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Space as a Warfighting Domain: Reshaping Defense Space Policy

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Over the past decade, there has been a shift in opinion in the nation's governing and defense-planning circles about inter-state relations in space and the duties incumbent on those in positions of leadership to adapt and respond to the reality that space is a warfighting domain. Despite arguments put forth over the past several decades by sanctuary-policy proponents that space should remain free of Earth's conflicts, reality has dictated otherwise as other powerful nations have acquired the capabilities to execute offensive and defensive operations within the space domain. There is today, in other words, an overriding assumption that the country no longer has the luxury of believing it can operate in a benign space domain. Not all countries have the same respect for the space domain as countries that rely heavily on space systems for their economy and security do. Lesser powers, such as North Korea, do not leverage space to the same extent and hence can afford not to respect it. The United States has responded with recognition of the changed dynamic in its security policies and strategies by promoting greater

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awareness of the threat and reorganizing the Joint Force and command structure to protect U.S. space assets and mature U.S. spacepower.

Pressure to bolster deterrence and prepare for the defense of U.S. interests in space is growing. Given that the United States has responded to the technological and policy developments of other nations in space by establishing a new military service with responsibility to guard U.S. interests in space, what steps will the nation take next to fulfill the U.S. Space Force mission to "defeat aggression and deliver space combat power"? Will it involve the development of policies to deliver war-winning offensive and defensive terrestrial- or space-based capabilities to protect U.S. satellites from direct attack from kinetic or directed energy weapons, or to counter or permanently remove hostile satellites from orbit? Will the next steps involve weapons deployed in space to defend the nation against, for example, ballistic or hypersonic missile attack? Even though reality dictates that space is now a warfighting arena, policy uncertainty about which U.S. activities in space are permissible remains a looming presence over these discussions and threatens to stall the maturation of U.S. spacepower.

Two major changes have occurred that make it impossible to regard space as a sanctuary. The first is that space has become vital to the America way of life. Leaders in the Defense Department have strained to make the point that losing access to space and what it provides would be catastrophic.[1] Second, other nations have deployed space assets as well as capabilities and weaponry that may be used to deprive the United States of its freedom to use space. Over the past two decades, multiple threats to U.S. space systems have emerged. China and Russia have made strategic choices to develop their spacepower capabilities, to include conducting live anti-satellite tests in low earth orbit and building capabilities that can damage or destroy U.S. space assets.[2]

U.S. dependence on space will only grow over time, which means failure to respond smartly today to a potential adversary's aggressive use of space could have deadly consequences on earth. Possible answers to these threats would involve a more assertive military presence in the orbital regions in the form of improved space control capabilities and the application of force in space. These activities, however, remain problematic because they have not been properly authorized and adequate money has not been appropriated to develop weapon systems. There is, in other words, an inadequate "policy story" to fully support such moves.

Relative Policy Consistency

National security space policy has been remarkably consistent across administrations since President Eisenhower declared it was in the interest of the United States to ensure freedom of space, which, from the earliest days, included the peaceful and scientific uses of space as well as military activities there. The right to self-defense is internationally recognized in Article 51

of the United Nations Charter, a right that all nations within the UN recognize, which also extends into the space domain.

U.S. policy statements have consistently recognized space to be a free domain so long as activities of those who use space are peaceful and nonaggressive (although they may be military). That is, peaceful purposes allow defense and intelligence-related activities in pursuit of national security.[3] Presidents Gerald Ford and Jimmy Carter laid the foundation for the idea that space is more than a domain for enhancing land, sea, and air power, which set the stage for considering the development of anti-satellite weapons to counter threatening systems under development by the Soviet Union.[4] In other words, the United States began viewing space as an active warfighting domain in the 1970s, a position that was expanded by the Reagan Administration, which sought to eliminate the threat of nuclear ballistic missile attack against the United States through the deployment in space of ballistic missile defense systems. Since 1958, the United States also has encouraged international cooperation, underscoring that commercial and national involvement with other nations would benefit the nation. Washington also has been cautiously open to undertaking measures with other nations to govern activities in space, so long as the international agreements reached are equitable and verifiable and enhance the security of the nation and its allies.

There have been a few key strategic-level developments since 2000 affecting the evolution of spacepower in the United States and U.S. space policy discussions.

- With the nation's withdrawal from the Anti-Ballistic Missile (ABM) Treaty in 2002, the door was swung wide open for the possible development, deployment, and operation of new missile defense architectures that involved space-based sensors and weapons.
- With the growth in transparency in the defense space world since 2013, there has been a greater willingness among political and military leaders to talk about threats to space systems, the types of technologies in use and counter-space systems used in actual demonstrations, and the nations developing them.
- This recognition of the threat to U.S. space systems drove the United States to take steps to consolidate the U.S. military space organization by establishing a U.S. Space Force and U.S. Space Command.

Although it has not yet issued its own national space policy, early signals by the Biden Administration indicate that it will take a realistic view of the threats to and in space.[5] The Biden policy will be constrained by an international and security environment much different than that which enabled the policy in the previous Democratic administration of Barack Obama of deemphasizing U.S. warfighting prowess in space. The significant military space developments by other nations will make it far harder to deny the fact that space has become central to warfighting scenarios envisioned by Russia, China, and perhaps other states.

Developing military policies and programs with regard to space is complicated to some extent by a broad range of existing space laws and policies that have entered into force over the past decades. There are various prohibitions and restrictions strewn among different treaties and conventions (even futuristic prohibitions, such as the Outer Space Treaty provisions banning the establishment of military bases on the Moon), and there are familiar domestic policy controversies (reflected in political arguments) about placing constraints on and funding of military space programs. And there may be some policies or limitations that existed in the past, but which are no longer legally in effect. For example, some restrictions on space weapon development were in place when the ABM Treaty was in force, but these no longer exist, as stated above. In general, though, space laws have not been the difference-maker when it comes to sanctioned U.S. activities in space. Rather, the strong and decades-old political debates over military space issues and secrecy surrounding national security space activities have had a significant dampening effect on military space planning and programs.

Military Requirement for Space Systems

During peace and in war, the mission of the Joint Force is to deter nuclear and non-nuclear strategic attacks and defend the homeland. The United States is one of the few countries that can reach out to any corner of the world to pursue a military objective or defend its interests, and space is a critical enabler of this capability. U.S. military forces must be capable of deterring and defeating the full range of conventional and nuclear threats to the United States, as well as developing new operational concepts and capabilities to win without necessarily being the dominant force in the air, maritime, land, space, and cyberspace domains. "Deterrence must be extended across all of these domains and must address all possible strategic attacks."[6]

Development of layered missile defenses is a solid requirement in today's Defense Department, and effective missile defenses must leverage the space domain to deploy sensors, especially to address the more advanced missile threats, such as hypersonic glide vehicles. With respect to the orbital region around Earth, according to a Defense Department official who introduced the Department's 2020 *Defense Space Strategy*, "our desired conditions are a secure, stable, and accessible space domain."[7] The Joint Force must also be ready to establish, maintain, and preserve freedom of operations in space and protect and defend U.S., allied, partner, and commercial space capabilities.

There are four military space missions that leverage or support U.S. space systems and, of those, two of the mission areas (space support and space force enhancement) are well established and amply supported by current policy structures, rhetoric, budgets, and actions. Space control, or ensuring freedom of action in space, and force application (*the use* of active kinetic and non-kinetic space denial capabilities and defensive capabilities) in space are two missions that are only vaguely addressed in the current policies. This is significant because there are scenarios in which passive defenses will not be sufficient to protect satellite functions,

and the employment of active defenses, or defensive force application, may be necessary. Today, the United States does not appear to be in a position to respond with agility to destructive space threats, at least within the space environment, despite a requirement to do so.[8] There is no current policy support or public discussion in the Air Force or the U.S. Space Force for the development and deployment of interceptors and strike weapons in space or advocacy for an examination of how space combat weapons might be put to strategic use.

"Any discussion of a future conflict must begin with a conversation of deterrence and what can be done, as a joint force, to prevent our adversaries from open conflict," stated General Mark Milley, Chairman of the Joint Chiefs of Staff.[9] Exploitable vulnerabilities invite attack, and there is no way to protect a single satellite against a determined attack.[10] The current U.S. approach to deterrence of attacks in space is to deny the adversary victory by reducing the likelihood of success, that is, deterrence by denial. By merely threatening to attack U.S. space systems unprotected by a strong deterrent or defenses, a country might be able to deter, or significantly alter the manner or willingness of the United States' entry into a conflict.

Deterrence of attacks on space systems presents special challenges, to include the defender being able to identify who did what to whom and respond in a timely manner. Although deterrence by denial may deter aggressors from acting, it might not be sufficient against an optimistic, aggressive and determined adversary. A more comprehensive deterrence strategy—specifically the combination of denial and punitive approaches, coupled with the deployment of offensive retaliatory capabilities (potentially in space)—may be required to convince an adversary that the costs of initiating an attack would outweigh the benefits and that the likelihood of success would be low.

Space debris is a real concern and we must pay it heed. It is sometimes argued that increased orbital debris would result from a greater military presence and combat engagements in space.[11] The greatest threat from debris is in low Earth orbit, where half of the world's active satellites circle the Earth. Space debris does not discriminate. If a nation creates debris, that debris might end up hitting one of its own satellites. We must be wary of this when we develop space combat tactics and operations. It is also true that, if the conflict stakes are high, concerns about space debris and any domestic or international condemnation of offensive or defensive space combat action could pale by comparison.

The Need for Policy Maturation

Thinking, in any case, must change. On the one hand, we speak in full recognition of space as a domain available for tactical military exploitation. Yet on the other, in what we do and what we *really* think, space is treated as a sort of haven from hostilities. If the nation is to be in a position to defend itself and pursue its interests in the age of satellites, the foundations of its national security space policy must be formed and solidified. That policy should express the

power and the will to execute the underlying freedom of space vision, which may mean undertaking active combat activities in that domain. Unless capabilities and will exist to express that power, the declarations made in a policy statement, however visionary and revolutionary they may sound, are ultimately meaningless and powerless.

Clearly, the subject of spacepower maturation requires the current administration to step up to ensure its relevance in policy discussions and drive policy direction in a way that brings the Congress along. If the subjects of space control and space force application continue to be held in private classified sessions, there is not much that can be done to advance the agenda politically and ensure the required protection of U.S. interests through the exercise of spacepower. For space policy to be fully sanctioned by the nation and by the people, other supportive actions by the nation's leadership and across the government are required, to include better public education.

There are at least three key points that must be conveyed to the U.S. public. (It should be noted that these same informational needs apply to public and government audiences in allied nations.) The first is that space is vital to daily life as we know it. Second, the public must understand what the consequences would be of failure to protect the nation's interests in space, defend its assets, or protect its territories from attacks that leverage the space domain (i.e., ballistic missiles). And third, the public must understand what space control means. The meaning of "control" will come down to conveying to domestic and foreign audiences what is being controlled (an orbit or a spacecraft), how long it is being controlled, and the purpose of this control.

The public needs information on the "who?" "what?" and "so what?" of space threats, and this will require reexamining the rules the country has in place to protect national security space information. This information must be conveyed in a manner and language that increases public understanding of the issues. Advancing public understanding of the risks involved in U.S. space activities through improved declassification procedures, to include the counter-space capabilities of American adversaries and the response capabilities available to the Joint Force, must be undertaken if the nation is to coherently and effectively deal with the threat from enemy systems.[12]

The reality of possible conflict in space almost certainly will bring significant headaches in international diplomacy (indeed, any meaningful growth will be painful). Deterrence and warfighting practices and theories of stability will have to be reexamined. New and more vicious budget wars will arise. Political leaders may not want to confront the problems that necessarily result from the maturation of spacepower.

A new vision for space, one that is bipartisan in its fundamentals, would be critical to the formulation of enduring and clear policies and strategies. The bipartisan policy should define

U.S. national military posture in space, consider overall national foreign policy and military objectives, and make it possible to develop a strategy for U.S. spacepower designed to achieve the high ends of policy. Clear and precise explanations of U.S. military space plans and actions to allies and international partners also will help U.S. leaders speak effectively to strategy, warfighting, and deterrence.

The national vision for space, and the country's national security space policy, must fold in the reality of possible combat engagements in space. If we are to ensure space dominance, the U.S. administration and the nation's lawmakers will have to take some policy risks in a time when near-peer competition in space is growing rapidly and significantly. Policy that does not actually implement and evolve U.S. spacepower is bad policy. Inaction, inadequate action, or misguided action will have negative and degrading effects, and place at risk the nation's ability to enforce its deterrence strategy and effectively fight a battle that may involve space warfare.

The Biden Administration should continue to support the establishment and evolution of the U.S. Space Force and the excellent work of the National Space Council, and undertake its own whole-of-government evaluation of existing National Security Space Policy and Defense Space Strategy to ensure they reflect 21st century space realities. It should then use the opportunity of a newly published directive to publicize broadly the U.S. vision for space, a vision that speaks clearly and unambiguously to the U.S. interest in maintaining freedom of space in times of peace and war. Unless power and will exist, the declarations made in any policy statement are ultimately meaningless and powerless. Clearly, the subject of spacepower maturation requires the administration and the U.S. Congress to ensure its relevance in defense policy discussions.

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3. See White House, *National Space Policy of the United States of America*, December 9, 2020, p.1, available at https://trumpwhitehouse.archives.gov/wp-content/uploads/2020/12/National-Space-Policy.pdf.
4. The 1976 *NSDM*-333 sought to enhance satellite survivability, available at https://fas.org/irp/offdocs/nsdm-ford/nsdm-333.pdf; and *NSDM*-345, issued in January 1977 toward the end of the Ford Administration, focused on development of the first non-nuclear ASAT, laying the groundwork for the first non-nuclear ASAT test using an F-15 in 1985, available at https://fas.org/irp/offdocs/nsdm-ford/nsdm-345.pdf. "1e. The United States will pursue Activities in space in support of its right of self-defense." See Presidential Directive/NSC-37, "National Space Policy," May 11, 1978, available at https://www.hq.nasa.gov/office/pao/History/nsc-37.html
5. According to Space Force Commander, General Raymond, "I have had an opportunity to talk with President Biden. The president and the vice president came over to the Pentagon and met with the Joint Chiefs, so I was there and I had an opportunity to talk about the strategic environment that we face. I was very pleased to hear that the administration came out in full support of the Space Force. It was really clear that everybody understands the importance of space to our nation and just how critical the standup of the Space Force is to stay ahead of a growing threat." Jacqueline Feldscher and Lara Seligman, "Q&A: Chief of Space Operations Gen. Jay Raymond," *Politico Online*, February 26, 2021, available at https://www.politico.com/news/2021/02/26/politico-pro-q-a-chief-of-space-operations-gen-jay-raymond-471646.
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10. Doug Loverro, Former Deputy Assistant Secretary of Defense for Space Policy, "Space Warfighting Readiness: Policies, Authorities, and Capabilities," *Statement before the House Armed Services Committee*, March 14, 2018.
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