

**U.S. Military Space Policy and Strategy  
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by Theresa Hitchens, Vice President, Center for Defense Information**

First, I'd like to again thank everyone for being here and for the opportunity to speak today on a subject matter that is of increasing importance to the future of global security. I've been asked to talk about the ongoing evolution of U.S. military space policy.

As some of you may already know, the administration of President George W. Bush is expected at some point to sign – although it is unclear if it will be publicly released -- a new U.S. National Space Policy, replacing the current policy that dates to 1996 and the Clinton era. This so-called presidential decision directive will be the capstone document to a number of specific new national policies (such as on space imaging) and military policy, strategy and doctrinal documents that have emerged from the current administration and the Pentagon over the last four years. Most importantly, the new policy is expected to give a green light to the strategy already articulated by DoD and the U.S. Air Force to fight “in, from and through space,” turning upside down some 40 years of U.S. policy and practice that put a priority on the peaceful uses of space.

The Department of Defense and the Air Force already have laid out, in impressive detail, this new military space strategy in documents such as the Joint Doctrine for Space Operations (JP 3-14) of August 2002 and the U.S. Air Force Counterspace Operations Doctrine (AFDD 2-2.1) of August 2004. These documents seek to codify U.S. intentions to conduct space warfare both for defensive and offensive purposes; and to establish “space control” at least in wartime if not in peacetime (the distinction is a bit unclear, given the premium put on preemptive warfare by current U.S. national security strategy and the Pentagon's military space strategy alike). There are two basic missions currently envisioned for space weapons (which I define as systems based either terrestrially or in space for antisatellite missions; or systems based in space designed to attack terrestrial targets).

1. So-called counterspace operations – “defensive counterspace operations” using antisatellite weapons to defend U.S. space assets as well as “offensive counterspace operations” to attack adversary satellites or third-party satellites, government or commercial, being used by an adversary. The Counterspace Operations Doctrine further stakes out the possibility that the Air Force might attack satellites that MIGHT be used by an adversary in a preemptive strike. While Air Force officials insist that the priority will be on using “temporary and reversible means” – such as jamming or hacking -- the Pentagon does not rule out using destructive measures that would create dangerous space debris. Indeed, according to DoD officials, the Pentagon’s classified Space Control Policy very pointedly **rules out** ruling out destructive measures such as kinetic energy or destructive laser ASATs.
2. The second mission envisioned for space weapons is so-called global strike – that is, attacking terrestrial targets either through space (that is via a space plane or perhaps non-nuclear ICBMs) or from space-based platforms. This mission includes space-based missile defense operations, but also the possibility of offensive strikes on ground targets such as deeply buried bunkers. The goal of offensive global strike operations is to be able to strike anywhere in the world in less than 90 minutes; preferably as little time as 30 to 45 minutes.

The new presidential policy document, then, likely will simply provide political blessing for what already has been determined at the elemental military space strategy. So the question becomes, how far along is this space warfare and space weaponization strategy? Has it actually been implemented? And the answer to that is: not yet. There are several reasons why. First, many of the technologies required to do so are in early stages of development. Second, cost is a factor – space operations of any kind are expensive. Third, there remains a political debate in the United States about the geostrategic wisdom of becoming the first country to weaponize space.

The Air Force HAS laid out a vision of the new weapon systems it would need to fully implement a space warfare strategy by the 2030 timeframe, under a document called the FY 03 USAF Transformation Flight Plan. This document included a detailed annex of specific space weapon systems such as: an Air Launched Anti-satellite missile; Space-Based Radio Frequency Weapon; relay mirrors to bounce killer lasers onto satellites in both Low Earth Orbit and in Geosynchronous Orbit where most commercial communications satellites reside; and the infamous Hypervelocity Rod Bundles (Rods from God) for striking targets on Earth.

At the same time, a small number of the space systems listed in the FY 03 Transformation Flight Plan already have made it into the Pentagon's budget already. These include the Counter Communications System, a mobile, ground-based systems for jamming satellites. The first CCS was delivered in October 2004 to the 76<sup>th</sup> Space Control Squadron in Colorado Springs; and at least two more are planned. Very few details have been released publicly about this system, however. I will note that, in my mind, it is difficult to classify CCS as a true space weapon – as it is from all available evidence nothing more than a new, perhaps more powerful, radio-frequency jammer and the U.S. military has employed myriad RF jamming systems in the past. Nonetheless, CCS is being budgeted in the pot of Air Force money dedicated to “Counterspace Systems” and Air Force officials have touted it as the first “space control” system to come on line. Another system envisioned in the Transformation Flight Plan for which technology development is being funded is the Evolutionary Aerospace Global Laser Engagement system (a program that first appeared in 2002 in briefing documents of the Air Force Research Laboratory), essentially a network of laser relay mirrors to be based high in the atmosphere or in space to bounce ground-, air- or potentially even space-based lasers at enemy missiles or satellites. In addition, U.S Missile Defense Agency officials have coyly mentioned that the Pentagon is investigating other missions for the Airborne Laser, without specifying those missions – and industry sources have said that one such mission is ASAT operations using relay mirrors.

There are a number of other research programs in the unclassified Air Force budget on technologies that could enable space weapons, such as the XSS-11 experimental satellite launched this year and designed to demonstrate a capability to autonomously conduct close maneuvers around a larger satellite, but my point here is that research aimed at developing the systems envisioned by the Transformation Flight Plan is ongoing.

Unfortunately, it is impossible to say how much money is being targeted at space weapons-related R&D. Due to the way the Air Force budgets for technology development, using budget pots of monies for broad categories, such as “Multidisciplinary Advanced Development Space Technology,” it is impossible to calculate exactly how much funding has been or is planned for weapons enabling technologies. An analysis of the FY 06 budget by myself, Jeffrey Lewis of the University of Maryland, and Michael Katz-Hyman of the Stimson Center identified only about \$300 million dedicated to such technologies; but that doesn’t necessarily mean there isn’t other research being funded.

First, fully half of DoD spending on space is classified. Further, myriad agencies and military services are involved in space research, from the Air Force to the Navy to the Defense Advanced Research Planning Agency to the Missile Defense Agency. And, as noted above, much research is essentially hidden in plain sight in nonspecified funding pots. What we do know is that total DoD spending on space, both unclassified and classified and including spy satellites, is set at \$22.5 billion in FY 06, and is expected to rise to at least \$25 billion by FY 09 (up from about \$14 billion five years ago).

What I can also say is that even if the new presidential policy blesses the Pentagon’s space warfare strategy, it remains unclear whether Congress will be willing to fund it much beyond basic technology research. Space is an exceedingly expensive place. To fully implement the capabilities necessary to fight “in, from and through” space, hundreds of billions would have to be dedicated to developing new weapons, launching thousands of new on-orbit assts, and maintaining those systems once they are deployed. With launch costs remaining at \$22,000 per kilogram, and current satellites in LEO

weighing up to 4,000 kilograms, the price tag rapidly becomes exorbitant – hundreds and hundreds of billions of dollars. Further, Congress is already expressing concerns about the costs of today’s Air Force space programs that have nothing to do with controversial ASAT or space-strike systems. Programs such as the Transformational Satellite System designed to replace current military communications satellites, and the Space Radar to replace aging U.S. early warning satellites, are years behind schedule and tens of millions of dollars over budget. Congressional reaction to Air Force budget requests for new space weapons programs based on unproven and yet undeveloped technologies may well not be all that favorable. In addition, space weapons remain controversial politically and the concept unpopular with broad U.S. public opinion – and a unilateral move by the United States to weaponize space is likely to also face harsh international political resistance and possible backlash as other nations seek to compete with their own space weapons programs. Indeed, recognizing these facts, the House Armed Services subcommittee on strategic forces, which is responsible for the military space budget, plans to hold hearings sometime in June on the question of “space control” and space weaponization.

Thus, the future of the U.S. military in space remains somewhere between the Buck Rogers vision of the would-be space warriors in the Air Force and the current, more benign reliance on space largely for support of terrestrial operations. I can only advise: watch this space.

Thank you, and I would be happy to take questions.