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14. ABSTRACT

This paper examines the concept of operational fires and the offensive counterspace mission are to determine if future counterspace operations should be considered an operational fire. Additionally, it addresses the operational level of war implications of this determination. It begins by defining the operational level of war and concept of operational fires. Specifically, it explores the function and characteristics of operational fires. Next, the paper investigates the four space mission areas and further defines the counterspace mission. It describes the major architecture components of all space systems, the four different types of counterspace operations, the five major functions of counterspace operations and provides details of capabilities that may emerge to carry out this critica mission area.

A detailed analysis of the comparison of operational fires and counterspace operations reveals that counterspace operations should be considered an operational fire. Finally, some of the operational level of war implications that result from this determination are examined. Specifically, it focuses on the command and control issues that arise from the global nature of counterspace operations.

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Offensive Counterspace--An Operational Fire

by

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A paper submitted to the Faculty of the Naval War College in partial satisfaction of the requirements of the Space Policy Elective.

The contents of this paper reflect my own personal views and are not necessarily endorsed by the Naval War College or the Department of the Navy.

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Abstract

OFFENSIVE COUNTERSPACE --AN OPERATIONAL FIRE

This paper examines the concept of operational fires and the offensive counterspace mission area to determine if future counterspace operations should be considered an operational fire. Additionally, it addresses the operational level of war implications of this determination. It begins by defining the operational level of war and concept of operational fires. Specifically, it explores the functions and characteristics of operational fires. Next, the paper investigates the four space mission areas and further defines the counterspace mission. It describes the major architecture components of all space systems, the four different types of counterspace operations, the five major functions of counterspace operations and provides details of capabilities that may emerge to carry out this critical mission area.

A detailed analysis of the comparison of operational fires and counterspace operations reveals that counterspace operations should be considered an operational fire. Finally, some of the operational level of war implications that result from this determination are examined. Specifically, it focuses on the command and control issues that arise from the global nature of counterspace operations.

Introduction.

Over the past fifty years, the Department of Defense has spent billions of dollars developing and procuring constellations of satellites to provide critical communication; navigation; intelligence, surveillance and reconnaissance; and weather information, largely in response to the Cold War. On the heels of the Cold War, Operation DESERT STORM highlighted the need to establish a more mature distribution grid for these space utilities to enhance our military effectiveness. Moreover, during this same period, robust commercial communications and satellite imagery markets emerged offering high quality commercial space utilities of military value. These two trends, a greater United States reliance on space, and the global distribution of commercial space information, represent a high level of risk to our nation. The recently published *Report of the Commission to Assess United States National Security Space Management and Organization* clearly articulates this risk as, "direct threats to U.S. space systems and threats to U.S. military forces from foreign use of space systems."[1] The United States must develop space control capabilities to protect its access to space and to deny adversaries access in war.

The purpose of this paper is to determine if the offensive counterspace mission is an operational fire that should be planned and executed at the operational level of war. There are significant implications that stem from such a determination because they will highlight the need to develop space operational art. With the advent of the Global Positioning System (GPS), the precision and lethality provided from space have shaped the operational level of war for traditional warfighters. However, due in large part to the intense policy debate concerning the weaponization of space, the focus on force enhancement, and the building of the command, Air

[1] *Commission to Assess United States National Security Space Management and Organization Report*, (Washington DC: US Government Printing Office, 2001), 6.

Force Space Command has not fully considered the application of operational art tenets to space control.

This paper does not seek to join the space control policy debate. It begins with the premise that in the future it is inevitable that the United States Air Force will be called upon to "deter and defend against hostile acts directed at United States space assets and against the uses of space hostile to United States interests."[2] This supposition is made for the following reasons. First, counterspace is one of the stated Air Force functions and space control is one of four Air Force Space Command mission areas.[3] Second, space control is one of the six operational goals outlined in the 2001 Quadrennial Defense Review.[4] Third, and most significantly, in Operation Iraqi Freedom, the Iraqi military attempted to exploit a potential critical vulnerability by attempting to negate the navigation and timing signal provided by the Global Positioning System.[5]

Studying the application of operational art for space control or space warfare would be a task with a much broader scope than can be accomplished in this paper. In an effort to show the importance of developing the operational art for space, however, this paper will focus on the single function of operational fires. Specifically, it will address offensive counterspace capabilities that may emerge in the future to determine if these capabilities represent operational fires. This paper will not address the ability to deliver precision weapons from space. Although the delivery of such weapons in the future will arguably also represent an operational fire, it is a capability that will take decades to realize. This is in contrast to the offensive counterspace

[2] Ibid., vii.
[3] Department of the Air Force, *Air Force Doctrine Document 2-2, Space Operations*. (Washington DC: US Government Printing Office, 2001), 9.
[4] Department of Defense, Office of Force Transformation, *Transformation Planning Guidance*, (Washington, DC.: Government Printing Office, 2003), 11.
[5] Jeremy Singer, "U.S.-Led Forces Destroy GPS Jamming Systems in Iraq. SPACE.COM News, 25 March 2003. Available from http://www.space.com/news/gps_iraq_030325.html. Accessed: 2 May 2003.

mission, where overcoming political hurdles represent a greater challenge than the time required to develop the technology.[6]

Preceding any analysis, this paper will start by defining the "operational level of war" and the term, "operational fire." Then, it will define the Space Control mission by focusing on the offensive counterspace mission area. Next, an analysis of the data gathered will determine if the offensive counterspace mission is an operational fire that should be planned and executed at the operational level of war. Finally, this paper will make some recommendations regarding the application of operational art in accomplishing the critical space mission.

Operational Level of War

Before defining the concept of operational fires, it is necessary to define the operational level of war that plans and execute fires. *Joint Publication 3-0, Doctrine for Joint Operations,* defines the operational level of war as, "the level of war at which campaigns and major operations are planned, conducted, and sustained to accomplish strategic objectives within theaters or other operational areas."[7]

Operational Fires

One of the significant challenges in understanding and correctly applying the term "operational fires" is the lack of common terminology. A closer examination of the historical roots of the term provides some insight into the reasons behind this lack of commonality. The concept of operational fires originated as the ground-centric, linear, sequential application of firepower that was born with the advent of the technology that significantly extended the range of fires, allowing the achievement of operational effects (historically translated to operational

[6] John Hyten, "Space Control: Enablers and Issues." Space Control Division, Headquarters United States Air Force; Available from http://www.dtic.mil/ndia/2002spacepolicy/hyten.pdf. Accessed: 2 May 2003.
[7] U.S. Joint Chiefs of Staff. *Joint Publication 3-0, Doctrine for Joint Operations.* (Washington, DC: US Government Printing Office, 2001), GL-15.

reach) on the battlefield. Operational reach is the distance and duration across which a unit can successfully employ military capabilities.[8] Prior to World War II, the term operational fires did not exist, because there did not exist a means to hit targets of operational and strategic depth.[9] Technology constraints limited fires to the tactical level of war. Therefore, it should come as no surprise that the term operational fires is most clearly defined in U.S. Army Doctrine. Army Field Manual 3-0, defines operational fires as "the operational-level commander's application of nonlethal and lethal weapons effects, to accomplish objectives during the conduct of a campaign or major operation." Furthermore, it states that planning for operational fires includes allocating apportioned joint and multinational air, land, and sea means."[10]

Air Force Doctrine is silent on the term operational fires. Operational fires, with its roots imbedded in ground warfare and linear depth on the battlefield, does not seem to be in harmony with the Air Force's more multidimensional perspective of the battlefield. One does not have to read further than the forward to *Air Force Doctrine Document 2-1, Air Warfare,* to see the expanded operational and strategic role of Airpower envisioned by the Air Force. This publication states, "Operation DESERT STORM (1991) validated the concept of a campaign in which aerospace power, applied simultaneously against strategic and operational centers of gravity (COGs), rendered opposing military forces virtually ineffective."[11] Additionally, Air Force Basic Doctrine states, "realizing that for many situations, air and space operations provide the most efficient means to attain national objectives, **commanders must persist in air and space operations and resist pressures to divert resources to other efforts unless such diversions are vital to attaining theater goals or to survival of an element of the joint**

[8] Ibid.
[9] Milan Vego, *Operational Warfare*. (Newport RI: Naval War College, 2000), 239
[10] U.S. Department of the Army, *Field Manual 3-0, Operations.* (Washington DC: US Government Printing Office, 2001), 4-6.
[11] U.S. Department of the Air Force, *Air Force Doctrine Document 2-1, Air Warfare*. (Washington DC: US Government Printing Office, 2000), i.

force.[12] Clearly, what the Air Force is describing is strategic and operational fires; however, it discusses fires in terms of effects.

Joint Publication 3-0, Doctrine for Joint Operations, broadly addresses the terms tactical, operational and strategic fires. It states that some fires "will support operational and tactical movement and maneuver by air, land, maritime, amphibious and special operations forces, while other fires are independent of maneuver and orient on achieving specific operational and strategic effects."[13] In analyzing this definition, the Army view would rightfully focus on the first type of fires, while the Air Force's view focuses more on the independent fires.

In his book *Operational Warfare*, Dr Milan Vego defines operational fires as "the application of firepower to achieve a decisive impact on the outcome of a campaign or major operation." He further states that the fires can be lethal or non-lethal and are differentiated according to their delivery platform. The greater the range and more destructive are its weapons, the more suitable a platform is for operational fires.[14]

There are several attributes of operational fires that help distinguish them from tactical or strategic fires. Operational fires are normally planned by the operational level commander, are inherently joint to ensure a synergistic application of power, and are designed to achieve operational level objectives. Lethal fires are planned to delay, disrupt, destroy or degrade operational forces, functions or facilities. Non-lethal fires are planned to impair, disrupt or delay. Electronic warfare is a critical non-lethal operational fire that can have a significant impact on the adversary's command and control capability. Operational fires are usually

[12] Department of the Air Force, Air Force Doctrine Document 1, *Air Force Basic Doctrine.* (Washington DC: US Government Printing Office, 1997), 25-26.
[13] Joint Pub 3-0, III-27.
[14] Vego, 240.

conducted outside of a defined area and normally take place prior to the beginning of the operation or campaign.[15]

Operational fires can be used for numerous purposes, however, the most common application of operational fires is to isolate or shape the battlespace of a planned or current major operation. Other uses of operational fires include facilitating maneuver, preventing the enemy's ability to maneuver, protecting forces or an area of operations, and manipulating enemy perceptions (i.e., part of a deception plan).[16]

Space Mission Areas

Air Force Space Command has four space mission areas: Space Forces Support, Space Force Enhancement, Space Force Application and Counterspace.[17] This discussion focuses on the counterspace mission area, which is defined as "those operations conducted to attain and maintain a desired degree of space superiority by allowing friendly forces to exploit space capabilities while negating an adversary's ability to do the same."[18] Under the counterspace mission areas, there are three submission areas: space situational awareness, defensive counterspace (protecting U.S. satellites from attack) and offensive counterspace.

Offensive counterspace

Offensive counterspace is defined as those operations to deny the adversary the ability to exploit space to its advantage.[19] Offensive counterspace operations involve the use of lethal or non-lethal means to negate enemy space systems or the information that is derived from these systems. To understand how this is done, one must have a basic understanding of the three

[15] Ibid., 240-242.
[16] Ibid., 244.
[17] Headquarters Air Force Space Command, Directorate of Plans, *Air Force Space Command Strategic Master Plan, FY04 and Beyond (Colorado Springs, Colorado)*, 8.
[18] AFDD 2-2, 9.
[19] Ibid.

elements of a space system. Each space system has a terrestrial segment, a space segment, and uplinks and downlinks that connect the two nodes.[20] This space system architecture provides the framework for the various methods available to conduct an offensive counterspace lethal or nonlethal attack.

Based on this architecture there are four types of operations that could be used: 1) denial and deception; 2) attack or sabotage of ground segments; 3) direct antisatellite attacks on space assets; and 4) electronic attack on the links connecting the ground and space segment.[21] There are both active and passive ways to deny and deceive an adversary's space capability. Active operations include spoofing, masking or jamming. Spoofing and masking include emitting false signals to serve as an electronic decoy. Jamming is the emitting of noise or some other signal to prevent the enemy from collecting the real signals.[22] Ground segment attacks are probably the easiest way to control adversarial access to the medium of space. Ground systems, including facilities associated with satellite command and control, data reception and relay, satellite processing, and launch facilities are vulnerable to attack and are critical to assured space access. There are also multiple ways that the space segment could be attacked. Some of these include: nuclear detonations in space, antisatellite interceptors, space mines, pellet rings, space-to-space missiles, standoff weapons, and particle-beam weapons. Finally, another way to negate the adversary's use of space is to conduct an electronic attack on his communications, data, and command links.[23] Besides a conventional attack on the ground segment, electronic attack is the easiest form of negation.

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[20] Ibid., 15.
[21] Tom Wilson, "Threats to United States Space Capabilities." (Background Paper: Commission to Assess United States National Security Space Management and Organization, 2001), 9.
[22] Wilson, 11.
[23] Commission to Assess United States National Security Space Management and Organization, Report Pursuant to Public Law 106-65, (Washington, DC.: Government Printing Office, 2001), 6.

Offensive counterspace operations can be used to achieve five major functions: deception, disruption, denial, degradation, and destruction. Deception attempts to cause the adversary to react in a manner contrary to their interests. Disruption is the temporary impairment, usually without physical damage, of the space system's capability. Denial is the temporary elimination of the space systems capabilities. Degradation is the permanent impairment of some or all of the space systems capabilities, while destruction is the permanent and total elimination of space capability.[24]

Analysis

A critical analysis of this research, indicates that offensive counterspace is an operational fire that should be planned and executed at the operational level of war. This will have major doctrinal, operational, programmatic, organizational, and training implications for the United States Air Force. However, prior to exploring the implications of this finding, a careful review of the analysis behind the finding is warranted.

Offensive counterspace operations can be conducted at all three levels of war, however, the most prevalent use will be at the operational level, supporting campaigns or major operations. Strategically, the United States could use offensive counterspace operations to coerce an enemy to decide not to engage in the fight. In January 2001, the Air Force hosted Schriever 2001, its first space war game. The game was set in the 2017 timeframe and explored counterspace requirements. The most significant finding from this war game was the ability for counterspace capabilities to serve as a strategic deterrent.[25]

[24] AFDD 2-2, 10.
[25] Singer, 1. The Schriever 2001 war game was the first of a series of Air Force sponsored war games designed to explore space control. Specifically, in a scenario set in 2017, the objectives of the game were focused on exploring ways to counter adversary space capabilities.

Because of the proliferation of commercial space communications and intelligence, surveillance, and reconnaissance capabilities, there will become a time when close space support is required at the tactical level. This will be important to remove the eyes, ears, and voice of an adversary in a tactical situation. Operation Iraqi Freedom provides a good illustrative tactical-level scenario. The U.S. Army's only retreat in the war came when an Iraqi general, located in Najaf, used his cell phone to warn his troops of an impending Apache attack. Under intense enemy fire, approximately thirty helicopters were forced to retreat, and one helicopter was shot down.[26] If the United States had a counterspace capability, in this situation it would have been prudent to remove the ability for satellite phone communications to ensure no warning could have been given.

However, the global perspective of space and the significant political, commercial and military implications of offensive counterspace operations will most likely ensure that these operations will be planned in advance and executed to meet operational objectives in a campaign or major operation. Therefore, responsibility for this mission should rest with the operational level commander.

Although, as stated earlier in this paper, there is not a clearly agreed upon definition of operational fires, offensive counterspace operations meet the various definitions of an operational fire. Using Dr Vego's definition, it is clearly an "application of firepower to achieve a decisive impact on the outcome of a campaign or major operation."[27] Analysis of the changing nature of the battlespace requires a broader, effects-based definition of operational fires. As offensive counterspace operations illustrate, an operational fire should be defined as an application of lethal or nonlethal power to achieve decisive operational or strategic effects on the

[26] Rowan Scarborough, "General Tells How Cell Phone Foiled U.S. Attack in Iraq," *Washington Times*, 8 May 2003.
[27] Vego, 239.

battlespace. This definition seeks to divorce operational fire from fire support, better incorporates lethal and nonlethal means, and recognizes the changing battlespace to include space and information operations. In fact, in Kosovo or Afghanistan, a clear case could be made for the humanitarian airdrops to be considered operational fires. These were nonlethal fires that helped shape the battlespace and were necessary to help the United States achieve its operational and strategic objectives.

Offensive counterspace operations are also consistent with the characteristics of operational fires. As described above, there are both lethal and nonlethal means of conducting counterspace operations and consistent with operational fires, lethal and nonlethal counterspace operations can be used to delay, disrupt, destroy, degrade, impair, disrupt or delay operational forces, functions or facilities respectively.

The timing of future counterspace operations is also consistent with the timing characteristics of operational fires. Operational fires are usually conducted prior to the beginning of a campaign or major operation. This would hold true for future counterspace operations as well. Moreover, to be decisive, these operations should be orchestrated with other more traditional force elements to generate a synergistic effect.[28] For example, offensive counterspace operations should be integrated with other electronic warfare missions, such as SEAD, prior to a strike mission. Additionally, counterspace missions should be planned to synchronize with other information operations to provide more decisive applications of information warfare. The operational level commander should allocate counterspace assets, assign target priorities, and establish clear rules of engagement for execution to ensure maximum combat power is applied decisively.[29]

[28] Ibid., 243.
[29] Ibid.

The primary function of operational fires is to shape the battlespace. Once again, the diffusion of commercial space capabilities and the reliance of United States military forces on space capabilities have played a critical role in the evolution of the battlefield to battlespace. The name change alone indicates today's battlefield encompasses much more than a linear physical space.[30] Physically, the depth of the battlefield has increased due to increased precision and range enhanced by the Global Positioning System. Some have argued that this increase in depth has eroded the operational level of war.[31] Ironically, it was technology that enabled the concept of operational fires with the ability to strike at operational depth, and now some have argued that technology has made the term irrelevant. However, not only has the battlefield increased physically, it has expanded into the realm of space and cyberspace. To effectively shape this battlespace, offensive counterspace must be employed to negate adversarial access. An adversary without battlespace awareness, command and control, and precision provided from space is operationally bankrupt. Offensive counterspace is not an "optional extra." In future wars, if one cannot shape the battlespace by controlling the medium of space, loss is inevitable."[32]

Another characteristic of today's battlespace is the blurring of combatants in the battlespace.[33] This holds true in space as well. The military's reliance on commercial space communications satellites is an important example. The United States military is heavily dependent on commercial satellites to meet the increased bandwidth requirements of its information-based military. For example, in Operation Enduring Freedom, the commercial

[30] David S. Alberts, John J. Garstka, and Frederick P. Stein, *Network Centric Warfare:Developing and Leveraging Information Superiority*, 2d ed. (Washington D.C.: Command and Control Research Program, 2nd ed., 2000), 60.
[31] Douglas A. Macgregor, "Future Battle: The Merging Levels of War," *Parameters* (Winter *1992-93): 33.*
[32] Colin S. Gray and John B. Sheldon, "Space Power and the Revolution in Military Affairs," *Airpower Journal (*Fall 1999*): 36.*
[33] Alberts, Garstka and Stein, 63.

satellite sector handled sixty-five precent of the U.S. military communications requirements.[34] In the future, the United States military could find itself in a position of having to negate a commercial communications satellite that is owned by a third party or consortium.

Besides isolating or shaping the battlespace, there are numerous other functions that argue for categorizing offensive counterspace as an operational fire. Although operational fires can be conducted independent of maneuver, they can be employed to facilitate one's operational maneuver. Many classify Operation Desert Storm as the first space war. The United States conducted the "left hook" or "Hail Mary" maneuver with impunity because Iraq did not have access to space-based imagery. Today, however, commercial space imagery of a quality needed for military utility is readily available. The ability to control this information gleaned from space is critical to facilitating United States' and coalition partners operational maneuver.

Another key function of an operational fire is related to force protection. Operational fires are used to protect one's area of operations and development of new bases. Counterspace operations against ISR assets, such as the use of spoofing to negate imagery of airfields, seaports, camps, and bases will be vital in future conflicts. If Saddam Hussein had the ability to pin-point the location of coalition airfields, supply points, staging areas, and target them precisely using Global Positioning System guided weapons, the effects could have been significant. In fact, it would seem logical that without space superiority or the ability to conduct counterspace operations to gain space superiority, the plan, as implemented, would have had to have been revised and most likely would have required more forces to mitigate the increased risk.

By employing counterspace operations, the United States military may be able to force an adversary into reacting operationally in a way that is not in its best interest.[35] For example, if by

[34] Carol Welsch, "Battlespace Bandwidth: Warfighter Implications and the Way Ahead." Space Programs and Integration Division, Headquarters United States Air Force; Available from http://www.sspi.org/art2/presentations/Welsch_Presentation.PDF. Accessed: 13 May 2003.

attacking an adversary's ability to command and control its forces, the United States may make it more difficult for an enemy to maneuver its forces. It may be forced to fight a more static fight. Additionally, without battlespace awareness, the adversary may be forced to disperse its forces to cover more area rather than concentrate them in mass.

Counterspace operations should also be integrated into a robust deception plan. The United States and its coalition partners may want to establish localized intelligence, surveillance and reconnaissance dazzlers or jammers in an area of little or no military value. When the imagery comes back obviously distorted, such a feint could draw attention away from the true operational plan. Once again, this capability must be employed synergistically with other means of deception to ensure the maximum effect.

Recommendations

Analysis of the definition, attributes, and purposes of operational fires and offensive counterspace operations indicates that future offensive counterspace operations should be considered an operational fire that is best planned and executed at the operational level of war. This finding has significant implications for theater combatant commanders, Strategic Command and Air Force Space Command.

As the policy debate over mission areas unfold, the Department of Defense must reconsider the application of operational art for controlling the medium of space. Specifically, Air Force Space Command and STRATCOM must address the operational functions of intelligence, logistics and protection to support this mission area. Additionally, operational planning must be defined to include rules of engagement, sequencing, synchronization, and planning of counterspace operations. Finally, Air Force Space Command must develop and

[35] Vego, 240.

exercise space operational leadership. However, the most critical and most contentious operational function as it applies to the conduct of operational fires is command and control.

Historically, one of the biggest challenges to the concept of operational fires is who commands and controls the assets. Poorly defined command and control relationships for the conduct of operational fires have resulted in needless deaths of American soldiers in the breakout from Normandy and the inefficient use of operational assets in both the Korean and Vietnam Wars.[36] The seam between tactical and operational fires is the root cause of many command and control issues between the Army and the Air Force. In the case of counterspace operations, because of the global nature of the mission and the significant political, economic, and military implications of negating space assets, seams will occur between the strategic and operational levels of war. The United States Strategic Command and the Air Force Space Command must develop a command and control philosophy to minimize these seams and to establish unity of command over space assets. Failing to do so has the potential to cause results that surpass WWII, Korea and Vietnam in their devastation.

To effectively plan and execute an operational fire, it is important to establish a command and control structure that promotes unity of effort. Command relationships must be unambiguous and understood by all components to facilitate timely engagement of targets, prevent duplication of effort, and allow for robust communication.[37] Additionally, as noted previously in this paper, the operational level commander must allocate assets, assign target priorities and define rules of engagement to ensure maximum and decisive application of power.

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[36] Charles O. Hammond, "Operational Fires and Unity of Command." (Fort Leavenworth, KS: Command and General Staff College, 1990), 29.

[37] Robert W. Madden, "A Thousand Points of Light: Integrating Operational Fires into Campaign Design." (Fort Leavenworth, KS: Command and General Staff College, 1991), 30. Problems noted with command and control in the planning and execution of operational fires were also noted in several monographs by Command and General Staff College students in the early to mid 1990s. They include: Leonard G. Tokar, Jr., "U.S. Doctrine for Command and Control of Operational Fires." (Fort Leavenworth, KS: Command and General Staff College, 1996), 23. William J. Rice, "Operational Fires—What's in a Name?" (Fort Leavenworth, KS: Command and General Staff College, 1990) 41. Hammond, 29.

There are two ways to achieve this unity of effort. First, operational command and control of the counterspace mission could be transferred to the Joint Forces Air Component Commander. This would be the optimal solution and would allow for integration of air and space effects in the Master Air Attack Plan. However, the global nature of counterspace missions will complicate the fundamental operational tenet of unity of command in theater. Specifically, the negation of a space asset, link, or ground station could have global effects that transcend the theater commander's area of responsibility, thereby affecting other regional combatant commanders. Another complicating aspect of counterspace operations is that space situational awareness, the cornerstone of the space control mission, is conducted by the 1st Space Control Squadron, located in Cheyenne Mountain in Colorado Springs under the command and control of STRATCOM. Finally, when considering space-based, counterspace operations, such as the Microsat capability described earlier in this paper, command and control, or the actual flying of the Microsat, would fall under the command and control of STRATCOM.

Another way to achieve unity of command is to centralize command and control with STRATCOM. However, centralized command and control by the functional or global combatant commander also provides challenges. Global command and control could dilute theater relevancy by hindering the responsiveness, synchronization, and integration of space capabilities into theater planning.

Air Force Doctrine Document 2-2 attempts to clarify the challenges of command and control of space assets by categorizing the effects of space systems as the discriminator for defining command and control arrangements. For those assets that will have a theater effect,

command and control should reside with the theater commander; while those operations that have global effects, command and control should reside with STRATCOM.[38]

Space functions with a theater effect should be under the command and control of the theater JFACC. Therefore, as the Department of Defense begins to develop this future mission area, there are some steps that must be taken to ensure that command and control of space forces can move forward to the theater. Such actions will allow offensive counterspace operations to be integrated into the Master Air Attack Plan. Air Force Space Command has made a big first step by having a Deputy JFACC for Space in both Operation Enduring Freedom and Operation Iraqi Freedom.

For those missions that have a global effect, STRATCOM should retain operational control of those assets. However, STRATCOM must develop the processes and procedures to ensure that the offensive counterspace capability can be a relevant capability in the theater of operations. Schriever II, the second of the space war games, focused on the issue of command and control. One of the preliminary findings contained in the Quick Look Report was that "players struggled to resolve apportionment and allocation of limited space assets to produce effects in combination with non-space platforms. Players saw the need to further explore STRATCOM's role as the coordinating authority for all attacks against space capabilities and integrator of all assets (including commercial space) to provide a true global perspective."[39] This finding does not recognize the fact that Air Force and joint space doctrine both state that command and control of space assets should be pushed to theater when the effects are theater limited. STRATCOM must develop the capabilities to chop space assets to the applicable geographic theater commander and develop responsive global command and control procedures

[38] AFDD 2-2, 17.
[39] Maj John Wagner, USAF. Point Paper on "Schriever II Quick Look Findings," (Space Warfare Center), March 2003.

when effects cannot be limited to a specific geographic theater to effectively integrate space capabilities into the theater fight.

Since the future counterspace mission is clearly an operational fire, Air Force Space Command must begin to develop the operational art associated with planning and executing this vital mission. Operational functions such as operational intelligence, logistics, protection, rules of engagement and, most importantly, command and control, should be developed as the policy debate over this mission area runs its due course.

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