CHAPTER - II

LEGAL REGIME OF OUTER SPACE AND MILITARY ACTIVITIES
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II.1. Introduction

In the previous chapter mention was made of the growth in legal norms which govern and regulate multifarious activities of states in outer space. It will be evident on a closer examination that many of these norms directly and indirectly impose constraints on certain types of military activities in outer space. In this chapter a comprehensive survey and critical examination of the contemporary regime of international law is attempted. The examination commences with more specific legal norms, especially those created by various space treaties, with a foreword on sources of space law. It further trenches on bilateral legal obligations of leading space powers and legal obligations flowing from international law in general - as distinct from specific space treaties - which are particularly relevant in the context of military activities in outer space.

II.2. Sources of Space Law

Article 38 of the Statute of the International Court of Justice is frequently indicated as authoritative statement of the sources of international law. Leaving aside the controversy as respects its exhaustiveness, a reference to the first paragraph of this article will be apposite -

The Court, whose function is to decide in accordance with international law such disputes as are submitted to it, shall apply:

a. international conventions, whether general or particular, establishing rules expressly recognized by the contesting states;
b. international custom, as evidence of a general practice accepted as law;

c. the general principles of law recognized by civilized nations;

d. subject to the provisions of Article 59, judicial decisions and the teachings of the most highly qualified publicists of the various nations, as subsidiary means for the determination of rules of law.

Not infrequently, certain branches of international law owe their origin to predominantly one or two particular source or sources, rather than all of them. The most important single characteristic of the contemporary space law is that it is predominantly a treaty law. It scarcely need adding that the contemporary space law is a product of the legal developments of not more than last three decades. This is comparatively a short period. Indubitably, for development of international law in a short time, multilateral law-making treaties have no substitute, provided there exists an urge and an apparent resolve on the part of the members of the international community to that end. But this should not be taken to demean the competency of custom in the process of development of space law. Indeed, custom is a significant source of space law, albeit secondary and therefore complementary to multilateral law-making treaties. There is no discernable impact of other sources of international law on space law, at least, as yet.

II.2.(1) Multilateral Law-making Treaties on Outer Space

So far five multilateral treaties have been adopted
under the auspices of the United Nations Committee on Peaceful Uses of Outer Space (COPUOS) which constitute the core of space law. These are as under:


1. U.N.G.A. Res. 2222 (XXI), December 19, 1966. For text, see Appendix.
5. U.N.G.A. Res. 34/68, December 5, 1979. For text, see International Legal Materials, 1979, pp. 1434-41.
Howsoever purposive these treaties may appear, they have not created an impeccable and infallible regime of space law so as to ensure absolute order in outer space. Nevertheless, their contribution in regulating space activities is significant and cannot be underestimated. There are many shortcomings and loopholes in these treaties. Such imperfection and lacunae are attributable to the profound difficulties with which the international law making process is fraught. It is indeed significant to note that the loopholes in space treaties are deliberate and they underline the predilection on the part of leading members of the international community for imperfection in the legal regime. The imperfections subserve their self-interests.

A word regarding the background of these treaties would be apposite here. Soon after a year from the launching of the first artificial earth satellite by the Soviet Union, the U.N. General Assembly recognized the need for international co-operation and accentuated the necessity of legal constraints to ensure maintenance of peace and order in outer space on the basis of the fundamental principle of sovereign equality of all states. This was the harbinger of subsequent legal developments. First an ad hoc Committee was established to examine legal aspects of space exploration,

and later the Committee on Peaceful Uses of Outer Space (COPUOS) was established as an inter-governmental body subsidiary to the General Assembly. The COPUOS is responsible to the General Assembly to which it is supposed to present periodical reports. In 1962 a legal sub-committee and a scientific and technical sub-committee of the COPUOS were established. The creation of a sub-committee to deal with legal aspects of space exploration was preceded by a resolution of the General Assembly, which recommended to states for their guidance in exploration and use of outer space that international law applies to outer space and that outer space and celestial bodies, though free for exploration and use by all states, are not subject to national appropriation. In 1963 another resolution titled 'Declaration of Legal Principles Governing the Activities of States in the Exploration and Use of Outer Space' was unanimously adopted by the General Assembly. Leaving aside for the moment the issue of legal efficacy of General Assembly resolutions, these two resolutions undoubtedly encouraged and laid down guidelines for development of space law, particularly adoption of specific law-making multilateral treaties.

The Outer Space Treaty, 1967 was adopted on the background of ever increasing space activities of both the U.S. and the U.S.S.R., and a deep concern, shared by many, that outer space could be exploited for deleterious and obnoxious activities. Also concern for safety of astronauts, liability for damage which may be caused by space accidents, appropriation of celestial bodies, etc., motivated the U.S. and the U.S.S.R. to take a lead in establishing binding legal norms to maintain order in outer space.

The Outer Space Treaty is replete with fundamental principles of space law. Some of these have been refined and articulated in subsequent treaties on space law. Thus the legal regime of outer space, the foundation of which was laid down by the Outer Space Treaty, has been reinforced and fortified to a certain extent. It seems reasonable to conclude that the Outer Space Treaty may be regarded as genus of which the subsequent four treaties are species.

In addition to the treaties concluded under the auspices of the COPUOS, some instruments for co-operation in specific areas of space exploration have been adopted under the auspices of the International Telecommunications Union and the World Meteorological Organization. Outside the framework

of the U.N. too, some developments have contributed to co-operation in space exploration and uses. This will be particularly evident from the activities of the Organizations INTELSAT, INMARSAT, INTERSPUTNIK and INTERCOSMOS. Besides, regional arrangements are also contributory and effective in certain cases for co-operation in space exploration as demonstrated by the experience of the European Space Agency.

Certain multilateral treaties, such as the Nuclear Test Ban Treaty, though not adopted exclusively for regulation of activities in outer space, contain provisions which may nevertheless impose legal obligations extendable to outer space, may be regarded as complementary instruments for securing order in outer space.

II.2.(2) Customary Space Law

Article 38 of the Statute of the International Court of Justice requires the Court to apply, inter alia, 'international custom as evidence of a general practice accepted as law', in deciding disputes submitted to it. It is generally said that for establishing a customary rule,

11. The European Space Agency was created in May 1975 by amalgamating the European Launcher Development Organisation, established in March 1962 and the European Space Research Organisation, established in June 1962.
following criteria are essential:

(a) concordant practice by a number of states with reference to a type of situation falling within the domain of international relations;

(b) continuation or repetition of the practice over a considerable period of time;

(c) conception that the practice is required by, or is consistent with, prevailing international law; and

(d) general acquiescence in the practice by other states.

Oppenheim observes that international jurists speak of custom when a clear and continuous habit of doing certain actions has grown up under the aegis of the conviction that these actions are according to international law obligatory or right. Thus, it has generally been accepted that to establish a rule of customary international law, two tests must be satisfied: first, consistent and recurrent state practice, and second, a conviction that such practice is obligatory or right - opinio juris sive necessitatis. It is not necessary that the practice is followed as a consequence of the element of legal obligation. What is required is a sentiment of obligation and it need not be accompanied by an apprehension of sanction in case of non-compliance. It has


traditionally been understood that 'universal' and 'age-old' state practice is a prerequisite of emergence of customary international law.

In the context of outer space a question of considerable significance arises: whether it is possible and plausible to derive and deduce customary rules from the practice of limited number of states and that too, of limited period of time? The twin requirements of 'universality' and 'antiquity' pose a particular problem, because, as a matter of fact, the existing state practice in outer space is overwhelmingly predominated by very few states, and in most of the cases, by the U.S. and the U.S.S.R. Secondly, state practice in outer space ranges over a comparatively shorter period of time. Space activities are a phenomenon of the last three decades, of which the effective state practice would be of not more than last twenty years.

As respects the element of universality, it is now accepted that usage need not be absolutely universal and even if it is common to the states generally concerned with the situation, it will not affect the process of custom formation. Although the requirement of generality of practice introduces a quantitative dimension into ascertaining existence of customary law, yet the term

'general' is too ambiguous and uncertain. It would indicate that it implies common and widespread practice among many states. It has also been suggested that active adherence to a rule by certain states of particular significance when assessing the generality of practice could be determinative. Acquiescence or silence on the part of other states may be taken as acceptance of the practice as conducive to custom formation. A protest voiced by a state which does not have any substantive interest in the activity may be considered irrelevant. Most significantly, it has been suggested that adherence to a rule would be required of all those states who had the opportunity to engage in such practice. Therefore, in the researcher's submission, state practice in outer space, though indubitably predominated by the two space powers, could be regarded as conclusive for and conducive to emergance of customary space law.

The second qualification of state practice for custom formation is the time element. There is no time-scale in international legal theory which necessitates state practice to be consistently followed for a certain number of years before it petrifies into a customary norm of international law. This is amply reflected in the observations of the

17. Ibid.
International Court of Justice in the North Sea Continental Shelf Cases that the passage of only a short period of time is not necessarily, or of itself, a bar to the formation of a new rule of customary law. Though on the municipal plane, the notion of formation of customary law has been associated with antiquity, yet on international plane, most authors agree that duration of practice is a relative requirement, and that customary law may arise within a comparatively short period of time. The reasons attributed to this are the quickening pace of international relations, technological progress and social change, and in improvements in communications between states. A rational view has been expressed, and the researcher fully concurs with it, that dispensing with strict insistence on time element is not only justifiable, but essential in those cases where technological and scientific advancements bring about rapid changes in international society. In the context of space activities it is now believed that although the state practice in outer space is relatively new, yet the deficiency in time element may be counter-balanced by a strong opinio juris expressed in uniform state practice.

22. Ibid.

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It is, therefore, not unreasonable to concede some concessions in favour of practice of limited number of states, and that too, for a comparatively shorter period of time. The researcher is of the opinion that it is indeed possible to derive certain customary rules of space law from the contemporary practice in outer space, and at appropriate places the researcher has done so in the present study.

It is also possible to argue that the practice of the U.S. and the U.S.S.R. in outer space may have overwhelming significance insofar as interpretation of the space treaties is concerned. Sometimes the subsequent practice may lead to emergence of a norm which is not envisaged by the treaty. One may also wonder whether it is an independent norm of law or can it be justified on the basis of treaty interpretation in the light of subsequent practice or even a de facto amendment of the treaty by variant state practice.

II.2.(3) General Assembly Resolutions:

As pointed out earlier, the adoption of multilateral space treaties was preceded by resolutions of the U.N. General Assembly purporting to lay down principles of international law applicable to space activities. In general, an attempt on the part of the General Assembly to arrogate law-making

function has unleashed a profound controversy which still persists, though no more in the context of space law, but in respect of certain other areas of international law. The question whether the General Assembly can make space law is otiose since the Assembly no more indulges in this oblique and controvertible law-making process for development of space law. Prof. Bin Cheng has articulately demonstrated how space-law making by the General Assembly is a dubious process, though it may appear to create 'instant' customary law.

II.2.(4) Bilateral Treaties:

To assert that bilateral treaties impose obligations only on the parties and do not bind non-parties is to indulge in platitudes. Nevertheless, account should also be taken of the fact that bilateral treaty arrangements could portend state practice - one of the constitutive element of custom as a source of international law. Thus, indirectly bilateral treaties could also be conducive to emergence of international legal norms. It is indeed significant to note a view that nuclear arms control obligations undertaken by the two nuclear superpowers are obligations erga omnes and not merely inter se. Thus, it is further observed that the


undertaking in the Anti-Ballistic Missile Treaty, 1972, may be not only a promise among the parties but also a joint statement binding the parties to other nations led to rely upon it.

Moreover, it is unquestionable that bilateral treaty obligations between the U.S. and the U.S.S.R. which impinge upon military activities in outer space need a specific examination in the present study. It is clear and undisputed that the Americans and Soviets have played, and will continue to play, a dominant and decisive role insofar as space law making is concerned. Their mutual understanding and approval of proposed legal measures is an essential prerequisite for development of space law. It is quite likely that bilateral arrangements may pave way for multilateral regulation. Thus, bilateral treaties between the two space powers need a particular attention.

With this background now it seems opportune to examine and analyse the nature, content and provisions of the space treaties in details with a particular emphasis on regulation of military activities in outer space.

II.3. The Outer Space Treaty, 1967

It seems appropriate to divide the examination of the Outer Space Treaty into two parts: the first dealing with

28. Ibid.
29. For text, see Appendix.
general provisions in brief; and the second, a more detailed examination of those provisions which directly and indirectly pertain to military activities in outer space. A summary of the general provisions of the treaty follows:

II.3.(1) General Provisions of the Outer Space Treaty

(a) Space exploration shall be carried out in the common interest of all countries.

(b) There shall be free access to all states without discrimination and on the basis of equality to outer space for exploration and scientific investigation.

(c) Outer space and celestial bodies shall not be subject to sovereignty of any nation and their appropriation by any means, by any nation is forbidden.

(d) International law including the U.N.Charter is applicable to activities of states in outer space.

(e) Astronauts in difficulty, distress or emergency should be given every possible assistance.

(f) States shall bear international responsibility for activities in outer space of non-governmental entities.

30. Ibid., Article I.
31. Ibid.
32. Ibid., Article II.
33. Ibid., Article III.
34. Ibid., Article V.
and international organizations of which they are members.

(g) States are internationally liable for damage caused by their space objects to other states or their nationals.

(h) States retain jurisdiction and control over their space objects including their personnel, wherever they may be.

(i) States shall have due regard to preservation of natural environment of outer space and celestial bodies.

(j) States shall give maximum possible information to the international community regarding their space activities.

(k) On the basis of reciprocity states shall allow representatives of other states to visit their stations, installations, etc. on celestial bodies.

(l) States shall, on the basis of equality allow other states, as far as possible, to observe their space flights.

The above principles hardly need any elaboration. It is,

35. Ibid., Article VI.
36. Ibid., Article VII.
37. Ibid., Article VIII.
38. Ibid., Article IX.
39. Ibid., Article XI.
40. Ibid., Article XII.
41. Ibid., Article X.
However, with the provisions dealing with military activities, that we are here immediately concerned.

II.3.(2) The Outer Space Treaty and Military Activities

The researcher now approaches the most significant aspect of the Treaty in the context of the present study, namely, examination and appraisal of those provisions of the Treaty which directly regulate, as well as indirectly impinge upon, military activities in outer space.

II.3.(2)(1) Article III

It would in the first place be expedient to consider Article III of the Treaty. As noted above, it requires the states parties to carry on activities in the exploration and use of outer space and 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. This provision by itself cannot be regarded as adequately cogent to proscribe activities of military nature in outer space and to require states to confine their outer space activities to peaceful purposes only. It is too fragile to effectively check military activities in outer space. Because this is a very general provision and lacks exactitude. It more or less resembles a preambular desire. It is partly declaratory and confirmatory in the sense that it announces that international law and the Charter of the United Nations apply to outer space activities. Extension
and application of international law to outer space activities is examined later in this chapter.

II.3.(2)(ii) Article IV

It will be apparent on a closer examination that this article is most pertinent and germane to military activities in outer space. It deserves an articulate examination. The provisions of this article are summarised below:

(1) States shall not place in orbit around the earth any objects carrying nuclear weapons or any other kinds of weapons of mass destruction.
(2) The weapons described above shall not be installed on celestial bodies or stationed in outer space in any other manner.
(3) The moon and other celestial bodies are completely demilitarized and shall be used exclusively for peaceful purposes.
(4) Establishment of military bases, installations and fortifications, testing of weapons and military manoeuvering on the moon and other celestial bodies is forbidden.
(5) Use of military personnel and military facilities, equipment for peaceful exploration and use of the moon and other celestial bodies is permitted.

42. See infra II.10 (1).
43. For text of Article IV, See Appendix.
II.3.(3) Analysis of Article IV

The analysis of Article IV reveals that it is replete with many provisions, particularly significant in the context of military activities in outer space. It will be desirable first, to consider each of these independently, and later collate them so as to determine their cumulative effect.

(a) Outer Space proper has been partially deweaponized, by prohibiting placement of any objects carrying nuclear weapons and other kinds of weapons of mass-destruction in orbit around the earth, and stationing such weapons in outer space in any other manner. The term 'partial deweaponization' is preferable to 'partial demilitarisation' because military activities other than stationing nuclear and mass-destruction weapons have not been prohibited in outer space. Even placing weapons other than those specifically mentioned in the article has not been prohibited. The word 'place' is used in relation to orbit around the earth and the word 'station' with reference to outer space in general. It appears that the clause "... station weapons in outer space in any other manner -" is much comprehensive than" ... place in orbit around the earth...." Article IV per se does →

not prohibit other military activities in outer space proper. A view has been expressed that Article IV does not prohibit orbiting of nuclear weapons and other weapons of mass-destruction around celestial bodies.

This view does not appear to be sound for the simple reason that orbits around celestial bodies indeed form part of outer space proper and the point just made permits the conclusion that orbits around celestial bodies, too have been partially deweaponized so as to exclude placing nuclear and mass-destruction weapons therein.

(b) Not surprisingly, the terms 'nuclear weapons' and 'weapons of mass-destruction' have not been defined by the Treaty. A critical question that arises in this connection – and it seems necessary to stress it – is whether the term 'nuclear weapon' as used in this article should also be a 'weapon of mass-destruction' in addition to being nuclear or is it enough to treat a weapon as nuclear weapon if its operative mechanism requires nuclear energy but in no way it is capable of causing mass-destruction. In other words, the question is whether a nuclear weapon incapable of causing mass-destruction is within the manifest scope and purport of Article IV? The issue is of profound contemporary

significance because it is reasonable to prognosticate development of a weapon which relies on nuclear energy but it is not a weapon of mass destruction in terms of extent of expected annihilation. The researcher is inclined to conclude that the term 'nuclear weapon' as used in Article IV does not bring within its purview those nuclear weapons which are not weapons of mass destruction. Howsoever undesirable this interpretation may appear, a cautious examination of Article IV substantiates it. Reliance for this purpose may be placed on a rule of interpretation which is well established in many leading domestic legal systems. According to McNair, the rule is also applicable in interpretation of treaties. The rule which is known as *noscitur a sociis* is that where two or more words which are susceptible of analogous meaning are coupled together, they are understood to be in their cognate sense. They take colour from each other and the meaning of the more general being restricted to a sense analogous to that of the less general. Therefore, the manner in which the terms 'nuclear weapons' and 'weapons of mass destruction' are used it appears that the drafters believed that nuclear weapons are essentially weapons of mass destruction.

48. Ibid.
Besides, the use of word 'other' in the above clause is crucial. Had the clause been framed as 'nuclear weapons and weapons of mass-destruction' or, for that matter, as 'nuclear weapons or weapons of mass-destruction', the conclusions would have been different. The use of word 'other' presupposes that nuclear weapons are weapons of mass-destruction, but if there are other non-nuclear weapons of mass-destruction, they too, are prohibited. Thus, reference to weapons in this article is generic and not enumerative.

To support the above interpretation, it may also be pointed out that in 1966 - when the treaty was drafted, all nuclear weapons were essentially weapons of mass destruction. McNair observes that there is authority for the rule that when there is a doubt as to the sense in which the parties to a treaty used words, those words should receive the meaning which they bore at the time of the conclusion of the treaty.

From the foregoing, the inescapable conclusion which emerges is that Article IV prohibits stationing of only weapons of mass-destruction in outer space. The researcher, therefore, disagrees with Stephen Gorove, who in the context of Article IV observes that 'all arms which utilize atomic energy in accomplishing their

49. McNair, n.46, p.467.
intended purpose, irrespective of their size or destructive force, would be regarded as nuclear weapons.

(c) Another fundamental consideration, of particular contemporary importance in the context of Article IV is the meaning of a weapon of mass destruction. The term 'mass' usually connotes something of a large scale. The dictionary meaning of 'mass' is:

a. of a large number of things; large scale;
b. of a large number of persons.

It may generally be inferred that 'mass-destruction' is symptomatic of destruction of property on a large or massive scale and/or killing of human beings in a large number at a single strike. But this further compounds the problem and a host of questions come to the forefront. What is 'property of a large scale'? Whether 'large' refers to quantity of property or its value? If so, what should be the value of property to be qualified as 'large'? Whether it should be monetary value or scientific, cultural, technological, strategic, etc.? In relation to human beings, what number of people would collectively qualify to form a 'mass'? All these questions elude satisfactory answers. All the same, it could be said

that a weapon capable of destroying or damaging a number of independent objects without discrimination at a single strike may be regarded as a weapon of mass-destruction of property. As regards human beings, a weapon capable of killing or injuring a number of people at one and the same time could qualify as a weapon of mass-destruction of people. It has also been suggested that a weapon could be regarded as a mass-destruction weapon if its destructive impact is one of catastrophic proportions.

Though the concept defies definition, yet certain categories may be indicated with certainty as weapons of mass-destruction. Thus, it has been observed that conventional weapons, e.g., those with lethal mechanism which employ gunpowder and other conventional components do not constitute weapons of mass destruction, whereas, unconventional weapons such as nuclear, chemical and bacteriological weapons may be considered as weapons of mass-destruction. Some writers use the term 'radiological' instead of the word 'nuclear' in cataloguing mass-destruction weapons. As regards


53. Ibid.

bacteriological and chemical weapons Stephen Gorove argues that these weapons would seem to fall under the category of weapons of mass destruction even if they are used against a small group of persons.

A difficulty raised in this context is that it is open for states to interpret the term 'weapons of mass destruction' in a manner suitable to their purpose and policy by contending that a particular weapon possesses or does not possess as much destructive capability as is enough to characterize it as a weapon of mass-destruction.

(d) Turning now to celestial bodies, it will be seen that the first paragraph of Article IV outlaws installation of nuclear weapons and other weapons of mass destruction on celestial bodies. This injunction is further reinforced by the second paragraph of Article IV, examined below. But first, a drafting error in the first paragraph must be outlined. It may be recalled that in the present study the researcher has used the term 'celestial bodies' as inclusive of the moon for the

55. Gorove, n. 50, p. 87.

obvious reason that the moon is a celestial body. But this is not so with the space treaties. While prohibiting installation of nuclear and other weapons of mass destruction on celestial bodies, reference to 'the moon' is omitted, whereas the second paragraph while prohibiting all kinds of military activities, along with celestial bodies there is reference to the 'Moon'. There is no gainsaying that the moon is a celestial body. The drafters need not have singled out the moon from other celestial bodies. But since they chose to do so, they ought to have used the term 'moon' at every place the term 'celestial bodies' is used. Indeed, throughout the treaty this has been done except in the above mentioned paragraph. As a consequence, it has been argued that installation of nuclear and other weapons of mass-destruction on the Moon is not prohibited. But this is a fallacious interpretation for several reasons. First, the omission of reference to the moon appears to be accidental and a purely drafting error. Secondly, it is contrary to the spirit of Article IV as well as that of the Treaty. Thirdly, and most significantly, it will be apparent from examination of the second paragraph of Article IV, which specifically prohibits any military use of the moon and other celestial bodies, is adequately capacious and incontrovertible so as to dispel any doubts regarding installation of weapons on the moon. Therefore,
irrespective of the omission, it may be positively concluded that nuclear and other kinds of mass-destruction weapons may not be installed on celestial bodies including the moon.

(e) The second paragraph of Article IV is indeed perspicuous. It may be unequivocally asserted that it not only deweaponsizes the celestial bodies, but completely and absolutely demilitarizes them. Thus, the first sentence of the second paragraph in incontrovertible terms declares that the moon and other celestial bodies shall be used exclusively for peaceful purposes. The second sentence further reinforces the obligation flowing from the first sentence by specifically cataloguing certain military activities and categorically prohibiting them on the celestial bodies. Thus, as mentioned earlier, establishment of military bases, installations and fortifications, testing of weapons and military manoeuvering on the celestial bodies is prohibited. It is worthy of note that this paragraph in demilitarizing the moon and other celestial bodies adopts both generic and enumerative approach. But certain misgivings regarding this approach have been expressed, especially by attempting a comparison between this paragraph of Article IV and Article I of the Antarctic Treaty, 1959. Admittedly, Article I of the latter resembles Article IV. Its first paragraph reads
as follows:

1. Antarctica shall be used for peaceful purposes only. There shall be prohibited, *inter alia*, any measures of a military nature, such as the establishment of military bases and fortifications, the carrying out of military manoeuvres, as well as the testing of any type of weapons.

The language of Article 1 is not susceptible to dubitations and, therefore, is certainly preferable to that of the second paragraph of Article IV. The inestimable advantage of the words "*inter alia*" and "such as" as used there before cataloguing activities of military nature is that the list of such activities is kept open. It also indicates that the list is simply exemplificatory rather than exhaustive. A reference to *travaux preparatoires* of the Outer Space Treaty reveals that during the drafting stage of the Treaty, the U.S. specifically, but unsuccessfully, attempted to import a language similar to that of Article I of the Antarctic Treaty, but the U.S.S.R. opposed the move.

Notwithstanding these misgivings, the cumulative effect of the second paragraph of Article IV is that the celestial bodies have been completely demilitarized. A view has been expressed, and the researcher unhesitatingly endorses it, that even in its present form, the interpretation of this paragraph in good faith leads us to conclude that no activity serving a military

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purpose is permitted on celestial bodies. Even though certain key-terms such as a weapon of mass-destruction are not defined by the Treaty total demilitarization of celestial bodies is not in the least affected. There are certain misgivings regarding installation of weapons on the moon. A view, which is difficult to endorse, is that though a weapon may not be installed on the celestial bodies, yet it may be installed on the moon because the treaty fails to clarify whether the moon is a celestial body. It must be stressed that such fears are misplaced because unquestionably the moon is a celestial body.

(f) The precise meaning of military bases, installations and fortifications, weapons testing is not clear from the Treaty. A view has been expressed that a military base normally refers to a center of military activities or a source of military supplies; a fortification refers to a series of structures, walls or furnishings for strengthening a position against enemy attack; and an

59. The researcher disagrees with the view that lack of the definition of weapons of mass-destruction may enable states to deploy weapons of limited destruction on celestial bodies. See M.Muskat, 'New Developments in Outer Space and Their Role in Increasing International Security' 30 Zeitschrift Fur Auslandisches Öffentliches Recht und Volkerrecht, 1970, p.117.
61. Ibid.
installation may refer to any apparatus which is in position for use. As regards weapon testing it is observed that it would cover any and all segments of the testing procedure. It may nevertheless be asserted that howsoever differingly the terms are interpreted, they are quite capacious and comprehensive so as to bring within their ambit almost all types of conceivable military activities.

(g) The last sentence of Article IV is intended to facilitate peaceful uses and exploration of outer space and celestial bodies by permitting use of military equipment and personnel therefor. Despite the straightforward and unambiguous language and congruity of this provision with earlier provisions and the spirit of Article IV as such, some writers have attempted a circuitous and capricious interpretation of this sentence so as to justify some military activities on the celestial bodies. It has been observed that permission to use military personnel and equipment on celestial bodies implies that they may be used for defensive activities such as incorporation of stations on them in missile warning or satellite inspection systems, because defensive activity is a peaceful

62. Gorove, n.45, p.120.

63. Ibid.

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activity. It is exceedingly difficult to endorse this argument for several reasons. Suffice it to point out that Article IV completely and absolutely demilitarizes the celestial bodies by prohibiting all kinds of military activities—irrespective of whether they are offensive or defensive, or for that matter, aggressive or non-aggressive. As indicated earlier, use of military facilities and personnel is limited exclusively to peaceful uses and exploration. This is further substantiated by the subsequent practice of the states parties to the Treaty. There is not a shred of evidence to suggest that states are using celestial bodies for non-aggressive or defensive military purposes though some are capable of doing so. The researcher is entirely in accord with the view that 'the test whether an activity or an equipment is of a military character is essentially functional one and not of nominal status.' The indispensable role which military personnel and facilities play in peaceful space exploration was also stressed at the time of drafting the Treaty. Generally it is believed that the provisions permitting the use of military personnel


and facilities in no way affect demilitarisation of celestial bodies. The researcher unhesitatingly contends that it would be an entire misreading of the whole purpose of Article IV to interpret it so as to authorize defensive or, for that matter, 'peaceful' military activities on celestial bodies.

(h) Few concepts in space law have generated more controversy than the one of 'peaceful purposes'. During the recent past it has further been exacerbated by ascensive military interest in outer space. Basically, there are two differing interpretations. One interpretation which is based on the plain meaning of the word 'peaceful' is that peaceful means non-military. This would necessarily preclude any activity that serves military purpose - whether offensive or defensive or aggressive or non-aggressive - in outer space. Whereas the other view is that the term 'peaceful' is equivalent to 'non-aggressive' and hence includes defensive military activities. The Americans have stubbornly and consistently used the term 'peaceful' in accordance with the latter interpretation. The words 'peaceful purposes' appear in the Treaty in the second and fourth paragraphs of the preamble and

twice in the second paragraph of Article IV. The interpretative controversy in relation to celestial bodies is otiose for two reasons. First because second paragraph of Article IV refers to exclusively peaceful purposes making it abundantly clear that all military activities, even those which are defensive and non-aggressive, are prohibited on celestial bodies. Secondly, the second sentence of the second paragraph cogently establishes that the celestial bodies have been totally demilitarised. Therefore, it is only in relation to outer space proper the interpretative controversy may have some relevance and significance. However, it is fairly clear that the only military activity that is prohibited in outer space is stationing of weapons of mass-destruction therein. There is enough scope to indulge in other military activities in outer space. Therefore, the interpretative controversy is superfluous in the context of outer space as well. Gorove also agrees that it is futile to debate over the meaning and interpretation of the term 'peaceful' and suggests identification of permissible and prohibitive activities in outer space and on celestial bodies. He points out that the Treaty itself adopts this approach partially, therefore,

68. See Appendix.

69. Emphasis supplied.

70. Gorove, no.50, p.94.
instead of debating over meaning of 'peaceful' it would be preferable to identify specific activities as permissible and prohibitive in a future outer space convention. Although, it is a commendable approach, yet an unsurmountable difficulty lies in convincing the leading space powers to accept such categorization, and foreclose further ventures of the kind prohibited by the treaty. But if the cataloguing is not exhaustive, there will always be room to invent a novel military activity which does not fall in the prohibitive category and thereby frustrate the mandate. In the wake of rapidly advancing technology, to formulate an exhaustive list is indeed an arduous task.

It is particularly interesting to note that the Soviets have consistently interpreted the term 'peaceful' to mean non-military. Thus, it was observed in the early days of the Outer Space Treaty that the notion of 'peace' has always been contrasted with 'war' and 'peaceful' always meant 'non-military'.

This was also supported by writers in the Western

71. Ibid.


Countries in the early days of space exploration.

More recently interpretation of 'peaceful' to mean 'non-aggressive' has been justified on a novel ground, namely, that this enables the states parties to retain maximum freedom of strategic activities in the absence of effective verification system.

By way of conclusion, a word may be added. One aspect of the controversy which calls for special attention is that the wording of Article IV, and the Treaty in general, is the outcome of a deliberate attempt on the part of the space powers to ensure that nothing in the Treaty will inhibit their military ambitions in outer space. Both the super powers had realized the potentially nefarious consequences of stationing nuclear weapons in outer space. Hence they unhesitatingly accepted a ban on such weapons. But this was subject to a rider that other military activities remain unhindered. This is vividly demonstrated by the categorical rejection of the Indian proposal that a provision requiring that the entire space environment be used exclusively for peaceful purposes be included in the Treaty.

Thus, interpretation of 'peaceful' as


'non-agreesive' in the context of outer space is quintessence of the paramount significance of the military potential of outer space to the space powers. At the expense of repetition, it may be added that now the interpretative controversy has least practical significance.

II.3(4) An Assessment

It seems hard to deny that the Outer Space Treaty is a significant achievement, though admittedly, by no means adequate today on account of the vicissitudes brought about by the amazing advances in military science and technology. As has been stressed previously, Article IV of the Treaty significantly proscribes certain military activities in outer space. But far more impressive achievement of Article IV is absolute and comprehensive demilitarization of the celestial bodies. Other provisions of the Treaty do not significantly contribute to the cause of demilitarization. It is sometimes claimed that the first paragraph of Article I of the Treaty which requires the states parties to use outer space and celestial bodies for the benefit and in the interest of all countries, and declare that it shall be the province of mankind; would prohibit stationing and placing of any kinds of weapons in outer space. But it must be stressed that

the above obligation is too general to specifically proscribe weaponization of outer space. By itself, it lacks the requisite cogency.

II.4. The Astronauts Agreement, 1968

Deeply concerned about the safe return of their astronauts and spacecrafts in case of distress or accident, the Soviet Union took initiative in adoption of the Astronauts Agreement. Undoubtedly, the Americans were not seriously interested in adoption of the Agreement since they had already developed an efficient network of tracking facilities and hence their need for assistance in cases of emergency was not pressing. The Outer Space Treaty already provided for assistance to astronauts, their return, as well as return of space objects to the state in which they were registered. Nevertheless, in view of ever increasing space activities it was proposed by the Soviet Union that a detailed regime be established by an independent multilateral treaty to deal with rescue and return of astronauts and recovery and return of space objects.

78. For the text of the Agreement, See 7 International Legal Materials, 1968, pp.151-61.

79. Wadegaonkar, n.24, p.16.

80. Articles V and VIII of the Outer Space Treaty.

All the provisions of the Agreement have not been examined in detail here. First, the general provisions are outlined, and later, those provisions which are particularly pertinent to military activities in outer space have been examined at length.

II.4.(1) Important Features of the Agreement:

Whenever the personnel of a spacecraft meet with an accident or experience distress or make unintended or emergency landing on the high seas or in the territory of another state or at a place not under the jurisdiction of any state; the state party which receives information of such an eventuality must notify the launching authority if identifiable or known, or if not known, make a public announcement; and also inform the Secretary General of the United Nations. If the personnel land in the territory of a state party, then it must take all the necessary efforts to rescue them, with the co-operation of the launching authority, if necessary. In the eventuality of the personnel landing on the high seas or on terra nullius, those states which are in a position to help rescue the personnel,

82. For a general examination of the Agreement see Bin Cheng, 'The 1968 Astronauts Agreement or How Not to Make a Treaty' 23 Yearbook of World Affairs, 1969, pp.185-208.

83. Article I of the Agreement.

84. Ibid., Article II.
shall extend assistance in search and rescue mission. The personnel so rescued should be safely returned to the launching authority.

The provisions pertaining to return of space objects are equally significant. When space objects or their component parts are found in the territory of a state or a state receives information that they have returned to the high seas or terra nullius, such state party is obliged to notify these facts to the launching authority and the Secretary General of the United Nations. In those cases where space objects or their component parts are discovered in the territory of a state, such state shall, at the request of launching authority recover and return them to, or hold at the disposal of, the launching authority. The state party may require identifying data from launching authority before their return. In cases of hazardous or deleterious components of space objects, the state party discovering them shall notify the launching authority who shall take immediate measures to render them harmless. The expenses incurred for recovery

85. Ibid., Article III.
86. Ibid., Article IV.
87. Ibid., Article V (1).
88. Ibid., Article V (2) and (3).
89. Ibid., Article V (3).
90. Ibid., Article V (4).
and return of space objects shall be borne by the launching authority. There is no comparable provision regarding bearing the expenses incurred by a state party in rescue and return of the personal of a spacecraft by the launching authority.

II.4.(2) The Astronauts Agreement and Military Activities in Outer Space:

The rescue and return of astronauts and search and return of spacecrafts raises certain interesting issues in the context of military activities in outer space. There is no gainsaying the extensive military missions of the U.S. and the U.S.S.R., especially those involved in military intelligence gathering. It is not difficult to envisage a situation wherein a military manned or unmanned spacecraft makes an emergency landing in the territory of a hostile state on account of dysfunction. The spacecraft contains devices which have collected and recorded extremely sensitive data pertaining to the national security of the state which has found the spacecraft in its territory. Presuming that the concerned states are parties to the Agreement, in the circumstances, can the state which has found the spacecraft refuse the return of the spacecraft or at least the devices containing sensitive data? In case of manned mission of similar nature, can it arrest the astronauts and indict them?

91. Ibid., Article V (5).
on charges of espionage? Or must it, in strict adherence to the Agreement, safely return the spacecraft, its reconnoitring devices, astronauts, if any, to the launching state in utter disregard to its national security?

Not unnaturally, in the Agreement there is no satisfactory answer to these questions. The Agreement does not distinguish between military and non-military space objects, or for that matter, between lawful and unlawful space missions. Nor military and civilian personnel of a spacecraft are distinguished. Such problems could be exacerbated if a spacecraft is simultaneously engaged in both military and civilian missions. In this context the concern expressed by the Japanese delegate at the time of adoption of the Agreement is worthy of note. He raised the following issue:

...His Government had been greatly concerned by a recent report of tests being conducted by a certain space power towards the possible development of a "fractional orbital bombardment system". ... The present draft agreement or any other government on rescue and return could not place an obligation on a contracting party to recover and return a space object intended primarily for the development of a bombardment system to be placed into any kind of orbit, whether fractional or non-fractional.

It seems hard to deny that the obligation under the Agreement to return space objects as well as personnel thereof is absolute and unconditional. The Agreement does

93. Cheng, n.82, pp.205, 206.
not define 'personnel of a spacecraft'. It has been rightly observed that the words 'all personnel' as used in the Agreement leave no room for distinction between military and civilian personnel.

In a vein to arrive at a pragmatic solution, the researcher is inclined to suggest that for the purposes of the Agreement, it would be plausible to distinguish between lawful and unlawful space activities. This may be attained by resorting to international law, particularly the Outer Space Treaty and other space treaties to which the concerned states are parties. If a space activity is manifestly illegal, the spacecraft and its astronauts would not be entitled to avail of the protection afforded by the Agreement. However, the paramount difficulty is how to determine lawfulness of an activity. It is fairly reasonable on the part of a state to contend that a space object belonging to another state engaged in remote sensing and collecting data regarding the natural resources or crop conditions of the former without its knowledge or permission is engaged in an activity in contravention of principles of state sovereignty, a fundamental concept in international law.

94. It is curious to note that the title of the Agreement refers to 'astronauts', whereas, this term is no where used in the text of the Agreement, but instead the term 'personnel of spacecraft' is used.

law, and hence unlawful. The determination of lawfulness is bound to be subjective in the absence of compulsory third party dispute settlement procedure. But such incertitude is not uncommon in international law. A host of situations of the like nature can be envisaged. What solution, for example, the Agreement would provide in case a state in whose territory a hostile military space object - with or without personnel - lands unexpectedly, elects to treat the landing as some kind of forcible intervention, or invasion or for that matter, 'an armed attack' and decides to exercise 'the inherent right of self-defense' by resorting to appropriate forcible measures?

This and similar other questions are left unanswered by the Agreement. Indeed, it is heartening to note that so far the question of rescue and return of astronauts, or that of recovery and return of space objects has not arisen. The solitary incident on which the Agreement was invoked is that of the Soviet space object COSMOS 954, which disintegrated in January 1978 in outer space, the remnants of which were found in the territory of Canada. The Soviets were informed of the discovery of parts of COSMOS 954 in accordance with, and referring to the provisions of the Agreement. The Soviets replied that the remnants of COSMOS 954 no more interest them and Canadian authorities may dispose of them at

96. For details of the Official Correspondence, see 18 International Legal Materials 1979, pp.910-30.
their discretion. The matter thus ended without any consternation. It is, however, not known whether the space object was engaged in a civilian or military mission.

By way of conclusion, it may be observed that the Agreement would be ineffective when it comes to its application to military spacecrafts and personnel thereof, if any. An unusual feature of the Agreement which may be pointed out in the passing is that it casts many obligations on all states parties but its advantages are esoteric, for they are available to only few states which are extensively engaged in space missions. But this semblance of imbalance is excusable on account of humanitarian overtone which underlines the Agreement.

II.5. The Liability Convention, 1972

II.5.(1) The General Scheme of the Convention:

As a response to the deep concern over space accidents, the Liability Convention creates a legal regime to govern payment of monetary compensation to victims of space accidents. The Outer Space Treaty also contains a provision

97. Ibid., p.916.

98. For the text of the Convention, see 10 International Legal Materials, 1971, pp.965-72.

pertaining to the question of liability. Article VI of the Treaty deals with this issue in an elementary manner. The Liability Convention contains a large number of detailed provisions pertaining to situations where a space object causes damage to other states or their persons, natural as well as legal, and/or their property. The manifest scope and purport of the provisions of the Convention indicate that its scheme is based on two distinct principles of liability: firstly, the principle of absolute liability applicable to damage caused on the surface of the earth or to an aircraft in flight; and secondly, the principle of fault liability for damage caused to a space object or persons or property on board thereof, while it was at any place elsewhere than on the surface of the earth or its airspace. Without going into further details, suffice it to point out that the Convention lays down procedure for settlement of claims, criteria for calculation of the amount of compensation, apportionment of compensation where two or more space objects of different states cause damage, liability of international organizations and so forth.

II.5.(2) The Liability Convention and Military Activities in Outer Space:

Article I of the Convention defines a space object as under:

The term 'space object' includes component parts of a space object as well as its launch vehicle and parts thereof.
It is reasonable to presume that the above definition equally applies to both military as well as civilian space objects. Therefore, if a military reconnaissance satellite of a state develops a defect while in the orbit and crashes in the territory of another state, the former is liable to pay compensation to the latter in accordance with the scheme of the Convention, provided both the states are parties thereto. However, in the context of the question of liability, military activities in outer space pose a host of questions of altogether different nature.

Whether a state would be entitled to claim compensation for any damage caused to its interests on account of collection and/or dissemination of sensitive data pertaining to its security by another state by employing reconnaissance techniques from outer space? In this context, the first thing to be noted is that the material scope of the Convention is confined to 'loss of life, personal injury or other impairment of health; or loss of life or damage to property of States or of persons, natural or juridical, or property of international intergovernmental organizations.'

It seems hardly necessary to make more explicit that the kind of loss contemplated here is physical. Therefore, any injury or damage to interests of a state - security, political or otherwise - is indubitably beyond the scope of the

100. Article I(a) of the Convention.
Convention. Besides, damage done by dissemination of data would not be done by the space object itself, but by the activities of some authorities after the reconnaissance is completed.

The second question is, can a state destroy a space object of another state which, according to the former is engaged in an activity detrimental to its national security or an activity prohibited by international law, without attracting liability under the Convention towards the latter state? This question needs a careful consideration. First, it must be noted that the Outer Space Treaty expressly proscribes certain kinds of military activities in outer space and on celestial bodies. It appears to be now generally admitted that fundamental principles contained in the Outer Space Treaty have gained the character of customary law on account of their universal observance. If, therefore, a state has violated the Outer Space Treaty, for example, by placing weapon of mass-destruction in outer space, other state or states may venture to destroy or otherwise render the weapon inoperable. Such an action will not attract legal liability under the Liability Convention. The Convention is based on the premise that when damage is caused to innocent states' interests, the loss must be compensated. Thus,

101. Gorove, n.50, p.126.
102. Article IV, the Outer Space Treaty.
Article VI of the Convention provides that exoneration from absolute liability may be granted if a launching state establishes that the damage has resulted from a negligent act or intentional conduct on the part of a claimant state or its persons. However, there is an exception, namely, where damage has resulted from launching states' activities contrary to international law, U.N. Charter and the Outer Space Treaty, no such exoneration may be granted. Therefore, it may be argued that when a state intentionally causes damage to other states' space objects, and suffers damage, it is not entitled to claim compensation. But such a state—which intentionally causes damage to other state's space object—may claim compensation for the loss it suffers if the latter state's space object was engaged in an activity contrary to international law, the U.N. Charter or the Outer Space Treaty. Therefore, a fortiori, the recalcitrant state has no right to claim compensation from the state which deliberately uses force against the former's unlawful space object. Admittedly, this is a circuitous justification, but a possibility of such a circumstance cannot be overruled.

But it must be carefully noted that a state may not use force against a space object of another state even if it threatens the national security of the former. If a state is doing something in outer space which is detrimental to the interests of other state, unless there exists a specific prohibition on such activity in international law, such activity cannot be complained of. As will be evident later,
secretly gathering data from outer space regarding the military planning of other states is not prohibited. Therefore forcible action cannot be taken against such a space object howsoever prejudicial it may be to its security interests.

The next question is that whether a state is liable to pay compensation for intentionally destroying a space object in the exercise of the right of self-defence? Obviously the answer must be in the negative. Again Article IV of the Liability Convention may be invoked. Self-defence is permitted against an armed attack, an act which is categorically proscribed by international law as well as the U.N. Charter. Article VI would justify use of force against a space object which has caused an attack on another state through outer space. But even in cases where a state is attacked on the surface of the earth, defensive measures may be adopted. Outside outer space, there is no question of violation of the Liability Convention for the legal right of self-defence which is unquestionably a jus cogens cannot be so constricted. The defensive measures adopted by a state which is subject of an attack need not be co-terminus with the attack.

Finally, it may be queried whether a state is entitled to claim compensation under the Convention for deliberate surface damage caused to its persons or property from a hostile military space device or, for that matter, a space weapon? Such a damage is outside the scope of the Liability
Convention. A careful reading of the convention makes it clear that it deals with damage caused by space objects and not from space objects. It may be reiterated that in the main the Convention deals with accidental damage or damage caused negligently. It does not envisage intentional damage as such.

By way of conclusion it may be observed that the convention is not directly concerned with military activities in outer space. It does not purport to provide a deterrent to or compensation for nuclear war. The provisions of the Convention are as a practical matter, basically relevant to behaviour short of outright hostilities. It simply provides for a regime to govern the question of monetary compensation for loss suffered on account of negligent conduct of space activities.

II.6. The Registration Convention, 1975:

At the expense of triteness, it may be observed that identification of objects or vehicles in any international space which is open for all is imperative for maintenance and preservation of order in that milieu. Registration serves the purpose of identification. What can be said regarding


104. Ibid.

air space and high seas is equally congruous in connection with outer space. Registration of aircraft and ships is articulately dealt with by international law. The Outer Space Treaty refers to registration of space objects but makes no provision therefor. The Registration Convention incorporates detailed rules for registration of space objects so as to facilitate their identification.

II.6.(1) Important Provisions of the Convention:

The Convention provides for three types of registrations - national registration, institutional registration and the United Nations registration.

A. National Registration:

The Convention enjoins the state parties to maintain a register in which 'every space object launched into earth orbit or beyond' shall be registered by means of an entry. The Convention does not dwell upon the particulars to be entered into the national register.

106. Articles 17, 18 and 19 of the Chicago Convention on International Civil Aviation, 1944.
108. Article VIII, the Outer Space Treaty.
109. Article II, the Registration Convention.
B. Institutional Register:

When space activities are conducted under the auspices of international intergovernmental organization, if majority of states members of the organization are parties to the Convention and the Outer Space Treaty, the organization may declare its acceptance of the rights and obligations provided for in the Convention. An organization which makes such a declaration is obliged to establish a register for registration of space objects launched under its aegis.

C. The United Nations Register:

The most impressive provision of the Convention is the one pertaining to the U.N. Registration. The Secretary General of the U.N. is required to establish a register for recording information furnished by the states parties in accordance with the Convention. The particulars to be furnished are:

(a) Name of the launching state or states;
(b) An appropriate designator of the space object or its registration number;
(c) Date and territory or location of launch;

110. Ibid., Article VII.
111. Ibid., Article III.
(d) Basic orbital parameters, including
i. Nodal Period,
ii. Inclination,
iii. Apogee,
iv. Perigee,

(e) General function of the Space Object.

It is not imperative that a space object must bear an identification mark or registration number on it, but if a state party chooses to have a mark and number, the details thereof must be notified to the Secretary General.

Since identification of space objects is the crux of the Convention, the states parties are expected to co-operate in identifying those space objects which cause damage to other states or which are hazardous or deleterious in nature. Especially those states parties which possess monitoring and tracking facilities are required to respond 'to the greatest extent feasible to a request' by a state party or the Secretary General of the U.N., under 'equitable and reasonable conditions in the identification of the object'.

112. Ibid., Article IV.
113. Ibid., Article V.
114. Ibid., Article VI.
115. Ibid.
II.6.(2) The Registration Convention and Military Activities in Outer Space:

As noted earlier, the Convention does not determine the contents of national register. Absolute latitude is given to the states parties. In the circumstances it is absurd to expect the states parties to enter full particulars of military space missions in the national register. If national registration is intended for the convenience of the states parties, then it is up to them to regulate the modalities of national registration. It needs little imagination to envisage that provisions pertaining to national registration are devoid of practical significance.

As regards the U.N. registration, it is inconceivable that states will be forthright in detail disclosure regarding their space missions, especially those which serve military purposes. There seems little doubt that states will either avoid registration of military space missions or provide insufficient information without alluding to military nature of the mission. Not the least of the difficulties here is the suppression of material details in the interest of 'paramount considerations of national security'. It has been aptly observed that with whatever scanty information that is supplied to the U.N., it would not be possible to predict the exact nature of space mission, and there may be a considerable time gap between the date of notification and the launch. It is highly revealing to note that the reporting record of the major space powers consistently shows
reservedness and lack of concern for the interests of other states, and more significantly, so far no space mission has been reported by these powers as serving military purpose. Other states do not raise any objection against such non-disclosure. This is symptomatic of inertness on the part of launching states and ineffectiveness of the Convention.

It can never be doubted that registration of space objects could significantly contribute to maintaining peace in outer space. It has been cogently observed by I.H.Ph.Diederiks-Verschoor that a well ordered, complete and informative register would constrain states from furtively deploying weapons of mass destruction in outer space. Because of the lack of detail information, identification of space objects is bound to be elusive. But it must be noted that the two leading space powers are least concerned, for they possess equipments, facilities and expertise for monitoring and tracking space objects to

118. Agrawala, n.56, p.515.
identify and locate them as well as to discover the genuine nature of their mission.

As a measure to fortify the Convention, an amendment has been suggested by the addition of a paragraph in Article IV as under:

The State of registry shall immediately inform the Secretary General of the United Nations in case any object carrying any kind of outer space weapons has been launched into outer space.

Although such an amendment will indubitably help demilitarization of outer space and preservation of law and order therein, it is inconceivable that space powers will ever agree to such an amendment.

Finally one more point to be noted in the present context is that the Convention does not apply to the ballistic missiles which are expected to traverse through outer space, but do not complete one full orbit. It is clear that the Convention applies to those space objects which are launched into earth orbit or beyond. The word 'launched' indicates that the object is intended to remain in outer space or earth orbit for considerable period. It excludes objects which are expected to remain in outer space or earth orbit for a short while.

120. He Quizi, 'The Registration Convention and Maintenance of Peaceful uses of Outer Space, in Jasentuliyana, ed., n.103, p.120.

121. Article II, the Registration Convention.

By and large, the Convention is unable to contribute significantly to the cause of maintaining peace and order in outer space unless the states actively engaged in space missions decide to sincerely follow the Convention in its letter and spirit.

II.7. The Moon Treaty, 1979

In keeping with the great concern over commercial exploitation of the resources of celestial bodies, the Moon Treaty contains a large number of detailed provisions on exploration and use of the celestial bodies. The Treaty establishes a comprehensive legal regime for celestial bodies. Needless to mention, the Treaty is founded on the principles contained in the Outer Space Treaty. It has amplified and articulated some of the fundamental principles pertaining to celestial bodies.

II.7.(1) A Summary of the General Provisions of the Treaty

Throughout the Treaty, there is reference to 'the moon' rather than 'the celestial bodies'. But Article 1 at the outset declares that 'the provisions of this Agreement relating to the moon shall also apply to other celestial bodies within the solar system, other than the earth.' This


kind of extraordinary method to expand the scope of the Treaty is inconsiderate and might create incertitude in interpretation. In this discussion for the sake of convenience the researcher has, as done earlier, used the term celestial bodies which apparently includes the moon and excludes the earth. The outstanding provisions of the Treaty are briefly summarized below.

(a) **Common Heritage of Mankind** :

The singularly outstanding feature of the Treaty is its emphasis on the principle of common heritage of mankind. This concept, the inspiration of which comes from the aspiration of the Third World, is of undisputed value as a principle. The concept which first emerged in the context of the law of the sea is reflected in many provisions of the Treaty.

125. Articles 4 and 11 of the Moon Treaty.

(b) **Scientific Investigation** :

The Treaty ensures freedom of scientific investigation on celestial bodies by all states parties on non-discriminatory basis. The rights and duties of states in carrying out scientific investigation are also laid down.

126. Ibid., Article 6.

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(c) **Environmental Protection**

The Treaty imposes certain obligations on the states with a view to maintain equilibrium of the natural environment of the celestial bodies.

127. Ibid., Article 7.

(d) **Stations on Celestial Bodies**

The Treaty permits states parties to establish manned and unmanned stations on celestial bodies, presumably for conducting scientific investigations and experiments thereon.

128. Ibid., Article 9.

(e) **Assistance to Persons on Celestial Bodies**

Article 10 of the Treaty adverts to the provisions of the Outer Space Treaty and the Astronauts Agreement pertaining to the assistance to be given to astronauts and enjoins the states parties to adopt all practicable measures to safeguard the life and health of persons on the celestial bodies. Any person on a celestial body is to be treated as 'astronaut' within the meaning of the Outer Space Treaty and 'personnel of a spacecraft' within the meaning of the Astronauts Agreement, for this purpose.

(f) **Jurisdiction and Control**

The Treaty reiterates the principle that states parties shall retain jurisdiction and control over their personnel,
space vehicles, equipments, facilities, stations and installations on the celestial bodies and that the ownership of such things shall not be affected by their presence on the celestial bodies.

(g) Accidents:

A state which learns of accidents on celestial bodies is obliged to promptly inform it to the launching state party and the Secretary General of the United Nations.

(h) Responsibility and Liability:

The principles of international responsibility for activities of nationals and liability for damage are also applicable to activities on celestial bodies. It is acknowledged that further elaborate measures as respects responsibility and liability may become necessary when activities on celestial bodies increase.

(i) Dispute Settlement:

The Treaty obliges the states parties to settle their disputes regarding observance of the Treaty by holding consultations and, if necessary, by resorting to other peaceful methods for settlement of international disputes.
(j) **International Organizations**

The Treaty enables international intergovernmental organizations to assume the obligations and avail of the rights provided for by the Treaty by making a declaration to that effect if a majority of the members of the organization are also parties to the present Treaty and the Outer Space Treaty.

II.7.(2). **The Moon Treaty and Military Activities in Outer Space**

Article 3 of the Treaty elaborately and almost impeccably deals with military activities on celestial bodies. The article reads as under:

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

2. Any threat or use of force or any other hostile act or threat of hostile act on the moon is prohibited. It is likewise prohibited to use the moon in order to commit any such act or to engage in any such threat in relation to the earth, the moon, spacecraft, the personnel of spacecraft or man-made objects.

3. States Parties shall not place in orbit around or in 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.

134. Ibid., Article 16.
In many respects this article is identical to Article IV of the Outer Space Treaty. This article has significantly elaborated and articulated the basic principles on which Article IV of the Outer Space Treaty is founded.

The first paragraph of Article 3 obliges the states parties to use the celestial bodies exclusively for peaceful purposes. Despite the interpretative differences, the article uses the term 'peaceful purposes'. But the mandate to use the celestial bodies exclusively for peaceful purposes leaves no doubt about the comprehensiveness of the prohibition and its unequivocality. What has been said regarding the meaning of 'peaceful purposes' in the context of the Outer Space Treaty equally holds good here as well.

The second paragraph of Article 3 is similar to Article 2, paragraph 4 of the U.N. Charter. It is particularly interesting to note that the scope of Article 3, paragraph 2 is much greater than that of Article 2, paragraph 4 of the U.N. Charter for the simple reason that the latter provision is limited to use or threat of force 'against the territorial integrity or political independence of any State or in any other manner inconsistent with the Purposes of the United Nations'. It is readily apparent that any use of force consistent with the purposes of the U.N. is excepted. Forcible action under the aegis of the U.N., use of force by way of self-defence are the instances wherein use or threat of force would not violate the Charter mandates. Some
misgivings, not totally unfounded, have been voiced that Article 3, paragraph 2 disallows use of force even by way of self-defence. However, Article 2 of the Treaty obliges the states parties to carry out all activities on the celestial bodies in accordance with international law, in particular the Charter of the U.N. in the interest of maintaining peace and security. This is more than enough to protect the rights of states under the general international law as well as the U.N. Charter. Indeed, France has attached an explanation while signing the Treaty that the provisions of Article 3, paragraph 2 cannot be construed as anything more than a reaffirmation of the prohibition on use or threat of force in international relations under the U.N. Charter.

Further, Article 3, paragraph 2 comprehensively prohibits use of celestial bodies for use or threat of force, hostile act or threat thereof in relation to the earth, celestial bodies, spacecraft, personnel of spacecraft or other man-made objects. The provision is self-explanatory.

The third paragraph prohibits placing of nuclear and other mass-destruction weapons (a) in the orbit around the celestial bodies, (b) in a trajectory to or around the celestial bodies, and (c) on or in the celestial bodies.

This is an extension of the principle contained in Article IV of the Outer Space Treaty which bans placing nuclear and other mass-destruction weapons in outer space. Undoubtedly, orbits around celestial bodies and trajectories to and around celestial bodies do form part of outer space proper. From the language of Article 3, paragraph 3, some writers are tempted to draw an inference that weapons other than nuclear or mass-destruction weapons may be placed on celestial bodies or used on or in celestial bodies. However, a glance at the rest of the article, particularly paragraph 1 and 4 will convincingly demonstrate that such an inference is totally unfounded, because the celestial bodies have been completely demilitarized.

The last paragraph of Article 3 is an ad verbatim reproduction of the second sentence of the second paragraph of Article IV of the Outer Space Treaty which deals with establishment of military bases, installations, fortifications, testing of weapons, military manoeuvring etc. on celestial bodies. Therefore what has been said in that context needs no repetition here. However, in only one respect there appears to be a divergence from the Outer Space Treaty. It is a consequence of the extraordinary and curious definition of the moon in Article 1, paragraph 2 of the

Treaty, which provides:

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

As a direct consequence, the establishment of military bases, installations, fortifications, weapons testing, etc. in orbits around celestial bodies and in trajectories to or around them has been deviously prohibited. The orbits around celestial bodies are part of outer space proper, but because of the unusual definition of the moon, these parts of outer space have been assimilated to celestial bodies and consequently brought within the purview of the Treaty.

Article 15 of the Treaty may be outlined as a provision which might be contributory to observance of the Treaty obligations including those pertaining to military activities in outer space. It confers a right on the states parties to visit the facilities of other states parties on celestial bodies in order to ascertain whether the activities of such state party are in compliance with the Treaty. But this is subject to a reasonable notice and the taking of maximum precautions to ascertain safety and to avoid undue interference. It is particularly significant to note that such visit need not be on the basis of reciprocity as is the case under the Outer Space Treaty. Although such a visit has to be preconcerted, in case of a disagreement or an impasse in settling the proposed visit, unilateral recourse to the
Secretary General of the U.N. for resolving the controversy is provided for. Nevertheless, it is doubtful how far this provision will avouch a state party an assured visit to other states' facilities on celestial bodies. Beyond holding consultations in good faith, no further obligation rests on the states parties who have space vehicles, equipment, facilities, stations and installations on celestial bodies.

II.7.(3) Concluding Observations:

The overall impression is that the Moon Treaty is an useful instrument. It effectively and unequivocally demilitarizes the celestial bodies, orbits around them and their trajectories. An ominous claim is often made that certain weapons may be deployed on celestial bodies since they have deterrent effect and hence contributory to maintenance of international peace and security, and therefore such a deployment would be a 'peaceful purpose'.

It is very difficult to endorse such a view, because the deployment of weapons for deterrence would at any rate be violative of the last paragraph of Article 3, howsoever lofty the objective may be. The intangible notion of 'deterrence' may not help maintain peace on celestial bodies and in outer space. Above all, what guarantee is there that a weapon intended for deterrence is not used for aggression?

A circuitous interpretation is often the only tool at the disposal of policy makers to obfuscate a legal obligation or a provision in order that the interpretation suits their policy. This is amply illustrated by a statement made by a U.S. Department of Defense Official during congressional hearing on the Moon Treaty ratification.

We will be looking carefully at the language of the treaty, and in particular Article 3... to insure that certain possible non-aggressive military activities in deep-space or in the vicinity of the moon are not precluded. In this regard, we will want to insure that the treaty's reference to peaceful purposes and to the threat or use of force are interpreted in a manner consistent with United States interpretation of the Outer Space Treaty and the United Nations Charter.

The U.S. delegate to the COPUOS had, immediately after adopting the text of the Agreement, made it clear that the U.S. will continue to interpret 'peaceful' as 'non-aggressive'. For reasons fully expounded earlier, the researcher maintains that such an interpretation is unwarranted and unnecessary in the context of celestial bodies, especially in view of the comprehensive and elaborate mandates of Article 3 of the Treaty.


The Treaty is a significant achievement. Although it must be admitted that most of the provisions of the Treaty do not have practical application as yet, and are undoubtedly prescient, yet it is better to fortify the legal regime prognostically, especially in view of the unforeseen pace at which science and technology are advancing.

II.8. Legal Definition of Outer Space, Delimitation of Air Space and Outer Space and Military Activities

Few issues in space law have ensued more controversy than the issue of legal definition of outer space and consequent non-delimitation of air space from outer space. The concept of 'outer space' has defied definition ever since the dawn of space age for reasons exclusively attributable to policy rather than legal considerations. The leading space powers are unable to agree on a boundary between air space and outer space for reasons expounded below. This particular issue has been dealt with here at some length not because it is a major unsettled issue in space law, but because it has significant repercussions on military activities in outer space.

II.8.(1) Military Interests and Delimitation

At the expense of repetition it must be emphasised that outer space is one of the international spaces where states enjoy freedom of action except and insofar as they are
constrained by law. As seen earlier, not all military activities are prohibited in outer space. States enjoy a large measure of freedom to engage in non-prohibited military activities in outer space. Space powers apprehend that delimitation will invariably inhibit their freedom in outer space, especially the freedom to engage in military activities like satellite reconnaissance and surveillance. Harry Almond has aptly outlined the rationale behind non-delimitation in the following words:

"The policies connected with definition gain importance from the deep concerns of all states with security and the widely held belief that state security is either dependent upon space technology and space access, or through a rapidly advancing technology soon will be. The security policy elements are to be found in the potential that space offers for surveillance conducting armed conflict both in space and for commanding and controlling military and peaceful activities in general." 140

Since the early days of space exploration, military ambitions have dominated space programmes. Satellite reconnaissance has always been a military asset of immense potential. Of more immediate interest are the recent advances in military space technology, particularly space weapons programmes.


141. Fawcett, n.15, p.29.
II.8(2) Different Trends:

Basically, there are two views as regards delimitation. According to one view, spatial delimitation is not necessary, and legality or illegality of an activity should be determined with reference to the nature of the activity, rather than its locus. This has come to be known as 'functional' approach. Proponents of second approach, namely spatial approach, pithily contend that the lawfulness of a space activity depends on its location and hence a spatial delimitation is a precondition for determining lawfulness of such an activity. The functionalists are not uniform in their approach. The only common denominator amongst them is that spatial delimitation is not required at all or not required at present. Bin Cheng has summarized the functionalist trends as follows:

(a) Spatial delimitation not required at all:
   i. Astronautics can be regulated by reference solely to the nature of the activities;
   ii. Astronautics can be regulated by reference solely to the nature of the activities and the nature of space objects;

(b) Spatial delimitation not required at present and astronautics can be adequately regulated at present by either (a) (i) or (a) (ii) above.142

Those who tend to procrastinate spatial delimitation, as in category (b) above, basically stick to functionalist approach but heavily rely on future developments. These are termed as "wait and seers". The functional approach has been strongly defended by McDougal, Lasswell and Vlassic. Their contention is as under:

"It may ... be emphasised that in principle we do not favour any boundaries in super-incumbent regions unless it can be demonstrated that such boundaries promote inclusive interest. The possible temporary boundary we suggest, and any other solution which would artificially limit man's freedom of exploration, navigation and communication should be considered as no more than a transitional arrangement, reflecting not so much long-term general community interests as short term, transient, particularistic interests which do not express the true needs of the space age but are rather a relic of the past." 144

There are several inherent weaknesses in the functionalist approach. The policy-orientedness is pre-eminent in this approach. The U.S. has always been an ardent advocate of functionalism. The U.S. delegate has argued in the Legal Sub-committee of the COPUOS that boundary between air-space and outer space is unnecessary because most states will not be in a position to monitor such an altitude frontier, that the relevant legal, scientific, technical and political factors have not been adequately

143. Cheng, n.65, p.93.

examined, and most importantly, that adoption of a boundary will have an inhibiting and even stifling effect on future space exploration.

The spatialist approach is rooted in certain well established principles of international law. It is based on a deep sense of respect for international legal regulation of outer space activities and to contain such activities within certain limits so as not to transgress on the rightful entitlement of other states. It is axiomatic to note that the legal regimes of air space and outer space are distinct from each other and are based on different premises and legal considerations. The legal regime of air space is founded on the principle of state sovereignty in air space whereas that of outer space is based on the principle of freedom of activity subject to specific restrictions imposed by law. The former is governed by aviation law, the major part of which consists of multilateral law making treaties, viz., the Chicago International Air Services Transit Agreement, 1944; The Tokyo Convention on Offences and Certain Other Acts Committed on Board Aircraft, 1963; The Hague Convention for the Suppression of Unlawful Seizure of Aircraft, 1970; The Montreal Convention for the Suppression of Unlawful Acts against the Safety of Civil Aviation, 1971 and innumerable

bilateral air transport agreements executed by various nations to regulate air services between themselves. The regime of space law, as examined earlier, is composed of the space treaties and emerging customary space law. The existence of two distinct legal regimes intended for distinct spaces founded on different premises imperatively demand delineation of the spaces wherein the regimes are intended to operate. It is not difficult to envisage the host of practical problems that are likely to arise on account of non-delimitation, many of which, as will be seen later, are significantly concerned with impending military activities in outer space.

The implications of non-delimitation are examined below in Chapter IV with particular reference to recent outer space military initiative.

II.9. Bilateral Legal Obligations of the U.S. and the U.S.S.R.

Lawfulness of the American and Soviet military activities in Outer Space will, in addition to international legal obligations, depend on the mutual legal obligations assumed by them as well. The most significant, and incidentally equally controversial, bilateral treaty pertinent in the present context is the Treaty on the Limitation of Anti-ballistic Missiles Systems signed at Moscow on May 26, 1972 -
known simply as the ABM Treaty. By Article I of the Treaty, the parties have agreed to limit anti-ballistic missiles systems and not to deploy them except as provided by the Treaty. Article II enumerates ABM systems for the purposes of the Treaty and Article III enables the parties to deploy limited ABM systems. The most notable provision which is directly pertinent to military activities in outer space is contained in Article V which reads as under:

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.¹⁴⁷

The parties have also accepted certain statements as agreed interpretation of the Treaty, which for all practical purposes may be treated as part of the Treaty. A particular reference to paragraph D is apposite. It reads as under:

In order to insure fulfilment of the obligation not to deploy ABM systems and their components except as provided in Article III of the Treaty, the parties agree that in the event ABM systems based on other physical principles and including components capable of substituting for ABM interceptor missiles, ABM launchers, or ABM radars are created in the future, specific limitations on such systems and their components would be subject to discussion in accordance with Article XIII and agreement in accordance with Article XIV of the Treaty.

¹⁴⁶ For the text, see 11 International Legal Materials, 1972, p.784.
¹⁴⁷ Emphasis supplied.
¹⁴⁸ Supra, n.146, p.796.
Lawfulness of certain military activities in outer space planned for immediate future has been examined in view of the legal obligations flowing from the ABM Treaty with a particular reference to the interpretative controversy at a later stage in the present work.

II.10. General International Law and Military Activities in Outer Space:

Mention was made in the introduction to this chapter that military activities in outer space are not only dealt with by space treaties, but there are indeed certain principles and specific rules in general international law including some multilateral lawmaking treaties, which to a significant extent are pertinent to military activities in outer space. These are examined in this part.

II.10.(1) Application of international law to outer space activities:

It is the prime function of international law to regulate multitude of activities of states in their international relations. In doing so, international law knows no geographic limits. It would be a grave mistake to presume that international law applies only on the surface of

149. Infra, Chapter IV.8.

150. Here the term 'general international law' is used to denote the rules and principles of international law excluding the specific body of space law as such. Naturally, general international law here includes customary as well as treaty law.

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The geographic scope of international law is boundless, for it regulates relations between its subjects in any milieu, even outside the earth and beyond its air space; provided that the situation demands its application. It regulates relations between its subjects wherever necessary and in whatsoever dimension of the universe. Needless to remind that we are dealing with international law and not merely world law. It was therefore unnecessary on the part of the U.N. General Assembly to overtly declare that international law is 'extended' to outer space. It cannot be doubted that there never existed a legal vacuum in outer space. It is indeed interesting to note that in the early days of space exploration, there were serious misgivings in the U.N. regarding application of international law to outer space activities, and certain nations believed that outer space is devoid of legal regime. Earlier, the U.N. General Assembly had announced that 'international law including the Charter of the United Nations applied to outer space and celestial bodies.' Later, the Assembly also declared that 'the activities of states in the exploration and use of outer space shall be carried on in accordance with international law, including the Charter of the United Nations.' Article III of the Outer Space Treaty, 1967

explicitly requires the states parties to conduct outer space activities in accordance with international law, including the U.N. Charter. The researcher is entirely in accord with the views expressed by many writers that these statements have a declaratory character rather than laying down a new rule of international law defining the scope of that law. However, the issue of importance is a reference to the U.N. Charter as a part of international law. Matte has voiced a word of caution:

"With regard to the United Nations Charter, here again further clarification is of the essence if criticism is to be avoided concerning too frequent reference to the Charter in various treaties or agreements concerning outer space. There might be the risk of making the treaty too dependent on an organization which after all may encounter changes in various directions."156

In the researcher's submission, such fears are largely misplaced. Because it would be unwise to expect radical changes in the United Nations system through amendment of the Charter, at least in the foreseeable future, unless there is universal or nearly universal support to such changes. Reference to and reliance on the U.N. Charter could have the effect of strengthening the legal regime which operates in outer space. Besides, some of the fundamental principles on which the Charter is based were either already well

154. See Appendix.


established in customary international law or have subsequently acquired that status. In Nicaragua vs. United States, the International Court of Justice has aptly observed that a number of rules contained in the U.N. Charter have acquired a status independent of it. Referring the law pertaining to use of force, the Court observed that both the Charter and the customary international law flow from a common fundamental principle outlawing the use of force in international relations.

As respects the extent of application of international law to outer space activities, Bin Cheng has made a thorough analysis with a specific emphasis on the concept of jurisdiction. He convincingly advocates:

"As a result of man's penetration into space, all the rules of international law governing the attribution and exercise of quasi-territorial and personal jurisdiction become fully applicable extra-terrestrially whenever spacecraft and nationals of members of the international society venture beyond the terrestrial airspace."

There are enough manifestations of the views of writers and state practice to warrant a conclusion that extraterrestrial application of international law is well established in law and logic and there need be no misgivings regarding application of this law to activities in outer space.

158. Ibid.
160. Ibid., p. 141.
II.10.(2) Some Multilateral Treaty Obligations:

It is fairly conceivable that the international community may adopt certain legal constraints regulating a specific activity in all international spatial zones, including outer space. Again, such constraints may significantly regulate certain military activities in outer space. Viewed from this perspective, an examination of two significant multilateral treaties would be apposite.

The first of these is the Treaty Banning Nuclear Weapon Tests In The Atmosphere, In Outer Space And Under Water, 1963, which is commonly known as the Nuclear Test Ban Treaty. The paramount concern of this treaty is 'the discontinuance of all test explosions of nuclear weapons for all time', and 'putting an end to the contamination of man's environment by radioactive substances.' It is obvious that the emphasis is on protection from radioactive substances, rather than arms control. Be that as it may, the testing of nuclear weapons in outer space - one of the most insidious military activities - is categorically prohibited by the treaty. Indeed, this is an inestimable achievement. Thus, the relevant portion of Article I of the Treaty reads as under:

Each of the Parties to this Treaty undertakes to prohibit, to prevent and not to carry out any nuclear weapon test explosion, or any other nuclear explosion, at any place under its jurisdiction and control,

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

(b) in any other environment if such explosion causes radioactive debris to be present outside the territorial limits of the State under whose jurisdiction or control such explosion is conducted.

The second paragraph of Article I further reinforces the obligation. The states parties have undertaken to refrain from directly or indirectly taking part in carrying out nuclear explosions or nuclear weapons tests conducted by other states in any of the environments already mentioned or which would have the kind of effect contemplated by the earlier provision.

The second treaty is 'The Convention on the Prohibition of Military or Any Other Hostile use of Environmental Modification Techniques, 1977.' It needs little imagination to envisage the host of serious problems that can be engendered by deliberate manipulation of natural environment. The purport of this convention, which is commonly known as the Environmental Modification Technique (EMT) Convention, is to prohibit artificial changes in natural environment for military or other hostile purposes. Indeed, the extensive resort to such techniques by the U.S. during the Vietnam War to destroy forests and crops, muddying and flooding of land routes is a glaring example to convince that these techniques could be exploited for military or

other hostile purposes. It may fairly be inferred that if environmental or geophysical modification activity is left uncontrolled it could be exploited as a weapon of war in all the dimensions of the international spaces. It is this realization that gave an impetus to the negotiation and eventual adoption of the EMT Convention. The most noteworthy provisions of this convention are contained in Articles I and II. These are as follows:

Article I:

1. Each State Party to this Convention undertakes not to engage in military or any other hostile use of environmental modification techniques having widespread, long-lasting or severe effects as the means of destruction, damage or injury to any other State Party.

Article II:

As used in article I, the term 'environmental modification techniques' refers to any technique for changing - through the deliberate manipulation of natural processes - the dynamics, composition or structure of the Earth, including its biota, lithosphere, hydrosphere and atmosphere, or of outer space.

No one would question the technological abilities of the super powers as well as some other advanced states to devise artifices and means for deliberate manipulation of environment. Therefore, worthy of note is the fact that the U.S. and the U.S.S.R. presented almost identical drafts of a


164. Emphasis supplied.
convention on environmental modification technique in August 1975 to the United Nations Committee on Disarmament. This undoubtedly indicates that both the super powers realised the potential dangers of environmental modification techniques and their obviously obnoxious consequences.

A view has been expressed that the terms 'widespread long lasting or severe' as used in the Convention are not precise. Irrespective of this vagueness, if a technique has any of such effects, it would be prohibited by the Convention. Because it is inconceivable that an environmental modification technique must have at one and the same time widespread, longlasting and severe effect. For the same reasons the researcher is unable to endorse the view that the Convention outlaws only those techniques which have a long-lasting effect.

Secondly, it is also pointed out that the convention bans only use of the environmental modification technique, it does not ban research, testing and development of such techniques. The Convention is also criticised on the ground that its dispute settlement procedure is not effective.

165. Roberts and Guelff, n.163, p.377.
166. Ibid., p.378.
Admitting the shortcomings and weaknesses, it must nevertheless be appreciated that the Convention emphatically discourages states from developing such techniques. This is not an insignificant achievement. Another appreciable feature of the convention is that the terms 'military or other hostile use ...' as used in Article I(1) leave no room for doubt as to the comprehensiveness of the ban, particularly in view of the interpretative controversy that has emerged in the context of the Outer Space Treaty regarding the meaning of 'peaceful purposes'. Thus, the association of 'military' with 'any other hostile use' avoids any inroads on the distinction between aggressive military uses and peaceful military uses. At any rate, by way of conclusion a word may be added to give due credit to the Convention as one of the multilateral instruments which, though in a limited way, hails the cause of demilitarization of outer space.

II.10.(3) Use of force and self defence in and from Outer Space

Since the infancy of international law, the question of use of force has been a subject of potential disagreement. Over several centuries the law has meticulously delineated


legitimate use of force. After the adoption of the U.N. Charter— which significantly deals with use of force and self defence—it was hoped that the controversy would be put at rest once for all. This turned out to be a forlorn hope, because the post-Charter years too, have witnessed a substantial difference of opinion as regards these key issues which are undoubtedly vital for maintenance of international peace and security. As mentioned in the previous chapter and as will be evident later, the militarization, particularly, weaponization of outer space is underway. Outer space is regarded as battleground of the future. Today outer space is so extensively used by some nations for legitimate purposes that any deliberate interference with these activities might endanger the very existence of a nation. In view of the unprecedented significance of outer space applications, the concepts of 'use of force' and 'self - defence' need a conscious re-examination in the context of present study.

To begin with, a reference to Article 2(4) of the U.N. Charter would be apposite:

All Members shall refrain in their international relations from the threat or use of force against the territorial integrity or political independence of any State, or in any other manner inconsistent with the Purposes of the United Nations.

It seems hard to deny that this provision has gained the status of customary international law so as to bind all
states irrespective of the U.N. membership. In the space milieu it is possible to conceive following forms of use of force:

(a) From land territory or air space of a state or from high seas or terra nullius; against an object in outer space.
(b) From outer space against a target in outer space itself, or on a celestial body.
(c) From outer space against a target on the surface of the earth, the seas, and the airspace.
(d) From a celestial body against a target on the same or another celestial body; or in outer space, in airspace, on the surface of the earth.

Article 2(4) of the U.N. Charter would encompass all such eventualities within its purview. The phrase 'use of force against political independence or territorial integrity' is wide enough to embrace use of force against space objects of a nation in outer space and stations, installations, etc. on celestial bodies. There has been a marked tendency to interpret the phrase 'political independence or territorial integrity' so as to embrace the total of legal rights which a state possesses.

Violation of Article 2(4) or in other words, illegal use of force by a state against the interests of another

171. Brownlie, n. 169, see generally chapter XIII.
activates Article 51 of the U.N. Charter which paves way for use of force in retaliation by way of self-defence. Though the right of self-defence is well founded in international law, yet its precise scope and content is a subject of extensive controversy. This is a matter of vital international concern, for a slight error of judgement in the exercise of this right could lead to dreadful consequences, more so if that happens in outer space.

The controversy stems from a difference in approach in interpreting Article 51. Brownlie contends that the right of self-defence as it exists in its modern form is a result of legal developments since the period of the League of Nations. During the period 1920 to 1939 states began discarding war or use of force as an instrument of national policy. This resulted in the refinement of the classical broader right of self-preservation and the residual right which survived to justify action that is necessary only for the maintenance of integrity of territorial domain is the right of self-defence. Many writers pithily argue that Article 51 is an effective expression of the right of self-defence in contemporary international law. However, in many quarters there are serious misgivings regarding such a view. Some writers maintain a distinction between traditional or customary right of self-defence and the right of self-defence as contained in Article 51.

172. Ibid., p.274.
173. Ibid., p.251.
174. Ibid., p.252.
An examination of the traditional right of self-defence invariably involves a reference to the Caroline incident which took place during the Canadian Rebellion of 1837. Lawfulness of the British seizure of the American ship Caroline was discussed in correspondence between the U.S. and the British Officials. The frequently quoted part of the communication, which has come to be known as the Caroline formula, reads as follows:

"It will be for ... [Her Majesty's] Government to show a necessity of self-defence, instant, overwhelming, leaving no choice of means, and no moment for deliberation. It will be for it to show also that the local authorities of Canada ... did nothing unreasonable or excessive; since the act, justified by the necessity of self-defence, must be limited by that necessity, and kept clearly with it...." 176

Although some writers argue that the above formula which is apparently wider than Article 51, still stands valid as an effective expression of the customary right of self-defence. However, Brownlie contends that the Caroline test is now inapplicable on account of several changes that have taken place, especially during the period 1920 - 1945. Bowett has supported a view that Article 51 does

175. For the Official Correspondence, See Harris, n.170, pp.655-6.
176. Ibid., p.656.
not prevent states from resorting to customary right of self-defence which, according to him, is much broader than Article 51. He substantiates his view by asserting that members of the U.N. have all those rights which general international law accords to them except and insofar as they have surrendered them under the Charter. Referring to the opening sentence of Article 51 - 'Nothing in this Charter shall impair the inherent right of self-defence ...', Bowett argues that 'the inherent right of self-defence' is nothing but the traditional right of self-defence. The most noteworthy aspect of this line of reasoning is that the customary right is capacious enough to enable states to adopt forcible preventive measures in the face of an impending attack, without waiting for the actual attack to occur. Such anticipatory action is categorically ruled out by Article 51 which enables a state to adopt forcible defensive measures only if 'an armed attack occurs'. There is a strong current in international legal thinking that the right of self-defence must be exercised in accordance with Article 51, and no anticipatory preventive action is justifiable. A paramount difficulty with anticipatory self-defence is that it involves a determination of the certainty of attack which necessitates an attempt to ascertain the intention of a government, which might lead to a serious conflict if there is ...

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179. Bowett, n.177, p.185.
180. Ibid.
181. Ibid.
mistaken appraisal of a situation. Again, even if a state is preparing for an attack, it may change the decision and never attack. It is a trite observation that the measures taken by way of self-defence must always be proportionate to the force used by way of attack. Anticipatory preventive action is inconsistent with this basic requirement of the right of self-defence. The researcher is entirely in accord with the view that Article 51 taken with Article 2(4) supplants the previous customary law. A proper interpretation of Article 51 would be that that article by referring to 'inherent right of self-defence', makes it explicit that the right as such - which has origin in customary international law - survives, but this does not mean that it survives in its archaic form. Rather, the article further makes it abundantly clear that the right is exercisable only if 'an armed attack occurs'. This is a serious limitation on the earlier rights of member states. Nevertheless, it is reasonable to conclude that the member states have surrendered their broader right in favour of the narrower right. And as mentioned above, Bowett also agrees that members of the U.N. have all those rights which general international law accords to them except and insofar as they have surrendered them under the Charter. Article 51 is

183. Ibid.
184. Ibid.
an instance of such a surrender on the part of the members of the U.N. making it more than explicit that the traditional broader right no more survives.

In the context of outer space, as will be seen later, adherence to a broader right of self-defence, particularly the right of anticipatory self-defence will lead to catastrophic consequences.

As mentioned earlier, there appears to be a general consensus in international legal thinking that use of force by way of self-defence must be proportionate to the force used by way of attack. It need hardly be added that force may be used with impunity only to the extent and insofar as necessary to repel the force used unlawfully. Brownlie has suggested that a legal concept of self-defence comprehends proportionality and that the emphasis on proportionality as a special requirement in international law may represent an attempt to create the necessary distinction between defence and self-help in reaction to an historical tendency to confuse them. The emphasis in above referred Caroline formula on 'nothing unreasonable or excessive; since the act, justified by the necessity of self-defence, must be limited by that necessity, and kept clearly with it' is a testimony to the fact that the customary law assumed that the force used must be proportionate to the threat.

The traditional concept of 'laws of warfare' which in modern times has come to be known as 'International humanitarian law' i.e. *jus in bello*, governs and regulates the actual conduct of hostilities. The earlier treaties on this subject used the term 'war', whereas the modern instruments prefer the term 'armed conflicts'. The prime reasons for this change are developments of the present century. War as such is a legal rather than factual notion. The traditional doctrine necessitated a declaration of war to attract the provisions of international law even though force was used on a massive scale in warlike manner. Now, the concept of armed conflict, as described below, has subsumed the legal notion of 'war', -

The notion of 'international armed conflict' is much broader than the traditional concept of 'war'. It includes (i) the use of force in a warlike manner between states, whether they recognize themselves as being war or not; (ii) all 'measures short of war', whether they are comparable with Article 2(4) of the U.N. Charter or not; and (iii) wars of national liberation.188

What is of contemporary significance is that a declaration of states as being at war is unnecessary to determine the legal character of the situation and to attract application of laws of warfare. Now there is a clearly apparent resolve to apply rules of customary and conventional

laws of warfare to international armed conflicts.

Use of force by a state against objects in outer space or on celestial bodies will undoubtedly amount to an international armed conflict. This being so, the humanitarian law will necessarily apply to outer space hostilities and, a fortiori, hostilities on the earth conducted from outer space. But it must be noted at the outset that certain areas of humanitarian law are impertinent in the context of conflict in space, such as, the law of belligerent occupation. Then there are certain other areas, application of which needs stretching the imagination to an implausible extent – such as law relating to prisoners of war, treatment to wounded and sick soldiers, etc. But of more immediate interest are certain aspects of humanitarian law, which on a closer examination appear to be pertinent to armed conflict in outer space. It is to these issues that now we turn.

Article 36 of the 1977 Geneva Protocol I Additional to the Geneva Conventions of 12 August 1949, and Relating to the Protection of Victims of International Armed Conflicts casts certain obligations on states parties as regards development of new weapons. It reads as follows:

New Weapons: In the study, development, acquisition or adoption of a new weapon, means or method of warfare, a High Contracting Party is under an obligation to

189. See, for instance, Article 2(b) of the Protocol Additional to the Geneva Conventions of 12 August 1949, and Relating to the Protection of Victims of International Armed Conflicts (Protocol I), 1977.
determine whether its employment would in some or all circumstances, would in some or all circumstances, be prohibited by this Protocol or by any other rule of international law applicable to the High Contracting Party.

This is an obligation which pertains to what is commonly understood by 'Research and Development' of a weapon or weapons system. The obligation does not appear to be very strong for there is considerable leeway to make subjective determinations regarding lawfulness of a weapon or weapons system.

A very firmly established principle in general international law of warfare is contained in Article 51 of the Protocol. It deals with protection of civilians in times of armed conflicts. There is apparently no reason why astronauts or personnel of a spacecraft should not be treated as 'civilians' if they are not engaged in any kind of military activity. Article 51 stipulates that civilian population as well as individual civilians shall not be the object of attack.

Article 52 of the Protocol affords protection to civilian objects. It is conceivable that a state may launch civilian as well as military objects in outer space. But as seen earlier, celestial bodies shall be free of military objectives. The article defines military objectives as those which by their nature, location, purpose or use make an effective contribution to military action and whose total or partial destruction, capture or neutralization, in the
circumstances ruling at the time, offers a definite military advantage.

Finally, Article 57 of the Protocol enjoins the states parties to take all feasible measures to verify that the objectives which may be attacked during an armed conflict are neither civilians nor civilian objects. They must, further, select such weapons for attack as would minimise incidental loss of civilian life, injury to civilians and damage to civilian objects. States are obliged to refrain from an attack which is expected to cause incidental loss of civilian life, injury to civilians, damage to civilian objects, etc., which would be excessive in relation to the concrete and direct military advantage anticipated.

Indeed, it would be very difficult for a state engaged in an armed conflict in outer space to strictly apply the above provision. There may not exist the necessary means to identify the nature of activity or of personnel of a space object. This provision, as well as the other provisions examined have evolved in the context of land, maritime and air warfare, bearing in mind the particular problems encountered in such warfares. Therefore, it would be fallacious to apply in toto these regulations to outer space conflicts. However, this should not be taken to mean that no humanitarian standards may be observed in case of conflict in space. From the general nature, content and scope of international humanitarian law certain standards of behaviour
may nevertheless be deduced, modified and applied in outer space.

Another significant aspect of the humanitarian law in the present context is that it will have maximum application in those cases where weapons are used from outer space against targets on land, air space or the seas. Because such use of weapons will be treated as land, air or sea warfare, as the case may be, and all established rules of these warfares could be applied to regulate the use of force.

A weak argument against development of highly dangerous space weapons, especially those which could be used against objects in the air, on the seas and land, would be a claim on the basis of what has come to be known as the Martens Clause. The clause which first appeared in the Preamble to 1899 Hague Convention II reads as under:

Until a more complete code of the laws of war is issued, the high contracting parties think it right to declare that in cases not included in the Regulations adopted by them, populations and belligerents remain under the protection and empire of the principles of international law, as they result from the usages established between civilised nations, from the laws of humanity, and the requirements of public conscience.

Similar hope has also been expressed in the Geneva Conventions of 1949. The underlying principle is that the right of belligerents to adopt means of injuring the enemy is not unlimited. But one must admit that the so called Martens clause, though well founded in customary law, appears incongruous in the context of space weapons. The
developments in space weapons technologies have a different dimension in that their major targets would be objects in outer space. Whereas the customary international humanitarian law is chiefly concerned with the safety of civilian population and objects, avoidance of unnecessary suffering and prohibition of weapons which would have indiscriminate effect.

II.10.(5). Effect of Outbreak of Hostilities on Space Treaties

One final issue which must be considered in the present context is that, what would be the effect of outbreak of hostilities between parties to the space treaties on such treaties. As is very well known, on outbreak of war and hostilities, some treaty obligations are abrogated, some suspended and some continue to bind the states parties irrespective of the existence of the state war. Increasing reliance on treaties for regulation of activities in outer space demands an examination of the above question.

The Vienna Convention on the Law of Treaties leaves the question of the effect of hostilities on treaty obligations untouched. Thus Article 73 provides:

The provisions of the present convention shall not prejudge any question that may arise in regard to a treaty ... from the outbreak of hostilities between states.

This makes reference to the customary law inevitable.

The first and foremost requirement in customary law to
determine the effect of hostilities on a treaty is identifying the nature of the treaty. For this purpose, customary law discriminates between following kinds of treaties:

(a) Political treaties.
(b) Treaties expressly made applicable to a state of war.
(c) Treaties declaring, creating or regulating permanent rights, permanent regime, etc.
(d) Capitulations.
(e) Extradition Treaties.
(f) Commercial Treaties.
(g) Multipartite treaties constituting an international regime or status.
(h) Multipartite treaties creating international unions.
(i) Multipartite law-making treaties.
(j) Arrangements made by the peace treaties at the end of the first World War.
(k) Arrangements made after the second World War as to its effect upon treaties.

A superficial examination of the space treaties establishes that these are multilateral treaties of law-making character. As regards such treaties, McNair concludes that these are unaffected by outbreak of war between all or only some of the parties. The decisive point is that there must be an intention to create permanent

190. McNair, n. 48, pp.703-27.
191. Ibid., p.723.
law on the part of states participating in the treaty. This intention need not be expressly stated, but may be inferred from the treaty. An examination of the background, travaux préparatoires and the text of various space treaties undoubtedly indicates that there is an intention on the part of the states parties to create permanent legal obligations as regards activities in outer space. It is, therefore, difficult to endorse the view that on the outbreak of hostilities, application of the Outer Space Treaty will be suspended and states may place nuclear and other mass-destruction weapons in outer space and militarize celestial bodies as well, because Article IV of the Treaty is basically concerned with disarmament and demilitarization, and that they are incompatible with hostilities. It must be stressed that such an exposition is unreasonable because the spirit of the Outer Space Treaty clearly indicates that the parties intended to create permanent law rather than transient arrangements like disarmament.

As regards bilateral treaty obligations, the position is not very clear. Determination of this legal issue is essential in the context of the ABM Treaty between the U.S. and the U.S.S.R. since it impinges upon certain military activities in outer space. A generally accepted and also plausible view is that intention of the parties at the time when they concluded the treaty ought to be given paramount

consideration in adjudging the effect of hostilities on treaty obligations. Viewed from this perspective, it is readily apparent that the parties did not intend to observe the obligations ensuing under the ABM Treaty to survive in case of outbreak of hostilities between themselves. This intention is amply reflected in the second paragraph of Article XV which contains a caveat that each state party has a right to withdraw from the treaty if it decides that extraordinary events related to the subject matter of the treaty have jeopardized their supreme interest. Therefore, this and other similar bilateral arms control treaties will not survive outbreak of hostilities. To this extent the researcher concurs with the view propounded by Harry Almond. But it is exceedingly difficult to accept his proposition that the Nuclear Test Ban Treaty and the Environmental Modification Technique Treaty will also be suspended during wartime. In the researcher’s submission, these two treaties, being multi-partite treaties of law-making character, will survive a war. All the more, the latter treaty is intended to regulate the behaviour of belligerents during armed conflicts. It is universally admitted that treaties which purport to regulate the actual conduct of warfare remain in force during war.


194. Ibid.

195. McNair, n.46, p.704.
II.11 Concluding Observations:

A survey of contemporary international legal controls which regulate and would regulate activities of military character in outer space will have revealed that the regime contains some significant norms. It is readily apparent that multipartite law making treaties are instrumental in developing space law. Some of these treaties contain rules applicable to military activities in outer space. However, it must be admitted that a specific instrument to regulate and control military activities in outer space does not exist.

Apart from the specific space treaties, international law in general will also have considerable significance in nature in outer space. As demonstrated earlier, this law knows no spatial limitations insofar as its application is concerned. Of immediate importance and pertinence are those provisions in international law which deal with use of force in international relations and self-defence. In addition, some other multilateral instruments also deal with some aspects of outer space military activities, albeit obliquely. It is also plausible to expect the leading space powers to create and accept bilateral obligations in the context of disarmament and arms control which may also dwell upon military activities in outer space.

The above discussion is expected to provide a legal framework on the basis of which the activities of military
nature will be examined so as to determine whether they are in conformity with existing legal obligations of concerned states or not. Thus, the next chapter examines multifarious projects of military nature which involve outer space exploitation, progress made so far by nations in that direction and the prospects of actually exploiting outer space to that end.