Law Historic Analogy Proposal. One final proposal for dealing with space militarization can be drawn from a historic comparison between maritime law and space law. No attempt should be made to tie the development of space law directly to the history of maritime law but certain similarities and historic precedents already exist. It is entirely feasible that lessons or examples could be drawn from the history of the sea which would apply equally to space.

The specific principle to be addressed in this discussion of maritime law is the primary principle upon which it has been founded for nearly 200 years; the principle of "freedom of the high seas" (3:225). All other facets of maritime law have revolved around this one and all others are meaningless if it is abrogated (3:225).

Modern international law relating the law of the sea was founded on the principle of "freedom of the sea: as propounded by Hugo Grotius in 1609 in his Mare Liberum or "The Free Sea" (3:2). This concept of freedom of passage is very similar to the provision in the 1967 OST which states that space is "free for exploration and use by all States." This too is the central principle of law, space law.

Further examination of the development of the "Free Sea" shows that this concept existed only because the maritime powers, most notably "Britain and later the United States," desired the seas to be free (6:7). In similar fashion, looking at the history of space development, it is clear that from the very beginning both the Soviet Union and the United States desired free access and exploration of space and, being the only two space powers initially, they significantly contributed to and encouraged free use of space for all.

Examination of maritime law reveals one significant aspect of the freedom of the high seas. Hugo Grotius wrote Mare Liberum in 1609, yet it was not until after the Napoleonic Wars, in the 1820s, that Britain forced the principle upon the world making it de facto international law. The interim period of time had been dominated by the writings of John Selden in Mare Clausum which espoused not free but controlled seas for the purpose of enhancing "profitable trade monopolies" (3:228). Reassertion of Mare Liberum in the 19th century occurred because it proved to be much more suitable to both Britain and Europe in their colonial exploitations (3:229). The "'traditional law of the sea was largely the 19th century creation of British sea power.'" The "freedom of the seas" remained in effect until the advent of the First World War

(3:229), at which time it was abrogated by virtually all parties at war. The principle was reinstated until the outbreak of the Second World War at which time it was again universally ignored (3:231).

The important points to be drawn from this discussion are first, that "behavior in this case . . . clearly preceded 'law'" (6:8) and second, that the status of the "free sea," and consequently maritime law, rested upon the naval might of the preeminent world power of the period. This truth should not be forgotten when dealing with discussions of international law in general or in this case with space law in particular. The development of the 1967 OST and subsequent treaties, the Moon Treaty excepted, have followed to a greater or lesser extent the established practices of the Soviet Union and the United States. And it must be emphatically stated that, as the major space powers, and the only two with direct military capabilities in space, the extent of free access to and peaceful use of space resides with them jointly and almost exclusively. Other nations may come to have the potential to jeopardize the freedom of space activities in the future but certainly no other nation or group is likely to gain such arbitrary power as these two nations now hold.

The apparent reality is that international "law" in space, like the traditional law of "freedom of the sea," rests with those who possess the ability to dominate it. In this case it is not a single power, such as Britain in the 19th century, but with the Soviet Union and the United States, massive but opposing powers of the 20th century. Although not to be regarded necessarily as a proposal, it remains an alternative that the current space militarization problem could be

resolved bilaterally between these two nations with the agreement being forced upon the balance of the international community as de facto "law." Such agreement could consist of any mutually satisfactory arrangement which would ascertain the necessary security requirements sought by the superpowers while leaving all other parties to accept or reject it as they see fit but without the ability to alter it.

This situation is the apparent lesson to be drawn from historical precedent in maritime law, specifically the existence of "freedom of the seas." The law of space is, in reality, subject to control by a dominant world power, or coalition.

Some would dispute this analogy, specifically the history of maritime law, on the grounds that the final chapter has not been written. Following the Second World War, a "transformation of the international society" took place in the form of the rise of many African and Asian nations that had previously been reduced to servitude by European colonialism (3:232). These states, rejecting the concept of international law which was strictly "of European origin" and which benefited only those European or advanced nations, denounced the traditional concepts of "freedom of the seas" and espoused (3:232) an end to the concept and the formulation of a new Law of the Sea which would recognize the sea and its resources as the "common heritage of mankind" (3:239). The proponents of this view see a new "law of the sea . . . developing;" one which seeks a new regime which is "organized to regulate new uses of the sea for the new vastly extended international society" (3:240). Such advocates see a new system emerging in which the lesser nations,

now assertive and uniting, will have a voice and in which they too will receive benefits from international law (3:240).

The development of the term "common heritage of mankind" in the Moon Treaty as well as the phrase "province of all mankind" in the Outer Space Treaty are similar movements to that underway in the Law of the Sea. However, in both cases, it remains to be seen whether these third world countries are truly developing a new international society in which they too have an equal say, or whether the creation of these international laws has merely been suffered by the major powers up to this point. If the latter should be the case, and nothing of historical precedent indicates it is not, then the domination of the weak by the strong shall remain a valid policy option for the superpowers should they choose it.

While the proposals presented here do not represent all feasible plans of action, they do represent a significant cross section of legal theory confronting the space militarization problem. The task now at hand is to evaluate these alternatives in relation to the problem they are intended to solve and to select that which is most capable of succeeding.

### III. Evaluation and Conclusions

Based on the research that has been conducted, several proposals have been articulated for dealing with the space militarization problem, at least in part. It is entirely possible that these do not present a feasible solution capable of answering the problem that has been presented. It is possible that no complete solution exists. However, the proposals which have been discussed will be evaluated and the best available recommendation will be made.

#### Evaluation of Proposals

Soviet. Of the two Soviet draft treaties presented to the United Nations concerning military limitations in space, only the 1983 proposal need actually be considered. The 1981 submission was too critically flawed in its scope and wording to have ever received serious attention and it was, in any event, superseded in purpose by the 1983 "Draft Treaty on Banning the Use of Force in Space and From Space With Respect to the Earth."

The 1983 Draft espoused a very desirable "legal regime;" that is, it proposed a prohibition against all acts of violence in space, whether they be directed at space objects or earth objects. This prohibition was intended to protect space from the effects of war but also very importantly to protect earth from the effects of war from space. If such a treaty could be effected, the problem of space weaponization would be in large part resolved.

However, several factors stand out in evaluation of this proposal

which severely mitigate against its desirability. The first factor is the unilateral Soviet advantage in operational antisatellite (ASAT) capability. (As this is being written, although the United States is preparing for the first test of its ASAT weapon against an actual space target, it still remains unproven). While the treaty proposal does call for destruction of all existing ASAT devices, which the Soviet Union has never admitted having, it does not establish adequate verification mechanisms to ensure compliance. Even ignoring the possibility of Soviet evasion of this destruction clause, full compliance by all parties would secure for the Soviets a permanent advantage in ASAT technology. The Soviets could "break out" of the treaty at any time and engage in ASAT production while all other nations, if they chose to do so, would be unable to "break out" as quickly due to lack of testing. Such a situation would give the Soviet Union undue bargaining power at a later date deriving from their potential to quickly deploy ASAT systems while no other nation could effectively counter in this field.

A second factor in evaluating the soundness of this proposal is the improper reference it makes to "manned spacecraft." The draft treaty specifically seeks to ban use of such objects for "military" or "antisatellite" purposes. This reference is seen to be directed at the U.S. Space Shuttle, as already mentioned, and can be viewed as nothing less than an attempt to limit this specific system by international treaty. This treaty then is being used in a manipulative manner which is not proper for international law, at least ideally.

A third factor of relevance to the discussion is the lack of definition of terms, discussed at some length in general in Chapter II.

No definition of military uses is given and the status of military support satellites, such as communications, is not specified.

A final factor that must be included in assessing the validity of this proposal is Soviet attitudes and actions. The history of Soviet compliance with international treaties is abominable and their actions in unilaterally developing and deploying the world's only ASAT system, even to the extent of conducting tests while proposing a complete ban, suggest that their intent is geared more towards inhibiting competitive military activities than prohibiting all military space actions. For these reasons the Soviet proposal is viewed as insufficient for meeting the militarization problem and is not considered a viable option. The purported goal of the "legal regime" that would be created is the ultimate objective that international law seeks but this Soviet vehicle is not the means to achieve it.

U.S. The Soviet Union has proposed two treaties to deal with the space militarization problem, neither of which is judged to be effective for the task at hand. However, in spite of these flawed proposals, the Soviets appear to at least put some effort into a consideration of the problem. In contrast, the United States apparently does not even consider the problem to warrant attention since no legitimate proposals, even flawed ones, have been broached. The United States is moving on a two track course in the space militarization arena. On the one track are the ASAT development efforts and Strategic Defense Initiative (SDI) research programs which seek to develop space-based weapons for missile defense. On the other track are official proclamations and negotiating efforts which claim the goal of banning space weapons, at least ASATs,

under verifiable, equitable conditions. What is lacking is the strategic plan that these possible contradictory tracks fit into.

There is no specific U.S. proposal to be evaluated. The U.S. appears to be moving toward a full scale use of space for military purposes, especially if the SDI program should move beyond the research stage. If this is to be official U.S. policy, then considerable thought and planning is required to determine how such weaponization plans can be accommodated to international law or what impacts they are likely to have on the system of law now established. The decision to proceed with space militarization plans should not be made in isolation from law or the effect such policies will have on international law, yet the U.S. seemingly gives little attention to legal considerations of policy options. Continuation of military space programs without a strategic plan and without a strategic plan and without due analysis of their impact on current legal arrangements can only be viewed as shortsighted and ultimately detrimental to the space interests of not only the United States but also the entire world community.

French. The French proposal for establishment of an International Satellite Monitoring Agency (ISMA) is a valuable concept which could provide some positive results in international treaty negotiations, if adequately implemented. The primary benefit to be derived from a successful agency would be independent verification of arms control agreements. This would of course free the majority of the international community from mandatory reliance on the two major powers for treaty compliance. This benefit of increased and independent verification

could also remove one major impediment to the conclusion of additional agreements.

The ISMA proposal, if achieved, would also serve as another step in the direction of the trend for a truly international, interdependent, world community; a trend which the United Nations Organization itself embodies. This agency, if created, could provide the foundation for even more comprehensive international structures capable of fulfilling duties in space other than strictly arms control verification. One example would be the use of the agency for formulating and/or monitoring "traffic rules" for space which will be discussed below.

Major criticisms of the proposal emanate from questions about effectiveness, feasibility and cost. As was mentioned in the discussion of the proposal, a satellite monitoring system alone would be of limited effectiveness for many verification needs, notably the concealment of ASAT kill mechanisms. The effectiveness of the agency in investigating possible agreement infractions and courses of action that could be taken in the face of detected violations are also under question. As for feasibility, it is unlikely that either the U.S. or the Soviet Union would ever be willing to part with sensitive reconnaissance data. And finally, the enormous cost projected for this proposal is by itself a formidable obstacle which could easily inhibit implementation even if the other criticisms were resolved.

The French proposal, however, is a good concept that should not be quickly discarded. Perhaps the proposal is too ambitious and should start with a skeleton organization based on this concept of an international, independent monitoring agency. Such an agency should not be

expected to monitor all agreements but possibly, as a first step, only those that are conducive to satellite monitoring or those specifically related to space military activities. The important point is that the concept behind the proposal is vital and could be implemented in a basic form open to upgrading at a later date. The exact specifics of operations are not necessary and should remain negotiable and expandable.

Other.

Traffic Control/Ban. The traffic control/ASAT ban proposal is limited in scope to a specific militarization topic, the ASAT problem. It is, however, possibly an effective means of dealing with this not insignificant threat to the future peaceful use of space. One distinct advantage in favor of this proposal is that it seeks a single, relatively narrow goal which is definable and achievable. The combination of actions which it proposes to implement is feasible and could eradicate the problem.

Of the three individual proposals, an ASAT ban is a desirable goal but, by itself, difficult to verify or to ensure protection against treaty evasion. The feasibility of a traffic control proposal, while much broader in scope, is proven by the existence of "traffic rules" at sea. The final proposal, increasing satellite survivability, is purely defensive and nonthreatening. Satellites are unlikely to be defensible against "dedicated" ASAT systems (short of the deployment of active defenses) so such survivability options would be of value only against "nondedicated" ASATs operating in a secondary role. This option would therefore be practical only in an environment of "nondedicated" ASATs

thus removing an incentive to develop ASATs while "hardening" friendly satellites for unilateral advantage.

This combined proposal, like any dealing with an ASAT ban, could never be certain of eliminating the low orbit threat because systems with that capability already exist and can be hidden. However, a total ban could at least prevent further developments which will eventually lead to capabilities stretching into the geostationary orbit, holding the threshold of threat to the low earth orbit. While unfortunate that any ASAT capability exists to threaten the peaceful use of space, a policy which can at least prevent an extension of that threat is better than no policy at all.

The traffic control proposal would be dependent on the existence of an international monitoring agency to oversee "flight" activities and to formulate or clear "traffic rules." While limited here to a discussion of space militarization, such an agency would obviously have direct and important influence over other space activities, specifically business enterprises. The traffic agency envisioned here could be tied into or derived from an agency established as part of the French proposal. The creation of an agency for either purpose could therefore have an added benefit of being adaptable to serving the needs of the other purpose as well as other potential needs for international regulation. The important feature to be kept in mind with both of these proposals is their long range implications and their potential applications. While not achieving utopia overnight, they can establish a framework for building larger and stronger controls as needed. But they

require establishing at least a rudimentary agency as the first necessary step.

Treaty Modifications. There are no specific proposals under the subject of treaty modifications which would in themselves achieve much in the space militarization area. A strengthening of launch data reporting provisions under the Registration Convention would be complementary to the success of other proposals, such as the monitoring of traffic in the traffic control proposal above. The theory of changing the perspective of treaties from prohibitions to admissions is an interesting concept. It contains an appealing argument that such a change of view would remove the search for loopholes which would allow prohibitions to be avoided in efforts to circumvent treaty intent. The major flaw however is that the search for loopholes in specified allowances could be just as frenzied and could result in the same general effect. Likewise, defining everything that is allowed, especially considering the difficulty involved in defining terms, would be an immensely larger task than the numerically smaller number of prohibitions that are required.

Central Control. The evolution of a central body to monitor all space activities, and theoretically an organization of even greater scope, appears to some as a natural, inevitable conclusion in international relations, unless destruction overwhelms mankind first. However, whether this is truly the trend or not, it is not a policy option which can be seriously pursued. The actual fulfillment of this trend will undoubtedly occur only in the face of an overwhelming common crises which forces mankind to ignore the current real and imagined differences

which separate nations. The occurrence of such an eventuality cannot be predicted or planned for, although the ingredients for a catastrophic crises in many areas are visible. The development of a central control structure of governing magnitude may occur as a result of circumstances, but it is unlikely that logic, sentiment or proclamation can bring it about.

Maritime Law Analogy. The correlation of maritime law to space law did not necessarily present a specific proposal. However, it did highlight an important fact which the student of history can quickly verify. The concept of international law changes as the dominant world power sees fit to change it. Law is an attempt to establish particular behavior which will achieve certain goals. A nation with the power to make or break laws will logically seek to establish law which contributes to fulfillment of desirable goals, from that nation's perspective.

In the case of space law, in the current world situation, since there is no dominant power, neither the United States nor the Soviet Union has the ability to create law arbitrarily, although either could arguably destroy its proper functioning. However, should the two superpowers reach agreement on any issue, in this case space militarization, they could create space law which suited their needs jointly and which could be imposed, by the fiat of their power, on the international community. This is not a policy option that is desirable or an advocacy for its pursuit. But it is a recognition of reality to be borne in mind that this possibility exists if all other options fail and the alternative is a degradation of space utility for all.

## Recommendations

Based on the information that has been presented, the following recommendations are made, one from the international perspective and the other from the United States national perspective, for addressing the space militarization issue.

International. From the international perspective, it is recommended that a total antisatellite weapons ban be sought through international forums which would prohibit all future testing, which would prohibit all basing schemes and which would demand all existing systems be destroyed. This follows very closely certain provisions of the Soviet draft treaties. At the same time, in an attempt to deal with fundamental problems of the space militarization issue, it is recommended that an international determination be made, in the form of a protocol, for the definition of terms used in the space treaties. This document should be attached by amendment to existing treaties to clarify the meaning of provisions in them and should be incorporated into all future treaty deliberations. Such definitions should clearly specify what is meant by military use, peaceful use, weapons, antisatellites and other terminology under question in current arguments.

Recognizing that antisatellite (ASAT) weapons exist primarily to destroy critical military assets of an adversary, it is recommended that, as a further incentive to inhibit ASAT deployments and in the interest of increasing peaceful uses of space, military uses of space be limited further by prohibiting dedicated military support satellites, with the exception of those associated with "national technical means," and by prohibiting all weapons use systems. This limitation should be

phased in over a period of years to allow for a gradual disengagement from military assets already in place.

A final recommendation is that the International Satellite Monitoring Agency, or a similar organization, should be established to provide independent treaty verification where possible. However, the created organization should be established with an eye toward expansion to many other functions as necessary. The agency is here envisioned as the foundation for a building block approach to the establishment of an international regime with regulatory powers over space activities. Such an agency could develop and monitor "traffic rules" which not only affect space militarization, as already discussed, but which would also have value in overseeing business uses of space. Funding for the agency in this case could be provided in part by a tax assessment against business or other activities in space, much like user fees.

Although these proposals are not likely to be enacted in the near future, they do represent a possible solution to the space militarization problem. They are idealistic recommendations to be sure, but they could be achieved gradually. The basic requirement though is that the process be started with limited objectives which can be built upon as time and circumstances permit. The alternative at this point strongly suggests that military uses of space will increase dramatically in the future and that any hope of maintaining a weapons free space environment will soon be extinguished forever.

National. From a United States national perspective a reasonable recommendation must first of all ensure national security requirements are met. It is therefore in the U.S. interest to conclude

a short term ASAT ban which would prohibit all testing after a specific date and which would immediately seek to prevent development of extended ASAT capabilities, specifically geostationary orbit range. Such agreements should further seek to minimize deployments of current ASAT systems; however, short of an adequate means of verifying compliance, no ban on existing systems should be initiated or accepted. The danger of concealed, dedicated ASATs is too great to risk unilaterally disarming the U.S. through destruction of the current ASAT under development. Future testing should be halted on all systems to minimize the danger already present. Since these systems are developed and now exist, the best that can be hoped for is to now lock them in their current states, preventing the perfection of their lethality.

It is further recommended that the United States define an overall, strategic plan for its military uses of space. Included in this should be an accurate assessment of international legal goals which it supports and a determination of how military space programs impact legal elements. This strategic plan should also investigate the advisability of placing so much strategic reliance on such assets with a questionable, ASAT deterrence capability to ostensibly protect them.

A final recommendation is that the U.S. continue laboratory research and design efforts for military space systems including space-based ballistic missile defense (BMD). Such work should be kept current to the highest level which can be attained in this limited laboratory environment but, if agreements for military limitations are reached, no field testing should take place and no intent should exist for deployment of a Strategic Defense Initiative program. Research should

continue to a level capable of matching that of any adversary but it should proceed only as a hedge against Soviet breakout of space arms limits and should not be considered an actual deployment program. It is believed that the ultimate interest of the U.S. and all nations, in regard to space use, would be compromised by active defensive armaments in space.

### Conclusion

In conclusion, this study has shown that a well developed and important body of specified, international, space law has already been established. Additionally, there is a general body of international law with precedents which may be applicable to specific legal questions in space law. This study has also shown that in spite of this law, many questions concerning space use still remain in regard to the need for legal requirements or regulations. These questions, such as those involved with space militarization, if left unanswered have the potential to negatively impact space usage for all.

Specific areas of deficiency in space law were pointed out in questions of proper jurisdictional authority, including regulatory ability, resource allocations and, the focus of Chapter II, militarization. In the case of militarization it has been shown that existing legal arrangements are insufficient to meet the growing problem and that further legal controls or international bodies are needed to meet this challenge.

In answer to this need, several proposals for its resolution were presented. Although none was judged to be a complete answer to the

problem, recommendations based on elements of these proposals were made which could alleviate if not eradicate the militarization problem.

The proposals presented here are not completely adequate to answer the needs of controlling space militarization. But it is unlikely that any proposal, anywhere, will ever be completely adequate either. What is possible in the final analysis is an ability to recognize reality and to strive to minimize the undesirable military activities in space at the lowest possible level. Aspirations for a totally peaceful space environment are utopian and realistically unattainable. Amidst all the hope and the proclamations for peace that men can generate, the age old truth of the prophet, proven by a score of generations to be valid, should not be forgotten; "'Peace, peace,' they say, when there is no peace." And equally true is the promise, "you will hear of wars and rumors of wars . . . such things must happen" until the end of time finally arrives. Peace in space is no more desirable than peace on earth and, like the latter, can be expected to have little more success unless the nature of man should be altered. The best that can be hoped for in this world is a minimization of the likely confrontation; minimization achieved through law.

Appendix A:  
Space Treaties in Force

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 13 December 1963,  
Recalling resolution 1884 (XVIII), calling upon States to refrain from placing in orbit around the Earth any objects carrying nuclear weapons or any other kinds of weapons of mass destruction or from installing such weapons on celestial bodies, which was adopted unanimously by the United Nations General Assembly on 17 October 1963,  
Taking account of United Nations General Assembly resolution 110 (II) of 3 November 1947, which condemned propaganda designed or likely to provoke or encourage any threat to the peace, breach of the peace or act of aggression, and considering that the aforementioned resolution is applicable to outer space,  
Convinced that a Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies, will further the Purposes and Principles of the Charter of the United Nations,  
Have agreed on the following:

ARTICLE I

The exploration and use of outer space, including the moon and other celestial bodies, shall be carried out for the benefit and in the interests of all countries, irrespective of their degree of economic or scientific development, and shall be the province of all mankind.

Outer space, including the moon and other celestial bodies, shall be free for exploration and use by all States without discrimination of any kind, on a basis of equality and in accordance with international law, and there shall be free access to all areas of celestial bodies.

There shall be freedom of scientific investigation in outer space, including the moon and other celestial bodies, and States shall facilitate and encourage international co-operation in such investigation.

#### ARTICLE II

Outer space, including the moon and other celestial bodies, is not subject to national appropriation by claim of sovereignty, by means of use or occupation, or by any other means.

#### ARTICLE III

States Parties to the Treaty shall carry on activities in the exploration and use of outer space, including the moon and other celestial bodies, in accordance with international law, including the Charter of the United Nations, in the interest of maintaining international peace and security and promoting international co-operation and understanding.

#### ARTICLE IV

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

The moon and other celestial bodies shall be used by all States Parties to the Treaty exclusively for peaceful purposes. The establishment of military bases, installations and fortifications, the testing of any type of weapons and the conduct of military maneuvers 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 nongovernmental entities, and for assuring that national activities are carried out in conformity with the provisions set forth in the present Treaty. The activities of nongovernmental entities in outer space, including the moon and other celestial bodies, shall require authorization and continuing supervision by the appropriate State Party to the Treaty. When activities are carried on in outer space, including the moon and other celestial bodies, by an international organization, responsibility for compliance with this Treaty shall be borne both by the international organization and by the States Parties to the Treaty participating in such organization.

#### ARTICLE VII

Each State Party to the Treaty that launches or procures the launching of an object into outer space, including the moon and other celestial bodies, and each State Party from whose territory or facility an object is launched, is internationally liable for damage to another State Party to the Treaty or to its natural or juridical persons by such object or its component parts on the Earth, in air space or in outer space, including the moon and other celestial bodies.

#### ARTICLE VIII

A State Party to the Treaty on whose registry an object launched into outer space is carried shall retain jurisdiction and control over such object, and over any personnel thereof, while in outer space or on a celestial body. Ownership of objects launched into outer space, including objects landed or constructed on a celestial body, and of their component parts, is not affected by their presence in outer space or on a celestial body or by their return to the Earth. Such objects or component parts found beyond the limits of the State Party to the Treaty on whose registry they are carried shall be returned to that State Party, which shall, upon request, furnish identifying data prior to their return.

## ARTICLE IX

In the exploration and use of outer space, including the moon and other celestial bodies, States Parties to the Treaty shall be guided by the principle of co-operation and mutual assistance and shall conduct all their activities in outer space, including the moon and other celestial bodies, with due regard to the corresponding interests of all other States Parties to the Treaty. States Parties to the Treaty shall pursue studies of outer space, including the moon and other celestial bodies, and conduct exploration of them so as to avoid their harmful contamination and also adverse changes in the environment of the Earth resulting from the introduction of extraterrestrial matter and, where necessary, shall adopt appropriate measures for this purpose. If a State Party to the Treaty has reason to believe that an activity or experiment planned by it or its nationals in outer space, including the moon and other celestial bodies, would cause potentially harmful interference with activities of other States Parties in the peaceful exploration and use of outer space, including the moon and other celestial bodies, it shall undertake appropriate international consultations before proceeding with any such activity or experiment. A State Party to the Treaty which has reason to believe that an activity or experiment planned by another State Party in outer space, including the moon and other celestial bodies, would cause potentially harmful interference with activities in the peaceful exploration and use of outer space, including the moon and other celestial bodies, may request consultation concerning the activity or experiment.

## ARTICLE X

In order to promote international co-operation in the exploration and use of outer space, including the moon and other celestial bodies, in conformity with the purposes of this Treaty, the States Parties to the Treaty shall consider on a basis of equality any requests by other States Parties to the Treaty to be afforded an opportunity to observe the flight of space objects launched by those States.

The nature of such an opportunity for observation and the conditions under which it could be afforded shall be determined by agreement between the States concerned.

## ARTICLE XI

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

information, the Secretary-General of the United Nations should be prepared to disseminate it immediately and effectively.

#### ARTICLE XII

All stations, installations, equipment and space vehicles on the moon and other celestial bodies shall be open to representatives of other States Parties to the Treaty on a basis of reciprocity. Such representatives shall give reasonable advance notice of a projected visit, in order that appropriate consultations may be held and that maximum precautions may be taken to assure safety and to avoid interference with normal operations in the facility to be visited.

#### ARTICLE XIII

The provisions of this Treaty shall apply to the activities of States Parties to the Treaty in the exploration and use of outer space, including the moon and other celestial bodies, whether such activities are carried on by a single State Party to the Treaty or jointly with other States, including cases where they are carried on within the framework of international inter-governmental organizations.

Any practical questions arising in connection with activities carried on by international inter-governmental organizations in the exploration and use of outer space, including the moon and other celestial bodies, shall be resolved by the States Parties to the Treaty either with the appropriate international organization or with one or more States members of that international organization, which are Parties to this Treaty.

#### ARTICLE XIV

1. This Treaty shall be open to all States for signature. Any State which does not sign this Treaty before its entry into force in accordance with paragraph 3 of this article may accede to it at any time.

2. This Treaty shall be subject to ratification by signatory States. Instruments of ratification and instruments of accession shall be deposited with the Governments of the 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 Depository Governments.

3. This Treaty shall enter into force upon the deposit of instruments of ratification by five Governments including the Governments designated as Depository Governments under this Treaty.

4. For States whose instruments of ratification or accession are deposited subsequent to the entry into force of this Treaty, it shall enter into force on the date of the deposit of their instruments of ratification or accession.

5. The Depositary Governments shall promptly inform all signatory and acceding States of the date of each signature, the date of deposit of each instrument of ratification of and accession to this Treaty, the date of its entry into force and other notices.

6. This Treaty shall be registered by the Depositary Governments pursuant to Article 102 of the Charter of the United Nations.

#### ARTICLE XV

Any State Party to the Treaty may propose amendments to this Treaty. Amendments shall enter into force for each State Party to the Treaty accepting the amendments upon their acceptance by a majority of the States Parties to the Treaty and thereafter for each remaining State Party to the Treaty on the date of acceptance by it.

#### ARTICLE XVI

Any State Party to the Treaty may give notice of its withdrawal from the Treaty one year after its entry into force by written notification to the Depositary Governments. Such withdrawal shall take effect one year from the date of receipt of this notification.

#### ARTICLE XVII

This Treaty, of which the English, Russian, French, Spanish and Chinese texts are equally authentic, shall be deposited in the archives of the Depositary Governments. Duly certified copies of this Treaty shall be transmitted by the depositary Governments to the Governments of the signatory and acceding States.

Opened for signature 27 January 1967  
Entered into force 10 October 1967

Text cited from source (60:24-34)

AGREEMENT 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;

(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 II

If, owing to accident, distress, emergency or unintended landing, the personnel of a spacecraft land in territory under the jurisdiction of a Contracting Party, it shall immediately take all possible steps to rescue them and render them all necessary assistance. It shall inform the launching authority and also the Secretary-General of the United Nations of the steps it is taking and of their progress. If assistance by the launching authority would help to effect a prompt rescue or would contribute substantially to the effectiveness of search and rescue operations, the launching authority shall co-operate with the Contracting Party with a view to the effective conduct of search and rescue operations. Such operations shall be subject to the direction and control of

the Contracting Party, which shall act in close and continuing consultation with the launching authority.

### ARTICLE III

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 IV

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 V

1. Each Contracting Party which receives information or discovers that a space object or its component parts has returned to Earth in territory under its jurisdiction or on the high seas or in any other place not under the jurisdiction of any State, shall notify the launching authority and the Secretary-General of the United Nations.

2. Each Contracting Party having jurisdiction over the territory on which a space object or its component parts has been discovered shall, upon the request of the launching authority and with assistance from that authority if requested, take such steps as it finds practicable to recover the object or component parts.

3. Upon request of the launching authority, objects launched into outer space or their component parts found beyond the territorial limits of the launching authority shall be returned to or held at the disposal of representatives of the launching authority, which shall, upon request, furnish identifying data prior to their return.

4. Notwithstanding paragraphs 2 and 3 of this article, a Contracting Party which has reason to believe that a space object or its component parts discovered in territory under its jurisdiction, or recovered by it elsewhere, is of a hazardous or deleterious nature may so notify the launching authority, which shall immediately take effective steps, under the direction and control of the said Contracting Party to eliminate possible danger of harm.

5. Expenses incurred in fulfilling obligations to recover and return a space object or its component parts under paragraphs 2 and 3 of this article shall be borne by the launching authority.

#### ARTICLE VI

For the purposes of this Agreement, the term "launching authority" shall refer to the State responsible for launching, or, where an international inter-governmental organization is responsible for launching, that organization, provided that that organization declares its acceptance of the rights and obligations provided for in this Agreement and a majority of the States members of that organization are Contracting Parties to this Agreement and to the Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies.

#### ARTICLE VII

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 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 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 or 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 VIII

Any State Party to the Agreement may propose amendments to this Agreement. Amendments shall enter into force for each State Party to the Agreement accepting the amendments upon their acceptance by a majority of the States Parties to the Agreement and thereafter for each

remaining State Party to the Agreement on the date of acceptance by it.

#### ARTICLE IX

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 X

This Agreement, of which the English, Russian, French, Spanish and Chinese texts are equally authentic, shall be deposited in the archives of the Depositary Governments. Duly certified copies of this Agreement shall be transmitted by the Depositary Governments to the Governments of the signatory and acceding States.

Opened for signature 22 April 1968  
Entered into force 3 December 1968

Text cited from source (60:40-47)

CONVENTION 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 to be taken by States and international intergovernmental  
organizations involved in the launching of space objects, damage may  
on occasion be caused by such objects,

Recognizing the need to elaborate effective international rules  
and procedures concerning liability for damage caused by space objects  
and to ensure, in particular, the prompt payment under the terms of this  
Convention of a full and equitable measure of compensation to victims  
of such damage,

Believing that the establishment of such rules and procedures will  
contribute to the strengthening of international cooperation in the field  
of the exploration and use of outer space for peaceful purposes,

Have agreed on the following:

ARTICLE I

For the purposes of this Convention:

(a) The term "damage" means loss of life, personal injury or other  
impairment of health; or loss of or damage to property of States or of  
persons, natural or juridical, or property of international intergovern-  
mental organizations;

(b) The term "launching" includes attempted launching;

(c) The term "launching State" means:

(i) A State which launches or procures the launching of a  
space object;

(ii) A State from whose territory or facility a space object  
is launched;

(d) The term "space object" includes component parts of a space  
object as well as its launch vehicle and parts thereof.

ARTICLE II

A launching State shall be absolutely liable to pay compensation  
for damage caused by its space object on the surface of the earth or to  
aircraft in flight.

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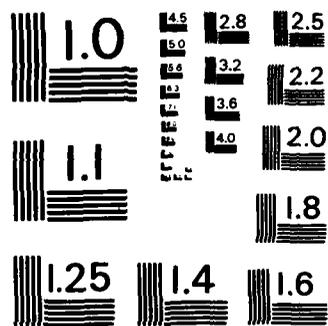
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### ARTICLE III

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

#### ARTICLE VII

The provisions of this Convention shall not apply to damage caused by a space object of a launching State to:

- (a) Nationals of that launching State;
- (b) Foreign nationals during such time as they are participating in the operation of that space object from the time of its launching or at any stage thereafter until its descent, or during such time as they are in the immediate vicinity of a planned launching or recovery area as the result of an invitation by that launching State.

#### ARTICLE VIII

1. A State which suffers damage, or whose natural or juridical persons suffer damage, may present to a launching State a claim for compensation for such damage.

2. If the State of nationality has not presented a claim, another State may, in respect of damage sustained in its territory by any natural or juridical person, present a claim to a launching State.

3. If neither the State of nationality for the State in whose territory the damage was sustained has presented a claim or notified its intention of presenting a claim, another State may, in respect of damage sustained by its permanent residents, present a claim to a launching State.

#### ARTICLE IX

A claim for compensation for damage shall be presented to a launching State through diplomatic channels. If a State does not maintain

diplomatic relations with the launching State concerned, it may request another State to present its claim to that launching State or otherwise represent its interests under this Convention. It may also present its claim through the Secretary-General of the United Nations, provided the claimant State and the launching State are both Members of the United Nations.

#### ARTICLE X

1. A claim for compensation for damage may be presented to a launching State not later than one year following the date of the occurrence of the damage or the identification of the launching State which is liable.

2. If, however, a State does not know of the occurrence of the damage or has not been able to identify the launching State which is liable, it may present a claim within one year following the date on which it learned of the aforementioned facts; however, this period shall in no event exceed one year following the date on which the State could reasonably be expected to have learned of the facts through the exercise of due diligence.

3. The time-limits specified in paragraphs 1 and 2 of this article shall apply even if the full extent of the damage may not be known. In this event, however, the claimant State shall be entitled to revise the claim and submit additional documentation after the expiration of such time-limits until one year after the full extent of the damage is known.

#### ARTICLE XI

1. Presentation of a claim to a launching State for compensation for damage under this Convention shall not require the prior exhaustion of any local remedies which may be available to a claimant State or to natural or juridical persons it represents.

2. Nothing in this Convention shall prevent a State, or natural or juridical persons it might represent, from pursuing a claim in the courts or administrative tribunals or agencies of a launching State. A State shall not, however, be entitled to present a claim under this Convention in respect of the same damage for which a claim is being pursued in the courts or administrative tribunals or agencies of a launching State or under another international agreement which is binding on the States concerned.

#### ARTICLE XII

The compensation which the launching State shall be liable to pay for damage under this Convention shall be determined in accordance with international law and the principles of justice and equity, in order to provide such reparation in respect of the damage as will

restore the person, natural or juridical, State or international organization on whose behalf the claim is presented to the condition which would have existed if the damage had not occurred.

#### ARTICLE XIII

Unless the claimant State and the State from which compensation is due under this Convention agree on another form of compensation, the compensation shall be paid in the currency of the claimant State or, if that State so requests, in the currency of the State from which compensation is due.

#### ARTICLE XIV

If no settlement of a claim is arrived at through diplomatic negotiations as provided for in article IX, within one year from the date on which the claimant State notifies the launching State that it has submitted the documentation of its claim, the parties concerned shall establish a Claims Commission at the request of either party.

#### ARTICLE XV

1. The Claims Commission shall be composed of three members: one appointed by the claimant State, one appointed by the launching State and the third member, the Chairman, to be chosen by both parties jointly. Each party shall make its appointment within two months of the request for the establishment of the Claims Commission.

2. If no agreement is reached on the choice of the Chairman within four months of the request for the establishment of the Commission, either party may request the Secretary-General of the United Nations to appoint the Chairman within a further period of two months.

#### ARTICLE XVI

1. If one of the parties does not make its appointment within the stipulated period, the Chairman shall, at the request of the other party, constitute a single-member Claims Commission.

2. Any vacancy which may arise in the Commission for whatever reason shall be filled by the same procedure adopted for the original appointment.

3. The Commission shall determine its own procedure.

4. The Commission shall determine the place or places where it shall sit and all other administrative matters.

5. Except in the case of decisions and awards by a single-member Commission, all decisions and awards of the Commission shall be by majority vote.

## ARTICLE XVII

No increase in the membership of the Claims Commission shall take place by reason of two or more claimant States or launching States being jointed in any one proceeding before the Commission. The claimant States so joined shall collectively appoint one member of the Commission in the same manner and subject to the same conditions as would be the case for a single claimant State. When two or more launching States are so joined, they shall collectively appoint one member of the Commission in the same way. If the claimant States or the launching States do not make the appointment within the stipulated period, the Chairman shall constitute a single-member Commission.

## ARTICLE XVIII

The Claims Commission shall decide the merits of the claim for compensation and determine the amount of compensation payable, if any.

## ARTICLE XIX

1. The Claims Commission shall act in accordance with the provisions of article XII.
2. The decision of the Commission shall be final and binding if the parties have so agreed; otherwise the Commission shall render a final and recommendatory award, which the parties shall consider in good faith. The Commission shall state the reasons for its decision or award.
3. The Commission shall give its decision or award as promptly as possible and no later than one year from the date of its establishment, unless an extension of this period is found necessary by the Commission.
4. The Commission shall make its decision or award public. It shall deliver a certified copy of its decision or award to each of the parties and to the Secretary-General of the United Nations.

## ARTICLE XX

The expenses in regard to the Claims 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 interfered with the living conditions of the population or the functioning of vital centers, the States Parties, and in particular the launching State, shall examine the possibility of rendering appropriate and rapid assistance to the State which has suffered the damage, when it so requests. However, nothing in this article shall affect the rights or obligations of the States

Parties under this Convention.

#### ARTICLE XXII

1. In this Convention, with the exception of articles XXIV to XXVII, references to States shall be deemed to apply to any international intergovernmental organization which conducts space activities if the organization declares its acceptance of the rights and obligations provided for in this Convention and if a majority of the States members of the organization are States Parties to this Convention and to the Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies.

2. States members of any such organization which are States Parties to this Convention shall take all appropriate steps to ensure that the organization makes a declaration in accordance with the preceding paragraph.

3. If an international intergovernmental organization is liable for damage by virtue of the provisions of this Convention, that organization and those of its members which are States Parties to this Convention shall be jointly and severally liable; provided, however, that:

(a) Any claim for compensation in respect of such damage shall be first presented to the organization;

(b) Only where the organization has not paid, within a period of six months, any sum agreed or determined to be due as compensation for such damage, may the claimant State invoke the liability of the members which are States Parties to this Convention for the payment of that sum.

4. Any claim, pursuant to the provisions of this Convention, for compensation in respect of damage caused to an organization which has made a declaration in accordance with paragraph 1 of this article shall be presented by a State member of the organization which is a State Party to this Convention.

#### ARTICLE XXIII

1. The provisions of this Convention shall not affect other international agreements in force in so far as relations between the States Parties to such agreements are concerned.

2. No provision of this Convention shall prevent States from concluding international agreements reaffirming, supplementing or extending its provisions.

#### ARTICLE XXIV

1. This Convention shall be open to all States for signature. Any State which does not sign this Convention before its entry into force in accordance with paragraph 3 of this article may accede to it at any time.

2. This Convention shall be subject to ratification by signatory States. Instruments of ratification and instruments of accession shall be deposited with the Governments of the United States of America, the United Kingdom of Great Britain and Northern Ireland and the Union of Soviet Socialist Republics, which are hereby designated the Depositary Governments.

3. This Convention shall enter into force on the deposit of the fifth instrument of ratification.

4. For States whose instruments of ratification or accession are deposited subsequent to the entry into force of this Convention, it shall enter into force on the date of the deposit of their instruments of ratification or accession.

5. The Depositary Governments shall promptly inform all signatory and acceding States of the date of each signature, the date of deposit of each instrument of ratification or accession to this Convention, the date of its entry into force and other notices.

6. This Convention shall be registered by the Depositary Governments pursuant to Article 102 of the Charter of the United Nations.

#### ARTICLE XXV

Any State Party to this Convention may propose amendments to this Convention. Amendments shall enter into force for each State Party to the Convention accepting the amendments upon their acceptance by a majority of the States Parties to the Convention and thereafter for each remaining State Party to the Convention on the date of acceptance by it.

#### ARTICLE XXVI

Ten years after the entry into force of this Convention, the question of the review of this Convention shall be included in the provisional agenda of the United Nations General Assembly in order to consider, in the light of past application of the Convention, whether it requires revision. However, at any time after the Convention has been in force for five years, and at the request of one third of the States Parties to the Convention, and with the concurrence of the majority of the States Parties, a conference of the States Parties shall be convened to review this Convention.

#### ARTICLE XXVII

Any State Party to this Convention may give notice of its withdrawal from the Convention one year after its entry into force by written notification to the Depositary Governments. Such withdrawal shall take effect one year from the date of receipt of this notification.

ARTICLE XXVIII

This Convention, of which the English, Russian, French, Spanish and Chinese texts are equally authentic, shall be deposited in the archives of the Depositary Governments, Duly certified copies of this Convention shall be transmitted by the Depositary Governments to the Governments of the signatory and acceding States.

Opened for signature 29 March 1972  
Entered into force 9 October 1973

Text cited from source (60:53-67)

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 Bodies of 27 January 1967 affirms that States shall bear international responsibility for their national activities in outer space and refers to the State on whose registry an object launched into outer space is carried,

Recalling also that the Agreement on the Rescue of Astronauts, the Return of Astronauts and the Return of Objects Launched into Outer Space of 22 April 1968 provides that a launching authority shall, upon request, furnish identifying data prior to the return of an object it has launched into outer space found beyond the territorial limits of the launching authority,

Recalling further that the Convention on International Liability for Damage Caused by Space Objects of 29 March 1972 establishes international rules and procedures concerning the liability of launching States for damage caused by their space objects.

Desiring, in the light of the Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies, to make provision for the national registration by launching States of space objects launched into outer space,

Desiring further that a central register of objects launched into outer space be established and maintained, on a mandatory basis, by the Secretary-General of the United Nations,

Desiring also to provide for States Parties additional means and procedures to assist in the identification of space objects,

Believing that a mandatory system of registering objects launched into outer space would, in particular, assist in their identification and would contribute to the application and development of international law governing the exploration and use of outer space,

Have agreed on the following:

ARTICLE I

For the purposes of this Convention:

- (a) The term "launching State" means:
  - (i) A State which launches or procures the launching of a space object;
  - (ii) A State from whose territory or facility a space object is launched;
- (b) The term "space object" includes component parts of a space object as well as its launch vehicle and parts thereof;

(c) The term "State of registry" means a launching State on whose registry a space object is carried in accordance with article II.

## ARTICLE II

1. When a space object is launched into 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 its behalf, for assistance under equitable and reasonable conditions in the identification of the object. A State Party making such a request shall, to the greatest extent feasible, submit information as to the time, nature and circumstances of the events giving rise to the request. Arrangements under which such assistance shall be rendered shall be the subject of agreement between the parties concerned.

#### ARTICLE VII

1. In this Convention, with the exception of articles VIII to XII inclusive, references to States shall be deemed to apply to any international intergovernmental organization which conducts space activities if the organization declares its acceptance of the rights and obligations provided for in this Convention and if a majority of the States members of the organization are States Parties to this Convention and to the Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies.

2. States members of any such organization which are States Parties to this Convention shall take all appropriate steps to ensure that the organization makes a declaration in accordance with paragraph 1 of this article.

## ARTICLE VIII

1. This Convention shall be open for signature by all States at United Nations Headquarters in New York. Any State which does not sign this Convention before its entry into force in accordance with paragraph 3 of this article may accede to it at any time.

2. This Convention shall be subject to ratification by signatory States. Instruments of ratification and instruments of accession shall be deposited with the Secretary-General of the United Nations.

3. This Convention shall enter into force among the States which have deposited instruments of ratification on the deposit of the fifth such instrument with the Secretary-General of the United Nations.

4. For States whose instruments of ratification or accession are deposited subsequent to the entry into force of the 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 on \* \* \*.

Opened for signature 14 January 1975  
Entered into force 15 September 1976

Text cited from source (60:71-75)

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 co-operation among States in the exploration and use of the moon and other celestial bodies,

Desiring to prevent the moon from becoming an area of international conflict,

Bearing in mind the benefits which may be derived from the exploitation of the natural resources of the moon and other celestial bodies,

Recalling the Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies, the Agreement on the Rescue of Astronauts, the Return of 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:

ARTICLE I

1. The provisions of this Agreement relating to the moon shall also apply to other celestial bodies within the solar system, other than the earth, except in so far as specific legal norms enter into force with respect to any of these celestial bodies.

2. For the purposes of this Agreement reference to the moon shall include orbits around or other trajectories to or around it.

3. This Agreement does not apply to extraterrestrial materials which reach the surface of the earth by natural means.

ARTICLE II

All activities on the moon, including its exploration and use, shall be carried out in accordance with international law, in particular the Charter of the United Nations, and taking into account the Declaration on Principles of International Law concerning Friendly Relations and Co-operation among States in accordance with the Charter of the United Nations, adopted by the General Assembly on 24 October 1970, in

the interest of maintaining international peace and security and promoting international co-operation and mutual understanding, and with due regard to the corresponding interests of all other States Parties.

### ARTICLE III

1. The moon shall be used by all States Parties exclusively for peaceful purposes.

2. Any threat or use of force or any other hostile act or threat or 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 or other trajectory to or around the moon objects carrying nuclear weapons or any other kinds of weapons of mass destruction or place or use such weapons on or in the moon.

4. The establishment of military bases, installations and fortifications, the testing of any type of weapons and the conduct of military manoeuvres on the moon shall be forbidden. The use of military personnel for scientific research or for any other peaceful purposes shall not be prohibited. The use of any equipment or facility necessary for peaceful exploration and use of the moon shall also not be prohibited.

### ARTICLE IV

1. The exploration and use of the moon shall be the 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 co-operation in pursuance of this Agreement should be as wide as possible and may take place on a multi-lateral basis, on a bilateral basis, or through international inter-governmental organizations.

### ARTICLE V

1. States Parties shall inform the Secretary-General of the United Nations as well as the public and the international scientific community, to the greatest extent feasible and practicable, of their activities concerned with the exploration and use of the moon. Information on the time, purposes, locations, orbital parameters and duration shall be given in respect of each mission to the moon as soon as possible after

launching, while information on the results of each mission, including scientific results, shall be furnished upon completion of the mission. In the case of a mission lasting more than 60 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 VI

1. There shall be freedom of scientific investigation on the moon by all States Parties without discrimination of any kind, on the basis of equality and in accordance with international law.

2. In carrying out scientific investigations and in furtherance of the provisions of this Agreement, the States Parties shall have the right to collect on and remove from the moon samples of its mineral and other substances. Such samples shall remain at the disposal of those States Parties which caused them to be collected and may be used by them for scientific purposes. States Parties shall have regard to the desirability of making a portion of such samples available to other interested States Parties and the international scientific community for scientific investigation. States Parties may in the course of scientific investigations also use mineral and other substances of the moon in quantities appropriate for the support of their missions.

3. States Parties agree on the desirability of exchanging scientific and other personnel on expeditions to or installations on the moon to the greatest extent feasible and practicable.

#### ARTICLE VII

1. In exploring and using the moon, States Parties shall take measures to prevent the disruption of the existing balance of its environment, whether by introducing adverse changes in that environment, by its harmful contamination through the introduction of extra-environmental matter or otherwise. States Parties shall also take measures to prevent 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 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 VIII

1. States Parties may pursue their activities in the exploration and use of the moon anywhere on or below its surface, subject to the provisions of this Agreement.

2. For these purposes States Parties may, in particular:

(a) Land their space objects on the moon and launch them from the moon;

(b) Place their personnel, space vehicles, equipment, facilities, stations and installations anywhere on or below the surface of the moon.

Personnel, space vehicles, equipment, facilities, stations and installations may move or be moved freely over or below the surface of the moon.

3. Activities of States Parties in accordance with paragraphs 1 and 2 of this article shall not interfere with the activities of other States Parties on the moon. Where such interference may occur, the States Parties concerned shall undertake consultations in accordance with article XV, paragraphs 2 and 3, of this Agreement.

#### ARTICLE IX

1. State Parties may establish manned and unmanned stations on the moon. A State Party establishing a station shall use only that area which is required for the needs of the station and shall immediately inform the Secretary-General of the United Nations of the location and purposes of that station. Subsequently, at annual intervals that State shall likewise inform the Secretary-General whether the station 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 I 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 X

1. States Parties shall adopt all practicable measures to safeguard the life and health of persons on the moon. For this purpose they shall regard any person on the moon as an astronaut within the meaning of article V of the Treaty on Principles Governing the Activities of States on the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies and as part of the personnel of a spacecraft within the meaning of the Agreement on the Rescue of Astronauts, the Return of Astronauts and the Return of Objects Launched into Outer Space.

2. States Parties shall offer shelter in their stations, installations, vehicles and other facilities to persons in distress on the moon.

## ARTICLE XI

1. The moon and its natural resources are the common heritage of mankind, which finds its expression in the provisions of this Agreement, in particular in paragraph 5 of this article.

2. The moon is not subject to national appropriation by any claim of sovereignty, by means of use or occupation, or by any other means.

3. Neither the surface nor the subsurface of the moon, nor any part thereof or natural resources in place, shall become property of any State, international intergovernmental or non-governmental organization, national organization or non-governmental entity or of any natural person. The placement of personnel, space vehicles, equipment, facilities, stations and installations on or below the surface of the moon, including structures connected with its surface or subsurface, shall not create a right of ownership over the surface or the subsurface of the moon or any areas thereof. The foregoing provisions are without prejudice to the international 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 of the natural resources of the moon as such exploitation is about to become feasible. This provision shall be implemented in accordance with article XVIII of this Agreement.

6. In order to facilitate the establishment of the international 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 VI, paragraph 2, of this Agreement.

#### ARTICLE XII

1. States Parties shall retain jurisdiction and control over their personnel, space vehicles, equipment, facilities, stations and installations on the moon. The ownership of space vehicles, equipment, facilities, stations and installations shall not be affected by their presence on the moon.

2. Vehicles, installations and equipment or their component parts found in places other than their intended location shall be dealt with in accordance with article V of the Agreement on 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 XIII

A State Party which learns of the crash landing, forced landing or other unintended landing on the moon of a space object, or its component parts, that were not launched by it, shall promptly inform the launching State Party and the Secretary-General of the United Nations.

#### ARTICLE XIV

1. States Parties to this Agreement shall bear international responsibility for national activities on the moon, 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 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 XV

1. Each State Party may assure itself that the activities of other States Parties in the exploration and use of the moon are compatible with the provisions of this Agreement. To this end, all space vehicles, equipment, facilities, stations and installations on the moon shall be open to other States Parties. Such States Parties shall give reasonable advance notice of a projected visit, in order that appropriate consultations may be held and that maximum precautions may be taken to assure safety and to avoid interference with normal operations in the facility to be visited. In pursuance of this article, 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 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, as its

choice, either itself or through another State Party or the Secretary-General, as intermediary.

#### ARTICLE XVI

With the exception of articles XVII to XXI, references in this Agreement to States shall be deemed to apply to any international intergovernmental organization which conducts space activities if the organization declares its acceptance of the rights and obligations provided for in this Agreement and if a majority of the States members of the organization are States Parties to this Agreement and to the Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies. States members of any Such organization which are States Parties to this Agreement shall take all appropriate steps to ensure that the organization makes a declaration in accordance with the provisions of this article.

#### ARTICLE XVII

Any State Party to this Agreement may propose amendments to the Agreement. Amendments shall enter into force for each State Party to the Agreement accepting the amendments upon their acceptance by a majority of the States Parties to the Agreement and thereafter for each remaining State Party to the Agreement on the date of acceptance by it.

#### ARTICLE XVIII

Ten years after the entry into force of this Agreement, the question of the review of the Agreement shall be included in the provisional agenda of the General Assembly of the United Nations in order to consider, in the light of past application of the Agreement, whether it requires revision. However, at any time after the Agreement has been in force for five years, the Secretary-General of the United Nations, as depository, 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 XI, paragraph 5, on the basis of the principle referred to in paragraph 1 of that article and taking into account in particular any relevant technological developments.

#### ARTICLE XIX

1. This Agreement shall be open for signature by all States at United Nations Headquarters in New York.

2. This Agreement shall be subject to ratification by signatory States. Any State which does not sign this Agreement before its entry into force in accordance with paragraph 3 of this article may accede to it at any time. Instruments of ratification or accession shall be deposited with the Secretary-General of the United Nations.

3. This Agreement shall enter into force on the thirtieth day following the date of deposit of the fifth instrument of ratification.

4. For each State depositing its instrument of ratification or accession after the entry into force of this Agreement, it shall enter into force on the thirtieth day following the date of deposit of any such instrument.

5. The Secretary-General shall promptly inform all signatory and acceding States of the date of each signature, the date of deposit of each instrument of ratification or accession to this Agreement, the date of its entry into force and other notices.

#### ARTICLE XX

Any State Party to this Agreement may give notice of its withdrawal from the Agreement one year after its entry into force by written notification to the Secretary-General of the United Nations. Such withdrawal shall take effect one year from the date of receipt of this notification.

#### ARTICLE XXI

The original of this Agreement, of which the Arabic, Chinese, English, French, Russian and Spanish texts are equally authentic, shall be deposited with the Secretary-General of the United Nations, who shall send certified copies thereof to all signatory and acceding States.

IN WITNESS WHEREOF the undersigned, being duly authorized thereto by their respective Governments, have signed this Agreement, opened for signature at New York on December 18, 1979.

Opened for signature 18 December 1979  
Entered into force 11 July 1984

Text cited from source (59:351-361)

TREATY BETWEEN THE UNITED STATES OF AMERICA AND THE  
UNION OF SOVIET SOCIALIST REPUBLICS ON THE LIMITATION  
OF ANTI-BALLISTIC MISSILE SYSTEMS

The United States of America and the Union of Soviet Socialist Republics, hereinafter referred to as the Parties,

Proceeding from the premise that nuclear war would have devastating consequences for all mankind,

Considering that effective measures to limit anti-ballistic missile systems would be a substantial factor in curbing the race in strategic offensive arms and would lead to a decrease in the risk of outbreak of war involving nuclear weapons,

Proceeding from the premise that the limitation of anti-ballistic missile systems, as well as certain agreed measures with respect to the limitation of strategic offensive arms, would contribute to the creation of more favorable conditions for further negotiations on limiting strategic arms,

Mindful of their obligations under Article VI of the Treaty on the Non-Proliferation of Nuclear Weapons,

Declaring their intention to achieve at the earliest possible date the cessation of the nuclear arms race and to take effective measures toward reductions in strategic arms, nuclear disarmament, and general and complete disarmament,

Desiring to contribute to the relaxation of international tension and the strengthening of trust between States,

Have agreed as follows:

ARTICLE I

1. Each Party undertakes to limit anti-ballistic missile (ABM) systems and to adopt other measures in accordance with the provisions of this Treaty.

2. Each Party undertakes not to deploy ADB systems for a defense of the territory of its country and not to provide a base for such a defense, and not to deploy ABM systems for defense of an individual region except as provided for in Article III of this Treaty.

ARTICLE II

1. For the purpose of this Treaty an ABM system is a system to counter strategic ballistic missiles or their elements in flight trajectory, currently consisting of:

(a) ABM interceptor missiles, which are interceptor missiles constructed and deployed for an ABM role, or of a type tested in an ABM mode;

(b) ABM launchers, which are launchers constructed and deployed for launching ABM interceptor missiles; and

(c) ABM radars, which are radars constructed and deployed for an ABM role, or of a type tested in an ABM mode.

2. The ABM system components listed in paragraph 1 of this Article include those which are:

- (a) operational;
- (b) under construction;
- (c) undergoing testing;
- (d) undergoing overhaul, repair or conversion; or
- (e) mothballed.

#### ARTICLE III

Each Party undertakes not to deploy ABM systems or their components except that:

(a) within one ABM system deployment area having a radius of one hundred and fifty kilometers and centered on the Party's national capital, a Party may deploy: (1) no more than one hundred ABM launchers and no more than one hundred ABM interceptor missiles at launch sites, and (2) ABV 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 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, not 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 the Treaty, each Party undertakes:

(a) not to give missiles, launchers, or radars, other than ABM interceptor missiles, ABM launchers, or ABM radars, capabilities to counter strategic ballistic missiles or their elements in flight trajectory, and not to test them in an ABM mode; and

(b) not to deploy in the future radars for early warning of strategic ballistic missile attack except at locations along the periphery of its national territory and oriented outward.

#### ARTICLE VII

Subject to the provisions of this Treaty, modernization and replacement of ABM systems or their components may be carried out.

#### ARTICLE VIII

ABM systems or their components in excess of the numbers or outside the areas specified in this Treaty, as well as ABM systems or their components prohibited by this Treaty, shall be destroyed or dismantled under agreed procedures within the shortest possible agreed period of time.

#### ARTICLE IX

To assure the viability and effectiveness of this Treaty, each Party undertakes not to transfer to other States, and not to deploy outside its national territory, ABM systems or their components limited by this Treaty.

#### ARTICLE X

Each Party undertakes not to assume any international obligations which would conflict with this Treaty.

#### ARTICLE XI

The Parties undertake to continue active negotiations for limitations on strategic offensive arms.

## ARTICLE XII

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

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

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.

Opened for signature 26 May 1972  
Entered into force 3 October 1972

Text cited from source (55:139-142)

Appendix B:  
Space Treaty/Policy Proposals

DRAFT TREATY ON THE PROHIBITION OF THE  
STATIONING OF WEAPONS OF ANY KIND  
IN OUTER SPACE

The States Parties to this Treaty,  
Guided 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,

Desiring not to allow outer space to become an arena for the arms  
race and a source of aggravating 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 organi-  
zation to engage in activities contrary to the provisions of paragraph 1  
of this article.

ARTICLE II

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 co-operation and mutual understanding.

ARTICLE III

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 I, paragraph 1, of this treaty.

#### ARTICLE IV

1. For the purposes 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 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.

3. In order to promote the objectives 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 V

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

2. The amendment shall enter into force for each State Party to this Treaty which has accepted it, upon the deposit with the depositary of instruments of acceptance by the majority of States Parties. Thereafter, the amendment shall enter into force for each remaining State Party on the date of deposit of its instrument of acceptance.

#### ARTICLE VI

This treaty shall be of unlimited duration.

#### ARTICLE VII

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 give notice to 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 regards as having jeopardized its supreme interests.

#### ARTICLE VIII

1. This treaty shall be open to all States for signature at 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 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 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 IX

This treaty, of which the Arabic, Chinese, English, French, Russian and Spanish texts are equally authentic, shall be deposited with Secretary-General of the United Nations, who shall send duly certified copies thereof to the Governments of the signatory and acceding States.

This treaty proposed on 20 August 1981

Text cited from source (32:115-117)

DRAFT TREATY ON BANNING THE USE OF FORCE IN SPACE  
AND FROM SPACE WITH RESPECT TO THE EARTH

The States Parties to this treaty,

Guided by the principle whereby United Nations members refrain in their international relations from the threat of force or the use of force in any form incompatible with the objectives of the United Nations;

Seeking to prevent an arms race in space and thereby to reduce the danger of nuclear war threatening mankind;

Desiring to contribute to the objective whereby the exploration and use of space, including the moon and other celestial bodies, is effected exclusively for peaceful purposes;

Have agreed as follows:

ARTICLE I

It is prohibited to resort to the use of force and the threat of its use in space, in the atmosphere, and on earth with the employment for this of space objects orbiting the Earth, stationed on celestial bodies, or deployed in space in any other manner as a means of destruction.

It is also prohibited to resort to the use of force or the threat of its use with regard to space objects orbiting the Earth, stationed on celestial bodies, or deployed in space in any other manner.

ARTICLE II

In accordance with the provisions of Article I the States Parties to this treaty undertake:

1. Not to test and not to deploy by putting into orbit around the Earth, deploying on celestial bodies, or in any other manner any space-based weapons intended to hit targets on the Earth, in the atmosphere, or in space.

2. Not to use 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.

3. Not to destroy, damage, or disrupt the normal functioning of other States' space objects, nor change their flight trajectories.

4. Not to test or develop new antisatellite systems and to eliminate such systems already in their possession.

5. Not to test or use for military, including antisatellite, purposes, any manned spacecraft.

### ARTICLE III

The State Parties to this treaty agree not to help, encourage, or incite any States, groups of States, international organizations, and also physical and legal persons to engage in activity prohibited by this treaty.

### ARTICLE IV

1. To ensure confidence in observance of the provisions of this treaty each State Party uses the national technical verification facilities available to it in a way corresponding to generally recognized principles of international law.

2. Each State Party to the treaty undertakes not to interfere with [chinit pomekh] the national technical verification facilities of other States Parties exercising their functions in accordance with paragraph 1 of this article.

### ARTICLE V

1. The States Parties to this treaty undertake to consult and cooperate with each other in resolving any questions which may arise with regard to the objectives of the treaty or in connection with the observance of its provisions.

2. Consultations and cooperation in accordance with paragraph 1 of this article may also be effected on the basis of utilization of corresponding international procedures within the framework of the United Nations and in accordance with its Charter. These procedures can include the services of the consultative committee of the States Parties to the treaty.

3. The consultative committee of the States Parties to the treaty is convened by the depositary within 1 month of the receipt of a request from any State Party to this treaty. Any State Party may appoint a representative to the committee.

### ARTICLE VI

Each State Party to this treaty undertakes to adopt any internal measures which it considers necessary in accordance with its constitutional procedures to prohibit and prevent any activity contravening the provisions of this treaty which comes under its jurisdiction or control, wherever it may be.

### ARTICLE VII

Nothing in this treaty affects the rights and duties of States under the Charter.

#### ARTICLE VIII

All disputes which may arise in connection with the operation of this treaty shall be resolved by exclusively peaceful means through the use of procedures envisaged in the UN Charter.

#### ARTICLE IX

This treaty is of unlimited duration.

#### ARTICLE X

1. This treaty is open for signature to all States at central United Nations offices in New York. Any State which does not sign this treaty prior to its entry into force in accordance with paragraph 3 of this article may accede to it at any time.

2. This treaty is subject to ratification by signatory States. Instruments of ratification and documents of accession shall be deposited with the Secretary-General of the United Nations.

3. This treaty shall enter into force in relations between States which have deposited instruments of ratification after five instruments of ratification, including the instruments of the USSR and the United States, have been deposited with the Secretary-General of the United Nations.

4. For States whose instruments of ratification or documents of accession are deposited after the entry into force of this treaty it will enter into force on the day of the deposit of their instruments of ratification or documents of accession.

5. The Secretary-General of the United Nations shall promptly inform all signatory and acceding States of the date of each signing, the date of deposit of each instrument of ratification and document of accession, the date of entry into force of this treaty, and also other notices.

#### ARTICLE XI

This treaty, of which the Russian, English, Arabic, Spanish, Chinese, and French texts are equally authentic, shall be deposited with the Secretary-General of the United Nations, who shall transmit duly certified copies of the treaty to the governments of the signatory and acceding States.

This treaty proposed 22 August 1983

Text cited from source (19:13-14)

MEMORANDUM FROM THE FRENCH GOVERNMENT CONCERNING  
INTERNATIONAL SATELLITE MONITORING AGENCY

1. In its memorandum submitted on 24 February 1978 to the Preparatory Committee for the Special Session of the General Assembly Devoted to Disarmament, Franch proposes the establishment of a satellite monitoring agency.

2. In view of the work that is to be done during this session, Franch wishes to describe its proposal in greater detail with a view to enabling other States to make their observations and comments.

3. The progress space technology has made in the field of earth observation satellites constitutes a new development in international life.

4. These satellites, particularly those of a military type, have already attained a very high level of precision in their observation capability, and further progress will undoubtedly be made in that technology. At present the information secured by means of such satellites is collected by two countries which have the greatest experience in space technology and are in a position to make observations of the surface of the earth at such places and for such observation periods as they choose. The satellites available to those two countries, moreover, play an important role in the verification of their bilateral disarmament agreements.

5. Franch considers that, within the framework of current disarmament efforts, this new monitoring method should be placed at the service of the international community.

6. The information gathered by observation satellites is such that a new approach and new methods for monitoring disarmament agreements and for helping to strengthen international confidence and security can be envisaged. Many resolutions of the United Nations have stressed how essential it is that disarmament agreements should be subject to rigorous and efficacious international monitoring. Accordingly, the use of observation satellites as a means of conducting such monitoring should enable some of these difficulties to be overcome and thereby lead to progress towards disarmament.

7. Apart from monitoring questions, the information gathered by observation satellites could provide the essential elements for settling disputes between States by making it possible, on conditions to be determined later, for the facts giving rise to such disputes to be more satisfactorily assessed.

8. To that end, a satellite monitoring agency would become an essential adjunct to disarmament agreements and to measures to increase

international confidence and security by providing interested parties with information that they were entitled to demand.

9. France hereby submits the main elements of its proposal for a satellite monitoring agency under the following headings:

Guiding principles  
Functions  
Statute  
Technical resources  
Financing  
Settlement of disputes.

1. Guiding principles of the work of the Agency

10. The purpose of the international satellite monitoring Agency shall be to the advance disarmament efforts and the strengthening of international security and confidence.

11. The Agency shall act in accordance with the purposes and principles of the United Nations Charter, in conformity with the policy followed by the United Nations with regard to disarmament and in conformity with all agreements under international law concluded in pursuance of that policy.

12. The Agency shall be responsible for collecting, processing and disseminating information secured by means of earth observation satellites. It shall have available to it the technical resources necessary for the accomplishment of its task. Those resources shall be expanded gradually in accordance with the provisions of its statute.

13. The Agency shall in performing its functions respect the sovereign rights of States, bearing in mind the provisions of its Statute and those of agreements concluded between it and any State or group of States in accordance with the provisions of that statute.

2. Functions of the Agency

14. The functions of the Agency shall include:

participation in monitoring the implementation of international disarmament and security agreements;

participation in the investigation of a specific situation.

(a) Monitoring the implementation of international disarmament and security agreements

15. Arrangements for the participation of the Agency in these agreements would differ, depending on whether they are agreements already in force or agreements yet to be concluded.

16. In the case of agreements already in force, the Agency would constitute a new instrument for ensuring greater effectiveness in monitoring them. Moreover, when provision had already been made in such agreements for national monitoring measures, the Agency's measures would be of the same category.

17. As regards the procedure, an inventory of existing agreements would be made with a view to determining, according to the nature of the armaments covered and the commitments entered into, to what extent monitoring by observation satellite would be applicable to them. If it were found to be applicable, the Agency would propose that its services should be made available to the parties to the agreement. Those that its services should be made available to the parties to the agreement. Those parties, if they unanimously accepted that offer, would jointly specify the link to be established between the agreement in question and the Agency's monitoring work.

18. Similarly, in the case of future disarmament and security agreements, the Agency would constitute an essential adjunct to their monitoring of agreements in any case in which the information gathered by the Agency could be used effectively for the purposes of such monitoring.

19. To that end, standard clauses of agreements would be prepared by the Agency and submitted to States desiring to conclude disarmament agreements with others.

20. At the time, provision might be made for regional international organizations with functions in the sphere of security to solicit the Agency's services.

(b) Investigation of a specific situation

21. A State could report to the Agency when it had good reason to believe that an agreement to which it was a party was being infringed by another State or when the conduct of that other State jeopardized its security. The Agency, in order to proceed to an investigation, should then obtain the consent of the State to be investigated.

22. The Security Council might also take action by invoking Article 34 of the United Nations Charter which authorizes it to "investigate any dispute or any situation which might lead to international friction or give rise to a dispute."

### 3. Statute of the Agency

23. On account both of its purpose, which is to advance disarmament efforts, and of its essential universality, the Agency, should be part of the United Nations system.

24. To that end, France proposes that the Agency should be established as a specialized agency of the United Nations.

25. The characteristics of the specialized agencies are ideally suited to the specific role of the Agency and to the need to endow it with substantial financial and technical resources, which will be of a new type.

26. Details of the statute proposed by France for the Agency will be the subject of further proposals. For the moment, however, the following general outline is proposed:

Membership of the Agency would be open to any State Member of the United Nations or member of a specialized agency;

The decision-making and deliberative bodies of the Agency would include at least a plenary organ and a restricted organ having balanced representation of all regions of the world;

The Agency would have the personnel required for the accomplishment of its task. The personnel would include, in particular, qualified technical personnel to process and analyze the data collected by observation satellites.

### 4. Technical resources

27. The complexity of observation satellite installations and the costliness of space applications (ground segment and space segment) suggest that gradual expansion of the technical resources of the Agency would be advisable. The growth of the Agency's resources could, in any event, proceed concurrently with the expansion of the functions assigned to it.

28. Consequently, when it started to operate, the Agency, since it would have no satellite of its own, would need to be able to rely on the data collected by the observation satellites of those States which possess them. Procedures for transmitting such data to the Agency could be worked out in agreement with those States.

29. Nevertheless, in order to ensure that the Agency had a sufficient degree of autonomy, it should, when it went into operation, itself have the technical capacity to interpret the data so transmitted. To that end it should have its own processing centre.

30. Accordingly, France proposes that the expansion of the technical resources of the Agency should take place in three successive stages:

Stage 1: the Agency would have a centre for processing data supplied by those States having observation satellites;

Stage 2: the Agency would establish data-receiving stations which would be directly linked to those States' satellites;

Stage 3: the Agency itself would have the observation satellites required for the performance of its task.

31. The sequence of these stages would be determined by the statute of the Agency, taking account in particular of the gradual expansion of its competence.

32. Moreover, the statute of the Agency should state that the information collected or received was to be used for no purpose other than the performance of the Agency's tasks.

## 5. Financing

33. The magnitude of the technical resources that should be available to the Agency requires that a variety of sources of financing be used, such as:

Mandatory payments, provided for by budgetary rules comparable to those of the United Nations;

Voluntary payments, among which account might be taken of the technical resources made available to the Agency by those States having observation satellites;

Funds paid in return for services provided by the Agency, particularly if States used its services to monitor a disarmament or security agreement concluded by them.

## 6. Settlement of disputes

34. In the event of disputes arising either between States or between States and the Agency, machinery for the settlement of disputes should be provided. In view of the specificity of the Agency's functions, France proposes that such disputes, if not settled by other peaceful means, should be submitted to arbitration. To that end, an arbitration committee would be established, and arrangements for its composition and operation would be incorporated in the statute of the Agency.

35. To that end France will submit a draft clause on machinery for the settlement of disputes.

36. In submitting these proposals on a satellite monitoring agency to the States participating in the special session of the General Assembly devoted to disarmament, France hopes that they can be examined in the course of the deliberations of the session.

37. Since, however, it is well aware of the scope of this proposal and the questions raised by it, France proposes that a committee of experts be established to consider the conditions in which a satellite monitoring agency might be established.

38. That committee would be composed of a limited number of experts, in order to ensure its satisfactory functioning, account being taken of equitable geographical distribution. The committee would be instructed to report on its work to the thirty-fourth session of the General Assembly.

39. To that end, France proposes that the terms of reference of the committee of experts to consider the proposal for an international monitoring agency should cover the following points:

- (a) The guiding principles of the work of the Agency;
- (b) Its functions, i.e.:
  - (i) Participation in monitoring the implementation of international disarmament or security agreements whether already in force or to be concluded;
  - (ii) Participation in the investigation of a specific situation (either at the request of one State, with the consent of the State to be inspected, or at the request of the Security Council),
- (c) Its institutions (its position within the United Nations system structures, rules for making decisions);
- (d) The technical resources available to the Agency and their gradual expansion;
- (e) The financing of the Agency at various stages of its activity;
- (f) Machinery for the settlement of disputes.

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Text cited from source (1:180-183)

PARTIAL TEXT OF ADDRESS BY THE PRESIDENT TO THE NATION  
CONCERNING THE SDI PROGRAM  
THE OVAL OFFICE

. . . Thus far tonight I have 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 directed toward deterrence of aggression through the promise of retaliation -- the notion that no rational nation would launch an attack that would inevitably result in unacceptable losses to themselves. This approach to stability through offensive threat has worked. We and our allies have succeeded in preventing nuclear war for 3 decades. In recent months, however, my advisors, including in particular the Joint Chiefs of Staff, have underscored the bleakness of the future before us.

Over the course of these discussions, I have 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 are 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 am 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 in stabilizing the nuclear balance. Nevertheless it will still be necessary to rely on the specter of retaliation -- on mutual threat, and that is a sad commentary on the human condition.

Would it not 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 advisors, 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.

Up until now we have increasingly based our strategy of deterrence upon the threat of retaliation. But 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 is 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 is it not 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 honor 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 who gave us nuclear weapons to turn their great talents 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 under the A.B.M. Treaty and recognizing the need for close consultation with our allies, I am 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 are launching an effort which holds the promise of changing the course of human history. There will be risks, and results take time. But with your support, I believe we can do it.

Presidential Speech of 23 March 1983

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## VITA

First Lieutenant Gregory T. Noble was born on 2 March 1960 in Columbus, Ohio. He graduated from high school in Dothan, Alabama, in 1978 and attended Troy State University, Troy, Alabama, from which he received the degree of Bachelor of Science in Computer Information Science in June 1982. Upon graduation, he received a commission in the USAF through the ROTC program. He was called to active duty in October 1982. He served with the 20th Missile Warning Squadron and later, after a unit reorganization, with the 1020th Computer Services Squadron as a computer programmer in the Early Warning and Radar Control Group at Eglin AFB, Florida, until entering the School of Systems and Logistics, Air Force Institute of Technology, in June 1984.

Permanent address: Route 3, Box 214  
Headland AL 36345

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## Block 18: Spacecraft

This research effort presents a brief background of the international law and legal bodies that exist for regulating the activities of man in space. This research additionally identifies specific areas where specified space law does not apply or where serious questions about legal applicability exist. One specific area, space militarization, is highlighted with the current legal deficiencies pertaining to this activity discussed in detail. Proposals are presented for dealing with the question of legal regulations over space militarization. These proposals, from the Soviet Union, United States, France and other lesser proposals, are evaluated in light of the problems they purport to solve. Recommendations are presented on what legal actions should be pursued in the space militarization issue, from the international and the U.S. national perspectives. Although recommendations are made, the overall conclusion is that legal control of space militarization in most respects is infeasible and the future for arms in space is unlikely to differ significantly from the history of arms on earth.

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