

Forum: Historical Security Council

Issue: The geopolitical significance of the space race

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*Remember this Research Report is written from 1968's point of view.

Introduction

Space exploration in the 20th century has reached a level of development never seen before in human history. Unprecedented discoveries in nuclear weapons and the context of the Cold War have made the world's two greatest superpowers - the United States and the Soviet Union - fight their battles in the race to get to space, too.

It should be noted that the space race's origins lie in the nuclear arms race between the two nations cited before after World War II (1939-1945). During the conflict, both countries used German missile technology and recruited scientists from that nationality. After the war ended, both countries wanted to defend their own political and economic models - capitalism vs communism -, and one way to show their superiority to the international community was by "winning" the space race and being the first nation to land humans on the Moon.

The space race proved to be a remarkable process through which many achievements in science, space exploration, astronomy and technology were made. Seeing as it was a very expensive and costly endeavour to reach space, success in that field would prove key to showing the world that the United States or the Soviet Union had what they considered the right political and social model. Therefore, the importance of the race to get to space transcended the scientific area but was also meant to be a way of boasting about a country's military potential.

In the end, the space race has produced groundbreaking efforts to launch artificial satellites, along with manned and unmanned missions to space. Landing on the Moon's surface is one of the current objectives of different nations, and the world looks up to them in expectation of what country will achieve the feat first.



Term Definitions

Space race

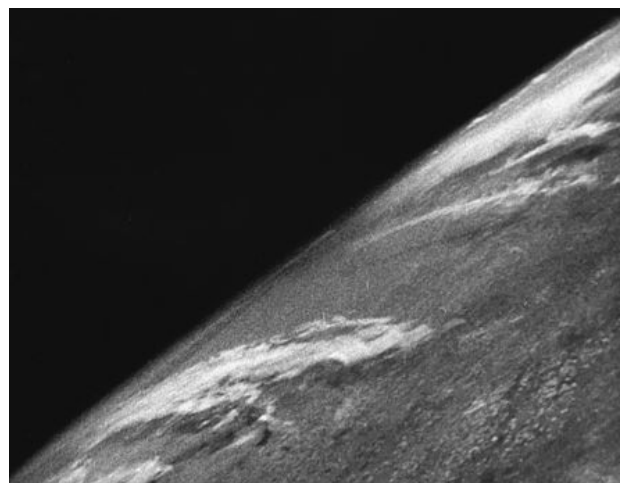
The space race was a series of competitive technology demonstrations between the United States and the Soviet Union, aiming to show superiority in spaceflight. It was an outgrowth of the mid-20th-century Cold War, a tense global conflict that pitted the ideologies of capitalism and communism against one another, according to an online exhibit from the National Air and Space Museum.

Cold War

The Cold War is an ongoing political rivalry between the United States and the Soviet Union and their respective allies that developed after World War II. The conflict began after the surrender of Nazi Germany in 1945, when the alliance between the United States and Great Britain on the one hand and the Soviet Union on the other started to fall apart. The Soviet Union began to establish left-wing governments in the countries of eastern Europe, determined to safeguard against a possible renewed threat from Germany. The Americans and the British worried that Soviet domination in eastern Europe might be permanent. The Cold War was solidified by 1947–48, when U.S. aid had brought certain Western countries under American influence and the Soviets had established openly communist regimes. Nevertheless, there has been very little use of weapons on battlefields during the Cold War. It's waged mainly on political, economic, and propaganda fronts, all according to the Encyclopedia Britannica.

V-2

The V-2 was the world's first long-range guided ballistic missile, designed by Nazi Germany during World War II, and was later used to attack Allied cities such as London during the war. But after the conflict, other countries used this type of missile to develop space-related projects. For instance, in the United Kingdom, in



1946, the British Interplanetary Society proposed an enlarged man-carrying version of the V-2, called Megaroc. It could have enabled sub-orbital spaceflight similar to, but at least a decade earlier than, the Mercury-Redstone flights of 1961. The United States' usage of these rockets included Operation Paperclip, which is explained in more detail further down this research report. One example of it is the first photo of the Earth from space, which was taken from a V-2 launched by US scientists in October 1946. The USSR was another country that used V-2 rockets in their space program, mainly to imitate them and transform them into different types of rockets, such as the R-2 or the R-7. They later used the latter type of rockets to create the world's first ICBM, which launched the Sputnik 1 in 1957. Also, in 1945, a group led by M. Tikhonravov K. and N. G. Chernyshov at the USSR Academy of Sciences developed on their own initiative the first stratospheric rocket project. VR-190 called for the vertical flight of two pilots to an altitude of 200 km using captured German V-2 rockets, so this is another example of an application of the originally war rockets in the space race, for peaceful uses. And finally, another country that used V-2 rockets, this time in the form of Soviet-developed R-2s, was China, whose first Dongfeng missile, the DF-1 was a licensed copy of the Soviet R-2. In the 1960s, China also developed DF-4, inspired by DF-1, which served as a basis for China's first space launch vehicle, Chang Zheng 1 (Long March 1).

ICBM

The term ICBM stands for Intercontinental Ballistic Missile. The USSR's R-7, the first ICBM, placed the first artificial satellite in space, Sputnik, on 4 October 1957. The first human spaceflight in history was accomplished on a derivative of R-7, Vostok, in April 1961, by the Soviet cosmonaut Yuri Gagarin. Nowadays, in 1968, ICBMs form the basis of many space launch systems. Examples include R-7, Atlas, Redstone, Titan, and Proton, which were derived from the earlier ICBMs but never deployed as one.

Background Information

The Space Race is proving to be a testing time for all of the world's nations, but especially for the two that are making the most effort and investing the most in this endeavour: the United States and the USSR. Its origins are diverse, but we will try to summarise in this section the background of the conflict and the rivalry.

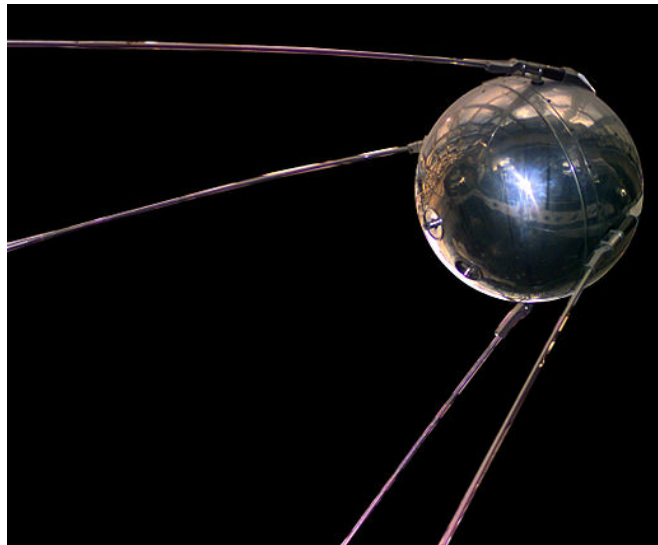
Before World War II, Germany, the US, and the USSR had experimented with small liquid-fuel rockets, but in order to launch satellites and humans into space, the development of larger ballistic missiles was required. One of the first ones was Wernher von Braun's Aggregat-4, which was later known as the Vergeltungswaffe 2 (V-2), developed by Nazi Germany to bomb London in the war. When the conflict ended, both the US and USSR acquired custody of German rocket development assets, which they used to further develop their own missiles.

But when World War II ended, the two former allies became engaged in the Cold War (1947-), in which we are still immersed. This state of political conflict and military tension has polarised the whole world, but Europe specifically has become divided into the Soviet Union's satellite states (also known as Eastern Bloc) and the Western states, allied with the US. The Space Race is another battle that's metaphorically fought in the Cold War, which has this name because there has been no direct armed conflict between the two superpowers.

On the one hand, in the USSR, Stalin made Korolev his chief rocket engineer. He designed several rockets which were based on the German ones used during the war, as he had help from captured German engineers. In 1953, Korolev was given the go-ahead to develop the R-7 Semyorka rocket, which after being successfully tested in 1957 became the world's first fully operational ICBM (Intercontinental Ballistic Missile). This rocket has been used lately to launch the first satellite into space, and it will probably have other future uses.

On the other hand, the US expatriated formerly German engineers in 1945, including Wernher von Braun, who they recruited in Operation Paperclip, to test and launch previously acquired V-2 rockets. These tests led to the first photos of Earth from space, and the first two-stage rocket, the WAC Corporal-V2 combination, in 1949. Von Braun also developed the US Army's first operational medium-range ballistic missile, the Redstone rocket, derivatives of which launched the US' first satellite.

Finally, both countries have started using these missiles derived from World War II ones to develop their space programs. The first achievement in the space race was made by the Soviet Union when on the 4th of October of 1957 they successfully launched Sputnik 1, the world's first artificial satellite and the first man-made object to be placed into the Earth's orbit. From that day, both superpowers have achieved several of their goals in different areas related to the Space Race, but it still remains to be seen who will be the first to land a person on the Moon's surface. After all, we are in 1968, and still don't know what progress will be made in upcoming years.



Countries and Organisations Involved

Different countries and organisations have become involved in the issue of the space race throughout the last few years. Despite that, the two most relevant ones are the United States (USA) and the Union of Soviet Socialist Republics (USSR), which have already been cited in this research report.

First of all, the US was the first nation to announce that they wanted to launch an artificial satellite into space, the first of its kind, in the year 1955, so it's considered as the country that started the space race. But the USSR answered this announcement with a satellite of their own in August of the same year, thus bringing the rivalry that the two countries already have on Earth to new heights. The US and the USSR are the two nations that sparked the space race, and that are still competing to see who places the first man on the Moon, and as they're the ones that have invested more time, resources, and personnel into the space venture, we can say that they have the predominant roles in space exploration.

But these two countries aren't the only ones that have participated or aided in the space race. Germany, for example, proved key in developing missiles during World War II. These were later upgraded and modified by engineers and scientists from that nationality so that they could be used for the launch of rockets or for their design itself. In addition, Werner Von Braun, who was a central figure in the development of rocket and space technology in the US, was German. He helped design and developed the V-2 rocket during World War II, and was later part of Operation Paperclip, where he developed the rockets that launched the US' first space satellite Explorer 1, in 1958.

Other nations were involved in the space race, even if not as ardently as the US and USSR. Canada was the third country in the world to put an artificial satellite into space, following the successful launch of Alouette 1, in September 1962. The satellite was sent aloft by NASA, from California. Another country that made a lot of progress was China who, for instance, took its first official step into space, launching and recovering an experimental biological rocket carrying white mice, on July 19th, 1964. Another example

of a country that experimented with rockets is Brazil, with the Sonda I, which was developed as a satellite launching missile, but hasn't been yet tested successfully.

France also played a key role in the research and design of space technology in Europe. In 1962, the development of Western Europe's first carrier rocket, the Diamant, began, and it was first launched in Algeria. In addition, on November 26th, 1965, Astérix, the first French satellite in space, was successfully launched by a Diamant rocket from the Algerian desert. It was active for 2 consecutive days before ceasing to transmit.

India has also been an active country in terms of space technology development. They built Thumba (or TERLS), an Indian spaceport, on 21 November 1963. It began its operation with the launch of Nike Apache, a US sounding rocket. On November 20th, 1967, the first Indian-developed sounding rocket, Rohini-75, was launched, beginning the era of Indian rocketry. This year, on February 2nd, 1968, TERLS was dedicated to the United Nations by their Prime Minister, Indira Gandhi, as an international range for carrying out experiments using sounding rockets with the goal of using outer space for peaceful applications.

In conclusion, even if the USSR and the US are the two countries that are usually more recognized for participating in the space race, other nations have also made progress in the last years, joining the quest for space while aligning with one of the two "superpowers".

Timeline of Events

- 2nd of August 1955** The USSR responds to the announcement made by the US that they want to launch the first artificial satellite into space with a satellite of their own.
- 4th of October 1957** The USSR successfully launches Sputnik 1 (Russian for “traveller”), the world’s first artificial satellite and the first man-made object to be placed into the Earth’s orbit. In the US, it came as an unpleasant surprise, and it was seen as a potential military weapon.
- 3rd of November 1957** The USSR successfully launches Sputnik 2, carrying a dog, named Laika, into space. They become the first nation to successfully send a living organism into orbit.
- 31st of January 1958** The USA enters the space race with the launch of Explorer 1, the first US satellite to reach orbit.
- 1st of October 1958** NASA, which stands for National Aeronautics and Space Administration, is created in the United States.
- 18th of December 1958** The USA launches SCORE, the world’s first communications satellite. It broadcasted for the first time a human voice in space.
- 2nd of January 1959** The USSR launches Luna 1, the first “cosmic rocket”, which escapes the orbit of the Moon and orbits the Sun instead.
- 2nd of August 1959** The USA launches Explorer 6, the world's first weather satellite, and obtains the first pictures of Earth from space.
- 12th of September 1959** The USSR launches Luna 2, which is the first spacecraft to reach the surface of the Moon.

- 4th of October 1959** The USSR launches Luna 3, which is sent to orbit around the Moon and manages to capture photographs from its far side.
- 19th of August 1960** The dogs Belka and Strelka and several plants are returned alive from space aboard the Soviet Union's Sputnik 5.
- 31st of January 1961** A US chimpanzee named Ham becomes the first hominid in space and the first to survive the landing.
- 12th of April 1961** The USSR achieves a great triumph in the space race: Yuri Gagarin, aboard the Vostok 1, makes an orbit around the Earth and becomes the first man to reach space. He remained in space for one hour and forty-eight minutes before landing in Saratov Oblast, west Russia.
- 5th of May 1961** On this date the USA achieves the first pilot-controlled journey and first American in space with Alan Shepard aboard the Mercury-Redstone 3 (or Freedom 7) spacecraft. On this flight, Shepard did not orbit Earth, though.
- September 1962** Canada launches Alouette 1, thus becoming the third country in the world, after the USSR and the US, to launch an artificial satellite.
- 16th of June 1963** Valentina Tereshkova (USSR) becomes the first civilian and first woman in space, spending nearly 3 days in space, orbiting the Earth.
- 19th of July 1964** China takes its first official step into space, launching and recovering an experimental biological rocket carrying white mice.
- 18th of March 1965** Alexei Leonov (USSR) conducts the first-ever spacewalk, in

a specialised suit and for 12 minutes.

14th of July 1965

Mariner 4, a US satellite, performs the 1st successful trip to Mars and returns close-up images of the Martian surface.

26th of November 1965

France puts Astérix, the first French satellite, into space. It was successfully launched by a Diamant rocket from the Algerian desert.

20th of November 1967

The first Indian-developed sounding rocket, Rohini-75, is launched, beginning the era of Indian rocketry.

1967

During this year, several space missions from both countries, the USA and the USSR, prove fatal and provoke the deaths of numerous astronauts.

21st of December 1968

The United States' Apollo 8 becomes the first spacecraft to reach the Moon, orbit it, and successfully return to Earth.

Relevant UN Treaties, resolutions, and previous attempts to solve the issue

In the last years, there have been several attempts made by the United Nations to try to solve the issue of the space race. First of all, it should be noted that last year, 1967, represented a milestone in space history, with the entry into force of the *Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies*. It was adopted by the General Assembly in December 1956, and its importance lies in the fact that it was the first treaty of its kind to address the space issue, and that it provides the basic framework on international space law.

Furthermore, this December of 1968, has entered into force the *Agreement on the Rescue of Astronauts, the Return of Astronauts and Return of Objects Launched into Outer Space*, also known as the Rescue Agreement. According to the United Nations Office for Outer Space Affairs, “the Agreement, elaborating on elements of articles 5 and 8 of the Outer Space Treaty, provides that States shall take all possible steps to rescue and assist astronauts in distress and promptly return them to the launching State, and that States shall, upon request, provide assistance to launching States in recovering space objects that return to Earth outside the territory of the Launching State”.

Having already passed the two treaties listed above, the UN has also adopted a Declaration related to the topic concerning this Research Report. It's the *Declaration of Legal Principles Governing the Activities of States in the Exploration and Use of Outer Space*, and was included in the UNGA resolution 1962 (XVIII) of 13 December 1963.

Finally, the last attempt to regulate the issue of the space race in terms of importance was the GA Resolution 1721 A and B (XVI) of 20 December 1961, which was also named *International cooperation in the peaceful uses of outer space*.

In case more information about all of the above-cited UN treaties, resolutions, and declarations was required, the HSC chairs advise delegates to take a look at a booklet edited by the UNOOSA, the United Nations Office for Outer Space Affairs. It is titled

International Space Law: United Nations Instruments, and it will provide delegates with very extensive information about the decisions reached in this field, even those that have come into existence after 1968.

Possible Solutions

Very diverse and different possible solutions could be devised for the issue of the space race. It should be taken into account that the problem itself to resolve would be regulating the issue so that space technology can be used for peaceful purposes and for the benefit of all of humanity, and so space technology isn't used, as some states fear, as a way to gain military advantage.

It has to be noted that, as the space race is intrinsically related to the development of ICBMs or Intercontinental Ballistic Missiles, concerns about the future use that some countries can give to their space investigation have been raised. Some of the world's nations fear that what may be disguised as scientific research in space is in fact a way to develop missiles. For example, the fact that the Soviet space program was militarily influenced may be the best explanation for this secrecy.

The US has also been careful about the image it gives to the international community about their developments of space technology. Their president, Eisenhower, feared in the last years that he might cause an international incident if he were to use military missiles as launchers. Therefore, he selected the untried Naval Research Laboratory's Vanguard rocket, which was a research-only rocket. This meant that von Braun's team, who has already been cited before in this report, was not allowed to put a satellite into orbit with their Jupiter-C rocket, because of its intended use as a future military vehicle.

All in all, during the Cold War everything can be seen as a threat by the international community, and the space race is no exception. So one possible solution to de-escalate the tensions present in 1968 could be, as US President Eisenhower hinted, to only use non-military equipment for space missions, so that the international community rests assured that whatever country is sending a rocket into space, it won't be used for military purposes or the research done won't be applied to design potential warfare.

Another solution could be to share the designs and the progress that's being made in spacial investigation with all of the members of the United Nations, so that all of humanity can benefit from the discoveries made in other parts of the universe, or even

send joint missions to space, promoting collaboration between cultures. If information on developments made was to be shared, all countries could be sure that space missions weren't being used as a way to escalate the Cold War and provoke direct conflict. One example of a country that did exactly that, selflessly offering a base to be a launchpad for rockets from all across the globe, is India, with their spaceport TERLS. Guided by Gandhi, they dedicated Thumba to the United Nations, "as an international range for carrying out experiments using sounding rockets with the goal of using outer space for peaceful applications".

In conclusion, thousands of different solutions to the space race conflict could be imagined, and we trust delegates from the Historical Security Council, set in 1968, will prove to be very creative in their design, as well as good representatives of their countries in this issue.

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