

# STRATEGIKA

Conflicts Of The Past As Lessons For The Present

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## SPACE FORCE AND WARFARE IN SPACE

IN THIS ISSUE

ANGELO M. CODEVILLA • WILLIAMSON MURRAY • JOHN YOO

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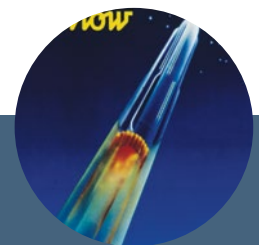
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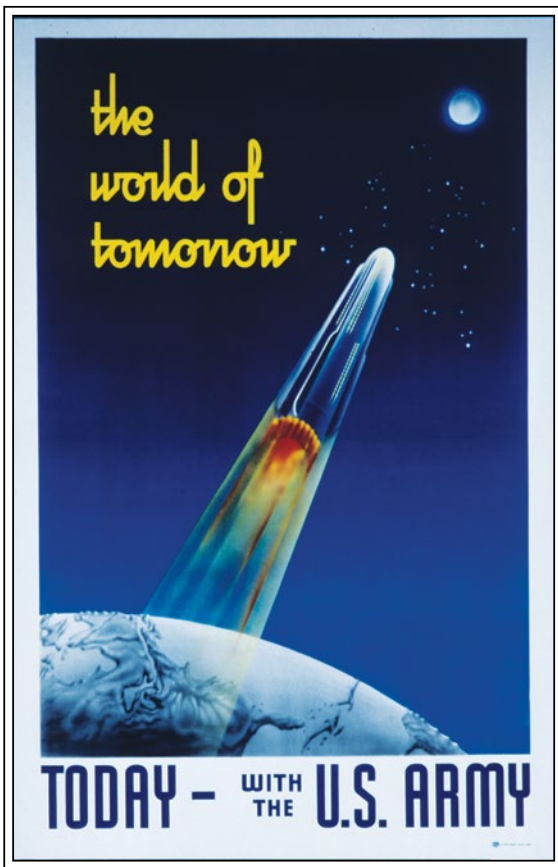


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# Winning the Space Race

By John Yoo

President Donald Trump's National Security Strategy set a new course by focusing on rebuilding the domestic economy as central to national security and aiming at "rival powers, Russia and China, that seek to challenge American influence, values, and wealth." Critics observed that the White House seemed to reverse past presidents' emphasis on advancing democracy and liberal values and elevating American sovereignty over international cooperation.<sup>1</sup>

Less noticed but perhaps equally revisionist, the Trump administration reversed its predecessor's course on outer space. Even as American military and civilian networks increased their dependence on satellites, the Obama White House had deferred to European efforts to develop a space "Code of Conduct." The Trump administration instead relies on unilateralism: "any harmful interference with or an attack upon critical components of our space architecture that directly affects this vital U.S. interest will be met with a deliberate response at a time, place, manner, and domain of our choosing." On June 18,

2018, President Trump announced a new branch of the military: the United States Space Force.

Control of space already underlies the United States' predominance in nuclear and conventional warfare. Intercontinental- and submarine-launched ballistic missiles, the heart of the US nuclear deterrent, pass through space to reach their targets. Reconnaissance satellites monitor rival nations for missile launches, strategic deployments, and major troop movements. Communications satellites provide the high-speed data transfer that stitches the US Armed Forces together, from generals issuing commands to pilots controlling drones. With economic rivals such as China and India, and rogue states like Iran and North Korea developing space programs that pursue similar missions, the importance of space technology to US interests and international peace will only increase.

Space not only enhances military operations, but also exposes new vulnerabilities. Anti-satellite missiles can make an opponent's space-based communication networks easier to disable than purely ground-based systems. Losing reconnaissance satellites could blind the United States' strategic monitoring and disabling the GPS system would degrade its operational and tactical abilities. Space invites asymmetric warfare because anti-satellite attacks could even the technological odds against Western powers that have become dependent on information-enhanced operations. As the nation most dependent on space-based networks, the United States may have the most to lose.

Strategists divide competition in this emerging arena into four categories. First is space support, which refers to the launching and management of satellites in orbit. The second is force enhancement, which seeks to improve the effectiveness of terrestrial military operations. The importance of these basic missions is well established. Indeed, the very first satellites performed a critical surveillance role in the strategic competition between the United States and the Soviet Union. Spy satellites replaced dangerous aerial reconnaissance flights in providing intelligence on rival nuclear missile arsenals. Later space-based systems provided

the superpowers with early warnings of ballistic missile launches. These programs bolstered stability and aided progress in nuclear arms reduction talks. Satellites created “national technical means” of verification: the capability to detect compliance with arms control treaties without the need to intrude on territorial sovereignty. They reduced the chances of human miscalculation by increasing the information available to decision makers about the intentions of other nations.

The United States has made the most progress in the second mission, force enhancement, by using space to boost conventional military abilities. GPS enables the exact deployment of units, the synchronization of combat maneuvers, clearer identification of friend and foe, and precision targeting. In its recent wars, the United States has used satellite information to find the enemy, even to the level of individual leaders, deploy on-station air or ground forces, and fire precision-guided munitions to destroy targets with decreased risk of collateral damage. American military leaders have argued that continued integration of space and conventional strike capabilities will allow the United States to handle the twenty-first century threats—terrorism, rogue nations, asymmetric warfare, and regional challengers—more effectively with less resources.

The third and fourth space missions focus on space itself. Space control involves freely using space to one’s benefit while denying access to opponents. Conceptually akin to air superiority, space control begins with defense: hardening command, control, communications, and reconnaissance facilities to prevent enemy interference. It includes shielding satellite components, giving them the ability to avoid collisions, disguising their location, and arming satellites to destroy attackers.<sup>2</sup>

Such forms of active defense can blend into the fourth mission: space force. Space force envisions weapons systems based in orbit that can strike targets on the ground, in the air, or in space. In an important respect, space control and force application demand a greater exercise of power than air or naval superiority. While air and naval superiority can be achieved through rapid deployment of assets for the duration of a conflict, dominance in space requires a broader geographic scope and longer-term duration—a constellation of space weapons would circle the globe for years.<sup>3</sup>

It is in this realm that new weapons technologies are emerging, prompting questions of whether space-faring nations like the United States should treat space as another area for great power competition. “The reality of confrontation in space politics pervades the reality of the ideal of true cooperation and political unity in space, which has never been genuine, and in the near term seems unlikely,” argues Everett Dolman.<sup>4</sup> The United States certainly has taken such concerns to heart. In the decade ending in 2008, for example, the United States increased its space budget from \$33.7 billion to \$43 billion in constant dollars. The entirety of this spending increase went to the Defense Department.

These weapons systems take several forms. Already operational, the US national missile defense system relies upon satellites to track ballistic missile launches and help guide ground-launched kill vehicles. Space-based lasers, like those in development by the United States today, remain the only viable method to destroy ballistic missiles in their initial boost phase, when they are easiest to destroy.

American reliance on space-based intelligence and communication for its startling conventional military advantages has made its satellites a target of potential rivals. In 2007, for example, China tested a ground-launched missile to destroy a weather satellite in low earth orbit—the same region inhabited by commercial satellites. “For countries that can never win a war with the United States by using the methods of tanks and planes, attacking an American space system may be an irresistible and most tempting choice,” Chinese analyst Wang Hucheng has written, in a much-noticed comment.<sup>5</sup>

Though the 2007 ASAT (Anti-satellite weapon) test sparked international controversy, China had only followed the footsteps of the superpowers. The United States had carried out a primitive anti-satellite weapon test as early as 1959. During the Eisenhower, Kennedy, and Johnson administrations, the United States continued to test anti-ballistic missile systems in an anti-satellite role. The Soviet Union followed suit. The superpowers temporarily dropped these programs with the signing of the Anti-Ballistic Missile Treaty of 1972, only to restart them in the 1990s. As rivals and rogue nations begin to mimic American development

of force enhancement and space control abilities, the United States will naturally develop anti-satellite weapons to restore its advantage and deter attacks. Such anti-satellite weapons may become even more common due to the vulnerability of satellites and the spread of ballistic missile technology.

Critics question whether the benefits of space weapons are worth the possibility of strategic instability. They argue that only arms control agreements and international institutions can head off a disastrous military race in space. But space will become an arena for preemptive deterrence. Every environment—land, air, water, and now space—has become an arena for combat. The United States could deter destabilizing space threats from rivals by advancing its defensive capabilities. Some realist strategists argue not just in favor of protecting US space assets, but seeking US space supremacy. Because great power competition has already spread to space, the United States should capitalize on its early lead to control the ultimate high ground, that of outer space.

Criticisms of space weapons overlook the place of force in international politics. Advances in space technology can have greater humanitarian outcomes that outweigh concerns with space weapons themselves. Rather than increase the likelihood of war, space-based systems reduce the probability of destructive conflicts and limit both combatant and civilian casualties. Reconnaissance satellites reduce the chances that war will break out due to misunderstanding of a rival's deployments or misperception of another nation's intentions. Space-based communications support the location of targets for smart weapons on the battlefield, which lower harm to combatants and civilians. Space-based weapons may bring unparalleled speed and precision to the strategic use of force that could reduce the need for more harmful, less discriminate conventional weapons that spread greater destruction across a broader area. New weapons might bring war to a timely conclusion or even help nations avoid armed conflict in the first place. We do not argue that one nation's overwhelming superiority in arms will prevent war from breaking out, though deterrence can have this effect. At the very least, space weapons, like other advanced military technologies, could help nations settle their disputes without resort to wider armed conflict, and hence bolster, rather than undermine, international security.

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1 I thank Jeffrey Senning for his excellent research assistance.

2 Benjamin S. Lambeth, *Mastering the Ultimate High Ground: Next Steps in the Military Uses of Space* (Rand, 2003), 105; Joan Johnson-Freese, *Space as a Strategic Asset* (Columbia University Press, 2007), 91–93.

3 Bob Preston et al., *Space Weapons Earth Wars* (Rand, 2002), 23; Joan Johnson-Freese, *Heavenly Ambitions* (University of Pennsylvania Press, 2009), 68.

4 Everett C. Dolman, *Astropolitik: Classical Geopolitics in the Space Age* (Routledge, 2002), 2.

5 Quoted in Johnson-Freese, *Space as a Strategic Asset*, *supra* at 197.



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From 2001 to 2003, he served as deputy assistant attorney general in the Office of Legal Council in the Justice Department of President George W. Bush. Professor Yoo is the author of a number of books, most recently of *Crisis and Command: A History of Executive Power, From George Washington to George W. Bush*.



# The Space Force's Value

By Angelo M. Codevilla

Imagine what power would accrue to the nation were its military—on the ground, at sea, and in the air—to be backed by a force able to decide whether or how any other country might benefit from objects in orbital space; if that nation were to control access to orbit, securing such objects and benefits for itself. Today, who can do what to whom in or by using orbital space makes a big difference. The world's significant militaries live by information from and communications through objects in orbital space. Inevitably, sooner or later, one will bid for the comprehensive capacity to control that space. Better that America be first. Establishing the US Space Force will endow people with the mission—the goal, the will, and the interest—to make US control of space happen.

Ever since 1960, when the United States managed the first orbital rendezvous, and hence the capacity to destroy objects in orbital space, every technology useful for space warfare has made giant strides—computing power, communications, energy storage, miniaturization, reduction of weight and vibrations, all manner of optics, pointing and tracking, control systems, etc. Continuing advances offer ever-more tempting options for offense and defense in orbit. It is impossible to imagine any major war's operations henceforth without competitive destruction of satellites. Because orbital space is ballistic missiles' highway, satellites offer the only prospect of anything like preclusive defense against them through control of access to space. Moreover, orbital fire control systems—which America now lacks—are key to efficient operation of surface-based missile defenses.

But for human beings to turn any technology's potential to military effect, those who really want to do it must be in a position to make it happen. Though the logic of war and technology has long counseled establishing a US Space Force, the logic of military bureaucracy has forestalled it. The existing military services' bureaucratic interests have obscured the fact that orbital space is itself a major theater of operations, victory in which might be decisive for victory everywhere else. That is why establishing the US Space Force is no mere rewiring of bureaucratic diagrams.

Understandably, the US Air Force has objected most ferociously. The USAF already lost the claim that had justified its separate existence—that manned "strategic bombing" is the key to warfare. That happened when modern air defenses, plus accurate ballistic missiles and the space sensors that act as artillery spotters for them, combined to devalue airplanes for the delivery of major ordnance. The USAF styles itself the aerospace force. But it has regarded what happens in space as instrumental to other missions and, to say the least, has not prioritized either satellite warfare or missile defense. Moreover, establishment of the Space Force will mean losing some of its best people, reduced missions and promotions, and fewer contracts and postretirement jobs for senior officers. Keep in mind, however, that the military services, their missions and budgets, exist for the country, not vice versa.

America's need for serious capabilities to defend and attack satellites, as well as for a missile defense worthy of the name, has been debated for decades. Only under the Trump administration, however, have persons



Image credit: Poster Collection, GE 01530, Hoover Institution Archives.

occupied senior positions for whom these needs override other considerations (e.g., National Security Advisor John Bolton and Under Secretary of Defense for Research and Engineering Michael Griffin).

On September 4, 2018, Griffin, a former administrator of NASA, summed up to a congressional forum the technical futility that results from the self-imposed lack of precise birth-to-death information on all missile threats, and inability to transfer such information directly to surface-based interceptors. That is to be remedied by putting the requisite equipment in orbit. He also saw no technical or military reason why America should not avail itself of the opportunity we have to defend against ballistic missiles through orbit-based interceptors or lasers. The technology exists to make the devices to take care of these needs.

Safeguarding our devices in orbit is not least among these needs, and is surely the most challenging to fill. While hardening satellites may protect them against the necessarily weak flux from ground-based lasers, no satellite of any kind can possibly be protected against a megawatt laser firing through unobstructed space. Nor can hardening protect satellites against kinetic kill vehicles. Nor can satellites be safeguarded by escorts.

Because satellites are so easy to kill in so many ways, the challenge is simply this: Protecting satellites requires preventing any threats to them from reaching space in the first place. Hence, a partial defense of satellites is akin to a partial defense of virginity. But acting as the gatekeeper to orbital space the way that America and Britain policed access to the oceans during World War II is a political more than a technical problem. Nevertheless, one cannot even consider defending satellites at all unless the technical tools are in hand.

It hardly needs to be said that, technically, preventing rockets from reaching space is identical to boost-phase missile defense. Once that is in place, whether by interceptors or lasers, one may consider using it to kill enemy satellites and to protect our own.

Establishing the Space Force opens technical-military vistas, and will force us to confront choices from which we have averted attention. But an undertaking so focused on America's own interest and so pregnant of major consequences must overcome our ruling class's congenital allergy to unilateral assertion of America's own interests. Its military value may be inferior to its role as a reminder that Americans have it within ourselves to do what is necessary for our own good.



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# A New Space Service! Hurrah!!

By Williamson Murray

The talk among some commentators on America's defense, furthered by the comments of the president of the United States, is that America needs a new military service, entirely devoted to wartime and peaceful operations in space. It is a brilliant idea which possesses all sorts of possibilities. What a wonderful opportunity this would present in a time in which entitlements are increasingly siphoning funds away from other federal expenditures. A whole new service, my goodness, the opportunities seem extraordinary!

Well, what might a new service require? Certainly, a service chief and a deputy service chief, both four-star generals, would be the first requirement.<sup>1</sup> And then a whole staff of lieutenant generals, major generals, and brigadier generals, supported by innumerable colonels and lieutenant colonels with a few majors and captains thrown in to do the paper work—whoops, I meant to say computer support stuff. But our staff needs have hardly begun, because in this wonderful joint bureaucracy that Congress and the services have so carefully crafted into organizations that are expeditious and imaginative, we will need space officers at high ranks assigned throughout the joint commands, with some of them even taking the highest places, when it is their turn. And there will have to be large numbers of officers required to liaison with the other services.

The space service itself will require a large bureaucracy of officers and civil services so that it can compete in Washington for its share of the defense budget. Beyond that structure, it will have to have an even larger procurement and acquisitions bureaucracy to run complex programs with the same level of success that the joint community and the services have achieved with the Joint Strike Fighter. Unfortunately, there will be some added cost in adding new bureaucrats and serving officers to the department of defense's bureaucracy, but rest assured the nation will get a substantial return on its investment.

One must remember that in a highly technological service, the new service will require far fewer enlisted personnel than is the case with the other services: only the enlisted personnel required to plug in computers, take away a few waste paper baskets of an all computerized force, monitor the computers late at night, and bring the commanding general her coffee will be needed. The fewer enlisted personnel, then, the fewer discipline and other problems. It all really sounds like the new service will come close to the idealized academic dream, realized at All Souls College at Oxford, in which there are only academic fellows and no students: in this case a military service with few enlisted people.

The new service will definitely require its own brand-new academy. The design of the new academy will, of course, require considerable effort, while the location will throw the state governors into a dizzy of anticipation as to where it is going to be located—namely their own state. Equally important will be the creation of the uniforms for the new cadets, probably now called space people. We will have none of the boring designs of the uniforms at West Point and Annapolis, fixated as they are on the tradition of the ancient past.



Image credit: Poster Collection, INT 00240, Hoover Institution Archives.



No, like the air force academy at its inception, the uniforms of which, rumor has it, were designed by Darryl Zanuck, we will need uniforms looking into the future that will catch the imagination of the American people. Those uniforms might best be created by those wonderful people at Nike, who are now, with the help of ESPN, designing new football uniforms for college football teams, uniforms that have nothing to do with the past histories of those institutions. And yes, the new service academy will require a football team so that it can compete with the other service academies and thus further jointness throughout our military.

Finally, the new service academy, like the service that its space people will serve, will require an intensive focus on engineering and the sciences. There will certainly be none of that nonsense of learning from the past by studying military history, strategy, or human cultures. Rather, the new service with its focus on the future will, emphasize that its purpose is both to defend the United States, but equally to “go where no man has gone before”—whoops, I meant to say where no space people have gone before.

<sup>1</sup> One should note that in contrast to defense publications, the author has chosen not to capitalize words like service, joint, army, navy, marine corps, and air force in an effort to counteract the efforts of the department of defense to capitalize nouns, just like the Germans. It is, of course, a hopeless effort.

## POLL: Is there any value in creating a formal “Space Force”?

- ☐ A space force is the future of warfare, and will transcend the army, navy, and air force.
- ☐ A space force should be a coequal partner with the other branches of the military.
- ☐ A formal space force can slowly become a subsidiary branch of the existing air force.
- ☐ The future is too uncertain and we should wait and see how new weapons and strategies emerge.
- ☐ The idea is utter nonsense and be should be dropped.



**WILLIAMSON MURRAY** serves as a Minerva Fellow at the Naval War College. He graduated from Yale University in 1963 with honors in history. He then served five years as an officer in the US Air Force, including a tour in Southeast Asia with the 314th Tactical Airlift Wing (C-130s). He returned to Yale University, where he received his PhD in military-diplomatic history under advisers Hans Gatzke and Donald Kagan. He taught two years in the Yale history department before moving on to Ohio State University in fall 1977 as a military and diplomatic historian; in 1987 he received the Alumni Distinguished Teaching Award.

## Discussion Questions

1. Would a space force weaponize existing satellites?
2. Would a space force place military bases on the moon?
3. To what degree, if any, would a space force trigger a new arms race in outer space?
4. Should the United States pursue its own space force or do so in conjunction with its NATO allies?
5. Could a war in space be confined to space or mostly be a way of enhancing war on earth?

IN THE NEXT ISSUE

The Structure of World Power



## Military History in Contemporary Conflict

As the very name of Hoover Institution attests, military history lies at the very core of our dedication to the study of “War, Revolution, and Peace.” Indeed, the precise mission statement of the Hoover Institution includes the following promise: “The overall mission of this Institution is, from its records, to recall the voice of experience against the making of war, and by the study of these records and their publication, to recall man’s endeavors to make and preserve peace, and to sustain for America the safeguards of the American way of life.” From its origins as a library and archive, the Hoover Institution has evolved into one of the foremost research centers in the world for policy formation and pragmatic analysis. It is with this tradition in mind, that the “Working Group on the Role of Military History in Contemporary Conflict” has set its agenda—reaffirming the Hoover Institution’s dedication to historical research in light of contemporary challenges, and in particular, reinvigorating the national study of military history as an asset to foster and enhance our national security. By bringing together a diverse group of distinguished military historians, security analysts, and military veterans and practitioners, the working group seeks to examine the conflicts of the past as critical lessons for the present.

## Working Group on the Role of Military History in Contemporary Conflict

The Working Group on the Role of Military History in Contemporary Conflict examines how knowledge of past military operations can influence contemporary public policy decisions concerning current conflicts. The careful study of military history offers a way of analyzing modern war and peace that is often underappreciated in this age of technological determinism. Yet the result leads to a more in-depth and dispassionate understanding of contemporary wars, one that explains how particular military successes and failures of the past can be often germane, sometimes misunderstood, or occasionally irrelevant in the context of the present.

## *Strategika*

*Strategika* is a journal that analyzes ongoing issues of national security in light of conflicts of the past—the efforts of the Military History Working Group of historians, analysts, and military personnel focusing on military history and contemporary conflict. Our board of scholars shares no ideological consensus other than a general acknowledgment that human nature is largely unchanging. Consequently, the study of past wars can offer us tragic guidance about present conflicts—a preferable approach to the more popular therapeutic assumption that contemporary efforts to ensure the perfectibility of mankind eventually will lead to eternal peace. New technologies, methodologies, and protocols come and go; the larger tactical and strategic assumptions that guide them remain mostly the same—a fact discernable only through the study of history.



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