> arisen in connection with the violation of a State Party of the Treaty;
>
> d) take measures to put an end to the violation of the Treaty by any State Party.
>
> The title, status, specific functions and forms of work of the Executive organization of the Treaty shall be the subject of an additional protocol to the Treaty.[269]

The most important issue with regards to the proposed treaty though, it that it provides no solution as to what is to happen to the already existing military satellites in outer space carrying non-prohibited weapons. There is no replacement, mutual destruction or other kind of mechanism in the treaty towards this end. Perhaps if such a provision was included, States that already possess such satellites would refuse from the outset any kind of discussion over this draft. On the contrary, as it currently stands, the draft has caught the attention of numerous States, who have submitted relevant comments with regards to the proposed measures.[270] However, not all major space-faring nations are amenable to the conclusion of such a treaty. The USA in particular oppose any restrictions that might limit its access to or use of space, including any potential arms control agreements, testing or other operations in outer space.[271]

D. Proposals for deweaponisation: the 2010 European Draft Code of Conduct for Outer Space Activities.

The European Union has always been active in the exploration and use of Outer Space, having within its members really active space-faring nations, such as France, Germany, the United Kingdom etc. However, the European Union Member States still maintain a rather high degree of individuality when it comes to their space activities, which has so far not allowed for the creation of a coherent European Space Policy, although it is greatly desired

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[269] *Id.* arts. 7 & 8.

[270] Ram S. Jakhu, *Law of Space Applications, Documents and Materials* 1852-1898 (McGill Institute of Air and Space Law, Montreal 2011).

[271] Paul Stephen Dempsey, *The Evolution of US Space Policy*, 33 ANNALS AIR & SPACE L. 325, 334 (2008); USA National Security Presidential Directive, *National Space Policy 2006*, at 2, *available at* www.ostp.gov.

by everyone.[272] Consequently, despite substantial efforts towards the creation of a common European Space Military, this option has not yet come to be.[273]

The European Union has not remained passive, however, on the face of challenges such as the ones presented above. Like Russia and China, the European Union has presented its own international instrument addressing some of the issues caused by the militarisation of outer space. Unlike Russia and China though, the European Union has opted for a non-binding instrument, and has hence presented a draft Code of Conduct for Outer Space Activities.[274] The draft Code is an attempt to minimize the negative impact of certain activities, to make space more sustainable and indirectly control the militarisation and weaponisation of outer space. It has been agreed upon by the European Union, revised following consultations with other space faring nations and presented to the Conference on Disarmament, as an alternative method of regulating existing issues with regards to space. It reflects the fundamental premise of the European Union for the strengthening the security of activities in outer space in the context of expanding space activities that contribute to the development and security of States.[275] The first purpose of the draft Code is to encourage participation on a voluntary basis in measures for transparency, confidence building etc., not exclusively by the European Union States, but also by as many States as possible in general.[276] The ultimate purpose is to maintain international peace and security,[277] through the freedom of access to space for all, for peaceful purposes and the preservation and security of space objects, taking into account the considerations for legitimate defence of States.[278] The drafters of the Code made an effort to show that it was actually a codification of new best practices,[279]

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[272] Isabelle Soubrès-Verger, *La militarisation de l'espace: perspective européenne*, 29 ANNALS AIR & SPACE L. 357, 359 (2004).

[273] *Id.* at 374.

[274] European Council Document 14455/10 (2010), *Council Conclusions concerning the revised draft Code of Conduct for Outer Space Activities* [hereinafter Draft Code of Conduct].

[275] *Id.* at 2.

[276] *Id.* art. 1,§4.

[277] *Id.* art. 1,§1.

[278] *Id.* art. 2.

[279] *Id.* art. 1,§3.

though in fact it is, as the following analysis of the most important provisions will demonstrate, a reiteration of the current legal regime governing outer space.

In particular, under Article 3 of the Draft Code of Conduct, Subscribing States take to re-affirm their commitment to the existing legal framework and take steps of progress, application and adherence to the following international instruments:

> (a) the existing framework regulating outer space activities, inter alia:
>
> - the Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies (1967);
> - the Agreement on the Rescue of Astronauts, the Return of Astronauts and the Return of Objects Launched into Outer Space (1968);
> - the Convention on International Liability for Damage Caused by Space Objects (1972);
> - the Convention on Registration of Objects Launched into Outer Space (1975);
> - the Constitution and Convention of the International Telecommunications Union and its Radio Regulations (1995), as amended**;**
> - the Treaty banning Nuclear Weapon Tests in the Atmosphere, in Outer Space and under Water (1963) and the Comprehensive Nuclear Test Ban Treaty (1996); and
> - the International Code of Conduct against Ballistic Missile Proliferation(2002).
>
> (b) Declarations and Principles, inter alia:
>
> - the Declaration of Legal Principles Governing the Activities of States in the Exploration and Use of Outer Space as adopted by UNGA Resolution 1962 (XVIII), (1963);

- the Principles Relevant to the Use of Nuclear Power Sources in Outer Space as adopted by UNGA Resolution 47/68 (1992);
- the Declaration on International Cooperation in the Exploration and Use of Outer Space for the Benefit and in the Interest of All States, Taking into Particular Account the Needs of Developing Countries as adopted by UNGA Resolution 51/122 (1996); and
- the Recommendations on the Practice of States and International Organisations in Registering Space Objects as stated in UNGA Resolution 62/101 (2007).[280]

Emphasis should be given to the characterisation of States just before the listing of the aforementioned instruments. States are called "subscribing," for they are not bound by the Code of Conduct, nor do they have to be Parties or signatories to the aforementioned instruments. It should also be noted that the Moon Agreement does not form part of the list of instruments of Article 3, whereas non-binding documents, such as the 1962 Legal Principles Resolution, which was later incorporated in the Outer Space Treaty, or the principles relevant to the use of nuclear power sources and the declaration on international cooperation, are included in this enumeration. It is doubtful that the inclusion of this soft law instruments in another soft law document, such as the Code of Conduct, will somehow strengthen their legal value. Without being too cynical about it, one would have to assume that there must be some kind of intention behind this inexplicable choice, for it would be too easy to just think of this selection as the result of "clumsy" drafting.

Article 5 of the Draft Code of Conduct addresses the issue of space debris, in providing that States should "refrain from the intentional destruction of any on-orbit space object or other activities which may generate long-lived space debris."[281] Reference is also made to the UN Space Debris Mitigation Guidelines[282], however it makes no further references to what States should do to

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[280] *Id.* art. 3.

[281] *Id.* art. 5,§1.

[282] G.A. Res. 62/217, U.N. Doc. A/RES/62/217 (Feb. 1, 2007).

remove the existing debris, or indeed provide any tangible example of best practices in this field.

Last but not least, some special attention should be paid to the provisions of Articles 6, 8 and 9, which are all included under the general title "Cooperation Mechanisms" and respectively read as follows:

> Article 6. Notification of outer space activities
>
> 6.1. The Subscribing States commit to notify, in a timely manner, to the greatest extent feasible and practicable, all potentially affected Subscribing States on the outer space activities conducted which are relevant for the purposes of this Code, inter alia:
>
> - scheduled manoeuvres which may result in dangerous proximity to the space objects of both Subscribing and non-Subscribing States;
> - pre-notification of launch of space objects;
> - collisions, break-ups in orbit, and any other destruction of space objects generating measurable orbital debris which have taken place;
> - predicted high-risk re-entry events in which the re-entering object or residual material from the re-entering object either likely would survive to cause potential significant damage, or might cause radioactive contamination; and
> - malfunctioning of orbiting space objects which could result in a significantly increased probability of a high risk re-entry event or a collision between space objects in orbit.
>
> 6.2. The Subscribing States commit to provide the notifications described above through diplomatic channels, or by any other method as may be mutually agreed.
>
> Article 8. Information on outer space activities
>
> 8.1. The Subscribing States resolve to share, on an annual basis, where available and appropriate information on:

- their space policies and strategies, including basic objectives for security and defence related activities in outer space;
- their space policies and procedures to prevent and minimise the possibility of accidents, collisions or other forms of harmful interference;
- their space policies and procedures to minimise the creation of space debris; and
- efforts taken in order to promote universal adherence to legal and political regulatory instruments concerning outer space activities;

8.2. The Subscribing States may also consider providing timely information on space environmental conditions and forecasts to the governmental agencies and the relevant nongovernmental entities of all space faring nations**,** collected through their space situational awareness capabilities.

Article 9. Consultation mechanism

9.1. Without prejudice to existing consultation mechanisms provided for in Article IX of the Outer Space Treaty of 1967 and in Article 56 of the ITU Constitution, the Subscribing States have decided on the creation of the following consultation mechanism:

- A Subscribing States that may be directly affected by certain outer space activities conducted by one or more Subscribing State(s) and has reason to believe that those activities are, or may be contrary to the core purposes of the Code may request consultations with a view to achieving mutually acceptable solutions regarding measures to be adopted in order to prevent or minimise the inherent risks of damage to persons or property, or of potentially harmful interference to a Subscribing State's outer space activities.
- The Subscribing States involved in a consultation process commit to:

- consulting through diplomatic channels or by other methods as may be mutually determined; and
- working jointly and cooperatively in a timeframe sufficiently urgent to mitigate or eliminate the identified risk initially triggering the consultations.

- Any other Subscribing State(s) which has reason to believe that its space activities would be affected by the identified risk and requests to take part in the consultations is entitled to take part, with the consent of the Subscribing State(s) which requested consultations and the Subscribing State(s) which received the request.
- The Subscribing States participating in the consultations are to seek mutually acceptable solutions in accordance with international law.

9.2. In addition, the Subscribing States may propose, on a voluntary basis, to create a mechanism to investigate proven incidents affecting space objects and to collect reliable and objective information facilitating their assessment. The mechanism, to be determined at a later stage, should utilize information provided on a voluntary basis by the Subscribing States, subject to national laws and regulations, and a roster of internationally recognised experts to undertake an investigation. The findings and any recommendations of these experts are to be advisory, and are not binding upon the Subscribing States involved in the incident that is the subject of the investigation.[283]

Presented in their entirety, these provisions clearly demonstrate the intention of recirculating, or perhaps even duplicating, already existing information, exchanged among States through COPUOS, by the creation of completely new and different mechanisms, such as biannual meetings of the subscribing States. The creation of an additional layer of international dialogue, as a means of solving the existing problem resulting from the various

[283] Draft Code of Conduct, *supra* note 274, arts. 6, 8 & 9.

military uses of outer space, appears to the more sceptical eyes as a further attempt to by-pass the UN institutions and segregate outer space from its jurisdiction.

E. The issue of verification of space objects.

The issue of verification has been almost synonymous to the effort to control an arms race at a global level ever since World War II. At first aimed primarily towards monitoring the compliance of disarmament of nuclear weapons, verification has nowadays gone a long way from the 1962 proposals of both the USSR and the USA about a "general and complete disarmament" that included relevant verification procedures.[284] As a process tied to an arms control instrument, verification takes place in three different stages: first, the activities of the parties to the disarmament treaty have to be mutually monitored; second, the information resulting from such monitoring procedure must be interpreted and analysed; and third, an assessment must be made as to what kind of risk the activities of the monitored State parties pose for the security of the monitoring and assessing State.[285] It is evident that the greatest burden of the verification process falls upon the shoulders of the intelligence services worldwide, as they are expected to perform all three stages before final action, if any, is to be taken. For indeed, even in cases where violations of a disarmament treaty have been discovered through the verification process, it is not necessary that action was taken against the violating State. Disarmament treaties are a prime example of international law working on the basis of reciprocity: if one State does not fulfil its international obligation *vis-à-vis* its contractual counterparts, then they in return can delay the fulfilment of theirs, action which could be easily described as taking countermeasures against the offending State.[286] In fact, a State or the States towards this obligation is owed can assert the international respon-

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[284] *See* Nicolas Mateesco Matte, *International Verification Procedures: Past and Future Prospects*, 11 ANNALS AIR & SPACE L. 237 (1986).

[285] ISABELLA H. PH. DIEDERIKS-VERSCHOOR & VLADIMIR. KOPAL, AN INTRODUCTION TO SPACE LAW 138 (Kluwer Law International 2008).

[286] Linos-Alexandre Sicilianos, *Les réactions décentralisées à l'illicite: Des contremesures à la légitime défense* 501-525 (Librairie générale de droit et de jurisprudence, Paris 1990).

sibility of the State violating the provisions of the disarmament instrument, as its non-compliance "[i]s of such a character as radically to change the position of all the other States to which the obligation is owed with respect to the further performance of the obligation."[287] Additionally, the affected State or States can in fact suspend or even terminate the disarmament treaty, even towards those other Parties that were at all times acting lawfully,[288] since the obligation of lawful performance is effectively conditioned upon and requires the performance of all the other parties as well.[289] A strong interest on behalf of all State parties in the cessation and the reparation of the unlawful act is a precondition to claiming such international responsibility,[290] which evidently exists in the case of reducing space arsenals in a significant manner.

Verification is indeed believed to be a *conditio sine qua non* for the concluding of an arms control agreement.[291] Scholars have been actively advocating the need to enhance the equipment available, mostly on military satellites, so that more accurate and precise data can be collected, making it thus easier to discover violations of the agreement and leaving little room to the violating State to conceal its unlawful conduct.[292]

Therefore, one of the most important provisions of the ABM treaty and the SALT-I is that prohibiting any interference with the "national technical means"[293] of the other party, used for treaty compliance verification purposes.[294] Although not defined in

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[287] ASR, *supra* note 50, art. 42(b)(ii).

[288] VCLT, *supra* note 99, art. 60,§2.

[289] ASR, *supra* note 50, at 119.

[290] *Id.*

[291] Carl Q. Christol, *The Use of Outer Space for Peaceful Purposes, Legal and Political Considerations*, *in* PROCEEDINGS 28TH COLLOQUIUM 4-7 (Stockholm 1985); A. S. Piradov & B. C. Maiorsky, *On the Question of the Non-Use of Force in Outer Space and from Space Against the Earth (components of an international legal regime)*, *in* PROCEEDINGS 27TH COLLOQUIUM 349-353 (Lausanne 1984); Nicolas Mateesco Matte, *International Verification Procedures: Past and Future Prospects*, 11 ANNALS AIR & SPACE L. 237 (1986); Ivau Kotlyarov, *Space Law and International Control*, 3 SPACE & L. 147 (1985).

[292] HE QIZHI, I TOWARDS LEGAL CONTROL OF SPACE ARMS, A DIFFICULT PROCESS, ARMS CONTROL AND DISARMAMENT IN OUTER SPACE 125-141 (1985).

[293] David A. Koplow*, Arms Control Inspection: Constitutional Restrictions on Treaty Verification in the United States*, 63 N.Y.U. L. REV. 229, 240 (1988); Louis Haeck, *Le droit de la guerre spatiale*, 16 ANNALS AIR & SPACE L. 307, 329 (1991).

[294] ABM Treaty, *supra* note 236, art. XII; SALT I, *supra* note 236, art V.

these instruments, it was understood that "national technical means" referred to the intelligence capacities of a State used to collect data from outside the monitoring State,[295] including land-based and mobile radar, various kinds of sensors and reconnaissance satellites and space-based sensors.[296] A similar provision was also included in the Treaty on Conventional Armed Forces in Europe,[297] concluded between the then NATO States and six former States of the Warsaw Pact, the only exception being that the protection from interference is also granted to multinational technical verification means.[298] The CFE Treaty nowadays has been amended to include as many as 30 States, preventing them from interfering purposefully with the national technical means of the other signatories, unless acting in self-defence or under a Security Council authorisation.[299]

It should be noted however that the ABM Treaty and the SALT-I were not the only effort to address the issue of disarmament verification. In fact, in 1978 France proposed the creation of an International Satellite Monitoring Agency (IMSA)[300] for the purposes of verifying the progress of arms control and disarmament agreements,[301] a suggestion which was most welcome by the academic community.[302] Despite the positive reaction of the academic world and the fact that nothing in international law in general and space law in particular prevents the establishment of such an international monitoring organisation, the French proposal was dropped, as the USA considered the project financially unattractive, with the USSR making no comments at the time.[303]

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[295] Christopher M. Petras, *"Eyes" on Freedom – A View of the Law Governing Military Use of Satellite Reconnaissance in US Homeland Defense*, 31-I J. SPACE L. 81, 91 (2005).

[296] Koplow, *supra* note 293.

[297] 1990 Treaty on Conventional Armed Forces in Europe, 30 I.L.M. 1 [hereinafter CFE Treaty].

[298] *Id.* art. XV.

[299] Christopher Petras, *The Debate over the Weaponization of Space – A Military-Legal Conspectus*, 28 ANNALS AIR & SPACE L. 171, 194 (2003).

[300] G.A. Devoted to Disarmament, *French Proposal for Establishment of Int'l Satellite Monitoring Agency (ISMA)*, U.N. Doc. A/S-10/AC.1/7 (June 1, 1978).

[301] Ram Jakhu & Riccardo Trecroce, *International Satellite Monitoring for Disarmament and Development*, 5 ANNALS AIR & SPACE L. 509, 511 (1980).

[302] He Qizhi, *Space Arms Control and International Verification*, *in* AN ARMS RACE IN OUTER SPACE, PROCEEDINGS OF A SYMPOSIUM 119-125 (McGill University 1985).

[303] DIEDERIKS-VERSCHOOR, *supra* note 285, at 139.

A little more than a decade later though, and just before its collapse, the USSR proposed the creation of a monitoring organ within the UN for the purposes of arms control and disarmament treaty compliance verification purposes.[304] In the meantime, the USSR had made repeated proposals to the UN about the adoption of an international instrument of complete space disarmament.[305] All proposals included verification processes, which would be realized by the use of national technical means,[306] which were to be protected.[307] In fact, these proposals echoed to a great extent the provisions already included in the ABM Treaty and the SALT-I and SALT-II, which were however binding only between the USA and the USSR. Despite any weaknesses, scholars seemed amenable towards the adoption of the instruments proposed by the USSR, since they believed "it could serve the cause of strengthening confidence among States in the process of demilitarization of outer space,"[308] as the use of force anywhere in space and against any space object placed anywhere in space (space, orbit, celestial body) was expressly prohibited.[309] The Soviet proposals were further supported by the very optimistic plan proposed in the mid-1980s by the USSR to eliminate nuclear weapons by the beginning of the new millennium, which would combine the creation of a nuclear free world with the maintenance of a peaceful outer space.[310] None of the proposals made by the USSR managed to acquire sufficient support in the UN so as to be adopted. Instead, throughout the

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[304] G. P. Sloup, *Arms Control Verification – The Poor Person's Approach*, *in* PROCEEDINGS 29TH COLLOQUIUM 77-83 (Innsbruck 1986); Bhupendra Jasani, *ISMA – Will it ever happen?*, 8 SPACE POL'Y 13 (1992).

[305] G.A. Res. 36/192, U.N. Doc. A/36/192 (Dec. 17, 1981); G.A. Res. 38/194, U.N. Doc. A/38/194 (Dec. 20, 1983).

[306] Sune Danielsson, *Examination of Proposals Relating to the Prevention of an Arms Race in Outer Space*, *in* NANDASIRI JASENTULIYANA (ED.), MAINTAINING OUTER SPACE FOR PEACEFUL PURPOSES – PROCEEDINGS OF A SYMPOSIUM HELD BY THE UNITED NATIONS UNIVERSITY 277-289, at 281 (The Hague 1984).

[307] Article 4 Draft Treaty on the Prohibition of the Stationing of Weapons of Any Kind in Outer Space: Article 4 Draft Treaty on the Prohibition of Use of Force in Outer Space and From Space against the Earth.

[308] Carl Q. Christol, *Arms Control and Disarmament in Space: The Rough Road to Vienna 1984*, 1 SPACE POL'Y 26, 41 (1985).

[309] Yuri M. Kolossov, *Non-Use of Force in Outer Space*, *in* PROCEEDINGS 26TH COLLOQUIUM 205-209 (Budapest 1983).

[310] Vladlen S. Vereshchetin, *Strategic Defense Initiative and International Law*, *in* PROCEEDINGS 29TH COLLOQUIUM 94-99 (Innsbruck 1986).

1980s and henceforth, the UN had entered the soft law era of space law. Just in 1981 as many as 48 Resolutions were adopted by the General Assembly with regards to disarmament. For the purposes of the present Article, the most important of them was the Resolution Preventing an Arms Race in Outer Space,[311] for it was the beginning of the PAROS era.

EPILOGUE

The present Article attempted to highlight some of the problems that the rapid increase of and dependence upon military applications of outer space has created. While voices have been heard that the current legal regime is vulnerable to the challenges posed by the ever-developing State practice in the field of space militarisation,[312] it is my contention that the current legal regime, if applied correctly and consistently, can address the majority of these problems.

Under Part I, it was demonstrated that general space law and general public international law can coexist harmoniously, in order to maintain international peace and security, an aspect of which is safeguarded by demanding the use of outer space for peaceful purposes. While the term "peaceful" has been considered as rather nebulous,[313] its true meaning can be understood better when put it context. The oxymoron of allowing non-aggressive military uses of space is in fact perfectly rational: if we accept that measures utilising force can be taken down on Earth for the maintenance, or even restoration, of international peace and security, then we have to accept that similar measures should be considered permissible under international space law. Examples of military uses of civilian/commercial space assets,[314] especially when under the auspices of the UN, such as those of INMARSAT during the early 1990s,[315] further prove this point. General international law has developed over the years to a sufficient degree to

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[311] G.A. Res. 36/97, U.N. Doc. A/RES/36/97C (Dec. 9, 1981).

[312] DIEDERIKS-VERSCHOOR, *supra* note 285, at 144.

[313] Stephen Gorove, *Arms Control Provisions in Outer Space Treaty: A Scrutinizing Reappraisal*, 3 GA. J. INT'L & COMP. L. 114, 120 (1973).

[314] *See* Morgan, *supra* note 150.

[315] Wolf D. von Noorden, *INMARSAT Use by Armed Forces: A Question of Treaty Interpretation*, 23-I J. SPACE L. 1, 8 (1995).

allow for specific prerequisites to determine the lawfulness of State action with regards to outer space,[316] prerequisites that contemporary (defensive) technology can in fact meet, or should at least strive to meet through improvement.

Part II addressed some of the contemporary challenges to the current legal regime,[317] by providing specific examples of action and the proposed methods of resolving the problematic situations. The proposals submitted by various States and the reluctance or enthusiasm with which they were treated by the international community prove in the clearest way possible that the prospect of amending the current legal framework in order to modernise it, will be nothing short of a cumbersome and time-consuming endeavour. With the situation in outer space changing so rapidly, it is questionable whether the international community can afford the wait and the quantities of ink to be spilled, before a compromising solution can be reached. And indeed, a compromise would be necessary, in order to balance the conflicting interests of actual and potential space-faring Nations, which do not partake in the space race on an equal financial, technological and capacity footing.[318] The antagonism demonstrated with the recent ASAT tests is just the tip of what could be a really big iceberg of a Cold-War-reminiscent arms race between incumbent and emerging space powers.[319] It would seem more prudent for States to re-evaluate their own conduct, so as to make it compatible with both the letter and the spirit of the law as it stands, instead of seeking to bend the law to their will.[320] It is true that what is urgently needed is the standardisation of terms and expression in the legal instruments currently in effect; however the current state of things shows that States lack the political will to engage in such a fruitful and meaningful discussion, all being preoccupied and focused on their individual interests.

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316 *See* Ricky J. Lee, *The Jus ad Bellum in Spatialis: The Exact Content and Practical Implications of the Law on the Use of Force in Outer Space*, 29-I J. SPACE L. 93 (2003).

317 *See* Nair, *supra* note 224.

318 Stephen Gorove, *Arms Control in Space: Issues and Alternatives*, 33 ZEITUNG FÜR LUFT UND WELTRAUMRECHT 191, 194 (1984).

319 Maogoto, *supra* note 11, at 17.

320 *See* Major David L. Willson, *An Army View of Neutrality in Space: Legal Options for Space Negation*, 50 A.F. L. REV. 175 (2001).

If anything, what I believe is really needed in outer space, is closer, international, honest and meaningful cooperation among all States,[321] in order to safeguard the continuous enjoyment of space-related benefits. It is important to remember that such co-operation is not a eulogy, but in fact an international legally binding obligations upon States, pursuant to Article IX of the OST.[322] The new conditions created by the increasing correlation between civilian and military applications of outer space will continue to challenge the current legal framework, due to the (presumed) implications created for national security.[323] States must face these new developments on a multilateral, global level, even more so when they are, actually or potentially, affecting international peace and security.

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[321] *See* Eilene Galloway, *Maintaining International Space Cooperation for Peaceful Uses*, 30-II J. SPACE L. 311 (2004).

[322] Michael C. Mineiro, *FY-1C and USA-193 ASAT Intercepts: An Assessment of Legal Obligations Under Article IX of the Outer Space Treaty*, 34-II J. SPACE L. 321, 340 (2008).

[323] *See* Captain Michael R. Hoversten, *U.S. National Security and Government Regulation of Commercial Remote Sensing from Outer Space*, 50 A.F. L. REV. 253 (2001); Major Christopher M. Petras, *"Space Force Alpha": Military Use of the International Space Station and the Concept of "Peaceful Purposes"*, 53 A.F. L. REV. 135 (2004); Major Elizabeth S. Waldrop, *Integration of Military and Civilian Space Assets: Legal and National Security Implications*, 55 A.F. L. REV. 157 (2006).

NEW HABITS AND HARD LAW: PUTTING OLD SOFT LAW "SANCTIONS" AND THE SPACE DEBRIS EPIDEMIC OUT TO PASTURE

George T. Lyons III[*]

INTRODUCTION

On January 11, 2007, the People's Republic of China undertook an Anti-Satellite Technology (ASAT) interception of the FY-1C weather satellite at an altitude of approximately 525 miles above the earth's surface. Although there have been numerous criticisms advanced concerning the actual interception and its ineffectiveness in minimizing the amount of debris this event created, the largest body of international disapproval has come from the events leading up to the actual test. China provided absolutely no method of notification or justification to the rest of the world prior to their ASAT test. This lack of notification was seen by many as a direct violation of Article IX of the Outer Space Treaty (OST). Although a direct violation of Art. IX of the OST was not established or sought for sanction by the international community, a large number of critics classified the actions of China, undeniably, as in opposition to the spirit of the OST.

Almost a year later, the United States commenced what would be viewed by many as a more responsible ASAT engagement in their interception of the US-193. Prior to the interception of US-193, the U.S. undertook numerous actions to insure that the international community, many of which whom still adhere strict-

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ly to the fundamentals of the OST, would be on alert of the United States' intentions and justifications for the interception of US-193. While the U.S. could be applauded for their efforts in attempting to lead by example in following closer to the requirements of Art. IX of the OST, their adherence has done little to resolve the ambiguities presented at the core of the language contained in Art. IX of the OST.

This paper will serve to analyze the most beneficial domestic and international response that might be conjured in the wake of the interceptions of FY-1C and US-193. Part I of this paper will serve to establish some historical context of exactly what measures were implemented by the U.S. and China before conducting their interceptions of US-193 and FY-1C respectively. Part II of this paper will serve to provide an analysis of the concepts of hard vs. soft international law, as well as some respective strengths and weaknesses of both. Part III will provide what might be the best-case scenario for handling the ambiguities and varying interpretations of the modern OST schedule and the subsequent responsible space exploration standards. Finally, Part IV will provide a sort of "test case" of implementing such solutions presented in Part III, in order to discuss the realistic costs, as well as supposed benefits that would be gained by implementing such legal remedies.

The concept of competitive interests within the realm of international law and politics is not a novel one, but at this point, clarity must be provided immediately. The proliferation of space debris caused by improper and inconsiderate ASAT testing, as well as decades of irresponsible launching tactics, has led to an epidemic that grows larger every day. International standards and clarity must be established soon in order to mitigate the damages constantly proliferated by such an enormous problem.

The United States has the opportunity, privilege, and obligation to lead humanity into the next generation of responsible ASAT testing, and apply those responsible testing tactics to the gamut of launching activities pursued by spacefaring nation-states abroad. Although the reformation of ASAT testing that will be facilitated by a more stringent analysis of the events in US-193 vs. FY-1C, such an analysis is only one cog in the machine drives the discussion of responsible space exploration, however, it is ab-

solutely vital to its success. The U.S. has grasped the helm of space exploration since its inception and should absolutely hold fast to it now.

I. FY-1C, US-193, AND ART. IX OF THE OST

A. The Outer Space Treaty

In 1965 and 1966, the United States, in pursuance of a solution to the ever-growing weapons proliferation that was occurring between it and the U.S.S.R, looked in part to the construction of the most relevant internationally-binding treaty.[1] After lengthy negotiation, drafting, and redrafting efforts between the U.S. and the U.S.S.R, this solution would eventually become the Outer Space Treaty (OST). Upon unanimous Senate ratification approval, the OST went into effect on October 10th, 1967.[2] Although the OST contains the most in-depth and comprehensive legal obligation and analysis ever created by an internationally-binding space exploration treaty, the focus of this paper will be constrained simply to a discussion of Art. IX of the OST. Art. IX states simply,

> In the exploration and use of outer space, including the Moon and other celestial bodies, States Parties to the Treaty shall be guided by the principle of co-operation and mutual assistance and shall conduct all their activities in outer space, including the Moon and other celestial bodies, with due regard to the corresponding interests of all other States Parties to the Treaty. States Parties to the Treaty shall pursue studies of outer space, including the Moon and other celestial bodies, and conduct exploration of them so as to avoid their harmful contamination and also adverse changes in the environment of the Earth resulting from the introduction of extraterrestrial matter and, where necessary, shall adopt appropriate measures for this purpose. If a State Party to the Treaty has reason to believe that an activity or experiment planned by it or its nationals in outer space, including the Moon and other celestial bodies, would cause potentially harmful interference

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[1] 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* Jan. 27, 1967, 18 U.S.T. 2410, 610 U.N.T.S. 205 [hereinafter Outer Space Treaty].

[2] *Id.*

> with activities of other States Parties in the peaceful exploration and use of outer space, including the Moon and other celestial bodies, it shall undertake appropriate international consultations before proceeding with any such activity or experiment. A State Party to the Treaty which has reason to believe that an activity or experiment planned by another State Party in outer space, including the Moon and other celestial bodies, would cause potentially harmful interference with activities in the peaceful exploration and use of outer space, including the Moon and other celestial bodies, may request consultation concerning the activity or experiment.[3]

While the language of Art. IX looks exceedingly clear in the expectations it purports to establish in examining the proper notification that should be delivered to other State Parties before any space exploration might be conducted, the vast majority of problems have been derived from two phrases contained within Art. IX. These phrases are "reason to believe"[4] and "potentially harmful interference"[5] and both seem pretty soft, comparatively, in their exact obligation requirements. This legal softness has allowed a virtual gamut of interpretation internationally. Varying interpretations have been influenced slightly by conversations surrounding the true "spirit of the treaty" that should be considered in attempting to narrow the actual expectations of Art. IX. Such attempts, however, often create more complex and convoluted subsequent discussions, spurring more confusion than clarity. There have also been attempts internationally by current space powers to "lead by example" and create a narrowing of exactly what expectations are mandated by Art. IX, however, such efforts are often viewed as more illustrative than impactful on the nations that need the most immediate sanctions for irresponsible space activity. One such comparison is illustrated by the Art. IX notification actions conducted by China in their interception of FY-1C compared to those conducted by the U.S. in their interception of US-193.[6]

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[3] *Id.* at art. 9.

[4] *Id.*

[5] *Id.*

[6] This analysis, provided in the subsequent sections "B) The Interception of FY-1C" and "C) The Interception of US-193" were originally, in large part, included in the background analysis section of the paper, George T. Lyons III, *Orbital Debris: A Scien-*

B. The Interception of FY-1C

On January 11th, 2007, China intercepted the Fengyun 1C (FY-1C) geostationary weather satellite, utilizing long range Anti-Satellite Weaponry (ASAT) technology.[7] The FY-1C was initially launched on December 8, 2006, and was to be primarily used in providing images of "cloud conditions, typhoons and storms every half an hour, and data to infer sea temperatures and winds parking over 86.5 E longitude."[8] China gave no warning to other nations of their intentions to destroy the FY-1C.[9] This lack of notification provided no risk assessment to other nations concerning the potential threat to such nations' space assets.[10] Although there is some debate as to the functional status of FY-1C at the time of its interception, such a discussion lends itself to an entirely different body of legal analysis. For the purposes of this paper, it will be assumed that the FY-1C was in fact inoperable at the time of its interception and thus its interception might be justified under relevant international interpretations. There is also a large potential discussion to be had concerning the legitimacy of China's *realistic positive expectations* in intercepting the FY-1C at such a high altitude, but, for the purposes of this paper, it will also be assumed that China had the utmost hope of a successful interception of FY-1C.[11] In any event, after the interception of FY-1C,

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tific Approach to an International Diplomatic Problem (2013) [available upon request]; moreover, while it is strictly the purpose of the author to include these sections for further clarity and depth surrounding factual events that precluded the international diplomatic efforts this paper strives to discuss, candor and transparency concerning their origins must be included as well.

[7] *OASD Satellite Engagement Communications Plan* (Feb. 14, 2008), USA-193: Selected Documents, Special Topics in Aerospace Law, No.1, page 28, 37 (compiled by P.J. Blount, 2009).

[8] *SPACEWARN Bulletin, No. 638* (Jan. 1, 2007), USA-193: Selected Documents, Special Topics in Aerospace Law, No.1, page 5, 8 (compiled by P.J. Blount, 2009).

[9] *OASD Satellite Engagement Communications Plan* (Feb. 14, 2008), USA-193: Selected Documents, Special Topics in Aerospace Law, No.1, page 28, 37 (compiled by P.J. Blount, 2009).

[10] *Id*.

[11] This is a not assumption that the author personally adheres to. In fact in writing *Orbital Debris: A Scientific Approach to an International Diplomatic Problem* (2013) [available upon request], the author outlines the scientific impossibility of conducting a space debris conscious ballistic ASAT interception at this altitude. Because this isn't the primary focus of this paper, however, the discussion will be limited to China conducting a "good-faith" interception of the FY-1C satellite.

China created an estimated 2,841 pieces of new orbital debris.[12] China's interception of FY-1C ranks number one on the list of the top ten space junk causing missions of all time, surpassing the runner-up mission on the list by almost 250 percent.[13]

In the wake of China's interception of FY-1C, Gordon Johndroe, speaking for the National Security Council, said "[t]he U.S. believes China's development and testing of such weapons is inconsistent with the spirit of cooperation that both countries aspire to in the civil space area."[14] Responding to the international criticism, Liu Jianchao, the Chinese foreign ministry spokesman, also held a press conference to reiterate that "China has always advocated the peaceful use of space, opposes the proliferation of weapons in space… has never and will never participate in an arms race in space."[15] Jianchao reiterated that "[t]his test was not directed at any country and does not constitute a threat to any country…. [a]fter various parties expressed concern we explained this test in outer space to them."[16] Jianchao summed up blatantly, "China has nothing to hide."[17] Many saw the actions of China, and the lack of any notification required under Art. IX of the OST, as a direct slap in the face to those notification requirements mandated by the OST. Again, the outcome of this test and the justifications China used in explain their adherence to Art. IX of the OST hinged on their careful explanation of just what they assumed was mandated by Art. IX and their adherence to it. Although many international OST parties disagreed, China saw itself within the requirements of Art. IX because they did not foresee any potential "reason to believe"[18] that their interception of FY-1C could result in any "potentially harmful interference"[19] with other nation-

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[12] NASA IDENTIFIES TOP TEN SPACE JUNK MISSIONS, http://www.networkworld.com/community/node/64242 (last visited Nov. 31, 2013).

[13] *Id*.

[14] Marc Kaufman, *China Criticized for Anti-Satellite Missile Test*, THE WASHINGTON POST (Jan. 19, 2007), http://www.washingtonpost.com/wp-dyn/content/article/2007/01/18/AR2007011801029.html.

[15] CHINA CONFIRMS ANTI-SATELLITE MISSILE TEST, http://www.theguardian.com/science/2007/jan/23/spaceexploration.china (last visited Nov. 31, 2013).

[16] *Id*.

[17] *Id*.

[18] Outer Space Treat, *supra* note 1, at art. 5.

[19] *Id*.

states space assets.[20] Although China had arguably violated the spirit of the OST, even in spite of their attempts to carefully couch their justifications for doing so in the ambiguities created by Art. IX, no direct violations of the OST could be established in order to pursue sanctions against China.[21]

C. The Interception of US-193

Almost a year after China's interception of FY-1C, the U.S. decided to intercept its own military reconnaissance satellite, the US-193. On February 20, 2008, at approximately 10:26 p.m. EST, the USS Lake Erie launched a single modified SM-3 towards the USA-193.[22] A few minutes later, a collision was detected between the SM-3 and the USA-193 that would later be confirmed as the successful interception of USA-193[23] at approximately 153 miles above the earth's surface.[24] The mission was marked as successful and initial reports estimated that as a result of its success, "nearly 100 percent of the debris safely burned-up during reentry within 48 hours the remainder would safely re-enter within the next few days."[25] Because, however, the interceptions of the FY-1C and US-193 were fundamentally, physically, and pragmatically very different, the events leading up to the interceptions are of the utmost

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[20] The language of the OST is included here to reiterate the ambiguity that might be illustrated by potential violating parties to the OST and the justifications that said ambiguity might be used to illustrate in their attempted release from liability under the OST.

[21] *Contra* George T. Lyons III, *Orbital Debris: A Scientific Approach to an International Diplomatic Problem* (2013) [available upon request] (This assumption that no direct violation of OST Art. IX occurred during China's interception of FY-1C is an assumption made strictly to facilitate the international comparative law discussion of this paper. In fact, the author personally does not subscribe to this view and has written a paper in which the direct violation of OST Art. IX by China is illustrated by utilizing a physics-based analysis. This analysis attempts to prove that any outcome other than a large contribution to orbital debris was physically impossible and China, being the hyper-advanced technological state that they are, knew this from the beginning of their endeavor).

[22] ONE-TIME MISSION: OPERATION BURNT FROST, http://www.mda.mil/system/aegis_one_time_mission.html (last visited Nov. 31, 2013).

[23] *Id*.

[24] *American Forces Press Service, "Navy Missile Hits Decaying Satellite Over Pacific Ocean"* (Feb. 20, 2008), USA-193: Selected Documents, Special Topics in Aerospace Law, No.1, page 121 (compiled by P.J. Blount, 2009).

[25] ONE-TIME MISSION: OPERATION BURNT FROST, http://www.mda.mil/system/aegis_one_time_mission.html (last visited Nov. 4, 2013).

importance, even when compared to the actual interception tactics of the two satellites.[26]

The U.S. went to great lengths in alerting its domestic and international communities of not only the notification of its intentions to intercept US-193, but also provided a host of justifications in doing so. Primarily, the US-193 was in low earth orbit at its time of interception and was poised to re-enter earth's atmosphere "on or about March 6, 2008."[27] Early models predicted that a satellite with the size and mass of US-193 would only lose about half of its mass to atmospheric disintegration as it reentered the atmosphere.[28] This problem was compounded by the fact that US-193 would reenter with approximately 1000 lbs. of toxic frozen hydrazine, which by all estimates would likely not melt or burn up as it reentered earth's atmosphere.[29]

While some have criticized the validity of the actual dangers of US-193 reentering the earth's atmosphere[30], the U.S. government conveyed to the world that "although the risk from a natural reentry is not high, we cannot rule out the possibility that the hydrazine fuel could cause casualties on the ground."[31] While this candor seems to be detrimental to reiterating the absolute need to intercept US-193, further good-faith and justification were provided when the U.S. sought simply to restate that "[w]e will do whatever we can to mitigate this risk."[32] Notification of USA-193's in-

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[26] *See* George T. Lyons III, *Orbital Debris: A Scientific Approach to an International Diplomatic Problem* (2013) [available upon request].

[27] *Statement by Ambassador Christina Rocca, Permanent Representative of the United States to the Conference on Disarmament* (Feb. 15, 2008),), USA-193: Selected Documents, Special Topics in Aerospace Law, No.1, page 63 (compiled by P.J. Blount, 2009).

[28] DOD NEWS BRIEFING WITH DEPUTY NATIONAL SECURITY ADVISOR JEFFREY, GEN. CARTWRIGHT AND NASA ADMINISTRATOR GRIFFIN, http://www.defense.gov/transcripts/transcript.aspx?transcriptid=4145 (last visited Nov. 31, 2013).

[29] *See* Robert L. Kelley & William C. Rochelle, *Atmospheric Reentry of a Hydrazine Tank*, NASA White Paper (undated), USA-193: Selected Documents, Special Topics in Aerospace Law, No.1, page 17 (compiled by P.J. Blount, 2009).

[30] ANALYST: U.S. SATELLITE STRIKE WAS JUSTIFIABLE; CRITICS SUCH AS CHINA, RUSSIA, ARE OFF-BASE, http://www.satellitetoday.com/publications/st/2008/02/25/analyst-u-s-satellite-strike-was-justifiable-critics-such-as-china-russia-are-off-base/ (last visited Nov. 31, 2013).

[31] *OASD Satellite Engagement Communications Plan* (Feb. 14, 2008), USA-193: Selected Documents, Special Topics in Aerospace Law, No.1, page 28, 35 (compiled by P.J. Blount, 2009).

[32] *Id*.

terception was conveyed to "the United Nations Committee on the Peaceful Uses of Outer Space, the Conference on Disarmament, and members of the United Nations Security Council."[33]

The availability and readiness of the U.S. to actively seek out the notification and consultation of such a diverse panel of parties potentially privy to the OST, was a strong illustration of the type of conduct Art. IX purports to mandate. It is also important to notice that the U.S. was quick to note that all U.S. diplomatic posts would be available to "answer host government questions regarding the engagement and consequence management preparations."[34] This is an important assertion by the U.S. because it reiterated an often overlooked portion of Art. IX. That portion is the part that creates an option for "consultation concerning the activity or experiment" for all nations who have "reason to believe that an activity or experiment planned by another State Party in outer space" might in fact "cause potentially harmful interference with activities in the peaceful exploration and use of outer space."[35] Basically, the U.S. took the opportunity to say *you have the option to consult with us about anything we do that you might view as potentially harmful, and better yet, our diplomatic posts' doors are wide open!* Again, this is maybe a little rhetorical, but it just provided one more good-faith effort to notify the parties privy to the OST of the U.S.'s intentions in intercepting US-193.

One final tactic implemented by the U.S. in preparing for OST party response, the U.S. reiterated that it would be absolutely liable for any damages caused by on earth or to other object in flight that resulted from its interception of US-193.[36] While this could be viewed as outside of the scope of Art. IX, it was just one more cog in the wheel of good-faith notification the U.S. was establishing pursuant to Art. IX.

While the U.S.'s interception of US-193 looks immensely more successful when held in comparison to China's interception

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[33] *Id*. at 39.

[34] *Id*.

[35] Outer Space Treaty, *supra* note 1, at art. 5.

[36] *OASD Satellite Engagement Communications Plan* (Feb. 14, 2008), USA-193: Selected Documents, Special Topics in Aerospace Law, No.1, page 28, 39 (compiled by P.J. Blount, 2009) (this seemingly new obligation was just a reiteration and affirmation of the U.S.'s continued involvement in the 1972 Convention on International Liability for Damage Caused by Space Objects).

of FY-1C, it is more important to reiterate again, that the true success of the U.S. was seen in the extensive measures it sought to undertake in notifying parties to the OST of its intentions to intercept US-193 pursuant to Art. IX expectations. No matter how successful the U.S. could hold its technical capabilities and accomplishments to be, no real precedent or binding authority could be enforced against China and their seemingly irresponsible interception of FY-1C in light of the U.S.'s interception of US-193 because the two events were conceptually and physically so distant. Simply stated, it was not the U.S.'s employment of some magical missile or striking technology that made their engagement of US-193 more successful, it was strictly the altitude at which each party chose to engage.

This struggle for authority, applicability, and enforceability is one that continues to plague the two countries (as well as the many other parties to the OST) today. What would ultimately be the most comprehensive, fair, and enforceable result to insure that the horrific proliferation of space debris is not a problem that continues to grow every year? The answer is extremely complex and before the discussion can even begin, some ground rules must be laid out in order to facilitate a fair discussion concerning the benefits and costs of several international law conclusions.

II. HARD LAW VS. SOFT LAW

Although the title implies otherwise, the conversation surrounding what would constitute the most appropriate international law measures requires more than a verdict between two polar concepts; moreover, the interpretation of concepts such as hard law vs. soft law, must not be viewed as an either/or decision. Instead, the two concepts should be viewed as two components at two different ends of a sliding scale, among which the appropriate solution will be the product of constantly reevaluating precisely where the most appropriate solution falls on such a sliding scale. To simplify such a hard law/soft law dichotomy, recall the concept of a number line. On one end of the number line lies the concept of hard law and on the other lies the concept of soft law. In evaluating the measure appropriate to deal with each circumstance, you must continuously evaluate what the highest priorities of the nation and its citizens are, compared to the greater good of all of

humanity. Every decision will bear an effect on your position on the number line and a summation of these decisions will ultimately constitute your final position on the number line. Some varying considerations and examples of hard law/soft law can ultimately help to determine what would be the most effective domestic and international solution to the problematic ambiguities created in the range of interpretations and treatments of Art. IX of the OST.

A. Hard Law

The concept of hard law might be most easily illustrated by a few phrases that are constantly thrown around when describing such hard laws. Such terms include: binding, most restrictive, clearly defined, sanctionable, multilateral, precise, and other such phrases. Perhaps another way to illustrate hard law is to look to some examples of international diplomacy that are considered hard law. Treaties are often interpreted as some of the "hardest" international law available to the international legal psyche. This is due in large part to the supposed binding authority that a treaty enforces on all parties who are signers. Typically, a treaty also authorizes or creates a governing body that oversees the adjudication of violations and their subsequent sanction for violation. The simple need to create an international body that strives to enforce and sanction subsequent violations of such international law led to the formation of the United Nations in 1942.[37] It is also worth noting that while many countries have authorized one leader or diplomat who is authorized to sign off for his/her respective nation in order to join whatever treaty they see as in the best interest of their country, this, however, is not the case in the U.S.[38] Although such countries who have authorized one figurehead to establish their commitment to whatever UN treaty they see fit might have an easier time in getting their nation-state signed off on a treaty, a treaty commitment from a country that requires a vastly complex democratic process before ratifying and joining any interna-

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[37] HISTORY OF THE UNITED NATIONS, http://www.un.org/en/aboutun/history/ (last visited Nov. 31, 2013).

[38] Treaties*, Ch.1: The Senate's Role in Treaties*, *available at* http://www.senate.gov/artandhistory/history/common/briefing/Treaties.htm (last visited Nov. 31, 2013).

tional obligation will most certainly constitute a firmer commitment to such international hard law.[39]

While this list of hard law attributes is not exhaustive, it is helpful to consider factors that lend themselves the qualifications of what makes international hard law. These factors will come at a cost and the potential benefit gained will have to be calculated when compared to the alternative ideals that encompass a body of law known as "soft law." It is also equally important to consider the opposite end of the spectrum, soft law, which serves as a viable antitheses to the ideals that compose hard law, and the possible compromises that lie somewhere in the middle.

B. Soft Law

When considering the language that typically surrounds hard law (binding, precise, restrictive, etc.), the easiest way to imagine soft law is to break out your trusty thesaurus. Soft law is typically described using words that are almost direct antonyms of the language that describes hard law. Words that include: voluntary, compromise, non-binding, suggestive, self-regulating, loose, and the like. Soft laws are often hashed out through more diplomatic and less binding "agreements" or "coalitions" as opposed to the binding treaties that are typically reserved for hard law. By its very definition, soft law is more suggestive and persuasive towards a favorable result as opposed to a strict body of hard law that has been created to enforce and sanction violations of a specific standard or ideal. Its power is almost totally derived from its ability to persuade, rather than require mandatory adherence.

Some of the most famous bodies of soft law that have been created in the past few decades are the various Codes of Conduct created throughout the formation of the European Union (EU). These Codes of Conduct are non-legally binding documents that do not enforce any certain standard upon the parties that party to the document; instead, they operate on a clear contingency of voluntariness from parties that seek to adhere to higher standard of

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[39] *See* Treaties, *available at* http://www.senate.gov/artandhistory/history/common/briefing/Treaties.htm (last visited Nov. 4, 2013) (such is the case for a country like the United States that authorizes that the United States Senate "shall have Power, by and with the Advice and Consent of the Senate, to make Treaties, provided two-thirds of the Senators present concur" U.S. CONST. art. 2 § 2).

better self-regulation and practices.[40] It is important to reconsider, however, that very rarely do you find parties that adhere solely to soft law, simply because there will always be a temptation for direct influence to control the outcome of a market, no matter how self-regulated that market may become. This case is illustrated again by the current state of the Codes of Conduct in the EU's Business Regulations and Corporate Tax. Even though the primary mechanism for taxing non-resident workers has been by providing "recommendations" of a proper tax rate to businesses, these "recommendations" are deeply ensconced in a vast body of harder regulatory law that makes up the majority of the EU's Business Regulations and Corporate Tax structure.[41] This regulatory entrenchment tends to put a little pressure on businesses through other available channels and adds to the ability of regulatory markets to undercut the spirit of the seemingly voluntary and self-regulating soft-law markets. This is a direct example of what may be the most effective way of defining soft law. Soft law is simply any measure of international law that falls short of hard law. This may be an overgeneralization, but is illustrative of what could be defined on the sliding scale of hard/soft law. If, perhaps, the number line analogy is too simplified to incorporate the multi-tiered facets of diplomacy that contribute to the discussion of hard vs. soft law, a more complex, and often-used analogy is available.

C. The Abbott/Snidal Model

In their pivotal work, *Hard and Soft Law in International Governance*, Kenneth Abbott and Duncan Snidal addressed the vast complexities that drive the determinations over what exactly defines hard/soft law.[42] Opting to pursue a more detailed abbreviation than hard or soft law, Abbott breaks down the three main characteristics that vary in the conversations surrounding hard/soft law into a discussion of obligation, precision, and delega-

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[40] Mariola Seeruthun-Kowalczyk, *Hard Law and Soft Law Interactions in EU Corporate Tax Regulation: Exploration and Lessons for the Future*, 25 (University of Edinburgh 2011) *available at* https://www.era.lib.ed.ac.uk/bitstream/1842/6409/2/Seeruthun-Kowalczyk2012.pdf (last visited Nov. 31, 2014).

[41] *Id*. at 58.

[42] Kenneth W. Abbott and Duncan Snidal, *Hard and Soft Law in International Governance*, International Organization, Vol. 54, No. 3, Legalization and World Politics, 421 (The MIT Press 2000).

tion.[43] By instituting a shorthand that follows the [O{bligation}, P{recision}, D{elegation}] form, that is defined by varying degrees of intensity for each variable, Abbott created a mechanism that can drive the discussion of hard vs. soft law in a way that is not binary, but instead, descriptive of the varying degrees of the contributing factors that make up the hard vs. soft discussion.[44] The hardest of laws would be defined by [O, P, D] because a body of hard law, like a treaty, typically calls for strong obligations from the treaty seeking parties, a lot of precision within the language of the treaty, and a strong delegation body that could adjudicate any possible violations and enforce subsequent sanctions.[45] Soft law measures such as international coordination standards (akin to the Codes of Conduct discussed above) are typically defined by [-, P, d].[46] This designation again defines the typical goals and ambitions of such a type of soft law in that it would require little to no obligation, because they are voluntary, high precision, because the definitional language is narrow, and some delegation, because some monitoring may occur between participatory nations, but with no real mechanism for deterrence.[47]

Although this model is helpful in describing key considerations in each of a variety of scenarios in which international law might be molded, the most important consideration for the purposes of this paper is to consider that as any variable increases in the model, so do transactional costs and time consumption. Abbott articulates this idea very concisely,

"In sum, we argue that [nation-]states face tradeoffs in choosing levels of legalization. Hard agreements reduce the costs of operating within legal framework – by strengthening commitments, reducing transaction costs, and the like – but they are hard to reach. Soft agreements cannot yield all these benefits, but they lower the costs of achieving (some) legalization in the first place.

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[43] *Id*. at 424.

[44] *Id*. (This shorthand is further supplemented by varying degrees of intensity for each variable, ie. O = very strong obligation, o = some obligation, - = no obligation, etc. for each variable).

[45] *Id*.

[46] *Id*. at 429.

[47] *Id*.

Choices along this continuum of tradeoffs determine the "hardness" of legalization, both initially and over time."[48]

Again, this model may yield a more comprehensible discussion of what implications will flow from any decision that is implemented within the next steps taken to mold international law, but the costs and benefits of any future model must be at the forefront of any discussion and must be weighed completely before any decision can be made. This continual revaluation of the applicability and interpretation of this model will hopefully serve as a continual means of driving subsequent discussions towards an international solution.

D. Driving Discussion

Although the conversations that surround what exactly will be the most impactful and cost-effective means of drafting the new frontier of international space law are vastly complex and at times extremely frustrating, these complexities must not dampen the drive to attempt such efforts. Hard law will surely come at a high cost initially. It will take time, collaboration, and monetary commitment from a host of potential participatory parties. On the other hand, by establishing a treaty of detailed language and international expectations, as well as a governing body to oversee and enforce such a treaty, there could be a very distinct line drawn in the sky concerning what standards will be expected and enforced. By creating such a regulatory body, any ambiguities that have been created in any number of OST pseudo-violations could be cleared up and prosecuted with clearer consistency and ease. It should be noted that softer forms of law also have some very distinct advantages as well. By implementing a sort of voluntary code of conduct, initial formative costs could be minimized because it would require little negotiation or construction time/effort in that it would be a completely voluntary program, to which anyone might join.

The effects of these initial savings would be more than evidenced however on the backside of any attempt to enforce any violation of some code of conduct that is as easy to voluntarily leave as it was to join. Although there hasn't been a clearly defined solu-

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[48] *Id*. at 436.

tion to emerge yet, there are a couple of tactics that could be pursued in order to reconsider the ever-present problem of existing space debris, as well as the continual addition and proliferation of new space debris from irresponsible launching practices of several spacefaring nation-states. These solutions should be well defined, well thought out, and in the spirit of a nation that should continue to lead the charge for a new generation of responsible space exploration, the United States.

III. SOLUTIONS AND COMPROMISES

Although there have been many projected solutions to dealing with the ambiguities skirted by many international powers attempting to not fall victim to OST violations, there are a couple of ways that the U.S. should drive the discussion forward immediately. All of these solutions will have to be presented on the back of a strong national desire to correct an internationally devastating series of irresponsible space exploration tactics. There has never been an opportunity to guide the national psyche like the present and much of this discussion might be spurned by the smash success of the international hit, *Gravity*.[49] It is always best to strike while the iron is hot, and that time is now. The United States has to lead the charge for the reformation of international space law, and there is no doubt that charge will have to begin with policy reform on American soil. Once it has established its own pinnacle standards, it would be hard, if not impossible, for the rest of the world to take note and possibly follow suite. The influence that America has wield over international discussions, surrounding international space policy, must always be at the forefront of the American diplomat's mission. The U.S. has the opportunity drive discussions of reform and improvement and should always pursue such discussions with great fervor.

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[49] GRAVITY (Warner Bros. Pictures 2013) (*Gravity* is a motion picture that deals directly with the proliferation of space debris and the potential harm it possesses to damage international assets in the earth's orbit; *Gravity* was released to international success and grossed over $218 M dollars in U.S. movie theaters alone), http://www.imdb.com/title/tt1454468/ (last visited Nov. 31, 2014).

A. Domestic Reform

1. Definition

Although many scholars have alluded to the primary necessity of defining what exactly constitutes "space debris," most all of those conversations turn to an international mandate and reformation of existing treaty language.[50] The most important realization concerning a hesitancy to reach any sort of definitional clarity at an international level is that no party really wants to take responsibility for debris they've already created. Essentially, any time one party wants to classify what constitutes space debris, the initial force of the conversation will be driven by having to define already existing space debris. Therefore, to accomplish such a definition, you would have to take into account many factors that would tend to make responsible parties increasingly hesitant about taking responsibility.[51] The problem with this rational is that it is completely self-defeating. Essentially, such parties have created a very real and a very devastating problem and because no one wants to take responsibility for their part in creating the problem, everyone sits around, attempting to avoid liability for the magnitude of space debris already in existence. This is especially problematic in the present case because there is absolutely no denying that even if there was never another object launched into earth's orbit, the current state of orbital debris will continue to have detrimental and self-proliferating effects on existing space assets into the future.[52] Therefore, there is absolutely no scenario of inaction appropriate in this circumstance.

One tactic the U.S. might explore in this area would be to go ahead and take responsibility for its contributions to existing

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[50] *See* Carl Q. Christol, *Scientific and Legal Aspects of Space Debris*, 34 ACTA ASTRONAUTICA 367 (International Academy of Astronautics 1994).

[51] *Id*. at 368 (Christol points out that one would have to analyze every piece of existing orbital debris by determining first "where the debris is located, 'the circumstances under which it came to be situated there, the intent of the…[launching entity] which placed the… space object into orbit, the physical characteristics of the debris… the range of responses available to the… [launching entity]'").

[52] Daniel Gregory, JF Mergen, & Aaron Ridley, *Space Debris Elimination (SpaDE) Phase I Final Report*, NASA NIAC—11- 11NIAC-0241, 3 (Dec. 12, 2012), http://www.nasa.gov/pdf/716066main_Gregory_2011_PhI_SpaDE.pdf (the self-proliferation of existing orbital debris is commonly known as the Kessler Syndrome).

space debris and pursue fully the gamut of options to mitigate and retract potential future harm from such debris. The counterargument here obviously becomes, *Well, how do we know what is ours?* Although the major monitoring nations, the U.S. and the U.S.S.R., are able to constantly track objects as small as four inches in diameter, it is impossible to distinguish exactly what objects belong to what nations.[53] In the vast sea of orbital space debris, however, lies several satellites that are very easily identifiable as to their country of origin. This is due in large part to the running lists of launched satellites and their operational statuses maintained by NASA, Roscosmos, and the United Nations Office for Outer Space Affairs (UNOOSA). [54]

These satellites, although the most easily tracked and assigned ownership, are the least dangerous for the same reasons. That is to say that if there were only a few big pieces to worry about, the planet would be in a lot better shape logistically because astrophysicists could track, identify, and alter any flight plans accordingly. The more dangerous circumstance is the one presently brewing in not being able to adequately track and anticipate collisions with smaller pieces of orbital debris. Although it is hard to fathom on earth, colliding with a 5 lb. chunk of space debris orbiting at 125 miles above the earth's surface would be energetically equivalent to getting hit by a full-size seventy two passenger International school bus traveling at 240 miles per hour.[55] It is easily seen that these small and seemingly untrackable pieces of space debris have the potential to cause some real damage. It should absolutely be the priority of the U.S. to accept responsibility for such inactive satellites and pursue recovery immediately before those big chunks of garbage collide with highly energetic chunks of smaller garbage and the problem further self-proliferates. This discussion, however, mandates that the issues

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[53] Nola Taylor Redd, *Space Junk: Tracking & Removing Orbital Debris*, *available at* http://www.space.com/16518-space-junk.html.

[54] SPACE DEBRIS GUIDELINES OF THE COMMITTEE ON THE PEACEFUL USES OF OUTER SPACE, http://www.oosa.unvienna.org/pdf/publications/st_space_49E.pdf (last visited Nov. 31, 2014).

[55] This statement utilizes the Kinetic Energy equation $\Delta KE = (\frac{1}{2})mv^2$ and assumes that the International school bus weighs 25,000 lbs. empty and that the 5 lb. chunk of space debris is traveling at 17,000 mph in order to maintain a steady orbit around the earth at an altitude of 125 miles above the earth's surface.

surrounding what exactly constitutes space debris must stop being skirted around. It is time for the United States to have a call to arms and answer for the debris it has created and follow every avenue of recovery possible.

2. Liability

One avenue that might accelerate a discussion of what exactly needs examined to be on the home front would be a dialogue surrounding potential liabilities of errand space debris that belongs to the U.S. Although the U.S. has been quick to accept responsibility for any liabilities sounding recent ASAT interceptions and subsequent issues that might arise internationally,[56] no case has been afforded to test the waters of exactly how the U.S. might react if an inactive satellite or U.S. owned space debris were to collide and injury another party.[57] In looking at the spirit of how the U.S. handled the liability notifications preceding the interception of US-193, the U.S. should go ahead and explicitly assume the responsibility for identifiable, U.S. owned, orbital debris. This also assumes that a clear definition of orbital debris has been reached, but the ultimate realization here is that because the U.S. has the most expansive and elaborate system of space assets in the world it obviously has the most to lose. Take for example, the U.S.'s ownership of the Global Positioning Satellite (GPS) network. The GPS network is perhaps the most relied upon and useful telecommunications network of all time.[58] An interruption of such a network, intentional or otherwise, would prove to be a complete catastrophe to the way of life that all Americans know and depend

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[56] *OASD Satellite Engagement Communications Plan* (Feb. 14, 2008), USA-193: Selected Documents, Special Topics in Aerospace Law, No.1, page 28, 39 (compiled by P.J. Blount, 2009).

[57] *See* Michael Listner, *Iridium 33 and Cosmos 2251 Three Years Later: Where Are We Now?*, Safety Space Magazine (Feb. 12, 2013), http://www.spacesafetymagazine.com /2012/02/10/iridium-33-cosmos-2251-years-later-learned-then/ (last visited Nov. 31, 2013) (although this collision between a Russian satellite, Cosmos 2251, and a U.S. satellite, Iridium 33, might be partially instructive as to how the two nations would settle space asset conflicts through internal negotiation, it didn't provide much instruction for OST Art. VII/1972 Liability Convention interpretation between the two countries).

[58] BRIEFING ON THE IMPORTANCE OF GPS TO U.S. CIVILIAN AND ECONOMIC INFRASTRUCTURES (Apr. 28, 2009), *available at* http://www.gps.gov/multimedia /presentations/2009/04/hill/invite.pdf.

upon. The question that begs to be answered is, *If we're not willing to take responsibility for liabilities that might result from collisions with U.S. owned/created space debris, how could we ever ask another country to take possession and liability for theirs if it were to effect American assets?* This simple scenario illustrates what many Americans take for granted every day, not fully understanding the current need for immediate action in mitigating and resolving potential threats from above to American security.

3. Backlash

Many scholars, however, have proclaimed threats to American security are what have driven the need to pursue ambiguous language because narrower language leaves America open to security threats in that it ties the U.S.'s hands from pursuing appropriate military research, development, and reaction.[59] Those same scholars, however, often reiterate the extent of exactly how many budding space capable nations, who have never been space capable in the past, are proliferating currently.[60] Obviously, these same scientists also view this proliferation as a threat to space security.[61] This stance creates a sort of a paradox in that the U.S. doesn't want to bind itself with specific language or liability in order to maintain national security, but also views this lack of responsible space exploration from budding space programs by not accepting liability for potential space debris, as a threat to national security as well. This *do as I say, not as I do* form of international influence has never and will never work effectively in the long term. Instead, the U.S. should push to narrow the definition of space debris from a domestic point of view and then become stewards of the improved term to the rest of the world. The same tactic should be employed as a blanket acceptance of the space debris the U.S. currently has floating throughout the earth's orbit. Again, this just illustrates good faith to the rest of the international space community and would drive discussions to reform and

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[59] *United States Space Systems: Vulnerabilities and Threats*, Ensuring America's Space Security, 14 (Federation of American Scientists 2004), http://www.fas.org/pubs/_docs/10072004163734.pdf.

[60] *Id*. at 15.

[61] *Id*.

amend the ambiguities created by the language of Art. IX of the OST and its lack of definition of what constitutes space debris.

B. International Influence

1. Mission: Planning, Design, Manufacture, and Operation

This title language comes directly from the *Space Debris Guidelines of the Committee on the Peaceful Uses of Outer Space* issued by the United Nations Office of Outer Space Affairs (UNOOSA).[62] It is not typically the policy of American diplomacy to take on the language of an international code of conduct and make it the U.S.'s own[63], however, in this case it would seem to be a prudent and responsible strategy to usher in the dawn of American space exploration in this manner. As U.S. space exploration becomes more and more privatized, the U.S. has to create more hardline boundaries for private companies who wish to participate in the market, in order to retain some shield from potential liability.[64] In accepting stricter language from internationally driven documents like those routinely published by UNOOSA, the U.S. could simultaneously dodge two bullets, one from the international community at large, and one domestically from the potential liability it could face if associated sufficiently with private parties it authorized to act.

One specific example that might be implemented domestically could be the legal requirement that all American satellites launched into orbit contain some retrorocket capability. In doing so, the potential problems that are implicated about exactly how companies are supposed to retrieve their satellites after launch

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[62] SPACE DEBRIS GUIDELINES OF THE COMMITTEE ON THE PEACEFUL USES OF OUTER SPACE, http://www.oosa.unvienna.org/pdf/publications/st_space_49E.pdf (last visited Nov. 31, 2014).

[63] *Contra* Kenneth W. Abbott and Duncan Snidal, *Hard and Soft Law in International Governance*, International Organization, Vol. 54, No. 3, Legalization and World Politics, 428 (The MIT Press 2000) (One exception to this rule can be seen in the Congressional provisions making "violations of the Whaling Convention and the Convention on International Trade in Endangered Species (CITES) constitute violations of U.S. law").

[64] *See* Dalehite v. U.S., 346 U.S. 15 (1953) (Under the Federal Trade Claims Tort Act (FTCA), 28 U.S.C. § 1346(b), the U.S. may be sued, just like a private party, if it sufficiently shown that the party in litigation was acting on behalf of the U.S. government (with certain exceptions)).

are dissolved. By the simple flick of a switch, the satellite is able to slow down its stable orbital velocity and return naturally to earth, utilizing only the gravitational forces that are present on earth every day. Complications that arise under scenarios where communications have been lost with such satellites could also be mitigated with the implementation of a simple "dead man's switch" circuit.[65] Although neither one of these scenarios accounts for what could be done in the case where the satellite loses power, this would only be of concern if the satellite had already reached stable orbit before it failed.[66] Either way, it would provide a better scenario than currently employed by U.S. space exploration-centric actors.

There is no end to the number of hypotheticals that could be explored in order to increase the U.S.'s ability to safely conduct domestic space activity, but a willingness to utilize international codes of conduct in formulating our own domestic policy would provide a greater good-will showing to the rest of the international space law regimen. It would send a clear message to the rest of the world that the U.S. wants not only what's best domestically, but also what is best for the greater good of the international community as a whole. This showing would most certainly also lead to a bevy of subsequent talks and international policy reform.

2. Interpreting The OST

Another tactic that the U.S. could readily employee would be to take international treaty language, that has been well established and signed off on by a number of countries it holds in high regard, and implement that language verbatim, or maybe an even more strict interpretation, into its own domestic law. No single body of law could be as potentially important and impactful to the international spacefaring community at large that the OST. Looking at the semantics of the language included in the OST, argua-

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[65] A "dead man's switch" is a mechanical circuit that recognizes a lack of electronic activity and subsequently activates an alternative circuit path to engage a failsafe mechanism built into the machine's schematic.

[66] Otherwise it would probably fall back to earth naturally due to its inability to reach a stable orbital velocity.

bly the last major multi-national treaty on the subject[67], even its "binding language" is soft by comparison to what it could have been.

Calls for action under Art. IX are appropriate when there is "a State Party to the Treaty has reason to believe that an activity or experiment planned by it or its nationals in outer space… would cause potentially harmful interference with activities of other States Parties in the peaceful exploration and use of outer space."[68] This "reason to believe" language is arguably self-defining, as seen in the actions of China in the wake of their 2007 ASAT, and thus potentially highly ineffective. Alternatively, if the launching country feels they "might be potentially harmful," then "it shall undertake appropriate international consultations before proceeding with any such activity or experiment." These "appropriate international consultations" are never fully defined, but instead are sort of defined in the alternative in the remainder of Art. IX. The language of Art. IX basically says that if any country has reason to believe that another country could be potentially harmful, then they should ask them to consult as well. Again, the ineffectiveness of this definition was seen in China essentially saying, *We didn't think creating 3,000 new pieces of orbital debris would be potentially harmful.*

Any interpretation under the Reasonable Person (RP) standard observed in American and English tort law would mark this assertion of innocence to be a complete fallacy.[69] Because treaties that America has signed onto have historically been interpreted as the "law of the land,"[70] an easy transition might be made from the language contained in Art. IX like "reason to believe" and "might

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[67] This assertion is based on the assumption that the 1972 Liability Convention dealt directly with the liabilities and ramifications that might stem from conduct performed in the scope of the OST and that the 1976 Convention on Registration of Objects Launched into Outer Space dealt directly with specific registration requirements that precede the actual launch.

[68] *Supra* note 1.

[69] Throughout American and English common law, the Reasonable Person standard asks, "What would a reasonable person do in the same of similar circumstances?" Although this seems largely as ambiguous as the OST language, there are literally tens of thousands of cases evaluating the RP standard that could help guide discussions of the RP standard in Space Torts.

[70] *See* Carlos Manuel Vázquez, *Treaties as Law of the Land: The Supremacy Clause and the Judicial Enforcement of Treaties*, 122 HARV. L. REV. 599 (2009).

be potentially harmful" to something more analogous to the RP standard currently observed in the U.S. and abroad. This transition would be a seemingly stress-free one that might facilitate the incorporation of existing international law into our own domestic law, all while retaining the strength and purpose of legions of American tort law. By introducing the more stringent RP standard into the U.S. interpretation of Art. IX domestically, the U.S. might then levy their interpretation back to the U.N. for an international reassessment of Art. IX, effectively strengthening the validity and enforcement of both simultaneously.

Another approach might be to include something a little closer to the language seen in Art. XII of the OST. When discussing potential visits to the moon, Art. XII mandates "[s]uch representatives shall give reasonable advance notice of a projected visit, in order that appropriate consultations may be held and that maximum precautions may be taken to assure safety and to avoid interference with normal operations in the facility to be visited."[71] This language avoids definitional ambiguity and requires absolute reciprocity in projected actions from nation-states attempting to visit the moon. A similar mechanism could easily be implemented domestically and applied to private companies seeking to launch or intercept satellites. A successful domestic program in dealing with orbital debris effectively would no doubt spur the discussion for responsible orbital debris recovery, with the U.S. leading the way.[72]

IV. BRINGING IT ALL BACK HOME: THE TEST CASE

Presently, the U.S. should take the immediate opportunity to create and declare two documented assertions. First, the U.S. should come up with a national standard of what it considers to be "space debris." In doing so, the U.S. stands to bring about a discussion, albeit a heated one (no pun intended), that could spur an international adoption of a definitional standard that would once and for all define space debris. Second, the U.S. should step up

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[71] Outer Space Treaty, *supra* note 1, at art. 12.

[72] Although it is the opinion of the author that there are also a number of other sections of the OST, namely Art. IV and Art. VII that could be interpreted through our domestic legal system in order to provide greater clarity for what constitutes responsible space exploration and ASAT testing, this is not the focus of this paper.

and claim responsibility for objects it has clearly contributed to the pool of space debris that currently hovers over our planet. In doing so, it would no doubt expose itself to a sea of potential litigation surrounding the liabilities of such debris in orbit. However, under the Convention on International Liability for Damage Caused by Space Objects of 1972, a treaty to which the U.S. is a party, such liability probably already exists.[73] In all reality, declaring such a liability wouldn't expose to any more liability than it isalready liable for, but, instead would just serve to illustrate good-faith to the rest of the space-faring world.[74] It is important to realize that both of these tactics would only bring the U.S. into the realm of responsibility for objects that are already in space.

This conversation remains extremely important, however, in that it must be accomplished before any hope of future judicial realms of international law might be negotiated. In terms of the U.S.'s hard law vs. soft law commitment here, the stakes aren't really that high. The U.S. effectively would be trading the international "semi-hard" law seen in its current obligations to the OST and Liability Convention for a hard version of domestic law with little substantive change or impact. The direct advantage would come when the U.S. eventually attempted to levy its "best practices" hard law back against the OST and Liability Convention in order to "harden" what it expect out of the rest of the world. This tactic would allow the U.S. to be in the driver's seat to steer further "hardening sessions" concerning the OST and Liability Convention because it would illustrate a willingness from the U.S. to ratify UN treaty language as the official "law of the land." Under the Supremacy Clause of the U.S. Constitution, this seems to clearly be the case already.[75]

The implementation of international law and codes of conduct might be problematic, but a few examples have been illustrated that hopefully will make this assimilation more appealing that complete inaction. As space exploration in the U.S. becomes increasingly privatized, the U.S. government will not be able to as-

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[73] Convention on International Liability for Damage Caused by Space Objects, *opened for signature* Mar. 29, 1972, 24 U.S.T. 2389, 961 U.N.T.S. 187 [hereinafter Liability Convention].

[74] *Supra* note 34.

[75] *Supra* note 63.

sume a backseat role in interpreting the standards of space exploration that govern private industries in space, especially if the U.S. portends to seek immunity under the FTCA. The U.S. government will have to establish regulatory committees to outline, establish, and enforce violations of such private actors if it ever hopes to maintain a shred of credibility in the eyes of its international space comrades. This set of regulatory standards will be beneficial to the market, the actors, and the nation, all while establishing an international precedent and "shining example" of what other space faring nations should strive to be. Again, this is an example of domestic hard law that could be fabricated in order to later "harden" established international treaty commitments.

The other example provided in Part III of this paper, the example of reinterpreting OST language domestically into the creation of new U.S. law, would be by far the hardest sale in the bunch. This is true for a number of reasons. Firstly, the U.S. has historically been averse to joining any treaty that includes specific binding language that governs the U.S.'s conduct.[76] This sentiment rings especially true when you begin to threaten the U.S.'s ability to adequately defend itself and thrive in its security efforts. While these ideals seem to be in almost direct conflict with the practices of the U.S. in heralding the OST and its adherence to the language of such a treaty, the case is not so opposite. In fact, the semi-ambiguous language of the OST typically weighs itself in favor of American diplomacy. This is one of the biggest reasons the U.S. ever signed onto it in the first place. These ambiguities, and several countries propensity to expose them and take advantage of them, has kind of left the U.S. standing around with its proverbial hands in its pockets when it comes to sanction or reprimand of violating countries. In fact, if the U.S. were to try to impose sanctions or international scolding on such parties, it might currently look a little more pious than it should perhaps strive to be. By incorporating well-established international legal standards into its own domestic interpretation of the OST, like those discussed in respect to the RP standard, the U.S. might just gain a more ground with its international counterparts, and subsequently be

[76] *See* Kenneth W. Abbott and Duncan Snidal, *Hard and Soft Law in International Governance*, International Organization, Vol. 54, No. 3, Legalization and World Politics, 421 (The MIT Press 2000).

able to inject a little more domestic hard law into the increasingly soft law of the OST. These diplomatic undertakings wouldn't really change the U.S.'s current commitment, but the direction the U.S. might take in being truly diplomatic by incorporating law created internationally into its own law, could produce some benefit to all parties involved in the discussion, most of all the U.S. These benefits would be easily observed domestically by the "best practices" standards the U.S. should strive to achieve applied directly to the private actors and corporations that represent it internationally and by the effect those international actors could serve to have on the rest of the spacefaring nations of the world.

CONCLUSION

The biggest question that has to always be answered when discussing the U.S.'s ability to influence international actors with its own policy remains, *How realistic is it that the U.S. will ever take foreign policy in as its own?* Before answering that question, however, remember also, that the policy tactics proposed in this paper tend to lend themselves towards narrowing the ambiguities of policy that the U.S. typically enjoys exploiting. Therefore, by adding up these grim, but important factors, it is hard to see a probable outcome in which these policies will be adopted in U.S. law. More importantly, however, it must be remembered that at this point, there aren't any other options other than to spur the conversation for international policy reform and implementation. The U.S. and the U.N. have continuously balked at numerous OST violations in the past couple of decades, and the earth's orbital environment has paid the high price. Even with all environmental and international considerations cast aside, however, it still must be realized that domestic threats will continue to plague the U.S. without reform. The U.S. has the most sophisticated and extensive network of space assets in the world and its high time it started acting like it. The U.S. enjoys a firm seat as the head of space exploration and should wield that power accordingly, with boldness and authority it possesses now; because in the end, like everything else, such power will have its season. The U.S. better utilize its seat at the head of the table that governs international space exploration standards while it still has a chance, and that ultimately means it must start now before its loaded hand has been folded.

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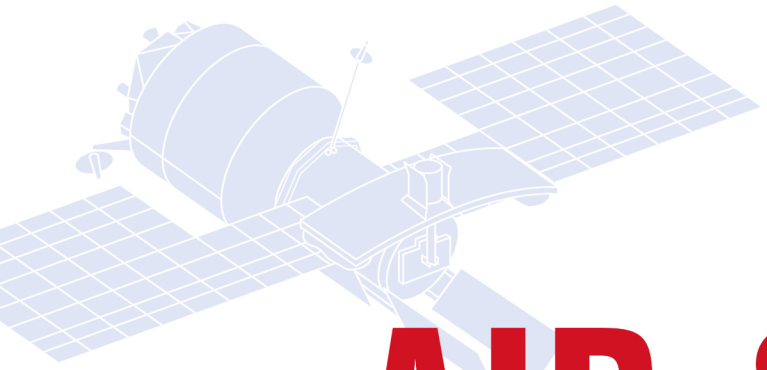

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