BELLARMUN 2024

UNITED NATIONS OFFICE FOR OUTER SPACE AFFAIRS

TOPIC A:
Space Privatization

TOPIC B:
Military in Space

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Dear Delegates,

My name is Genevieve Davis, and I am thrilled to be serving as your director for UNOOSA at BELLARMUN 2024! I am currently a sophomore at Bellarmine and I cannot wait to experience this terrific committee with you all. I am honored to be working alongside Anna Freimarck, your amazing Chair, and Anya Moravek, your ever-so-talented Assistant Director, and we are incredibly excited for this year's iteration of BELLARMUN!

BELLARMUN holds a very special place in my heart. It is the place where I was first introduced to MUN and all the opportunities and friendships it holds. Model UN has helped me become a more confident public speaker, a more engaged student, and has taught me so much about our world and prevalent issues around us. I hope that this committee will help you become just as interested in MUN, just like myself, or even just make a new friend and learn a little something about space!

The United Nations Office of Outer Space Affairs is a highly regarded committee that works towards managing peaceful space interactions and furthering space explorations to find more sustainable solutions to global economic and social issues. At this year's iteration, UNOOSA will be discussing the topics of Space Privatization and Military in Space. Both these topics are issues currently arising in further space exploration and management, and will continue to be prevalent issues in our near-coming future. We look forward to all the debate and creative solutions you all will have in store as it is your job to find dynamic long term solutions that will help the world tackle these issues!

I would like to thank you on behalf of my dias team and I, and to welcome you all to UNOOSA at BELLARMUN 2024!! I wish you all the best and cannot wait to see you all in committee!

Sincerely,

Genevieve Davis

United Nations Office of Outer Space Affairs

Committee Overview

Encompassing a broad range of issues, the United Nations Office for Outer Space Affairs is an international organization that promotes and facilitates peaceful international cooperation in outer space. Originally founded in 1958, UNOOSA was created to promote space exploration and discover more sustainable economic and societal advancements for the globe. Since then the committee has worked closely with many other UN bodies. Recently, UNOOSA has held multiple workshops and webinars to promote further space interest for both global governments and private industries. They have passed multiple initiatives which highlight the importance of space technology and exploration equipment, putting a high emphasis on aiding developing countries. Furthermore they have also created initiatives for natural disaster management and the promotion of outer space sovereignty.

Composed of 102 member states, the committee's jurisdiction over space activities is quite large. UNOOSA is separated into two branches, the Scientific and Technical Subcommittee and the Legal Subcommittee both established in 1961. Members of both subcommittees have the ability to create and recommend treaties and frameworks for global governments, push for the distribution of space science technology, and maintain and launch space technology. Funding for UNOOSA is provided by the UN General Assembly budget, as well as from financial support from donating countries. Through their member states and employees, UNOOSA strives to make the future of space technology grow and possible for all people. Delegates have the chance to develop the future of space as they debate and craft encompassing resolutions.

Topic Introduction

Beginning in the 21st century, private agencies, such as SpaceX, became involved in space exploration. Driven by endless economic opportunities, technological advancements, and cost reductions, these companies began to dominate the space industry. In the past, the only major players in the space economy were government-funded organizations, such as NASA and CNSA, that have led many expeditions that have advanced space exploration.

Most recently, billionaires such as Elon Musk and Jeff Bezos have created private companies to advance space travel and exploration. These private companies include SpaceX, Blue Origin, and Boeing. The main problem with this privatization is that international law is insufficient to regulate private companies. There are few regulations, leading to worse environmental problems, such as rocket emissions or resource extraction, in outer space. In the committee, delegates should try to focus on creating a system of policies that private companies have to follow regarding environmental issues to regulate the risk of environmental harm, lack of accountability, and labor issues. However they must balance this regulation with their country's economic policies of free trade and the independent nature of the private sector.

Topic History

The first major government-created space program was the Soviet Space Program, which originated in 1955 and was disbanded in 1991. Since then, NASA, the National Aeronautics and Space Administration, created by the US in 1958, is the oldest government-running space program. Many countries have since created government-funded space programs to reach new levels of space exploration.

Government-funded programs were alone in the exploration of space and the space economy until the creation of OTRAG, which was the first private space company. OTRAG, founded in 1974, was a West German company that was the first to attempt to launch a private spacecraft. However, due to pressure from the German government, OTRAG was retired in 1983. Since then, several other private companies have been created, the most well-known being

Space. Created in 2002 by Elon Musk, SpaceX was founded to reduce space transportation costs to create a sustainable colony on Mars. Since then, the space industry has rapidly and immensely expanded and changed. Many private companies have partnered with NASA and other government space agencies to increase the world of space exploration. Private space companies will continue to impact the space industry and the environment. But as they develop, their activities often call their motives into question.

Current Situation

The increasing presence of private companies in space could cause issues because of the lack of guidelines and regulations outlining limits on private development. Traditionally, the majority of the estimated $366 billion earned from the space sector was from a space-for-earth economy where the goods and services produced in space are inteded for use on Earth. However, in May of 2020, SpaceX made history by being the first private company to send humans into space. This groundbreaking movement jump-started the development of an entirely unforseen space-for-space economy. SpaceX has carried out 301 flight missions since the first rocket debut. And they plan to launch more than 140 rockets in 2024. SpaceX's historical achievements, along with efforts from Boeing, Blue Origin, and Virgin Galactic to join in on the space industry marks the beginning of the privately-inclined transition of the space sector.

Recently, NASA has been partnering with private companies to increase overall space production. They have partnered with SpaceX, Blue Origin, and Dynetics for the development of their innovative human landing systems. They have also worked with private companies to increase the common low Earth orbit economy. Low Earth orbit are orbits of space technology such as telescopes and satellites that are close enough to Earth to allow for convenient transportation, communication, observation, and resupply.

While the work that private space companies have done, and plan to do, is groundbreaking, many are worried about the lack of environmental regulations. When rockets take off, they exhaust a component of black carbon, also known as soot, into the atmosphere in extremely large quantities. The environmental harm that rockets cause can go unchecked if there are no national regulations for private space companies.

Past Action

In 1958, the first international treaty regarding space was introduced to UNOOSA, the Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, more simply known as the Outer Space Treaty. After many years of additions and edits, it was fully adopted by all UN general assemblies in 1966 and was signed into force a year later. The premise of the Outer Space Treaty was to create regulations for space activities, formulate legal restrictions, and to oversee these affairs.

The treaty created an organization called COPUOS, the Committee on the Peaceful Uses of Outer Space. This committee was split into two subsections, with one making policies regarding what would be considered legal space affairs, while the other managed scientific actions. The legal division created an international law, enforceable for both governmental and private sector groups, that required transparency, correspondence, and peaceful actions between all space organizations. The science division passed many resolutions that were focused mainly on creating a transparent information system between government programs and private organizations to benefit the global community, and the further monitoring of scientific advancements.

The treaty, overall, encouraged cohesive space programs and opened up opportunities for less developed countries to begin their expansion of space exploration. This treaty not only applied to specific participating countries, but it was intended to apply to all private space groups, ensuring that they fulfill and align with the treaty's requirements to continue to provide a peaceful space environment. In the past, UNOOSA has made partnerships with private space organizations to facilitate cooperation with UN and government agencies and to build a more unified and connected space community.

Bloc Positions

Developed Space Programs: Australia, Canada, China, France, India, Italy, Russia, South Africa, United Arab Emirates, United States, United Kingdom, Japan

Countries within this bloc have highly developed government space programs that are leading the globe in space expansion and technology development. These national organizations have provided a great outline for developing space programs and have made significant leaps in science fields and space exploration. Some countries have also provided developing programs aid and assistance through opening launch sites, providing funds, and working cohesively on long-term projects. Since private companies have developed within many of these countries, nations in this bloc feel less threatened and more open to cooperatively working with these space programs, and are also more inclined to provide aid to these companies. Delegates in this bloc may want to find solutions that increase the role of the private space industry in global exploration, and ways to continue their expansion seeing as they provide valuable information to many of these nations.

Developing Space Programs: Argentina, Brazil, Egypt, Germany, Indonesia, Iran, Kazakhstan, Kenya, Mexico, Nigeria, Sudan, thailand, Venezuela

Countries within this bloc have space programs that are beginning to form or are not as well developed as other nations; they are working towards the further improvement of their organizations. Some of these countries use other nations' launch sites for their satellites and many strive toward more interstellar independence and hope to join global powers in further space exploration. With the uprising of private space companies, these government owned organizations may face large setbacks and find their own necessity decreasing. Delegates may want to advocate for solutions that have more regulations and restrictions on the scope of private companies to prevent their own organizations from being dismantled.

Case Studies

OTRAG

In the early 1970's, German Lutz Kayser won a contract, granting his research company the ability to develop new rocket technology. Kayser's renowned concept utilized parallel clusters of identical propellant tank and rocket engine modules and, through the process of mass production, led to a 10% cost reduction. Kayser then went on to create OTRAG, the Orbital Transport-und-Raketen Aktiengesellschaft, in Stuttgart, Germany—which was the first ever private commercial space launch company. In 1975, OTRAG signed an agreement with the Congolese government to establish a rocket range at Katanga, a province in the Democratic Republic of the Congo, which then became the site for OTRAG's flight tests. However, many governments were frustrated by this low-cost competitor, and created propaganda campaigns stating that OTRAG was a cover for German and South African nuclear cruise missile development. The Congo was then pressured by Russians to withdraw permission of OTRAG to use their site.

It was not until 1981 that OTRAG found a new site to launch their rockets: the Sahara Desert in Libya. This was where 14 suborbital test flights were launched. This development was cut short, however, by the illegal confiscation of OTRAG's equipment. Shortly after, Kayser shut OTRAG down. Kayser's ideas for a more affordable and sustainable space inspired private entrepreneurs such as Musk, Bezos, and Rutan.

SpaceX

SpaceX, the Space Exploration Technologies Corporation, was created by Elon Musk and Gwynne Shotwell with the ultimate goal of putting humans on Mars. Elon Musk gained the idea for space exploration after his near-death experience with malaria. His partner, Gwynne Shotwell, spent a decade at the Aerospace Corporation before joining SpaceX and was promoted in 2008 to President and Chief Operating Officer. In the early 2000s, the first SpaceX launch was the Falcon; the Falcon had four failures and their fifth launch, if a failure, would lead to the shutting down of SpaceX. However, Falcon V beat the odds and was a success.

SpaceX has continued to launch and contribute to multiple launches such as Falcon 9, NASA's Commercial Crew and Cargo Programs, Dragon, Falcon Heavy, and Starship. One of SpaceX's most recent launches of Starship was on March 13th, 2024 where the third rocket was able to reach space, opening the door for even more future programs and space explorations.

Guiding Questions

1. What regulations, if any, could be placed on private corporations?
2. To what extent can the UN intervene and place restrictions on private corporations?
3. Should private companies be allowed to possess space weaponry? Do your countries' government corporations possess space weaponry?
4. Should government space organizations communicate and distribute information with private companies, or should they only work with other governments?
5. Should government owned corporations move towards making their own organizations private to increase efficiency, or should they keep them public?
6. Have private corporations helped or hindered your country's economy in the past, and how does that affect your country's current position on private companies and regulations?

Further Research

https://www.unoosa.org/oosa/en/ourwork/space-agencies.html
This source provides the government space organization for each nation and provides the information to their website and helps begin research on potential space organizations.

https://www.unoosa.org/oosa/en/ourwork/spacelaw/treaties/outerspacetreaty.html
This source provides the Space Treaty that was created by UNOOSA in 1966, and outlines many of the policies that are still utilized today.

https://aerospace.csis.org/the-private-sectors-assessment-of-u-s-space-policy-and-law/

This source provides the shifting of governmental priorities as private space companies are starting to take over the space economy as well some laws that have emerged facing private space companies.

https://www.forbes.com/sites/quora/2017/04/04/the-pros-and-cons-of-privatizing-space-exploration/?sh=415c87e43319

This source discusses the pros and cons of private ownership of space companies and further advancing space technology.

Topic Introduction

Space, an expansive realm once disconnected from the conflicts of the world, is now becoming an integral part of human development, but is threatened by the risk of militarization. Space is already deeply woven into our everyday lives through satellites which allow for instant global communication, provide information about the weather, and give access to vast networks. Because of this, many countries believe that space operations are crucial in maintaining national security. Defense experts claim space to be an ultimate high ground, serving as the hub for essential communication, intelligence, missile-warning technologies, and surveillance.

Defensive advantages of space weaponry makes these technologies wildly appealing in space-faring countries, but these defenses would be especially advantageous when in conflict with countries that do not possess space arms. For example, Space-to-Earth weapons could attack targets deep in enemy territory while completely avoiding the risk of being shot down. Since tracking a weapon in orbit is a highly-complex task requiring resources developing nations have less access to, weapons in space also have a unique ability to bypass early detection radars and missile defenses.

Space weapons are typically categorized into three main groups: kinetic, non-kinetic, and electronic. Kinetic weapons are direct ascent weapons aimed at satellites, or weapons first placed into orbit and then propelled towards a target. Non-kinetic weapons include lasers and electromagnetic pulses which can damage the internal frameworks of space technologies. Electronic weapons target the ways satellites transmit and receive data, typically by using some form of a jamming frequency. Space weapons also give their home country first-strike capabilities—meaning they would be able to effectively wipe out a target country's nuclear abilities before they have a chance to strike back. A first-strike capability could eliminate the concerns of mutually assured destruction: the ideology that if countries engaged in nuclear war, there would be no winners and everything would be destroyed. The elimination of this nuclear deterrence would have catastrophic effects, and could lead to a nuclear war or rapid escalation of conflicts. Space-faring nations will likely continue the development and testing of space-bound weapons, which could ultimately disrupt the sanctuary of space and have massive societal implications. Throughout this committee, the United Nations Office for Outer Space Affairs should focus on addressing issues that come with new kinds of weapons in space; and create

guidelines outlining how countries can effectively and peacefully handle potential weaponry in space—advancing towards UNOOSA's goal for a more collaborative and peaceful outer space.

Topic History

The Space Race, an arms development race between the United States and Soviet Union, occured in the 1950's when each country was desperate to be the first to send a rocket into space. This resulted in a frantic period of space research and development, where each country wanted to demonstrate their missile technology and abilities. The military motivations behind the Space Race shows how countries have historically viewed space as an instrument of state defense.

Russia launched its first satellite, *Sputnik*, in 1957, and the United States followed closely with its launch of *Explorer 1* in 1958. By the end of the 1960s, both countries had deployed numerous satellites and were continuously developing and launching more. Reconnaissance satellites were used by both sides as spyware, taking photos of the other side's military operations. In response, states began developing anti-satellite weapons (ASATs) to attack rival satellites. Additionally, the United States and the Soviet Union began carrying out high-altitude missile programs. The most important of these was the Starfish Prime test, carried out by the United States in 1962. A 1.4-megaton bomb was detonated 250 miles in the air and was the highest altitude test ever to be completed. It left an electromagnetic pulse (EMP) which was felt as far as 800 miles away in Hawaii, where 300 street lights went out.

The Global Positioning System (GPS), is another commonly used space military technology. This system uses satellites to determine precise locations on Earth and is a highly accurate reference. It is free to the public, but is most commonly used to improve location awareness and targeting abilities of missiles, along with jamming location data for enemy location receivers. The first of the twenty-four satellites that support current GPS systems was launched by the United States on February 14th, 1989.

Forms of space warfare have only occurred during training missions in which countries shot down their own satellites. For example, in the 1980s, a United States Air Force pilot flying an F-15 shot down a communications satellite that was in a 345-mile orbit. Another instance was

when China used a missile system in 2007 to shoot down one of its antiquated satellites. As of 2024, there have been no human casualties from any of these training missions.

As of 2018, the only known weapons located in space were Russia's Almaz space station's armament and pistols, which are used for defense against potential attacks.

Current Situation

Because of extensive technological development and advancements, space has become more accessible than ever before, and the number of government agencies involved is growing significantly. The development of space-bound military programs with goals of improving defensive operations in both space-to-space and space-to-earth systems, has increased drastically.

Some say that with an increase in debris in space, ASAT missiles could be repurposed to solely protect important satellites from orbiting waste. Because it is speculated that there is a promising future in mining precious materials in space, for example on asteroids or the moon, military presence in space will play an integral role in protecting the transportation of these materials. Earth-to-Space weapons such as ASAT missiles have become significantly less expensive, and any country with an advanced space program can have the ability to produce them. Space-to-Space weapons have been increasingly developed in the last few years, and have become less financially risky and more reliable. This suggests that the possibility of Space-to-Space weapons in the future is extremely high.

Currently, China and Russia are reported to be pursuing and testing counter space weapons, such as jammers, lasers, and ASAT weapons. These weapons are reported to be more sophisticated and adaptable, posing a significant threat and causing concerns about the safety of satellites and other space-technology in the reach of China's ASAT technology. It is also known that China has an extensive arsenal of operational communications, radars, GPS jammers, and ASAT missiles. It is speculated that China will have developed a more powerful blaser by the mid to late 2020s, one with the ability to damage structural components of satellites.

Past Action

In 1963, The Moscow Treaty was signed into effect by UNOOSA, which directly addressed a hole in the recently proposed Outer Space Treaty: the use of nuclear weapons in space. This treaty specifically rejected any use of weapons in areas beyond atmosphere limits and was a big turning point for future discussions on space arms, as it would lead to many new resolutions on the Outer Space Treaty and the creation of more specialized committees. With the newly introduced Moscow Treaty, participating member states of UNOOSA proposed a resolution to the Outer Space Treaty in 1963, which was aimed at specifically addressing nuclear weapons and weapons of mass destruction surrounding the Earth.

In the following years, UNOOSA attempted to make a committee that would work towards discerning the limits between the legality of actions and how to continue the prevention of space-used arms, but it was ultimately unsuccessful. Many members had very conflicting ideas on how to determine the legality of affairs because proposed ideas did not align with many country initiatives, which led to the disassociation of the committee. This introduction of a possible specialized space group was a step in the right direction for UNOOSA, it was just poorly executed. Many years later, member states re-proposed the creation of a committee, this time more specialized, with the primary focus being the regulation and disarmament of space crafts.

Starting in 2018, the UN Disarmament Commission (UNDC) began working on projects to create a peaceful and trustworthy global system that would help reduce the numbers at which military arms were being introduced into space. They have put into place many transparency and confidence-building measures, called TCBM's, to increase the spreading of information and space community affairs. Some TCBM's that were implemented were concealed global information exchanges, global space coordination, frequent visits done by officials to launch

sites, and global notifications of space exploration. These action steps led to a more communal space environment and put an emphasis on the importance of space transparency, as well as addressing the future dangers of military warfare in space.

Bloc Positions

Countries Possessing Space Weaponry: China, France, India, Russia, United States, United Kingdom, Japan

Countries within this bloc all possess space weaponry of some kind, such as anti-satellite weaponry, directed lasers, and jammers. While these countries recognize and acknowledge the hazards to themselves and others in a potential space arms race, they continue to push for the further development of space weaponry as a way to get a head start on militarization. Many of these countries also feel threatened by one another and continue their development as means of defense against possible space-based attacks. Delegates in this bloc may want to find solutions that allow the continuation of space weaponry development but would be open to more regulation, while others may not be so reluctant to higher restriction. Countries in this bloc will often find themselves working with allies to protect their nations from those whom they fear.

Countries not possessing Space Weaponry: Argentina, Australia, Brazil, Canada, Egypt, Germany, Indonesia, Iran, Italy, Kazakhstan, Kenya, Mexico, Nigeria, South Africa, Sudan, thailand, Venezuela, United Arab Emirates

Countries in this bloc generally have less developed space programs and are beginning their own space exploration—meaning that they are far from the development of possible space weaponry. If a space arms race or deployment were to occur between larger countries, many smaller developing nations would be greatly impacted and mass destruction could rain on these areas. Many developing countries believe that if further space weaponization continues without regulation, mass destruction and political tension will arise, causing more setbacks for their

country as well as their space programs. Delegates in this bloc may want to push for higher weaponry regulation and some may want to dismantle the continuation of future weaponry development altogether.

Guiding Questions

1. How can countries work together to decrease the hazards of space weapons for civilians?
2. Should space weaponry be limited to certain kinds, and if so, what would they be? What kind of space weapons, if any, do your nations possess?
3. What restrictions should be placed on space weaponry for the future, and can it build off of any past regulations already set in place?
4. What can be put in place to protect innocent civilians and nations in the case of the future use of space arms?
5. What other nation(s) does your country believe to be a threat to theirs and others safety? What is your country's relationship like with this country on land and in space?

Further Research

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