COPUOS COMMITTEE: COMMITTEE ON THE PEACEFUL USE OF OUTER SPACE

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I. Historical Context

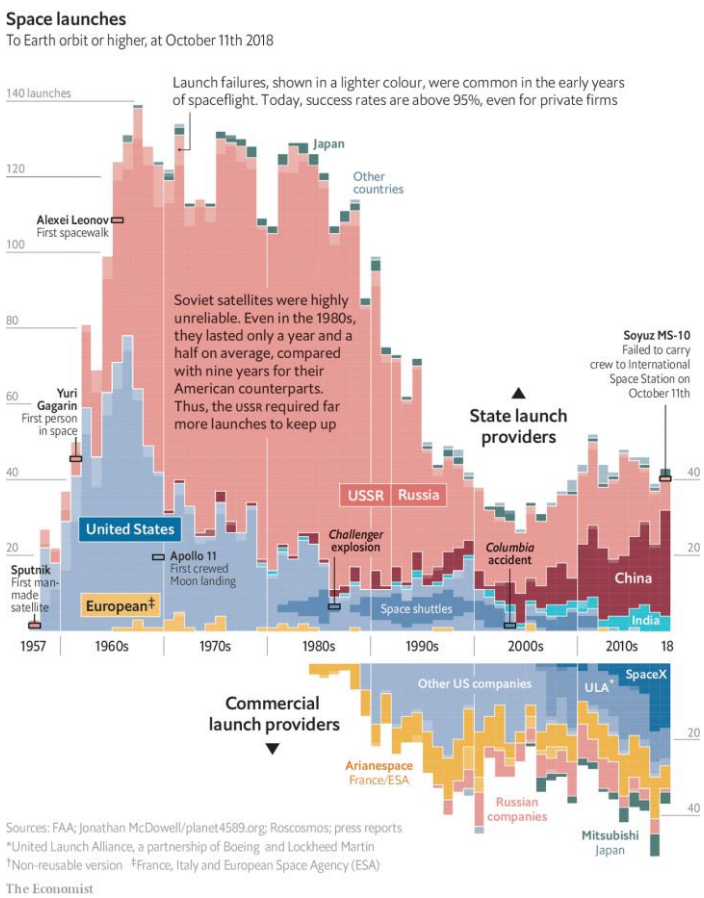
The aerospace industry began around 1900 with the Wright brothers' first experimental aircraft. World War I further motivated innovation in this sector in Europe and the United States. Production increased in the 1920s and 1930s, yet it was abruptly halted in Europe by World War II. During and after the war, the United States built many military aircrafts. Following this boom in production, the aerospace industry's focus shifted from manufacturing to researching. Moreover, there was an increased amount of new technologies that predominated the industry. In short, both international conflicts stimulated the research and development of military aircrafts in the aerospace field.

Two years after World War II, the Cold War between the United States and the Soviet Union began following the Berlin airlift in 1947. The competition between these superpowers to develop Intercontinental Ballistic Missiles (ICBM) transformed into a competition revolving around space exploration from 1955 to 1975. Both contenders yearned for the "superiority status" that came with reaching and dominating space—the final frontier. On October 4, 1957 the Soviet Union launched the first artificial satellite, Sputnik I. Studies have shown that between 1955 and 1961, the USSR had been training approximately three times as many scientists per year as the United States. This educational gap and the launch and orbit of Sputnik I revealed the Soviet Union's technological edge which was interpreted as a serious threat to U.S. national security. Nevertheless, the American government was quick to respond by establishing the Explorer Program, which carried out scientific investigations from space, and

passing the National Aeronautics and Space Act in 1958, which would create NASA. The Soviet Union continued to be successful in this field as is exemplified through their accomplishment of sending the first human into space aboard the Vostok 1 spacecraft on April 12, 1961. However, in the Apollo 11 mission, the United States achieved the most daunting task by sending a man to the moon on July 20, 1969.

II. International Presence

The substantial achievements from both parties ensued a period of detente, diminishing competitiveness and increasing cooperation between the two nations via the Apollo–Soyuz Test Project (ASTP). Government funding increased following President Ronald Reagan's State of the Union Address in 1984, which directed NASA to build the International Space Station (ISS) within the next decade. Considering its slow progress, American citizens' interest in space colonization wavered. As a result, the United States government minimized their production of military aircrafts and the amount of people that were employed by this industry dropped from 8.8% in 1989 to 4.3% in 1995.



The dissolution of the USSR in December 1991 made way for other countries' space industries, many of which converted their space agencies from military to civilian programs. In 1998, the first segments of the ISS were launched using Russian proton rocket named

Zarya ("sunrise"). The ISS was established as a cooperative space investigation station: the concomitant of the collaboration and political negotiations in the 1970s between the space agencies of the United States, Russia, Japan, Canada, and the member states of the European Space Agency (Belgium, Denmark, France, Germany, Italy, The Netherlands, Norway, Spain, Sweden, Switzerland, and the United Kingdom). The ISS facilitates international cooperation in spatial experiments and maintenance. The amount of people allowed to be sent by each country depends on the amount of money and resources they send. The station coordinates spacewalks and researches the changes that the human body undergoes when in space. The nature of the ISS's politics and legal framework, their rights, obligations, jurisdiction, and control with respect to space station elements, are defined by the Space Station Intergovernmental Agreement (IGA). Currently, China is the only major world space power not part of the ISS which can, to some extent, be attributed to NASA's stringent Chinese exclusion policy. As a result, the China National Space Administration launched and operated their own single-moduled space investigation station, Tiangong 1 - Tiangong in 2011. Chinese flight controllers lost control of Tiangong-1 in 2016 leading to the fiery end of the 8.5 metric ton space lab over the Pacific Ocean in April 2018 after seven years of operation.

III. Militarization of Space

Since Sputnik 1, space resources have been vital for governments by ensuring national well-being. Such technologies have been used for surveillance mechanisms, secure communication networks, precise navigation, weather predictions, and for military purposes. However, on October 10, 1967 the Outer Space Treaty became effective. This treaty claimed that the use of outer space is accessed by all states and it should be solely for peaceful, beneficial exploration opportunities. Furthermore, it affirms that:

States shall not place nuclear weapons or other weapons of mass destruction in orbit or on celestial bodies or station them in outer space in any other manner; the Moon and other celestial bodies shall be used exclusively for peaceful purposes; Astronauts shall be regarded as the envoys of mankind; States shall be responsible for national space activities whether carried out by governmental or non-governmental activities;

In short, the Outer Space Treaty asserts that outer space should be used in a primarily peaceful manner and barred the implementation of nuclear weapons and weapons of mass destruction in orbit.

Although the Outer Space Treaty does not entirely ban the presence of all weapons in space, it has been remarkably successful and has been signed and ratified by 105 countries. As a response to its shortcomings, the Space Prevention Treaty was the resolution of a 2006 General Assembly which granted the prohibition of all weapons from Earth's orbit and celestial bodies. However, this was not passed because the United States voted against it and Israel abstained. In February 2008, China and Russia proposed the Treaty on Prevention of the Placement of Weapons in Outer Space and of the Threat or Use of Force against Outer Space Objects (PPWT). This treaty had similar goals and again was opposed by the United States due to security concerns over its space assets. On December 4, 2014, the United Nations passed two resolutions to promote the peaceful exploration of outer space. The first, *Prevention of an arms race in outer space,* calls on countries with space capabilities to ensure the peaceful use of outer space and prevent an arms race; both the US and Israel abstained. The second, *No first placement of weapons in outer space,* emphasizes the goals against an arms race that are established in the first resolution; US, Israel, Ukraine and Georgia voted against while 46 countries abstained.

The United States 2020 National Defense Authorization Act established the new, independent Space Force branch in the military. Currently, the United States is the only country

to have a separated branch in their military to curtail specifically to spatial uses. This new branch will organize tasks in space in a more efficient and centralized manner. The Space Force raises the possibility that other nations, such as China and Russia, formalize a sector in the military for space. This could undoubtedly result in conflicts that would violate the international treaties and resolutions.

IV. Rise of Private Companies

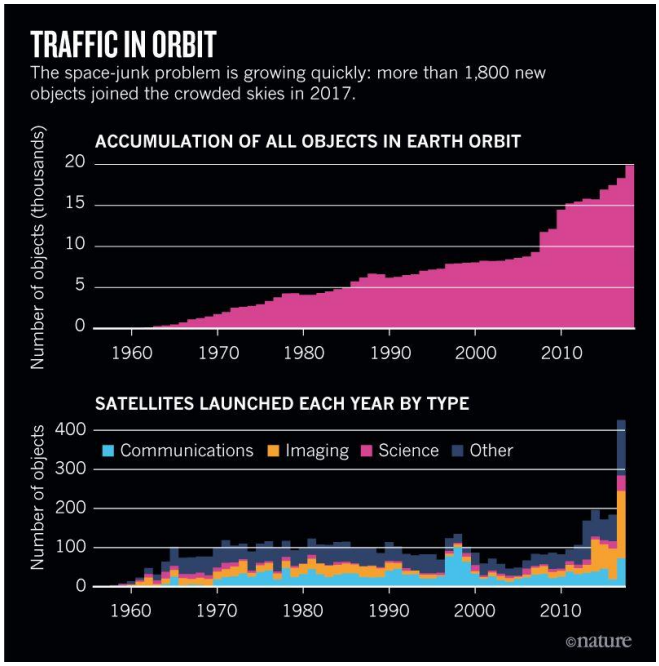
Private companies first became involved in the aerospace industry when they built a communication satellite, the Telstar I, which was launched in 1962 by NASA. In the late 1980s, NASA and the European Space Agency passed legislation that allowed and encouraged the participation of private companies in conducting launches. Since the Commercial Space Launch Amendment Act in 2004, the space industry began to privatize. Private companies like Virgin Galactic, SpaceX, Blue Origin, United Launch Alliance (a partnership between Lockheed Martin and Boeing) and the European Space Agency have emerged and become indispensable assets for space exploration. In 2010, Obama's administration ordered NASA to award grants to private companies for developing commercial spacecraft. After the slow development process of government programs in the early 2000s, private companies have exceeded technological innovations and cost efficiency. For example, SpaceX has developed the first liquid-propellent rocket to reach orbit (density increases, therefore more fuel volume is available) and completed the first reuse of an orbital rocket. For this reason, governments have come to rely on private companies' technologies and to pay for their new creations. Moreover, private companies provide governments several, reliable options as access routes to space. On the other hand, private companies have allowed space exploration to spread to poorer countries since they are not responsible for the expensive costs of research and launches. More importantly, companies allow governments to maintain and better protect their national

sovereignty. The United States, for example, used to depend on Russian rockets and engines. The emergence of these companies has allowed the United States to essentially eliminate their reliance on other nation's inventions and created a mutually dependent relationship between the public and private sector. The private sector also benefits from this relationship by being financially supported through contracts and subsidies.

Nonetheless, the rising influence of private companies displays several concerns. These companies have access to different governments' very sensitive data. This could result in an issue of national security seeing as companies work with different countries at one same time and have each of their information. For example, the United States is currently working with SpaceX, yet if SpaceX were to collaborate with the Chinese or Russian military in order to increase their funding, then the United States' could face a security breach. Due to the nature of their relationship, governments are forced to rely on the security measures taken by the private sector in handling sensitive data and physical payloads. Increasing militarization of space could endanger this high-risk high-reward synergy that has proved effective. One incident could easily leave us back at square one, therefore, countries should better determine the extent of trust they place in these private-military contracts.

Furthermore, several companies have expressed their desire to expand the aerospace industry to the extremely lucrative space tourism business. This could be a problem seeing as an increase in launches will create an increase in space debris. Naturally, this would raise the threat of collisions. Also, this would negatively impact the Earth's climate. One study found that 1,000 suborbital launches in a year would increase the temperature in poles by 0.2 to 1 °C. This would result in an increase in the melting of ice by 5% to 15%.

V. Space Debris



Space debris is any artificial material that is unfunctional and still orbiting the Earth. Currently, there is an estimated 14,000 pieces larger than 4 inches across, 200,000 pieces between 0.4 and 4 inches, and millions of pieces smaller than 0.4 inches which move at an average speed of 17,500 mph. This debris makes space research more difficult to execute. Primarily, collisions with pieces of space debris of any size can cause collisions that severely damage aircrafts, space stations or operational satellites. These collisions are a threat to both manned and unmanned expeditions. Furthermore, increased collisions increase the threat of a chain reaction. The manner of these collisions is that one occurs, and as a result more space debris is created, which leads to more collisions. On the other hand, these excess amounts of space debris make moving satellites and rockets more complicated since they must avoid these different pieces of rubble. Essentially, with more variables in space, the more difficult it is to monitor and maneuver the path of objects in space.

Several space agencies have begun initiatives to minimize the amount of space debris that is created and remains within Earth's orbit. For example, they have begun to burn fuel so that rockets do not explode. On the other hand, they have begun saving fuel so that rockets can be derailed out of Earth's orbit once the mission is completed. In 2018 the British RemoveDEBRIS satellite was launched from the ISS. This satellite either captures pieces of space debris or slows them down so they can reenter the atmosphere. Furthermore, agencies

such as the United States' Space Surveillance Network and the Joint Space Operations Center (JspOC) work to track space debris so that missions can avoid it.

VI. Timeline

- October 4, 1957: The launch of Sputnik 1 by the Soviet Union, which marked the start of the Space Age
- April 12, 1961: The Soviet Union sends the first human into space aboard the Vostok I
- October 10, 1967: The Outer Space Treaty became effective
- July 20, 1969: The United States' Apollo 11 mission successfully lands a man on the moon
- 1998: Launch of the International Space Station (ISS)
- January 11, 2007: Destruction of China's Fengyun 1C weather satellite in an anti satellite missile test
- February 10, 2009: The collision between the United States' Iridium 33 and Russia's Kosmos 2251
- December 20, 2019: President Donald Trump establishes the Space Force as a separate branch of the military

VII. Guide questions

1. What role has your delegation played in space exploration? Is this role expanding or contracting? If so, why?
2. What new areas or forms of research does your delegation wish to explore? What methods do you suggest to complete these investigations? What countries or corporations is your delegation willing to collaborate with for these new innovations?
3. Does your delegation support or oppose the incrementing presence of private companies in the aerospace industry? What parameters does your delegation propose to implement to address this situation? How does your delegation

define the private-public relationship and where should the limits of trust be established?

4. What solutions does your delegation propose to tackle the issue of space debris and the resulting collisions?
5. Does your delegation favor the current, peaceful cooperation in space or the presence of weapons in space? What measures do you propose to support your beliefs?

VIII. Message from the Dais

Hello delegates! We are looking forward to being in committee with you and hearing all of your creative propositions about issues in outer space. We greatly encourage you to research beyond the information presented in this briefing. Position papers should be written in **Times New Roman size 12 font** in **1.5 spacing** with **1-inch margins.** The document should not exceed **2 pages**. An additional page may be used for relevant figures, graphs, or tables. Works cited may be written in footnotes or on a separate page. Position papers should be submitted by **Thursday, February 27, 2020 at 11:59 pm** in a Word or PDF document**.** Do not hesitate to contact either of us with doubts or concerns regarding any information presented in the briefing or about the committee in general!

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"From out there on the moon, international politics look so petty."

—Edgar Mitchell, *Sixth man to walk on the moon*

Works Cited

"A Brief History of Space Exploration." *The Aerospace Corporation*, 1 June 2018, aerospace.org/article/brief-history-space-exploration.

"Beware the Situation: How JSpOC Tracks Space Debris - Room: The Space Journal." *Room, The Space Journal*, room.eu.com/article/Beware_the_situation_how_JSpOC_tracks_space_debris.

Bugos, Glenn E. "The History of the Aerospace Industry." *EHnet*, eh.net/encyclopedia/the-history-of-the-aerospace-industry/.

Gregersen, Erik. "Space Debris." *Encyclopædia Britannica*, Encyclopædia Britannica, Inc., 4 Nov. 2019, www.britannica.com/technology/space-debris.

Howell, Elizabeth. "International Space Station: Facts, History & Tracking." *Space.com*, Space, 8 Feb. 2018, www.space.com/16748-international-space-station.html.

"International Space Station Legal Framework." *ESA*, www.esa.int/Science_Exploration/Human_and_Robotic_Exploration/International_Space_Station/International_Space_Station_legal_framework.

Kennedy, Merrit. "Trump Created The Space Force. Here's What It Will Actually Do." *NPR*, NPR, 21 Dec. 2019, www.npr.org/2019/12/21/790492010/trump-created-the-space-force-heres-what-it-will-do.

"Space Race : the Epic Battle between America and the Soviet Union for Dominion of Space : Cadbury, Deborah : Free Download, Borrow, and Streaming." *Internet Archive*,

New York : HarperCollins, 1 Jan. 1970, archive.org/details/spaceraceepicbat00cadb/page/n5.

Stromberg, Joseph. “Private Spaceflight, Explained.” *Vox*, Vox, 4 Sept. 2015, www.vox.com/2015/2/6/18073658/private-space-flight.

Stuart, Jill. “The Outer Space Treaty Has Been Remarkably Successful – but Is It Fit for the Modern Age?” *The Conversation*, 18 May 2019, theconversation.com/the-outer-space-treaty-has-been-remarkably-successful-but-is-it-fit-for-the-modern-age-71381.

“United States Space Force.” *Military.com*, www.military.com/space-force.

Wood, Johnny. “The Countries with the Most Satellites in Space.” *World Economic Forum*, www.weforum.org/agenda/2019/03/chart-of-the-day-the-countries-with-the-most-satellites-in-space/.