WEAPONISATION OF OUTER SPACE AND NATIONAL SECURITY: FAULTLINES IN THE LAW

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Man has arrived at the final frontier and further advances in space technology are happening rapidly. As a result, multi-dimensional exploration and exploitation of outer space fall in the realm of feasibility—technically, economically and politically. Accordingly forays into outer space are increasing exponentially and use of this medium is becoming progressively extensive. This leads to an urgent need for maintenance of proper order in outer space through suitable laws governing its use without conflict and with cooperation.

The existing legal regime of outer space permits equal freedom to all nations for scientific exploration and for peaceful uses of outer space and celestial bodies. But only a few nations have the financial capacity and technological capability to undertake outer space ventures. Fortunately, India is a space-faring nation that has taken advantage of space activities for the welfare of its people and to improve their quality of life. India has fairly shared the benefits of scientific experimentation of, and with, the world at large. It, thus, has viable stakes in the regulation of space activities and the law of outer space.

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There is no gainsaying the fact that, historically, activities in outer space were an offshoot of the arms race and a corollary to the development of missile defence projects like anti-ballistic missiles (ABMs) and anti-satellites (ASATs), by the superpowers, controlled and operated under the military domain. Hence, it seems natural that these powers should have had futuristic plans to exploit outer space for their national defence imperatives or security cover for their strategic allies. Not surprisingly, they have already undertaken programmes, and have more in the pipeline, for offensive and defensive systems. In either case, the risk of weaponisation of outer space is rife and rampant.

In contrast, as the number of countries using space for developmental needs grows, not all of them will have the capability to build effective defence mechanisms to ward off attacks from outer space. Even those that do place weapons in space cannot escape the vulnerabilities since the time and direction of attack would be of the enemy's choosing, thus, leaving little reaction time for detection of the assault and activation of defence instrumentalities to neutralise the weapons before they hit the target. Incidentally, the scenario takes the parameters at face value and does not doubt the efficacy, or precision, or success rate of the ABMs or ASAT weapons.

Further, it is also important to factor in the necessity of engagement for neutralisation over that part of the globe where it shall have the least harmful impact on man and the planet earth. One can only wonder if such precision and control can possibly be exercised and achieved in real-time situations. This predicament can be extrapolated for the attacker to consider whether the weapons of mass destruction (WMDs) released from a space station or orbiting platform would have the precision to so accurately home onto the target that it would cause no collateral damage to unintended areas and innocent beings. Or what would be the level of certainty and safety that such weapon

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would not suffer a malfunction or a technical failure to become a rogue satellite and, thus, cause unimaginable damage in outer space itself, with unintended consequences, or hit other than the programmed target on the earth, and cause considerable grief and regret? This paradigm certainty evades an exact answer and no guess shall be totally wrong.

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Ironically, the illusion of an impenetrable defence shield stems from a belief that there are purely military answers to problems of security, whether on land, sea, air or outer space. In the armed forces, it is a cliché that political policy ends where military strategy begins. But this premise is outdated in the 21st century international order where political overtures and multi-track diplomacy are equally good and efficacious alternatives and there is greater need for a synergistic approach. Responsible nations realise that a war is a war and even when waged through outer space may leave no reason for the victor to rejoice because second strike capabilities, used in reprisal or revenge, may be equally lethal and devastating. The subsequent loneliness of the winner, if surviving, may only be suffocating and his repentance ageless.

CURRENT SCENARIO IN OUTER SPACE

It is now quite clear that space assets can be used as real-time informers for war-theatre dominance and, thus, can really influence the outcome of battles as also facilitate monitoring of combat area operations. The importance of space satellites for their speed of surveillance, precision in pinpointing enemy positions, accuracy of information and transmission of data back to the earth station for analysis and conversion to command instructions and accordingly influence operations in a matter of seconds is of tremendous and decisive advantage. The synergy, thus, created in collaboration with earth-based systems can be amazing. Consequently, concepts of command and control have undergone a sea-change. Speedy decision-making based on real-

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time information is of the essence and precision targeting with smart munitions helps minimise collateral damage. No wonder, outer space provides the traditional high ground for observation with spectacular advantages in augmenting the military might. And this temptation is difficult to resist.

Today, it is a *fait accompli* that outer space has been militarised. Satellites offering dual use, where either the military lends facilities for civilian utilities or private assets in outer space partly undertake military missions, are common and numerous. Thus, a separation of exclusive military and purely civilian satellites is difficult by definition and may even be misleading. To compound the situation further, the number of mixed assets in outer space is likely to grow exponentially in the future. The stage where outer space was a protected sanctuary for scientific exploration and peaceful activities is long over. Space has been "militarised" already by both military and commercial satellites. And there is clamour for broad-based and enhanced defence capabilities and diversified service products from space assets. It would, therefore, be naive and futile to expect to roll back the clock.

It may instead seem more sensible and fruitful to urge, for the future, a total and absolute ban on active strike vehicles, loosely called "shooters" to operate in and from outer space. These vehicles could be of any kind or denomination, but with military connotation and for strategic or tactical offensive purpose, operating from or through the jurisdiction of outer space so as to de-orbit for an attack on an earth-bound target or hit another asset in space. These may have the capability to directly launch loaded projectiles or space cannons or lay space mines or shoot directed-energy beams at targets on the earth for destruction, with an aim that could be offensive or defensive. These shall bear pure military strike usage of hit-to-kill and would not be expected to render any civilian utilities. A few examples of these could be the US ABM system or ASAT system.. The Soviet intercontinental ballistic missile (ICBM) instrumentality called fractional orbital bombardment system (FOBS)

or polyus orbital weapon system, with self-evasive sensor blinding laser, would also have fallen into this category.[1] The prohibition should include testing and deployment also. Similarly, the vice versa, in which high powered ground-based (includes air and sea) laser beams that can be used to attack and destroy satellites orbiting, emplaced or stationed in outer space should also be banned with equal vehemence.

For a better understanding of the origin and purpose of non-strike or passive satellites, it would help to list the popular classification related to their non-lethal use. These generally fall into two categories –communication satellites and sensor satellites—that are primarily for knowledge gathering or situational awareness. These can easily be exploited for both military and commercial value. The military roles would comprise reconnaissance, surveillance and communications. Other uses may be to virtually connect the battle ground to the combat commanders with real-time information through multi-media facilities. Such a high-speed informational grid and dedicated internet already exist and are operational for the US military. These are still considered as auxiliary aids for defensive assistance though these do augment power synergy. Hence, these are not dubbed as offensive-strike space weaponry. Reliable estimates categorically put these at about 200 such passive assets in outer space, while according to best guesses, it perhaps, seems that so far there are no shooters or strike weapons in space.[2] However, accelerated development work is currently under way for space-operations vehicles, space-based radar and laser, space cannons, space mines (nuclear or conventional) and adaptive optics. Breakthroughs are in the offing. Significant accomplishments are also expected in the field of EELV, that is, evolved expendable launch vehicles.

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1. SALT-II Treaty of 1979 prohibited the deployment of this system.
2. Information on this subject matter is a classified state secret and is rarely made public by governments. This is only an authentic estimate. For latest details, please refer *SIPRI Yearbook*.

Amongst the civilian uses, the communication satellites facilitate GPS (global positioning system) which provides precision in time and positional coordinates. This service is now widely used for navigational purposes and traffic control in the air, at sea and on the ground. Its uses seem to be versatile and ever expanding. The military has also made copious use of this innocuous facility for GPS-aided weapons and GPS-aided guided munitions as also fighter control in battle areas, particularly in the Kosovo War and the Iraq conflict. GPS is aptly suited for monitoring ground troop movements as well as search and rescue missions because of its high accuracy on grid-references.

The US military refers to this system as NAVSTAR-GPS or navigational signal timing and ranging global positioning system that provides exact location and highly accurate time reference almost anywhere on the earth. This network uses a constellation of 24 satellites operating in an intermediate circular orbit (ICO). This system was made operational in 1989 and is controlled and maintained by the US Department of Defence. This facility is provided free of charge worldwide but was subjected to the doctrine of selective availability by a presidential directive announced on May 1, 2000. This proclaimed that the facility can be restricted, selectively jammed or denied, even for civil purposes, during belligerence or global alert issued by the US. The European Community is wary of such a possibility and has expressed serious concerns resulting in efforts to develop the Galileo Positioning System for the commercial and civilian needs of the European Community. Russia also operates an independent system called GLONASS, since 2004, but with limited and specific usefulness.[3]

Another usefulness of communication satellites lies in cellular networks that are progressively providing wireless, multi-media facilities, that, thus, afford digital voice transmissions and near-real-time data transfers. The military makes use of these systems for communication eavesdropping signal intelligence (SIGINT) or for covert communications human intelligence (HUMINT). Such military operations exist in peace-time as well as in war-

3. From Wikipedia.

time. Thus, space communication, indeed, covers a wide spectrum of service products. Its further applications and other ramifications are expected to grow exponentially and that too, very soon.

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The second category comprises sensor satellites, like SBIRS (space-based infra-red systems). These bear peaceful uses of imagery for remote sensing, geodetic surveys, mapping and data for meteorological conditions. These are also being operated as space-sensor-platforms for military reconnaissance, surveillance and early warning systems to ensure a robust national defence missile cover. The existence of espionage satellites is tacitly accepted by both superpowers and is so enshrined in the SALT-I agreements. That military intelligence uses high-resolution photography for imaging intelligence (IMINT) is also well known. Thus, such satellites contribute to battle-characterisation, technical intelligence and overall space dominance with extra-refined information and speedy crunching. The space-based laser system, currently under development and proving, is certainly a reality for the future space-weapons arsenals. It is anticipated that it shall be able to deliver and inflict horrendous lethal punch.

LEGAL ORDER IN OUTER SPACE

It is heartening that the two superpowers should have shown great understanding during the tense Cold War years, reposed reasonable confidence in each other and built mutual trust to negotiate and conclude some of the most contentious treaties that strictly prohibit military activities and placement of WMD in outer space. Mankind, perhaps, realised its stakes in MAD (mutually assured destruction) acts and appreciated the advantages of cooperative living and common survival.

Regimen of the Outer Space Treaty

The basic legal regime of outer space is enshrined in the Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space,

Including the Moon and Other Celestial Bodies, popularly called the Space Treaty of 1967. The general tenets of the treaty, as relevant for our purpose, can be paraphrased for analysis as follows[4]:

1. Outer space, including the moon and other celestial bodies, shall be free for scientific investigation, exploration and use by all states without discrimination and on the basis of equality and shall facilitate and encourage international cooperation (Article I).
2. Such exploration and use of outer space shall be carried out for the benefit and in the interest of all countries and shall be the province of all mankind (Article I).
3. Outer space, including the moon and celestial bodies, is not subject to national appropriation by claim of sovereignty, by means of use or occupation, or by any other means (Article II).
4. Activities in outer space, including the moon and other celestial bodies, shall be carried out in accordance with international law, including the charter of the United Nations, in the interest of maintaining international peace and security (Article III).
5. Parties shall not place in orbit around the earth any objects carrying nuclear weapons or any other kinds of weapons of mass destruction, install such weapons on celestial bodies, or station weapons in outer space in any other manner (Article IV).
6. Activities in outer space shall be guided by the principles of cooperation and mutual assistance, with due regard to the corresponding interests of all other parties and to avoid their harmful contamination and also adverse changes in the environment of the earth (Article IX).

Complementary Provisions in Other Treaties

The Moon Treaty also desires "to prevent the moon from becoming an area of international conflict" and declares that all state parties shall use it "exclusively for peaceful purposes." This, by its very text and syntax, precludes any hostile or conflictive acts or threat thereof in relation to the earth and the moon and

4. The text of the treaty Articles is not complete. Only relevant extracts have been taken.

"shall include orbits around or other trajectories to or around it."[5] Interestingly, the Moon Treaty also ordains that parties "not place in orbit around in other trajectory to or around the moon, objects carrying nuclear weapons or any other kinds of weapons of mass destruction or place or use such weapons on or in the moon." This prohibition appears broader and stricter because it further forbids "[t]he establishment of military bases…the testing of any type of weapons and the conduct of military manoeuvres on the moon…" Of course, the use of military personnel, equipment or facility is not banned but is allowed only "for scientific research or for any other peaceful purposes…" on the moon.

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It would also be pertinent to mention other allied treaties or agreements that, in tandem, prohibit weaponisation of outer space on any one of its aspects or purposes. In this context, the ABM Treaty 1972 between the US and the USSR that put a moratorium on the development and testing of anti-ballistic missiles deserves to be alluded to. This treaty placed limits on deployment of ABMs at *status quo* as these missiles operate through the jurisdiction of outer space. Incidentally, the technology involved in such systems was nascent then, and shaky, at best. But the agreement was futuristic and, of course, laudable for its noble intent and mutual assurance. The US has reneged on this since 2002.

Later, when ICBMs came of age, and the debate on Star Wars was in heat with the possibility of Soviet FOBS (fractional orbital missiles) becoming functional, the SALT-II Treaty was signed in 1979. This specifically provided, "Each party undertakes not to develop, test or deploy…..systems for placing into earth orbit nuclear weapons or any other kind of weapons of mass destruction, including fractional orbital missiles." This had assured the world

5. The Moon Treaty is the popular abbreviation for the Agreement Governing the Activities of States on the Moon and Other Celestial Bodies of 1979. This was adopted by the UN General Assembly by Resolution 34/68 of December 5, 1979. Text within brackets has been taken from the treaty.

with much relief that MAD had been routed and averted for the time being. This treaty endorsed what was there in the Space Treaty of 1967 (Article IV) and reflected the contemporary thinking enshrined in the Moon Treaty of 1979 (Article 3).

Evaluation of Legal Safeguards

Despite a specific and strict ban on such military uses and emplacement of weapons of mass destruction in outer space, the existing corpus of space law grants some special permission and leaves certain grey areas that are exposed to promiscuous interpretation or lend themselves to ambiguous meaning. These create chinks and chasms in the legal shield of outer space. As a result, some strategic defence projects are being experimented with, and activities undertaken, by a few chauvinistic space powers, ostensibly, for legitimate reasons or patently licit purposes yet their *bonafides* are in the umbra of doubt. Hence, the faultlines in the law of outer space are becoming easily discernible and more prominent. Let us consider a few examples to buttress this point and vindicate the above thesis.

First, the Outer Space Treaty (OST) asserts that outer space, etc "shall be the province of all mankind" and permits exploration and use therein "for the benefit of and in the interest of all countries" and with "freedom of scientific investigation" to "facilitate and encourage international cooperation." Such laudable clauses in the avowed interest of world peace hardly brook any breach or use of outer space for ignoble causes of star wars or aiming targets on the earth from heights in outer space. The illegality in placement of WMDs in orbit or space stations or platforms in outer space is evident and crystal clear. Weaponisation can, by no stretch of the imagination, be construed "for the benefit of and in the interest of all countries" or that it would "facilitate and encourage international cooperation." The fallacy is apparent that

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such offensive activities having a destructive effect undoubtedly violate two fundamental precepts of the treaty – the peaceful purpose and the benefit of mankind clause. Therefore, enhancement and institutionalisation of the primacy of the mandated norms have become vitally important and of dire urgency. Else, extinction stares us in the face.

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Secondly, in the context of the Outer Space Treaty, the concept of cooperation and common security assumes obligatory importance. This obligation gets endorsed, in the post-Cold War era, by the Joint US-Russian Declaration adopted at the summit of May 23-24, 2002, wherein both sides undertook to cooperate to meet security challenges and embark on a cooperative strategic transition towards common security. It seemed a noble vow and a solemn pledge by the two superpowers. It was tantamount to an expression of their earnest desire for sincere endeavours in this direction and can be deemed to bear effect as *erga omnes*. This declaration should have realised into "mutual assured security" and ensured *de facto* halt of offensive military uses of extraterrestrial space.

It can also be argued that the cooperation and "transparency" clause of Article X of the treaty that assures "an opportunity to observe the flight of space objects launched" by other states, cannot accommodate the secrecy of clandestine offensive activities. Moreover, the mandate of "peaceful activities" under the treaty does not brook security threats or aggressive acts in or from outer space. Therefore, pursuit of cooperative overtures towards common security in outer space, as a strategic initiative, casts a legal obligation that by implication carries the force of customary space law.

Thirdly, OST prohibits placement of weapons of mass destruction in the earth's orbit or on celestial bodies. But some scholars have pointed out that though placement is banned, yet constant orbital does not, *in strictu sensu,* brook this embargo as it does not constitute placement. The concept of placement is relational in geographical dimension and controlled orbital

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disturbs its relevance. Further, nor do conventional bombs of earth-vintage (KKVs),[6] that are ultimately intended to be effective for damage on the earth and to earthlings, get banned by this narrow provision. The cleavage is, thus, wide open and revealing.

Fourthly, OST ordains that activities in outer space, on the moon and other celestial bodies shall be carried out in accordance with international law, in particular the Charter of the United Nations, et al, in the interest of maintaining international peace and security. And this law permits aggression in self-defence or even under threat thereof.[7] Legal experts have long wrestled with the true meaning and actual intent of the self-defence clause. The erudition of the scholars is commendable, but they tend to forget their professional burden implied in the maxim *ex vinculus sermocinatur*. This enjoins that the treaty must be interpreted in good faith and in its ordinary meaning. This duty is also cast under the Vienna Convention on the Law of Treaties, 1969. We can ignore this prime principle only by betrayal of our conscience and at peril to humanity.

Over the years, perceptions of self-defence have changed and notions of threat have blurred. There has been, in the past, little condemnation of pre-emptive attacks nor have aggressors shown any compunction in flouting the universal norm in the "principle of proportionality" in relation to the use of force. That the US could use its armed forces unilaterally or in concert when it felt threatened by the phantomised potential of Iraq or instability in Kosovo clearly exhibits that superiority in military prowess is the sole argument and justification. Spatial separation and geographical distances tend to lose their relevance. Even the UN could not live up to its ideal objectives. International conscience seems to have been routed badly and torn asunder.

Fifthly, it is of interest that the Moon Treaty[8] also endorses the above

6. Abbreviation of kinetic-energy kill vehicles.

7. Article 51 of the UN Charter

8. Agreement Governing the Activities of States on the Moon and Other Celestial Bodies, 1979. It was adopted by the General Assembly by Resolution on December 5, 1979. It is popularly referred to as the Moon Treaty.

provisions of the Space Treaty and other international agreements. In fact, it further asserts "…establishment of military bases, installations and fortifications, the testing of any type of weapons and the conduct of military manoeuvres on the moon shall be forbidden." But the Moon Treaty simultaneously permits that "… use of military personnel for scientific research or for any other peaceful purposes shall not be prohibited. The use of any equipment or facility necessary for peaceful exploration and use of the moon shall also not be prohibited." This concession has endemic potential for masking illegitimate activities in outer space and on celestial bodies. The paradox is clear and manifest. The inclusion of this appears advertent with mischief ingrained therein. And in the absence of verifiable controls and guarantees as well as effective monitoring by regular inspections by an autonomous agency, even promiscuous deployment of military personnel would be deemed licit and unobjectionable. Hence, this provision needs suitable riders to stem clandestine acts or obtain stricter assurances.

Sixthly, terrorism is another new dimension to the safety of human life and assets in outer space as well as security of states on the earth. The number of rogue organisations and states sympathetic to them, overtly or covertly, are multiplying rather fast. It has globally afflicted the human psyche and instilled fear in the minds of people. The apprehensions of the US in this regard are manifest in their paranoia and constant craving for impregnable security mechanisms. Typically, the terrorist strikes can be of their choosing of time, place and method. This threat is likely to permeate space activities and would become real and tangible sooner than expected. Hence, the world community needs to be alert against such contingencies and is urged to be heuristic in its thinking to prevent such incidents. Because the damage caused by such acts may be substantial and irreversible in outer space or on the celestial bodies, with resultant adverse impact on life and ecology on the earth. Fortunately, this threat is yet to become perceptibly manifest, but proactive thinking and cautious vigil are called for.

Lastly, another deficiency that assumes great importance is the absence of definitions in the treaties relating to outer space and celestial bodies. It is common

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knowledge in diplomatic circles that definitions are the most difficult part of negotiation in any treaty, yet their necessity cannot be underrated. It is axiomatic that even the best of legal statutes can be defeated in their intent and purpose due to sheer lack of definitions of operative words or for any ambiguity therein. The same delinquency prevails in the Space Treaty that makes it susceptible to equivocal interpretation and, at times, untenable construction of its provisions resulting in foiling the laudable motives of the treaty. Of course, undue promiscuity in legal interpretation, in utter disregard of the very objects of the treaty, is indeed highly reprehensible yet the state parties do get tempted in their vested interest and own advancement.

The generic terms and phrases used in the Space Treaty are outer space, weapons of mass destruction, placement in orbit, demarcation of outer space, peaceful purposes, militarisation of the moon and other such operative terms. For example, the pith and substance of this treaty is to guarantee undisturbed activities for peaceful uses of, and scientific exploration in, outer space with equal opportunity and freedom to all countries. Normally, this basic tenet of the treaty succumbs to no ambiguity whatsoever, but unfortunately, many activities in contravention of this stated principle have taken place. Powerful nations have clearly failed in the noble mission presented by the UN and blasphemied their sacred commitment to mankind. In fact, it should be considered as utter defiance of a legal commandment, with attendant consequences.

A FEW PROPOSALS

Amendment of Space Treaty

From the foregoing analysis, a few proposals can be deduced. First, the Space Treaty should be amended to incorporate a clause in the first paragraph of Article IV. The proposed clause should strictly prohibit use of outer space by any vehicle intending to aim or shoot-to-kill any target on the earth, whether

for defensive or offensive purpose. This restriction should be absolute so that man keeps his mischievous activities confined to the immediate limit of the atmosphere contiguous to the earth. The precincts of outer space should be kept pure from the banal intent of man and "sanctuarised" for purely peaceful activities and knowledge-driven scientific explorations in the interest of international peace and for the common benefit of mankind. This should rightly constitute an agenda for the UN.

In an idealist vein, it could be further suggested that no weapon or any other instrumentality should be deployed and activated from any base located on the earth to shoot at, or immobilise, or destroy any vehicle in orbit or stationed in outer space. This would mean that no assets operating in outer space shall be aimed at from the land, sea or air. The inverse of this proposition could be deviously interpreted to imply that aggressive actions to neutralise threats or offensive activities in outer space could possibly be initiated by vehicles operating in outer space. But this again is not permissible. It is a travesty of the tenets of the Space Treaty that permits only peaceful activities in outer space.

The above proposal, however, begs a question that has remained unanswered so far. This relates to the demarcation of the boundary between air space and outer space. Long and tortuous negotiations have repeatedly failed to throw up a consensus. Diverse criteria have been mooted but rejected for different reasons. For example, the altitude where the earth's gravity ceases to exist and weight loses its manifestation. It appears rational and objective but gets tenuous due to variations in gravity at the poles and over other parts of the globe. Another standard for this frontier was based on minimised usefulness of ambient air as an agent for combustion and generation of energy. Though the consideration appears pragmatic, the variability in the thickness of the air envelope makes it unsuitable due to the lack of uniform altitude.

Yet another desideratum can be the theory of perigee of satellites. This fixes the boundary where projectiles can begin to move without the help of air, that is, by their own force of inertia. Inversely, it approximates the height where the density of air is so reduced that aerodynamic displacement ceases

to exist. This criterion appears practical but the limit becomes variable as it is affected by the rotation of the earth and unequal distribution of the masses of water and land on the surface of the earth.

Soviet scholars have suggested the fixation of vertical air boundary on the basis of defence and security imperatives. But ever-advancing arms technology renders such limit impermanent and obsolete too soon. The Western pedagogues have recommended the altitude demarcation consistent with the power of the arm or the ability of the nation to patrol and monitor or exercise effective control over its sovereign air space. This concept is patently discriminatory and bears endemic ambiguity. The limit becomes differential due to varying levels of technological development in different countries. It, thus, lacks uniformity and seems speculative.[9]

There are also zonal theories based on geo-physical characteristics of the air space where efficient navigation is possible and outer space that is deficient and non-navigable. These postulate the existence of several distinguishable zones that can be indisputably delineated. But scientific reality belies this claim. Hence, the most pragmatic suggestion comes from von Karman, who recommends, based on Kepler's Laws, the fixing of a primary jurisdiction line at an altitude of 100 km. Despite its weaknesses for scientific and political reasons, it can safely be taken as a starting point till greater consensus is evolved and may be fixed as an *ad interim* boundary between the air space and outer space. Even if a margin for operational error has to be conceded, this height would be fairly protective of the true outer space and would considerably reduce offensive incursions as also provide a benchmark to identify violations and label them as intrusions in defiance of the law.

Greater Role for the United Nations

The next proposal relates to according of a greater role to the UN in the regulation and management of activities in outer space so as to render the concerns about national security redundant and defunct. In the space age,

9. Also refer G.S. Sachdeva, "Sovereignty in the Air—A Legal Perspective," *Indian Journal of International Law*, vol. 22, no. 3&4, July-December,1982, pp. 417-418.

one is not comfortable articulating about national security. It seems petty and smacks of parochialism. Astronauts have repeatedly asserted that the planet earth looks like a small ball when viewed from a not too distant earth orbit and political lines separating countries are hardly discernible. Yet the entrenched existence of political divisions on the globe cannot be wished away so easily. It could only be an evolutional change and it may be generational.

Further, the concept of national security stems from political sovereignty that was zealously guarded by nation-states of medieval times. In the contemporary world scenario, the notion of absolute sovereignty has been undermined and diluted for reasons of economic globalisation, advances in communications and information technology, space satellites impinging on national air space and other compromises on polity in a skewed multipolar world. The complexion of national sovereignty has drastically altered and its dogmatic adherence no longer prevails. A logical deduction thus makes national security a misnomer in relation to a "cosmosised" earth. Man needs to outgrow such narrow connotations and constricted mindset to revert to his generic roots of mankind.

With fervent hope, one can imagine the UN in an ideal role of world government presiding over a stable world order. It may not irk to reiterate here that the Space Treaty ordains that outer space and celestial bodies shall not be subject to national appropriation by claims of sovereignty and shall be the province of all mankind. Further, all activities therein are to be carried out for the benefit and in the interest of all countries. This idea approximates to the common heritage, or better still co-parcenary, of mankind, and trusteeship of this corpus can confidently be put with the UN to be acted upon ideally and in the broader interest of mankind as a whole. It may also be mooted to extend the concept of eminent domain of mankind over outer space and celestial bodies and the UN be appointed as a regulator of space affairs. The idea may appear rather abstract, yet it can be debated and opinion formulated. This may also smack of an exalted ego of man, yet good governance of outer space too is a solemn duty towards God and humanity. Leaving the domain of outer space to chaotic competition, unsustainable commercial exploitation, unchecked

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weaponisation and fierce military intrusions may usher in anarchy, with ensuing suicide of the human race. Therefore, we are duty bound to establish good public order in outer space, and under the present circumstances, till a better alternative is evolved, the UN is aptly suited for the job.

Be that as it may, the UN definitely needs to assume greater responsibility in regulation and management of space activities. The secretary general of the UN, through OOSA (Office Of Space Affairs), as deputed in various treaties relating to outer space, cannot effectively discharge the assigned duties and growing responsibilities. Therefore, there is dire need for a specialised organ that may be called the World Space Organisation (WSO). In fact, in the late Seventies of the last century, a move was afoot to establish an International Satellite Monitoring Agency (ISMA), which has not yet had a tryst with success. The then proposed role and functions of the ISMA, in the contemporary scenario, appear limited and unequal to the overgrown task. Hence, the impetus for ISMA may merge into the WSO as a full organ of the UN.

The WSO may contemplate to work on the lines of the International Civil Aviation Organisation (ICAO), but the different legal regime of outer space, registration of space vehicles launched, dissemination of information, need for space traffic control, curbs on space pollution, requirements of inspection of facilities in space and celestial bodies, issue of IPE or space travel documents and other cognate duties amply justify the need for a separate organ of the UN. This organisation needs to bear a futuristic perception, engage in prudent management, ensure transparency in its actions and judiciousness in the exercise of sanctions. The urgency for the establishment of such an organisation is obvious and its functioning should commence the soonest, lest it is overtaken by events and presented a *fait accompli* with a heavy burden of pollution and rogue activities in outer space. Wisdom dictates a prompt and suitable response. It is a vision that deserves to be evolved and nurtured.

As a corollary to this proposal, it may be suggested that the UN or WSO may consider levying a pollution cess on space vehicles launched into outer space. The quantum of cess may be determined on the basis of the vintage of the technology and its sheddable stages, weight or life of the satellite or the purpose of its mission, whether public, private, commercial or military. The justification of cess stems from the fact that space vehicles make use of the heritage of mankind and enter an area that is the province of entire mankind. We owe its sustainability to our future generations also. We should not defile this trust. The cess funds so generated could be used to encourage development of technologies for retrieval of defunct satellites or scavenging of outer space or sustenance of the space environment. This would help reduce chances of accidents and make space travel safer.

Active Diplomatic Initiatives

The anguished concern about weaponisation of outer space is genuine and worldwide. The angst of self-annihilation even by an inadvertent mistake or chance occurrence is real and looming large on mankind. This threat can only be abolished by conscious acts of "de-weaponisation" and strict adherence to laws. The choice is ours to make, either with sanity and sagaciousness or foolhardy egotism.

There are some movements that are trying to infuse sense and sensitivity about the dangers of an arms race in outer space but their efforts need encouragement and augmentation from all concerned. For example, a Space Preservation Treaty was proposed in the UN General Assembly on December 6, 2006.[10] This treaty enjoins a ban on all space weapons in an endeavour preventan an arms race in outer space. Of course, the embargo is total and wide ranging but a chronic ailment needs equally drastic remedies because placebos cannot cure an acute malady. The opposition of the US to this resolution was to be naturally expected but it was consistent and more vehement than a symbolic ritual. Obviously, then, one cannot be optimistic

10. Resolution presented at Meeting 67 of Session 61. Verbatim Report is available on http://www.undemocracy.com.

about its ratification in the near future. More lobbying and greater convincing skills are wanted.

Another recent step in this direction was taken by Russia and China when they sponsored a draft Treaty on the Prevention of Placement of Weapons in Outer Space, the Threat or Use of Force Against Outer Space Objects in the UN General Assembly in February 2008. The treaty is worded in simple terms, directed clearly at the objective of preventing placement of weapons in space, yet it falls short of the ultimate aim of total disarmament in outer space. Also, while it seems fairly unambiguous because the operative words have been defined, it nevertheless, does not prohibit the research and development of anti-satellite weapons. Also, it is silent on the use of weapons from the ground, such as jammers or blinding lasers, to interfere with the functioning of satellites in orbit. Further, though this proposal assures that it does not impede the right to explore and use space for scientific and peaceful activities, it also proposes to restrict the sovereign right to self-defence in accordance with Article 51 of the Charter of the UN. Experience has shown that promiscuous invocation of this Article through liberal interpretation leads to unjust rationale that can elicit dangerous consequences whether it be on earth or in outer space or on celestial bodies. The treaty evoked no more than a lukewarm response at the Conference on Disarmament, the main negotiating body for such treaties. The US, meanwhile, has been consistent in insisting that it visualises no impending threat of weaponisation of space and, hence, dismisses the need for any action in the direction.

However, it is incumbent on the international community that for safe and unhindered access to outer space for peaceful uses, governments are prodded into acting before the dangers are actually upon us. As the old adage goes, it is easier to achieve collectively and equally easy to nip an evil in the bud rather than let the dragon rear its head and then use the knight's armour. Space weaponisation is still in the budding process. We only need to select our options sagaciously and strive with unity.

CONCLUSION

It is understandable that the law cannot be prescient of technological advancement and consequent impact on human life. Yet, it need not be a laggard and should be responsive to likely contingencies before any damage is caused. Therefore, space law needs to be proactive and futuristic in its reach and gamut. Outer space is being explored and experimented in at a very fast speed and unexpected eventualities are unfolding themselves at a rapid pace. The relevant law should march in step, anticipate ensuing moves to provide appropriate solutions on time, rather than offer lame regrets later. The legal fraternity needs to expedite treaty-making processes and compress the preceding negotiations on contentious issues. It will mend the reputation of using dilatory tactics so often and not always for *bona fide* reasons.

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The thesis has been vindicated that the law of outer space is loose, nebulous and porous. The faultlines in the law and the grey areas, exposed to divergent interpretations, have been briefly demonstrated. Of course, this list is not comprehensive. An effort has been made to analyse and reveal the shortcomings of the space law, to devise remedies to plug the loopholes, strengthen the text of treaties and fill up chasms so wide and open. But the one point that comes up in sharp relief is that man must realise the impending disasters consequent to his even inadvertent indiscretion. Man must truly appreciate his collective stakes and common responsibility in survival that call for cooperation and not mindless competition. We owe this wisdom to our future generations, lest they fie upon us, perchance of their existence. On a realistic note, it may be stated that international law may not usher mankind into a heaven on earth yet it can surely save humanity from slipping into a veritable hell on earth.