

The Militarisation of Space and the Lack of a Modern Outer Space Treaty

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Introduction

There were echoes of a ‘serious national security threat’ from the Chairman of the U.S. House Intelligence Committee.² The threat was a Russian scheme to launch a nuclear warhead into low Earth orbit, where it could wipe out hundreds of satellites and limit the use of GPS navigation, financial transactions networks, and even vast portions of Earth's orbit for centuries

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² Le Monde, “US House Intelligence Committee chair warns of a ‘serious’ national security threat,” World, United States, *Le Monde*, February 15, 2024, https://www.lemonde.fr/en/international/article/2024/02/15/us-house-intelligence-committee-chair-warns-of-a-serious-national-security-threat_6525459_4.html.

by producing a self-accelerating chain reaction of orbital debris.³ But the world's institutional reaction to this was far more alarming, as the world's legal system, which was supposed to inhibit such a scenario, had suddenly stopped working.

The current era of outer space militarization is a qualitatively new and perilous stage for which the original Outer Space Treaty (OST) of 1967 was never intended and for which the current international law framework is inadequate.⁴ To make this argument, it should not only be studied what states are doing in space, but what they have engineered in terms of language, categories, and norms to develop an environment in which escalation can occur without challenge. The separation between 'militarisation' and 'weaponisation' is a social and political construct that has been beneficial to the interests of the most powerful space-faring powers, and has offered the international community the comforting illusion of legal limits.⁵

The policymaker, diplomat, and defense analyst won't have a leg to stand on when they stand to ask that question. Satellite features are undeniably an integral part of today's life. GPS directs emergency vehicles. Space-based timing signals are used in financial clearinghouses. Satellites are used in many applications, including weather forecasting, climate observation, agricultural forecasting, and aviation. An unregulated space environment is not a theoretical issue of geopolitics. It will directly affect the conditions for our daily life on Earth.

The 1967 Outer Space Treaty

The Outer Space Treaty was signed on January 27, 1967, and was the result of a very unique period in history.⁶ Just two years prior, the U.S. and Soviet Union had watched the Starfish Prime nuclear test in the atmosphere, which created an artificial radiation belt around the earth, obliterated eight satellites, and wreaked havoc on electrical services in Hawaii. This solitary fear, that nuclear conflict wouldn't spread into orbit, influenced the treaty that came out of the following 10 years of diplomacy.⁷

³ Secure World Foundation, "Secure World Foundation: FAQ: What We Know About Russia's Alleged Nuclear Anti-Satellite Weapon," 2025, <https://www.swfound.org/publications-and-reports/faq-what-we-know-about-russias-alleged-nuclear-anti-satellite-weapon>.

⁴ UN Office of Outer Space Affairs, "The Outer Space Treaty," 1967, <https://www.unoosa.org/oosa/en/ourwork/spacelaw/treaties/introouterspacetreaty.html>.

⁵ Secure World Foundation, "Secure World Foundation," 2025.

⁶ UN Office of Outer Space Affairs, "The Outer Space Treaty."

⁷ Ajey Lele, "The Space Review: Remembering Starfish Prime," 2024, <https://www.thespacereview.com/article/4822/1>.

The OST, now ratified by 114 countries and signed by 23 more, spelled out the prohibition on the orbiting or landing of weapons of mass destruction.⁸ It is the rule that the Moon and other celestial objects shall be used for the peaceful purposes of mankind; that outer space is the ‘province of all mankind’; and that States are liable for any damage caused by their space objects. From the perspective of Cold War arms control, it was a remarkable success. However, it is important to stop for the things that are not in the treaty, and for one reason.

No one speaks about conventional weapons in orbit in the OST. Does not mention anti-satellite (ASAT) weapons.⁹ Has no verification mechanisms. It does not control 'dual use' satellite systems, such as those which can be used for both civil and military ends. It does not define ‘peaceful purposes’ according to natural law or technical reasoning, but by negotiation between states with vast military space programmes who have a special interest in maintaining their freedom of action.

Knowledge of space governance is a social construct, not merely technical. Because the idea of what constitutes ‘peaceful means’ and what constitutes ‘weapon’ within space law was constructed by powerful actors for their own strategic purposes. A reconnaissance satellite is a military satellite, but now it is called peaceful in two ways: that they agreed that it was military, and that they agreed that it was called that. In a ground-based laser that could blind an enemy satellite, there are no rules clarified in a way that could be codified; it is in a legal grey zone.

How did ‘Militarization’ become Normalized?

The current notion about space security policy has been that if there is any militarization, it is not weaponization. So this separation has done a tremendous political job. It has enabled the U.S., Russia, and China to launch intelligence-gathering networks, signals interception beacons, and targeting-support networks, and simultaneously appear to be faithful to the peaceful applications of space. And the distinction between ‘militarisation’ and ‘weaponisation’ has failed us by normalising the militarisation of space.

This normalization was because states that had most to gain from unrestricted orbiting military forces always wanted to limit international deliberations about space governance to the narrow concern of weapons of mass destruction rather than a broader one of military competition. At different times, China and Russia have offered more serious proposals of greater restrictions

⁸ Arms Control Association, “The Outer Space Treaty at a Glance | Arms Control Association,” 2024, <https://www.armscontrol.org/factsheets/outer-space-treaty-glance>.

⁹ Lexin Legal, “Anti-Satellite (ASAT) Weapons & Space Law,” Lexin Legal, 2026, <https://lexinlegal.com/blog/anti-satellite-weapons-asat-threats-to-space-security/>.

on space weapons; these proposals, which the United States has protested, are not verifiable because they essentially would be aimed at hurting America rather than improving security.¹⁰ It is the strategic ambiguity where they're developing more sophisticated counterspace capabilities, direct-ascent anti-satellite missiles that can hit an enemy satellite in orbit, co-orbital maneuvering vehicles capable of closing in to disable an enemy satellite, ground-based directed energy weapons to shoot down an enemy satellite in orbit, and cyber-attack platforms aimed at the enemy's orbital systems; and they're doing it while remaining compliant with a treaty that doesn't cover any of these. No mention of the 1967 treaty has been made to mean that people were permitted to go.

What States are Really Doing

In the last ten years, the rapid development of military space activity has taken place. Insight into what is actually going on depends on focusing on the differences between what is said and what is seen.

The United States

U.S. Space Force is the world's first independent military space service, founded by the U.S. government in 2019.¹¹ Within that 'Space Warfighting' model, the Space Force's 2025 plan states that space superiority is an operational goal, and lists six types of counterspace systems, such as kinetic missiles, directed energy, and jamming systems, either launched from ground-based or satellite platforms.¹² In April 2025, General Stephen Whiting, commander of U.S. Space Command, announced publicly for the first time the deployment of weapons in space.¹³ In 2024, the DOD launched its Commercial Augmentation Space Reserve that provides integration of commercial satellite networks for military operations.¹⁴ The United States has been the most critical user of orbital infrastructure, with almost 5 thousand of the world's 7

¹⁰ C. G., "Russia and China Propose a Treaty Banning Space Weapons, While the Pentagon Plans an ASAT Test • Stimson Center," *Stimson Center*, February 14, 2008, <https://www.stimson.org/2008/russia-and-china-propose-treaty-banning-space-weapons-while-pentagon-plans-asat-test/>.

¹¹ USSF, "History: United States Space Force," 2019, <https://www.spaceforce.mil/about-us/about-space-force/history/>.

¹² U.S. Space Forces - Space, "U.S. Space Force Defines Path to Space Superiority in First Warfighting Framework," U.S. Space Forces - Space, 2025, <https://www.spaceforces-space.mil/Newsroom/Article/4160261/us-space-force-defines-path-to-space-superiority-in-first-warfighting-framework/>.

¹³ Audrey Decker, "The US Needs 'Weapons in Space,' SPACECOM Head Says," *Defense One*, April 8, 2025, <https://www.defenseone.com/threats/2025/04/us-needs-weapons-space-spacecom-head-says/404393/>.

¹⁴ US Department of War, "DoD Releases 2024 DoD Commercial Space Integration Strategy," U.S. Department of War, 2024, <https://www.war.gov/News/Releases/Release/Article/3728370/dod-releases-2024-dod-commercial-space-integration-strategy/>.

thousand active satellites. That consequently makes it vulnerable to maintaining this large scale of satellites.

Russia

Direct-ascent ASATs were demonstrated in November 2021 by Russia, which destroyed Cosmos-1408, resulting in more than one thousand pieces of trackable debris with an estimated 5% risk.¹⁵ More concerning is the Russia-invaded into an unusually high radiation orbiting satellite called Cosmos 2553, which was put into orbit just before the Russian invasion of Ukraine.¹⁶ The U.S. administration has determined that this satellite could have been part of a program to develop space-based nuclear arms. During this 2024 Aspen Security Forum, U.S. Space Command (SPACC) chief confirmed that Russia was up to developing a nuclear anti-satellite (ASAT) weapon at the same time, stating that such a weapon would threaten the entire modern way of life and affect American, Chinese, Russian, European, Indian, and Japanese satellites.¹⁷

China

The Chinese People's Liberation Army (PLA) has formed its People's Liberation Army Strategic Support Force (PLSSF) since 2015 and reorganized it into the PLA Aerospace Force in 2024. U.S. Space Force Gen. B. Chance Saltzman has evaluated China's first National Space Science Development Plan as 'an expression of (China's) goal to surpass the United States in the space domain and become the world's preeminent space power.'¹⁸ In 2025, China successfully surpassed the previous year with more than a third more space launches. U.S. defense intelligence estimates that China currently has a variety of counterspace systems, including ground-based laser systems that can disrupt, degrade, or damage the satellite sensors, co-orbitals, and platforms for electronic warfare.¹⁹ As with Russia, China has consistently claimed its space programme to be peaceful and in compliance with the OST—claims which become increasingly dubious as it unveils new capabilities.

¹⁵ Secure World Foundation, "Secure World Foundation: Russian Direct Ascent Anti-Satellite Testing Fact Sheet," 2021, <https://www.swfound.org/publications-and-reports/russian-direct-ascent-anti-satellite-testing-fact-sheet>.

¹⁶ France 24, "Russian Satellite Linked to Space Weapon Programme Appears to Malfunction in Orbit," France 24, April 25, 2025, <https://www.france24.com/en/europe/20250425-russian-satellite-linked-to-space-weapon-programme-appears-malfunction-orbit-cosmos-2553>.

¹⁷ Greg Wehner, "US General Warns Russia May Be Developing Nuclear Anti-Satellite Weapon in Orbit," Text.Article, Fox News, Fox News, April 16, 2026, <https://www.foxnews.com/politics/us-general-warns-russia-may-developing-nuclear-anti-satellite-weapon-orbit>.

¹⁸ Sandra Erwin, "U.S. Space Force Chief: China's Capabilities in Orbit a 'Destabilizing Force,'" *SpaceNews*, April 3, 2025, <https://spacenews.com/u-s-space-force-chief-chinas-capabilities-in-orbit-a-destabilizing-force/>.

¹⁹ US Department of War, *2025 Annual Report to Congress: Military and Security Developments Involving the People's Republic of China*, 2025.

The Governance Vacuum

The international community is not unaware of this problem. The lack is the absence of political will and institutional design.

In April 2024, the United Nations Security Council tried unsuccessfully to approve its first-ever resolution on controls on weapons in outer space. The resolution making this declaration, backed by the U.S., Japan, and over 60 countries, including the pledge to respect compliance with the OST, and explicitly not to place nuclear weaponry or weapons of mass destruction in orbit, was co-sponsored and approved by consensus by 13 countries, including the U.S., Japan, and more than 60 other nations, and vetoed by Russia, where China abstained. Russia's counter-proposal, an all-encompassing ban on all types of space armaments, did not get through as well.²⁰ The opposing side both sides called the other's proposal 'attacking and bullying', trying to limit the movement of the opponents. Both were correct. In arms control negotiations between great powers, this is the way it works.

By a resolution, the UN General Assembly approved the creation of a single Open-Ended Working Group on the Prevention of an Arms Race in Outer Space, which will meet until 2028.²¹ This is progress, just as long-wavelength solutions as opposed to the speed of technology. The most advanced formal proposal on the table, however, is the 2008 draft Treaty on the Prevention of the Placement of Weapons in Outer Space, submitted by Russia and China, which have been criticised by Western States for excluding ground-based ASAT systems (developed by both countries) and for insufficient verification provisions; 'weapons' are defined in the narrowest terms, meaning most of the dual-use systems which represent the highest threat do not fit the treaty definition of 'weapons'.²²

Unlike a nuclear warhead, a dual-use satellite won't be easily recognizable as a communications satellite. A friendly satellite damaged by a robotic arm repairing it can also be damaged by an enemy satellite's robot arm. The system is interchangeably called Co-orbital Maneuver System, Inspection Satellites, and Electronic Intelligence platforms. A treaty on such a basis that would satisfy the demands of transparency, for which major powers are hesitant, would have to be

²⁰ UN News, "Russia Vetoes Security Council Draft Resolution on a Weapon-Free Outer Space | UN News," April 24, 2024, <https://news.un.org/en/story/2024/04/1148951>.

²¹ UNODA, "Open-Ended Working Group on Prevention of an Arms Race in Outer Space - (2025) | United Nations," accessed June 20, 2026, <https://meetings.unoda.org/open-ended-working-group-on-prevention-of-an-arms-race-in-outer-space-2025>.

²² MoFA China, "Draft Treaty on the Prevention of the Placement of Weapons in Outer Space, the Threat or Use of Force against Outer Space Objects_Ministry of Foreign Affairs of the People's Republic of China," 2008, https://www.mfa.gov.cn/eng/wjb/zzjg_663340/jks_665232/kjfywj_665252/202406/t20240606_11405272.html.

quite detailed on these matters in order to resolve the ambiguities. All parties would benefit from a well-functioning government, but no single party is willing to make the changes that would allow for it.

This is also an epistemological issue. States' categorisations of their space activities, such as civilian, defensive, or dual use, are disputed terminological devices instead of factual definitions. The U.S. Space Force refers to this as defensive counterspace operations, China calls it protection of peaceful space assets, and Russia calls this the same activity in a different name, that is, neutralizing destabilizing Western dominance. They are spreading messages about alternative meanings to it, about alternative norms to abide by, and about alternative ways of determining the legitimate authority to perform it with. Some cooperation on knowledge is needed in the arms control talks before they can proceed.

What Is at Stake

There are no intangible costs of ongoing government failure. The near-term worst case involves deploying and firing nuclear warheads into orbit. If triggered at low Earth orbit, one could create an electromagnetic pulse and radiation belt that would knock out or destroy hundreds of satellites virtually in one fell swoop. The debris leveled would be a threat to satellites used by all spacefaring nations, including Russia and China. Over vast areas of the world, GPS will go out of service. Guidance systems for aircraft, military targeting systems, financial clearing houses, and communication systems for emergencies would be hampered or destroyed.

Russia's 2021 ASAT test was a single test that created a debris field, which had to be avoided by the crew aboard a space station.²³ The result is an increasingly cumulative and nonlinear chain. Every additional test, every increasingly larger debris field, every uncontrolled re-entry of a satellite into the atmosphere, dramatically increases the risk of a cascading situation; one that no State could reasonably manipulate and prevent.

When catastrophic scenarios are not at stake, the effects of uncontrolled military space competition are being felt. In the Russia-Ukraine conflict, space-based jamming and cyber operations have been employed to wreak havoc on Ukrainian military systems and communication, affecting navigation systems. Commercial satellites have even been hardwired into front-line military operations because of the existence of constellations such as Starlink.²⁴

²³ Arms Control Association, "Russian ASAT Test Creates Massive Debris | Arms Control Association," 2021, <https://www.armscontrol.org/act/2021-12/news/russian-asat-test-creates-massive-debris>.

²⁴ Shaun Waterman, "Russian Jamming Wreaks Havoc on GPS. Is It Hybrid Warfare?," *Air & Space Forces Magazine*, July 10, 2024, <https://www.airandspaceforces.com/russian-gps-jamming-nato-ukraine/>.

The OST was not expecting commercial satellites to be hardwired into front-line military operations. In 2024, the U.S. Department of Defense (DoD) officially designated this integration, yet did not offer a global treaty or any legal measure for treating commercial space assets during a future space war—putting SpaceX, and other companies in their unique standing as both civilian operators and military contractors, and potentially legitimate targets in any space conflict.²⁵

The OST's lack of attention to space traffic management, space debris prevention, space resource extraction, and space resource utilization for military purposes has put each new advancement into a legal issue. This gap is filled by national legislation, bilateral treaties, and unilateral claims of rights, none of which offer a stable, readily available framework for sustainable space operations.

Yet Its Fate and History Remain

The militarisation of space is commonly told as one of the great power competitions. That is a tale of geopolitical influence, military expenditures, and inter-state conflict. While this is not 'wrong,' it does not make up for the deficit, which has political implications. It's the job of the government and defense organisations to solve the problem, and the job of the ordinary citizens to watch. The infrastructure that would get obliterated in an uncontrolled space conflict isn't military infrastructure. Rather, it's civilian infrastructure that is used in every spectrum of life. Still, the governance problem exists. The International Committee of the Red Cross made a strong statement at the UN Open-Ended Working Group on the Prevention of an Arms Race in Outer Space, touting that the weaponization of space does not have to happen, that there is nothing preventing States from agreeing to additional rules to prohibit or limit specific military activities and weapons in outer space.²⁶ 17 States have already declared they will not be doing destructive direct-ascent ASAT testing, as a small but significant step toward implementing normative change without a full treaty revision.²⁷

And the political determination is missing to give up short-term strategic benefit in favor of long-term systemic stability. But not all diplomats can generate such a willingness. It is produced by an informed public, aware of the loss it could face, and it requires governance structures that are robust enough to meet the risks which the Governments produce. And there

²⁵ DOD, *2024 DOD Commercial Space Integration Strategy*, 2025.

²⁶ ICRC, "The Weaponization of Outer Space Is Not Inevitable | ICRC," August 5, 2025, <https://www.icrc.org/en/statement/weaponization-of-space-not-inevitable>.

²⁷ Bruce McClintock, *U.S. Decision on ASAT Testing a Positive Step Towards Space Sustainability* (2022), <https://www.rand.org/pubs/commentary/2022/04/united-states-decision-on-asat-testing-a-positive-step.html>.

are no technical and legal issues with regard to space governance. It's a political issue regarding both who should be the custodians of space and who absorbs the consequences when that can't be done, and whether there's any international community that can do the job that the present moment requires them to do.