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INTRODUCTION
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1.1. Approach to the Problem

The present century has witnessed a steady growth in impressive and stupendous achievements in science and technology. During the recent past astounding progress in areas previously unexplored has been made. This unprecedented breakthrough is responsible for unforeseen changes in domestic and international societies. No one will disagree that the triumph of science and technology must be purposively exploited to embellish the quality of life and to facilitate the common weal. The exploding force of science and technology must be contained and exploited for constructive, and not destructive, purposes. Unfortunately, often this remains to be a hope much cherished but less realized. Unscrupulous and inconsiderate use of science and technology to subserve national self-interest, usually to the detriment of other states' interests, is not uncommon.

The impact of scientific and technological advances on international relations is amazing. Many political, economic, social, strategic and legal questions with international dimensions are engendered by such developments. Almost always such issues are inextricably intertwined with each other. As a consequence, complexity in international relations and their regulation is growing. Adequate regulation of international relations is a prerequisite of orderly society. This intricate and formidable function is the province of international law. In international society, as in any other society, law must continually grow, adapt and
atone itself with the changing complexion of the society. It is universally acknowledged that keeping pace with changing circumstances is an indication of the vitality and strength of law. In the contemporary international society new problems and situations incessantly arise, which imperatively demand legal regulation. But the dismal truth is that the law is not always able to meet the demands and aspirations of the society for a variety of reasons. The resultant discordance between the societal and legal change becomes all the more poignant when we speak of international society and the changes taking place therein. In the society of nations the pace of legal growth is invariably slower than that of societal changes. In domestic legal systems various mechanisms exist to effect necessary changes in the legal controls without expending much time. On the contrary, international law-making is an excruciatingly slow process. A pragmatic assessment of the present nature of relations between nations and the ideological, political, economic division of the world reveals that the slow pace of legal growth is understandable. Nevertheless, a conscious effort to improve the legal regime on the part of all the actors involved in the process of international law-making is a need of the day. Three main actors are involved in this process: nations, international organizations and international lawyers.

If nations decide to wholeheartedly co-operate and collaborate to strengthen the international legal system, profound progress in developing international law can be achieved. This can be facilitated and expediated by the institutionalised fora of international organizations. The creative imagination of international lawyers has had a considerable impact on international law-making. The work of early writers like Grotius as well as that of the modern institutionalised forum of international law scholars - the International Law Commission - testifies to this fact. Their task is doubtless arduous, for they are expected to facilitate the process of finding aspirations of the world community an effective expression in the law.

One of the most striking facet of the recent advances in science and technology is the superlative progress in space exploration. In October 1957, first artificial earth satellite was successfully launched into outer space by the Soviet Union. Thereafter, the U.S. and the U.S.S.R. unceasingly engaged in space missions of various nature. It soon became apparent that outer space has in many respects a great potential to offer. The prodigious contribution of the scientific community in this respect is immeasurable. Advent

of man in outer space opened up a new international spatial zone which was until then a virgin area. Nations, and particularly powerful nations, have a predilection for expansionism. The unparalleled opportunities and advantages accrued by space exploration tempted such nations to establish their superiority and supremacy in space activities. It soon became apparent that immense strategic and commercial gains can be made by exploiting the potential of outer space. It needs little imagination to envisage the host of international legal problems which came to forefront on account of these activities. The emerging space powers, by early 1960s realized the dangers of unbridled freedoms and uncontrolled activities in the space milieu. This necessitated creation and adoption of new legal norms to ensure orderly behaviour in outer space, facilitate space exploration, and prevent transgression on the interests of other states. In the early 1960s, some rudimentary norms were accepted in the United Nations at the initiative of the Americans and the Soviets, though not strictly in the form of positive law. The General Assembly of the U.N. recommended certain principles of international law to be followed by states when engaged in space activities. This opened a new chapter in international law entitled 'space law'. In 1967, the principles already agreed in the form of the U.N. General Assembly resolutions were transformed into a multilateral

law-making treaty - the Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, Including the Moon and Other Celestial Bodies - which is commonly known as the Outer Space Treaty. Although this was a considerable achievement, it was by no means adequate to meet the demands and challenges of rapidly changing scenario of space exploration. The Outer Space Treaty was followed by four other treaties in course of time. The existing regime of space law regulates many aspects of space exploration. Today a variety of activities are conducted in and from outer space, viz. - telecommunications, navigation and aviation guidance, television and radio broadcasting, weather forecasting, military reconnaissance, remote sensing, etc. To a significant extent the existing regime of space law governs various aspects of space exploration, such as, international co-operation for scientific exploration, appropriation of resources of celestial bodies, questions of international liability for damage caused by space objects, rescue and return of astronauts and recovery and return of space objects in cases of space accidents, registration of space objects and exercise of jurisdiction and control in respect of them, certain kinds of military activities at certain places, protection and preservation of the natural environment of outer space and so forth. All the same, it will be seen on closer examination that the existing regime of space law is by no means perspicuous, complete and comprehensive so as to adequately regulate ascensive space activities.
The most striking feature of the contemporary space activities is their emphasis on strategic and military missions. It is observed that two out of three launching of spacecrafts serve military purposes. Undoubtedly, the advantages of military space missions are inestimable. Both the super powers have realized that outer space will play a determining role in a nuclear war, if ever fought. It has been aptly observed that the realm of outer space from the dawn of space age has been regarded by the space powers as an extension of the traditional theaters of military operations. With the traditional means of espionage proving inefficacious, satellite reconnaissance is now indispensable to both the super powers. Many other military uses of outer space are now viable on account of sophistication in space technology. As will be seen later, today the insatiable quest to exploit outer space for strategic gains and military supremacy has reached unprecedented height. There are enough manifestations of intentions of the super powers to warrant a conclusion that outer space is doomed to be a battleground for the future. A fierce competition for attaining military supremacy in outer


space is impending. This is undoubtedly a matter of vital concern for the international community. It may fairly be inferred that the super powers, by unabashedly pursuing their military interests in outer space, are taking advantage of the languid legal regime of outer space and are obfuscating those meagre regulations which have so far come into existence.

All through these years - which may approximately be reckoned as three decades from the dawn of space age - the space law was also progressing so as to bring within its ambit the expanding military activities in outer space. Some of these legal mandates pertain to certain types of military activities in outer space. It is significant to note that the two super powers have also bilaterally committed to abstain from certain activities of military nature in outer space.

One of the major concerns of international law in general is to proscribe use of force in international relations. To this end many legal controls have evolved. These will undoubtedly regulate use of force in and from space milieu. Nonetheless, certain obvious questions come to the forefront: How far the present technological advancements in space weaponry and other military ventures in outer space are compatible with obligations of states under general international law, the particular regime of space law, the bilateral treaty obligations, etc? Whether the existing regime of law is adequate to effectively deal...
the problems engendered by ascensive military interest in outer space? If not, what additional legal measures, and in what form are called for to regulate the activity? The present study dwells upon these and other related issues.

I.2. Statement of the Problem

As noted above, increasing military interest in outer space has brought forth multi-faceted problems. Many of these are political, strategic, technological, financial, legal and so forth. The researcher has attempted a legal examination of the issues which have surfaced on account of military activities in outer space. Hence the problem under study is stated as:

A STUDY OF INTERNATIONAL LAW WITH SPECIFIC REFERENCE TO MILITARY ACTIVITIES IN OUTER SPACE.

The important terms used in the statement of the problem and also in the present thesis elsewhere are defined, both, for the sake of clarification, as well as for explaining the scope of the study, as follows:

International Law:

In the present study, the term international law is used to mean 'public international law', namely, the law which governs and regulates relations between nations, nations and international organizations and to a lesser extent, nations and individuals.
Space Law:

The present century has witnessed a steady growth in various areas of international law. As a consequence, specialized branches of international law are emerging. One of the major branches that has emerged during the recent past is 'space law'. Space law may be defined as that branch of international law which contains orderly rules for the regulation of activities of states, international intergovernmental organizations, and private persons and entities in furtherance of exploration and uses of outer space and celestial bodies. It has also been defined as the law which regulates the relations between states, international organizations and private persons, arising from the exploration and use of outer space.

Military Activities:

Although it is very difficult to define this term with precision, yet without claiming to be exhaustive, a general statement regarding its nature may be ventured. Any activity in furtherance of, or as a part of the policy of a state relating to:

(a). armed forces, their composition, training, and efficiency;

(b) weaponry and weapons technology, testing, manufacturing and stockpiling of armaments, advancements in weapons technology;

(c) military preparedness, establishment of bases, fortifications, installations, etc., command, control and communication arrangements, movement of forces and location of armaments; and

(d) military intelligence and manoeuvring, ways and means of gathering information regarding military plans of adversaries;

- may be regarded as a military activity. Often terms of varying nature are used in the context of military activities such as aggressive or non-aggressive military activity; defensive or offensive military activity; peaceful military activity, etc. In the present study, however, the term military activity is used comprehensively so as to encompass within its purview all possible activities of military nature - aggressive, non-aggressive, peaceful or non-peaceful.

Outer Space:

The term 'outer space' has eluded definition ever since the dawn of space age for purely policy considerations, rather than legal. The issue of legal definition of outer space has been dealt with at length in Chapter II. Suffice it to mention at this juncture that outer space begins where air space ends. Air space is regulated by a distinct regime of aviation law. Outer space is also to be distinguished
from celestial bodies. The term cosmos is indicative of outer space and celestial bodies collectively. Space law as well as literature on space law avoids the term cosmos, for the two concepts of 'outer space' and 'celestial bodies' are firmly established. To avoid confusion, this accepted terminology is adhered to in the present work.

**Celestial Bodies:**

Celestial Bodies are all the cosmic bodies located in outer space excluding the earth, irrespective of their size and distance from the earth. These do not include the artificially placed man-made objects in outer space. Some space treaties use the wording 'Moon and other celestial bodies'. But this is incorrect practice because the moon itself is a celestial body. A specific reference to 'the moon' is uncalled for and may create confusion. The term 'celestial bodies' as used in the present work includes the moon. Sometimes the region of outer space 3000 nautical miles above the earth's surface is designated as 'deep space'. But in international legal instruments and literature, this kind of distinction is not followed.

**Satellites:**

The term satellites as used in the present study means

artificial earth satellites launched into varying orbits of the earth.

**Antisatellite Weapons**

These are weapons designed to destroy, damage or otherwise interfere with the normal functioning of a satellite launched into the earth orbit in outer space. As will be seen later, there could be variety of antisatellite weapons operable from land territory, high seas, airspace and outer space. These are abbreviated as 'ASAT' weapons.

**Anti-missile Weapons**

These are weapons designed to destroy or damage hostile missiles in the course of their flight trajectory while they are in air space or outer space. These could be land based, sea-based, air-based, or even space-based. These are also referred to as ballistic-missile-defence (BMD) weapons or anti-ballistic missile (ABM) weapons.

1.3. Significance of the Problem

The prolific growth in military activities in outer space with an emphasis on development of weapons for deployment and/or use in outer space is having an inhibiting and stifling effect on the maintenance of international peace, security and stability. From legal, political and social standpoints, these developments have a number of intriguing features. Some of the possible consequences of military escalation in outer space have been outlined below.
Much has been said and written regarding arms race and its pernicious consequences. Indubitably, the superpower rivalry in developing and amassing weapons of various nature and strength has reached a precarious stage. The dismal fact is that the globe on which we inhabit has been strewn with dangerous man-made artifices and substances which are capable of wiping out the civilization not only once, but several times. Progress towards disarmament is arduous. It is fallacious to expect that the superpowers will readily adopt and accept austere measures to halt the arms race, let alone to reverse it. History forefells that nations readily accept a ban on those weapons which are outmoded or have lost strategic significance in view of some other exotic weapons. The question of disarmament is being dealt with bilaterally as well as multi-laterally in the U.N. Conference on Disarmament. Now it is more than evident from the debates in the Conference on Disarmament that arms race in outer space is bound to have detrimental effect on the entire process of disarmament. Even at the dawn of space age it was feared that exploration and use of outer space for military purposes would impede the disarmament process. As will be seen later, this conclusion is substantiated by the intransigent stances taken by the

two super powers in international and bilateral negotiations.

(b) Two competing doctrines are believed to govern the principles of international security. These are - the doctrine of destruction and the doctrine of defence. The former, more accurately known as the doctrine of mutual assured destruction is based on the premise that if the potential adversaries are more or less matched in military capabilities and preparedness, a strategic stability will be achieved because of mutual deterrence. This is in accord with the old adage: *si vis pacem para bellum* (if you want peace, prepare for war). The doctrine of defence is based on the premise of 'mutual assured survival', even if there is an armed conflict. This doctrine relies on guaranteeing total protection from all kinds of weapons possessed by the potential adversary or adversaries.

It is essential to grasp the fact that the present stability is prevailing on account of the first doctrine of mutual assured destruction. However, with the emergence of space weapons programme for strategic defence, there is reversal in strategic thinking of the American leadership. This change is doomed to upset the strategic equilibrium and consequently encourage further arms build up. This is amply substantiated by a statement made by the Soviet President Mikhail Gorbachev...

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during the Washington Summit Meeting of 1987 with President Reagan that if the U.S. goes ahead with the space weapons programme for strategic defence, the Soviet Union will compensate by building more missiles to overwhelm the U.S. defence. In 1985, the Soviet Minister for Defence Marshal Sokolov warned that if the U.S. commences the militarization of space and threatens the existing strategic equilibrium, the Soviet Union will be left with no other choice but to adopt countermeasures to restore the situation.

(c) One further aspect of these developments is the direct and indirect involvement of states other than the superpowers in militarization of outer space. There is ample evidence to warrant a conclusion that many West European allies of the U.S., Israel and Japan are pulling their resources for advancement of space weapons technology. A dismal forecast is that this deleterious development will worsen the international relations.

(d) One very important offshoot of the developments pertaining to militarization of outer space is its adverse effect on peaceful exploration and uses of outer space. The resources of outer space and celestial bodies can be commercially exploited in the interest of all nations. Advances in technology relating to telecommunication, navigation guidance, remote sensing,

11. Red Star (Moscow), May 5, 1985, p.3.
meteorology and so forth can reap unprecedented advantages which will undoubtedly embellish the quality of life on the earth, provided that the leading space powers wholeheartedly co-operate with each other as well as help developing nations to make progress in space technology. But unfortunately, due to prevailing hostility between the Americans and the Soviets which is being further fuelled and fomented by impending programmes of space weapons, it is increasingly difficult to sustain a hope of that kind.

(e) Arms race in outer space is an expensive affair. Huge amounts are being spent inexorably. If these amounts are utilized for developmental projects and constructive, rather than destructive purposes, many problems haunting the mankind can be solved.

(f) It could normally be expected that the proposed military activities in outer space will heavily rely on deleterious fuels. There is increasing concern among the international community over use of nuclear power in outer space on account of its hazardous consequences on the space environment. Already there is a general movement aimed at adoption of certain measures to preserve and protect space environment. The recent plans of militarization of outer space are bound to exacerbate the problem.

12. Wadegaonkar, n.4, p.97.
India has argued in the Conference on Disarmament that space weapons systems could drastically affect the independence and sovereignty of the non-aligned states. It is feared that advanced space technology would give the space powers an unrestricted capacity to watch and manipulate world events from space, to conduct localized nuclear wars and in general to intervene militarily in the affairs of the third world countries. It must be admitted that these fears are not entirely misplaced.

These are but a few significant implications of militarization of outer space. From the foregoing, and as explained earlier, many legal issues come to the forefront. The researcher has, therefore, attempted a candid and comprehensive examination of the legal issues engendered by military activities in outer space.

I.4. Objectives of the Study

The researcher has conducted the present study with the following objectives:

(a) The first and foremost objective is to critically examine the legal regime governing space activities, comprising of both general international law as well
as specialized principles and rules devised to regulate space activities. A critical evaluation of the shortcomings in the contemporary regime is also attempted.

(b) The second objective is to examine the types, nature and basic characteristics of various military activities in outer space, both present as well as those which are impending. Such an examination is an indispensable prerequisite for examination of lawfulness of these activities, as well as to suggest legal measures for the future regulation of harmful activities.

(c) The next objective is to examine the lawfulness of the activities mentioned in (b) above on the basis of principles and rules referred to in (a) above. This examination will enable the researcher to propose certain additional legal measures to regulate the manifestly detrimental military activities in outer space.

(d) There is a strong opposition to militarization of outer space stemming from a genuine and sincere conviction shared by a large number of jurists, political scientists, politicians, nations, international organizations, etc. It is claimed that effective legal regulation of military activities in outer space will be conducive to international peace, security and stability. One of the objectives of the present study is to examine the leading proposals for legal controls in outer space which have emerged within and outside the
Finally, and as stated above, one of the purposes of the present study is to make concrete proposals for improvisation of the legal regime of outer space, which, as will be evident later, needs to be aggrandized to effectively inhibit escalation of an arms race in outer space, and make the earth a safer and better place to inhabit.

1.5. Procedure of Research and Methodology

It must be evident from the foregoing that the present study is doctrinal in nature. In order to examine various legal issues raised by military activities in outer space, the researcher has employed various techniques. Following is a brief survey of these techniques and nature of the present study.

(a) Analytical and interpretative technique:

The researcher has employed analytical technique insofar as examination of international law in general and space law in particular are concerned. Thus, various facets of the legal regime of outer space have been analysed and interpreted so as to deduce the rules which regulate activities of military nature in outer space.

(b) Critical or normative technique:

A mere analysis of the contemporary legal regime will
not suffice. Since the present study is also prescriptive, a censorious approach to highlight the weaknesses in the existing regime is necessary here. Hence the researcher has applied critical or normative technique as well.

(c) **Prescriptive approach** :

The inquiry under consideration would be incomplete and inconclusive unless concrete, albeit pragmatic, suggestions for improvisation of the existing legal regime are offered. This has been done on the basis of analytical and critical evaluation of applicable law. Therefore, the present study is also prescriptive.

(d) **Interdisciplinary nature of the study** :

The study of international affairs invariably trenches on such disciplines as politics, geo-politics, economics, history, law, diplomacy, defence and strategic studies, and above all, science and technology. Many a times and oft international legal studies involve a recourse to other disciplines which are intimately concerned with and which invariably influence the process of legal development. The researcher has examined political, strategic, scientific and technological aspects of military activities in outer space insofar as such a recourse is imperative for a contextual, meaningful and productive examination of the issues under consideration. Thus the necessary reference and recourse to disciplines other than law make the present study, to some extent, interdisciplinary.
(e) **Sources of the data collected**:

(i) **Legal** : International conventions, bilateral treaties, recognized works and treatises.

(ii) **Scientific and technological aspects** : Scientific journals and periodicals of acknowledged repute.

(iii) **Political developments** : Official publications (periodicals and documents published by governmental agencies); the United Nations Documents and publications; official press releases; joint communiqué; authoritative commentaries in recognized political science periodicals; etc.

I.6. **Organization of the Research Work**

**Chapter I** : This chapter deals with the general background of the study; its significance and objectives; statement of the problem; definitions of important terms; procedure and nature of research; techniques employed; and organization of the study.

**Chapter II** : An analytical and critical examination and evaluation of the legal regime of outer space insofar as military activities are concerned is attempted in this chapter.

**Chapter III** : This chapter deals with the examination of types, nature and features of present and projected military activities in outer space. This examination, in the main, deals with scientific and technological aspects of these
activities.

Chapter IV: This chapter is devoted to the legal examination of activities outlined in Chapter III on the basis of applicable law as examined in Chapter II.

Chapter V: This chapter examines various proposals so far made by the United Nations organs and some governments, private organizations etc. for legal regulation of military activities in outer space.

Chapter VI: The final chapter deals with the findings of the researcher in the form of conclusions. Since the conclusions evince that the contemporary legal regime needs some major changes, the researcher has recommended certain legal measures to improvise the existing regime.

Thus, the concise scheme of chapterization is as under:

Chapter I: Introduction
Chapter II: Legal Regime of Outer Space and Military Activities
Chapter III: Military Activities in Outer Space: Projects, Progress and Prospects.
Chapter IV: Legal Examination of Outer Space Military Activities.
Chapter V: Legal Regulation of Outer Space Military Activities: Proposals, Problems and Progress.
Chapter VI: Legal Regulation of Outer Space Military Activities: Conclusions and Recommendations.