INTERNATIONAL TRASH PICK-UP: THE NEED FOR A NEUTRAL ORBITAL DEBRIS REMOVAL ORGANIZATION

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I. BACKGROUND

The launch of Sputnik in 1957 transformed the human exploration of space forever. Today, the United States and other spacefaring nations depend heavily on space to carry out daily activities such as the use of GPS,

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It is important to distinguish between the militarization and the weaponization of space. Although most people use the terms militarization

A. Current Space Law: The Outer Space Treaty and More

The launch of Sputnik I, the first artificial satellite, on October 4, 1957 arguably started the great space race.[30] Sputnik's launch was a breakthrough in the human exploration of outer space. The launch offered hope for the limitless possibilities of space exploration, but it also instilled feelings of inferiority and insecurity in Americans.[31] Just a decade after the Cold War, Russia showcased its superiority in space.[32] The concern was that space, a neutral commons, would become another battle field for humanity.[33] This fear led to the creation of the UN ad hoc committee, the Committee on The Peaceful Uses of Outer Space in 1958.[34] Shortly after, the International Co-operation in the Peaceful Uses of Outer Space (Resolution 1472 XIV) was created.[35] Part XIV of the resolution emphasizes that the exploration of outer space should only be for peaceful purposes and for the betterment of mankind.[36] This emphasis echoed the fear of the militarization of outer space.[37] Moreover, Russia and the United States, the main space-faring nations, went further to prevent space from becoming a battlefield and created the Treaty in the early 1960s.[38] The Treaty would go on to serve as the primary legal framework of international space law.

The Treaty, formally known as the Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies, has become the primary source of space law. It was opened for signature in January 1967 and entered into force later that year.[39] Currently, 109 countries have ratified the Treaty, including the leading space-faring nations of the United States, China, and Russia.[40]

On its face, the Treaty appears to address many unanswered questions about the obligations and goals of space-faring nations, but a closer read

30. Sputnik and The Dawn of the Space Age,

reveals that the Treaty is quite ambiguous and incomplete. The preamble to the treaty reaffirms the importance of the peaceful exploration of outer space and international cooperation, similar to the International Co

L Q W H U Q D W L R Q D O [50] Therefore, launching states may ignore the guidelines and potentially create orbital debris without consequence.

Similarly, the Inter-Agency Space Debris Coordination Committee created the IADC Space Debris Mitigation Guidelines in 2007.[51] These guidelines, compared to the COPUOS guidelines, lay out different measures that space-faring nations should take to reduce the amount of orbital debris in space. However, similar to the COPUOS mitigation guidelines, the IADC guidelines are not binding and merely encourage the participating nations to

[3] D S S O \ > W K H @ J X L G H O L Q H V W R W K H J U H D W H V W H [W H Q W

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the main concern was nuclear weapons.[64] However, since 1967, space technology has advanced rapidly. The Treaty is arguably outdated due to its

III. THE NEED FOR A NEUTRAL INTERGOVERNMENTAL ORGANIZATION

Right now, it is critical for space-faring nations to come together to create and fund a neutral intergovernmental organization (IGO) to safely remove orbital debris. There are several reasons why this is the best solution for the current orbital debris crisis. First and foremost, the IGO will directly address the orbital debris issue by actively removing orbital debris. Second, because the IGO will be created and funded by several nations it will eliminate the need for a single country to address the orbital debris issue on its own. For example, because the IGO will be an international effort to remove orbital debris, China, for instance, will have less of a reason to send a dual-use laser to space in order to blast large pieces of debris into smaller pieces. Because several space-faring nations in the past have indicated an interest to preserve space as a peaceful environment, dual-use weapons in space would likely raise tensions between countries and potentially lead to strained diplomatic relations. Third, the creation of the IGO will strengthen the diplomatic relations of the space-faring nations. Space has always been recognized as a neutral commons, owned by no one and open for exploration by anyone, like the sea. It is appropriate for the space-faring nations to unite and address the crisis in space together.

Some scholars argue against an intergovernmental organization, describing it as unnecessary and futile. Jie Long argues there is no need to create a costly intergovernmental organization that actively removes orbital debris, and that the solutions to our orbital debris problems are in the Treaty itself.[72] In particu( )] TJ ET Q 8 /F1 11 Tf 1 0 0 1 136 /F1 18 ointed bit w8.3(ow)-4(n)0(e)12(a)-1

but all throughout, is ambiguous enough to allow countries to interpret it in their favor. Interpreting 3ZLWK GXH UHJDUG WR WKH FRUUHVSRQGLQ RWKHU 6WDWH 3DUWLHV´ DV FUHDWLQJ DQ REOLJDWLRQ orbital debris is a forced reading of the Treaty.[75] Furthermore, the ambiguity and broad language of the Treaty does not give countries enough incentive to deorbit their satellites or to fund an active debris removal project.

/RQJ¶V DUJXPHQW FRXOG VXFFHHG LI FRXQWULHV WKD held each other accountable for violating it. Although the language of the treaty is ambiguous, pressure from other countries to respect the shared environment of space may encourage the main spacefaring nations to practice more awareness in regard to the orbital debris they leave behind, because otherwise, they would risk disrupting their foreign relations with powerful countries. However, given that the orbital debris crisis is gradually worsening, it is crucial that countries take a more active approach and create the IGO.

,Q DGGLWLRQ WR WKH QHZ ,*2¶V DELOLW\ WR DFWLYH orbital debris, it would also reduce the risk of the covert weaponization of space. For example, if each country funded the IGO through a tax, knowing that they are contributing to the removal of debris, the attempt of other countries to go around the IGO and use a space-based harpoon to clean up debris would raise concerns. In other words, the creation and operation of the IGO will make it unnecessary and less likely that countries will weaponize space with dual use weapons to clean up orbital debris, because there will be an entire international organization to take care of the clean-up. The IGO will make it more apparent if a country is trying to use the orbital debris crisis as an opportunity to weaponize space.

IV. THE LEGAL FRAMEWORK OF THE INTERNATIONAL SPACE STATION

The ISS is celebrated as the apogee of international partnership.[76] The United States, Russia, China, Canada, and Europe (the Partners) are all part of the successful partnership.[77] Part of the success of the ISS is attributed to the Intergovernmental Agreement of 1998 (the 1998 Agreement). The 1998 Agreement offers a sophisticated and detailed legal framework of, inter alia,

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the management, operation, ownership, and funding of the ISS.[78] The law governing the creation, operation, and utilization of the Station can be divided into three categories: the 1998 agreement, the Memoranda of Understanding (MOU), and implementing agreements between the Partners.

The first and arguably most important category is comprised of the 1998 Agreement, which superseded the earlier 1988 agreement.[79] Article 1 of the $JUHHPHQW HPSKDVL]HV WKDW WKH REMHFW RI WKH a long-term international cooperative framework among the Partners, on the basis of genuine partnership, for the detailed design, development, operation,

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V. USING THE INTERGOVERNMENTAL AGREEMENT OF 1998 AS A MODEL FOR THE NEW INTERGOVERNMENTAL ORGANIZATION

Like the legal framework of the ISS, the creators of the new IGO should model the main agreement after the 1998 Agreement and use MOUs and implementing agreements as an operational me Like

Under Article 8 of the Treaty, when a State Party registers and launches an object into outer space, the State Party retains jurisdiction and control over WKH REMHFW ³ZKLOH LQ RXWHU VSDFH RU RQ D FHOHVWLDO is entered into a registry so that countries can keep track of its ownership.[98] The launched object[99] The treaty does not specify when the ownership and jurisdiction over a launched object ceases. Therefore, the launching countries still own the defunct and nonoperational satellites currently orbiting the earth which disincentivizes other countries to actively remove their satellites from orbit.[99] $V 0HOLVVD .HPSHU)RUFH H[SODLQV ³LW LV WKH HWHUQDO to ownership rights that prevents threatened users from using ADR to DPHOLRUDWH WKH GDQJHU SRVHG E\ GHIXQFW VDWHOOLWHV´[100] Nevertheless, the 1998 Agreement addresses the cessation of ownership.[100] Since it expressly states that the Station will be run in accordance with the Treaty, it is clear that the IGA does not offer any solution for determining when the ownership over defunct satellites ceases.

A plausible argument is that the law of abandonment should be applied to orbital debris.[101] Given the severity of the contamination of LEO and the increasing risk of Kessler Syndrome, the IGO will have to adopt strict abandonment laws for scrap pieces of former space objects and objects that cannot be identified under the registry. Moreover, the IGO should utilize MOUs to address the ownership issue of objects and satellites that have more value. More specifically, the members of the IGO should enter into a MOU that when an intact non-RSHUDWLRQDO VDWHOOLWH LV UHPRYHG IURP the IGO, it will identify the satellite through the registry and return it to the custody of the country that launched it.

Although all space objects are costly, which makes ADR more difficult, satellites in particular will be an issue for the IGO. Satellites are generally used for GPS tracking and telecommunications, but they are also used for reconnaissance.[102] Satellites store the information they collect in chips that

98. OST, *supra* note 37.

99. See Michael Listner, *Legal Issues Surrounding Space Debris Remediation*, SPACE REV. (Aug. 6, 2012) https://www.thespacereview.com/article/2130/1

100. Melissa Kemper Force, *Active Space Debris Removal: When Consent Is Not an Option*, 29 AIR & SPACE LAWYER 13, 14 (2016) (discussing the problem with nonconsensual use of active debris removal).

101. Emily M. Nevala, *Waste in Space: Remediating Space Debris through the Doctrinv1 o6.8 Tm 0 g 0 G e.00t78Y92 re W* n

are installed within them.

The Act makes licensing and regulation for private entities simple and fast, with all licensing and approval granted by the Secretary of Commerce of the Office of Space Commerce.[112] The language of the Act raises concerns about the U

doing so, the U.S. is not only holding itself out to the international community as relieving itself of responsibilities, but it is also risking violating the Treaty. If a private space company conducts space activities that are not in compliance with the Treaty, the U

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The time has come to take an active approach to debris removal. Mitigation efforts have fallen short of decreasing the amount of debris in orbit, and if space-faring nations do not act now, they may no longer be able to use space for daily activities and military reconnaissance in the future. However, to preserve space as a neutral environment, no single country should be able to take debris removal upon itself. Orbital debris is an issue that affects all space-faring nations, so all space-faring nations should enter into a partnership, akin to the IGA, to establish the guidelines and processes for safe debris removal.

Lastly, the IGO need not operate forever since it is a remedial measure. It may operate for as long as it is necessary to rid LEO of high-density space debris to make it a safe and