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THE FUTURE OF THE SPACE FORCE

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INTRODUCTION



“We must have American dominance in space” – President Donald Trump, 2018

Image of U.S. Space Force official logo

“Fly, fight, and win... airpower anytime, anywhere” – the mission of the United States Department of the Air Force (DAF) (United States Air Force).

In peace and in conflict since 1947, the force of 700,000 airmen personnel work to maintain five core pillars of air power: “air superiority; global strike; rapid mobility; intelligence, surveillance, and reconnaissance; and command and control” (United States Air Force).

The U.S. Space Force (USSF) was established on December 20, 2019, as the sixth independent branch of the U.S. Military, organized under the DAF (similar to how the Marine Corps are organized under the U.S. Navy), to modernize the capacity to uphold pillars of prosperity and security in the universe’s final frontier: outer space.

The USSF and its personnel (called Guardians) are a “bold” modern addition to the historically unmatched strength of the U.S. Department of Defense (DoD) (Department of the Air Force Posture Statement, 2022). According to acting secretary of the Air Force John P. Roth, with the addition of the USSF, “[the United States] can see, sense, and strike targets near and far, and provide global warning, networks, and independent operations in space.” (Department of the Air Force Posture Statement, 2022).

As the question ‘who owns space?’ becomes increasingly pressing, the USSF prepares to defend U.S. property (like satellites) in space, uphold international space law, and prepare for potential future conflict in space as other branches of U.S. military do on Earth.

EXPLANATION OF THE ISSUE

Historical Development

In 1966, the Treaty on Principles of Governing the Activity of States in the Exploration and Use of Outer Space (The Outer Space Treaty) illegalized claims of sovereignty over space by international law (United Nations Office for Outer Space Affairs). Thus, space objects, while owned by individual nations, are situated in outer space no-man’s-land, leaving them vulnerable to attack or damage.

Satellites are critical to the functionality of communication, navigation, and security – both to the public and to the government and military. They provide information about wealth systems and are critical to precise global positioning services.

The FY2020 National Defense Authorization Act (NDAA) enacted the establishment of the USSF due to increased infrastructural dependence on satellites in unprotected space for communication, navigation, meteorology, intelligence, and many other aides. Prior to the USSF’s creation, space operations were managed by branches of the U.S. Navy, U.S. Air Force, and U.S. Army (Bingen et al., 2022). Concern over this organizational structure was a key cause of the creation of the USSF and bipartisan support of the NDAA, despite the deeply partisan political arena in 2020.

The USSF is run by the Chief of Space Operations, Vice Chief of Space Operations, and Chief Master Sargent, who lead Space Force operations and the development of Guardians.

Space Superiority

Increasing threats from foreign powers were and continue to be critical factors in the conception of the USSF and the future direction of the force. The space capabilities of China and Russia can be used to find and target U.S. military operations on land, sea, and air, and can be used to target U.S. space assets (Lopez, 2023).

In 2023, the Chief of Space Operations General B. Chance Saltzman reported to the Senate Armed Services Committee that “the spectrum of threats to U.S. space capabilities [from Chinese and Russian developments] includes cyber warfare activities, electronic attack platforms, directed energy lasers designed to blind or damage satellite sensors, ground-to-orbit missiles to destroy satellites and space-to-space orbital engagement systems that can attack U.S. satellites in space” (Lopez, 2023).

Developing USSF systems to a higher capacity than the international competition is critical to the Space Force’s objectives. General Saltzman cited the force’s Proliferated Warfighter Space Architecture as a “prime example of that effort” (Lopez, 2023).

The USSF budget request for fiscal year 2024 was \$30 billion -- a \$3.9billion increase from FY2023.

[Lopez, 2023]

Scope of the Problem

Counterspace capabilities – the offensive and defensive operations which attain and maintain the desired control and protection in and through space.

Curtis E. Lemay Center,
2021

The Space Force emerged out of critical need for a uniform, consolidated effort in outer space. Space technology is absolutely critical to military and economic power, communications systems, and weather management. International adversaries have recognized this dependence – and the lack of guard of the nation’s vital assets – and have begun developing arsenals of **counterspace capabilities** to “disrupt, degrade, or destroy” space systems through physical attacks and cyber infiltration (Bingen et al, 2023). While no attack has yet been made, the looming threat remains significant. Developing readied Guardians, complex infrastructure, and superior weaponry is critical to paralleling the U.S.’s earthly military strength in space.

Personnel

Four years after the inception of the space force, the number of trained Guardians has remained limited: the 8,000 enlisted Guardians (2022) only make up half of their projected size (Bingen) The lack of personnel poses a significant threat to the future of the USSF – if there simply aren’t enough Guardians on the force, technology development efforts and weapons proliferation will be fruitless in their time of need.

However, the USSF is an intentionally small force, selecting only prime candidates to join the mission. According to the DAF Diversity and Inclusion mission, a “diversity of background, experience, demographics, perspectives, thought and organization are essential to the ultimate success in and increasingly competitive and dynamic global environment” (United States Air Force).

Emerging Threats and Capabilities

Emerging and developing international space capabilities pose a significant threat to U.S. national security and the world order. For example, Russian space technology – satellites – played an integral role in the precision of missile strikes on Ukraine (Bingen, 2023). Conversely, the strength of commercial satellites played a “highly visible and compelling role” in Ukraine’s resistance, according to the Center for Strategic and International Studies (CSIS) (Bingen, 2023).

Proliferating capabilities in China, Russia, India, Iran, and North Korea make those nations particularly relevant international competitors to the U.S.’s force global superiority.

Currently, China and the U.S. are in competition to become the world leader in space. In 2022, China conducted 64 space launches resulting in the placement of 150 satellites and 1 sub-orbital space plane (Bingen, 2023). While capability development is essential,



Chinese surveillance air balloon flown over the U.S., 2023.
NPR

lawmakers should be wary of creating an arms race, leading to unnecessary negative attitudes and potential acts of aggression against one another.

Notably, in February 2023, a Chinese information technology air balloon was discovered over U.S. territory. The air balloon caught national attention, inspiring fear, however Chinese officials cited the balloon's course as a mistake (Treisman et al., 2023).

Russia is the third most dominant space superpower. Russian space and counterspace technology were anticipated to be as advanced as its competitors, however, recent reports reveal Russia's system to be more rudimentary than previously determined (Bingen, 2023). Claims of advanced weaponry such as the Peresvet and the Sokol-Eshelon laser systems are faulty, and development operations are halted due to sanctions, according to the 2023 Space Threat Assessment (2023).

India became the fourth country to successfully launch a direct-ascent ASAT weapon, and space-based mission are proliferating in India's national defense strategy (Bingen, 2023).

In Iran, space capabilities have been demonstrated in the global stage as a testament to the country's strength and progress, however, the country denies interest in creating a nuclear ballistic missile system (Bingen, 2023). American politicians are skeptical of Iran's intentions and pay close attention to research, development, and testing efforts.

Finally, North Korean operations are intensely secretive with no recognized progress from 2012 to 2022, in which two tests of reconnaissance satellites were launched (Bingen, 2023). Due to the lack of transparency regarding development, many nations monitor North Korea as a potentially volatile foreign enemy.

The operations of foreign space systems is a focus of the USSF. However, the government must determine how and to what extent the USSF should engage with its competitors.

Counterspace Capabilities

Counterspace capabilities are developed and deployed in tactical, operational, and strategic levels across all domains of military (air, land, sea, and space), and are dependent on space situational awareness (SSA) and command and control (C2) across offensive counterspace (OCS) and defensive counterspace (DCS) fronts (Curtis E. Lemay Center, 2021).

OCS operations target an adversary's space capabilities by deceiving, disrupting, denying, degrading, or destroying, technology or infrastructure. OCS has a great capability to diminish an adversary's capability to wage war. For example, a multi-domain offensive approach may utilize OCS technology to destroy satellite communications technology in conjunction with a ground-based air

The electromagnetic spectrum is defended by the USSF from interruption or distortion from adversaries. Spectrum-based technology is vital for intelligence operations, communications systems and situational awareness, like radar.

Hoehn, 2022

strike on communications technology to effectively eliminate an enemy's command and control capabilities (Curtis E. Lemay Center, 2021).

DCS operations protect U.S. space assets from attacks, infiltration, and natural space disasters (like meteor collision) in the space segment (e.g., orbiting satellites), the ground segment (e.g., space operations centers and stations), and the link segment (the electromagnetic spectrum) (Curtis E. Lemay Center, 2021).

Space Force bases are currently located in Florida, Colorado, and California (U.S. Space Force).

Weaponry

Counterspace weaponry is divided into four categories according to the CSIS 2023 Aerospace Security Project: kinetic physical, non-kinetic physical, electronic, and cyber (2023).

Kinetic physical weapons “attempt to strike directly or detonate a warhead near a satellite or ground station” through direct-ascent anti-satellite (ASAT) weapons, co-orbital ASAT weapons, or ground-station attacks (Bingen, 2023).

For example, in 2007, China utilized direct-ascent ASAT weaponry to destroy and aging Chinese satellite. However, this use spread over 3,000 pieces of trackable debris into the atmosphere and onto earth, threatening other orbiting satellites and creating a global controversy which still effects debris-creating tests to this day (Way, 2022).

Non-kinetic physical weapons physically effect satellites or ground systems without making physical contact using high-powered laser (HPL), high-powered microwave (HPM) weapons, electromagnetic pulse attack, or nuclear energy (Bingen, 2023).

For example, in 2006, there were reports of American satellites being “dazzled” (or rendered temporarily sightless) as they passed over China, seemingly demonstrating the country’s ability to disrupt U.S. space systems (Way, 2022).

Electronic attacks target the way space systems transmit or receive signals, either through jamming or spoofing, and cyber-attacks consist of data inception and monitoring, data corruption, and seizure of control (Way, 2022).

For example, in 2009 Iraqi insurgents manipulated commercially available software to intercept and decode video surveillance through satellite communication links from U.S. aircrafts, rendering them able to see what the U.S. military was seeing in real time (Way, 2022).

Research and Development

Hypersonic Missile
– nonnuclear
offensive weapons
that fly faster than
five times the speed of
sound and spend most
of their flight in the
Earth’s atmosphere.
*Congressional Budget
Office, 2023*

In 2023, John F. Plumb testified before the House Armed Services Strategic Forces subcommittee to emphasize the importance of adequate funding for the development of space technology. Specifically, Plumb cited China as the most significant threat, saying “China ultimately seeks to challenge [the U.S.’s] ability to conduct joint operations in the Indo-Pacific” – a region where territories of both the U.S. and China are located.

The FY2024 defense budget increased the USSF budget by approximately \$4 billion to \$33.3 billion, and the majority of the spending will go to the research and development of advanced technologies in the aforementioned weaponry categories, as well as increasing communications strength, more precise navigation and position, and advancing weather monitoring systems.

Congressional Action

The Space Force was established on December 20, 2019, through the National Defense Authorization Act for FY2020 (United States Space Force).

Since the inception of the force, congressional action relating to the USSF has been limited to budget increases in FY2021, FY2023, and FY2024 (U.S. DoD).

IDEOLOGICAL VIEWPOINTS



Hypersonic Weapon
*[National Defense
Magazine]*

While the Space Force has been regarded publicly as a partisan-based joke due to similarities with popular space-media like Star Trek, Guardians of the Galaxy, and Battlestar Galactica, the \$738 billion military bill which authorized the creation of the Space Force passed the House and the Senate with bipartisan support (Edmondson, 2019). A bloc of progressive Democrats and libertarian Republicans posed the biggest threat to the passing of the bill.

According to a study by the Pew Research Center in 2015, liberals in the American public are more likely to support the establishment of a governmental presence in space, and generally both conservatives and Republicans are in favor (2015).

However, liberal-conservative views on the Space Force shifted in 2019 during the installation of the force – a change which can likely be partially attributed to the socially polarized, partisan civil arena of the Trump presidency.

Conservative View

Conservatives generally support military endeavors and spending, in contrast with the general conservative ideal of small

government. Conservatives generally seek an increased military budget. However, libertarians starkly disapprove of the expansion of government increased government spending.

Liberal View

Generally, liberals oppose increased militarism due to the strain military spending puts on the national budget, despite the liberal ideal of increased government responsibility. Liberals are more likely to support reductions in military spending in favor of social welfare spending.

Liberals father to the left will be concerned about the morality of militaristic dominance, citing the U.S. military's sphere of influence as corrosive to global democracy.

However, liberals generally approve of measures to increase national security, and will agree on increasing funding for means of national protection.

AREAS OF DEBATE

Global supremacy and a sharpened edge have guided the defense sector's progress steadily in the past century. The Space Force plays a critical role in sustaining a military advantage over China, due to the ensuing armament race and mounting conflict in the Pacific theater. The DoD's 2024 objectives cite the USSF as central to achieving supremacy and deterring both the loss of military strength rank and further aggression (U.S. DoD).

The decisions made by policy makers during the early stage of the Space Force's development are vital. Rapid technology and weaponry development is vital to asserting the force as a credible actor to international adversaries and the domestic public. However, the efficiency of internal organization must not be overlooked.

Lethal Weapons Procurement

The DoD allocated \$61.1 million across all domains to "continue developing, modernizing, and procuring lethal air forces (DoD, 2023), including unmanned aircrafts, and **hypersonic** and ballistic missiles. This technology is aggressive as it is aimed at human life rather than at space systems. Increasing the Space Force's supply of lethal arms could aid in developing the credibility of the USSF as a viable, strong branch of the military in its early stages (Kramer, 2023).

Amassing advanced technology is critical to military superiority and combat readiness. However, rapid development can instill fear and hostility in competitive nations like China. Developing

technology for attacks takes an offensive perspective on conflict on the global stage and could have significant implications on furthering the growing arms race with China.

Political Perspectives on this Solution

Liberals are generally less in favor of procuring armament for conflict and are generally more in favor of armament in times of peace.

While liberals are generally opposed to increasing militarism, some liberals become less steadfast in holding onto this perspective when militarism is deemed crucial to national defense. With tensions rising with China, national defense by increased militarism is becoming an increasingly more moderate.

Senators with experience in the military are more in favor of increased militarism, and far-left liberals are more likely to strongly oppose weapons development.

Advancing Counterspace Capability

As mentioned, significant counterspace capability is critical to the future of the space force. Developing counterspace technology increased the militarism of the USSF at a less aggressive tone than developing lethal space weapons. Counterspace capabilities – specifically electrical jamming – proved to be a critical use of space technology amidst the Russia-Ukraine war, so precision and advancement are vital to the USSF.

The level of lethality the USSF develops in its beginning years will set standards for how the force functions on the global stage and within the branches of military.

Political Perspectives on this Solution

Senators who are more in favor of military superiority as national defense strategy will air on a more aggressive perspective, while senators who resist advancing too far for fear of a rapid armament race will likely support counterspace capabilities over lethal weaponry.

Research

A pertinent component of the space force is the manipulation of cyber space as a battle front. Both defensive and offensive military technology exists in cyberspace. As more forms of warfare become **cyberwarfare**, cyberspace defense and attack technology become increasingly critical to military modernization and superiority.

Unfortunately, technological research takes considerable time and money. Most research on a specific topic is done through outsourcing to university labs, which are costly, and require time to vet the institution and the team, conduct research, and come up with effective solutions.

Cyberwarfare – the use of computer technology to disrupt the activities of a state or organization, especially the deliberate attacking of information systems for strategic or military purposes.
-Oxford Dictionary

Satellite
counterspace
technology



USSF

Political Perspectives on this Solution

Both liberals and Democrats are likely to support cyberspace weaponry and defense development, however, conservatives are more likely to consider cyberwar technology as secondary to arms.

Cold War – “a state of political hostility characterized by threats, propaganda, and measures short of open warfare”
Oxford Dictionary

Strengthen Internal Operations

Four years into its operations, the force’s personnel development has proven to be a slow, meticulous process. The USSF has currently employed about 9,000 personnel, just over half of its projected goal of 16,000 Guardians.

The USSF is committed to maintaining high standards of diversity and Guardian excellence (USSF). However, with increasing tension with China, the lack of available personnel may pose a significant threat.

Thus, Congress must decide: should the Space Force rapidly hire enough personnel to make its goal, or should recruitment remain exclusive?

Political Perspectives on this Solution

Liberals are generally in support of diversity, and strongly support the effort to hire diverse perspectives consciously. Conservative senators are generally indifferent to efforts on diversity and will not oppose this value unless the slow mobility of the hiring process and lack of personnel puts the Space Force at a disadvantage.



*U.S. Space Force Master Sargent Ana Afonso
“Afonso says she feels most connected to her Filipino roots by celebrating with food and family.”*

[USSF]

BUDGETARY CONSIDERATIONS

In 2024, military depending under the DoD has increased to an allotted \$842 billion of the U.S. National Budget – an increase from FY2023’s \$816 billion (U.S. DoD, 2023). The President’s budget increase is in an effort to maintain “a ready, lethal, and combat-credible joint force with laser focus on China and [to address] ... the acute threat from Russia,” according to the DoD press office (2023).

\$33.3 billion is specifically allotted to “vital space capabilities” (U.S. DoD, 2023).

CONCLUSION

The pending threat of Chinese armament is a key factor to consider. Technology and weaponry are developing rapidly in both the U.S. and China, heightening tensions that could easily escalate into conflict. Whether or not more armament and technology development move into a **Cold War**-esque arms race will be

determined by how aggressively each actor amasses and deploys developed technology.

However, regardless of the current state of play for the Space Force, the path of action the force takes in its beginning years will lay the foundation for how the USSF will interact with other actors. Which senators believe that the U.S. military should continuously assert dominance and superiority? These senators will likely be in support of further aggressive actions, to prove the USSF's strength. Senators who represent states that hold less favorability to militarism might support a more docile, protective future for the force.

GUIDE TO FURTHER RESEARCH

This briefing is intended to provide a high-level introduction to the challenges faced by the Space Force and should be used as a starting point for your own research. The following resources will be vital for developing your understanding of the issue and refining the position you'll choose to take during the conference and the policies you may advocate for.

For more information on the USSF, take a look at the official USSF website (<https://www.spaceforce.mil/>).

For more information on government spending or legislation, go to [congress.gov](https://www.congress.gov), [defense.gov](https://www.defense.gov), or other official government sites.

The Center for Strategic and International Studies and the Congressional Research Service also provide credible information on governmental affairs.

To learn more about potential solutions, it is recommended that you explore resources like think tanks, policy centers, and trusted news sources.

GLOSSARY

Cold War – a state of political hostility characterized by threats, propaganda, and measures short of open warfare.

Cyberwarfare – the use of computer technology to disrupt the activities of a state or organization, especially the deliberate attacking of information systems for strategic or military purposes.

Hypersonic Missile – nonnuclear offensive weapons that fly faster than five times the speed of sound and spend most of their flight in the Earth's atmosphere.

Counterspace capabilities – the offensive and defensive operations which attain and maintain the desired control and protection in and through space.

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