

DEMILITARISATION OF OUTER SPACE

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Abstract

This article wishes to identify and examine those regulations of space law, and in general of the international order, that contribute to demilitarisation of outer space. Far from representing a full and flawless system, these regulations can be in any case considered as an essential basis for those future regulation developments in this field which are now possible through the actual process of détente. The general opinion that the actual space order lays down a partial demilitarisation of outer space and a total demilitarisation of the moon and other celestial bodies seems now more acceptable.

Other treaties on demilitarisation, not specifically referring to outer space, have been taken in to consideration because they contain regulations relative to outer space.

Considering space militarisation as the last inevitable stage in the arms race, it seems appropriate to consider the effects in the space field of a series of bilateral USA-USSR agreements taken to limit the inconsiderate increase of arsenals in the two countries. These treaties are examined especially in reference to the limitations in the field of nuclear ballistic vectors and also in reference to some aspects regarding the placing of defensive systems in outer space, such as the so called American star shield.

The unarmed military activities of remote sensing for verification and security have been examined explaining the process that has brought to the accepted lawfulness in the international field of the use of satellites for such purposes.

Finally this article takes into consideration some recent suggestions for the creation of international control bodies that would use their own remote sensing satellites to guarantee the respect of the international treaties on armament reduction and to monitor any eventual crisis area on our planet.

Conventional regulations on the subject in multilateral agreements

The Moscow Treaty of 1963 introduced the first regulations regarding demilitarisation of outer space. Its real title "The Treaty banning the nuclear weapons tests in the atmosphere, in outer space and under water" (1), immediately identifies the subject it regulates. The explosion of the atomic bombs on Hiroshima and Nagasaki in 1945, and the progressive flourishing during the Fifties of

nuclear experiments for the increase of arsenal (mainly in the USA and USSR) had stimulated public opinion on the nuclear problem, and on the consequent international commitment of the countries to somehow limit this threat. The Treaty was signed by the nuclear powers on August 5th 1963 after many long and complex arguments (2), when it was brought to the signature of the other States, it rapidly reached and overtook the threshold of one hundred ratifications. The only countries with nuclear facilities that didn't sign the Treaty were China, who was against the nuclear monopoly of the three countries organising the Treaty, and France who continued to carry out nuclear experiments, following her armament policy (3). In a more specific reference to outer space, the ban on nuclear explosions must be considered valid apart from the distance from Earth and one must accept the interpretation that, in absence of any contrary specifications, the ban applies to celestial bodies because they belong to outer space. The Moscow Treaty doesn't contain any regulations regarding the verification of the accordance with the commitments undertaken by the Countries. This is because in front of the difficulties in establishing an international control order, each of the States Parties knew it could count on the more or less immediate availability of apt technologies and systems, not last those connected with the use of artificial satellites. It must be underlined that the ban not only refers to experiments for nuclear weapons but also to any other nuclear explosion, including those for peaceful purposes. The Treaty however does not seem to prohibit the use of nuclear weapons in war.

The last important clause to be mentioned amongst those contained in the five articles which constitute the Treaty is the one which regulates the withdrawal faculty of the signing States; such an option is recognised to each State in the event of extraordinary happenings regarding the regulated subject, considered as a threat to its own supreme interests; to exercise this right a three month warning to all other parties is sufficient. The purposefully ambiguous language is the result of the historical and political context in which the agreement itself developed and of the subsequent need of the States to maintain, in this first step towards the détente, wide margins for movement.

Article IV is the only one in the Outer Space Treaty of 1967 (4) to specifically regulate questions regarding militarisation of outer space and celestial bodies. It includes the contents of the United Nations Resolution 1884 in which the intentions of both the United States and USSR of abstaining from the instalment in outer space of nuclear weapons or of other mass destruction weapons were expressed, inviting all States Parties to undertake a similar commitment in reference to outer space and other celestial bodies. Soviet doctrine has given this resolution a real

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compulsory value (5).

The problem is the identification of the weapons the ban refers to. Article IV gives no indication regarding what should be considered a nuclear weapon or a mass destruction weapon. Devastating effects, compared to those obtainable by a "mass destruction weapon", can equally be produced in terms of human lives through the use of large quantities of so called conventional arms (6). As "mass" we not only intend people with no distinction of groups or individuals, but also "mass" in the physical sense, including everything that belongs to the natural environment when it can be manipulated to become inhabitable (7). From a legal point of view a resolution accepted in 1948 by the Commission for Conventional Weapons considers "mass destructive weapons" nuclear explosive arms, chemical and biological mortal weapons, radiological weapons and any other kind of future arm similar to the above mentioned ones from a destructive point of view (8). This definition, later reconfirmed in other resolutions of the United Nations' General Assembly, is now widely accepted by the States. Despite all that has just been mentioned, one cannot certainly maintain that the provision guarantees a complete denuclearisation of outer space; given that the ban applies to the instalment in orbit of nuclear and of mass destruction weapons, it is general opinion that this regulation cannot be applied to vectors, such as inter-continental ballistic missiles, which are equipped with nuclear warheads and do not enter the Earth's orbit but cross outer space for a more or less segment before falling back on the Earth's surface. It is generally admitted that the ban is only to be applied to those objects holding mass destruction weapons who complete at least one orbit around the Earth (9). The crossing of such missiles in atmospheric space could be considered as illegal, because it could not certainly be considered as a non offensive right of passage (10).

Neither the so called orbital bombardment systems (Fractional Orbital Bombardment Systems), similar to inter-continental missiles but with a stronger range (11), nor the deliberate military explosions, considered as one of the main causes for space "debris" (12), to the point that there is the possibility of establishing an agreement to ban such activities (13), can be considered legal.

Other questions are raised, other than the instalment of mass destruction arms, in reference to the militarisation of outer space. According to the provisions of art. IV the instalment of conventional weapons or of those arms not included among mass destruction weapons is not forbidden. From a practical point of view the problem involves the possible future deployment of sophisticated systems such as antisatellite weapons (ASAT) or defensive antimissile systems (BMD, Ballistic Missile Defence), still in the project or experiment phase, whose lawfulness we shall discuss later (14).

The actual military use of outer space is also generally connected to the use of the so called passive space systems, made up of satellites that, although unarmed, are already an indispensable support to earth military operations (telecommunication, maritime and air navigation or remote sensing) (15). While the second comma of article IV considers the regime of the Moon and of the other celestial bodies under this specific point of view, to the point of being unable to avoid contrasting opinions and conflicting

interpretations, no other regulation of the Treaty expressly establishes the lawfulness or the unlawfulness of the instalment of such systems in outer space. It is a common opinion that very few military activities are really forbidden by the provisions of the Treaty; one of the principles on which this assumption is based is that whatever is not expressly forbidden must be intended as lawful (16). This thesis is not unanimously accepted in doctrine.

The principle of the pacific purposes of space activities is stressed in various points of the Outer Space Treaty but the most important regulation in which this principle appears is without any doubt the one in article IV which establishes that "The Moon and other celestial bodies shall be used by all States Parties to the Treaty exclusively for peaceful purposes. The establishment of military bases, installations and fortifications, the testing of any type of weapons and the conduct of military manoeuvres on celestial bodies shall be forbidden. The use of military personnel for scientific research or for any other peaceful purposes shall not be prohibited. The use of any equipment or facility necessary for peaceful exploration of the moon and other celestial bodies shall also not be prohibited."

As clear as the ordinary meaning of the term "peaceful" may seem, its interpretation from the legal point of view is rather controversial, also due to the fact that that a clear definition of this term in the Treaty and in the whole space order is missing. Two main doctrine currents seem to be in conflict on this theme: according to the first, all those non aggressive military activities undertaken for purely defensive purposes are to be considered peaceful (17). The opposite thesis equals peaceful space activities to non military ones. According to this last interpretation, even the plain use of surveillance satellites placed in orbit by military personnel or for military purposes must be considered illegal, being non-pacific (18). There is an intermediate position that summarises the letter of the Treaty, the intentions of the States when it was adopted and the subsequent practice in a more efficient way, asserting the principle according to which the Outer Space Treaty establishes a principle of partial demilitarisation of outer space, and of total demilitarisation for the moon and other celestial bodies (19). The partial banning of military activities in outer space may be deduced not from the merely programmatic and not legally binding nature of the above mentioned principles, included in the Preamble and in the first articles of the Treaty, but from the fact that such principles are to be interpreted in the context of the Treaty. The banning in article IV of the installation in outer space of mass destruction weapons being established, all military activities not expressly forbidden should be allowed. The international practice follows such conclusions resulting from the analysis in the preliminary works of the predominant will of the States. The USA have always been advocates of the use of outer space for non aggressive military activities; even other western countries, from France to Canada, have generally followed this interpretation. USSR and non-aligned countries had instead sustained the ban on any military activity in outer space until half way through the Sixties, but the subsequent capacity of disposing of space systems able to undertake remote sensing, has induced socialist countries in the early Seventies to adopt an

interpretation according to which the use of outer space for non aggressive military purposes is not precluded by the Treaty of 1967.

The thesis according to which in time of war the effectiveness of the Space Treaty and of the partial limitations introduced in article IV, should be suspended, seeing that in the event of an armed conflict no legal conventional regime forbidding States to conduct hostilities in outer space or forbidding the use of power or of mass destruction weapons would be respected, is surely debatable. It cannot be taken for granted that the "fury of war" of a state involved in a conflict could easily override any limit of legal or ethical nature. A whole series of conventions exists, such as the Geneva Convention of 1949 on the treatment of the sick and wounded, of the shipwrecked and of civilians, whose ratio is precisely to limit and to modify for humanitarian needs the use of war violence. Demilitarisation of outer space and celestial bodies and the ban on placing mass destruction weapons would certainly be diminished if limited to periods of peace (20).

After the conclusion of the Outer Space Treaty of 1967, Italy actively co-operated at an international level to fill up the gaps in the text of the Treaty; and particularly in article IV which, by being more or less the intentional result of a compromise among States, has in actual fact allowed an increasing militarisation of outer space (21). In 1968 Italy had already requested a point of discussion on the necessity of amending article IV of the Treaty in the program of the works of the General Assembly of the United Nations. The amendment was never approved even though a few of the notified gaps have been filled in with the introduction of the following Treaty on the Moon in 1979. The second Italian suggestion in 1979 followed the adoption of the final document of the first special session of the General Assembly of the United Nations regarding disarmament. On this basis Italy presented in March 1979 the Committee for Disarmament with a proposal for an additional protocol on the Space Treaty (22). The purpose, according to the explanatory memorandum, was to modify the regime introduced by the Space Treaty, banning the development and use of all arms placed in outer space or on Earth, conceived for the damaging, destruction or interference with the functioning of any space object. The project of protocol, in six articles, prescribes the use of outer space only for peaceful purposes, forbidding the parties to engage in military or hostile activities such as the installation of military bases and the placing of equipment and devices for the same purposes. Forbidden are the placing in the Earth's orbit and the launching in outer space of objects equipped with mass destruction weapons and any kind of device for offensive purposes, and also the carrying out of military manoeuvres and the testing of any type of weapons. The use of military personnel for research or peaceful purposes is instead allowed in the framework of a control system established to guarantee the compliance with the agreements on disarmament. In the case of a contracting State violating the protocol the other parties have the possibility of referring to the Security Council of the United Nations who has the power of conducting an inquest. While obtaining favourable reactions from an international point of view (23), the Italian proposal did not give way to any concrete developments.

Even the Agreement Governing the Activities on the Moon and other celestial bodies of December

18th 1979 (24) includes an article, article III, specifically referring to the regulation of military activities on the moon and other celestial bodies. The text of this article follows article IV of the Space Treaty reaffirming the principle of the destination of the Moon and other celestial bodies for purely peaceful purposes, the ban on placing nuclear and mass destruction weapons, and finally in point 4 it says that "The establishment of military bases, installations and fortifications, the testing of any type of weapons and the conduct of military manoeuvres on the moon shall be forbidden. The use of military personnel for scientific research or for any other peaceful purposes shall not be prohibited. The use of any equipment or facility necessary for peaceful exploration and use of the Moon shall also not be prohibited" (25). The Agreement introduces many new points, the first regarding the areas in which the commitments undertaken by the parties are operative; the commitments are extended to the orbits and trajectories to the moon and also of all other celestial bodies (26). The main novelty is in the second point of article III, where together with the traditional prohibition of any threat or use of force, there is also the prohibition of any other hostile act or threat of hostile act, even if some do not consider this last expression to have any further significance, it being a more or less further reaffirming of the general principle of prohibition of the use of force (27). The principle of the total demilitarisation of the moon and of the other celestial bodies is only effective in reference to those States who ratified the Treaty on the Moon, who are very few in number and none of which belong to the two space powers (28).

The Convention on the prohibition of the use of environmental modification techniques for military or other hostile purposes was established by initiative of the Conference on Disarmament Committee of the United Nations. Opened to signature by the General Assembly on May 16th 1977, the Convention came into force on October 5th 1978 (29).

Article I establishes that each state undertakes not to use any environmental modification techniques that could cause serious long lasting and widespread effects for military or hostile purposes, to cause destruction or damage to any other State Party. Article 2 specifies that the expression "environmental modification techniques" means any technique conceived to modify, through deliberate manipulation of the natural processes, the dynamics, the composition and the structure of the Earth (including its biosphere, hydrosphere and atmosphere) or of outer space. The use of modification techniques for peaceful purposes is legal (art. 3). Article 5 establishes the constitution and the functioning of a Consultative Committee of Experts, formed by a representative of each State Party and presided over by the Secretary General of the United Nations, to whom each State Party can refer against any eventual or probable violation of the conventional regulations. This committee cannot exercise any coercive power in the case of certified violations of the Convention's dispositions; it can only send the other States a report on the conclusions it has reached, on the basis of which if any State considers it a real violation, it can present a formal complaint to the Security Council whose intervention is always subject to the power of veto of the permanent members. Among the merits of the convention there

is the fact of having in some way dispelled the worries of the public opinion regarding the potential use of new war techniques, and of having supported the increasing interest in environmental questions. On the other hand, however lacking and imperfect the functions of the Committee of Experts may be, this Convention introduces for the first time an organ for the control and verification in a multilateral agreement on arms control.

This concept of space as an extension of the Earth's dimension also brings into consideration the problem of space and earth disarmament, there being no solution to the first without solving the second one too.

Analysis of the practice of the States and of the bilateral Treaties on disarmament, in accordance or in contrast with the principle of demilitarisation of outer space

The General Assembly of the United Nations with the resolution of december 9th 1981 entrusted the Committee for Disarmament to especially consider the arms race in outer space. In march 1985 the Conference on Disarmament (so the Committee was called after february 7th 1984) decided to create a special committee to study the prevention of an arms race in outer space. The work of the committee is carried out in annual reports to the Conference which brought to the resolution of the Assembly on december 15th 1989. In it the General Assembly, conscious of the fact that the bilateral negotiations between USA and USSR could facilitate multilateral negotiations for the prevention of an arms race in outer space, invited the two nations to reach concrete results as soon as possible, periodically informing the Conference; it also asked the Conference itself to quicken the examination of the question, in all its aspects, entrusting the special committee to begin negotiations for one or more agreements; it finally asked all states, and especially those equipped with space means, to abstain in their space activities from actions incompatible with the treaties regarding the subject (30).

We have seen that the contents of article IV of the Space Treaty don't include inter-continental ballistic missiles which, mostly equipped with nuclear warheads, cross outer space before falling back on the earth's surface. This category of weapon has been the object of some bilateral agreements between USA and USSR, and particularly of the SALT agreements, seeing the particularly unanimous consensus, from a doctrinaire and practical point of view, in considering these missileistic activities as actual space activities (31).

The SALT I agreements (Strategic Arms Limitation Treaty) on strategic nuclear arms reduction are the result of a three year long bilateral negotiation, from november 1969 to may 26th 1972, when the agreements were signed in Moscow. The intention of the two nations to reach a regulation in the field of nuclear armaments had already been exposed through the promotion of the multilateral Treaty against the flourishing of nuclear arms of 1968, in the preamble of which the parties undertook to pursue negotiations relative to the immediate interruption of the nuclear arms race and to nuclear disarmament (32). In fact, since the beginning of the Sixties, the arsenals of the two powers had grown noticeably, initially

through the progressive increase of inter-continental ballistic vectors, and after that through the installation of antimissile defence systems (Anti-ballistic Missile System or ABM). The SALT I agreements include various documents: the ABM Treaty, of unlimited duration, a temporary agreement on some measures regarding the limitation of offensive strategic arms, lasting three years, and a Protocol on the temporary agreement. These agreements establish the definitive use of the two powers of the politics of dissuasion or of Mutual Assured Destruction (MAD), according to which the mutual vulnerability of the parties is the strongest deterrent to an eventual nuclear attack, with the assumption that no attack could fully destroy the answering capacity of the other.

Such vulnerability is granted by the ABM Treaty which limits the parties' possibility of deploying ABM defensive systems to protect its territory against inter-continental enemy missiles. The Treaty considers all ABM missiles, not only the actual ones but also the future ones: according to the declaration initialled E, in the event of other ABM systems being created and based on other physical principles, these systems would be object of discussion among parties and eventually of amendment of the Treaty. To guarantee the maximum accordance with the Treaty article III established the creation of a permanent commission to solve controversial questions. This commission was created with a Memorandum Understanding on December 21st 1972.

Immediately after the ratification of SALT I, in november 1972 the two nations continued negotiations to reach new agreements on the limitation of strategic offensive arms. These agreements, called SALT II, were signed in Vienna on june 18th 1979. In this case also, we are not speaking of disarmament measures, but of agreements of strategic military nature, for the compression of offensive arsenals (34). Article XIX of the Treaty established its coming into force from the moment of the exchange of ratifications among parties, but the SALT II agreements have never been ratified by the United States. The latter wanted to relaunch negotiations to reach an effective reduction of armaments, and not mere limitations on the increase of nuclear arsenals, so they began negotiations with the new name of START (Strategic Arms Reduction Talks).

The Intermediate-range nuclear Forces Treaty between USA and USSR was signed on december 8th 1987 and came into force on may 30th 1988. Its importance lies in the fact that it not only fixes a limit for the increase of nuclear arsenals, but establishes the elimination of an entire category of weapons, such as intermediate-range ballistic missiles. In reference to the impact of the Treaty in the space field, it has contributed to the keeping of peace in the space activities totally eliminating a whole class of ballistic missiles and so prohibiting their passage through outer space; it has proven to the sustainers of the strategic Defence Initiative how the negotiation process for the limitation and control of armaments can play the same, if not a better role as any military system, even if only a defensive one. From a legal and political point of view, the Treaty holds many new aspects: it is not only a simple agreement on armament control, like SALT, but on disarmament. The quantity limitations are unequal, seeing that USSR has been asked to eliminate a larger number of weapons than USA; it has been interpreted in such a way as to forbid missiles belonging to the

eliminated categories, eventually equipped with different weapons, such as laser beams; finally, it has introduced, for the first time, on-the-field inspections.

On July 31st 1991 USA and USSR signed the **Strategic Arms Reduction Treaty (START)** in Moscow (35), the last step in the commitments of the two powers in the field of armament control. In actual fact this agreement introduces for the first time noticeable cuts on arsenals, not limiting itself to stopping their increase.

Even if START has not yet begun to be operative, due to the missing ratification of the parties, new proposals for a future reduction of nuclear arms have been advanced lately by USA and Russia, the most important of the independent Republics born from the splitting of the former soviet empire. At the basis of these new proposals, together with the new friendly spirit that seems to fill the new eastern-western relationships, there is America's triple purpose: to reduce the risk of nuclear flourishing from the ex-communist block to the third world, to unburden economy from a part of military expenses, and to rebuild with Russia the privileged axe formerly created with USSR (36). On June 16th 1992 the two nations, overcoming the estimated differences, signed a major agreement in the history of disarmament: USA and Russia will destroy all MIRV multiple warhead missiles; the step from mutual assured destruction to minimum nuclear deterrence seems quite close (37). At the signature of the Treaty, whose text is not available yet, the Heads of State also made another crucial announcement: an agreement for a global defence system, that is to say for a common space shield to which France and England will also be invited.

On march 23rd 1983 USA president Reagan presented the world's public opinion with the **Strategic Defence Initiative**, commonly known as "space shield". This initiative establishes the constitution, through various phases of research, development and experimentation of an integrated system, based on the most modern technologies, for the defence of the USA and eventually of the other Allies, from an enemy attack from outer space with inter-continental ballistic missiles, through their interception and destruction (38). The end of the program, begun in 1985, was foreseen for year 2005. The main fields interested in this time lapse go from surveillance and collecting of data, to direct energy weapons, such as laser beams, and cynetic energy weapons, to the study of systems for the integration and management of the whole complex. A large part of the components here described will be placed in outer space, through the use of artificial earth satellites, but air and earth components will also be present. A SDI with antisatellite lasers would not be incompatible with the ABM Treaty because the latter refers to the reduction of antimissile weapons and not of antisatellite ones.

Some considerations are due on the lawfulness, from an international legal point of view, of the eventual common shield prospected at the signature of the recent Washington treaty. The space shield seems to be in open contrast with the dispositions of the ABM Treaty and in particular with article IV which prohibits the development, the experiments and the placing of antiballistic systems in the sea, in the atmosphere and in outer space, and also of earth mobile systems; and with article I, which bans the arrangement of such systems for the defence of national territory. No

disposition in the Treaty prohibits research. A restrictive interpretation of the Treaty, according to which the agreement bans the development, the experiments and the placing of any ABM system (both the 1972 systems and any future ones), but not research, was accepted in 1985 by the reagan administration, for the necessity of privileging research, in the first phase of the project, to then change their mind when passing to the experiment phase (39). One cannot accept the interpretation according to which the conventional obligations only refer to antiballistic systems contemporary to the conclusion of the Treaty, because the extension of the limitations to new ABM systems should have been object of discussion among the parties, according to the dispositions in Declaration E, appended to the Treaty. This Declaration, as indicated in its beginning, is first of all finalised to the fulfilment of conventional obligations, and certainly not to their violation or evasion. A unilateral United States decision would not in any case be admitted because different limitations should have to be agreed upon with the counterpart: the United States strategic defence project must be considered incompatible with the ABM Treaty which remains valid and binding unless the right of withdrawal is exerted subsequent to a report by one of the parties, according to article XV of the Treaty.

The development of an international policy for an effective reduction of armaments, and the growing détente between the two powers, to the point of prospecting a common star shield, have in fact made the problem of the opposition of the american project to the ABM Treaty out-of-date, but have made other general legal confutations on the strategic defence program much more interesting.

To justify the star shield it has been said that outer space is nothing but a new dimension of international competition on earth, where if it is legal to limit armaments in times of peace, it is also legal that each nation sees to its defence by preserving national security (40). While the principles of common heritage and of co-operation in outer space activities, included in the Space Treaty of 1967 would represent a positive result, an ambition to be encouraged, the reference to article 51 of the United Nations Charter would have immediate value; the right to autodefence, connected to the progress in military technologies would then be of primary interest. The right to autodefence, though, is only justified in international common law if in response to an urgent necessity that leaves no choice, in reference to an armed attack to be answered, if necessary, with the same degree of intensity and proportion. These characteristics would be missing in a highly sophisticated military system, arranged preventively to anticipate an eventual armed attack (41).

In reference to the compatibility with the space Treaty, it must be remembered that the latter prescribes in article III to undertake space activities in outer space in accordance with international law, and in the interest of maintaining peace; in article IV it forbids to place in orbit around the earth any objects carrying nuclear weapons or any other kinds of weapons of mass destruction. If the system were carried out with lasers leaving earth or with antisatellite systems, which are not taken into consideration by the Space Treaty, it would not belong to those activities forbidden by the Treaty. But because it is unthinkable that chemical or

electric energy lasers would be sufficient to immediately destroy thousands of missiles, it will be necessary to use X-ray or gamma-ray lasers produced by a nuclear explosion in outer space, contrasting with the regulations of the space Treaty (42). To avoid outer space becoming the new arena for the deployment of weapons that can easily change from defensive into offensive, it is necessary to solicit the negotiations in the UNCOPOUS see to prohibit antisatellite weapons and to update the Nuclear Test Ban Treaty extending the ban on the carrying out of nuclear arms experiments in outer space to the ban on developing and placing such weapons in outer space.

Legitimacy of remote sensing for security and military surveillance and legal conditions of antisatellite weapons

Among the first technical applications of remote sensing, we find military applications, begun in the first Sixties with the launching in outer space of the USA Satellites Discover 13 and Samos II, capable of taking the first photographs of Soviet territory.

Resolution 41/65 of the United Nations dictates some of the principles on remote sensing, defined as the observation from outer space of the Earth's surface to improve natural resources management, land use and the protection of environment. It does not refer to military remote sensing, even though its exclusion was the cause of debate, in the UNCOPOUS see, among the states. The casual acquisition of military information by civilian satellites must be treated according to the resolution for all other kinds of information (43).

The activity of military surveillance and reconnaissance satellites is now generally considered lawful by the states. The Treaty of 1967 in fact only establishes a partial demilitarisation of outer space, banning the placing of nuclear and mass destruction weapons and banning, in accordance with the Charter of the United Nations, any act of aggression towards other states. Now, military remote sensing being a mainly defensive activity and the Treaty itself establishing the freedom of exploration and use of outer space, we can only confirm its lawfulness (44).

The bilateral SALT agreements between USA and USSR establish and in fact legitimate the use of the above mentioned satellites for verification. Article XII of the AEM Treaty and article V of the temporary agreement included in the bilateral agreement SALT I between USA and USSR in 1972, and article XV of SALT II drawn up by the same powers in 1979, explicitly foresee the appeal of each party to National Technical Means as instruments for the verification of the accordance of the works of the counterpart with the commitments undertaken with those agreements. Even without listing the lawful technical means, the parties have agreed that these also include photographic and remote sensing satellites (45).

The use of these instruments must be in accordance with the generally known principles of international law, but each party agrees not to impeach the control exercised by the other, and not to deliberately make use of measures capable of impugning such control. To forbid surveillance satellites only because they are military would bring an opposite effect to the desired peaceful purpose, seeing the deterrent character of the functions that these may have against possible

surprise attacks and the consequent peaceful contribution they make.

Article XII of the 1987 Washington Treaty between USA and USSR for the destruction of ballistic missiles more or less follows SALT's dispositions in reference to the technical means. In addition, measures of co-operation are established among states parties for a period of three years, starting from the coming into force of the Treaty, for the observation, through the satellites, of the bases in which mobile ballistic missiles with a range in excess of 5500 km are placed. Similar verification systems are also foreseen in the 1991 START which definitely legitimates remote sensing among National Technical Means.

The problem of Antisatellite Arms (ASAT), weapons capable of destroying or mining the functioning of satellites, first of all reconnaissance and surveillance ones, is connected to the subject of remote sensing. These systems may be terrestrial or orbitant and they establish the use of earth-to-air missiles, or cynetic energy weapons, such as the "killer satellites", small bodies that destroy their targets through high-speed impact. The advent of laser beams, that is to say of rays of light, constituted by nearly parallel rays of chemical, electric or nuclear origin, has put into evidence their potential use in the ASAT systems. Despite a few negotiation attempts between USA and USSR in the UNCOPOUS see, no agreement has yet been reached (46). Despite not being expressly prohibited by the Space Treaty, it cannot be said that these weapons do not constitute a threat to the principle of freedom and peaceful use, and also to the fulfilment of those benefits for all mankind that the Treaty prescribes; the introduction of new regulations that expressly prohibit the placing of these arms in outer space would be appropriate.

A last observation is to be made on some new political and economical questions which noticeably influence the behaviour of the international community. New factors moderate military influence in outer space: the arrival of non super-powers that can play a balancing role, the consciousness of the growing importance of the safeguarding of environment which can be carried out in outer space and which has involved in the "Mission for Planet earth" even the american agency NASA (47); the virtual ending of the cold war, and, last but not least, the reaction against the cost of military expenditures which stimulates industries to use their technologies for more efficient civilian realisations (48).

In this context, co-operation among states is now much more felt, and, returning to our subject, it is appropriate to refer to a few proposals brought out by some nations regarding the creation of multilateral control systems through the use of satellites, for the verification of the respect of the disarmament treaties and for the surveillance of any eventual areas of crisis or conflict in the whole planet.

The first of these proposals was presented by France in May 1978, during the first session on disarmament of the General Assembly of the United Nations, and consisted in the creation of an International Satellite Monitoring Agency made possible by the progressive development of space abilities by the other states, after the two super-powers. The variety of the observation means, modifying international relationships, could constitute, in the eyes of the advocates, a tension

relief factor through the broadcasting of information on the potentials and the movements of the other states. The system could be constituted as a specialised agency of the UNO and the latter would be responsible for the collecting, the processing and the diffusion of data obtained through earth remote sensing satellites. Except for the immediate support from Italy, India and some less developed countries, who foresaw the possibility of access to the process of armament control, the proposal did not reach sufficient approval from the other more developed countries, and in fact it gained open opposition from the USA and USSR, fearful of losing their duopoly regime on disarmament and consequently on verification and monitoring. The General Assembly later made inquiries on the project, considering the accordance of the Agency both with the principles of the Charter of the United Nations and of the peace purposes therein affirmed, and with the international order, especially in the space field. In June 1988 France repeated the proposal, but to this moment no decision on it has been taken by the Assembly (50).

We must not forget the project for the constitution of a World Space Organisation, proposed to the UNO for the first time by the Soviet delegation in 1985 and then represented, with its hypothetical statute in 1988, which would carry out common projects for the peaceful use of outer space and would verify the respect of the treaties on disarmament and armaments reduction (51); and the Canadian project Paxsat, a recent initiative on research on remote sensing for military verification and monitoring, both in outer space and on earth (52).

The creation of an international satellite control Agency encounters a whole series of legal and political problems. It is extremely difficult, if not impossible, to limit the collecting of data according to the international treaties, without access to different kinds of information. The problem of the zones to be monitored, the access to data and information, their not always unequivocal interpretation which causes differences and controversies, and the impossibility of organising efficient if not through the Security Council of the UNO, with the possibility of a veto by permanent members, all represent difficulties to be solved, regarding the functioning of a similar entity, on which no proposal has yet thrown any light.

The creation of regional satellite monitoring agencies for the observation of military strategic regions, such as Europe where the ESA would be able to undertake activities of verification and monitoring, could have greater chances of realisation. Such structures, realised by geographically or politically close countries would allow the introduction of monitoring instruments independent from those of the traditional space powers (53). In this view of European autonomy we must place the recent agreement of the countries of the Western European Union (UEO) to be equipped with a sensing satellite system to verify the application of the arms reduction treaties and, when necessary, to manage crisis and to prevent conflicts, but also to monitor, and possibly to prevent, natural calamities; also with an independent system of military satellite observation, developed in co-operation with France and Spain, which will carry out in a short period of time (1994) the launching of the Helios satellite (54).

Conclusions

The actual space order establishes a regime of total demilitarisation for the moon and other celestial bodies and a partial demilitarisation for outer space. While the regime of the celestial bodies is clearly determined and unmistakably established by the letter of the second comma of article IV of the Space Treaty and by article II of the Treaty on the Moon, the condition of outer space and its use for military purposes is much, and maybe purposefully, less clear. This is not so much in reference to those military activities which have no offensive nor menacing character, such as remote sensing, which in actual fact can give an enormous contribution towards peace, and on whose legitimacy no one has any doubts; we rather refer to the possible placing in outer space of real armed systems capable of hitting earth or other space targets.

The only principle that limits the placing of weapons in outer space is the one that forbids the placing in the earth's orbit of nuclear and mass destruction weapons, a principle which seems to have taken on the shape of a real common law rule, because of its thirty year long duration and of the absolute accordance of the states to its dictate throughout all these years. The placing in outer space of any other type of conventional arms, such as the more recent direct energy laser or kinetic energy weapons, must then be considered as allowed, there being no rule that expressly forbids it. The only restriction to this conclusion is the ban imposed by the Charter of the United Nations, recalled by the same Treaty of 1967, on any aggressive action towards other countries, without of course considering the right of defence against aggressions. The placing of arms in outer space could then be justified as a defensive purpose, and it is here, in our opinion, that the weak point of the whole regulation lies, because this means that it is the use made of the weapon that is lawful or unlawful, and not the weapon itself, as would be appropriate. From this point of view, the right to legitimate defence seems to have created a pretext for the countries and in particular for the space powers to justify a future massive militarisation of outer space. If such a solution appears as the most accordant with the political and historical context of the years in which the Space Treaty was adopted, nowadays, with the radical change in such a context, and with the total subversion of the opposing block in international relationships, it is necessary to cancel such ambiguities and to clearly establish what is lawful and what is not. It is in any case necessary to consider some of the principles established in the Treaty of 1967: the call for international co-operation and the carrying out of space activities in the interest of all the countries and as a prerogative of all mankind.

The peaceful character of those military activities not concerned with the placing of arms in outer space, but which are carried out for national security reasons, is not to be questioned. From an international point of view there has been a substantial recognition of its lawfulness through the implicit inclusion of remote sensing satellites in the National Technical Means as verification instruments in the framework of the SALT treaties. Despite all this and despite the use of such satellites by the two super-powers right from the

early Sixties, the existence of a common law rule that establishes the lawfulness of these satellites is dubious, considering the wavering behaviour of the United States until recently. The missing of that opinio iuris that constitutes one of the necessary conditions for the identification of a common law rule is obvious.

From a political point of view, the fall of the soviet empire, while freeing many peoples from the enslavement to totalitarian regimes, has inevitably created regional conflicts and instability factors in different parts of the world. The creation of international (even regional) surveillance organisations, while allowing a greater participation of all countries in the control of the world's order, from the point of view of the respect of the treaties, of surveillance on eventual crisis areas, of resolution of international controversies, seems to constitute a good deterrent instrument against and eventual eversive action by some states, favouring the reaching of stable and longlasting new international equilibriums.

NOTES

- (1) Text in BACK IMPALLOMENI, Spazio cosmico e corpi celesti nell'ordinamento internazionale, Padova 1983, p. 148
- (2) MATEESCO MATTE, Droit aérospatial, Paris, 1969, p. 259, IDEM, The Treaty banning the nuclear weapons test in the atmosphere, in outer space and under water (10 oct. 1963) and peaceful use of outer space, in Annals of Air and Space Law, 1984, p.402; and on the issue of outer space disarmament cf. the two vol. of IDEM, Arms control and disarmament in outer space: towards a new order of survival, Lecture - seminars given at the Centre for Research in Air and Space Law, 1991
- (3) D'AMATO, legal aspects of french nuclear tests, in Am. Journ. of Intern. Law, 1967, p. 66; FISHER, L'interdiction partielle des essais nucléaires, in Annuaire français de Droit International, 1963, p.23
- (4) Treaty on the Principles governing the Activities of States in Exploring the Moon and the Other Celestial Bodies, Jan. 27, 1967, 18 U.S.T., 2410 T.I.A.S., 6347, U.N.T.S. 205 (effective oct. 10, 1967); art. IV: "State Parties to the Treaty undertake not to place in orbit around the earth any objects carrying nuclear weapons or any kind of weapons of mass destruction, install such weapons on any celestial bodies, or station such weapons in outer space in any other manner....."
- (5) ZHUKOV-KOLOSOV, International Law, Ney York 1984, p.54
- (6) Cf. GAL, Space weapons - problems of interpretation, in Proc. 31st Colloquium on the Law of outer space, 1988, p.349
- (7) HASSELMANN, Weapons of mass destruction, article IV Outer Space Treaty and the relationship to general disarmament in 25th Colloquium....., 1982, p.102
- (8) GOROVE, Limiting the use of arms in outer space: legal and policy issues, in 25th Colloquium..., 1982, p.93
- (9) GESTRI, Portata e limiti del principio dell'uso pacifico dello spazio extra-atmosferico, in La Comunità Internazionale, 1989, p. 507
- (10) CONDORELLI-MERIBOUTE, Some remarks on the state of international law concerning military activities in outer space, in ital. Yearb. of Internat. Law, 1985, p.9
- (11) BACK IMPALLOMENI, supra note p. 98
- (12) GOROVE, Maintening outer space for peaceful uses: some specific proposals for a modest headway in arms control, in Proc. 28th Colloquium....., 1985, p.27; ibidem, LAKSHMANAN, Prohibition of weaponisation of outer space, p.73, GAL, Activities on orbit and celestial bodies; two notions of peaceful uses?, in Proc. 25th Colloquium....., 1982, p.84
- (13) BERTOTTI-ANSELMO, The problem of debris and military activities in space, in Geneva Conference on Disarmament, Aug. 6, 1991; VERESHCHETIN, Environmental risks arising of space activities and their legal mitigation, in Rome Conference "Recenti sviluppi e prospettive del diritto dello spazio", March 13-14, 1992
- (14) JASENTULIYANA, Space Activities and International Environmental Protection: Perspectives on the United Nations' Role, in Proc. 41st Colloquium...., 1990, p. 154
- (15) The term "antisatellite weapon" (ASAT) means any instrument that can be used to impeach, alter or annihilate the operative capacities of the satellites orbiting around the earth. They can be installed on earth, on board aeroplanes or in outer space, and can be made up either of missiles or co-orbital systems equipped with explosive warheads, or of weapons with direct energy such as laser beam weapons. The ASAT conventional warheads can contain explosive or collision devices, see WULF, Arms Control - Outer space, in Journal of Space Law, 1983, p.69; for a review of the experiments conducted by the USA and USSR in the ASAT field see SMITH, Space Co-operation between the United States and the Soviet Union, in Proc. 31st Colloquium, 1987, p.86; the most noticeable example of BMD is the USA project of a star shield: this project, on whose feasibility many scientists hold serious doubts, would involve the installation in outer space of hundreds of satellites able to identify, intercept and destroy, through direct or cynetic energy weapons, nuclear enemy missiles during their flight, see HOAG, High-Tech Armaments and military space systems as a force undermining non alignment, in Colloque international sur la militarisation de l'espace extra-atmosphérique, Bruxelles, 1988, p. 243
- (16) VON KRIES, Space-based defences and the law of outer space, in Proc. 30th Colloquium...., 1987, p.106; CHOWDHURY, Legal aspects of maintaining outer space for peaceful purposes, in Proc. 31st Colloquium, 1988, p.13 who underlines that 75% of satellites are launched for these military aims
- (17) BUTLER, Peaceful use and self defence in outer space, in 25th Colloquium...., 1982, p.79; MIYOSHI, Some reflections on legal regulation of military uses in outer space, in Colloque intern. sur la militarisation de l'espace extra-atmosphérique, Bruxelles, 1988, p.278
- (18) VINCINEAU, Aspects juridiques de la militarisation de l'espace extra-atmosphérique, in Colloque intern. sur la militarisation de l'espace extra-atmosphérique, Bruxelles, 1988, p.44; ZWAN, The (il-)legality of the military use of outer space, ibidem, p.303; LAKSHMANAN, Prohibition of weaponisation of outer space, in Proc. 28th Colloquium, 1985, p. 68; MENTER, Peaceful uses of outer space and national security, in Proc. 25th Colloquium ... 1982, p. 136
- (19) CHRISTOL, Arms control and disarmament in space; the rough road to Vienna 1984, in Space Policy, 1985, p. 33; GORBIEL, Some observations on

the juridical essence of the 1967 Treaty's article IV, in Proc. 25th Colloquium ..., 1982, p.166; GAL, Activities on orbit and celestial bodies: two notions of peaceful uses?, in Proc. 25th Colloquium..., 1982, p.83; MARKOV, Implementing the contractual obligations of Art. I, par. I of the Outer Space Treaty 1967, in *Diritto Aereo*, 1974, p. 159

(19) BALLARINO-BUSTI, *Diritto aeronautico e spaziale*, Milano, 1988, p.216; ZHUKOV-KOLOSOV, supra note 5, p.53; GOEDHUIS, Problems of frontiers of outer space and air space in *Recueil des cours*, 1982, p. 375

(20) VERESHCHETIN, Against arbitrary interpretations of some important provisions of international space law, in Proc. 25th Colloquium..., 1982, p.153

(21) REIJNEN, The term peaceful in space law, in Proc. 25th Colloquium ..., 1982, p. 145

(22) Additional Protocol to the 1967 Treaty ..., with a view to Preventing an Arms Race in Outer Space, Doc. DC/9 (March 26, 1979) and included in the Report of the Committee on Disarmament, Appendix III, vol. 1, Doc. CD/53 (August 14, 1979); LAY, Usi pacifici dello spazio extra-atmosferico, in *La Comunità Internazionale*, 1979, p. 395; MAGNO, How to avoid the Militarisation of Outer Space, in Proc. 26th Colloquium..., 1983, p.222; GESTRI, supra note 9, p.454

(23) KOPAL, Article IV of the 1967 Outer Space Treaty. Its Present Meaning and Possibilities of Further Developments, in Proc. 25th Colloquium ..., p.120; JASENTULIYANA, Debate concerning Arms Control in Outer Space in the context of the Conference on Disarmament, in Proc. 27th Colloquium..., 1984, p.326; DIANIELSSON, Examination of proposals relating to the prevention of the arms race in outer space, in *Journal Space Law*, 1984, p.1

(24) The Agreement governing the Activities of States on the Moon and Other Celestial Bodies, Dec. 18, 1979 (effective July 11, 1984), U.N. Doc. A/Res./34,68, in *La Comunità Internazionale*, 1980, p.242, in *Annals of Air and Space Law*, 1980, p.705

(25) On the Moon status see CATALANO SGROSSO, *La responsabilità degli Stati per le attività svolte nello spazio extra-atmosferico*, Padova, 1990, p.60

(26) CONDORELLI-MERIBOUTE, supra note 9, p.10; VAN TRAA-ENGELMAN, The Moon Treaty: legal consequences and practical aspects in Proc. 23rd Colloquium ..., 1980, p. 226; JASENTULIYANA, The Moon Treaty, in *Maintaining Outer Space for peaceful uses*, Tokyo, 1984, p.131

(27) COURTEIX, L'accord régissant les activités des Etats sur la Lune et les autres corps célestes, in *Annuaire Français de Droit International*, 1979, p.210

(28) Only seven: Australia, Austria, Chile, Netherlands, Pakistan, Philippines, Uruguay

(29) FISCHER, La Convention sur l'interdiction d'utiliser des techniques de modification de l'environnement à des fins hostiles, in *Annuaire Français de Droit International*, 1977, p.820; PANZERA, Some considerations on the review of the 1977 Environmental Modification Techniques Conventions, in *Italian Year-book of International Law*, 1985, p.98

(30) Res. 44/113, Dec. 15, 1989, for the documents about the demilitarisation of outer space see; COURTEIX, *Documents d'études, Le droit de l'espace*, n. 3.04 éd. 1990, p.44

(31) Cf. TAVERNIER-KUSKVELIS, The Intermediate-range Nuclear Forces (INF) Treaty and the Space military regime in Proc. 31st

Colloquium..., 1988, p.74

(32) MATEESCO-MATTE, supra note 2, p.276

(33) MIYOSHI, supra note 16, p.281; BRUHA, "SALT", in *Encyclopaedia of Public International Law*, Amsterdam, 1986, vol.9, p. 363; CALVO GOELLER-CALVO, *The SALT Agreements-Content, Application, Verification*, Dordrecht, 1987, p.31 and p.181

(34) RICCIU, L'equilibrio del SALT II, in *Relazioni internazionali*, 1979, p.563; FISCHER, Les accords SALT II, in *Annuaire Franç. de Droit Intern.*, 1979, p.149; ROHE, Il SALT II e i suoi precedenti, in *La Comunità Internazionale*, 1979, p.69

(35) United States Information Service, "The Strategic Arms Reduction Treaty", 1991, pp.1-19

(36) *La Repubblica*, 24 Jan. 1992, p.7

(37) *La Repubblica*, 17 June 1992, pp.1-3

(38) ABRAMSON, SDI and new space renaissance, in *Space Policy*, 1985, p.118; RHINELANDER, US and Soviet ballistic missile defence programmes, in *Space Policy*, 1986, p.142; STARES-PIKE, The star war initiative in *Space Policy*, 1985, p.155; GARCIN, L'espace dans la dissuasion nucléaire, in *Droit de l'espace, Duteuil de la Rochère*, Paris, 1988, p.355; MARCH, The strategic Defence Initiative debate: an interdisciplinary approach in Proc. 28th Colloquium..., 1985, p.87; ALMOND, The SDI: what if the United States terminates its program to defend itself? in *Journal of Space Law*, 1988, p.80

(39) VERESHCHETIN, ABM Treaty: out of the maze of US interpretation in Proc. 30th Colloquium..., 1987, p.101

(40) ALMOND, Peaceful purposes in outer space: precision, ambiguity or confusion?, in Proc. 31st Colloquium..., 1988, p.1

(41) Contra SCHWIJE, Space defence systems, a peaceful use of outer space, in Proc. 29th Colloquium..., 1986, p.72

(42) BALLARINO, Demilitarizzazione dello spazio. in *Rome Conference "Recenti Sviluppi e Prospettive del Diritto dello Spazio"*, March 13-14, 1992

(43) CATALANO SGROSSO, Non discriminatory access of sensed States to data and information obtained by remote sensing, in Proc. 34th Colloquium..., 1991, p.153

(44) STEINBERG, Satellite reconnaissance; the role of informal bargain, New York, 1983, pp. 1-67; CHRISTOL, 1986 Remote Sensing Principles: emerging or existing law?, in Proc. 30th Colloquium..., 1987, p.270; KUSKVELIS, La legalité coutumière de l'observation spatiale militaire, in *Revue Franç. de Droit Aérien et Spatial*, 1990, p.297; CATALANO SGROSSO, Aspetti giuridici del telerilevamento, in *Rome Conference "Recenti Sviluppi e Prospettive del Diritto dello Spazio"*, March 13-14, 1992

(45) CALVO-GOELLER-CALVO, supra note 33, p. 271, see *Proceedings of the 84th Annual Meeting, American Society of International Law*, Washington, March 28-31, 1990 on the executive branch implementation of Arms control Treaties

(46) WOLFRUM, The problems of limitation and prohibition of military use of outer space, in *Zeitschrift für Ausländisches Öffentliches Recht und Völkerrecht*, 4, 1984, p.794

(47) Cf. *Chroniques des activités spatiales 1989-1990, Centre d'études et de recherches de l'espace*, Paris, Institut de Droit Comparé

(48) KINGWELL, The militarisation of space: a policy out of step with the world events?, in *Space Policy*, 1990, n.2, p. 107

(49) DUPUY, Les structures et les rôles d'une agence internationale de satellites de contrôle, in *Annals of Air and Space Law* 1981, p. 333; ALMOND,

The French proposal for an international satellite monitoring agency, in Proc. 25th Colloquium..., 1982, p. 180

(50) SLOUP, Arms verification - The poor person's approach, in Proc. 29th Colloquium..., 1986, p.77; ibidem MYERS, The United Nations and peaceful uses of space, p. 67, ANSELMO BERTOTTI FARINELLA, International surveillance of outer space for security purposes in Space Policy, 1991, p. 184

(51) KOTLYAROV, International control as a measure of trust for averting space militarisation, in Proc. 31st Colloquium..., 1988, p.48; VERESHCHETIN KAMENETSKAYA, On the way to a world space organisation, in Annals of Air and Space Law, 1987, p.337; KABIROV, Through co-operation in space towards understanding and peace on the earth, in Proc. 31st Colloquium....., 1988, p.38

(52) CLEMINSON, Paxsat and progress in arms control, in Space Policy, 1988, p.97

(53) JASANI, Arms control and conflict observation satellites, in Space Policy, 1985, p. 367; BEEK, Prospects for conventional arms reduction in Europe, in Space Policy, 1990, p. 291

(54) I.A.F. Chief of Staff, Gen. NARDINI, at the Rome Conference "Recenti Sviluppi e Prospettive del Diritto dello Spazio", March 13-14 1992

(55) Contra KUSKVELIS, supra note 44, p.305