Forum: The United Nations Office on Outer Space Affairs (UNOOSA)

Issue #16-02 : Measures to address the issue of weaponization in outer space

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Introduction

The weaponization of outer space has been an ever growing issue since the Cold War, when countries like the United States and Russia rapidly developed the necessary technology to place systems in outer space. When addressing the weaponization of outer space and space weapons, there are three main points to consider: weapons placed in space, weapons capable of targeting spatial targets, and weapons which transmit in outer space. All of the three can be devastating to world peace for numerous reasons, especially considering the capability of current defense systems. Weapons that are operated through space are much more unpredictable and accurate than those who travel inside earth, posing a superior military threat to those who are targeted by them. During the space race between both countries, technologies such as intercontinental ballistic missiles (ICBM), reconnaissance satellites, anti-satellite weaponry (ASAT), and anti-ballistic missiles (ABM) were developed in an effort to counter the opposing countries' military power. With the ever growing number of missiles that could travel through orbit in a matter of minutes, and the technology to pinpoint a target anywhere with an accuracy of a few meters, the weaponization of outer space has become a major threat to the stability and peace of humanity.

In order to address such an issue, one of the most important space treaties was created and approved by the UN. The Outer Space Treaty of 1967, which was a major step towards the abolishment of space weapons and the prevention of their devastating effects. This treaty made a variety of key points, clarifying the ownership of space and the usage of such power in it. The treaty states that the exploration of outer space and celestial bodies shall be carried out in "the interest of all countries", that celestial bodies are not subject to national appropriation, and that parties who agree to the treaty should not place weapons of mass destruction on orbit. Some of these terms were addressed in a press conference in the year 2000, where the limitation of weapons of mass destruction and ABMs was encouraged. With the establishment of such a treaty, the UN was aiming to prevent the catastrophic consequences of space weapons, which have proved themselves to be a dangerous asset over regular weapons.

While many see the weaponization of outer space as a major issue to be addressed, countries who want to hold a military dominance invest billions in developing technology that can not only destroy the military systems of other powers, but prevents the destruction of their own. When other countries see this as a threat, they start developing their own space weapons, which aim to target the ones placed by their adversaries. Such back and forth is extremely dangerous for humanity, as weaponry of such capability could easily be used for military domination and mass destruction. The capabilities of space systems which can target another country and travel in a matter of minutes cannot be overlooked, and must be prevented in order to establish peace and continue with the development of an arms-free world. The existence of space weapons only propagates the usage of weapons of mass destruction, and leads to a military race for outer space. Space is either safe for all or safe for no one, and making it a safe space for exploration without discrimination is crucial.

Definition of Key Terms

Intercontinental ballistic missiles (ICBM)

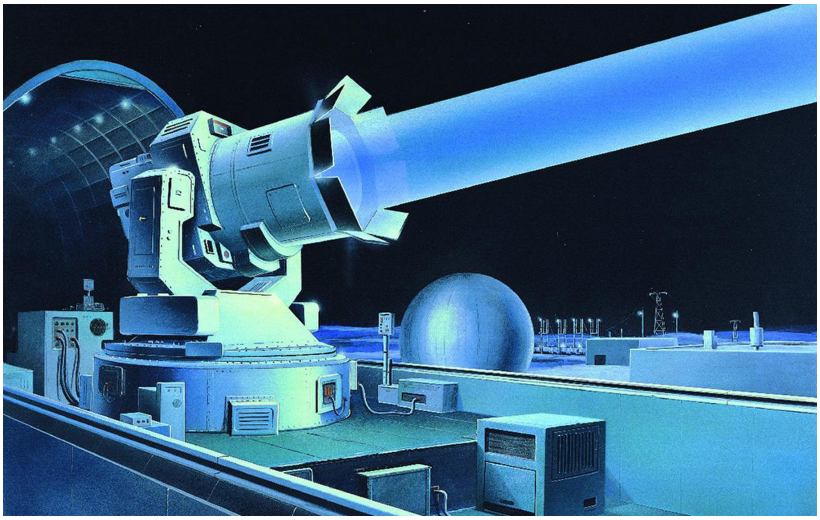
Missiles which travel at sub orbital levels at very high speeds. They are primarily used to deliver nuclear weapons, and can travel a minimum distance of 5500 kilometers, making them effective intercontinentally.

Reconnaissance satellites

Satellites imposed specifically for military or intelligence purposes. They are used in wars and battles to accurately pinpoint military bases, and get clearer images of warfare in order to generate counter strategies.

Anti-satellite weaponry (ASAT)

Weapons that are specifically designed to take down and destroy satellites. They were developed as a counter to reconnaissance satellites.



Ballistic missiles

A missile which is primarily used to deliver one or more warheads over a target. It follows a ballistic trajectory, which stays under earth's atmosphere.

Anti-ballistic missiles (ABM)

Defense systems that were created to counter ballistic missiles. They are designed to destroy any ballistic weaponry, mainly focused on ICBMs.

Celestial bodies

Any existing physical entity which is naturally existing outside of earth's atmosphere. Examples include the sun, the moon, stars, etc.

Space weapons

Weapons which are either placed in space, used to target objects in space, or that transmit through outer space.

Weapons of mass destruction

A weapon which can bring major harm to a group of humans, infrastructure, natural structure, or the biosphere. They can be nuclear, biological, chemical, radiological, or any other form of destruction.

General Overview

Cold War

In the year of 1953, escalations began between the former USSR and the United States, in a battle that could be described as a scramble of power between the west and the east, or communism versus capitalism. The new leader of the USSR

posed several threats, and decided that they would up the capacity of their military power in order to match the ones of the United States. Because of this, an arms race began that not only affected ground combat capabilities, but aerial and space related too. With the beginning of the space race in 1957, both the USSR and the United States developed enough technology to pose a significant threat in what were denoted to be space weapons. Space weapons started with the creation of the first ICBM, which could travel in low orbit and accurately lock into targets more than 5500 km away. Satellite technologies quickly followed, as both parties continuously developed and deployed new artificial satellites into orbit. With the development of new spy satellite technology, the threat of an imminent nuclear attack from either side became too pressing to ignore, especially with the development of ABM. ABM would use nuclear heads and accurate tracking technology to destroy incoming, possibly unstoppable ICBM, which both sides were worried about. Apart from that, with the quick development of satellites came the development of ASAT, with tests done which came within 4 miles of a target that was in orbit. All the growing tensions quickly resulted in an international worry on the use of space for warfare, leading to several treaties. The ABM treaty and the 1967 Outer Space Treaty were of the most important of them during the Cold War, attempting to limit the possibilities of both space and ground warfare.

Post Cold War Military Programs

After the Cold War ended, so did the space race, although did this not signify the end of weaponry in space. After the USSR disbanded and a lot of funding was lost, the United States was left as the major military power in space, running under the air force and later branching out into its own space force. Following behind, Russia established the now called Russian Space Forces in 1992, which attempted to catch up to the hegemony of the United States in regards to space weaponry. As years developed, many countries have also noticed the

possible threat of an arms race in space, and started their own programs to remain ahead in military power. Although some European countries are against the weaponization of space, the United Kingdom, Italy, France, Germany and Spain all currently own military satellites, on programs that started in the 21st century. France has notably launched the AsterX program, which started the first military space training in the EU. Besides this, India, China, Israel and Japan all currently have spy satellites under their own space programs.

Current Weaponry Capabilities

Along with technological advances, the capabilities of space weaponry has also rapidly grown. The first notable advancement is the capabilities of modern day reconnaissance satellites. Satellites can notably acquire high resolution photography in order to acquire classified or otherwise inaccessible information about a location. They can also be used to intercept and intrude foreign communications, providing inaccessible intelligence for military operations. Satellites have also been used in the prevention of possible attacks from other countries, and can visualize and warn of possible nuclear tests that are performed. The ability to detect missiles and threats has existed for a while, but it has been perfected in order to prevent imminent missile threats. Fast communication systems and GPS have also been developed from said satellites, although those are available for everyone's use. Countries have developed the technology to take down missiles, with very accurate ASATs and location trackers. In 2007, China had tested this technology by destroying an out of function satellite of theirs, asserting their military power in outer space. Further ASAT technology has been developed, with laser based weapons ready to destroy satellites if needed.

Possibility of War and Risks

The existence of such accurate and dangerously threatening technology has resulted in an ever growing arms race in space, which could possibly lead to nuclear warfare with a simple misstep. By placing weapons in space, an unbalance in power between countries is created. Countries who feel threatened by this power imbalance feel inclined to equalize the playing field by militarizing space as well. This results in a dangerous position, where the only possibilities boil down to a space that's safe for all, or safe for none. ICBMs along with GPS systems could result in the accurate targeting of small objectives, posing a threat to all military bases in the world to the dominant power. Not only this, but the enormous growth of high speed space debris that results from space weapons is a potential risk to all future space missions, disallowing easy exploration for all. The rising tensions that result from space weapons could very easily result in nuclear war if left unchecked.

Major Parties Involved and Their Views

United States

The United States has been a major participant in space weaponry ever since the cold war. They were one of the first countries to place a reconnaissance satellite in outer space, as well as a major developer in intercontinental ballistic missiles. Even though they are a signatory of the Outer Space Treaty of 1967, their space force budget encompases $17.4 billion US dollars, which are currently used to develop the Space Force. They are also one of the countries with the most reconnaissance satellites and intercontinental ballistic missiles, which they continue to develop in an effort to counter what they believe to be threatening activities by Russia. Their development of space weaponry does not seem to be decreasing, but rather increasing in order to ensure the safety of their spy and communication satellites.

Russia

As the former USSR, Russia was also a main part of the original efforts to weaponize space during the cold war. They have several spy satellites established for their intelligence efforts, and continue to develop space weaponry in the last years. Only last year, Russia was seen to launch anti-space weaponry outside the earth's atmosphere, posing a possible threat to established US reconnaissance satellites. The launched satellite threatens to have the characteristics of a weapon, posing a possible threat to the peace of space and possible debris that could endanger future special missions.

China

As one of the dominant military powers in the world, China has seen the weaponization of outer space as a major high ground for military power. For this reason, they have expressed their discontent with the current military space programs being established by several countries, and believe that it is important to maintain space a peaceful ground. Chinese officials are concerned that a growing military US space program could become a possible threat to their military systems. In efforts to counter such dominance, China has developed various anti-satellite systems, and placed their own military satellites in outer space.

Indonesia

Indonesia believes that the presence of space weapons is a threat to the development of a continuous arms race, which can only threaten the sovereignty of nations around the world. They strongly oppose weaponization in general, and continue to support denuclearization. Space weapons, and the development of ABM is a major concern to Indonesia, who believes that open treaties should be made which entitle trust and prevent a possible space arms race that is starting to develop among major powers.

France

France, in its efforts to become the third major world power, have started to

launch their own military space programs. In 2021, France launched a program codenamed as AsterX, which represented their first efforts in space military exercises. They want to recognize and monitor potential dangerous space objects, which could threaten the destruction of their own spy satellites. These efforts represent not only France, but Europe's effort to place themselves among the competition for military dominance. In addition to this France plans to develop anti-satellite laser systems to close the gap with rivals.

Timeline of Events

Date	Description of event
1955	The United States announces its desire to place artificial satellites in space, closely followed by similar intentions from the USSR. This marks the beginning of the space race.
August 1957	The USSR develops the R-7 Semyorka, the world's first intercontinental ballistic missile.
October 1957	The USSR places the first artificial satellite in space, Sputnik 1.
December 1957	The United States followed up with their own ICBM, the SM-65A Atlas.
1959	United States anti-satellite weaponry tests begin, in a program called “Bold Orion”.
1960s	Both the US and the USSR regularly deploy satellites in orbit. They begin to use reconnaissance satellites.

1960s	The US and the USSR both develop nuclear anti ballistic missiles to intercept possibly unstoppable ballistic missiles.
1967	The 1967 Outer Space Treaty is created, which attempts to ban weapons of mass destruction in space, and details important legality details of space.
1972	The anti ballistic missile treaty is created, which limits the use of ABM systems.
2001	The United States announced its withdrawal from the ABM Treaty, leading to the creation of the American Missile Defense Agency.
2020	Russia allegedly launches a satellite which has the capabilities of a weapon. It is criticized by both the United States and the United Kingdom.
2021	France launches the AsterX program, a series of military space exercises. This marks an effort and advancement to catch up with their military rivals.

UN involvement, Relevant Resolutions, Treaties and Events

The UNOOSA committee has recognized and condemned the possibility of an arms race in space, which they would want to prevent. The effects of space

warfare could be catastrophic for the parties involved, and so several resolutions have been established to avoid this possibility.

- On October 10th of 1967, The United Nations Office for Outer Space Affairs adopted resolution **2222 (XXI) - UNOOSA.** This resolution banned the use of weapons of mass destruction in outer space, and set regulations for the safe use of space exploration that benefits all. This resolution was adopted in order to prevent the possible development of an arms race between the United States and the USSR in space, which could leave catastrophic consequences. In this resolution, it was also established that: outer space is not subject to national appropriation and neither are celestial bodies, which shall only be used for peaceful purposes, and that the exploration of space should be free for all.
- After that resolution was established, several reiterations and committees for international cooperation have been hosted, as well as resolutions which attempt to prevent a possible arms race in space. Such solutions include resolution **A/RES/62/20** established in 2007. This resolution acknowledges the possibility of an arms race in space, and includes the topic on the provisional agenda of the conference. A similar resolution, **A/RES/69/32** was established in 2014, which emphasized the importance of not only condemning an arms race in space, but taking measures so that it is not even possible in the first place. Resolution A/RES/62/20 was met with 178 votes in favor and two abstentions (United States and Israel). Resolution A/RES/69/32 was less accepted, with 126 votes in favor, 4 against (Georgia, Israel, Ukraine, United States), and 46 abstentions from members of the EU.

Evaluation of Previous Attempts to Resolve the Issue

While many efforts to prevent the weaponization of outer space have been implemented, not all of them have been effective or useful in doing so. In 1967,

when resolution 2222 (XXI) was adopted, it had a positive impact towards the prevention of this issue. Countries respected the boundaries set by it, and drifted away from the implementation of weapons of mass destruction into outer space, especially preventing the testing of such weapons in space. Not only that, but the use of celestial bodies for military purposes has not been an issue ever since such limitations were implemented, which proved to be a major step in the right direction. Along with the ABM Treaty, it aided in the reduction of overall destruction power for countries like the United States, bringing the world a step forward in the prevention of a nuclear war. While resolution 2222 (XXI) has been mostly respected, it does not cover some important points, which is why an arms race is still present. As for the ABM Treaty, both countries have backed down from it, and so it upholds no legal limitations today. While both of these proved to slow down the arms race in space, countries have worked around them today, allowing for the continuation of the issue.

Other attempts include resolutions presented to the General Assembly, like the aforementioned resolutions A/RES/62/20 and A/RES/69/32. When resolution A/RES/62/20 was presented in 2007, all countries seemed to agree that the development of space weapons could only be a catastrophe, with the exception of the United States and Israel. As for resolution A/RES/69/32 which was introduced in 2014, was not as accepted as the one in 2007. This resolution attempted to not only acknowledge, but take actions to prevent the arms race in space, meeting acceptance from most countries, but with a lot of abstentions from members of the EU, and votes against from 4 countries. These resolutions, while effective in raising awareness and attempting to establish regulations, have not been very effective due to their lack of both legal consequence and complete acceptance. Countries which do not agree with said resolutions are not bound to follow them, and so many have continued to develop their weaponry and space weapon technology. WIth the development from

countries like the United States, Russia, and the beginning of the France program, it is clear that the pressure of the possibility of dominant space weapons is still present for many. This has proved that the presented resolutions have not been very effective in the prevention of the issue.

Possible Solutions

Such an issue can only be resolved by international cooperation from all parties, as a failure to contribute or abide from a nation can result in an imbalance of power. In order to resolve this problem, the first objective should be to establish proper regulations into not only the prohibition of weapons of mass destruction, but other dangerous space weapons that could threaten with an imbalance of power. If proper regulations can be established, it will be easier to have a consensus of all countries to stop the arms race that is slowly developing. Another important aspect of resolving this issue is to stop the development of new technologies that could be used in the future. While publicly available tools that benefit all should be encouraged and developed such as the GPS, weapons that give more power to one country should be stopped. The existence of such technology discourages mutual trust between countries, and encourages the creation of new destructive technologies to compete. In order to prevent a competition, it is crucial to discourage the creation of all space weapons. The vital issue when preventing a possible arms race is mutual trust, and only when countries are able to all agree in the prevention of an arms race in space, and the condemning of the creation of such, will the issue be resolved and possible nuclear war prevented.

Sustainable Development Goal (SDG)

This issue directly connects to the Sustainable Development Goal 16: Peace, Justice and Strong Institutions. This goal wants to prevent many issues that would

threaten global peace, which is something that the weaponization of space is affecting. By weaponizing outer space, and developing space weapons, many targets are set back in the pursuit of peace and justice. For starters, the unfair advantage of military power that a rich country can attain over developing countries goes against the target to allow for developing countries to have an impact and participation in the institutions of global governance. Such dominance could also prevent the transparency of governments and related institutions, as well as preventing responsive, inclusive, participatory and representative decision-making. The hold of such a significant military advantage would prevent the development of trust and peace, and threaten with the possibility of war. War would inherently prevent the protection of fundamental freedoms, increase death rates, provide for the possibility of exploitation and abuse, increase arm flow, and would promote violence. For all these reasons, the weaponization of space is a crucial point of discussion when considering the success of SDG Goal 16.

Appendix

I. The full Outer Space Treaty of 1967, which is still one of the most important documents when considering space international regulations. https://www.unoosa.org/oosa/en/ourwork/spacelaw/treaties/outerspacetreaty.html

II. Resolution A/RES/62/20, established in 2007, a resolution which acknowledged the start of an arms race in space. https://undocs.org/en/A/RES/62/20

III. Resolution A/RES/69/32, established in 2014, attempts to take further

action in the prevention of an arms race in space. https://undocs.org/en/A/RES/69/32

IV. A list of all resolutions that have been passed by the General Assembly under UNOOSA in the past. https://www.unoosa.org/oosa/documents-and-resolutions/search.jspx?&view=resolutions

V. A detailed timeline on the full development of space weapons and steps to abolish them, in a road to completely denuclearize and prevent the weaponization of outer space. https://www.nti.org/learn/treaties-and-regimes/proposed-prevention-arms-race-space-paros-treaty

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