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THE AMBIT OF THE LAW OF NEUTRALITY AND SPACE SECURITY

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ABSTRACT

Superiority within both the air and space medium is presently considered within American military doctrine, to be the crucial first step in the success of any military operation. Although the law of armed conflict structures the legal relationship between belligerents and the civilian population, it is the law of neutrality that structures the legal relationship between belligerent States and non-belligerent States. The importance of the law of neutrality was elaborated upon by the ICJ in its advisory opinion on the legitimacy of nuclear weapons. Space control and the means and methods through which space control can be achieved remain constrained within the legal boundaries established by the international community through both the law of war and the law of neutrality. This paper will examine the origins and effects of the law of neutrality and its application to the US doctrine of space control. The paper will argue that neutral rights and duties in space are a corollary of the theory of space control promoted by US military doctrine. The paper presents two arguments. First, the law of neutrality confers on neutral states protection from belligerent acts such as those either expressed or implied by the doctrine of space control. Second, the international community is presently at a diplomatic stalemate on the question of the weaponization of space. The Conference on Disarmament (CD) is unable to break the diplomatic stalemate, handicapping the UN discussions on the Prevention of an Arms Race in Outer Space (PAROS). The international community has also frequently expressed concern over the weaponization of space. Given the improbability of the development of an effective legal regime to resolve conflicting national priorities concerning the weaponization of space, the law of neutrality remains, if only by default, a primary normative structure in the regulation of the practical effects of space control.

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FULL TEXT

Superiority within both the air and space medium are presently considered within American military doctrine to be the crucial first step in the success of any military operation.[1] Space superiority is defined as "the degree of dominance in space of one force over another that permits the conduct of operations by the former and its related land, sea, air, space and special operations forces at a given time and place without prohibitive interference by the opposing forces".[2] United States Air Force (USAF) doctrine adds to this definition by including "the degree of control necessary to employ, maneuver, and engage space forces while denying the same capability to an adversary".[3] The result of space superiority is space control, which in turn is defined by the Department of Defense as "the combat, combat support, and combat service support operations to ensure freedom of action in space for the United States and its allies, and when directed, deny any adversary freedom of action in space".[4] This space control "mission" is achieved through the use of counter-space operations.[5] It is important to note that even though counter-space operations target space assets and capabilities, such operations are not limited to occurring within the space environment and may be conducted anywhere within a multidimensional battle-space.[6] In fact counter-space operations are defined as being "those offensive and defensive operations conducted by air, land, sea, space, special operations and information forces with the objective of gaining and maintaining control of activities conducted in or through the space environment".[7] Offensive counter-space measures aim to preclude an opposing belligerent force from exploiting space to their advantage. The means and methods through which offensive counter-space measures work[8] include both "hard kill" and "soft kill" means and methods.[9] Hard Kill weapons are those, which are designed to physically destroy, either completely, or partially the targeted space assets, thus rendering them useless. Soft kill weapons can be equally effective in precluding the use of a space asset but may simply disable the space asset or alter its function without serious physical impact upon the space asset. Examples of hard kill technology that can operate within the space environment are Directed Energy Weapons (DEW[10]) or Kinetic Energy Weapons (KEW[11]). Examples of soft kill means and methods that can also operate within the space environment include KEW weapons that impair without physically destroying the satellite or that simply change the satellite's orbit, Electro Magnetic Pulse weapons (EMP) that degrade the electronic circuitry of a satellite, lasers which temporarily interfere with a satellite sensor (dazzling), high-powered microwave attacks (HPM) and Electronic Warfare Weapons. It is important to note that satellites are not the only targets of offensive counter-space operations, which may target all aspects of a space asset's architecture such as communication links,[12] including up-links and down-links, ground stations, launch facilities, Command, Control, Communication, computer, Intelligence, Surveillance and Reconnaissance (C4ISR) Systems and

1 *Counter-space Operations, Air Force Doctrine Doc.* 2-2.1, 2 Aug. 2004, at 1. (hereinafter: *AFDD* 2-2.1).

2 *Ibid.*, 55.

3 *Id.*

4 U.S. Department of Defense, Joint Chiefs of Staff, Joint Doctrine for Space Operations, *Joint Publication* 3-14 Aug. 9, 2002, at GL-6, available at: www.dtic.mil/doctrine/jpoperationsseriespubs.html (hereinafter: *J.P.* 3-14).

5 For an interesting analysis concerning Rules of Engagement applicable to space military operations *see* R.L. Simerall, "A Space Strategy Imperative: Linking Policy, Force, and Rules of Engagement", 39 *Naval L. Rev.*, 117 (1990). For a detailed analysis on the physics of counterspace operations *see* D. Wright, L. Grego & L. Gronlund, *The Physics of Space Security, A Reference Manual*, published by the American Academy of Arts and Sciences (AAAS), available at: http://www.amacad.org/publications/rulesSpace.aspx (hereinafter: *Physics of Space Security*).

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7 *AFDD* 2-2.1 *supra* note 1, at 51.

8 "U.S. Air Force counterspace operations are the ways and means by which the Air Force achieves and maintains space superiority"; *id.*

9 *AFDD* 2-2.1 (*supra* note 1) lists five such means *Ibid.*, 31.

10 *See* B. Preston *et. al., Space Weapons Earth Wars Project Air Force* (Rand 2002); *see also* Maj. Gen. (Ret.) D.L. Lamberson *et. al.*, "Whither High-Energy Lasers?", *Air & Space Power J.* (Spring 2004), available at: www.airpower.maxwell.af.mil/airchronicles/apj04/;

11 For a description of the technology *see*: http://www.rand.org/pubs/monograph_reports/MR1209/MR1209.appb.pdf;

12 In Sept. 2004 the USAF "fielded its first dedicated OCS capability, the Counter Communications System.. *See* Herbert *supra* note 4, at 5. According to Maj. Ge

even third party providers.[13] Defensive counter-space operations include Camouflage, Concealment and Deception (CC&D), system hardening or shielding, dispersal of space systems, maneuvering and redundancy.[14] From an operational perspective space control comprises four mission areas, these are: surveillance of space, negation, prevention and protection.[15]

I. THE LEGAL MATRIX GOVERNING THE RECOURSE TO THE USE OF FORCE

International law governs the use of force by States. The use of force in space is not an exception to this rule. In fact the primary international treaty governing the activities of States in outer space clearly refers to the international collective security structure within Article III of the 1967 Outer Space Treaty (OST). [16]
The normative deference within OST Article III to international law, the UN Charter[17] and to international peace and security textually launches the law governing both the recourse to force and the law governing the means and methods of the use of force by States into outer space. National security law is thus conventionally present in space.

II. LAW GOVERNING THE USE OF FORCE

The use of force by States is judged twice, firstly, the decision concerning the recourse to force is legally constrained by, customary international law, the UN Charter and the collective security system of the United Nations. This body of law is referred to as *jus ad bellum*. It is comprised mainly of the right to individual and collective self-defense as established in Article 51 of the UN Charter and in customary international law. The United Nations Security Council also has a crucial role to play in determining the legality of the use of force, as its primary function concerns the maintenance of international peace and security.[18]
Secondly, the use of force requires legitimate use of the means and methods as established within a body of law commonly referred to as *jus in bello*. This body of law is composed of customary international law as well as various instruments and is also generally referred to as International Humanitarian Law (IHL), or Law of Armed Conflict (LOAC) and is principally, but not exclusively comprised of the 1907 Hague Conventions, the four 1949 Geneva Conventions and the two 1977 Additional Protocols.[19] Although the applicability of the main space treaties (OST, the 1968 Rescue Agreement,[20] the 1972 Liability Convention,[21] and the 1975 Registration Convention[22]) during an international armed conflict remains a debatable issue, conversely, the applicability of the IHL, or LOAC during an international armed conflict is indisputable.

Furthermore, although IHL structures the legal relationship between warring belligerents and between belligerents and the civilian population, the law of neutrality complements this body of law by structuring the legal relationship between belligerent and non-belligerent States. The importance of the law of neutrality was elaborated upon by the ICJ.[23]

Thus space control and the means and methods through which space control can be achieved remain constrained within the legal boundaries established by the

13 *AFDD* 2-2.1 *supra* note 1, at 33-34.

14 *Ibid.*, at 25-26.,

15 M. Perdomo, "United States National Space Security Policy and the Strategic Issues for DOD Space Control", *US Army War College* 3 (18 Mar. 2005), available at: http://www.strategicstudiesinstitute.army.mil/pdffiles/ksil8.pdf

16 Treaty on the Principles Governing the Activities of States in the Exploration and Use of Outer Space, Including the Moon and Other Celestial Bodies, 1967, 720 *U.N.T.S.* 843 (hereinafter: OST).

17 *Can. T.S.* 1945, No. 7.

18 *See* UN Charter, *supra* note 17, Ch. VII, Arts. 39-51.

19 1949, *ibid.*, 135; Geneva Convention Relative to the Protection of Civilian Persons in time of War 1949, 75 *ibid.*, 287; Protocol Additional to the Geneva Conventions of 12 August 1949, and Relating to the Protection of Victims of International Armed Conflicts (Protocol I), 1977, 1125 *U.N.T.S.* 3; Protocol Additional to the Geneva Conventions of 12 August 1949, and Relating to the Protection of Victims of Non-International Armed Conflicts (Protocol II), 1977, 1125 *U.N.T.S.* 609.

20 Agreement on the Rescue of Astronauts, the Return of Astronauts, and the Return of Objects Launched Into Outer Space, 1968, *T.I.A.S.* 6599 (hereinafter: Rescue Agreement).

21 Convention on the International Liability for Damage Caused by Space Objects, 1972, NO. *U.N.T.S.* 187 (hereinafter: Liability Convention).

22 Convention on Registration of Objects Launched Into Outer Space, 1975, 1023 *U.N.T.S.* 15 (hereinafter: Registration Convention).

23 *Ibid.*, para. 89.

international community through IHL or LOAC and the laws of neutrality, irrespective of the jus ad bellum issues.

III. EFFECT OF NEUTRALITY

The laws of neutrality have a limiting effect on armed conflicts. This effect is multi-dimensional for both belligerents and neutrals. First, neutrality limits the geographical scope of an armed conflict. Consequently, belligerents may not exercise belligerent rights within the territory of neutral States, which includes vessels, aircraft, and space assets listed on their registry.[24] Second, and as a corollary to the first premise, neutrality helps to reduce the number of States, which participate in a conflict. The limitation of the number of participants in a conflict is a direct consequence of the duty of belligerents to respect the sovereign rights of States that decide not to participate in an armed conflict. The scope of the duty to respect the sovereign rights of a State applies to both respect for the territorial integrity of the neutral State and to the exercise of the sovereign rights of the neutral States within international spaces. The standard of the duty to respect the sovereign rights of neutral States is high. As Justice Fleischhauer stated in his separate opinion in the *Nuclear Weapons Case*: "...the respect for the neutrality of States not participating in an armed conflict is a key element of orderly relations between States".[25]

A. History of Neutrality

The concept of neutrality can easily be traced to antiquity.[26] International normative instruments on neutrality are, however, relatively more recent. The principal instruments dealing with neutrality and war were drafted at the onset of the 20th century. These are the 1907 Hague Convention V Respecting the Rights and Duties of Neutral Powers in Case of War on Land[27] and the 1907 Hague Convention No. XIII Concerning the Rights and Duties of Neutral Powers in Naval War.[28] From these treaties one can deduce a legalistic concept of neutrality, namely "the legal position of states which do not actively participate in a given armed conflict".[29] Furthermore, as Oppenheim wrote: "Neutrality may be defined as the attitude of impartiality adopted by third States towards belligerents and recognized by belligerents, such attitude creating rights and duties

24 "The territory of neutral Powers is inviolable": Art. 1, Hague Convention (V) Respecting the Rights and Duties of Neutral Powers and Persons in Case of War on Land (hereinafter: Hague Convention V), repr. in *Documents on the Laws of War* 87 (A. Roberts & R. Geulff eds., 3rd ed., 2000). In the *Nuclear Weapons Case* (*supra* note 25), Shahabuddeen J., within his Dissenting Opinion correctly points out that the term "inviolable" is not defined within the Hague Convention V and argues for a broad interpretation of the concept, not limiting the concept to belligerent acts occurring physically within the territory of a State but including "trail Smelter type of situation" where a State "suffers substantial physical effects of acts of war carried out elsewhere". Shahabuddeen J. then completes his argumentation proffering: "The 1907 Hague principle that the territory of a neutral State is inviolable would lose much of its meaning if in such a case it was not considered to be breached"; *ibid.*, sec. 4, at 10. Neutral territory includes all national waters and airspace, *i.e.*, land, internal waters, territorial seas, and archipelagic waters as well as the airspace above them; *see* M.N. Schmitt & J. Ashley III, "The Law of the Sea and Naval Operations", 42 *Air Force L. Rev.* 119, at 139 (1997).

25 *Nuclear Weapons Case*, *supra* note 25, Separate Opinion of Fleischhauer J., para. 2.

26 *See* P. Constantineau, *La Doctrine classique de la Politique Etrangere* (1998); R.A. Bauslaugh, *The Concept of Neutrality in Classical Greece* (1991); D.J. Bederman, *International Law in Antiquity* (2001). Some publicists argue that the legal concept of neutrality emerged later in the middle Ages. For an interesting discussion on this polemic *see* G. Politakis, *Modern Aspects of the Laws of Naval Warfare and Maritime Neutrality* 348 (1999).

27 *Supra* note 27. According to Roberts & Guelff (*supra* note 27), at the time of its adoption Hague V was considered to be declaratory of customary international law. The "general participation" Article is now obsolete.

28 Repr. in *Documents on the Laws of War, supra* note 27, at 127 (hereinafter: Hague Convention No. XIII). According to Roberts & Guelff, *ibid.*, at the time of its adoption Hague XIII was considered to be declaratory of customary international law. The "general participation" Art. 28 is consequently obsolete. The Hague Conventions are considered to represent customary international law, even jus cogens Nuclear Weapons Case (supra note 25).

29 According to Roberts & Guelff, *supra* note 27, this legalistic form of neutrality is to be "distinguished from other uses of the term, for example to describe the permanent status of a State neutralised by special treaty. In this latter case, particular duties arise in peace as well as in war, and the state may have a treaty obligation to remain neutral"; *ibid.*, 85. The *San Remo Manual on International Law Applicable to Armed Conflicts at Sea* (L. Doswald-Beck ed., 1995) defines "neutral" as "any State not party to the conflict" (at 13). For thorough discussion on the origins of neutrality *see Neutrality Changing Concepts and Practices* (A.T. Leonhard ed., 1988).

between the impartial States and the belligerents".[30] Neutrality is thus a reciprocal concept engendering both duties and rights on the part of both belligerents and neutral States.

B. Juridical Status of Neutrality

It has been argued that the neutrality of States exists merely by virtue of not participating in a war. Once a state of war was declared, neutrality need not be declared: [31]

The question of whether neutrality can still exist within an international system of collective security has been the subject of discussion by publicists since the days of the League of Nations.[32] They generally agree that collective security as structured within the UN Charter precludes States from establishing the juridical status of neutrality *vis-à-vis* an international armed conflict. The concept of neutrality is thus seen as antithetical to the premise of collective security. The argument is based on the application of Articles 2(5), 25 and 39 of the UN Charter. Publicists also generally agree that modern conflicts do not necessarily fit within the security paradigms established within Articles 2(5) 25 and 39 of the UN Charter. Indeed conflicts may arise where the UN does not take a position on determining the identity of the aggressor. An example of such a conflict is the Iran-Iraq War. Another example of silence of the Security Council on the legitimacy of the use of force by States was the NATO intervention in Kosovo. Contextually speaking, in conflicts where public actors decide to use force in a manner, which is outside the strict paradigms of the UN collective security system, the law of neutrality is revived and is once again pertinent to international legal order. Within this context, the argument advanced by Oppenheim[33] remains valid and in accordance with the customary international law of neutrality where any State that does not take part in the armed conflict automatically benefits from neutrality *vis-à-vis* the belligerent States and must respect the rights and exercise duties related to this status. Furthermore, and *a fortiori,* Articles 39 and 25 of the UN Charter have never been applied concurrently. Thus Security Council decisions to use force have been drafted in a manner, which leaves States the option to not participate in a conflict and to remain neutral.[34] In addition treaties subsequent to the UN charter have recognized the existence of neutrality within armed conflicts. As commentators have pointed out, the Geneva Conventions of 1949 quickly signaled the survival of neutrality despite the UN Charter, by specifically restricting the rights of neutral States.[35] Historically, neutrality was contingent upon a declaration of war being issued by belligerent States in accordance with the third Hague Convention of 1907.[36] Article 2(4) of the UN Charter has rendered the legal requirement for a declaration of war inoperative. Within the UN Charter security system there are aggressor States and those that use force for individual or collective self-defense. International armed conflicts now occur in a wide variety of contexts that are often very difficult to categorize. Practically speaking, neutrality is more correctly described as being contingent on the occurrence of a state of generalized hostilities.[37]

C. Raison d'Être of Neutrality

Although laws concerning neutrality have a humane effect by limiting armed conflict, their *raison d'être* is contingent upon historically variable paradigms. In antiquity, neutrality was primarily concerned with the security of city-States. The development of maritime neutrality as seen in the *Consolado Del Mare*, published in 1494, the French marine ordinances of 1543 and 1584, or the Rule of 1756,[38] represented the concerns of a

30 L. Oppenheim 2 *International Law* 653 (7th ed., by H. Lauterpacht, 1963).

31 *Ibid.*, 653-54.

32 *See* F. Deak, "Neutrality Revisited", in T*ransnational Law in a Changing Society – Essays in Honor of Philip C. Jessup* 137-54 (W. Friedman, L. Henkin, & O. Lissitzyn eds., 1972); *see also* L. Henkin, "Force, Intervention, and Neutrality in Contemporary International Law", 57 *Am. Soc'y Int'l L. Proc.* 147 (1963).

33 Oppenheim, *supra* note 33.

34 On this point *see* P.M. Norton, "Between the Ideology and the Reality: The Shadow of the Law of Neutrality", 17 *Harv. Int'l L. J.* 249 (1976).

35 *Ibid.*, at 254; Deak, *supra* note 35, at 144.

36 For an interesting comment on the topic of the effects and requirements of a formal declaration of war *see* "Effects of a Formal Declaration of War: U.S. Defense Department Statement", in 5 *I.L.M.* 791 (1966). For an interesting pre-Charter analysis *see* C. Eagleton, "Form and Function of the Declaration of War", 32 *A.J.I.L.* 19 (1938); F.R. Black, "The Declaration of War", 61 *Am. L. R.* 410 (1927).

37 This position is cogently argued by G.C. Petrochilos, "The Relevance of the Concept of War and Armed Conflict to the Law of Neutrality", 31 *Vand. J. Transnat'l L.* 575 (1998).

38 Politakis, *supra* note 29, at 352-57.

different era primarily motivated by commercial interests and the desire of States to protect them.[39] In studying the history and *raison d'être* of the laws of neutrality one commentator astutely pointed out the pragmatic origins of neutrality, stating that "laws of neutrality probably had their sources in the practical ability of non-participants in a war to insist on certain rights and on the corresponding practical ability of belligerents to impose some duties".[40] Other publicists have linked the development of neutrality with the development of international trade[41].

The same logic should now be applied to space military activities for two reasons. First, in a manner similar to the high seas, space is widely used by public and private entities for civil, commercial and military operations. Simply put, within our information-based society and global economy, space assets are an important link in the information, commercial and security pipelines. This makes the application of the law of neutrality in space necessary for the maintenance of the global public order.

IV. SPACE CONTROL AND NEUTRALITY

It can cogently be argued that neutrality rights and duties in space are a corollary of the theory of space control promoted by US military doctrine. There are two reasons for this. First, the law of neutrality confers on neutral States protection from belligerent acts such as those either expressed or implied by the doctrine of space control.[42] Second, the international community is presently at a diplomatic stalemate on the question of the weaponization of space. The Conference on Disarmament (CD) is unable to break the diplomatic stalemate, handicapping the UN discussions on the Prevention of an Arms Race in Outer Space (PAROS). Further, the international community has frequently expressed concern over the weaponization of space.[43] Given the improbability of the development of an effective legal regime to resolve conflicting national priorities concerning the weaponization of space, the law of neutrality remains, if only by default, a primary norm in the regulation of the practical effects of space control. The importance of neutrality in space is implicitly recognized in US military doctrine, which advocates targeting neutral commercial space assets, should these be inadvertently used in an international armed conflict. It is argued that the use of neutral commercial space assets indirectly in support of an adversary's military activities renders these assets legitimate military objectives, subject to attack even preemptively.[44] This is a serious warning to neutral States to develop the legal and technical capacity to maintain the neutrality of their space assets during an international armed conflict.

Although not expressly stated within AFDD 2-2.1,[45] a belligerent must respect the neutrality of a non-belligerent in space. The international legal order obliges a State, which exercises space control as advocated within the said doctrine to respect the right of neutral States to access space and the ensuing freedom of navigation in space. This is an important factor in space control, restraining both the targeting process and possible collateral damage that could result from attacking military objectives in space. During the exercise of space control, the question that needs to be asked is, does the weapon or its effects respect the sovereign rights of neutrals in outer space?

The risk of damaging or destroying neutral space assets requires a definition of a neutral satellite. The law concerning maritime neutrality can perhaps help in establishing such a definition. The San Remo Manual on International Law Applicable to Armed Conflicts at Sea[46] defines a neutral ship as any ship from a nation not party to a conflict. Nonetheless, the nationality of ships differs from the "nationality" of satellites. The determination of the neutral status of a satellite in international law is problematical. First, there is no text in international legal instruments that defines a neutral satellite. Secondly the normative structure within the

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39 E. David argues: "Le fondement de la neutralite est cependant beaucoup moin humanitaire que commercial et ce n'est pas par hazard si, datan de l'antiquite, l'institition ne se developpe qu'au XIX siecle..."; *Principes de Droit des Conflits Armés* 17 (1999).

40 H.J. Taubenfeld, "International Actions and Neutrality", 57 *A.J.I.L.* 377 (1953).

41 *Documents on the Laws of War*, *supra* note 27, at 85.

42 The applicability of the law of neutrality is practically omitted from *AFDD* 2-2.1 *supra* note 1.

43 For a such expression of concern on the importance of preventing an arms race in space *see*: UN G.A. Res. 58/37, 17 Dec. 2003, adopted by a recorded vote of 113 in favour to 3 against (Federated States of Micronesia, Israel, United States), with 56 abstentions, online: United Nations.

44 *AFDD* 2-2.1, *supra* note 1, at 31.

45 *Supra* note 1.

46 *Supra* note 32.

major space law instruments compound the difficulty by dissociating the concepts of a State's "jurisdiction and control" of a satellite (Article VIII OST) from the State's international liability for national activities in outer space (Article VI OST)

Evidence of jurisdiction and control is established through the Registration Convention, which limits registration to Launching States. [47] Pursuant to Article III of the Registration Convention, the UN Secretary General maintains a register, which indicates, amongst various data the name of the launching State or States and the general function of the space object. Neither the OST nor the Registration Convention provides a mechanism, which allows for the transfer of the jurisdiction and control of a satellite to a non-launching State[48]. Considering that the ownership of a satellite can be transferred while in space, a satellite can conceivably be under the theoretical "jurisdiction and control" of a state while being owned and operated by nationals of a different state. State practice on this issue varies.[49] This discrepancy significantly increases the difficulty in determining the legal status of a targeted satellite as being an asset of either a belligerent or neutral state. This normative dilemma could result in the space treaties becoming irrelevant in the determination of the legal status of a satellite during an international armed conflict. The U.N.G.A. recently expressed its concern over current diverging State practices regarding on orbit transfer of ownership of space objects, recommending the enactment and implementation of national laws providing continuing supervision of space activities.[50] A harmonization of state practice on this issue would increase space security. Furthermore, a protocol to the Registration Convention could address this issue and further strengthen the impact of the Registration Convention on space security.

A. Practical Applications

The 1907 Hague Convention No. V[51] establishes in Article 8 that a Neutral Power is not called upon to forbid or restrict the use on behalf of the belligerents of Telegraph or Telephone cables or wireless telegraphy apparatus belonging to companies or private individuals. Although not originally intended to apply to space assets, the interpretation of the norm can evolve to become applicable to satellite telecommunications. Thus the use of a neutral telecommunication satellite by a belligerent would not necessarily be a violation of the duties of a neutral State. Article 40 of the 1923 Hague Rules also states "Belligerent military aircraft are forbidden to enter the Jurisdiction of a neutral state".[52] Although strictly speaking this paradigm cannot easily be transposed to apply to space assets and their applications, from a space law conceptual perspective the use of the word "jurisdiction" is nonetheless very interesting. Considering that sovereign territory in outer space does not exist but that States have "jurisdiction and control" over their space assets, by transposing the Hague Rules paradigm involving the use of the term "jurisdiction", interference with the national jurisdiction of States in Outer Space could be determined to be a violation of neutral rights.

The international trade of space related services during an armed conflict remain subject to the laws of neutrality. According to Article 7 of Hague Convention No. V[53] a neutral State is not obliged to prevent the export on behalf of belligerent of arms munitions or anything that can be of use to an army. The Hague Convention No. XIII[54] reaffirms this principle within its Article 7. Nonetheless Article 6 of Hague XIII prohibits the supply of war material of any kind in any manner, directly or indirectly, by a neutral State to a belligerent. The supply by a neutral state of earth imaging data to a belligerent, either raw or processed, would then be a violation of neutrality. However the export of data to a belligerent by a private company operating an Earth imaging satellite, which has no government ownership, would fall under Article 7 of Hague XIII and would not necessarily entail a State's violation of its neutral duties. The exception to this rule would be the presence of a UNSC resolution calling for an embargo of such commercial transactions. The sale by a purely private company of earth imaging data either raw or processed and/or the information

47 *Supra* note 24, there can be more than one Launching State.

48 U.N.Docs. ST/SG/SER.E/333 and 334, (Apr. 3, 1998).

49 Bin Cheng, *Space Objects and Their Various Connecting Factors, in* OUTLOOK ON SPACE LAW OVER THE NEXT 30 YEARS 214 (Gabriel Lafferranderie & Daphné Crowther eds., 1997)

50 G.A. Res. 59/115, ¶ 3, U.N. GAOR, 59th Sess., U.N. Doc. A/RES/59/115 (2005)

51 *Supra* note 27.

52 *Documents on the Laws of War, supra* note 27, at 139..

53 *Supra* note 27, at 85.

54 *Supra* note 31.

contained therein to a belligerent does however raise other impòrtant IHL issues such as that of being a mercenary as defined in additional Protocol II Article 47 or the direct participation in hostilities by civilians with their ensuing consequences. Nonetheless, the trade of Earth imaging data is also closely related to the draft 1923 Hague Rules (First Part) that establish in Article 6.1 that the transmission from a neutral vessel or aircraft, while on the high seas, of any military information intended for a Belligerent's immediate use is to be considered a hostile act. In applying this rule to space based earth imaging it can be cogently argued that the transmission of earth imaging data and/or of the information resulting from the processed data, which has either tactical or strategic value, in real time to a belligerent, is a hostile act. In these circumstances the "neutral" or private space asset violating these norms would then be liable to capture or attack as a legitimate military objective. The acquisition and use of space imagery and space communications is an issue of concern to US military planners and current American policy is to deny enemy access to these.[55]

Neutrality laws also have an impact on the international trade in launch services. Using the Alabama Claims Arbitration[56] logic as codified in Article 8 of Hague XIII, it can be argued that a State must use due diligence to prevent the launch of a satellite from its territory when it has reasonable grounds to believe that the satellite is intended for military use in a conflict within which it is neutral. Similarly a neutral state is bound to employ the means at its disposal to prevent the fitting or arming of a satellite within its territory which it has reason to believe is intended for hostile operation against a belligerent with which it is at peace.

The practical effects of the laws of neutrality upon belligerents is primarily that belligerents must not direct hostilities against a neutral State's space assets.[57] In transposing the paradigm of naval warfare into outer space, one can cogently argue and most would agree that unrestricted warfare against neutral space assets is unlawful.

B. Attacking a Neutral Satellite

The law of naval warfare allows, under certain conditions, belligerent acts against neutral vessels. On this point, the San Remo Manual points out that as a principle neutral vessels cannot be attacked, subject to certain exceptions such as carrying contraband.[58]

Contextually speaking,[59] the nature of space activity is considerably different from maritime trade. Nonetheless, in applying a similar rule to space assets, it can cogently be argued that a satellite of a neutral State cannot be attacked unless the satellite engages in a belligerent act or otherwise makes an effective contribution to the enemy's military action. Consequently, should a neutral space asset be used impermissibly by a belligerent, and should the neutral State be either unwilling or unable to stop the use of its asset, an attack upon the misused asset may be legally justified either under the doctrine of self-help or simply self-defense.[60] Although these two doctrines are very similar, an important difference exists in the conditions precedent to such attack. Under the doctrine of self-help, if time permits, a State should contact the neutral government allowing it time to react and correct the situation. Under the doctrine of self-defense, a State may react immediately to an imminent or ongoing attack originating from a neutral asset.[61]

V. OPERATIVE STANDARD OF SPACE NEUTRALITY

The international law standard applicable by belligerents towards neutral space assets and the latter's corresponding freedom of navigation in space is a primary factor that will determine the efficacy of neutral rights in space. In discussing the respect of neutral rights by belligerents, it is to be noted that in international humanitarian law the term "respect" has a very specific connotation amounting to a stringent duty of care upon belligerents. In fact, within the corpus of international

55 Perdomo, *supra* note 15, at 13.

56 Treaty Between Great Britain and the United States for the amicable settling of All Causes of Difference Between the Two Countries, signed at Washington, 8 May, 1871, Clive Parry (Ed.) The Consolidated Treaty Series (Oceana Publications, Inc, Dobbs Ferry, New York 1977), Vol. 143, p. 145.

57 Dinstein, *supra* note 51, at 99.

58 *San Remo Manual, supra* note 32, para. 67.

59 Container shipping presently severely restricts the ability to search ships on the high seas. *See* F.F. Megna, "Time for a Change: Maritime Neutrality in the War in Terror": http://atlas.usafa.af.mil/jscope/JSCOPE04/Megna04.html

60 Schmitt & Ashley, *supra note* 27, at 140.

61 *Ibid.*, at 141.

humanitarian law, the term "respect" is used to create legal protection for a category of individuals or objects, precluding a legitimate attack.[62] Consequently a duty of "respect" of neutral rights within a context of international humanitarian law terminology would presuppose a duty not to attack. It is perhaps more accurate to speak of a duty of "due regard" upon belligerents towards the neutral rights of space faring nations.[63] It has been cogently argued that the use of the standard of "due regard" in the law of naval military operations results from an "accommodation of interests or a balancing of rights and duties that can be summed up in the concept of reasonable use".[64] This argument can easily be transposed to space belligerent operations and to the rights of neutral States in space. Considering that a duty of due regard conventionally exists in outer space through Article IX of the OST a development of the law of space neutrality would strengthen the OST. Again, a Protocol could be added to the OST concerning this issue.

One of the primary difficulties in applying the law of neutrality to space military operations lies in the need to reconcile the law of neutrality and the right of self-defense as set out in Article 51 of the UN Charter. It is interesting to note that neither the UN Charter prohibiting the use of force primarily at Article 2(4) nor the Charter right of self defense is weapon specific.[65] These normative dispositions thus cannot be used to either justify or ban space weapons *per se*. Nonetheless, the argumentation which Justice Fleischhauer adroitly presented concerning the interface between the law of neutrality and the right of self defense in its application to nuclear weapons equally holds true when applied to space weapons. Justice Fleischhauer opined that these two principles were "in sharp contradiction to each other".[66] Although these two fundamental principles of the international legal system do not negate each other their coexistence remains problematic as a conflict of norms of equal standing or value.

The reasoning of the ICJ along with the Separate Opinion of Justice Fleischhauer posits that a violation of the law of neutrality could be breached should the survival of a State be contingent upon such actions.[67] An argument can be made that the threshold permitting the violation of neutral rights in outer space could be set at an equally high level as that established for the use of nuclear weapons on earth. It is to be noted that the ICJ did not limit the scope of its decision to the use of nuclear weapons on Earth. Consequently, the ICJ argument is easily applicable to nuclear space weapons. Nonetheless, considering the variety of the means and methods available to establish space control that may not involve the detonation of a nuclear weapon in space, a more nuanced and reasonable argumentation is perhaps one based on the principles of necessity and proportionality in the recourse to the use of force in space. Most publicists generally agree that an act of self-defense must be necessary and proportional.[68] The reasonableness and degree of violation of neutral rights in space would have to be proportional to the threat of the misuse of the neutral space asset faced by the State invoking the right. Such action should not be taken for a retaliatory or punitive purpose.[69] A space military operation that would affect the rights of neutral States within a geostationary orbit would require greater justification than the unintended consequences affecting a single

62 M.S. McDougal & W.T. Burke, *The Public Order of the Oceans* 51-52 (1962):

63 In applying this principle to naval warfare the *San Remo Manual (supra* note 32) states: "In carrying out operations in areas where neutral States enjoy sovereign rights, jurisdiction, or other rights under general international law, belligerents shall have due regard for the legitimate rights of those neutral States"; *ibid.*, para. 12.

64 J.A. Roach, "The Law of Naval Warfare at the Turn of Two Centuries", 94 *A.J.I.L.* 64, 68 (2000).

65 The ICJ stated in its Advisory Opinion in the *Nuclear Weapons Case* (*supra* note 25) in discussing Arts. 2(4), 42 and 51 of the UN Charter: "These provisions do not refer to specific weapons. *ibid.*, para. 39.

66 *Nuclear Weapons Case, supra* note 25, Separate Opinion of Fleischhauer J., para. 5.

67 *Id..*, para. 5.

68 1)

necessary promptly to secure the permissible purposes", in M.S. McDougal & F.P. Feliciano, *Law and Minimum Public World Order: The Legal Regulation of International Coercion* 217 (1961). In an excellent article Maj. E.S. Waldrop points out that the American SROE defines proportionality in the use of force as "reasonable in intensity, duration, and magnitude to the perceived or demonstrated threat based on all facts known to the commander at the time", in "Integration of Military and Civilian Space Assets: Legal and National Security Implications", 55 *Air Force L. Rev.* 219 (2004

Ibid., at 219-20.

69 Gray, *supra* note 67, at 106, points out the aim of such act must be limited to "halt and repel".

satellite of a neutral country within a different seldom used orbit.[70] Arguably, the creation of space debris resulting from the use of force in space weather as an act of self-defense or self-help, and its corresponding effects upon the rights of neutral States would necessarily be an important variable in determining whether such an act in outer space is proportionate. It is interesting to note that in 2004 the International Space Station and two classified US DOD satellites were forced to maneuver in order to avoid space debris.[71]

VI. THE AMBIT OF SPACE NEUTRALITY

The laws of naval neutrality were created in an effort to maintain international trade during wars. The laws of neutrality specifically addressed the problems caused by naval technology of the time. The challenge at hand is to establish a normative structure relating to both the freedom of neutral navigation in space and the acceptable space commercial activities of neutral States *vis-à-vis* belligerents. In space, current technology does not permit interception, and inspection of space assets. Space security concerns are different than those of naval security and are based on the use of the asset rather than the nature of the cargo it is carrying. Furthermore, space navigation differs considerably from naval navigation. Space assets are less capable of choosing their routes in a manner similar to ships at sea. Space navigation is predicated upon predictable orbital parameters or orbital coordinates. Some satellites, such as those in the crowded geostationary orbit must maintain a fixed position in orbit. Other satellites have more eccentric orbits or even polar sun-synchronous orbits such as Earth imaging satellites. Space weaponry and their corresponding effects differ considerably from naval weapons. The targeting and attack of a space asset can cause considerable havoc to the navigation of other satellites through either space debris or through the radiological effect of the weapon. Seen in this light, an additional cause of concern for neutral States is the effect of the weapon, and not just the targeting of a satellite. Consequently, the rule of due regard for neutral rights in space, becomes a rule affecting weapons and their use more than anything else. Space military operations thus have a distinct variable to factor into the calculus of targeting, namely the duty of due regard towards the rights of neutral States to freedom of use and navigation in outer space.

VII. INCIDENTS OF CONCERN

It is important to remember that the technological capacity to affect space assets is available on the open market. For example GPS jammers may be purchased for $38,000.00 and satellite "noisemakers" can be purchased for 7,500.00.[72] Modern weapon systems generally have a back up inertial guidance system in case of GPS signal jamming but will nonetheless have decreased accuracy from the jamming.[73] The international proliferation of space capable military technology is evidenced by the following occurrences. In 2005 the State of Libya was accused of jamming the broadcast of two satellites, namely Eutelsat's Hotbird[74] and Loral Skynet's Telsat 12. The effect of this jamming was the interruption of the signals from several TV and radio stations. The jamming signals had been identified as originating from Tripoli. There are several issues of concern here.[75] However, from the perspective of both the law of neutrality and the law of armed conflict, an issue of concern is the indirect effect of the Libyan actions, namely the disruption of US military communications in the Mediterranean. This incident demonstrated the possible unintended consequences of radio frequency jamming actions. Such

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70 On this point it is important to note as T. Hitchins commented on *AFDD* 2-2.1 (*supra* note 1) that: the Counter-space Operations doctrine itself makes no mention of the dangers of space debris or the need to ensure against unintentional damage caused by its creation Available at: www.CDI.org

71 *See* Herbert, *supra* note 4, at 4. *see Physics of Space Security*, *supra* note 5, at 136.

72 According to Lt. Col. T. Freece, "GPS jamming is a verified adversary tactic"; *see* Herbert *supra* note 4, at 5. *see also*:
http://www.f-16.net/f-16_armament_article9.html.

73 C.B. Puckett, "In This Era of Smart Weapons is a State Under an International Obligation to Use Precision-Guided Technology in Armed Conflict", 18 *Emory Int'l L. Rev.* 645, at 715 (2004).

74 *see:*
http://www.washingtontimes.com/op-ed/20051215-092213-4859r.htm.
and http://www.parliament.the-stationery-office.co.uk/pa/cm200506/cmhansrd/cm051208/text/51208w32.htm

75 According to the ITU Constitution, *supra* note 19, Art. 45, harmful interference with radio communications must be avoided and all States recognize the necessity of taking all practical steps to prevent harmful interference.

unintended consequences can be quite destabilizing, as space is increasingly considered a battleground.[76] Space is no longer considered by the US as a militarily benign environment. The importance of space dominance dictates that US military satellite operators should no longer assume that satellite failures are necessarily the result of equipment malfunction but rather the result of malicious acts of enemies.[77]

It is also reported that Iran in 2003 had succeeded in jamming the uplink to Telstar 12 from its embassy in Cuba.[78] That such an act could emanate from an embassy is an issue of serious legal concern.

A Chinese satellite was also the target of jamming activities in 2005.[79] More specifically on March 13 2005, six transponders on AsiaSat 3S satellite were jammed. Although the point of origin of the jamming remains unknown, the jamming signals could have originated from outside China. This incident also demonstrates that such act may be done not only by States but also by individuals or groups.

It must also be kept in mind that broadcasts of hate radio were an important part of the 1994 Genocide in Rwanda. A cogent argument can be made for a UN Chapter VII action in jamming such broadcasts.[80]

CONCLUSION

In observing the collective security system of the League of Nations, Professor Jessup had commented that a collective security system could benefit from the creation of an intermediate status between belligerents without retaining the classic status of neutrality.[81] Furthermore, Professor Lauterpacht's observation on the topic of neutrality during the era of the League of Nations still holds true today, namely that neutrality "has never been a doctrine with an immutably fixed content"[82] The observations of these two publicists might very well help to develop a contemporary concept of space neutrality embedded within a theory of space security. The concept of space security could encompass both space control and space neutrality creating a dynamic theoretical concept with a practical and justiciable regulatory effect upon international actors.

The law of neutrality remains an important normative corrolary to the doctrine of space control. Neutrality creates an active balance between the conflicting interests of the belligerents and those that wish to remain outside the conflict. As George P. Politakis has commented, "[n]eutrality is certainly not a static point of equilibrium; it is a dynamic power relation".[83] From this perspective, the law of neutrality unmasks the fundamental paradox that permeates the doctrine of space control. In justifying the US doctrine of space control, US military manuals stress, "US space systems are national property afforded the rights of passage through and operations in space without interference".[84] These documents then review the possible consequences that can result from interference with American space assets that is viewed as an infringement of the sovereign rights of the US justifying self-defense measures.[85] Yet neutral satellites also benefit from this same right of passage and operation in space without interference.

The development and clarification of space neutrality norms is a necessary corollary to a doctrine of space control. However for space neutrality to properly evolve, in a similar manner in which naval neutrality evolved, there must be an international synergy combining space policy and capacity to promote, enforce and protect neutral rights in space. The moment appears to be propitious for nations concerned about the weaponization of space to expand their space policy and space power to influence the development of the law of space neutrality and its impact upon space security. Space security can only be enhanced by the determination of clear norms helping belligerents identify neutral space assets and

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76 According to Gen. L.W. Lord, commander of Air Force Space Command, "military leaders must think of space as a battleground. Indeed combat capabilities provided by advanced orbital systems increasingly are at risk"; *see* Herbert, *supra* note 1, at 1.

77 *See* Herbert, *supra* note 4, at 4-5.

78 http://www.washtimes.com/world/20030715-114937-2635r.htm

79 *See*: http://english.people.com.cn/200507/05/eng20050705_194131.html

80 A.C. Dale, "Countering Hate Messages that Led to Violence: The United Nations' Chapter VII Authority to use Radio Jamming to Halt Incendiary Broadcasts". Vol 11 Duke . Comp. 7 Int'l L. (2001) 109.

81 P.C. Jessup, "Should International Law Recognize an International Status Between Peace and War?", 58 *A.J.I.L.* 98 (1954).

82 Sir E. Lauterpacht, *International Law Being the Collected Papers of Hersch Lauterpacht* (Vol. 5, Disputes, War and Neutrality) 611 (2004).

83 Politakis, *supra* note 29, at 347.

84 Department of Defense Directive No. 3100.10 (July 9, 1999), Art. 4.1.

85 *Ibid.*, Art. 4.2, 4.2.1.

determining the corresponding rights and duties of neutral States.