

Practical Application of *jus in bello* and *jus ad bellum* to the Legal Regulation of Outer Space Environment

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Abstract

Soon after the World Wars – at the time when the use of force was lawful and nations were not prohibited from waging war (*jus ad bellum*) – the international community developed a continuing interest in regulating the conduct of warfare through prescribed rules of behaviour (*jus in bello*). Although, the use of force between States is prohibited by peremptory rules of international law today, certain exceptions, like self-defence (individual or collective), Security Council enforcement measures and right to self-determination exist. More so, despite the existence of the prohibitions, armed conflicts still take place. Today, nations have “development programs in directed energy and hit-to-kill mechanisms” and other space-related warfare technology, to engage terrestrial targets from space. This is for the purposes of protecting their territories, sovereignty and superiority. The legality of fighting an armed conflict through outer space is a matter to be examined in this work, having regards to international space law. The core focus of the paper is on these International humanitarian law rules which govern the legality of the use of force by nations (*jus ad bellum*) and regulate the actual conduct of war once the use of force begins and has attained a reasonable level of intensity (*jus in bello*), and their practical application to the unique environment of outer space. It gives a brief discussion on *jus ad bellum* and *jus in bello*. It talks about the legal regulation of outer space as it relates to armed conflict and its intersection with the two principles. The duties of space-faring belligerent nations towards non-combatant civilians and civilian objects in outer space and on Earth are also analyzed. The work concludes with some recommendations.

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“We will engage terrestrial targets someday – ships, airplanes, land targets – from space. We will engage targets in space, from space. [...] [The] missions are already assigned, and we’ve written the concepts of operations”.¹

General Joseph W. Asby, (1996)

I. Introduction

The outbreak of the World War I put an end to the advances in living standards of the people and the industrial and technological revolution of the period. The War witnessed the use of methods of warfare that were deployed on an unprecedented scale. It depicted the bombardment from the air of undefended town and cities, and the use of poison gas, leaving several millions of people dead and others wounded. However, the horrors of the War and its devastating effects, and the international legislation against the use of certain means of warfare, did not stop the breaking out of another war in 1939 – the World War II.

The World War II became the most lethal international armed conflict in the history of the world.² Non-combatant civilian population was also an intended target in this War; the attacks on London and Coventry, the bombing of Dresden and the atomic-bombing on Hiroshima and Nagasaki, caused the death of several non-combatant civilians. The horrors of this War, however, inspired a stream of important developments of general International Law as well as International Humanitarian Law (IHL).³ It led to the establishment of the United Nations Organization (UNO) and the adoption of its Charter in 1945.

Between 1945 and now, the world has experienced incredible advances in technology and means of warfare. This has, today, changed the nature of military forces of States and the execution of armed conflicts. Outer space is more frequently being used during the course of armed conflict, as well as for the purposes of the protection of, and threats to, territorial integrity and sovereign independence.

1 Scott W. B., 1996, “USSC Prepares for Future Combat Missions in Space”, 145:5 AV. WK. & SPACE TECH., Aug. 5, 1996, at 51.

2 See Kaarbo J. and Ray J. L., 2011, *Global Politics*, 10th edn, United States: Wadsworth Cengage Learning, p. 43.

3 See Kalshoven F. and Zegveld L., 2001, *Constraints on the Waging of War: An Introduction to International Humanitarian Law*, 3rd Edn, Geneva: International Committee of the Red Cross, p. 25.

II. International Humanitarian Law and Armed Conflicts

II.1. International Humanitarian Law

International Humanitarian Law (IHL) has been defined by Sassoli and Bouvier (1999)⁴ as that branch of international law limiting the use of violence in armed conflicts by:

- a. Sparing those who do not or no longer directly participate in hostilities;
- b. Limiting the violence to the amount necessary to achieve the aim of the conflict, which can be – independently of the causes fought for – only to weaken the military potential of the enemy.

International Humanitarian Law, also known as the law of armed conflict or the law of war, is the body of rules that, in war time, protects persons who are not or are no longer participating in the hostilities.⁵ It limits the methods and means of warfare. Its central purpose is to limit and prevent human suffering in times of armed conflict. The rules are to be observed not only by governments and their armed forces, but also by armed opposition groups and any other parties to a conflict.⁶

This definition leads to the following basic principles:

- The distinction between civilians and combatants;
- The prohibition to attack those hors de combat;
- The prohibition to inflict unnecessary suffering;
- The principle of necessity; and
- The principle of proportionality.⁷

The four Geneva Conventions of 1949, their two Additional Protocols of 1977 and the third Additional Protocol of 2005 dealing with Emblem, are the principal instruments of international humanitarian law. Other texts include the 1925 Geneva Protocol Banning the Use of Gas, the 1980 Convention on Certain Conventional Weapons and the 1997 Ottawa Convention on the Prohibition of Anti-Personnel Mines.⁸

II.2. Armed Conflicts

Neither the Geneva Conventions nor the Additional Protocols contains a real definition of the expression ‘armed conflict’. Additional Protocol I to the Geneva Convention of August 12, 1949, relating to the Protection of Victims of

4 Sassoli M. and Bouvier A. A., 1999, *How Does Law Protect in War? Cases, Documents and Teaching Materials on Contemporary Practice in International Humanitarian Law*, Geneva: International Committee of the Red Cross, p. 67.

5 See International Committee of the Red Cross, 2005, *Discover the ICRC*, Geneva, Switzerland: ICRC, p. 15.

6 Ibid.

7 Ibid.

8 Ibid.

International Armed Conflicts, merely includes an article on ‘Definitions’,⁹ as well as on ‘Terminologies’.¹⁰ Despite this, Additional Protocol I do not define the term ‘armed conflict’.

Pictet provides some guidance by explaining that ‘any difference arising between States and leading to the intervention of members of armed forces is an armed conflict’.¹¹ For Bartels, the phrase applies to international armed conflicts only.¹² The International Criminal Tribunal for the former Yugoslavia (ICTY) similarly considered a ‘resort to armed force between States or protracted armed violence between governmental authorities and organized armed groups or between such groups within a State’ as an armed conflict.¹³ The ICTY’s definition of an armed conflict is all-embracing, in that, it applies to both international armed conflicts and non-international armed conflicts. Basically, two types of armed conflicts exist – international armed conflict and non-international armed conflict.

II.2.1. International Armed Conflict

Simply put, this is fighting between the armed forces of at least two States. Wars of national liberation have been classified as international armed conflict;

II.2.2. Non-International Armed Conflict

This means fighting on the territory of a State between the regular armed forces and identifiable armed groups, or between armed groups fighting one another. To be considered a non-international armed conflict, fighting must reach a certain level of intensity and extend over a certain period of time.

III. *Jus ad bellum and jus in bello*

III.1. *Jus ad bellum*

Jus ad bellum refers to the conditions under which States may resort to war or to the use of armed force in general.¹⁴ Contemporarily, *jus ad bellum* prohibits the use of force, with the exception of right to individual or collective

⁹ See Article 1.

¹⁰ See Article 2.

¹¹ Pictet J., 1958, Commentary on the Geneva Conventions of 12 August, 1949, relating to the Treatment of Prisoners of War, ICRC, Geneva, p. 23.

¹² Bartels R., “Timelines, Borderlines and Conflicts: The Historical Evolution of the Legal Divide between International and Non-International Armed Conflicts”, in the IRRC, Vol. 91, No. 873, March 2009, p. 38.

¹³ *Ibid.* See the International Criminal Tribunal for the former Yugoslavia (ICTY), Prosecutor v. Dusko Tadiq, Decision on the Defence Motion for Interlocutory Appeal on Jurisdiction, Case No. IT-94-I-A, 2 October, 1995, para. 70.

¹⁴ International Committee of the Red Cross, 2004, International Humanitarian Law: Answers to your Questions, Geneva: ICRC, p. 8.

self-defence and Security Council enforcement measures.¹⁵ In this regard, the provisions of Articles 2(4), 51 and 42 of the Charter of the United Nations, 26 June 1945, are worthy of consideration.

Article 2(4) provides: ‘All Members shall refrain in their international relations from the threat or use of force against the territorial integrity or political independence of any state, or in any other manner inconsistent with the Purposes of the United Nations.’

The above provision is the principal source of *jus ad bellum*.¹⁶ However, Articles 42 and 51 make provision for certain *exceptions*. If there is an armed attack against a Member of the United Nations, until the Security Council has taken the measures necessary to maintain international peace and security, individual or collective self-defence right is inherent and allowed.¹⁷ More so, when the Security Council determines the existence of any threat to peace, breach of peace, or an act of aggression,¹⁸ and calls upon the parties concerned to comply with some provisional measures as it deemed necessary or desirable and such parties fail to comply,¹⁹ the Council may decide measures not involving the use of armed force to be taken to effect its decisions;²⁰ and should such measures proved inadequate, it may take such action by air, sea, or land forces as may be necessary to maintain or restore international peace and security. Such actions may include demonstrations, blockade, and other operations by air, sea, or land forces of Members of the United Nations.²¹

III.2. *Jus in bello*

Jus in bello, on the other hand, regulates the conduct of parties engaged in an armed conflict. It has as its aim the conciliation of “the necessities of war with the laws of humanity” by setting clear limits on the conduct of military operations.²² In this regard, the wordings of St Petersburg Declaration and International Court of Justice (ICJ) Advisory Opinion on the Legality of Threat or Use of Nuclear Weapons is worth discussing.

15 See Moussa J., 2008, “Can *jus ad bellum* override *jus in bello*? Reaffirming the Separation of the two Bodies of Law”, *International Review of the Red Cross*, Volume 90 Number 872, December 2008.

16 See Greenwood C., “The Relationship between *ius ad bellum* and *ius in bello*” in: Weiler J. and Nissel A. T. (eds), 2011, *International Law: Critical Concepts in Law*, Volume V *International Law in and of War*, New York: Routledge, pp. 360-376.

17 See Article 51.

18 Article 39.

19 Article 40.

20 Article 41.

21 See Article 42.

22 See Moussa (*supra*).

III.2.1. 1868 St Petersburg Declaration²³

This Declaration fixed technical limits at which the necessities of war ought to yield to the requirements of humanity, by declaring the following:

- That the progress of civilization should have the effect of alleviating as much as possible the calamities of war;
- That the only legitimate object which States should endeavour to accomplish during war is to weaken the military forces of the enemy;
- That for this purpose it is sufficient to disable the greatest possible number of men;
- That this object would be exceeded by the employment of arms which uselessly aggravate the sufferings of disabled men, or render their death inevitable;
- That the employment of such arms would, therefore, be contrary to the laws of humanity.

It further renounced the employment of any projectile of a weight below 400 grams, which is either explosive or charged with fulminating or inflammable substances. Interestingly, the Declaration made a provision for a case of “future improvements which science may effect in the armament of troops.” The Contracting or Acceding Parties reserve to themselves to come together to an understanding whenever a precise proposition is drawn up, in order to maintain the principles which they have established, and to conciliate the necessities of war with the laws of humanity.

III.2.2. ICJ Advisory Opinion on the Legality of the Use of Nuclear Weapon²⁴

On the applicability of the principles and rules of humanitarian law to a possible threat or use of nuclear weapons, the Court noted that, although, nuclear weapons were invented after most of the principles and rules of humanitarian law applicable in armed conflict had already come into existence and there is a qualitative as well as quantitative difference between nuclear weapons and all conventional arms, it cannot be concluded from this that the established principles and rules of humanitarian law applicable in armed conflict do not apply to nuclear weapons. Such a conclusion would be incompatible with the intrinsically humanitarian character of the legal principles in question which permeates the entire law of armed conflict and applies to all forms of warfare and to all kinds of weapons, those of the past, those of the present and those of the future. A clear interpretation of this is that *jus in bello* regulates all weapons used in armed conflict and the entire conduct of the belligerents.

23 Declaration Renouncing the Use, in Time of War, of certain Explosive Projectiles. Saint Petersburg, 29 November/11 December 1868.

24 ICJ, Legality of the Threat or Use of Nuclear Weapons, Advisory Opinion of 8 July 1996.

Jus in bello (law in war, as sometimes called) is related to IHL, for it seeks to address the reality of an armed conflict without considering the reasons for or legality of resorting to force. It regulates only those aspects of the armed conflict which are of humanitarian concern. Its provision applies to the warring parties irrespective of the reasons for the armed conflict and whether or not the cause upheld by either party is just.

IV. Regulation of Outer Space in Relation to Armed Conflicts

In treating this subject, a division has to be made between those United Nations space treaties that have tangential relationship to the regulation of space warfare and those that do not have on one hand, and those treaties that are not among the known United Nations Space Treaties.

The Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and other Celestial Bodies 1967 (hereinafter ‘the Outer Space Treaty’), the Magna Carta of international space law, in its Article IV, prohibits the placement of nuclear weapons and other weapons of mass destruction in orbit around the Earth and establishes, during times of peace, somewhat of a demilitarization of celestial bodies. It also prohibits the establishment of “military bases, installations and fortifications, the testing of any type of weapons and the conduct of military maneuvers on celestial bodies.” This is the most significant provision with respect to armed conflict through space and military forces in space. Under Article III, space activities are to be carried out “in accordance with international law, including the Charter of the United Nations, in the interest of maintaining international peace and security and promoting international cooperation and understanding.” It should be noted that the maintenance of international peace and common security is principal purpose and supreme value of the United Nations.²⁵ More light is thrown on this in the later part of this work. The provision of Article VI of the Outer Space Treaty requiring that States bear “international responsibility for national activities in outer space [...] whether such activities are carried on by governmental agencies or by non-governmental entities” is also pertinent in this discussion. It has a significant impact on the research and development of weapons systems. For example, to the extent that a military space contractor pursues testing of space weaponry in outer space, the host State will bear “international responsibility” for the activity.²⁶ The provision of Article IX of the Outer Space Treaty, can be stretched to cover a situation of armed conflict in and through outer

25 Xinmin M. A., 2014, “The Development of Space Law: Framework, Objectives and Orientations”, A Speech at United Nations/China/APSCO Workshop on Space Law, Beijing, China, 2014.

26 See Major Ramey R. A., 2000, “Armed Conflict on the Final Frontier: The Law of War in Space” *The Air Force Law Review* Vol. 48 2000, p. 76.

space. According to the Article, “States Parties to the Treaty shall pursue studies of outer space and conduct exploration of them so as to avoid their harmful contamination and also adverse changes in the environment of the Earth resulting from the introduction of extra-terrestrial matter and, where necessary, shall adopt appropriate measures for this purpose. It is an incontestable fact the war leaves indelible mark in any area it is fought – Hiroshima and Nagasaki are typical examples.

In the Preamble of the Moon Agreement,²⁷ the prevention of the Moon from becoming an area of international conflict, is desired. Just like the provision in the Outer Space Treaty, activities in the Moon shall be carried out in accordance with international law, in particular the Charter of the United Nations and taking into account the Declaration on Principles of International Law concerning Friendly Relations and Cooperation among States in accordance with the Charter of the United Nations, in the interest of maintaining international peace and security and promoting international cooperation and mutual understanding, and with due regard to the corresponding interests of all other States Parties. Article 3 of the Moon Agreement appears to be more useful as it relates to armed conflicts. It provides that the Moon shall be used exclusively for peaceful purposes. It prohibits any threat or use of force or any other hostile act or threat of hostile act on the Moon. It prohibits the use the Moon to commit any such act or to engage in any such threat in relation to the Earth, the Moon, spacecraft, the personnel of spacecraft or manmade space objects. It prohibits the placing in orbit around or 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. It forbids the establishment of military bases, installations and fortifications, the testing of any type of weapons and the conduct of military manoeuvres on the Moon. With respect to the peaceful and sustainable use of Outer Space, Article 4 of the Moon Agreement is also important. According to the Article, in the exploration and use of the moon, due regard shall be paid to the interests of present and future generations as well as to the need to promote higher standards of living and conditions of economic and social progress. These provisions aim to safeguard the sustainable exploration and use of outer space, with due regard to the interests of present generation and future generations, underpinning the notion of long-term sustainability of outer space and intergeneration equality.²⁸

The Rescue and Return Agreement²⁹ clarifies the duties of States relating to astronauts and objects launched into Space. It gives astronauts the status of

27 Agreement Governing the Activities of States on the Moon and Other Celestial Bodies, 1979.

28 Xinmin M. A (*supra*).

29 Agreement on the Rescue of Astronauts, the Return of Astronauts and the Return of Objects Launched into Outer Space (Rescue and Return Agreement), 1968.

diplomats. The Liability Convention³⁰ takes as its goal an elaboration of “effective international rules and procedures concerning liability for damage caused by space objects and to ensure, in particular, the prompt payment under the terms of this Convention of a full and equitable measure of compensation to victims of such damage.” Its Article II made a launching State “absolutely liable to pay compensation for damage caused by its space object on the surface of the Earth or to aircraft in flight.” The Registration Convention³¹ establishes a mandatory system of registration for space objects launched into orbit and beyond. It specifies the requirement that States maintain a registry, and the nature of its contents.

Other treaties dealing on areas of armed conflicts also exist. For instance, the “Limited Test Ban Treaty”, adopted before any of the “space” treaties, is the first treaty provision governing the use of outer space. The Treaty forbids nuclear weapon test explosion[s], or any other nuclear explosion[s] [...] (a) in the atmosphere; beyond its limits, including outer space; or underwater, including territorial waters or high seas; or (b) in any other environment if such explosion causes radioactive debris to be present outside the territorial limits of the State under whose jurisdiction or control such explosion is conducted.³² The Anti-Ballistic Missile (ABM) Treaty³³ severely limits the deployment, testing, and use of missile systems designed to intercept incoming strategic ballistic missiles. Article V (1) provides that “[e]ach party undertakes not to develop, test, or deploy ABM systems or components which are sea-based, air-based, space-based, or mobile land-based.

V. Space Weapons for Terrestrial Armed Conflicts

Some weapons are land-based, sea-based, or air-based, and can be used to damage space object or interfere with its functioning (for example, anti-satellite weapon or ASAT). Others are space-based and can be used in attacking targets either in space or on the ground (for example, space-based ballistic missile defence interceptors and ground-attack weapons).

Countries have invested billions of dollars into the research and development of advanced space weapons like the Space Based Laser (SBL). Others are in the process of developing a space-based defence option in the form of kinetic kill vehicles capable of destroying enemy ballistic missiles during the boost

30 Convention on the International Liability for Damage Caused by Space Objects (Liability Convention), 1972.

31 Convention on Registration of Objects Launched into Outer Space (Registration Convention), 1975.

32 Treaty Banning Nuclear Weapons in the Atmosphere, In Outer Space and Under Water (Limited Test Ban Treaty), 1963.

33 Treaty on the Limitation of Anti-Ballistic Missile Systems, May 26, 1972, U.S.-U.S.S.R., 23 U.S.T. 3435 (entered into force Oct. 3, 1972) [hereinafter ABM Treaty].

phase.³⁴ Generally, technologies that have been created with the capability and intent of destruction include space-based directed energy weapons, space-based kinetic weapons, certain anti-satellite satellites (ASAT), etc. Some distinct classes of Space-based weapons include, namely:³⁵

V.1. Directed-Energy Weapons

Directed Energy Weapons include a broad variety of technologies such as lasers, particle beams and signal interference technologies like high-powered microwaves or high power radio frequencies.³⁶ These weapons destroy targets with energy transmitted at the speed of light over long distances, are in a class of their own. They include a range of weapons from electronic jammers to laser cutting torches. Directed-energy weapons could destroy targets on or above the earth's surface, depending on the wavelength of the energy propagated and the conditions of the atmosphere, including weather.

V.2. Kinetic-Energy Weapons against Missile Targets above the Atmosphere and against Surface Targets

The concept of Kinetic Energy Weapons is simple: a 'kill' is being executed through high velocity impact (hit-to-kill).³⁷ Kinetic-energy weapons come in two types: those designed to destroy targets outside the earth's atmosphere and those that can penetrate the earth's atmosphere. The first type, described here, could conceivably provide an additional layer of defence against targets that leak through the laser weapons' boost-phase defence. They would destroy targets using the kinetic energy of high-velocity impact and would require very little weapon mass. They are only able to engage targets above 60 km because the interceptor needs to stay out of the atmosphere.

Space-based kinetic-energy weapons for surface targets also destroy targets by using their own mass moving at very high velocities. Unlike weapons that engage targets outside the earth's atmosphere, these must be large enough to survive re-entry through the earth's atmosphere with a speed high enough to be destructive. To preserve accuracy and energy through re-entry, they have to attack targets at steep, nearly vertical trajectories. They could be effective against stationary (or slowly moving) surface targets that are vulnerable to vertical penetration of a few meters, such as large ships, missile silos, hard-

34 See generally, Park A. T., (n.d), "Incremental Steps for Achieving Space Security: The Need for a New Way of Thinking to Enhance the Legal Regime for Space", *Houston Journal of International Law* [Vol. 28:3], pp. 871-912.

35 This is exhaustively discussed by Preston B. (et al.), 2002, *Space Weapons: Earth wars*, United States: RAND. Available at www.rand.org. Accessed 17 September 2015.

36 Vermeer A., (n.d) "The Laws of War in Outer Space: Some Legal Implications for the Jus ad Bellum and the Jus in Bello of the Militarisation and Weaponisation of Outer Space."

37 Vermeer (*supra*).

ened aircraft shelters, tall buildings, fuel tanks, and munitions storage bunkers. Because of their meteoroid like speed entering the atmosphere, these weapons would be very difficult to defend against.

V.3. Space-Based Conventional Weapons against Surface Targets

Space-based conventional weapons would inherit their accuracy, reach, target sets, and lethality from the conventional munitions they deliver. Such weapons could engage a broader range of targets than kinetic-energy weapons, including manoeuvring targets and more deeply buried targets. They could use “old” technology.

Note that both kinetic-Energy weapon and Space-based Conventional Weapon destroy targets by delivering mass to the target using either the kinetic energy of their own velocity and mass or the stored chemical energy of conventional explosives to destroy the target.³⁸ Each type of weapon operates in different ways, is suitable for different kinds of targets, has different response times, and requires different numbers of weapons in orbit to achieve the degree of responsiveness required to reach a particular target when needed.³⁹

V.4. Electromagnetic and Radiation Weapons and Explosive Proximity Weapons

On one hand, Electromagnetic and Radiation Weapons operate through the emission and/or creation of electromagnetic pulse or radiation. The device that brings about both consequences at once is a nuclear weapon. On the other hand, Explosive Proximity Weapons, also referred to as space mines, are moved in position and explode.⁴⁰

VI. Intersection of *jus ad bellum* and *jus in bello* with the Regulation of Outer Space

As earlier mentioned, the cornerstone provision on the regulation of the use of force between States is Article 2(4) of the Charter of the United Nations. This Article is declaratory of customary international law and even considered to be *jus cogens*, thus binding upon all States in all their international relations, including those in outer space.⁴¹ *Jus cogens* (Peremptory norms) are ‘accepted and recognized by the international community of States as a whole as a norm from which no derogation is permitted and which can be modified

38 Ibid.

39 Ibid.

40 Vermeer (*supra*).

41 See, Vermeer A., (n.d) “The Laws of War in Outer Space: Some Legal Implications for the Jus ad Bellum and the Jus in Bello of the Militarisation and Weaponisation of Outer Space”. See also, Randelzhofer A., 2002, “Article 2(4)”, in: Simma B. (ed.), 2002, *The Charter of the United Nations: A Commentary*, Oxford: Oxford University Press, at 112-136.

only by a subsequent norm of general international law having the same character.⁴² The United Nations International Law Commission, talking about *jus cogen* in 2001 states:⁴³

“So far, relatively few peremptory norms have been recognized as such. But various tribunals, national and international, have affirmed the idea of peremptory norms in contexts not limited to the validity of treaties. Those peremptory norms that are clearly accepted and recognized include the prohibitions of aggression, genocide, slavery, racial discrimination, crimes against humanity and torture, and the right to self-determination.”

The Outer Space Treaty expressly confirms that activities in outer space shall be conducted in accordance with international law and the Charter of the United Nations. Article III provides thus:

“States Parties to the Treaty shall carry on activities in the exploration and use of outer space, including the Moon and other celestial bodies, in accordance with international law, including the Charter of the United Nations, in the interest of maintaining international peace and security and promoting international cooperation and understanding.”

The meaning of the above provision is that every activity in outer space is regulated by International Law, including the Charter of the United Nations. Therefore, Article 2(4) automatically regulates activities in outer space. Where there is a lacuna in the legal regime of outer space, International Law rules, including the Charter of the United Nations are called to play. Article 103 of the Charter pushes the point further. It provides thus:

“In the event of a conflict between the obligations of the Members of the United Nations under the present Charter and their obligations under any other international agreement, their obligations under the present Charter shall prevail.”

The interpretation of this, therefore, is that the Charter of the United Nations prevails over any of treaties and principles governing outer space in the event of a conflict. The provision of Article 2(4) of the Charter of the United Nations, where *jus ad bellum* originated from, and the provisions of Articles 42 and 51, where the exceptions to *jus ad bellum* emanated from, apply to outer space in all ramification.

In this regard, the prohibition by Article 51 of Additional Protocol I⁴⁴ applies to armed conflicts through outer space. This article is a key provision and

42 See Article 53 of Vienna Convention 1969.

43 International Law Commission, 2001, p. 85.

44 The Protocol Additional to the Geneva Conventions of 12 August 1949, and relating to the Protection of Victims of International Armed Conflicts (Protocol I), 8 June 1977.

sets clear limits at every stage to the preparation and conduct of military operation. It prohibits indiscriminate attacks – attacks not directed against a definite military objectives (e.g. area bombing) or in which the means and methods of warfare used cannot be restricted to specific military objective (e.g. poorly controllable missiles), or which bring into use other means and methods that make it impossible to observe the rules of International Humanitarian Law.

VII. Duties of Space-Faring Belligerent Nations towards Non-Combatant Civilians and Civilian Objects in Outer Space and on Earth

In any armed conflict, the belligerents must take measures, to the maximum extent possible, to avoid or minimize damage to civilians or civilian objects, whether on Earth or in Outer Space. This will require verifying the nature of what is being attacked and the possible damage that the attack might cause.⁴⁵ The only legitimate object which States should endeavour to accomplish during war is to weaken the military forces of the enemy.⁴⁶ Belligerent State can accomplish this goal in two ways: (a) eliminating those objects which may be regarded as military objectives like units of the enemy armed forces, their armoured cars and mobile artillery, and military installations such as fixed gun emplacements and munition depots; and (b) denying the enemy the acquisition or production of weapons either through cutting off supply or selecting arms factories as targets military operations.⁴⁷

Resolution XXVIII of the 20th International Conference of the Red Cross and Red Crescent (Vienna 1965) and Resolution 2444 (XXIII) of the United Nations General Assembly (1968) reaffirmed some “principles for observance by all governmental and other authorities responsible for action in armed conflicts.”⁴⁸ The relevant ones are – (b) that it is prohibited to launch attacks against the civilian population as such; and (c) That distinction must be made at all times between persons taking part in the hostilities and members of the civilian population to the effect that the latter be spared as much as possible.⁴⁹ The principles clearly underlie the prescriptions of Article 25 and 26 of the

45 See Garcia D., (n.d), “Future Arms: what International Law? Or Future Arms: Legal Vacuum? Or Future Arms: Global Governance Vacuum – What International Law? Or What International Law for the New (Weapons) Technologies?”, a paper presented to the Cornell University Law School, International Law and International Relations Colloquium.

46 Declaration Renouncing the Use, in Time of War, of certain Explosive Projectiles. Saint Petersburg, 29 November/11 December 1868.

47 See Kalshoven F. and Zegveld L, 2001, Constraints on the Waging of War: An Introduction to International Humanitarian Law, Geneva: International Committee of the Red Cross, pp. 44-45.

48 Ibid.

49 Ibid.

Hague Regulations, which provide that undefended towns may not be attacked or bombarded by any means and that the commanding officer of a force attacking a defended locality “must before commencing a bombardment, except in cases of assault, do all in his power to warn the authorities.”⁵⁰

The Additional Protocol I of 1977⁵¹ gave specific form, adapted to today’s circumstances, to the principles concerning the protection of the civilian population first enunciated in the Hague Regulations on War on Land and embodied in customary law.⁵² Article 50 (I) of Protocol I defines civilians as persons not belonging to the armed forces. Article 52 (I) of the same Protocol talks of civilian objects as all objects that cannot be considered as military objectives. Under Article 51, neither the civilian population as a whole nor individual civilians may be the object of attack. “Acts or threats of violence the primary purpose of which is to spread terror among the civilian population are prohibited.” It prohibits indiscriminate attacks – attacks not directed against a definite military objectives (e.g. area bombing) or in which the means and methods of warfare used cannot be restricted to specific military objective (e.g. poorly controllable missiles), *or which bring into use other means and methods that make it impossible to observe the rules of International Humanitarian Law*.⁵³ Any attack that may be expected to cause incidental loss of civilian life, injury to civilians, damage to civilian objects, or a combination thereof, which would be excessive in relation to the concrete and direct military advantage anticipated, must be abandoned.⁵⁴ In the case of operations in an area where civilians or civilian objects are likely to be present, military commanders must always assess the proportionality of the expected harm to the civilians as compared to the intended military advantage. The military commander is under obligation to gather information on the location of military objectives and on the surrounding civilian areas.⁵⁵ If there is likelihood of excessive losses among civilians, the attack must be cancelled or suspended. Article 51(6) prohibits attack against the civilian population or individual civilians by way of reprisals.

Article 52 of Protocol I prohibits attacks on a number of civilian objects. This is an attempt to protect human beings as much as possible from the effects of war.⁵⁶ Any object normally dedicated to civilian purposes, such as a place of

50 Ibid.

51 The Protocol Additional to the Geneva Conventions of 12 August 1949, and relating to the Protection of Victims of International Armed Conflicts (Protocol I), 8 June 1977.

52 Hans-Peter Gasser, 1993, *International Humanitarian Law: An Introduction*, Vienna: Paul Haupt Publishers, p. 62.

53 *Ibid.* See Article 51(4) of Protocol I.

54 See Article 51(5)(b).

55 Article 57.

56 Hans-Peter Gasser, 1993 (*supra*), p. 64.

worship, a house or other dwelling or a school counts as being civilian and therefore must not be attacked, unless and until the commander in charge is convinced to the contrary. “Historic monuments, works of art or places of worship which constitute the cultural or spiritual heritage of peoples” must not be attacked.⁵⁷ “Starvation of civilians as a method of warfare is prohibited.” Therefore, “objects indispensable to the survival of the civilian population” like foodstuffs, livestock or drinking water installations, are protected.⁵⁸ Belligerents must take care in warfare to protect the natural environment against widespread, long-term and severe damage.⁵⁹ There must be no attacks on “works and installations containing dangerous forces”, particularly dams, dykes, and nuclear power installations.⁶⁰

A cardinal question that we need to ask and provide answer to is – Does the protection given to civilian population and civilian objects under International Humanitarian Law, extend to civil space assets and astronauts? The answer to this question is, “yes”, as long as they are not being used for military purposes.

VIII. Conclusion and Recommendations

It has earlier been mentioned that the provision of Article 2(4) of the Charter of the United Nations, is the principal source of *jus ad bellum*. Going by our discussion so far, it can be said that the legal regime of outer space as it relates to armed conflict in and through outer space is inadequate. Therefore, in the event of conflict, the provisions of the Charter of the United Nations should be applied. The wordings of the Charter in Article 103 are worth considering here: ‘In the event of a conflict between the obligations of the Members of the United Nations under the present Charter and their obligations under any other international agreement, their obligations under the present Charter shall prevail.’

The interpretation of this provision is that the Charter of the United Nations prevails over any of treaties and principles of outer space in the event of a conflict. Therefore, the provision of Article 2(4) of the Charter of the United Nations, where *jus ad bellum* originated from, and the provisions of Articles 42 and 51, where the exceptions to *jus ad bellum* emanated from, apply to outer space.

The question, whether *jus in bello* should apply as part of general international law in principle in outer space in the event of armed conflict, has been answered by the ICJ advisory opinion. Therefore, in all armed conflicts, whether on land or in outer space, *jus in bello* must be applied.

57 Article 53 of Protocol I.

58 See Article 54 of Protocol I.

59 Article 55 of Protocol I.

60 Article 56 of Protocol I.

All said and done, this recommends that the time has come for those working the field of International Space Law and International Humanitarian Law, to come up with an all-embracing legal regime, which will embody the principle of *jus in bello* in the regulation of armed conflicts in and through outer space. More so, an international enforcement regime should be put in place for the effective operation of such laws.

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