

NEW HEIGHTS OF COMBAT—YESTERDAY’S SCIENTIFIC FANTASIES, TODAY’S TECHNOLOGICAL POSSIBILITIES: WEAPONISATION OF OUTER SPACE

JACKSON NYAMUYA MAOGOTO*

Dr Jackson Maogoto is a Senior Lecturer in Law at the University of Newcastle (Australia). He holds a masters degree from the University of Cambridge and a doctorate from the University of Melbourne. He is the author of three books and over two dozen refereed journals. His field of specialty is Public International Law. His research interests include use of force and international law, the law of armed conflict and counter terrorism. His current research focuses on a detailed study that seeks to consolidate and address technological breakthroughs in the militarization and weaponization of space against the landscape of the Space Law regime. It examines space technology as the basis of integrated battle platforms. The research will highlight the fact that the international arena now has a new game in the making for which it is in many ways ill equipped to handle with dual purpose technology having capabilities for both defensive and offensive purposes.

ABSTRACT

This Article focuses on militarization and weaponization of space. Though there are no authoritative international definitions of either term, the former refers to ‘the use of outer space by a significant number of military spacecraft’, while the latter ‘refers to the placing in outer space for any length of time any device designed to attack man-made targets in outer space and/or in the terrestrial environment.’ Militarization of space occurred many decades ago. The contemporary concern is weaponization of space; that is, the introduction of new futuristic weapons into the space environment. The Article argues that the quantum leaps by China’s space program (set to outpace Russia’s cash strapped program) may herald the dawn of a new Cold War and a heated arms race with the United States as China seeks to underwrite its regional pre-eminence with military might. The Article highlights the fact that the international Space Law regime now has a new game in the making for which it is in many ways ill equipped to handle.

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 Ashy, USAF (1996)

[I]f there was ever a threat to our national security [in space], the best—the only—way to solve the problem is to take weapons into space.²

General Howell M Estes, III USAF (1997)

The Pentagon is so sure that whomever controls space will control the Earth and beyond that they are feverishly working to deploy anti-satellite weapons (ASATs) that will enable the US to knock out competitors’ ‘eyes in the sky’ during any future hostilities. As the Space Command says in its slick Vision for 2020 brochure, ‘Control of space is the ability to assure access to space, freedom of operations within the space medium, and an ability to deny others the use of space if required.’³

Bruce K Gagnon (1999)

* LLB (Hons) (Moi), LLM (Hons) (Cantab), PhD (Melb), GCertPPT (UoN). Senior Lecturer in Law, University of Newcastle (Australia). The author wishes to acknowledge the enlightening comments and suggestions of two anonymous referees which contributed to the strengthening of the substantive flow and structure of this Article. Any errors however remain the author’s.

¹ Quoted in William B Scott, ‘Pentagon Considers Space as New Area of Responsibility’ (1997) 146(12) *Aviation Week and Space Technology* 54, 55.

² *Ibid.*

³ Bruce K Gagnon, ‘Pyramids to the Heavens: The Coming Battle for Control and Exploitation of Space’ (1999) 48 *Toward Freedom* 1, available at <<http://www.towardfreedom.com>> at 10 December 2005.

I. INTRODUCTION

The mastery of outer space as the basis of integrated battleground platforms⁴ is fast becoming a reality. As the two Gulf Wars and the Kosovo military campaign made clear, space assets are decisive in battle planning and execution. The contemporary move towards weaponization of space and its intersection with international law forms the basis of this article. Given the increasing global reliance on space systems, and increasing militarization of space, its weaponization and evolution into a distinct theatre of military operations seems likely.⁵ With the dawn of the 21st century, the prospect of a celestial war is no idle scenario. Space warfare is the focus of serious planning as the military planners of major powers brace for new forms of high-tech combat. The notion of space warfare has moved from pure science fiction, created in Hollywood, to realistic planning.⁶ Though armed conflicts have not occurred in space to date, the rudimentary means for engaging in such conflicts now exist. This is particularly evident in the US where the Air Force has recently increased its focus on space—not just how to operate there, but how to protect operations and attack others in space.⁷ It has established a new ‘space operations directorate’ at Air Force Headquarters, opened a new Space Warfare School and activated two new units: the 76th Space Control Squadron and the 527th Space Aggressor Squadron.⁸

⁴ This concept encapsulates the combination of land, sea and air forces through the use of space assets notably satellite capabilities to enhance the co-ordination of manpower and facilitation of synergies of firepower. This includes centralisation of the gathering and processing of intelligence (tracking and identifying military objectives including troop movements), transmission and dissemination of orders from central command centres to the war theatre and vice versa and use of Global Positioning Satellites (GPS) to facilitate troop movements and mark targets.

⁵ See United States Space Command, *Vision for 2020* (1997) Federation of American Scientists <<http://fas.org.spp/military/docops/usspac/visbook.pdf>> at 15 November 2005.

⁶ Thomas E Ricks, ‘Space is Playing Field for Newest War Game: Air Force Exercise Shows Shift in Focus’, *Washington Post*, 29 January 2001, A01, available at <<http://www.washingtonpost.com/ac2/wp-dyn/A58813-2001Jan28>> at 10 October 2005.

⁷ Ibid.

⁸ Ibid.

Many may regard combat in space as an extension of air to air ‘dog-fighting’, but the velocities involved and the nature of the battlefield itself suggest a different set of dynamics. Major Robert A Ramsey suggests that space combat ought to be viewed *sui generis* as fundamentally different from combat in terrestrial airspace, based on the reality that air combat and space combat ‘are fundamentally different types of combat suggesting different doctrinal tenets of power’.⁹ He astutely notes: ‘freed from a strict air warfare paradigm, the effort to establish limits on space combat in its own right can draw principles of armed conflict from those applicable to land and sea warfare, as well as from those governing air warfare’.¹⁰ This author concurs with Ramsey’s conclusion that, ‘[w]hile the military use of space has traditionally been viewed as a medium from which to support terrestrial warfare, including air warfare, space as a medium of warfare itself raises entirely different legal and operational issues’.¹¹ Considering the spatial separation of human combatants from their weaponry and the legal analysis of issues unique to space combat, it is asserted here that space warfare is indeed a stand-alone field of combat that is not adequately captured by the international regime on the use of force.

At the heart of this Article lies the theme of militarization and weaponization of space. Though there are no authoritative international definitions of either term, the former refers to ‘the use of outer space by a significant number of military spacecraft’, while the latter ‘refers to the placing in outer space for any length of time any device designed to attack man-made targets in outer space and/or in the terrestrial environment.’¹² Militarization of space occurred many

⁹ Robert A Ramey, ‘Armed Conflict on the Final Frontier: The Law of War in Space’ (2000) 48 *Air Force Law Review* 1, 2.

¹⁰ *Ibid.*

¹¹ *Ibid.*

¹² Ivan A Vlastic, ‘Space Law and the Military Applications of Space Technology’ in Nandasiri Jasentuliyana (ed) *Perspectives on International Law* (1995) 386, n 6.

decades ago.¹³ The contemporary concern is weaponization of space; that is, the introduction of weapons into the space environment. This Article seeks to highlight the fact that the international space law regime¹⁴ now has a new game in the making for which it is in many ways ill equipped to handle.

In Part II the Article discusses the trends towards an arms race in space, noting the various technological and engineering endeavours geared to this goal. It analyses the efforts towards militarization and weaponization of outer space in the shadow of international efforts to push for an exclusive use of outer space for peaceful purposes. It notes the antagonistic domestic policies (particularly by the United States) to recognise the utility of space within its broad self-defence concept. Part III focuses on a discussion of the space regime. It adopts a two-prong analysis on one hand elaborating the entrenchment of international legal instruments to govern outer space, and exposing their inadequacies and limitations in respect of the weaponization of space. On the other hand, it carries out a tour de horizon of the efforts of various specialist UN committees and conferences to secure a consensus to halt weaponization of outer space.

Part IV of the Article notes the maturation of a space enabled integrated battle platform manifest in the first Gulf War and the paradox of the 1990s—a decade in which significant technological breakthroughs brought weaponization of the space to the fore and witnessed United

¹³ From the initial conquest of space, both the US and the Soviet Union used space for such military purposes such as early warning and monitoring of arms control agreements and military reconnaissance.

¹⁴ The space regime as it now exists rests upon five multilateral United Nations treaties on outer space: *Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space in the Exploration and Use of Outer Space, Including the Moon and Other Celestial Bodies*, opened for signature 27 January 1967, 610 UNTS 205 (entered into force 10 October 1967); *Agreement on the Rescue of Astronauts, the Return of Astronauts, and the Return of Objects Launched into Outer Space*, opened for signature 22 April 1968, 672 UNTS 119 (entered into force 3 December 1968); *Convention on International Liability for Damage Caused by Space Objects*, opened for signature 29 March 1972, 961 UNTS 187 (entered into force 1 September 1972); *Convention on Registration of Objects Launched into Outer Space*, opened for signature 14 January 1975, 1023 UNTS 15 (entered into force 15 September 1979); and *Agreement Governing the Activities of States on the Moon and Other Celestial Bodies*, opened for signature 5 December 1979, [1986] ATS 14, annexed to GA Res 34/68, UN GAOR, 34th sess, UN Doc A/34/664 (1979) (entered into force 11 July 1984). These treaties evolved from a series of General Assembly resolutions and declarations following the creation of the Outer Space Committee in 1959.

States initiatives to deploy missile defence. Ironically the same decade witnessed robust initiatives by the two dominant space-powers to limit strategic offensive weaponry through the Strategic Arms Reduction Treaties (START I & II). Part VI of the Article argues that the quantum leaps by China's space program may herald the dawn of a new Cold War and a heated arms race with the United States as China seeks to underwrite its regional pre-eminence with military might. To be a regional hegemony China needs to dominate its own backyard, something that is leading the United States to increasingly seek to contain rather than engage China. Part VII rounds off the discussion and analysis by casting an eye on the ambivalence of national and international initiatives and what the future may portend and how existing initiatives may anchor the mantra of peaceful purposes and curtail the weaponization outer space.

II. THE COLD WAR—A DIFFERENT WAR: NEW IMPERIAL MILITARY AMBITIONS

The contemporary technological arms race underpinned by strategic offensive weaponry¹⁵ commenced in the shadow of World War II with the wartime effort to design and build the first nuclear weapons. With the discovery of fission in 1939, it became clear to scientists that certain radioactive materials could be used to make a bomb of unprecedented power.¹⁶ On 9 October 1941, then United States President Franklin Roosevelt formally authorised atomic weapon development,¹⁷ heralding the modern development of strategic weaponry. The Manhattan Project (as the project is popularly known) represented a massive and outstandingly successful

¹⁵ In the context of this Article, it means weaponry that has unprecedented power and reach in comparison to conventional weaponry and is geared to generate massive firepower attacks aimed at the destruction of an array of infrastructure such as electric power grids, telecommunications, and transportation geared to not only undermine the opponent's economic and military capacity but also neutralise its ability to sustain or mount counter-attacks. Strategic weaponry addresses the deficiencies of first generation modern war dominated by man and fire power. Strategic weaponry makes use of technology and engineering breakthroughs to deliver awesome massed firepower in every hit. See eg Thomas X Hammes, 'Insurgency: Modern Warfare Evolves into a Fourth Generation' (2005) 214 *Strategic Forum* 1, available at <<http://www.ndu.edu/inss>> at 10 February 2006.

¹⁶ *The Manhattan Project* (2006) Wikipedia <http://en.wikipedia.org/wiki/Manhattan_Project> at 10 February 2006.

¹⁷ This was incidentally two months before the Japanese attack on Pearl Harbour, on 7 December 1941.

technological effort.¹⁸ After surmounting many scientific, coordination and political problems, the first ever nuclear test signalling the start of the Atomic Age took place on 16 July 1945.¹⁹ A few weeks later the power of the atomic bomb was unleashed by America on Japan targeting two of its key cities—Hiroshima and Nagasaki.²⁰

Modern strategic arms limitation efforts generally date back to the aftermath of the Japanese atomic bombings. In light of the overwhelming destructive potential of nuclear weapons it was apparent that these weapons caused a threat to humanity and in the event of a nuclear war, the very survival of humanity. In 1946 the then American representative to the newly formed United Nations (UN), Bernard Baruch, proposed that nuclear weapons be eliminated.²¹ In response, the UN General Assembly set up the Atomic Energy Commission (AEC) to make proposals for the peaceful uses of atomic energy and for the elimination of weapons of mass destruction.

The Commission concentrated debate on the Baruch Plan for an international agency to control atomic power and weapons but the plan was vetoed by the Soviet Union in the Security Council. The Soviets refusal of this proposition was primarily due to its ongoing efforts to bridge the technological gap created by the United States' Manhattan Project. The net result was that the Commission languished in an impasse for another three years. In 1949, the Soviet Union joined the nuclear club. With several other major powers accelerating their efforts to develop atomic bombs, the possible proliferation of nuclear weapons generated sufficient concern helping break

¹⁸ *The Manhattan Project*, above n 16.

¹⁹ The nuclear test took place in New Mexico. It was a test of an implosion–design plutonium bomb, the same type later dropped on Japan a few weeks later.

²⁰ Hiroshima was a major industrial and Nagasaki was its largest port. The bombings left tens of thousands dead in the aftermath and hundreds of thousands injured then or thereafter.

²¹ *Cold War: Arms Race* (Undated) Prince of Wales Colleague <<http://www.pwc.k12.nf.ca/coldwar/plain/armsrace.html>> at 10 January 2006.

the impasse at the AEC. This led to several initiatives aimed at limiting various aspects of nuclear weaponry.²²

Amidst the initiatives to curtail nuclear proliferation, in October 1954, the Committee for the International Geophysical Year (IGY) recommended that its member countries should consider launching artificial satellites for scientific space exploration. Emphasis was placed on satellites to measure the characteristics of the unknown space environment with scientists seeking to lay foundations for satellites to serve different purposes including communication, weather and navigation. These calls provided an enormous stimulus for further research on artificial satellites by the United States and the Soviet Union.

Three years later, the Soviet Union brought the Space Age to life with the launch of Sputnik 1, the first artificial satellite.²³ Despite the overarching principle of the use of outer space for peaceful purposes, the military advantages offered by outer space were hard to resist once the United States and Soviet Union had succeeded in placing satellites in orbit. Though the earliest satellite programs focused on communications, weather intelligence and navigation aid; almost simultaneously and indeed as an outgrowth both the United States and Soviet Union began exploring missile warning systems to monitor the launch of Inter-Continental Ballistic Missiles (ICBMs).²⁴ It was not lost on the two space faring powers that space assets would in the near future be indispensable to combat operations.²⁵ The international community was quick to note this changing mindset and generated rhetoric that states should use outer space for positive and peaceful purposes in an effort to ensure a pro-active rather than the reactive stance which had dominated atomic weaponry.

²² The first productive treaty to come out of this committee came in 1957 with the signing by the US and Russia of an agreement to demilitarise Antarctica and to ban testing of nuclear devices there.

²³ On 31 January 1958 the United States of America joined the Space Age with the Launch of Explorer 1.

²⁴ Curtis Peebles, *High Frontier: The US Air Force and the Military Space Program* (1997) 33.

²⁵ Ramey, above n 9 at 16–17.

In 1957 the UN General Assembly passed Resolution 1148 dealing with the topic of disarmament which declared that ‘the sending of objects through outer space shall be exclusively for peaceful and scientific purposes.’²⁶ In the following year, UN General Assembly Resolution 1348 recognised that the common aim of humankind was that outer space was to be used ‘for peaceful purposes only.’²⁷ The United States and Soviet Union obliged with the United States adopting the view that “‘peaceful” in relation to outer space activities was interpreted...to mean “non-aggressive” rather than non-military... By contrast, the Soviet Union publicly took the view, despite its own military uses of space, that “peaceful” meant “non-military” and that in consequence all military activities in outer space were “non-peaceful” and possibly illegal.’²⁸

Leading by example, the United States passed the National Aeronautics and Space Act in 1958.²⁹ In line with general international sentiment on the necessity of the use of space for ‘peaceful purposes’, the Act asserted that ‘activities in space should be devoted to peaceful purposes for the benefit of all mankind’.³⁰ The Act established the ‘foundation for United States policy in the development of international space law and serve[d] as a parallel to the international policies established through the United Nations’.³¹ Although Congress adopted the ‘peaceful purposes for the benefit of all mankind’ standard for space activities and placed these activities under the auspices of NASA, Congress also carved out a national defence exception to handle certain military activities.³²

²⁶ *Regulation, Limitation and Blanced Reduction of All Armed Forces and All Armaments; Conclusion of an International Convention (Treaty) on the Reduction of Armaments and the Prohibition of Atomic, Hydrogen and Other Weapons of Mass Destruction*, GA Res 1148, UN GAOR, 12th sess, UN Doc A/3805 (1957).

²⁷ Ivan A Vlastic, ‘The Legal Aspects of Peaceful and Non–Peaceful Uses of Outer Space’ in Bhupendra Jasani (ed)., *Peaceful and Non-Peaceful Uses of Space, Problems of Definition for the Prevention of an Arms Race* (1991) 39.

²⁸ *Ibid* 40.

²⁹ *National Aeronautics and Space Act of 1958*, 42 USC § 2451(a) (1994).

³⁰ *Ibid*.

³¹ S Neil Hosenball and Richard Reeves, ‘A Preface to US Space Laws and Policies’ in S Gorove (ed), *US Space Law* (1983) vol 1, 17, 20–21.

³² *National Aeronautics and Space Act of 1958*, 42 USC § 2451 (1994). The exception, section 102(b), is seemingly at odds with the spirit of the “peaceful purposes” clause of section 102(a). Section 102(b) states that:

In 1961, with a quantum leap in space technology, humankind's determination to reach the heavens came to fruition when the Soviet Union launched the first manned spaceflight, placing Yuri Gagarin into orbit. The United States followed suit in 1962. This marked the start of a technological space race between the United States and the Soviet Union with each seeking to assert dominance in space exploration providing the genesis of a competition which would soon metamorphose into an arms race. The history of the militarization and weaponization of space goes back to this period.

In the 1960s several air-launched Anti-Satellite Weapons (ASAT) systems were tested by the United States and Soviet Union as a counter weight to each other's development of strategic air-launched and satellite-dependent ballistic missiles. Early experiments focused on 'hard-kill weapons' involving experimentation in kinetic energy weapons—a form of hypervelocity weapon.³³ In the same period, study also commenced on laser weapons—Directed Energy Weapons capable of disabling satellites.³⁴ It was clear, at least theoretically then that lasers and ASATs with the capability to target space assets stood to radically change warfare if ever fielded.³⁵ The research was to span many decades with tremendous technical problems being gradually resolved.

[A]ctivities peculiar to or primarily associated with the development of weapons systems, military operations, or the defense of the United States (including the research and development necessary to make effective provision for the defense of the United States) shall be the responsibility of, and shall be directed by, the Department of Defense.

³³ The most common version of this was the ASAT designed for use against artificial satellites. These are 'hard kill' weapons that shatter their target through high-speed impact owing to the tremendous speeds at which these objects travel in orbit in low-earth orbit which generate kinetic energy sufficient to obliterate targets: Vlasic, above n 12, 397–8.

³⁴ 'Laser' is an acronym for Light Amplification by Stimulated Emission of Radiation, a device that produces a narrow beam of radiation by means of a physical emission. The intense beams can be used to either physically harm the satellite or simply to 'blind' the satellite sensors. For a concise discussion, see Major William Spacy II, *Does the United States Need Space-Based Weapons?* (1999) Maxwell-Gunter Air Force Base <http://www.maxwell.af.mil/au/aupress/CADRE_Papers/PDF_Bin/spacy.pdf> at 23 October 2005, 10.

³⁵ Ramey, above n 9, 23, 25.

The international community continued to maintain the view that outer space should be used for ‘peaceful’ purposes. However, the disagreement was whether this meant ‘non-military’ or ‘non-aggressive uses’, especially considering the fact that the then dominant players—the two superpowers—were actively engaged in harnessing the military utility offered by space and were thus averse to a strict definition. While talk of ‘peace’ increased, so did the military potential of space technology. With this in mind, the United States’ interpretation of the word ‘peaceful’ was created.³⁶ The official position of the United States has been and still remains that ‘peaceful’ means ‘non-aggressive’ and not ‘non-military’.³⁷ The Soviet Union held an opposite view that military activities in the space environment cannot be and are not peaceful.³⁸ The Soviet proposal, banning the use of outer space for military purposes, equated peaceful use with non-military use.³⁹ While both the United States and the Soviet Union continued to defend their positions, the truth of the matter was that neither country wanted a final definition to be accepted by all states.⁴⁰ Such an ultimate conclusion would limit both countries’ future use of outer space.⁴¹

As the Cold War confrontation between the United States and the Soviet Union heated up, the military utility space offered continued to fuel intense research and development of state-of-the-art technology to capitalise on the military utility of outer space. By the 1970s, the Soviet Union had succeeded in developing an explosive kill vehicle with the ability to be ‘hoisted’ into the same orbital plane as a target satellite. In addition, development of electromagnetic and

³⁶ See Bin Cheng, *Studies in International Space Law* (1997) 515.

³⁷ *Ibid.*

³⁸ Carl Christol, *The Modern International Law of Outer Space* (1982) 22.

³⁹ See Cheng, above n 36, at 515.

⁴⁰ *Ibid.* 516.

⁴¹ As Menon states, ‘[s]ince an all-pervasive, acceptable, objective criteria defining peaceful uses have never been devised, the conclusion that a particular activity is peaceful is always a subjective determination and therefore apt to reflect the self interests of the party making the determination’: P K Menon, *The United Nations’ Efforts to Outlaw the Arms Race in Outer Space* (1988) Chapter 3.

radiation weapons with the capacity to impair electronic circuitry by the creation and/or emission of electromagnetic pulse (EMP) was actively underway and yielding exciting results. Technological breakthroughs were turning scientific dreams into military utility.⁴² The US on the other hand was experimenting with ‘Microsats’—small non-kinetic devices borne on a Space Operated Vehicle (SOV) that could be used to disable or disrupt rather than to destroy enemy satellites when released in outer space. Military planners were soon diversifying their vision to encompass development of military space plane technologies and a viable military space plane base.⁴³

In 1978, in an effort to clarify policy for space activities in light of technological advances, the Carter administration ordered the National Security Council Policy Review Committee to review existing space policy and develop guidelines for space activities.⁴⁴ The resulting Presidential Directive provided that the United States would continue to advance the dual goals of international cooperation and national defence. On one hand, the principles championed peaceful uses of outer space, asserting the United States’ commitment to the exploration and use of outer space by all nations for peaceful purposes and the centrality of scientific and economic imperatives, while on the other asserting the utility of space as a component of its national defence.⁴⁵

⁴² Christopher M Petras, ‘The Use Of Force In Response To Cyber-Attack On Commercial Space Systems—Re-examining “Self-Defense” In Outer Space In Light Of The Convergence Of US Military And Commercial Space Activities’ (2002) 67 *Journal of Air Law & Commerce* 1213, 1224.

⁴³ These initiatives included Transatmospheric Vehicles (TAV), Military Aerospace Vehicles (MAV) and experimental reusable space planes. For details see *Military Spaceplane* (Undated) GlobalSecurity.org <<http://www.globalsecurity.org/space/systems/msp.htm>> at 9 August 2005; Paul B Stares, *The Militarization of Space: US Policy, 1945–1984* (1985) 169, 178–9.

⁴⁴ White House, ‘Description of Presidential Directive on National Space Policy’ (Press Release, 20 June 1978).

⁴⁵ *Ibid.*

In 1980, with Jimmy Carter out of office, Ronald Reagan became the new occupant of the White House. When Reagan came into office, détente was the policy of the day.⁴⁶ Reagan abandoned détente and made no secret of the fact that he considered the Soviet Union to be an ‘evil empire’. Under Reagan, a significant shift in space policy was to take place. In 1981, the first year of the Reagan presidency, the new administration initiated a comprehensive space policy review, geared towards exploring ways of generating a United States military capacity to weaponize space. On 23 March 1983, Reagan launched the Strategic Defence Initiative (SDI). The SDI was a system geared to use space-based systems to protect the US from attack by strategic nuclear missiles.

The SDI provided a measure of legitimacy to many ideas that were formerly seen as impossible. An arms race in outer space now meant something more—the introduction of new, futuristic weapons, including beam, kinetic, electronic, and laser weapons, into the space environment. With the SDI in place and Reagan’s militaristic mindset, billions of dollars were splashed on various military projects, mainly innovative technologies to bolster the military might of the United States. Instead of cooperating with the Soviets, Reagan was dedicated to strengthening US military might and also determined to force the Soviets to match America’s massive military budget. The initiative aimed at developing and introducing futuristic weapons into the space environment to assert United States military and technological supremacy over the Soviet Union.

There was considerable debate over the necessity, feasibility, and cost-effectiveness of the weapons envisaged under the SDI. Nevertheless, the huge military expenditure did finally pay

⁴⁶ Détente is French for relaxation. Generally, it may be applied to any international situation where previously hostile nations not involved in an open war ‘warm up’ to each other and threats de-escalate. However, today in international parlance, it has come primarily to refer to a general reduction in the tension between the Soviet Union and the United States and a weakening of the Cold War, occurring from the late until the start of the 1980s: *Détente* (2005) Wikipedia <<http://en.wikipedia.org/wiki/Detente>> at 26 September 2005.

dividends. Among its major successes was the flight on 13 September 1985 by United States Air Force pilot Major Doug Pearson. He made military history when he successfully displayed the capabilities of ASAT weapons. Flying an F-15A at one and half times the speed of sound, he launched a missile which kinetically destroyed a practice target satellite, reducing to it space debris.⁴⁷ Pearson's feat provided credence to, as well as a propaganda base for, the Reagan administration's 'Star Wars' vision, signalling a new phase in the arms race in outer space. The successful flight provided just the sort of evidence that proponents of the weaponization of space needed. It was evident that a robust, well-funded space program would be able to develop workable technologies. What had been regarded generally as science fiction four decades earlier was rapidly moving to the realm of military reality through the harnessing of technology and innovative engineering, buttressed by tens of millions of dollars in research and development funds.

By 1989, the Reagan policy of 'ASAT and EMP deterrence', and the corresponding goal of developing and deploying an anti-satellite capability were reaffirmed and entrenched as part of US military policy with the introduction of National Space Policy Directive No 1 (NSPD 1) in 1989. The Directive stated:

The United States will conduct those activities in space that are necessary to national defense. Space activities will contribute to national security objectives by (1) deterring, or if necessary, defending against enemy attack; (2) assuring that forces of hostile nations cannot prevent our own use of space; (3) negating, if necessary, hostile space systems; and (4) enhancing operations of United States and Allied forces.

⁴⁷ Michel Bourbonnière, 'Law of Armed Conflict (LOAC) and the Neutralisation of Satellites or *Ius in Bello Satellitis*' (2004) 9 *Journal of Conflict and Security Law* 43, 56.

III. THE SPACE LAW REGIME: A PATCHY FRAMEWORK AND LEAKY LEGAL PLATFORM?

A. Steps Forward? Disciplining Space Endeavours through International Law

As noted in Part II of the Article, in the early days of man's ascent into space, the majority of the international community failed to agree on whether 'peaceful' meant 'non-military'. It was amidst this background of disagreement that the space resolution—the Declaration of Legal Principles Governing State Activity in the Exploration and Use of Outer Space (Declaration of Principles)—was adopted in late 1963 by the United Nations General Assembly.⁴⁸ In many regards, it was the 'first significant step in the development of space law'.⁴⁹ As Ramey notes, '[t]hrough not binding on any State, the Resolution does not read like a traditional resolution. It declares and announces legal principles instead of merely recommending a course of action.'⁵⁰

In the same year that the Declaration on Legal Principles was adopted, the Treaty Banning Nuclear Weapons in the Atmosphere, In Outer Space and Under Water (Limited Test Ban Treaty) entered into force to address the contested and controversial issue of nuclear detonations in space.⁵¹ The Treaty primarily aimed to limit nuclear weapons testing but was also a reaction to Soviet pleas that nuclear detonations posed a danger to the safety of its cosmonauts. The US had responded to the Soviet concern with the assurance 'that no activities were contemplated which could have harmful effects upon the Soviet spacemen', however the international community felt

⁴⁸ *Declaration of Legal Principles Governing the Activities of States in the Exploration and Use of Outer Space*, GA Res 1962, UN GAOR, 18th sess, UN Doc A/5515 (1963).

⁴⁹ Ramey, above n 9.

⁵⁰ *Ibid* 67.

⁵¹ *Treaty Banning Nuclear Weapon Tests in the Atmosphere, in Outer Sphere and Underwater*, opened for signature 5 August 1963, 480 UNTS 43 (entered into force 10 October 1963) ('Limited Test Ban Treaty').

it imperative that nuclear detonations be totally banned.⁵² With the entry into force of the treaty, nuclear detonations in space were no longer lawful.

The year 1967 also yielded a very significant treaty, the Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, Including the Moon and Other Celestial Bodies (Outer Space Treaty).⁵³ So prominent and significant is this treaty that it has often been referred to as ‘the constitution of outer space’.⁵⁴ It represents ‘the primary basis for legal order in the space environment’⁵⁵ and has been termed the ‘Magna Carta of outer space law’.⁵⁶ The major principles governing activities in space are presented in articles 1, 2 and 3 of the Outer Space Treaty. Article 1 states that activities in outer space, including the moon and other celestial bodies, shall be conducted for the benefit of all countries and that outer space shall be part of the heritage of all mankind.⁵⁷ It also provides for freedom of scientific investigation in outer space and for international cooperation in such investigation.⁵⁸ Article 2 provides that nations cannot appropriate outer space by claim of sovereignty.⁵⁹ Article 3 provides that states parties to the Treaty are to conduct their activities in space in accordance with international law, the United Nations Charter, and in the interest of international peace, security, cooperation and understanding.⁶⁰

Of significance with regard to the use of force is article 3’s reference to article 51 of the Charter of the United Nations and, particularly its express preservation of the right of states to

⁵² Myers S McDougal, Harold D Lasswell and Ivan A Vlasic, *Law and Public Order in Space* (1967) n 387.

⁵³ *Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, Including the Moon and Other Celestial Bodies*, opened for signature 27 January 1967, 610 UNTS 205 (entered into force 10 October 1967) (‘*Outer Space Treaty*’).

⁵⁴ Vlasic, above n 27, 37.

⁵⁵ Christol, above n 38, 20.

⁵⁶ Nandasiri Jasentuliyana, ‘The Role of Developing Countries in the Formation of Space Law’ (1995) 22 *Annals of Air and Space Law* 425.

⁵⁷ *Outer Space Treaty*, art 1.

⁵⁸ *Outer Space Treaty*, art 1.

⁵⁹ *Outer Space Treaty*, art 2.

⁶⁰ *Outer Space Treaty*, art 3.

use space in self-defence. Though the UN Charter forbids 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’,⁶¹ the meaning of this prohibition remains hotly contested. As early as 1962, in an address to the UN General Assembly, then US Senator Al Gore proclaimed that the established rule of ‘peaceful purposes’ includes the right of a state to self-defence.

It is the view of the U.S. that outer space should be used only for peaceful—that is nonaggressive and beneficial—purposes. *The question of military activities in space cannot be divorced from the question of military activities on earth.* To banish these activities in both environments we must continue our efforts for general and complete disarmament with adequate safeguards. Until this is achieved, *the test of any space activity must not be whether it is military or non-military, but whether or not it is consistent with the U.N. Charter and other obligations of law.*⁶²

Whatever definition one gives to the concept of ‘self-defence’, the ultimate test of whether an action is legitimate self-defence is the approval of the UN Security Council rather than the opinion of each individual nation asserting such a right.⁶³ However, it is significant that many of the military initiatives in space by the space-faring nations have failed to elicit robust condemnations, despite constant debate and proclamations by the United Nations cautioning against an arms-race up yonder. In light of the fact that neither the UN nor the vast majority of its member states have protested these unilateral efforts, it would seem that there is a tacit imprimatur of approval. Turning to article 4, it provides in part:

The moon and other celestial bodies shall be used by all States Parties to the Treaty exclusively for peaceful purposes. The establishment of military bases, installations and fortifications, the testing of any type of weapons and the conduct of military manoeuvres on celestial bodies shall be forbidden. The use of military personnel for scientific research or for any other peaceful purposes shall not be prohibited. The

⁶¹ *Charter of the United Nations*, art 2(4).

⁶² UN Doc A/C 1/PV 1289, 13 (1962), quoted in Michael G Gallagher, ‘Legal Aspects of the Strategic Defense Initiative’ (1986) 111 *Military Law Review* 41, 46 (emphasis added).

⁶³ Jerome Morenoff, *World Peace through Space Law* (1973) 226.

use of any equipment or facility necessary for peaceful exploration of the moon and other celestial bodies shall also not be prohibited.⁶⁴

It is arguable whether the use of the adjective ‘exclusively’ in the article has any meaningful purposes in view of the express approval that ‘[t]he use of military personnel for scientific research or for any other peaceful purposes shall not be prohibited’. The reality is that most civilian applications are dual use and readily lend themselves to military utility. Secondly, the use of the word ‘purpose’ in article 4 of the Outer Space Treaty ‘brings in the notions of both intent and of consequences; the activity must not be designed to terminate in some use of force contrary to international law.’⁶⁵ There is no indication that the Outer Space Treaty’s drafters intended the term ‘purpose’ to have any ‘special meaning’. ‘Purpose’ is generally defined as ‘an intended or desired result; end, aim; goal’.⁶⁶ By this reasoning, for example, the ‘Star Wars’ program which never came to fruition would be held to be a peaceful use as its stated purpose was to defend the US, a peaceful ‘purpose’. That would equally mean that the ‘Son of Star Wars’ program falls in this parameter. The problem persists since weapons that are placed for defensive purposes can just as easily have offensive utility. The big question then becomes ‘does the Outer Space Treaty incorporate a “rightful intent” test?’⁶⁷

Besides the Outer Space Treaty, another set of rules was developed in the early 1970s, when détente cooled down the heated arms race, opening a new window of opportunity for the superpowers. This led to the signing of two significant treaties—the Anti-Ballistic Missile Treaty (ABM Treaty)⁶⁸ and the first Strategic Arms Limitation Talks (SALT) Treaty.⁶⁹ Both these

⁶⁴ *Outer Space Treaty*, art 4.

⁶⁵ James E S Fawcett, *Outer Space: New Challenges to Law and Policy* (1984) 109. See also Morenoff, above n 63, 296.

⁶⁶ *Random House College Dictionary* (1980) 1074.

⁶⁷ Fawcett, above n 65, 109.

⁶⁸ *Treaty between the United States of America and the Union of Soviet Socialist Republics on the Limitation of Anti-Ballistic Missile Systems*, signed 26 May 1972, 944 UNTS 13 (entered into force 3 October 1972) (‘ABM Treaty’).

treaties tacitly recognise the legality of reconnaissance satellites as a means of verifying treaty compliance, and prohibit any ‘interference’ with their function.⁷⁰ The provisions are no surprise since consensus was that positive activities in space included, but were not limited to, the use of military satellites to monitor the performance of arms-control agreements. Two primary provisions of the ABM Treaty have a direct bearing on the weaponization of space — articles 5 and 12.

Article 5(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’.⁷¹ Though there were no space-based ABM systems in existence in 1972 when the treaty was adopted, the space program of each Party was highly advanced and each could foresee the use of space-based ABM systems.⁷² Article 12 is perhaps even more significant to the long-term use of space by military systems beyond the narrower question of ABM systems:

1. For the purpose of providing assurance of compliance with the provisions of this Treaty, each Party shall use national technical means of verification at its disposal in a manner consistent with generally recognized principles of international law.
2. Each Party undertakes not to interfere with the national technical means of verification of the other Party operating in accordance with paragraph 1 of this Article.⁷³

Paragraph 1 is significant. Though the legality of military surveillance activity from space was established in international law prior to the ABM Treaty, the treaty gave formal sanction to the practice by the two leading space-faring states. In particular, it acknowledged the legality of space-based surveillance via satellite and entrenched this as ‘an essential component of the

⁶⁹ *Interim Agreement Between the United States of America and the Union of Soviet Socialist Republics on Certain Measures with Respect to the Limitation of Strategic Offensive Arms*, opened for signature 26 May 1972, 23 UST 3462 (entered into force 3 October 1972) (‘SALT I’).

⁷⁰ *ABM Treaty*, arts 12(1), 12(2); *SALT I*, arts 5(1), 5(2).

⁷¹ *SALT I*, art 5(1).

⁷² Glen H Reynolds and Robert P Merges, *Outer Space: Problems of Law and Policy* (2nd ed, 1997) 97.

⁷³ *ABM Treaty*, art 12 (emphasis added).

international arms control regime'.⁷⁴ Thus, while the term 'peaceful' is contained in all UN documents devoted to outer space matters, Richard A Morgan notes that most experts agree that the Outer Space Treaty does not prohibit 'military use' of space.⁷⁵ He goes on to note that there is a 'consensus, within the United Nations that "peaceful" more specifically equates to "non-aggressive"'.⁷⁶ However, the problem of identifying the exact parameters and interpretation of the term 'peaceful' in regard to the space law regime, and hence the interpretation to be accorded to the ABM Treaty and SALT Treaty, still persists in view of the fact that the general stance by commentators is at odds with the Conference on Disarmament's assertion in 1986 that '[n]o country should develop, test or deploy space weapons in any form'.⁷⁷ Alex Meyer offers a robust defence of this position, noting:

[a]ny use of space which does not itself constitute an attack upon, or stress against, the territorial integrity and independence of another State, would be 'permissible.' Military manoeuvres in peacetime, the issue of reconnaissance satellites, the testing of weapons, the establishment of military Orbiting Laboratories (MOLs), etc., would therefore be also permissible in Outer Space. These activities belong to the so-called 'peaceful military activities'.⁷⁸

From the foregoing discussion of the central treaties comprising the space law regime, it is readily apparent that despite the use for peaceful purposes centrepiece of the space law regime, key provisions readily lend themselves to interpretations that would support many aspects of militarization and weaponization of space. The matter is thus open and dependent on the perspective a state adopts, since the standard can be stretched and this elastic nature allows the space law regime to fit a 'for and against' interpretation. Supporters of the militarization theory

⁷⁴ Reynolds and Merges, above n 72, 97.

⁷⁵ Richard A Morgan, 'Military Use of Commercial Communication Satellites: A New Look At the Outer Space Treaty and "Peaceful Purposes"' (1994) 60 *Journal of Air Law and Commerce* 237, 288.

⁷⁶ Ibid.

⁷⁷ *Conference on Disarmament, Final Record of the Three Hundred and Fiftieth Plenary Meeting*, UN Doc CD/PV.350 (1986).

⁷⁸ Robert L Bridge, 'International Law and Military Activities in Outer Space' (1980) 13 *Akron Law Review* 649, 658.

rely on a fundamental axiom of international law: ‘If an act is not specifically prohibited, then international law permits it’.⁷⁹ Professor N M Matte sums up the patchy nature of the space law regime by noting that the regime, which includes the Limited Test Ban Treaty, the Outer Space Treaty, the Anti-Ballistic Missile Treaty and the Moon Agreement, was developed to ‘permit, indeed to endorse, the arms race, including the militarization of space’.⁸⁰

B. Musical Chairs? UN Efforts to Build a Consensual Policy on Disarmament in Outer Space

In the 1980s, in the face of the Reagan administration’s ambitious space militarization and weaponization vision, the United Nations was working to address the matter in a bid to head off the space arms race between the two superpowers. Ironically, it was the Soviet Union which introduced a robust plan to prevent an arms race in outer space into the agenda of the thirty-sixth General Assembly in the fall of 1981.⁸¹ It was a bold plan which proposed the conclusion of a Treaty on the Prohibition of the Stationing of Weapons of Any Kind in Outer Space.⁸² In response, the General Assembly expressed its view that it ‘considered it necessary to take effective steps, by concluding an appropriate international treaty, to prevent the spread of the arms race to outer space.’⁸³ It also requested that the Conference on Disarmament begin negotiations to achieve agreement on the text of such a treaty.⁸⁴ The following year, in its provisional agenda, the General Assembly reaffirmed its view that outer space ‘should be used

⁷⁹ Ibid 664; Morgan, above n 75 at 299–300.

⁸⁰ Nicolas Mateesco Matte, ‘A Treaty for “Star Peace”’, in Nicolas Mateesco Matte (ed), *Arms Control and Disarmament in Outer Space: Lecture-Seminars Given at the Centre for Research of Air and Space Law* (1987) vol 2, 190.

⁸¹ *Request for the Inclusion of a Supplementary Item in the Agenda of the Thirty-Sixth Session, United Nations General Assembly*, UN Doc A/36/192 (1981).

⁸² Ibid.

⁸³ Ibid.

⁸⁴ *Conclusion of a Treaty on the Prohibition of the Stationing of Weapons of Any Kind in Outer Space, United Nations Resolutions*, GA Res 36/99, UN GAOR, 36th sess, UN Doc A/RES/36/99 (1981).

exclusively for peaceful purposes and that it should not become an arena for an arms race.’⁸⁵ It went on to link peaceful uses of space with the good of general and complete disarmament.⁸⁶

In 1982, the United Nations Conference on the Exploration and Peaceful Uses of Outer Space (UNISPACE 82) convened in Vienna, Austria.⁸⁷ The Conference ‘was born out of a desire to explore how the worldwide activities in outer space, including international cooperation, could be developed to ensure that the potential benefits from space science, technology and their applications would be truly realized for all countries.’⁸⁸ With regard to the military use of outer space, UNISPACE 82 came up with some tangible recommendations. However, its attempts to introduce language banning the testing and deployment of ASATs and guaranteeing the inviolability of all peaceful space activities failed.⁸⁹ It did however reaffirm the goal of preventing an arms race in outer space and recommended that the United Nations bodies give priority to the issue of weapons in space. In relation to military use of outer space, the Conference made a number of recommendations key among which were:

- The extension of an arms race into outer space is a matter of grave concern to the international community, detrimental to humanity and should be prevented.
- The maintenance of peace and security in outer space is of great importance for international peace and security and the prevention of an arms race and hostilities in outer space is essential.⁹⁰

In its report issued at the end of its 1985 session, the United Nations Committee on the Peaceful Uses of Outer Space (COPUOS) acknowledged the differing viewpoints by member states as to the extent to which the Committee could engage in substantive work toward the

⁸⁵ *General Assembly Provisional Agenda*, UN Doc A/39/100 (1984).

⁸⁶ *Ibid.*

⁸⁷ United Nations Conference on the Exploration and Peaceful Uses of Outer Space (Vienna, August 9–21 1982). The UN General Assembly designated COPUOS and its Scientific and Technical Subcommittee as the Preparatory Committee and Advisory Committee, respectively, for UNISPACE 82.

⁸⁸ Yash Pal, ‘UNISPACE 82 and Beyond’ (1982) 10 *Journal of Space Law* (1982) 181.

⁸⁹ *Ibid.* 185.

⁹⁰ Second United Nations Conference on the Exploration and Peaceful Uses of Outer Space (UNISPACE 82) Report at 141, A/Conf. 101/11 (18 October 1982) Annex.

peaceful maintenance of outer space.⁹¹ Some delegations wanted COPUOS to consider specific steps to ensure that the uses of space remained peaceful.⁹² Three years later, in 1988 the General Assembly passed a resolution supporting general and complete disarmament under effective international control.⁹³ Resolution 43/70 stated that *in order for disarmament to take place, outer space must be used for peaceful purposes and must not become an arena for a new arms race.*⁹⁴ ‘The General Assembly recognized the need to consolidate, reinforce, and enhance the legal regime in outer space, and to provide effective verification measures. The vote on the resolution was 154 to 1: the United States cast the single negative vote.’⁹⁵

In 1989, the prevention of an arms race in outer space was once again at the heart of the deliberations of the Conference on Disarmament composed of both developed and developing world countries when it convened for its 520th plenary meeting. Delegates called for the prevention of an arms race in outer space. The general sentiments of the meeting are captured in Indian Ambassador Sharma’s declaration that:

[I]t is accepted that an extension of the arms race into outer space would have profoundly destabilizing consequences. Deeply conscious of such risks, an overwhelming majority of the Member States of the United Nations have in recent years urged the Conference on Disarmament to take resolute measures aimed at preventing an arms race in outer space.⁹⁶

However the differing viewpoints among some members and the political shadow cast by the reluctant superpowers prevented any definitive agenda emerging in relation to preventing weaponization of outer space, something which may perhaps have put a brake on the Reagan

⁹¹ Committee on the Peaceful Uses of Outer Space, Twenty-Eighth Session, 278th Meeting and Round-Up of Session, UN Doc A/AC.105/L.155; Round-up of Session, UN Press Release OS/1210/Rev 1 (28 June 1985).

⁹² Ibid.

⁹³ *Prevention of an Arms Race in Outer Space*, GA Res 43/70, UN GAOR, 43rd sess, UN Doc A/RES/43/70 (1988).

⁹⁴ Ibid (emphasis added).

⁹⁵ Colleen Driscoll Sullivan, ‘The Prevention of an Arms Race in Outer Space: An Emerging Principle of International Law’ (1990) 4 *Temple International & Comparative Law Journal* 211, 234.

⁹⁶ *Conference on Disarmament: Final Record of the 529th Plenary Meeting*, UN Doc CD/PV 529 (1989).

administration's 'Star Wars' vision and thrown cold water on Soviet determination to match and counter the Reagan administration's ambitious program.

In 1990, in the face of an ascendant and bellicose United States the UN General Assembly felt obliged to identify the legal deficit in the Space Law regime with regard to militarization and weaponization of the Space environment. The General Assembly stated that, '[T]he legal regime applicable to outer space by itself does not guarantee the prevention of an arms race in outer space, that this legal regime plays a significant role in the prevention of an arms race in that environment, [and expressed] the need to consolidate and reinforce that regime, ... enhance its effectiveness, and [emphasized] the importance of strict compliance with existing agreements, both bilateral and multilateral.'⁹⁷ In addition, the General Assembly recognised the fact that statements were not sufficient to prevent an arms race and emphasised additional measures 'with appropriate and effective provisions for verification to prevent an arms race in outer space' must be adopted by the community of nations.⁹⁸ The resolution called upon the major space faring states to 'contribute actively to the objective of the peaceful use of outer space' and to 'take immediate measures to prevent an arms race in outer space.'⁹⁹

Despite the rhetoric at the United Nations, the move by the United States to ensure effective global power projection through space supremacy received added urgency in the same year when the first Gulf War broke out. The war demonstrated technically and militarily the multiplier effects that space technology would have on military capabilities.

⁹⁷ *Prevention of an Arms Race in Outer Space*, GA Res 43/70, UN GAOR, 43rd sess, UN Doc A/RES/43/70 (1988).

⁹⁸ *Ibid.*

⁹⁹ *Ibid.*

V. THE GULF WAR—A WATERSHED: INTEGRATED BATTLE PLATFORMS COME OF AGE

The first Gulf War was the first war to rely heavily on space technology and the first to demonstrate that an integrated battle platform, coordinated through space assets, would contribute tremendously to battleground supremacy. The war demonstrated that, '[a]s with other military operations, space operations [were] shedding the old strategic Cold War myopia and focusing instead on theatre war.'¹⁰⁰ The experience of the first Gulf War, in which the multinational force suffered light casualties despite facing a supposedly battle-hardened Iraqi Army, and the role that technology played in enabling the multinational force to control the battlefield (despite facing being vastly outnumbered by the Iraqi army) buoyed US determination to enhance its military capabilities through technology. The heavy reliance on space technology convinced the US military that space dominance and space control were necessary. B K Gagnon sums up the technologically-driven and dominated first Gulf War thus:

[T]he war was essentially an opportunity to test new weapons systems. Afterward, Pentagon spokespersons predicted that if other enemies could be prevented from gaining access to military space assets, the US could dominate any battlefield situation. An urgent call went out for anti-satellite weapons that could knock out competitors' eyes and ears. Less than a decade later, the war in Kosovo was used to show the world that the goal [had] been achieved.¹⁰¹

Speaking on the experience and lessons of the first Gulf War, General Colin Powell, then Chairman of the Joint Chiefs of Staff, noted that the United States ought to 'achieve total control of space if [it is] to succeed on the modern battlefield.'¹⁰² On 19 June 1992, space was finally proposed to be included in the United States Air Force mission statement.¹⁰³ About two years

¹⁰⁰ D S Anderson, 'A Military Look into Space Law: The Ultimate High Ground' [November 1995] *Army Lawyer* 19, 23.

¹⁰¹ Gagnon, above n 3, 1.

¹⁰² Colin S Gray, 'Space Power Survivability' (1993) 7(4) *Airpower Journal* 27.

¹⁰³ 'USAF MISSION: Our mission—the job of the forces we bring to the fight—is to defend the United States through control and exploitation of air and space': General Merrill A McPeak, former Chief of Staff of the United

later, in April 1994, General Horner, the Commander in Chief of US Space Command (USSPACECOM), testifying before the Senate Armed Services Committee, asserted that theatre missile defence was the United States' 'top priority'.¹⁰⁴ The net result in subsequent years was to spur the United States to aggressively pursue research and development of innovative space weapons. In particular, the United States pursued research into the development of Space Operated Vehicles (SOVs) with the capability of delivering and deploying ordnances from space through low-earth orbit (LEO), geo-synchronous orbit (GEO) or sun-synchronous orbit (SSO). Since then, under the direction of the United States National Command Authority (NCA), the US has directed the use of military power through new force projection systems to strike targets in other countries during Operations Other Than War (OOTW).¹⁰⁵

Technological breakthroughs in the 1990s brought to the fore the fact that the heavens would not only be conquered but ruled. While the Clinton administration had advocated a robust space policy, the administration was disinclined towards heavy military spending on the initiatives. In 2001, Clinton exited the White House and George Bush Jr. took over the reins. The White House now had another bellicose, hard-line Republican occupant who, like Reagan in the 1980s, was convinced that America's pre-eminent status as a superpower must be underwritten by military might. This entailed a need to not only maintain America's supremacy but to eclipse every other nation. Shrugging the protests of the international community, the Bush Jr. administration dusted off Reagan's SDI and brought it back to play with the embrace of the so-called 'Son of Star Wars'. Tens of millions of dollars were soon being pumped into new defence initiatives. This huge expenditure was buoyed further by a January 2001 report to Congress by

States Air Force, as cited in Suzanne B Gehri, 'The Air Force Mission (Singular)' (1992) 6(4) *Airpower Journal* 17, 18.

¹⁰⁴ Charles A Horner, 'Space Systems Pivotal to Modern Warfare' (1994) 4 *Defense* 22, 24.

¹⁰⁵ Phillip Pournelle, *Component Based Simulation of the Space Operations Vehicle and the Common Aero Vehicle* (M Op Thesis, Naval Postgraduate School, 1999) available at <<http://diana.g1.nps.navy.mil/~ahbuss/StudentTheses/PournelleThesis.pdf>> at 31 March 2005.

the Commission to Assess US National Security Space Management and Organization, chaired by Donald Rumsfeld (Rumsfeld Commission).

In its report, the Commission warned that the 600 satellites upon which the US military depends for photo reconnaissance, targeting, communications, weather forecasting, early warning and intelligence gathering were highly vulnerable to attack from adversaries.¹⁰⁶ The report went on to warn that the US must anticipate what Pentagon officials called a ‘Space Pearl Harbour’—a crippling sneak attack against American satellites orbiting the planet.¹⁰⁷ To reduce the nation’s vulnerability, the Rumsfeld Commission urged the US to develop ‘superior space capabilities’, including the ability to ‘negate the hostile use of space against US interests’ by using ‘power projection in, from and through space’.¹⁰⁸ Rumsfeld noted that in history every medium—air, land and sea—had seen conflict. In essence, contemporary reality indicates that space will be no different. The report from his Commission rounded off by calling space warfare ‘a virtual certainty’.¹⁰⁹

The Other Side of the Coin: Redemption with Sin—Arms (Un)limitation

In the 1990s, two key treaties (Strategic Arms Reduction Treaty I & II—START I & START II) were negotiated between the United States and Russia to serve aimed at reducing the United States’ and Russia’s stockpiles of nuclear arsenals. Although the ABM Treaty set out initial limitations on the use of strategic arms, START I was the first treaty to actually reduce the number of strategic offensive weapons, resulting in overall reductions of thirty to forty percent.¹¹⁰

¹⁰⁶ *Report of the Commission to Assess United States National Security Space Management and Organization* (2001) US Department of Defense <<http://www.defenselink.mil/pubs/space20010111.html>> at 28 March 2006.

¹⁰⁷ *Ibid.*

¹⁰⁸ *Ibid.*

¹⁰⁹ *Ibid.*

¹¹⁰ Bureau of Arms Control, *START Treaty Final Reductions Fact Sheet* (2001) US Department of State <<http://www.state.gov/t/ac/rls/fs/2001/index.cfm?docid=6669>> at 28 March 2006.

START I brought about a reduction in both the United States' and Russia's nuclear warheads arsenal.¹¹¹ United States President George H W Bush Sr. and Soviet Union President Mikhail Gorbachev signed the START I Treaty in Moscow in July of 1991.¹¹² It was ratified by both countries in December 1994.¹¹³

As the START I Treaty was coming into force, negotiations were being finalised for the START II Treaty. The START II Treaty was designed to reduce the United States and Russian arsenal of strategic nuclear warheads and eliminate the most destabilising strategic weapons: heavy intercontinental ballistic missiles (ICBMs) and all other multiple-warhead ICBMs. This treaty was geared to build upon the START I Treaty and have greater reductions in strategic nuclear forces.¹¹⁴ Although the START II Treaty was designed to build upon the START I Treaty, it was never legally enacted and thus never gained legal binding force.¹¹⁵

The United States approved the initial START II Treaty in 1996,¹¹⁶ but the Russian Duma refused to ratify it.¹¹⁷ Russian officials then attempted to amend the START II Treaty in 1997.¹¹⁸ The Protocol to the Treaty on Further Reduction and Limitation of Strategic Offensive Arms included a memorandum of understanding linking ratification of the START II Treaty to the United States' continued adherence to the ABM Treaty. On 4 May 2000, Russia ratified the

¹¹¹ Secretary of State Colin L Powell, *Statement on the Achievement of the Final Reductions under the START Treaty* (5 December 2001) US Department of State <<http://www.state.gov/secretary/former/powell/remarks/2001/dec/6674.htm>> at 28 March 2006.

¹¹² *Treaty on the Reduction and Limitation of Strategic Offensive Arms*, opened for signature 31 July 1991, US-USSR (entered into force 5 December 1994) ('START I').

¹¹³ *Ibid.*

¹¹⁴ *Comprehensive Nuclear Test-Ban Treaty*, opened for signature 24 September 1996 (not yet in force).

¹¹⁵ See Charles Digges, *Russia and America Formally Scrap START II, ABM Treaty* (2002) Bellona <<http://www.bellona.no/en/international/russia/nuke-weapons/start/24686.html>> at 15 July 2005.

¹¹⁶ Baker Spring, *Accept No Russian Conditions to START II Treaty* (1998) The Heritage Foundation <<http://www.heritage.org/Research/RussiaandEurasia/em561.cfm>> at 28 March 2006.

¹¹⁷ Bureau of European and Eurasian Affairs, *Background Note: Russia* (2001) US Department of State <<http://www.state.gov/r/pa/bgn/index.cfm?docid=3183>> at 11 June 2005.

¹¹⁸ *Ibid.*

START II Treaty along with the 1997 Protocol; however, the United States never ratified the Treaty because it did not approve of the 1997 Protocol.¹¹⁹

As START negotiations dominated United States and Russian foreign military policy, the United States Congress was dominated by activity concerning the ABM Treaty—ironically its termination rather than strengthening. The Patriot batteries deployed during the Persian Gulf War helped make a case for the role of Theatre Missile Defence (TMD).¹²⁰ The duel between United States Patriot missile batteries and Iraqi SCUD theatre ballistic missiles during the 1991 Persian Gulf War brought TMD to the attention of the US Congress. Pressure began building in the United States to either loosen or completely divest United States antiballistic missile technology from the constraints of the ABM Treaty. On 5 December 1991 passed the Missile Defence Act of 1991.¹²¹ This act put Congress on record as officially supporting a National Missile Defence (NMD) program, stating that: ‘It is a goal of the United States to deploy an anti-ballistic missile system, including one or an adequate additional number of anti-ballistic missile sites and space-based sensors, that is capable of providing a highly effective defence of the United States against limited attacks of ballistic missiles.’¹²²

¹¹⁹ As a result, the START II Treaty had no legally binding effect because both nations ratified different versions of the Treaty. See *Fact Sheets: the START/ABM Package at a Glance* (1997) Arms Control Association <<http://www.armscontrol.org/factsheets/pack.asp>> at 1 April 2002 (pronouncing that the Clinton administration failed to submit the agreements to the Senate for approval, and it is unlikely that they will be submitted under the Bush administration).

¹²⁰ The proposed United States TMD systems will employ interceptor missiles without warheads, relying on kinetic energy to kill their targets. The lower tier system will ram its target after the target re-enters the earth’s atmosphere on its downward trajectory, the upper tier system rams its target during the target’s mid-course trajectory intercepting their targets in outer space. See Ballistic Missile Defense Organization, ‘Fact Sheet 97–05: Ballistic Missile Defense—The Core Programs’ (1997) 1–2; Ballistic Missile Defense Organization, ‘Fact Sheet 97–19: Navy Theater Wide Ballistic Missile Defense Program’ (1997) 2.

¹²¹ *Missile Defense Act of 1991*, Pub. L. No. 102-190, §§ 231-240, 105 Stat. 1321–26 (repealed 1996).

¹²² *Ibid* § 232(a) (1). The Missile Defense Act of 1991 refers to the proposed NMD system as the ‘Limited Defense System’, reflecting the system’s ability to counter only a limited ballistic missile attack: at § 236(a).

Four years later, a bill was introduced in the United States Congress entitled the Defend America Act of 1995,¹²³ which would require the President within 180 days after enactment to serve notice that the United States intends to withdraw from the ABM Treaty. This legislation (which later failed) was directed toward remedying the lack of defence against ballistic missile attack. Section 4 provided within one year after enactment for at least one test of either an ABM interceptor based in space; a sensor in space capable of providing data directly to an ABM interceptor; or an existing air defence, theatre missile defence, or early warning system to demonstrate its capability to counter strategic ballistic missiles or their elements in flight trajectory. In the same year, the Ballistic Missile Defense Act of was proposed.¹²⁴ The Bill approached ballistic missile defences by repealing the Missile Defense Act of 1991.¹²⁵ It then substantially reformulated the initial statement of United States policy on NMD. The proposed system included *space-based sensors, including the Space and Missile Tracking System (formerly known as Brilliant Eyes), and other space-based sensors which could provide cueing to the ground-based interceptors.*¹²⁶ The Bill also called for the NMD system to be developed for deployment, with an initial operational capability being achieved by 2003.¹²⁷ On 3 January 1996, President Clinton vetoed the Bill owing to the fact that the proposed NMD would not be accommodated within the existing ABM Treaty.¹²⁸ This however wasn't an outright veto on the program itself.¹²⁹ In 2001, Bill Clinton was replaced by George Bush Jr. Shortly into his first

¹²³ HR 2483, 104th Congress, 1st Sess. The Bill was introduced on 17 October 1995.

¹²⁴ Conference Report to accompany H.R 1530, Report 104-406, Subtitle C, 104th Cong., 1st Sess (1995).

¹²⁵ See HR 1530, 104th Cong (1995) (vetoed by the President on 3 January 1996), §§ 231, 238.

¹²⁶ *Ibid* § 235(b)(3).

¹²⁷ *Ibid* § 235(a).

¹²⁸ See Veto Message from the President of the United States, HR Doc No 104-155, at H12 (1996).

¹²⁹ Despite the signing on 26 September 1997 by representatives of the United States and Russia signed a portfolio of agreements regarding the Anti-Ballistic Missile (ABM) Treaty's application to the deployment of sophisticated theatre ballistic missile defences to preserve its viability, conservatives in Congress were calling for the termination of the treaty as 'a relic of the Cold War.' They contended that rapidly advancing technology and the changing world political situation have made continued United States adherence to the ABM Treaty a serious threat to United States

term, on 14 December 2001 Bush dropped a bombshell when he announced the withdrawal of the United States' from the ABM Treaty.¹³⁰ Among the key reasons he gave was that the Treaty was outdated and with the Cold War over, the United States had a new set of defence priorities.¹³¹ The most significant and alarming consequence of the withdrawal in the author's view is that it gives the United States a free run to develop weapon systems and in particular space based sensors and interceptors prohibited under the ABM Treaty, and thus creates yet another significant loophole in the space legal framework owing to the dual use technology to which ABM missiles can be adapted to.

VI. WRESTLING FOR SPACE SUPERIORITY (A NEW COLD WAR?): MUCH TO BE GAINED, LITTLE TO BE LOST—THE BATTLE OF THE TITANS

In the 21st Century, the United States is preparing its next military objective—a doctrine to establish 'space superiority'.¹³² Noting the experience of Iraqi Freedom in 2003 in which Iraqi deployed GPS jammers the United States is wary that adversaries will target its space capabilities in an attempt to deny that combat advantage. Space superiority ensures the freedom to operate in the space medium while denying the same to an adversary and, like air superiority, cannot be taken for granted.¹³³ The new doctrine means that pre-emptive strikes against enemy satellites would become 'crucial steps in any military operation'.¹³⁴ The USAF believes that seizing

national security. See 142 Congressional Records S917–918 (daily ed, 6 February 1996) (statement of Senator Helms); 142 Congressional Records S7294–7295 (daily ed, 28 June 1996) (statement of Senator Thurmond).

¹³⁰ President Bush invoked Article 15 of the ABM Treaty which provides generally that each Party shall, in exercising its national sovereignty, have the right to withdraw from the Treaty if it decides that extraordinary events have jeopardised its supreme interests.

¹³¹ See John Diamond, 'Missile Pact on Brink: US Says Imminent Testing May Violate ABM Treaty', *Chicago Tribune*, 13 July 2001, 1; Barry Schweid, 'US Quits Arms Treaty—War on Terror: Where Is Osama', *Daily Telegraph* (Sydney), 14 December 2001, 5.

¹³² Air Force doctrine is evolving to reflect technical and operational innovations. Air Force Doctrine Document 2–2.1, the Air Force's first doctrine publication on counterspace operations, provides operational guidance in the use of air and space power to ensure space superiority: *Air Force Doctrine Document 2–2.1: Counterspace Operations* (2004) Defense Technical Information Centre <http://www.dtic.mil/doctrine/jel/service_pubs/afdd2_2_1.pdf> at 28 March 2006.

¹³³ *Ibid*, Foreword.

¹³⁴ *Ibid*.

control of the ‘final frontier’ is essential for modern warfare, noting that ‘[s]pace superiority provides freedom to attack as well as freedom from attack. Space and air superiority is now deemed crucial in any military operation’.¹³⁵ In this regard the concept of counter space operations has been articulated premised on the notion of destroying enemy satellites in the event of combat to improve the chance of victory.¹³⁶

Space superiority will be gained and maintained through counter space operations which is anchored in The US Air Force’s air and space power functions. The development of offensive counter space capabilities provides combatant commanders with new tools for counter space operations. Counter space operations have defensive and offensive elements, both of which depend on robust space situation awareness. These operations may be utilised throughout the spectrum of conflict and may achieve a variety of effects from temporary denial to complete destruction of the adversary’s space capability.¹³⁷ With China ascendant in the 21st century space-technology rivalry between the United States and China is heating up. In 2000 China’s unveiled an ambitious ten-year space program whose objectives include:

- To build up an integrated Chinese military and civilian earth observation system.
- To set up an independently operated indigenously-built satellite broadcasting and telecommunications system. The technology would be used to develop new military and civilian communications satellites to form a command-and-control network designed to link Chinese combat forces.
- To establish an independent Chinese satellite navigation and positioning system. This would be achieved by launching a satellite constellation in stages while developing the relevant application systems.¹³⁸

¹³⁵ Ibid.

¹³⁶ Ibid.

¹³⁷ Mark Townsend, *US Ready to Put Weapons in Space* (2004) The Guardian <<http://observer.guardian.co.uk/international/story/0,6903,1345380,00.html>> at 10 October 2004.

¹³⁸ Mark Wade, *China* (2006) Encyclopedia Astronautica <<http://www.astronautix.com/articles/china.htm>> at 17 May 2006).

While one of the strongest immediate motivations for this program appears to be political prestige, China's space efforts almost certainly will contribute to improved military space systems.¹³⁹ In 2003, Huang Chunping, commander of the Long March 2-F carrier rocket team and deputy commander of the Jiuquan space launch centre noted: 'Just imagine there are outer space facilities of another country at the place very, very high above your head, and so others clearly see what you are doing, and what you are feeling...That's why we also need to develop space technology.'¹⁴⁰ Like the United States, China is researching technology designed to disable or destroy satellites, and is developing a dual-use satellite launch vehicle that is capable of 'blinding' or destroying satellites in orbit as well as technology that can be used in areas such as missile guidance systems.¹⁴¹

In 2003 the Chinese People's Daily quoted a Chinese military strategist as saying. 'In the current and future state security strategy, if one wants not to be controlled by others, one must have considerable space scientific and technological strength.'¹⁴² Later, a Chinese military official commented that China's army had already introduced the concept of 'space force strength'¹⁴³ in apparent reference to a similar US military concept (noted above in this Part of the Article). The official went on to note that a Chinese military research report proposed building a separate 'force to fight in space'.

China is rising peacefully at the moment but nationalism is an important force, and there are serious grievances regarding external issues, notably Taiwan. There are inevitable frictions with the United States as China's regional role increases and its 'sphere of influence' develops. It

¹³⁹ Leonard David, *Pentagon Report: China's Space Warfare Tactics Aimed at U.S. Supremacy* (2003) Space.com <http://www.space.com/news/china_dod_030801.html> at 28 March 2006.

¹⁴⁰ Bill Smith, 'Space War 2017: Science Fiction or Real Risk?', *Deutsche Presse-Agentur*, 14 October 2003, available at <<http://www.ummah.net/forum/showthread.php?t=24910>> at 5 May 2006.

¹⁴¹ David, above n 139.

¹⁴² *China looking at 'space force'* (2003) News24.com <www.news24.com/News24/Technology/News/0,,2-13-1443_1433115,00.html> at 10 May 2006.

¹⁴³ *Ibid.*

is likely that China is inching towards adopting the United States stance—underwriting its regional pre-eminence with military might.¹⁴⁴ Professor John J Mearsheimer observes that to predict the future in Asia, one needs to note how rising powers are likely to act and how other states will react to them. In a crisp, incisive analysis he postulates:

The international system has several defining characteristics. The main actors are states that operate in anarchy—which simply means that there is no higher authority above them. All great powers have some offensive military capability, which means that they can hurt each other. Finally, no state can know the future intentions of other states with certainty. The best way to survive in such a system is to be as powerful as possible, relative to potential rivals. The mightier a state is, the less likely it is that another state will attack it.¹⁴⁵

China's intent seems to be to eclipse any peer competitor in Asia and thus dominate Asia the way the United States dominates the Western Hemisphere. In another robust insight, Mearsheimer notes '...China will strive to maximize the power gap between itself and its neighbors, especially Japan and Russia, and to ensure that no state in Asia can threaten it.'¹⁴⁶ This path has lots of rewards to offer not least that gaining regional hegemony is probably the only way that China will get back Taiwan. However, American policymakers are unlikely to sit on their hands and watch this unfold, and in all likelihood as the world's sole superpower will seek to contain China much in the same way it behaved toward the Soviet Union during the Cold War.

At present, the United States is spending more on Missile Defense than on conventional counterforce and related capabilities dedicated to attacking theatre missiles on the ground before they are launched. In part, this allocation of resources reflects the abundance of weapons, platforms and sensors that can be applied to attacking theatre missiles and launchers, in addition

¹⁴⁴ Zbigniew Brzezinski, 'Clash of the Titans: Make Money, Not War' (2005) 146 *Foreign Policy* 46, available at <http://www.foreignpolicy.com/story/cms.php?story_id=2740> at 15 May 2005.

¹⁴⁵ John J Mearsheimer, 'Clash of the Titans: Better to be Godzilla than Bambi' (2005) 146 *Foreign Policy* 47, available at <http://www.foreignpolicy.com/story/cms.php?story_id=2740> at 15 May 2005.

¹⁴⁶ *Ibid.*

to the full spectrum of other ground targets. Once the United States deploys an effective BMD system, minimal deterrent capability posed by other major powers could be negated unless their missile arsenals are sufficiently improved in numbers and accuracy, and by fitting its ICBMs with Multiple Independently Targetable Re-entry Vehicles (MIRVs)—weapons long at the centre of the former US-Soviet Cold War arms race and the subject of key bilateral disarmament treaties including the ABM Treaty, SALT I and II and START I and II. This American initiative is fuelling a new arms race. Having abrogated the ABM Treaty in 2001, American policy makers declared that mounting non-nuclear warheads on intercontinental strategic missiles would give the option of striking a target anywhere on Earth within about 30 minutes and with a large element of surprise, since there is no reliance on easily detectable ships or aircraft.¹⁴⁷ In 2006, the Kremlin voiced worry over US plans to mount non-nuclear warheads on intercontinental strategic missiles to strike targets anywhere in the world within minutes and with no prior warning and called for talks on subject.¹⁴⁸

The American initiatives have raised hackles in China with its military strategists developing a concept of limited deterrence.¹⁴⁹ Limited deterrence rests on a limited war-fighting capability aimed at communicating China's ability to inflict costly damage on the adversary at every rung on the escalation ladder and thus denying the adversary victory in the event of a war. Limited deterrence requires hitting counterforce targets that are mobile. These forces would thus require effective space-based early warning, and some configuration of Ballistic Missile Defence

¹⁴⁷ *Kremlin Voices Concern At US Conventional Missile Plans* (2006) Spacewar <http://www.spacewar.com/reports/Kremlin_Voices_Concern_At_US_Conventional_Missile_Plans.html> at 15 May 2006.

¹⁴⁸ In his annual state of the nation address in 2006, Russian President Putin warned that: 'The launch of one such missile may trigger an inadequate response from the nuclear powers, including a full-scale retaliatory strike with the use of strategic nuclear forces.' Ibid.

¹⁴⁹ The impetus for Chinese development for space-base military capabilities was provided by the U.S. display of space dominance during the 1990-91 Gulf War, the Kosovo intervention in the late 1990s and, most recently, the Afghan operation and the war in Iraq, which demonstrated the growing gap between the US Revolution in Military Affairs and the other militaries.

capabilities. Given that China does not now have such capabilities, the straight-line prediction would be that over the next decade or so, we should expect to see a discernible effort to shift the forces away from a minimum strike-back assured destruction posture, which China now has, toward limited war-fighting.¹⁵⁰

China has made quantum steps to realise its space dream in a relatively short span of time. Sino-Russian space cooperation has strengthened as a cash-strapped Russia increasingly offers technological expertise to a cashed up China. This is likely to continue in the coming years as China moves toward lunar and deep space explorations and the next phases of manned space program. On the other hand, Sino-U.S. space cooperation has not been overly amicable. Though in 1995, the two countries signed a commercial space launch agreement whereby the U.S. government would grant export licenses for American-made satellites to be launched on Chinese rockets, Washington remained concerned over Chinese access to space technologies with military applications that could improve its missile systems. The program was effectively suspended in 2002 in the wake of the Loral/Hughes investigation and the release of the Cox Report that alleged, among other things, that the Chinese were using international space cooperation to enhance its military space capabilities.¹⁵¹

The implementation of the ambitious Chinese space plan creates a situation between the United States and China resembling the Cold War. Allegations of Chinese theft of American

¹⁵⁰ According to William S Murray III and Robert Antonellis, 'China's Space Program: The Dragon Eyes the Moon (and Us)' (2003) 47 *Orbis* 645, 650:

The PRC's current nuclear deterrence doctrine emphasizes a Chinese retaliatory strike against countervalue targets (enemy cities) rather than against counterforce targets (enemy missiles that could threaten China). This is because counterforce targeting requires the use of highly accurate ballistic missiles, preferably with multiple, independently targetable reentry vehicles (MIRVs)—two technologies that China currently lacks in its operational ICBMs.

¹⁵¹ James H Hughes, 'The Current Status of China's Military Space Program' (2002) 47 *The Journal of Social, Political and Economic Studies* 403-404.

technology through espionage, security crackdowns and spy hunts are strongly reminiscent of the early 1950's.¹⁵² This seems to bear the hallmarks of a new Cold War in the making pegged on a second space race. The 21st century may well be the 'Chinese Century', in which China becomes the richest, most populous, and most powerful nation on Earth.¹⁵³ As America strides along in the new millennium and a new space race is in the offing, this time, the challenger to the American super-power is China. Could another Cold War be afoot?

China's manned space and associate programs will no doubt enable the country to develop and improve its military applications, including space-based intelligence gathering, navigation, and guidance, and jamming. Chinese military space programs are driven by security considerations. '... Western analysts point to the fact that the Chinese manned space program has always been under the command of the PLA [People's Liberation Army] General Armament Director—Gen. Cao Gangchuan for Shenzhou V and Gen. Chen Bingde for Shenzhou VI. Many of the programs carried out through the Shenzhou series are suspected of having dual-use significance, such as the high-resolution imaging system and reconnaissance capabilities.'¹⁵⁴ In 2005 a United States Defence Department report on the Chinese military voiced concerns over China's space program, pointing out that military capability and strategy 'is likely one of the primary drivers behind Beijing's space endeavours and a critical component' of the country's financial investment in space.¹⁵⁵

In October 2005, during his first-ever visit to China as United States Defence Secretary, Donald Rumsfeld spent most of his time berating the top brass of the PLA on the excessive

¹⁵² Wade, above n 138.

¹⁵³ Ibid.

¹⁵⁴ *Kremlin Voices Concern At US Conventional Missile Plans*, above n 147.

¹⁵⁵ David, above n 139.

ambition and lack of transparency in regard to Chinese military modernisation program.¹⁵⁶ In November of the same year, when United States President Bush Jr. visited China, no breakthroughs were achieved from the much-anticipated summit between Presidents Bush Jr. and his Chinese counterpart Hu Jintao raising doubts as to whether the two ‘strategic competitors’ can put their common interests ahead of deep-seated differences. In the meantime, Chinese strategic and military advisers are warily watching new deployments of United States troops and military installations in Japan following discussions between defence officials from both sides on how to extend the reach of the U.S.-Japan military alliance in Asia.¹⁵⁷

VII. CONCLUSION

The Space Law regime has a schizophrenic quality which exposes a serious internal contradiction in the Space Law regime. As space technology develops into more sophisticated areas such as low-earth systems, space planes, and a variety of space-based platforms carrying a variety of systems, the issue of delimiting the outer space area district from national airspace should become more immediate. The ‘peaceful’ purposes centrepiece of Space Law does not rule out the military use of outer space or military use of commercial communications satellites. It does not prohibit the use of commercial satellite communications in tactical military operations in which armed force is used. Whether a military use is for ‘peaceful purposes’ cannot be determined by the type of vehicle on which a satellite terminal is mounted, by the vehicle’s cargo, by the nature of the communications traffic, or by whether the vehicle or personnel using the equipment are engaged in military operations involving the use of armed force. Satellite earth stations need not be ‘turned-off’ merely because the vehicle on which they are mounted are

¹⁵⁶ Willy Lam, *Despite Summit Rhetoric, US and China Remain Strategic Competitors* (2005) AsiaMedia <www.asiamedia.ucla.edu/article.asp?parentid=34681> at 15 May 2006.

¹⁵⁷ *Ibid.*

engaged in an operation involving the use of armed force. The Space Law regime yields little information on space warfare.

Several decades after man's conquest of space, there has not yet been a case of one nation using force against another in outer space. Nonetheless, given the increasing global reliance on space systems, and increasing militarization of space, its weaponization and evolution into a distinct theatre of military operations seems likely. According to one observer, 'two of every three launchings of spacecraft serve military purposes'.¹⁵⁸ As space technology develops into more sophisticated areas such as low-earth systems, space planes, and a variety of space-based platforms carrying a variety of systems, the issue of definitively interpreting 'peaceful purposes' assumes urgency. It is difficult to reconcile the objective of 'development of weapons systems' and 'military operations' with the goal of using space for 'peaceful purposes for the benefit of all mankind'.

In the face of rising Chinese Space breakthroughs and accelerating American space weaponization, it may not be possible to have these two titans agree to a bilateral treaty in the face of the obvious military utility offered by space. Absent a comprehensive, multilateral agreement preserving space for peaceful purposes, space remains open to military development. It is to be remembered that in August 1981, the Soviet Union submitted to the United Nations Committee on Disarmament a Draft Treaty on the Stationing of Weapons of any Kind in Outer Space.¹⁵⁹ The draft treaty sought to ban deployment of all types of weapons in outer space and to provide for the use of national technical monitoring facilities. Its revival would provide a focal point for states to negotiate a comprehensive multilateral treaty to address the weaponization of outer space considering that the United States withdrawal from the ABM Treaty and its policy to

¹⁵⁸ Daniel Goedhuis, 'Some Observations on the Efforts to Prevent a Military Escalation in Outer Space' (1982) 10 *Journal of Space Law* 13.

¹⁵⁹ See *General and Complete Disarmament*, GA Res 36/97, UN GAOR, 36th sess, UN Doc A/RES/36/97 (1981).

contain China as a peer competitor all but rules out a bilateral treaty between the two titans. In any case China is unlikely to agree to a treaty that constrains its rapidly budding space program, but preserves the technological edge that the United States already enjoys.