



Space Security

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STANDARD VERSION

CDI Fact Sheet: Questions on U.S. Plans for Space Weaponization

Recent press reports and statements by U.S. Air Force officials have raised a number of questions about U.S. plans to “fight in, from and through space.” Does current U.S. military space policy and strategy, led by the Air Force, represent plans for the deployment of space weapons? [1] Does the United States intend to develop destructive antisatellite weapons that would create dangerous space debris? Does the U.S. strategy envision the use of space-based weapons for attacking targets on Earth? Unfortunately, the answers to those questions remain unclear – largely because of discrepancies amongst various sources. Below find a series of the three major questions regarding U.S. military space plans, followed by statements from official sources.

Do Pentagon plans for achieving the Air Force’s stated goals of “space superiority” and “space control” include the deployment and use of space weapons?

“Counterspace Operations: Air Force Doctrine Document 2-2.1,” Aug. 2, 2004, United States Air Force; http://www.dtic.mil/doctrine/jel/service_pubs/afdd2_2_1.pdf

“U.S. Air Force counterspace operations are the ways and means by which the Air Force achieves and maintains space superiority. Space superiority provides freedom to attack as well as freedom from attack [emphasis in the original].”

“Space superiority is gained and maintained through counterspace operations Counterspace operations have defensive and offensive elements These operations may ... achieve a variety of effects from temporary denial to complete destruction of the adversary’s space capabilities.”

“OCS [Offensive Counterspace Operations] may target and adversary’s space capability (space systems, terrestrial systems, links, or third-party space capability), using a variety of permanent and/or reversible means. The Five D’s – deception, disruption, denial, degradation and destruction – describe the range of designed effects when targeting an adversary’s space systems.”

Joint Doctrine for Space Operations: Joint Publication 3-14, Aug. 9, 2002, Office of the Joint Staff; http://www.dtic.mil/doctrine/jel/new_pubs/jp3_14.pdf

“Space control operations provide freedom of action in space for friendly forces while, when directed, denying it to an adversary, and include broad aspect of protection of U.S. and U.S. allied space systems and negation of enemy adversary space systems. Space control operations encompass all elements of the space defense mission and include offensive and defensive operations by friendly forces to gain and maintain space superiority and situational awareness...”

“Negation. Measures to deceive, disrupt, deny, degrade, or destroy an adversary’s space capabilities. Negation can include action against the ground, link, or space segments of an adversary’s space system.”

Strategic Master Plan FY06 and Beyond, Oct. 1, 2003, Air Force Space Command;

<http://www.peterson.af.mil/hqafspc/library/AFSPCPAOffice/Final%2006%20SMP--Signed%20v1.pdf>

“OCS capabilities are intended to negate adversary space services. ...

“AFSPC will transform its [counterspace] capabilities by fielding revolutionary capabilities to leapfrog ahead to fulfill the mission area’s needs through the Mid- and Far-Terms. Examples include:

- OCS – Full spectrum, space-based OCS systems that bring the capability of negating adversarial space capabilities.”

The U.S. Air Force Transformation Flight Plan November 2003, Future Concepts and Transformation Division, United States Air Force; http://www.af.mil/library/posture/AF_TRANS_FLIGHT_PLAN-2003.pdf

“The ability to deny an adversary’s access to space services is essential so that future adversaries will be unable to exploit space in the same way the United States and its allies can. It will require full spectrum, sea, air, land, and space-based offensive counterspace systems capable of preventing unauthorized use of friendly space services and negating adversarial space capabilities from low earth up to geosynchronous orbits.”

“Key Programs/*Future System Concepts* Enabling Transformational Capabilities: ...

Long-Term (past 2015): *Air Launched Anti-Satellite Missile, Ground Based Laser, Orbital Transfer Vehicle, Space-Based Radio Frequency Energy Weapon, Space Maneuver Vehicle, Space Operations Vehicle.*”

“Key unclassified Air Force offensive counterspace programs that will provide combatant commanders the ability to achieve space superiority include the Counter Communication and the Counter Surveillance and Reconnaissance Systems.[2] Future system concepts include the Counter Satellite Communications System, short pulse laser technology, the Air-Launched Anti-Satellite Missile, Ground Based Laser[3], Space-Based Radio Frequency Energy Weapon”

Then-Undersecretary of the Air Force and Director of the National Reconnaissance Office Peter B. Teets, in a speech to a January 2003 Air Force Association symposium, according to an article in the Pittsburgh Post-Gazette, “U.S. The Leader in War Plans for Space,” by Jack Kelly, July 28, 2003

“If America doesn’t weaponize space, an enemy will.”

Lt. Gen. Daniel P. Leaf, vice commander Air Force Space Command, interview with Foreign Policy online, “Seven Questions: Space Weapons, Part II, August 2005

“[Offensive counterspace operations] deny adversaries access to space capabilities. That does not necessarily mean combat in space or direct attacks on satellites.”

Gen. Lance Lord, commander of Air Force Space Command, quoted in an article in the Fort Worth Star Telegram, “Talk of weapons in space is denied,” by Chris Vaughn, July 28, 2005

“We’re not talking about weaponizing space.”

Is the U.S. Air Force pursuing destructive anti-satellite weapons, including debris creating kinetic energy and laser weapons, to achieve “space superiority” and “space control?”

Counterspace Operations Doctrine

“OCS Targets. OCS operations seek and attack targets in three general categories: space nodes, terrestrial nodes and links. Space nodes may include satellite, space stations or other spacecraft. ...

- On-orbit Satellites. Satellites are on-orbit assets consisting of a mission sensor or satellite bus. ... OCS operations may target the mission sensor or the satellite bus. For example, a laser may deny, disrupt, degrade, or destroy certain types of sensors. Kinetic antisatellite weapons, on the other hand, usually target the satellite bus for physical destruction.”

“OCS Resources and Forces. ...The following are some of the forces and weapon systems that could be used, if and when available, to conduct OCS:

- Missiles. Missiles may be employed against a variety of an adversary’s space capabilities including launch facilities, ground stations, and space nodes.”
- “Offensive Counterspace Systems. These systems are designed specifically for OCS operations ... by denying their use of satellite imagery with reversible, nondamaging effects.”
- “Antisatellite Weapons (ASATs). ASATs include direct ascent and co-orbital systems that employ various mechanisms to affect or destroy an on-orbit spacecraft.”
- “Directed Energy Weapons (DEWs). DEWs, such as lasers, maybe land, sea, air or space based. ...DEWs are capable of a wide range of effects against on-orbit spacecraft, including: heating, blinding optics, degradation, and destruction.”

“Planners must decide on the desired effect – deception, disruption, denial, degradation and destruction – when targeting an adversary’s space capability. There may be times when temporary, reversible counterspace operations prove more appropriate than operations that permanently degrade or destroy space capabilities.”

Joint Doctrine for Space Operations

“Destruction. Permanent elimination of the utility of space systems. This last option includes attack of critical ground nodes; destruction of uplink and downlink facilities, electrical power stations and telecommunications facilities; and attacks against mobile space elements and on-orbit space assets.”

“Other countries may be using the same space systems as an adversary. Identifying these third-parties and understanding their dependency on the use of space systems are necessary to aid decisionmaking in order to minimize or avoid impact on others.”

“Space combat operations may impact friendly forces. For example, the creation of space debris or

jamming actions may impact friendly forces.”

Strategic Master Plan FY06 and Beyond

“AFSPC still must address the following needs between now and the planning horizon:

- Provide the capability to create reversible effects (deceive, deny, disrupt) against adversary space capabilities.
- Provide the capability to create irreversible effects (degrade, destroy) against adversary space capabilities.”

“OCS – In the Near- and Mid-term AFSPC will field initial ground-based OCS capabilities. ...These systems will deliver capability to produce reversible effects. AFSPC will continue to pursue lethal or non-lethal effects such as the use of deception, disruption, denial, degradation, and destruction of space capabilities.”

“In a scenario in which the adversary has access to commercial or other third-party space services, the ability to perform reversible negation provides greater utility to the U.S. warfighter than the ability to irreversibly negate. Adversary access to neutral-party assets is the most probable projected scenario.”

Transformation Flight Plan 2003

“The focus, when practical, will be on denying adversary access to space on a temporary and reversible basis.”

Lt. Gen. Daniel P. Leaf, “Is Arms Control Sufficient to Protect U.S. National Security in Space,” remarks to World Affairs Council, Los Angeles, Calif., March 15, 2005

“U.S. DoD Space Control Policy [*Note bene*: which is classified] states that the preferred U.S. approach to negating space systems or services hostile to U.S. national security interests is through localized, reversible and temporary effects. ... [I]t is established U.S. policy to minimize space debris.”

Lt. Gen. Daniel P. Leaf, Foreign Policy online, August 2005

“Our priority is on temporary and reversible means, not destruction. But we also know that there could be the potential for such a significant threat that destroying it might merit the resultant debris.”

Gen. Lance Lord, quoted by Inside the Air Force, “Lord: Space Command Focusing On Maintaining Space Superiority,” by Hampton Stevens, Jan. 20, 2004

Lord said his command is particularly focusing on such [reversible] effects, which temporarily degrade enemy capability, but do not permanently damage their space systems. However, he did not rule out pursuing more damaging counterspace capabilities for use when it is in the interest of national security. The United States must “protect this tremendous advantage that we have,” Lord said.

Does the United States intend to pursue on-orbit weapons to strike targets on the ground, in the air, or at sea?

Joint Doctrine for Space Operations

“Within the domain of space operations, there are four primary mission areas: space control, force enhancement, space support, and force application.”

“Space force application operations consist of attacks against terrestrial-based targets carried out by military weapons systems operating in or through space. Currently there are no space force application assets operating in space.”

“The force application mission area includes ballistic missile defense and force application.”

Strategic Master Plan FY06 and Beyond

“Planners should consider integrating future development capabilities, such as the capability to deliver attacks from space, into the campaign plan when determining how best to strike adversary Centers of Gravity (COG). Space force application systems would have the advantages of rapid global access and the ability to effectively bypass adversary defenses.”

“Space Force Application (SFA) – Capabilities to execute missions with weapons systems operating from or through space which hold terrestrial targets at risk.

“AFSPC currently cannot provide a non-nuclear, prompt global strike capability to the warfighter... .

However, completed [Land-Based Strategic Deterrent Mission Needs Statement] and Prompt Global Strike [Analysis of Alternatives] should result in selecting operationally responsive options for applying force from or through space using non-nuclear munitions.”

Transformation Flight Plan

“The key to achieving DoD’s current transformational objective of denying sanctuary to adversaries is: Rapid and precise attack of any target on the globe with persistent effects.”

“Key Programs/*Future System Concepts* Enabling Transformational Capability 13:

Near- to Mid-Term (up until 2015): Common Aero Vehicle...

Long-Term (past 2015): *BX-Bomber, Hypersonic Cruise Vehicle, Hypervelocity Rod Bundles*

[4], *New Long-Range Platform*.

“Hypervelocity Rod Bundles – Would provide the capability to strike ground targets anywhere in the world from space.”

Peter B. Teets, remarks at the Space Warfare Symposium, Air Force Association Lance P. Sijan Chapter, Keystone, Colo., June 29, 2004

“[W]e haven’t reached the point of strafing and bombing from space. Nonetheless, we are thinking about those possibilities.”

[1] Space weapons are defined for the purposes of this article as weapon systems based on the ground, in the air, at sea or in space designed to attack satellites on orbit, as well as weapon systems based on orbit designed to attack terrestrial and space-based targets. This does not include electronic warfare systems such as jammers; but does capture space-based missile defenses.

[2] The Counter Communication System was deployed in 2004; the Counter Surveillance and Reconnaissance System was canceled.

[3] “Would propagate laser beams through the atmosphere to Low-Earth Orbit satellites to provide robust defensive and offensive space control capability.”

[4] Commonly known as “Rods from God.”