CHAPTER IV

LEGAL EXAMINATION OF OUTER SPACE MILITARY ACTIVITIES
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IV.1. Introduction:

Having examined the legal regime governing outer space military activities in Chapter II, it remains now to be seen if, and to what extent, the present and projected military activities in outer space, as surveyed in the preceding chapter, are in conformity with the contemporary regime of law. In doing so, various facets of military activities are given individual attention in the present chapter. This examination, it is hoped, will provide a proper perspective as to lawfulness or otherwise of military activities in outer space which will unquestionably enable to determine what additional legal measures are imperative to contain obnoxious consequences of unbridled military pursuits in outer space.

IV.2. Weapons Prohibited in Outer Space:

As noted earlier, Article IV of the Outer Space Treaty prohibits, inter alia, placing of objects carrying nuclear weapons or other kinds of weapons of mass-destruction in orbit around the earth, install such weapons on celestial bodies or station them in outer space in any other manner. It may be recalled that on the basis of interpretation relied upon in the present study only those nuclear weapons which are also weapons of mass-destruction come within the purview of Article IV.

1. For test, see Appendix.
2. Supra Chapter II.3.(2)(iii)(b).
At this juncture it would be apposite to classify nuclear weapons into two categories:

(a) those which produce a very large release of energy and are expected to cause annihilation by the release of such energy, undoubtedly indiscriminately, on a massive scale, hence are also weapons of mass-destruction; and

(b) those nuclear weapons which utilise nuclear energy for their operation, but do not release uncontrolled energy, but the energy generated by nuclear detonation can be controlled, channelised and discriminately used for intended operative mechanism, and therefore, are not weapons of mass-destruction.

Those which fall in category (a) above, are typical atomic or nuclear weapons which derive their enormous explosive force from either the fission or fusion of atomic nuclei. A significant feature of such weapons is that their radio-active by-product continues to be deadly for many days. Hydrogen bombs of the older days and nuclear warheads of the modern times fall in this category.

As far as the directed energy weapons, viz., laser weapons and particle-beam weapons are concerned, only one

4. Ibid.
category of weapon, namely x-ray lasers are nuclear in nature in that they require nuclear detonation for their production mechanism. It is this feature of X-ray lasers that creates a belief that X-ray lasers are nuclear weapons within the meaning of Article IV of the Outer Space Treaty because they rely on nuclear energy derived by explosion to generate X-ray laser. Obviously the researcher does not subscribe to this view, for X-ray lasers are not weapons of mass-destruction although they depend on nuclear energy. It is contended that lasers are nuclear weapons within the meaning of the Outer Space Treaty because the basic atomic physics underlying such a weapon is the projection of destructive energy that has been automatically charged through the fission or fusion processes. But it must be noted that the resultant damage may not be as catastrophic as that caused by a weapon of mass-destruction. Lasers, not only X-ray but other types as well, are not weapons of mass-destruction because they are intended either to destroy a hostile satellite in an ASAT mode or attack and destroy hostile missiles in a BMD mode. The operative mechanism of

5. Supra Chapter III.2.(3)(ii).


lasers demands that their energy is channelised and controlled and is capable of discriminate use. The destructive force of such a weapon is by its very nature limited to a single target or a selected area of targets. It may be contended that use of a laser weapon against a vital satellite could have 'catastrophic consequences' hence it is a weapon of mass-destruction. Admitted, the destruction of a satellite may have a catastrophic consequence on the security and strategic interest of such state, but this is not a physical catastrophic consequence. A typical nuclear weapon's destructive effect is catastrophic for it releases uncontrolled and unchannelised energy. It is now generally agreed that laser weapons which are being developed do not have destructive effect comparable to those of atomic bombs.

The evidence so far available as to the nature of directed energy weapons does not suggest that they are weapons of mass-satellite destruction. Although today laser-weapons may not be treated as weapons of mass-destruction, one does not know if tomorrow a weapon of mass destruction with laser components is developed. In that case, it would naturally come under the category of prohibited weapons. It


has also been hinted that devices for interfering with normal functioning of space objects such as radiofrequency weapons, if capable of causing mass-destruction or to be precise, mass-interference, could be treated as weapons of prohibited category.

Another circuitous attempt to treat X-ray lasers as nuclear weapons for the purposes of the Outer Space Treaty is to be found in the view that nuclear powered X-ray lasers could be treated as 'nuclear weapons' because the term nuclear weapon as defined in the Latin American Nuclear Free Zone Treaty means 'any device which is capable of releasing nuclear energy in an uncontrolled manner and which has a group of characteristics that are appropriate for use for warlike purposes'. This view is fallacious for two reasons. First, because the definition of 'nuclear weapons' under the Latin American Nuclear Free Zone Treaty cannot be relied upon to interpret the same term in the Outer Space Treaty. Needless to mention, the Vienna Convention on Law of Treaties, 1961 does not justify this. Secondly, even if the definition is acceptable, yet laser weapons cannot be expected to release energy in an 'uncontrolled manner' as required by the said definition. The lasers, on the


contrary, are produced by controlling and channelising the energy.

What is said as regards laser weapons holds equally good in the context of particle-beam weapons as well. As regards kinetic energy weapons, namely, the Miniature Homing Vehicle and the electromagnetic rail guns of the U.S. and the space-borne missiles of the U.S.S.R., these are all non-nuclear and are not capable of causing 'mass-destruction'. Because, their intended targets are individual satellites or missiles. Their destructive mechanism is based on causing a sudden impact at great velocity on a target and render it inoperative, be it a missile or a satellite. As a result they do not fall within the prohibited category of weapons.

However, the same may not be true as regards electromagnetic pulse weapon which is under the consideration of both the U.S. and the U.S.S.R. As noted earlier, it relies on electromagnetic pulse effect generated by a nuclear detonation at a high altitude. First, admittedly it requires a nuclear detonation or explosion. An electromagnetic pulse is believed to be capable of indiscriminately destroying satellites which enter into a

12. Supra, Chapter III.2.(1).
13. Supra, Chapter III.3.(5).
14. Supra, Chapter III.2.(5) and III.3.(7).
15. Ibid.

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massive charged field created by the nuclear explosion. For all practical purposes, it resembles a typical nuclear weapon with the only difference that it is expected to operate in outer space rather than on the surface of the earth. Accordingly, it is a nuclear weapon of mass-destruction and hence, its deployment and use in outer space as an ASAT weapon would be unlawful under the Outer Space Treaty.

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Turning now to the hunter-killer satellites, which are heavily relied upon by the U.S.S.R. for ASAT applications, it is apparent that they would not, in all probability, amount to weapons of mass-destruction. Because, such a satellite's intended target is an isolated hostile satellite which is singled out for attack. It may fairly be inferred that at a time only one target may be 'attacked' or 'hunted and killed' by a hunter killer satellite. There is every likelihood that such a satellite operates on nuclear-powered sources. All the same, it cannot be regarded as a 'nuclear weapon' for the purposes of the Outer Space Treaty, for reasons already expounded in the context of nuclear powered X-ray lasers.

Finally, the radio-frequency weapon which, it is claimed by the U.S. that the U.S.S.R. is developing for destroying or interfering with missiles and satellites, appears to be non-

17 nuclear and certainly not a mass-destruction weapon.

16. Supra, Chapter III.3.(2).
17. Supra, Chapter III.3.(6).
Though much details are not available, yet it may be predicted that it will require electrical energy for generation and transmission of strong radio frequency signals to specific targets.

From the foregoing, what appears is that most of the weapons which are being researched and developed do not fall in the prohibited categories of 'weapons of mass destruction' as contemplated by the Outer Space Treaty. The only weapon which could be likened to the prohibited category is electromagnetic pulse weapon. At the expense of repetition, it must be emphasised that those space weapons which rely on nuclear energy are not 'nuclear weapons' for the purposes of the Outer Space Treaty unless they are also weapons of mass-destruction.

IV.3. Deployment of Space Weapons:

The preceding discussion of prohibited and non-prohibited categories of weapons will have sufficed to show that the Outer Space Treaty overtly refers to only a limited category of weapons. It is, however, with the deployment of various types of weapons and weapons systems, their component parts in different areas of international spaces that we are here immediately concerned. What is of decisive importance is not the nature of a weapon, but its location in outer space or, for that matter, in any other international space, including the land territory and the seas. Therefore, what
follows now is an examination of the lawfulness of deployment of space weapons in different international spaces.

IV.3.(1) Deployment of Weapons in Outer Space:

It may be recalled that the Outer Space Treaty obliges the states parties not to place in orbit around the earth objects carrying nuclear weapons or other kinds of weapons of mass destruction or station such weapons in outer space in any other manner. This provision is self-explanatory. Most notably, by specifically prohibiting placing of nuclear and other mass-destruction weapons in outer space, it permits placing of other types of weapons in outer space. This view is in accordance with the recognized principle of interpretation: what is not prohibited, is permitted. Naturally, there appears to be a consensus regarding this interpretation. Hence, placing in orbit around the earth or stationing in outer space in other manner directed energy weapons, i.e. laser and particle beam weapons, kinetic energy weapons, hunter-killer satellites and radio-frequency weapons would not violate the legal regime of outer space. But as noted earlier, electromagnetic pulse weapons are nuclear weapons of mass-destruction hence their use in outer space or deployment of an artifice capable of generating electromagnetic pulse in outer space is prohibited.

As regards deployment of weapons in outer space, it has been suggested that a strict interpretation of Article IV of 18. Article IV, the Outer Space Treaty.
the Outer Space Treaty prohibits placing or stationing of 'objects' carrying nuclear or mass-destruction weapons and not placing or stationing of nuclear or mass-destruction weapons *per se*. Thus, it is further claimed that if the object is the weapon it may not be prohibited. It would be an entire misreading of the whole intention of Article IV as well as the spirit of the Outer Space Treaty to interpret it in such a devious manner. Article IV not only prohibits placing in orbit objects carrying the specified weapons but also prohibits stationing of such weapons in outer space 'in any other manner'. This latter mandate is quite capacious to prohibit orbiting of specific weapons *per se*, or for that matter, placing such weapons in outer space in whatsoever manner possible. It is possible to envisage a state developing an atomic bomb and placing the bomb as such in orbit around the earth. With rapid advances in weapons technology it would be exceedingly difficult to distinguish between a weapon and an object carrying a weapon. Therefore it would be fallacious to maintain such an artificial and unwarranted distinction between a weapon and an object carrying a weapon, for it would defeat the object of the provision.


20. Ibid.

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A view has been expressed that the Outer Space Treaty prohibits placing or stationing all kinds of weapons irrespective of whether they are nuclear or mass destruction 21 weapons. To substantiate this view, Article I (1) of the Treaty is invoked. This provision requires the states parties to carry out exploration and use of outer space and celestial bodies 'for the benefit of and in the interest of all countries'. The rationale behind this argument is that deployment of any kind of weapon by a state could never be 'for the benefit and in the interest of all countries'. This lofty interpretation of Article I (1) appears to be far stretched. Article I (1) by itself is not capacious and adequately cogent to prohibit deployment of weapons in outer space. This provision lacks the exactitude expected of a serious legal obligation. When dealing with a subject of vital significance i.e. prohibition of weapons; specific, clear and incontrovertible legal mandates alone would prove effective and efficacious. Language of this provision is too general, susceptible to differing interpretations and fails to establish a specific legal obligation. All the more, it sounds like a preambular desire and a goal to be achieved.

Prof. Marcoff has expressed a view, similar to the one examined above, that all military activities - aggressive or


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non-aggressive - cannot be carried out without violating Article I (1). He asserts that although there is no specific legal prohibition on certain activities of military nature, it does not mean that these activities are in conformity with international law. He further argues that 'military space activities that are still not prohibited are just tolerated under present international law.'

It is difficult to accept such a strange reasoning to claim that military activities in outer space are not in conformity with international law. In strict law, an activity may either be permitted or prohibited. There is no such thing like an activity which is not prohibited as well as not permitted. What is not prohibited is permitted. It is quite likely that an activity permitted today may be prohibited tomorrow. The question of toleration of an activity by law does not arise when the law itself has not prohibited it.

One of the arguments resorted to by Soviet writers to castigate the U.S. strategic defence initiative as violative of the Outer Space Treaty is that deployment of units of weapons systems in outer space are a threat to peaceful

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23. Ibid.
24. Ibid.
satellites deployed in outer space and is therefore violative of Article I of the Outer Space Treaty. For the reasons mentioned above, such arguments are unfounded in law. A pragmatic approach would be to accept the fact that deployment of weapons and weapons systems in outer space is permitted as long as it is not pertaining to mass-destruction weapons.

In the context of deployment of weapons in outer space, there is an apprehension that the space powers, particularly the U.S., is planning to establish exclusion zones or 'keep-out zones' around missile defence weapons systems to be deployed in outer space. The plan is to declare an area surrounding a satellite encompassing perhaps hundreds of thousands of kilometers as a keep-out zone. However, such a claim to protect military systems or weapons systems in outer space would clearly be violative of the Outer Space Treaty, particularly Article II which forbids appropriation of outer space in clear and unambiguous terms. Thus,

[Outer space ... is not subject to national appropriation by claim of sovereignty, by means of use or occupation or by any other means.]


27. Ibid.

It is abundantly explicit that a claim of exclusive rights in respect of a certain portion of outer space is tantamount to a claim of sovereignty. The principle of non-appropriation of outer space which more vigorously applies to celestial bodies, is not only a fundamental principle of space law, but a *jus cogens* in international law. Any attempt to extend sovereign or even lesser exclusive rights to outer space would amount to a flagrant violation of space law.

Although the Moon Treaty deals exclusively with activities of states on and in relation to the celestial bodies, yet in a oblique way its one of the provisions might affect deployment of weapons in outer space. Article 1(2) provides that for the purposes of the Treaty reference to the moon including other celestial bodies shall include orbits around or other trajectories to or around it. Article 3 of the Treaty has completely demilitarized the celestial bodies. But the cumulative effect of Articles 1(2) and 3 is that placing or stationing of weapons of all types, their component parts, or other devices of weapons systems in orbits around celestial bodies as well as in their trajectories is prohibited. Except for the Moon Treaty, orbits around celestial bodies as well as trajectories to or around them undoubtedly form part of outer space as such. Most of the activities in outer space are regulated by the Outer Space Treaty and other space treaties. However, it is
purely because of the unusual and strange definition of 'the moon', which apparently appears to enlarge the scope of the prohibition in Article 3, this effect has been achieved, which is perhaps unintended.

IV.3.(2) Deployment of Weapons on Celestial Bodies :

A cumulative effect of Article IV of the Outer Space Treaty and Article 3 of the Moon Treaty is to completely demilitarize the celestial bodies. As noted in Chapter II, these provisions partake of exactitude, indubity and perspicuity expected of positive legal obligations. Not only mass-destruction weapons are prohibited from deployment, but no weapon of whatsoever nature is permitted on celestial bodies. References to 'use for exclusively peaceful purposes' and a specific and unambiguous prohibition of establishment of military bases, installations and fortifications, have not only deweaponized the celestial bodies, but totally demilitarized them. Deployment of a weapon or a component part of a weapon system for defensive purposes is also prohibited. Thus a celestial body based mirror to reflect directed energy beams on targets in outer space or elsewhere would be violative of the treaty. Apparently the present projects of space weapons systems which are underway in the U.S. and the U.S.S.R. do not reveal any use of celestial bodies for any part to play in the systems. However, there are some apprehensions that both - the Americans and the Soviets - are studying the possibility of stationing directed energy weapons on the moon. It may
be asserted that any such move to place directed energy weapons on the moon will undoubtedly contravene the Outer Space Treaty as well as the Moon Treaty.

Prof. Stephen Gorove has expressed a doubt as regards complete deweaponization of the celestial bodies. He refers to the prohibition in Article 3 (2) of the Moon Treaty on threat or use of force or threat of a hostile act on the celestial bodies and wonders if the celestial bodies have been totally deweaponized, why it was necessary to prohibit such threat or use of force or threat of hostile act on the celestial bodies. It appears that the obligation to refrain from threat or use of force, etc. strengthens and reinforces the obligation not to militarize the celestial bodies. Besides, it cannot be overlooked that states may devise weapons capable of causing damage on celestial bodies from ground stations on the surface of the earth, or from air space or high seas.

Prof. Williams has expressed a difficulty in determining whether purely defensive weapons could be deployed on the moon. But in the light of clear and incontrovertible provisions of the Outer Space Treaty and the Moon Treaty, it

29. Supra, n.22, p.358.
30. Ibid., p. 364.
31. Ibid.
32. Ibid., p.365.
is impossible to conceive lawful deployment of defensive weapons on the moon. Irrespective of the intended purpose of weapons or weapon systems, their deployment on celestial bodies has been categorically prohibited. Even if it is accepted that 'peaceful' is synonymous with 'non-aggressive', so as to include 'defensive' weapons, yet their deployment on celestial bodies would not be in conformity with the two treaties.

Thus, it may be concluded that an ASAT or BMD weapon or a component part of such weapons system cannot be lawfully deployed on celestial bodies. Any seemingly innocuous component part of such weapons system - such as a communication facility - may not be deployed on celestial bodies because such a facility would undoubtedly amount to a 'military installation' within the meaning of the Outer Space Treaty as well as the Moon Treaty.

IV.3.(3). Deployment of Terrestrial Space Weapons:

There may appear a contradiction in terms in the above title. But the term 'terrestrial' as used here refers to the land, the seas and the airspace of the earth, and hence a terrestrial space weapon in the present context means a weapon which is capable of destroying or damaging objects in outer space from the terrestrial land, air or sea. As seen in Chapter III, the present attempts to develop weapons for antisatellite and ballistic missile defence applications include a plan to devise weapons to be located terrestrially
but capable of destroying or damaging a satellite or missile in outer space. Two types of systems may be envisaged here. First, those systems which could be exclusively terrestrially based, and secondly, those of which some parts are terrestrially located whereas some are deployed in outer space. One component of the layered ballistic missile defence programme of the U.S. strategic defence initiative contemplates use of laser and particle beam weapons from land stations against hostile missiles in outer space. Again, the U.S. miniature homing vehicle programme involves firing of a missile from a F-16 aircraft against objects in outer space. A radio-frequency weapon which is believed to be under consideration of the Soviets is bound to be land-based. Some laser guns for antisatellite or antimissile applications are expected to operate from high seas. Thus, a weapon which is intended to be used against objects in outer space could be deployed at a place other than outer space and celestial bodies.

It is to be very sensibly noted that the framers of the present space treaties could not venture to impinge upon terrestrial space weapons, for that would have generated an extensive controversy and inevitable opposition to the treaties. Admittedly, use of a weapon against an object in outer space would be contrary to the general international law and the U.N. Charter. However, neither general international law nor the space treaties prohibit deployment, as distinct from use, of terrestrial space weapons. As noted
earlier, component parts like reflectors, mirrors or sensors of these weapons systems may be deployed in outer space without violating any of the space treaties.

Sea-based space weapons may attract provisions of the law of the sea. The United Nations Convention on Law of the Sea, 1982 specifically provides that the high seas 'shall be reserved for peaceful purposes.' There appears to be consensus on this principle so that it may have legal efficacy irrespective of the 1982 Convention's coming into force. But this provision is widely regarded as prohibiting only acts of aggression on the high seas rather than deal with other military activities such as deweaponization, etc. Therefore, mere deployment of a directed energy weapons system on a war ship and its sailing on or in the high seas would not contravene the above provision.

The scope of the Treaty on the Prohibition of Emplacement of Nuclear Weapons and Other Weapons of Mass Destruction on the Seabed and Ocean Floor and in the Subsoil Thereof, 1971 is very limited. It deals, first of all with a very limited category of weapons - namely 'nuclear weapons and other weapons of mass-destruction'. What has been said regarding meaning of 'nuclear weapons' in the context of

33. Article 88, the Law of the Sea Convention, 1982.
Article IV of the Outer Space Treaty holds equally valid in case of this Treaty as well because the use of terminology is identical to that of Article IV. Secondly, it pertains only to seabed, ocean floor and its subsoil. Therefore, apparently it does not prohibit placing of nuclear warheads, let alone space weapons, on naval ships - both surface ships as well as submarines.

Deployment of weapons in national air space is, for all practical purposes, equivalent to deployment of weapons on land territory. Here, by 'deployment in air space' or 'aerial-deployment' we mean deployment of a weapon on board an aircraft. Both the U.S. and the U.S.S.R. considerably rely on aerial deployment of space weapons. There is nothing in aviation law to prevent a state from flying its aircraft equipped with space weapons or for that matter, any other types of weapons in not only the national air space, but also the international air space.

With the current rate of technological progress, it is possible to envisage development of a mass-destruction weapon for antisatellite applications. But as long as such a weapon is not deployed in outer space its development and eventual terrestrial deployment will not violate any of the space treaties as well as general international law.

IV.4. Lawfulness of Use of Weapons in and from Outer Space and on Celestial Bodies:

The relevance of the law relating to use of force and
self defence has already been examined articulately in the context of extraterrestrial application of international law. However, in view of novel means of use of force and threat of force which are envisaged by the new space weapons initiatives, a reappraisal of some aspects of international law of use of force and self-defence is apposite and desirable. In view of the prolific technological advances made and being made in space weaponry, it will have become apparent that the traditional notions and perceptions of 'use of force' and 'threat of force' need a re-examination and re-definition. It is reasonable to presage that the ways and means of using force in and from outer space will profoundly differ from conventional methods of use of force. For example, disrupting telecommunication facilities of a space object without actually causing any apparent and visible damage to the object could be as fatal and as disastrous as physically attacking or destroying the space objects. In the space weapons programmes, an emphasis on covert means of interference and damage is clearly discernable. Therefore, it is desirable that the term 'force' when used in the context of space activities ought to be attributed wider meaning so as to bring within its purview resort to any means which have the effect of rendering a space object incapable of functioning or otherwise interfering with its normal and desired function and mode of operation. Applying this test, deliberately changing the flight trajectory or orbital path of a satellite or manipulating such a change by any means whatsoever would amount to 'use of force' in contravention of
Article 2, paragraph 4 of the United Nations Charter. To pursue this line of argument further, it may be observed that such use of force may also amount to an 'armed attack' and the means used for such attack could be treated as 'arms'. Neither the physical characteristics of the means employed nor the outward physical effects thereof, but the pernicious consequences of their application are of extreme significance. It may also be asserted that deliberate interfering with the normal functioning of a space object might as well constitute an act of aggression depending on the relevant circumstances. Although the U.N. Charter does not define 'aggression', the definition adopted by the General Assembly by consensus has been regarded as authoritative and is generally acceptable. Article 1 of the definition provides:

Aggression is the use of armed force by a State against the sovereignty, territorial integrity or political independence of another State, or in any other manner inconsistent with the Charter of the United Nations as set out in this Definition.

This article, which apparently borrows the language of Article 2, paragraph 4 of the U.N. Charter, is further reinforced by Article 3 of the definition which catalogues certain acts which may constitute aggression. Article 4 makes it clear that the acts listed in Article 3 are

exemplificatory and it is in no way an exhaustive enumeration of acts of aggression. A general conclusion which emerges from the reading of this definition is that a deliberate act of interfering with normal functioning of a space object would amount to an act of aggression. In view of increasing reliance on satellites for national security by certain states, it is fairly reasonable to envisage that certain satellites launched in outer space are so vital that rendering them inoperative could have catastrophic consequences on their security rather than an armed attack on the land territory. The terms 'political independence' and 'territorial integrity' as used in the definition have come to be regarded as symptomatic of the total of legal rights which a state possesses. Therefore, it is undoubtedly desirable that deliberately interfering with a space object is tantamount to an act of aggression against the launching state. In this context, it is interesting to note a view expressed by J.E.S. Fawcett while writing on outer space activities more than twenty years ago that an armed attack, a breach of the peace or act of aggression are processes in time, and not instantaneous events characterized by the first explosion, they may even achieve their purpose without a shot being fired.


In the preceding discussion, a phrase repeatedly used is 'interfering with the normal functioning of a space object'. In order to ascertain the scope of 'armed attack' in the context of outer space, precise meaning must be attributed to the above referred phrase. It is very sensibly anticipated that when a space object is launched in outer space, the launching state preordains several modalities of the space object such as its intended flight path or trajectory, duration in space, apogee and perigee, inclination, and above all, the function it is expected to perform. Changes in its predetermined performance on account of mechanical defects or unforeseen natural phenomena are not uncommon. But presuming that a space object is functioning normally as originally envisaged a deliberate act of interfering with it may take one of the following forms:

(a) Disrupting or blocking communication system or facilities or actual communications.
(b) Changing flight trajectory or orbital parameters.
(c) Interfering with electronic components without causing outward damage.
(d) Communicating false instructions.
(e) Physically attacking it or a part thereof.
(f) Capturing it.

These are but a few examples which demonstrate how interference with normal functioning of a space object may occur. There could be other ways of achieving the same or similar results, especially in view of ensuing technological
innovations. That apart, what must be emphasised here is that the means which are employed to achieve the above described effects could be treated as 'weapons' or to be precise, 'space weapons' and their actual use, an 'armed attack'. It is possible to stretch the meaning of 'weapon' to an unreasonable extent. Thus, it has been observed that any reusable space object which can capture or replace a satellite of an adversary could be regarded as an anti-satellite weapon. But then this would encompass any space object within the meaning of space weapon. Therefore such an expansive definition is undesirable.

By applying the above tests, it is possible to characterise various devices being developed by the U.S. and the U.S.S.R. as anti-satellite and anti-missile weapons. As regards the directed energy systems and kinetic energy systems it is without any difficulty possible to conclude that these are indeed 'weapons', because their intended application is to interfere with a space object. Their components at ground stations as well as in outer space form indispensable parts of the weapon system as a whole unit. The kinetic energy weapons, such as the miniature homing vehicle, electromagnetic railgun and a space-borne non-nuclear missile resemble conventional weapons or are hybrid of conventional and non-conventional weapons. These are

undoubtedly means of 'use of force'. However, exotic systems like radio-frequency weapons and electromagnetic pulse weapons which are based on altogether novel technologies, hardly resemble a traditional weapon. But as highlighted in the preceding chapter, their intended application is expected to result into interference with space objects in some other way and hence according to a revised concept of 'arm' or 'weapon' these are doubtless 'space weapons' capable of use of force against space-objects.

It has been apprehended that some of the weapons which are being developed for space applications could also be used against targets in air space, on seas and on land territories.

It is reasonable to conclude that any use of force or threat of force in any manner whatsoever being illegal, unless justified by the necessity of self-defence, use of weapons of the kind described above would be a violation of international law. It would make no difference whether the weapons are used against targets in outer space, on celestial bodies, in air space or on the surface of the earth; for prohibition on use of force is omnipotent.

IV.5. Self defence in Outer Space and on Celestial Bodies: Some Legal Problems:

The unprofitable controversy concerning the limits and
scope of the right of self-defence in international law could have ominous implications insofar as exercise of that right in and from outer space is concerned. A host of legal problems can be envisaged. These are discussed below.

IV.5.(1) Preventive Action in Outer Space:

While the right of anticipatory self-defence seems unrecognised by the U.N. Charter, nevertheless a fairly considerable body of jurists regards that such a right indeed exists. It is not difficult to envisage a state justifying its preventive action in view of some support to such an action. However, it will soon be apparent that if a right of preventive action as an anticipatory self-defence measure is exercisable or exercised in outer space, the consequences will certainly be disastrous. For there are, and there will be in future, if the present plans of space weapons are seriously pursued, a great number of objects in outer space which will be vulnerable to preventive action. For this purpose, such objects could be broadly classed into two - satellites and weapons.

(a) Preventive action against satellites:

The numerous satellites which serve variety of military functions such as early warning, reconnaissance, communication, navigation, etc., could be looked upon as 'military targets', their destruction or rendering them useless could afford a distinct military advantage if undertaken as a preventive measure. Although at present both
the space powers extensively rely on satellites for military purposes and their mutual acquiescence indicates that such satellites are legally permissible, nevertheless a state might elect to consider such satellites launched by a hostile state a serious threat to its national security. The following observation made by Guyala Gal is reflective of such apprehension.

"A strict interpretation of Article 51 of the Charter might give rise to serious theoretical objections in the case of intelligence satellites not directly constituting an armed attack. The strategic role of surveillance from outer space, however, might turn the activity of the intelligence satellites into an act of aggression .... Thus, in the given case the interception of an attack from outer space begins with paralyzing the equipment providing the necessary data thereto. The fact that so far no such measures have been taken, does not amount to a waiver on the part of the states to make use of this possibility at a later date."39

Almost similar view is found in early writings on space law. Many developments of later years have brought out significant changes in space law. As will be seen later, use of satellites for certain military purposes has come to be regarded as lawful. Extensive reliance on such satellites and their continual use by many nations has developed customary norms of space law to confer legitimacy on such activities. In 1960, the Soviets equated satellite surveillance with espionage from air and warned that in the interest of protecting its security against any encroachment

from outer space, they will be paralyzed and rebuffed. It was also claimed that such action will be fully justified under the existing rules of international law and the United Nations Charter. Anticipatory preventive action by a state against intelligence satellites of others was regarded as lawful if it presented a threat to the security of such state. To justify such action, Article 51 of the Charter was capaciously interpreted. Such action was also justified by relying on the Caroline formula. Carl Christol also justified a preventive action against surveillance satellites 'if the space vehicle were in fact engaged in conduct unreasonably dangerous to the existence of the inspecting state.'

The view which appears more appropriate today is that, first, Article 51 of the Charter does not recognize the right of anticipatory self-defence, and secondly, use of

41. Ibid.
43. Ibid.
46. Supra, Chapter II.10.(3).
satellites for certain military purposes like reconnaissance is not an illegal activity, still less an act of aggression as claimed by some writers in 1960s. Naturally, preventive action against military satellites is ruled out as contrary to contemporary law.

(b) Preventive action against space weapons:

The problem of preventive action is further compounded when one considers the recent plans to deploy weapons and components of weapons systems in outer space. Unlike intelligence or other military satellites, these would be admittedly weapons intended to perpetrate attacks on hostile satellites and other targets in outer space. Could their presence in outer space be regarded as an 'imminent threat to the security' of the state against whom they are most likely to be used?

The right of a state to fortify its military capability and preparedness is undisputed if exercised within such state's territorial domain. Under normal circumstances such preparedness does not enable others to exercise the right of self-defence, for this right itself justifies military preparedness. It could normally be expected that international law may restrain states from engaging in military activities outside their territorial domain during the peace time. In the absence of such specific constraints

47. Infra, IV.9.(2),
military activities outside the territorial domain, in international spatial areas are lawful. Returning to deployment of weapons in outer space, it is apparent that such deployment is not prohibited by international law, unless of course weapons of mass-destruction are deployed.

A view has been rightly expressed that a state can justify its use of force to end military uses violative of international law such as, deployment of weapons of mass-destruction in outer space.

It will have become apparent that deployment of non-prohibited weapons in outer space is a legitimate exercise based on the right of self-defence. It is difficult to endorse the view that the need for military preparendness appears only to justify armed manoeuvres within the national boundaries and high seas, but not in outer space. There is nothing in Article 51 of the Charter, nor in space law which warrants such a conclusion. The phrase 'if an armed attack


occurs against a Member of the United Nations' is capacious enough to enable a state to protect its interests in and from all international spaces, unless of course, a distinct legal rule prohibits to do so in a particular internationalised area. There is no reason why states should deny to themselves measures of military preparedness consistent with advancing technology. It must be conceded that if states may legitimately deploy weapons in outer space for defensive purposes, it is exceedingly difficult to justify their destruction or otherwise interference as a preventive measure, howsoever dreadful they may be. Even if their presence in outer space is regarded as an 'imminent threat to the security' of any state, this by itself is not a sufficient ground to take forcible action against space weapons. Their mere presence in outer space will not enable a state to exercise rights under Article 51 of the Charter. In this context a major change is discernable in the Soviet attitude, as reflected in the following observation:

'It is quite obvious that attack or threat of attack on a space object belonging to another country are incompatible with the aims of the United Nations and, consequently, forbidden by international law. Threat of attacking a space object involves international responsibility of the offender but does not provide the right to use armed force against him as individual of collective self-defence. Preventive self-defence and the preventive use, of armed force are not permitted by the U.N.Charter...’


Setting aside the issue of international responsibility for causing threat to space object, it is significant to note that preventive action is discouraged. As regards preventive action in general, i.e. against military satellites as well as space weapons, it may be emphatically concluded that both are prohibited by the contemporary law.

IV.5.(2) Self-Defence in Outer Space and the Proportionality Rule:

It has been noted earlier that force used by way of self-defence must be proportionate to the threat posed by the attack. In relation to land, sea and air warfare it may not be very difficult to assess the potentiality of attack so as to determine the extent to which force may be used by way of defence. However, in relation to self-defence in outer space the requirement of proportionality has considerable significance for it presents certain critical problems. For instance, it is very difficult to decide with certainty as to what kind of countermeasures for effective defence would be justified by law and where they may be taken in case a vital satellite of a state is attacked in outer space in violation of international law. One further aspect of this problem, and it seems necessary to stress it, is that a condition which requires the defensive measures to be co-terminus with the attack. In other terms, the defensive measures should be

52. Supra, Chapter II.10.(3).
confined to the *locus* of the attack. Particularly striking is a view expressed by Fawcett:

'... the use of force in self-defence must be controlled by the principle of proportionality. It must correspond with the attack in the kind of force employed; it must be proportionate to the attack in the degree of force used; and it must be reasonably co-extensive in time and place with the attack....'\(^53\)

It is apparent that a strict application of above conditions might negate the right of self-defence. For instance, a state whose space object is unlawfully attacked in outer space may not possess necessary means to exercise the right of self-defence in outer space. But nevertheless, it may effectively put an end to such attack by taking counter measures against land based control stations in the territory of the attacking state or its allies. Brownlie *prima facie* agrees that countermeasures should be confined to the source of attack, but concedes that in a situation like the one described above, it is only possible to deal effectively with the situation by destroying control mechanisms situated in the state of origin or even that of its allies in military pacts. The point just made permits the conclusion that, in view of recent plans to deploy weapons in space and to devise weapons for use in space, in certain cases legitimate counter-measures may prove far


\(^{54}\) Ian Brownlie, 'Maintenance of Peace and Security in Outer Space' 40 British Yearbook of International Law, 1968, p.24.
more effective if taken at a place other than the *locus* of the original attack. There is every possibility that space weapons, at least certain types of them, could be controlled and operated from ground stations. It is also possible to envisage deployment of component parts of a space weapons system in outer space, such as an orbiting mirror for reflecting beam weapons on targets in outer space. In these cases, legitimate counter-measures could be effective only if directed against crucial ground stations or essential components of such weapons systems in outer space. From what has been said above, it will be clear that insistence on co-terminusness of defensive counter-measures in the context of outer space warfare could have stifling effect on the right of self-defence. There is now emerging a trend to justify adoption of defensive measures elsewhere than at the *locus* of the attack, especially so in the context of outer space hostilities. It may also be argued that the insistence on co-terminusness of countermeasures was never an absolute rule. In cases of vicious and repeated attacks on ships and aircraft, defensive measures could be taken against territorial bases of the ships and aircraft carrying out the attacks. The U.S. has since long taken a view that even if the *locus* of attack is from outer space, defensive


56. Brownlie, n.54, p.23.
measures may be taken elsewhere. A Soviet author also justifies defensive measures through or using outer space against an aggressor in the process of legitimate self-defence. Once the requirement of co-terminusness of defensive measures is dispensed with, and as demonstrated above, there are strong reasons to do so, another and perhaps more significant consequence ensues. Thus, the consequence of the converse of the situation need to be considered. It may be asserted that in cases of territorial or terrestrial attacks, defensive countermeasures could be taken in outer space if the attacking state has launched objects into outer space. The researcher, therefore, endorses the view that in case of an armed attack against foreign territory, a foreign vehicle or installations in the areas of the high seas or the polar regions, a counter-attack may be launched against the spacecraft or space stations of the aggressive state in outer space. It is also possible that defensive countermeasures from outer space may be taken against territorial or terrestrial objects of attacking state.

In the absence of co-terminusness of defensive measures, it may perhaps be difficult to ascertain proportionality of

57. Statement of Mr. Loftus Becker, Legal Adviser, made before the Special Senate Committee on Space and Aeronautics, May 14, 1958, in 38 Department of Space Bulletin, 1958, p. 965.


59. Kish, n. 55, p. 183.
such measures. In the absence of objective criteria, it may be asserted that countermeasures may continue as long as the original attack persists.

IV.5.(3) The Outer Space Treaty and Self-Defence:

The legitimate exercise of the right of self-defence in and from outer space is not affected by the Outer Space Treaty. It may be recalled that the Outer Space Treaty obliges the states parties to carry on activities in outer space in accordance with international law including the U.N. Charter. It has also been demonstrated that international law has always had extraterrestrial application even before it was declared that it applied to outer space.

In asserting that the Outer Space Treaty does not affect the exercise of right of self-defence, differing views have been expressed. Carl Christol observes that this right is not affected because use of force by way of self-defence is not an aggression, and that non-aggressive activities are permitted in outer space because they are 'peaceful' in nature. However, Manfred Lachs believes that 'peaceful purposes' are symptomatic of measures of non-military

60. Article III, the Outer Space Treaty.
61. Supra, Chapter II.10.(1).
character. He admits that this could create problems for the exercise of the inherent right of self-defence, but suggests that self-defence should be viewed as a special exception to the rule.

The researcher is unable to endorse either of these views, but admits that the right of self-defence is left unaffected by the Outer Space Treaty. The reason is that the Treaty permits certain kinds of military activities in outer space, including use of force by way of self-defence. Exercise of this right is a permitted military activity in outer space. Besides, it is a well established fact that international law including the U.N. Charter apply to outer space. Thus, it is clear that those rights which are very well established in the law can certainly be exercised except and in so far as specific restrictions on the modalities of exercising such rights are imposed by law. For instance, weapons may not be deployed on celestial bodies even if they are intended for defensive purposes. In order to leave this right unaffected, it is not necessary to stretch the meaning of the phrase 'peaceful purposes'. As made clear earlier, the whole controversy regarding the meaning of 'peaceful purposes' in the context of outer space is futile.

64. Ibid., p.107.
Therefore, instead of distorting the meaning of certain terms in order to interpret them to suit certain activities, it is worthwhile and desirable to catalogue permitted and prohibited activities in outer space. A plain reading of Article IV and the rest of the provisions of the Outer Space Treaty reveals that the right of self-defence—undoubtedly a military activity and in no way a peaceful activity— is not prohibited in outer space. However, it must be cautioned that a state is not entitled to place mass-destruction weapons in outer space for defensive purposes, for these are categorically banned in outer space irrespective of their intended use—whether defensive or otherwise.

IV.5.(4) Self-defence on Celestial Bodies:

Article IV of the Outer Space Treaty and Article 3 of the Moon Treaty contain cogent and unequivocal mandates as respects activities of military nature on celestial bodies. By comprehensively and conclusively demilitarizing the celestial bodies, no scope is left for military activities of any nature, including those which are purely defensive. But the fact that celestial bodies are demilitarized does not imply that right of self-defence may not be exercised thereon. It is possible to envisage installations, stations and other objects on celestial bodies for peaceful purposes.

65. Supra, Chapter II.3.(2)(ii) and II.7.(2), respectively.
in accordance with the law. In the wake of weapons for outer space applications it is fairly reasonable to foresee an attack on objects or stations on celestial bodies in case of a space warfare. To repel such illegal use of force and to defend objects or stations on celestial bodies weapons may be used, though not on celestial bodies, but in and from outer space and, a fortiori, on surface of the earth. A strict application of the Outer Space Treaty and the Moon Treaty will not permit use of force even by way of defence on and from celestial bodies. However, if a state, in violation of its obligations, places weapons on celestial bodies and uses them against other state, the latter may also use weapons on celestial bodies as reprisals for violation of obligations. In any case it is hoped that states will not place weapons or components of weapons systems on celestial bodies so that the question of their use would not arise. But as noted above, if force is used on celestial bodies from a place other than that or other celestial bodies, defensive measures may be adopted to repel the force at its source or, for that matter, at any place other than the celestial bodies.

It is equally significant to note that Article 3, paragraph 2 prohibits use or threat of force on celestial bodies even though such use or threat of force is in accordance with the U.N.Charter. Use of force by way of...

66. Supra, Chapter II.7.(2).
self-defence is prohibited, too. It has been demonstrated earlier that use of force by way of self-defence need not be co-terminus with the attack. As a defensive measure, a state may elect to destroy stations established by the aggressor on a celestial body. But Article 3, paragraph 2 of the Moon Treaty precludes legitimate use of force as well. The researcher, for the reasons stated above, is unable to appreciate the view expressed by Christol that force by way of self-defence may be used on celestial bodies because defensive activities are peaceful activities. Though use of force as a defensive measure may be adopted in the interest of restoring peace, yet it cannot be treated as an 'exclusively peaceful activity'.

IV.6. Use of Weapons in Space and Humanitarian Law:

Earlier the issue of application of international humanitarian law to armed conflict in outer space has been examined. It remains now to be seen how far the recent advances in weapons technology and other military plans of the super powers are congruous with those mandates of humanitarian law which apply to space warfare.

It is not expected that the super powers would pay heed to the provisions of Article 36 of the 1977 Protocol I regarding 'new weapons' which requires the states parties to

68. Supra, Chapter II.10.(4).
determine whether the use of a futuristic weapon or weapons system would be violative of applicable conventional law as well as international law in general. The examination of space weapons projects and progress made so far will have sufficed to show that none of the super powers has considered the legal aspects of the development of directed energy, kinetic energy, electromagnetic and other kinds of weapons for space applications. As already observed, the obligations contained in Article 36 of the Protocol are not cogent and specific.

More significant and pertinent are those rules of humanitarian law which afford a great measure of protection to civilian population, individual civilians and civilian objects. The principle of protection to civilians and civilian targets is so widely and unhesitatingly accepted in many instruments on laws of warfare that it has received universal acceptance and recognition. However, military activities in outer space pose a serious problem as far as this kind of protection is concerned. Many rules of humanitarian laws of warfare maintain a distinction between combatants and non-combatants, civilian population and military personnel, as well as between civilian objects and military objects. This is irrespective of whether the military personnel and objects serve offensive or defensive purposes. The humanitarian laws of warfare are concerned with the use of force, whether it is used for offence or
defence is immaterial. As noted earlier, Article 52 of Protocol I defines military objectives as those which make an effective contribution to military action and whose total or partial destruction in the times of armed conflict offers a definite military advantage. It cannot be doubted that if the above test is applied to multifarious space activities of the present day, most of them will have to be characterized as military activities and objects conducting them as 'military objectives'. All those satellites launched for military purposes such as reconnaissance, military communication, early warning, geodesy and so forth will have to be treated as military objectives for the purposes of humanitarian law. The essential point is that those satellites and other space objects which are exclusively engaged in scientific exploration and other non-military functions such as weather reporting, civilian telecommunication, television and radio broadcasting, etc. as well as installations and stations on celestial bodies established 'exclusively for peaceful purposes' must be treated as civilian objects within the meaning of Article 52 and must be afforded necessary protection in case of an armed conflict in outer space.

Another ominous development is the frequent use of a single space object for both civilian and military services and functions. Now a days it is exceedingly difficult to maintain a distinction between civilian and military space missions. Many are intricately intertwined beyond the point
of distinction. Space objects are so designed as to perform civilian and military functions simultaneously. Similarly, personnel of spacecraft on most of the occasions are expected to perform civilian and military roles in the course of a single mission. The blurring of basic distinction between civilian and military objectives and personnel could seriously jeopardize both space objects and space personnel. The protection of civilian objectives and people accorded by the international humanitarian law will no more be available to space objects and personnel if they are also engaged in functions of military nature. Besides, incidental loss of civilian objects and individual civilians is permitted by humanitarian law.

Use of military personnel and objects for exclusively peaceful purposes is permitted by the Outer Space Treaty and the Moon Treaty. When such personnel and objects are engaged in exclusively peaceful activities or activities of non-military nature, they too, are entitled to the protection. Because the test is functional.

IV.7. Weapons Tests in Outer Space and on Celestial Bodies:

Testing is an indispensable stage in the process of weapons development. Up to a certain stage, testing in a simulated environment is possible. But simulated testing has limitations. Hence testing of a weapon in the environment in which it is expected to operate is essential to gain greater accuracy, reliability and efficiency. Unquestionably,
weapons designed for outer space applications are in all probability likely to be tested there. It, therefore, must be ascertained whether there are any legal constraints on testing of weapons of the kind examined earlier. It may be recalled that there are reports of extensive weapons tests which are being conducted by both the U.S. and the U.S.S.R.

The Nuclear Test Ban Treaty, 1963 deals with nuclear weapons tests exclusively. Article I of the Treaty forbids nuclear weapon test explosion in outer space. Some type of particle beam and laser weapons rely on nuclear energy. A nuclear explosion in outer space to generate a particle or laser beam would come under the prohibition envisaged by Article I. An electromagnetic pulse weapon which is admittedly a nuclear weapon cannot be tested in outer space. Nuclear explosions which may not be specific weapons tests, such as explosions for creating energy weapons are also forbidden by the Test Ban Treaty. Kinetic energy weapons may be freely tested in outer space because they are non-nuclear.

Whilst the Outer Space Treaty is silent as regards testing of weapons in outer space, it categorically prohibits testing of any kind of weapon on celestial bodies. Article IV is very explicit in this respect.

As far as the bilateral commitments of the U.S. and the U.S.S.R. are concerned, the lawfulness of testing antiballistic missile space weapons under the ABM Treaty is examined separately.

IV.8. The Anti-Ballistic Missile Treaty 1972 and Space Weapons:

Whilst it is true that the present study is in the main concerned with international legal obligations as regards military activities in outer space, yet it would be incomplete and inconclusive if contextual bilateral obligations of states involved in military activities in outer space are not examined here. Earlier, a brief reference is made to the ABM Treaty between the U.S. and the U.S.S.R. and basic obligations assumed under that treaty.

There is increasing concern over bilateral treaty commitments of the two states in the wake of ascensive military interest in outer space. An examination of continued lawfulness of the multifarious military space activities of the U.S. and the U.S.S.R. as described earlier, in view of the ABM Treaty's cardinal provisions would be apposite.

IV.8. (1) The interpretative controversy:

When the American and the Soviet projects to devise weapons for ballistic missiles defence became apparent, a debate concerning the interpretation of the ABM Treaty

\[70. \text{Infra, IV.8.(4).}
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\[71. \text{Supra, Chapter II.9.}
\]
obligations ensued. The most controversial provisions are Article V and Agreed Statement 'D'. According to the traditional interpretation, which is also known as restrictive interpretation; research into, but not development or testing of systems or components based on new technology, capable of substituting for old ABM interceptors, launchers or radars is permitted by the Treaty.

Apparently, there is considerable reliance on the wording of Article V of the Treaty which obliges the parties not to develop, test or deploy ABM systems, etc. except and insofar as permitted by the treaty.

The new and broader interpretation of the Treaty centers around Article II of the Treaty which defines ABM systems as under:

For the purpose of this Treaty an ABM system is a system to counter strategic ballistic missiles or their elements in flight trajectory, currently consisting of:
(a) ABM interceptor missiles ...
(b) ABM launchers ... and
(c) ABM radars ...

Thus, it has been claimed that the Treaty prohibits ABM


73. Statement of the Legal Adviser, Department of State, Mr.Soafer at Hearing Before the Subcommittee on Arms Control, Committee on Foreign Affairs, 22 October 1985, in 26 International Legal Materials, 1987, pp.283-85.

74. For the text of the ABM Treaty, see 11 International Legal Materials, 1972, p.785.
systems which consist of the specifically mentioned interceptors, launchers and radars. This does not mean that ABM systems based on new physical principles are prohibited by the Treaty. It is also contended that there are restrictions only on those technologies which existed at the time of conclusion of the Treaty. But Article II must be interpreted in view of Agreed Statement 'D'. This statement has officially been endorsed by the U.S. administration at the conclusion of the Treaty. This agreed statement provides that if in future ABM systems based on other physical principles are created, specific limitations on such systems would be subject to discussion in accordance with Article XIII which provides for establishing a standing consultative committee. The object of this agreed statement as stated therein is to 'insure fulfilment of the obligation not to deploy ABM systems and their components except as provided in Article III of the Treaty'. Article III permits limited deployment of ABM systems subject to certain geographic limitations. The broader interpretation of the Treaty is based on the contention that systems described by the Treaty in Article II are those that serve the functions described and which currently consist of the components

75. Supra, Chapter II.9 (Agreed statement 'D' is reproduced there).

76. Statement of Secretary of State Mr. Rogers at Strategic Arms Limitations Agreements. Hearing Before the Senate Committee on Foreign Relations on Executive, L. 92-2, pp.5, 6.
Only these systems are prohibited and new or futuristic systems will necessitate a specific ban in accordance with Agreed Statement D, for they are not covered by the Treaty.

IV.8.(2) The fallacy of broader interpretation:

On a closer examination of Article II and the agreed statement it appears that broader interpretation of the ABM Treaty so as to permit exotic ballistic missile defence systems, i.e. those not comprising of ABM interceptor missiles, launchers and radars is fallacious. It is significant to note that the definition of ABM systems as contained in Article II adopts a functional approach by describing an ABM system as 'a system to counter strategic ballistic missiles or their elements in flight trajectory'. The definition then proceeds to indicate components of existing ABM systems. This does not mean that only those ABM systems which currently comprise of the specified components are banned. This interpretation is further reinforced by Agreed Statement 'D' which is intended to 'insure fulfilment of the obligation not to deploy ABM systems and their components' except the permitted limited deployment. The statement enjoins the states parties to adopt specific bans on exotic ABM systems: A plain reading of this statement as well as related articles leads one to

77. Mr. Soafer's Statement, n.73, p.287.
conclude that until such specific bans are negotiated and adopted, the exotic systems would be subject to the general prohibition of Article V, for these systems, according to the definition in Article II would indeed be systems 'to counter strategic ballistic missiles or their elements in flight trajectory.'

The broader interpretation of the Treaty has been criticised by many American experts, including Mr. Gerald Smith, the Chief Negotiator of the Treaty. The American allies - Britain, West Germany, France, the Netherlands and Belgium - have resented the U.S. administration's attempt to interpret the Treaty broadly. It has been rightly pointed out that the subsequent practice of the U.S. and the U.S.S.R. as derived from official statements indicates that both the parties consider the new technologies to be within the scope of the ABM Treaty. Therefore, there seems little doubt that the exotic ballistic missile defence systems comprising of laser weapons particle beams and their components could be brought within the purview of the prohibition. The most constructive interpretation of the Treaty is the narrower or


79. Goedhuis, n.6, p.105.

80. Smith, n.11, p.63. The official U.S. view expressed immediately after the conclusion of the ABM Treaty unequivocally admitted that future ABM systems based on exotic technologies may not be deployed. See 67 Department of State Bulletin, 1972, pp.147, 820.
restrictive interpretation.

IV.8.(3) The U.S. reverts to restrictive interpretation :

It is perhaps because of increasing denigration and resentment of the broader interpretation by not only other states but by the American experts in various disciplines concerned with the Treaty, the U.S. administration decided to revert to the restrictive interpretation. A conclusion reached by a Panel of Security Specialists consisting of former U.S. President Jimmy Carter, former Secretary of State Dean Rusk, former Defence Secretary Robert McNamara, retired U.S. Army General Maxwell and former Directors of the CIA Stanfield Turner and William Colby, set up to initiate a national campaign to save the ABM Treaty, is that by pushing developments of 'star wars' missile defence systems, the U.S. administration was close to a clear violation of the ABM Treaty. In October 1985, the Legal Advisor to the U.S. Department of State observed that even though the U.S. administration believes in the merit of the broader interpretation, the President has decided to pursue the strategic defence initiative programme which can be accommodated within the confines of the restrictive interpretation which permits research into, but not

81. See generally, McGeorge Bundy, et.al., 'The President's Choice : Star Wars or Arms Control' 63 Foreign Affairs, 1984/85, pp.264-78.

development or testing of systems or components based on future technology and capable of substituting for ABM interceptors, launchers or radars.

The U.S. Senate, during its first session in 1987 passed a resolution on interpretation of the ABM Treaty and endorsed the restrictive interpretation of the Treaty. Subsequently, in September 1987 the interpretative controversy was also considered at length by the Committee on Foreign Relations of the U.S. Senate which reaffirmed the restrictive interpretation by eleven votes to eight. A view was expressed that the Executive is bound by the conditions imposed by the Senate at the time of consenting ratification of a treaty and that such conditions may be explicit or implicit. Article II, Section 2[2] of the U.S. Constitution provides that the President shall have power to make treaties subject to the advice and consent of the Senate. After the signature but before its ratification, extensive hearings were held in the Senate Committee on Foreign Relations and on Armed Services regarding the ABM Treaty. From the deliberations in the Senate it is

83. Supra, n.73, p.290.


85. Ibid., p.153.

86. Ibid.

87. Kennedy, n.72, p.860.
apparent that it expressed its consent believing in the restrictive interpretation. If this is so, an attempt to reinterpret the Treaty in a different manner is tantamount to disregard the Senate's authority and would amount to violation of the constitutional mandates by the Executive.

IV.8.(4) Research, Development and Testing ABM Systems and the Treaty:

As noted above, in October 1985 the U.S. administration, while reverting to restrictive interpretation declared that this was subject to a rider that 'research into, but not development or testing of systems or components based on future technology and capable of substituting for ABM interceptors, launchers or radars' is permitted and that the President has decided to pursue the strategic defence initiative programme within these confines. Earlier it was also recognized by the Senate Committee on Foreign Relations that, though deployment of defences based on new technologies, research into new technologies and in selected cases development and testing of defence systems according to Article III are permitted by the Treaty. However, a

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88. Ibid.
89. The ABM Treaty and the Constitution: Joint Hearing Before the Senate Committees on Foreign Relations and on Judiciary, 100th Congress, n.84, pp.152-58.
90. Supra, n.73, p.290.
91. 'Strategic Defense and Anti-satellite Weapons' Hearing Before the Committee on Foreign Relations, U.S.Senate 96th Congress, April 25, 1984, p.323.
crucial issue to be considered at this juncture is that at what stage 'research' ends and 'development' begins. In many instances it would be difficult to positively demarcate between the two stages. A review of the developments examined in the previous Chapter reveals that progress in respect of some weapons has surpassed the 'research' stage in strict sense of the term. As far as research and development of the ABM systems are concerned, one view is that the Treaty permits research which is confined purely to the laboratory stage. In the context of the ABM Treaty negotiations (SALT negotiations), the issue of distinction between research and development was considered in the U.S. official circles. Thus, one of the written submissions prepared by the Executive Branch concludes that the prohibition on development of ABM systems as contemplated by the Treaty would start at that point of the developmental process where field testing is initiated on either a prototype or a breadboard model. The reason for this understanding is that laboratory testing cannot be verified, whereas field testing may be verified by resorting to national technical means of verification. This interpretation of the term 'development' was also acceptable to the Soviet Union. This understanding regarding the meaning of research and development is further reinforced by

93. Supra, n.78, p.387.
a statement made by the American side which is attached to the Treaty:

The U.S. would regard a missile tested in an ABM mode, if the missile were flight tested against a target vehicle which has a flight trajectory with characteristics of a strategic ballistic missile flight trajectory or is flight tested to an altitude inconsistent with interception against which air defenses are deployed.94

It is clear that this statement preconceived testing of missiles as ballistic defence weapons. But the emphasis in the statement is on location of the target vehicle, namely, those which in all probability are comparable to strategic ballistic missiles. If testing of 'missiles' is taken as testing of 'other weapons' as well, and there appears to be no reason to prevent us from doing so, the statement may be validly resorted to discover the intention and understanding of the concerned party. This statement is to be read on the background of Article V of the Treaty which bans testing of ABM systems and their component parts. The obvious purpose of that article is to prevent states parties from evading treaty obligations by segregating various components of proposed ABM systems and developing them independent of each other. However, as respect general testing of exotic weapons system for ballistic missiles, it may be contended that since admittedly development is prohibited, a fortiori, the question of testing does not

94. Ibid.

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arise at all. Development and testing are two closely connected phases of the weapons projects. It may also be observed that research into a weapon does not include field testing. It may, in the maximum, involve laboratory testing or testing in a simulated environment.

As referred in the previous chapter, the U.S. has tested components of space weapons systems outside the laboratories. However, a major difficulty is in distinguishing between a weapon for antisatellite applications and one for ballistic missile defence. Since the ABM Treaty is exclusively concerned with ballistic missile defences, it is open to states parties to test a weapon in an anti-satellite mode, which is certainly not prohibited by any treaty. But it is significant to note that there are reports of the American testing of directed energy weapons in a missile defence mode. This is a clear violation of the ABM Treaty if our interpretation is taken as the correct one. Besides, the progress made in the context of certain BMD weapons technology undoubtedly reveals that it has passed the research stage and is at an advanced developmental stage. This is unquestionably a violation of the ABM Treaty.

IV.8.(5) Dual purpose space weapons and the ABM Treaty:

Various modes of operation of the proposed space weapons and weapons systems have been elaborately examined in the

95. Supra, Chapter III.2.(3) (v).
previous chapter. Broadly speaking, the weapons may be functionally classified into two categories — those for anti-satellite applications and those for ballistic missile defence. What is of great contemporary significance is the possibility of exploiting a particular technology for both the functions — ASAT and BMD. From the examination of weapons technologies advancements, one needs little imagination to envisage development of a laser or particle beams weapons system for both the functions. That these fears are not misplaced is established by an observation made during a U.S. Senate Hearing in April 1984, that the directed energy weapons systems, though not incorporated into effective missile defence system, they may have a significant role to play in nuclear offence and defence as well as in antisatellite attack, in anti-aircraft attack, and in other applications of concern. A study jointly conducted by two American space weapons experts concludes that the U.S. and the U.S.S.R. have developed anti-satellite technologies derived from ballistic missile defence systems and that in the future, systems that are nominally for antisatellite purposes could be used to approach ballistic missile defence capabilities that are otherwise prohibited by the ABM Treaty.

96. 'Principal Judgments and Observations' Senate Hearings, n.91, p.323.

As has been stressed previously, there is no specific ban on deployment of weapons in outer space for antisatellite applications. It is, therefore, fairly reasonable to portend incognito deployment of directed energy weapons in outer space. The justification for such deployment can be sought by claiming that these are anti-satellite weapons and not ballistic missile defence weapons when in fact they can render the latter function as well, perhaps more efficaciously than the former.

The general result of this development has been to complicate the ABM Treaty regime, for in all probability, it might tend states to lose faith in the Treaty and it will pose a serious threat to the continuation of the Treaty regime. It is also likely that if both the U.S. and the U.S.S.R. embark unilaterally on antisatellite systems with ballistic missile defence capabilities, perhaps both will be deprived of the assurances they have sought under the Treaty.

In one more way, deployment of weapons in outer space exclusively for antisatellite applications may indirectly pose a threat to the ABM Treaty. Article XII (2) of the Treaty stipulates that each party undertakes not to interfere.

98. Supra, Chapter II.11.


100. Ibid., p.209.
with the national technical means of verification of the other party. Presumably, these national technical means of verification mainly comprise of reconnaissance satellites and certain other communication satellites. Continued and safe functioning of such means of verification may be jeopardized by deployment of anti-satellite weapons in outer space. But this is not an issue of great concern, for there are other issues as noted above, of crucial significance.

A strict application of the Treaty would prohibit deployment of those weapons systems which are capable of dual or perhaps multiple roles if it is convincingly established that they could be used for ballistic missile defence in contravention of the ABM Treaty.

IV.8.(6) The question of compliance and claims of violation: Legal Consequences.

Article XIII of the Treaty provides for establishment of a Standing Consultative Committee to, inter alia, consider questions regarding compliance with the Treaty obligations, to assure confidence by providing information to that end and so forth. In general it may be inferred that the mechanism is intended to deal with disputes which might arise in connection with the Treaty obligations. However, it is readily evident that the effectiveness of the mechanism will invariably depend upon the willingness of the parties to cooperate with each other and resolve the problems in good faith.
As yet the parties have not resorted to this provision even amidst reports and allegations of violation of the Treaty made by the parties against each other. The Soviets contend that the U.S. has, by undertaking development of the so-called defensive space-based weapons, violated the ABM Treaty. On the other hand, Western experts contend that the U.S.S.R. has either violated the Treaty or it is very close to violation. These charges are based on two arguments. First, the Soviet Union has intensified its missile defence programme without admitting so by changing nomenclature and organizational structure within the Soviet forces. The other charge is that the Soviets have constructed a major radar system for missile defence in contravention of the Treaty at Abalakova in Central Siberia, which is known as the Krasnoyarsk Radar. It is claimed that on account of violation of the Treaty by the Soviet Union, the U.S. is relieved of its obligations under the Treaty, either in toto or may avoid those provisions which have been violated by the Soviets.

One of the well established principles in law of the treaties is that if a party to a bilateral treaty is guilty


103. Ibid., p.30.

of deliberate material breach of the treaty, the other party is at liberty to repudiate the treaty or violate the treaty as a reprisal. In case of the ABM Treaty, it would be possible for either of the parties to justify its space weapons programme for BMD applications by alleging that the other party has violated the treaty. In any case, it is inept to expect the treaty to survive in the wake of a material breach by either party.

IV.8.(7) Withdrawal from the treaty:

Legally speaking, the Treaty is not an unsurmountable impediment in deploying weapons in outer space even for BMD applications, because it provides for withdrawal. Article XV, on one hand stipulates that the Treaty is of unlimited duration, and on the other, incorporates a provision for withdrawal. Thus, the second paragraph of Article XV reads as under:

Each Party shall, in exercising its national sovereignty, have the right to withdraw from this Treaty if it decides that extraordinary events related to the subject matter of this Treaty have jeopardized its supreme interest. It shall give notice of its decision to the other Party six months prior to withdrawal from the Treaty. Such notice shall include a statement of the extraordinary events the notifying Party regards as having jeopardized its supreme interest.

Precisely what events may constitute jeopardizing supreme interest is not very clear. But unquestionably, it is left to the subjective determination of a party to decide whether such events have happened and whether they jeopardize
its supreme interest. This clause thus gives practically unbridled discretion to each party to frustrate the Treaty. However, the political factors will play a pivotal role in avoiding demise of the Treaty. The fact that the Treaty has survived for more than seventeen years is itself a compliment to the political understanding underlying the Treaty.

However, it was hinted immediately after the Treaty was concluded by the Chief U.S. negotiator, Ambassador Smith that if an agreement providing for more complete strategic offensive arms limitations were not achieved within five years, U.S. supreme interests could be jeopardized. Should that occur, he further said, it would constitute a basis for withdrawal. But the fact that no such agreement was signed, did not compel the U.S. to withdraw. This indicates their acquiescence. This notwithstanding, the above statement is indicative of what may constitute an 'extraordinary event related to the subject matter of the Treaty which may jeopardize supreme interest'. By the same token, it may be convincingly argued by either of the parties that alleged violation of the Treaty by the other party has jeopardized its supreme interests and hence it is withdrawing. It may also be contended that the present projects of space weapons in general have jeopardized their supreme interests so as to justify withdrawal.


106. Ibid.
IV.9. Lawfulness of Military Satellites:

In the previous chapter, an extensive survey of various types of satellites used for military purposes has been attempted. It is significant to note that this, at present, is the major military activity in outer space. These activities pose certain legal questions. An examination of these legal questions is attempted here. The term 'military satellites' as used here needs some clarification. It includes all those satellites which, at present, serve military purposes, namely, reconnaissance, early warning, ocean surveillance, communication, navigation, meteorology and geodesy. These military uses of outer space are also regarded as passive military missions. If satellites are launched in outer space for some other military purposes in future they will necessitate independent legal examination. This, it must be emphasised, is to be very sensibly understood in view of the present plans to use outer space for deployment of space weapons. It is clearly desirable that futuristic military satellites are left out of the present discussion. In the passing it may be presaged that in future satellites forming essential component parts of exotic weapons systems may be used in conjunction with

conventional satellites so that all satellites may constitute an undistinguishable and integrated space weapons system as a whole.

Although today satellites are used for a variety of military purpose, yet reconnaissance stands out of all on account of its overt military function and its immeasurable advantage to the state conducting it. It will be apparent on a closer examination that most of the other military uses of satellites such as communication and navigation are very close to non-military and civilian uses of outer space. Besides, it is the satellite reconnaissance that has generated a potential controversy since the dawn of space age. Therefore, in the following discussion greater emphasis is placed on this type of military satellite.

IV.9.(1) Satellite Reconnaissance: Whether Espionage?

Espionage is furtive collection of information by one state regarding another state, particularly regarding the military preparedness of the latter. Such information is technically known as 'intelligence data'. Reconnaissance and espionage have a common object, but they are not the same things. Espionage is essentially done within the territory of the hostile state. Whereas, reconnaissance can be conducted from within or outside the territory of a state. Espionage is traditionally conducted by individuals, who in many cases lawfully enter into the territory of the hostile
state. It is a crime under municipal law rather than international law. Reconnaissance is conducted by employing mechanical devices.

A review of contemporary reconnoitering ways and means will demonstrate that it may be broadly categorized into two types - territorial reconnaissance and extra-territorial reconnaissance. These are two new terms which need some elaboration. When reconnaissance is conducted by entering into the territory of a hostile state or its airspace, it is territorial reconnaissance. But when it is carried out from a place outside the territory, it is extra-territorial reconnaissance. This may be conducted from the territory of another state, international airspace, high seas, terra nullius, and outer space. Bin Cheng describes these two types of reconnaissance as peripheral and penetrative reconnaissance. However, without prejudice to the legal bases of these two types indicated by Cheng, the researcher prefers the term 'extra-territorial' to 'peripheral', and 'territorial' to 'penetrative'. The reason is that, reconnaissance could be conducted by aircraft operating in international air space, albeit very close to the state reconnaissed. In that context the term 'peripheral' was adequate. But reconnaissance from outer space, though akin to peripheral, is conducted from considerable heights, hence use of term 'peripheral' to describe it may be misleading.

Besides, the term 'extra-territorial' is broader to encompass all types of reconnaissance other than the territorial one.

Coming back to lawfulness of reconnaissance, it seems a trite observation that territorial reconnaissance amounts to violation of municipal as well as international law. It is incontrovertibly a violation of the territorial sovereignty of the state reconnaissed. And for that matter, mere presence of reconnoitering devices and not their operation, is enough to violate the territorial sovereignty. It is, however, with extra-territorial reconnaissance, that we are here immediately concerned. Undoubtedly, extra-territorial reconnaissance is not violative of international law. It is not the act of collecting information, but the locus from where it is done is decisive in determining its lawfulness. Instances in which stern action was taken against territorial reconnaissance abound in international practice. The oft quoted incident is the one when in May 1960 the Soviet Union shot down a U.S. U-2 reconnaissance aircraft while it was in the Soviet air space. The subsequent trial, conviction and imprisonment of the pilot was not questioned by the Americans. But when in July 1960 another American reconnaissance aircraft was shot down by the Soviets while it was flying in the international air space,

110. Ibid., pp.61, 62.
the act was extensively criticised by the Americans, for it was not guilty of violation of international law, and the Soviets too, admitted illegality of the action, albeit implicitly. The latter being extra-territorial reconnaissance could not be complained of. The more recent incident of shooting down of Korean Air Lines flight 007 in the early hours of 1st September 1983 in the Soviet air space is quintessence of states’ attitude towards territorial reconnaissance. For, according to the Soviets, their Anti-Aircraft Defence Forces’ concerned command concluded that a reconnaissance aircraft was heading towards the state frontier of the U.S.S.R. Although this was a mistaken judgment, yet it shows how territorial reconnaissance is looked upon and dealt with sternly by states.

In the early days of space exploration, satellite reconnaissance was regarded by some as espionage, thus assimilating all forms of intelligence gathering to only one. Soviets had warned that forcible action may be taken against novel means of espionage and that such action will be fully justified by existing international law including the U.N.

111. Ibid., p.62.

In asserting that satellite reconnaissance is illegal, it was labelled as 'space espionage' and treated as encroachment from outside and violation of the legal regime of air space as established by the Chicago Convention of 1944. This assertion revolves around one central theme and that is 'state security'.

McMahon categorically and convincingly refuted the Soviet claims in 1962 with cogent reasoning which stands valid even today. He emphatically observes that a reconnaissance satellite, situated outside a state's sovereign airspace and engaged in taking photographs of that state's secret military preparations would not be violating international law.

Although satellite reconnaissance is not prohibited by international law, yet it could be regarded as an offence under municipal legal systems of states. A state may claim exercise of jurisdiction on the basis of protective principle since satellite reconnaissance is admittedly aimed against the security of the state reconnaissed. But the obvious

114. Ibid., pp. 55, 56.
115. Ibid.
117. Ibid.
impediment in exercise of jurisdiction on this basis is securing the custody of guilty persons, if the spacecraft was manned. It by any chance a space object engaged in reconnaissance is compelled to land because of a mechanical defect in the territory of the state reconnaissed, the latter may validly exercise jurisdiction against the personnel of the space object on the basis of protective principle.

It is not surprising to note that now the Soviets have tacitly admitted lawfulness of satellite reconnaissance by extensively engaging in that activity. Thus, it may also be argued that practice of the two states subsequent to the conclusion of the Outer Space Treaty clearly indicates that the obligation to use outer space for 'peaceful purposes' is not violated by engaging in passive military activities like satellite reconnaissance.


Under general international law as well as the Outer Space Treaty, states are obliged to carry out activities in outer space in accordance with international law and the Charter of the United Nations. In this context, one particular aspect of use of military satellites calls for specific examination. At one time it was considered that presence of military satellites, particularly reconnaissance satellites, in outer space amounts to threat of force or

118. Feinrider, n.107, p.235.
even an act of aggression against the state which is being reconnaissed. Thus, the Soviets contended that they consider presence of reconnaissance satellite in outer space is a serious threat to national security, which fully justified self-defence measures. Also they claimed that the use of satellites for military surveillance is aggressive because it threatens the territorial integrity and national sovereignty of the nation state under surveillance.

The Americans have always exhibited proclivity to the lawfulness of satellite reconnaissance. They consistently contend that deployment of surveillance satellites is a non-aggressive space activity. They claim that obligation in the Outer Space Treaty to use outer space in the interest of maintaining peace is not violated by the deployment of such satellites because non-aggressive activities are peaceful activities, though military in nature.

An examination of the Outer Space Treaty reveals that no legal obligation is spelt out in the Treaty which would render satellite reconnaissance illegitimate. As seen

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121. Supra, Chapter II.3.
earlier, Article IV of the Treaty in a limited way forbids only certain types of military activities in outer space. Article III of the Treaty which requires the state parties to carry on activities in the interest of international peace and security are too general and vague and lack the immediate importance and exactitude expected of a concrete legal mandate.

The early Soviet views mentioned above were expressed at a time when the Outer Space Treaty had not been adopted. However, worthy of note is the fact that even in the absence of the Outer Space Treaty, under general international law, it would be fallacious to claim that presence of reconnaissance satellite in outer space amounts to an act of aggression, or for that matter, an immediate threat to national security so as to enable the aggrieved state to resort to the right of self-defence. Outer space has always been considered as territorium extra commercium i.e. territory which cannot form part of a state which is open for all nations for use and enjoyment except and insofar as certain acts are specifically prohibited therein. If the proposition that presence of a reconnaissance satellite in outer space is aggression were accepted, then, a fortiori, presence of a hostile military aircraft in international airspace or a warship on the high seas would also amount to

aggression. In any event there is no warrant for further denigration of that contention because a visible change has occurred in the Soviet view, presumably because the Soviets also extensively engage in satellite reconnaissance and have tacitly admitted that it is not prohibited by international law.

Apropos of the American view, attention may be drawn to the fact that it is unnecessary and superfluous to insist that satellite reconnaissance is a non-aggressive and peaceful activity, because the Outer Space Treaty permits satellite reconnaissance from outer space. It has also been claimed that since military satellites help supervise disarmament agreements and also provide information regarding military activities of a potential adversary, such satellites can exercise a favourable influence on the preservation of peace, because the extensive observation obtained make a surprise attack difficult and hence such satellites may be regarded as 'peaceful'. It is submitted that stretching the meaning of the term 'peaceful' in this manner is uncalled for. Because, if we were to accept this proposition, it would be possible to extend the analogy and claim that nuclear arsenal are 'peaceful' because they create


a nuclear deterrence which helps preserve world peace. The correct view would be to consider satellite reconnaissance as a permitted military activity rather than deviously conferring legitimacy on it, by indulging in circuitous interpretation of key terms so as to distort their meaning. Even if one contends that lawfulness of satellite reconnaissance under general international law is questionable, it may be argued that a customary rule of space law has emerged on account of extensive state practice accompanied by opinio juris generalis that satellite reconnaissance is lawful.

IV.9.(3) Satellites and Verification of Disarmament and Arms Control Agreements:

There seems little doubt regarding the significant role satellites play in verification of disarmament and arms control agreements. Both the Soviets and Americans have agreed, albeit tacitly, that mutual satellites which verify disarmament agreements shall not be interfered with. Thus, Article XII (1) of the ABM Treaty provides:

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

Similarly Article V of the Interim Agreement Between The U.S. and The U.S.S.R. On Certain Measures With Respect To The Limitation of Strategic Offensive Arms (SALT
Agreement) incorporates the above provision \textit{ad verbatim}.

An impression may be created that these bilateral agreements have legitimised the use of reconnaissance satellites by conferring the status of 'national technical means of verification' on them. Indeed, these provisions have a significant bearing upon lawfulness of reconnaissance satellites, but a careful examination of the clause reveals that under the Treaty only those national technical means of verification are permitted which are consistent with generally recognised principles of international law. Therefore, rather than conferring lawfulness, these provisions and subsequent state practice of the parties merely confirm their lawfulness.

IV.9.(4) Other Types of Military Satellites:

What has been said above in the context of reconnaissance satellites holds equally good in relation to other types of cognate military satellites which are currently deployed in outer space, \textit{viz.} military communication satellites, geodetic satellites, early warning satellites, etc. Their use has come to be recognized as a permitted military use.

IV.10. Transit of Weapons Through Outer Space:

The U.S. and the U.S.S.R. possess long range intercontinental ballistic missiles (ICBM) which can be equipped with nuclear warheads. An ICBM is a missile with a range in
excess of 5,500 kilometers, which follows a ballistic trajectory when thrust is terminated. Some of the U.S. ICBMs such as Titan-II have a range of 13,000 kms. An ICBM resembles a space craft in many ways. From the location where it is stationed, when fired, it is expected to enter into outer space, traverse a considerable distance through outer space, re-enter air space and home on the intended target. It is apparent that this would be a military use of outer space, and hence examination of lawfulness of this military activity is apposite.

Article IV of the Outer Space Treaty forbids stationing of mass-destruction weapons - nuclear as well as non-nuclear - in outer space. The ICBMs are designed to carry nuclear warheads which are incontrovertibly weapons of mass-destruction. A warhead equipped ICBM is expected to traverse through outer space for a few minutes after leaving air space and before re-entering it. But this transient presence of the missile in outer space may not be treated as 'stationing or placing them in outer space'. Although major portion of the trajectory of an ICBM is in outer space, yet it does not go into the orbit. Article IV of the Outer Space Treaty

126. Ibid., p.30.
prohibits placing and stationing of mass-destruction weapons in outer space, and not their transit. Perhaps, if a missile completes one full orbit before homing on, it may be claimed that it was placed in the orbit. Thus, it is apparent that transit of warhead equipped missiles would not violate the Outer Space Treaty. There is no provision in other space treaties as well as in general international law which would outlaw transit of such missiles through outer space.

IV.11. Implications of Non-delimitation on Military Activities in Outer Space

Certain aspects of the issue of delimitation of airspace and outer space have been examined earlier in Chapter II. No one would seem to dissent from the view that the consequent predicament is indeed bound to produce obnoxious consequences insofar as military activities in outer space are concerned. All the more, it is lamentable that because delimitation would invariably inhibit certain military activities in outer space, those states which have profound military interest in outer space are procrastinating the delimitation and consequently impairing progress in general legal regulation of activities of various types in outer space to the detriment of entire international community. This apart, non-delimitation has brought to the forefront certain critical issues in the context of military activities in outer space. These are discussed below.
IV.11.(1). Reconnaissance:

As noted earlier, satellite reconnaissance from outer space is not prohibited by international law. Reconnaissance carried out by a ship from the high seas, or by an aircraft from international air space is equally not prohibited. But if carried out by entering into air space of the state being reconnoitred it is obviously an illegal act which could be retorted and eventually the reconnoitering device obliterated by resorting to forcible measures. The earlier discussion on lawfulness of satellite reconnaissance will have sufficed to show that locus of the activity is of critical significance.

Sovereign rights in airspace, which for all practical purposes can be assimilated to the rights in respect of the state territory, are jealously protected by states. Agreement to internationalize territorial air space could not be reached at Chicago in 1944. As a consequence, it is subject to the domestic legal regime as well as international legal regime. Until the 1984 amendment to the Chicago Convention, states had claimed more or less unbridled authority to deal with all aircrafts intruding in their airspace even by mistake. Recent changes in the Chicago Convention were introduced in the wake of the ruthless downing of the Korean Air Lines Flight 007 in September 1983. A careful examination of the debates in the International Civil Aviation Organization Assembly and the resultant trend on the issue of intruding aircrafts indicates that states are deeply concerned about preventing reconnaissance by civilian
The immediate purport of these developments which are reflective of attitudes of states is that reconnaissance, when conducted by intruding into air space is a very serious violation of territorial sovereignty irrespective of the devices and vehicles used for it. It would not therefore be fallacious to content that reconnaissance by a satellite would also be equally illegal if conducted from air space of the state observed. It will have become apparent that the functionalist argument that legality or illegality of a space activity could be determined with reference to the nature of the activity, rather than locus, appears ludicrous. States have agreed to abstain from use of force against civilian aircrafts which unauthorisedly enter into airspace, but no rule in international law would stop a state from using forcible means for destruction of spacecrafts which enter into their airspace even if the spacecrafts are engaged in activities not prejudicial to the interests of the territorial state. It may be forewarned that this is a matter of vital international concern as far as maintenance of peace and order in outer space is concerned. Satellite reconnaissance to be lawful, needs to be conducted from outer space, and not from air space. But this invariably requires a definite demarcation between air space and outer space.

IV.11.(2) Multi-function Space Objects

Fallaciousness of the absolent functionalist argument
that astronautics may be regulated with reference to the
nature of space object rather than its locus is further
substantiated by increasing tendency to use a single space
object for multitude of purposes, broadly speaking civilian
as well as military, in the course of a single space mission
or flight, and thereby obfuscating the nature of space
mission. There is also the practice of using a reusable
space object such as a space shuttle to perform military and
civilian functions on same or different occasions. It has
been reported that approximately one third of the shuttle
flights planned until 1994, will be conducted with military
aims. Among the measures planned, the prominent are
transport of communications, reconnaissance and hunter-killer
satellites; experiments on board the space shuttle aiming at
destroying enemy satellites, inter alia, by using laser
weapons and other radiation armaments. The Director of
the U.S.Strategic Defence Initiative Organisation said in 1983
that there will be at least two flights of the space shuttle
every year as a part of the Strategic Defence Initiative
preparation. Such space vehicles as are used for both
military and non-military purposes could be regarded as
'dual-purpose' space objects. A leading Soviet space lawyer

129. H.Kautzleben, 'Some Remarks on U.S. and Soviet
Strategies Concerning Manned Activities in Outer Space' in Jasani, ed., Outer Space : A New Dimension of Arms

130. Ibid.

131. Aviation Week and Space Technology, February 18, 1985,
p.20 and October 31, 1983, pp.74-78.
has claimed that there should be a ban on the use of dual-purpose space objects for military ends. This development necessitates a spatial delimitation of outer space from air space so that all those activities which are permitted by law in outer space - whether military or non-military - may be conducted without any hinderance. But in the absence of spatial delimitation, use of dual purpose space objects could cause practical difficulties. There is a possibility that space powers may furtively engage in military activities but may not reveal expressly the nature of space mission.

IV.11.(3) Right of Transit:

A question of considerable practical significance which arises in the wake of non-delimitation is that whether states possess a right of transit for their space objects through the air space of other states for the purpose of entering into and returning from outer space. In contemporary law no such right of transit exists. But the absence of a boundary between air space and outer space favours space powers insofar as approach to and from outer space is concerned. Basing their argument on permissibility or non-permissibility of space activities, the functionalists contend that for space flights the concept of airspace sovereignty is


immaterial. The purport of functionalist argument is that once an activity is considered as permissible, a space object conducting that activity is entitled to transit through the airspace of other states. Bin Cheng has convincingly and cogently argued that such a claim is unfounded in law, particularly so because it infringes the principle of state sovereignty. He has demonstrated that if such a transit is permitted, insofar as a state's space activities are concerned, other states' air space sovereignty begins and ends at sea level or it no longer exists. The obvious reason for not agreeing on a boundary is that once it is settled permanently, it will not be possible to get it changed so as to suit the military plans of super powers. A tendency to circumvent the problem is discernable in a view expressed by one U.S. Air Force Lawyer -

"Until ... a definition becomes politically viable, the general consensus seems to be that the boundary between airspace and outer space lies somewhere between twenty five miles (the height which can be reached by vehicles which depend on reaction of the air to maintain flight) and eighty miles (the closest distance which presently orbiting vehicles can come to the earth's surface and still maintain orbital speeds)."136

It need hardly be stressed that the altitudes mentioned above are not immutable. In view of assurgent advances in

134. Ibid., p.97.
135. Ibid.
aerospace technology it is not difficult to envisage development of an aircraft flying at an altitude above twenty-five miles and of a space object orbiting at an altitude less than eighty miles. It is also possible to anticipate development of a 'craft' which appears like an aircraft as well as a space craft during its normal mode of operation. The U.S. space shuttle appears to be a combination of an aircraft and space craft. Gorove has admitted that development of such space objects has revitalised the question of delimitation.

Right of transit appears to be one of the major issues responsible for burdening delimitation. The Americans are not willing to accept a boundary because the transit would be adversely affected. The Soviets are prepared to agree to delimitation but a precondition is grant of right of transit for all space crafts. Thus, the Soviets forwarded a tentative proposal in the U.N. COPUOS as follows:

1. The region above 100 (110) kilometers from the sea level of the earth is outer space.
2. The boundary between air space and outer space shall be subject to agreement among States and shall subsequently be established by a treaty at an altitude not exceeding 100 (110) kilometers above sea-level.
3. Space objects of States shall retain the right to fly over the territory of other States at altitudes lower than 100 (110) kilometers above sea level for the purpose of reaching orbit or returning to earth in the territory of the launching State.

Unquestionably, the spatialists would hail the purport of paragraphs 1 and 2 of the above proposal, yet paragraph 3 is bound to be unacceptable to most of the states. It is more than apparent that agreeing to paragraph 3 is tantamount to conceding a right of transit in favour of all states for all types of space objects - military as well as non-military. A point worth noting is that a spatial delimitation is acceptable to the Soviets only if a right of transit at altitudes less than 100 (110) kms. is conceded by other states. The most significant aspect of the third paragraph is a tendentious proposition that 'space objects of states shall retain the right to fly over the territory of other states at altitudes lower than 100 kilometers'. This is tantamount to asserting that states already possess such a right, and the acceptance of the Soviet formula would have declaratory or confirmatory effect. The overall impression is that the Soviets too favour non-delimitation without overtly supporting functionalism and by pretending to favour spatialism.

In an attempt to resolve the vexing issue of transit rights space lawyers were tempted to draw analogies from the law of other international spaces, particularly the seas. J.E.S. Fawcett has suggested that to provide access to outer

space a right of innocent airflight would have to be established by a special agreement if a boundary is accepted. He explains that the notion of 'innocent' would comprise at least registration of the characteristics of the spacecraft, its flight elements and purpose of its flight, etc., with the U.N.; observance of conditions necessary for safe navigation; and absence of any prejudice to the good order or security of the subjacent state. Although there is a great measure of congeniality in all international spaces since they are the global or cosmic commons, yet considerable fundamental differences between outer space and other international spaces make analogies incongruous. It is apparent that most of the states will refuse to concede such a right of innocent transit since they lack means for effective monitoring of the space frontier and also to verify the purpose of the mission. It has been rightly pointed out by Vlassic that when space objects like space shuttles can be programmed to carry out military functions, states may not grant a right of innocent passage, for there is no guarantee that such space objects will be used for exclusively civilian purposes. It must be noted that the right of innocent passage in law of the sea has always been

142. Ibid.
available to all ships including warships. Whereas the
Chicago Convention of 1944 on Civil aviation rules out
passage of state aircraft through the airspace of states
parties. Therefore such analogies are unproductive for
resolution of the issue. The only pragmatic solution is
demarcating air space from outer space.

IV.11.(4). Weapons in Space and Delimitation:

The advent of space weapons and plans to deploy them in
outer space makes the question of delimitation all the more
poignant. It has been contended that anti-satellite
weapons, as well as anti-missile weapons are intended for
defensive applications or for non-aggressive purposes and
hence not prohibited by law. It may also be argued that they
are 'peaceful' in nature. But it is to be recalled that
functionalists advocate conducting all so called lawful
activities in outer space without admitting a spatial limit.
If this is so, the resulting position is particularly
serious, because states may deploy space weapons wherever
they feel it convenient irrespective of the height at which
they are deployed. This portends a possibility of deployment
of space weapons by one state in the air space of another
state or other states, or of keeping a satellite equipped
with space weapons orbiting in a low earth orbit which it may
be contended that, is not in outer space but in air space.

144. Article 3 of the Convention.
Thus, possibility of stationing or transiting of space weapons and/or their components in or through national airspace of other nations is not difficult to envisage. It is very sensibly anticipated that the territorial state may adopt all means at its disposal against such object in accordance with international law, particularly the lawful defensive measures.

Admittedly, deployment of non-mass destruction weapons in outer space is not prohibited by law, but then one must know precisely what constitutes 'outer space'.

Use of directed energy weapons which, it may be recalled, basically rely on conveying high potential of energy from its source to target via a charged beam, could perhaps pose problems in view of non-delimitation. Directing a charged beam through the air space of other nations could pose a danger to aviation and hence states may object to such traversing of their air space by a beam. But if air space and outer space are properly demarked and delineated, such problems could easily be averted.

IV.11.(5) Use of Force, Self-Defence and Delimitation:

The definition of aggression adopted by the U.N. General Assembly by consensus provides in Article 1, _inter alia_, that the use of force by a state against the territorial integrity or political independence of another state is aggression.

Further, Article 3 of the definition catalogues certain examples of aggression, one of which is that invasion by the armed forces of a state of the territory of another state. In the absence of a definition of outer space, it is possible to envisage an entry into the air space of a state by a space object equipped with weapons or reconnaissance facilities. The territorial state may elect to treat it as invasion and may adopt unilateral forcible measures to obliterate the internationally wrongful act. Lawfulness of such action cannot be questioned. No international liability may be incurred if it is established that that space object actually violated the air space of the territorial state. The burden of proving that it was not in air space would be on the state to whom the space object belongs.

Such intrusion by space objects in air space could be treated as a threat of force within the meaning of Article 2(4) of the U.N. Charter as well. The essential point to be noted in this context is that the law relating to aggression, armed attack and self-defence would be activated in cases of unauthorized entry by a space object in the air space of other states. Even if the space object actually does not use force or does not indulge in an activity prejudicial to the interests of the territorial state, yet the latter may use force against such space object by arrogating a right of anticipatory self-defence against imminent threat of attack.
IV.11.(6) Delimitation is Imperative:

The preceding discussion evinces that now a spatial delimitation of air space from outer space is exigent more than ever. With ever increasing military interest in outer space a precondition for establishment of peace, security and order in outer space is a spatial delimitation. In the early days of space exploration non existence of a boundary was understandable in view of insignificant number of space missions. But as Manfred Lachs has rightly pointed out that with the growth of outer space activities a spatial delimitation would offer clear advantages, such as, it would prevent the misunderstanding or even friction to which uncertainty tends to give rise, facilitate international cooperation, and so forth. Today, when nations are arrogating to themselves rights to engage in various types of military activities in outer space, it must be ensured that they exercise their rights with due respect to the lawful rights and interests of other states. One of the most basic principles on which the international system is founded is the sovereignty of nations and respect for the rights emanating from sovereignty. Lack of a boundary provides every opportunity to disregard sovereign rights of subjacent states. It has been rightly pointed out by Guyala Gal that agreement concerning definition and/or delimitation of outer space should not be neglected.  

146. Lachs, n.63, p.58.
space will serve as a very important structural basis of future law-making.

IV.12. Concluding Observations:

From the foregoing examination of lawfulness of military activities of various nature in outer space, it will have become apparent that some of these activities are strictly prohibited, some are benign and hence considered as lawful, whereas some are not dealt with at all. It is in the last category may be placed all the recent plans to devise weapons for use in and from outer space. This demonstrates that the contemporary legal regime is languid and unable to control military activities in outer space. This makes improvisation of the legal regime imperative. The international community is striving to that end, but as is common in international law making, the progress is excruciatingly slow. Various proposals are coming forth and being considered on bilateral as well as multilateral bases. It is to this issue that now we turn.