AIR AND MISSILE DEFENSE AND EFFECTS BASED TARGETING

A MONOGRAPH
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Preface

The impetus of this paper stems from my course of study at the Command and General Staff College and is due primarily by the faculty of the Command and General Staff College and the Air Defense Artillery Observer Controller Team from the Battle Command Training Program at Fort Leavenworth, Kansas. While at the College, I gained a greater appreciation of the targeting process and the apparent lack of targeting within Air Defense Doctrine. In many discussions of the topic, I concluded that Air Defense Artillery could benefit from the inclusion of the targeting methodology into Air and Missile Defense doctrine particularly at the tactical level. The question became how to prove it. The School of Advanced Military Studies provided the opportunity to delve into the topic. My hope is the Air and Missile Defense community will consider the formal adoption of the targeting methodology. I further hope that this study will be the start of a change in Air and Missile Defense doctrine that will ultimately cause a deepening of integration and synchronization of Air and Missile Defense throughout the joint and Army fire support system.

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Abstract

AIR AND MISSILE DEFENSE AND EFFECTS BASED TARGETING by Major Dennis K. Kater, USA, 74 pages.

The U.S. Army currently lacks a fully comprehensive and synergistic air and missile defense strategy for combating current and future air and missile threats at the tactical level. While Army Air Defense Artillery currently provides offensive and defensive counterair doctrine for missile defense and Echelon Above Corps (EAC) operations, there is no doctrine or method for conducting offensive counterair operations at levels below EAC. This monograph seeks to remedy this flaw by analyzing the conditions necessary in creating operational synergy with regard to air and missile defense. The monograph evaluates the theory of operational synergy, the air and missile defense doctrine supporting this theory, and the current Army targeting process as a means to execute this doctrine. Recommendations include the streamlining of current Army air and missile defense doctrine into one coherent counterair doctrine, and the adoption of the Army targeting process as an integral part of air defense planning for the execution of offensive counterair operations. By adopting these modifications, the U.S. Army Air Defense Artillery can achieve a comprehensive and synergistic air and missile defense strategy that incorporates simultaneous offensive and defensive counterair operations from the tactical to strategic levels of war.

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Chapter One

Introduction

> *If the band played a piece first with the piccolo, then with the brass horn, then with the clarinet, and then with the trumpet, there would be a hell of a lot of noise, but no music. To get harmony in music, each instrument must support the others, to get harmony in battle, each weapon must support the others. Team play wins.*
>
> — General George S. Patton

This paper is about creating conditions for decisive victory. It is about the synergistic application of combat power and unity of effort. As General Patton noted, it is not the individual instrument, but the orchestra that brings harmony to music. "Team Play wins," said Patton, and the overall objective of the U.S. forces today, and for the immediate future, demands that we "fight as a joint team,"[1] capable of decisive, overwhelming victory across the spectrum of conflict.

Joint Vision 2010, established by the Joint Chiefs of Staff, states that to be the most effective force for the future, America's military must be "fully joint: intellectually, operationally, doctrinally and technically."[2] However, it is the synergy of these systems working together that creates the greatest strength. Joint Vision 2010 establishes the goal of the Joint Force for the near term, but is a goal achievable today. In accordance with Joint Vision 2010, Air Defense Artillery also seeks to create a synergistic air and missile

[1] Chairman of the Joint Chiefs of Staff, *Joint Vision 2010*, Washington, D.C., p. 1
[2] Chairman of the Joint Chiefs of Staff, *Joint Vision 2020*, Washington, D.C., p. 1.

defense system from the tactical to strategic levels of war. The purpose of this monograph is to examine how Air Defense Artillery can best achieve this goal.

Air defense currently lacks a fully comprehensive air and missile defense strategy for combating air and missile threats at the tactical level. Countering this threat requires preventing attacks from occurring through deterrence, protection of critical assets, and preemptive strikes to neutralize the threat prior to launch, and the integration and synchronization of combined arms and joint capabilities to conduct preemptive strikes and/or respond to an actual attack. Among air and missile threats, tactical ballistic missiles, coupled with unmanned aerial vehicles (UAVs) for targeting data, and cruise missiles pose the greatest threat. Although great strides have been made with regard to defensive technological and tactical solutions, preemptive air and missile defense doctrine and methods for countering this threat are underdeveloped.

The current transformation occurring within Air Defense Artillery with regard to improved Patriot capabilities, the Theater High Altitude Air Defense System (THAAD), the Tactical High Energy Laser (THEL), the medium extended air defense system (MEADS) system, and the High-Mobility Multipurpose Wheeled Vehicle-mounted Advanced Medium Range Air-to-Air Missile System or "HUMRAAM," while impressive, concentrates exclusively on the technical elements of defensive counter air. As such, the synergy offered by a comprehensive "Single Battle" counter air and missile strategy--namely, conducting simultaneous offensive and defensive counterair and missile operations throughout the joint battlespace from the tactical to strategic levels of war--is lost. In contrast, this monograph offers leaders and decision makers an integrated approach to air and missile defense strategy covering both doctrine and methods for

conducting offensive and defensive counter air and missile operations simultaneously, and presents recommendations to translate strategy into action.

The United States currently fields the most powerful armed forces in the world. The U.S. Air Force is at the forefront of this force and considered the best. However, technological superiority alone does not ensure air superiority or the ability to control the entire aerospace environment. While it is widely accepted there are only a few countries in the world that can compete with the U.S. Air Force with regard to fixed and rotary wing aircraft, the threat of large caliber artillery, tactical ballistic missiles, unmanned aerial vehicles (UAVs), and cruise missiles remains. Several trends further indicate these capabilities will not diminish in the near future, but will increase in lethality, and capability.

- Russia and India's recent successful test of ram jet missiles, capable of hypervelocity reentry.[3]
- The development and proliferation of cruise missiles to include stealth technology.
- The development and proliferation of UAVs as a multipurpose air platform, to include attack capabilities.
- The continued use and development of tactical ballistic missiles as displayed by Russian forces during the war in Chechnya and most recently by tests conducted by India.

The fact that potential adversaries continue to adapt to counter U.S. technological advantages raises concern about the current concept of the Army air and missile defense strategy. The current focus of this strategy is primarily defensive counterair, relying on the engagement of air and missile threats only after they are inbound. This is particularly

[3] Subramanian T.S., "India's Supersonic Cruise Missile," *Frontline*, (Vol 18, Issue 13, June 23 – Jul 26, 2001). Internet, http://www.flonnet.com/fl1813/18131300.htm. Accessed on 29 January 2002.

true of theater air defense.[4] Due to modern and potential future technological advancements and the ability of the threat to defeat the current system of a defense oriented counterair doctrine, this strategy may no longer be valid in accomplishing the mission of air defense. To the contrary, the potential for air and missile attacks by tactical ballistic missiles, UAVs, and cruise missiles continues to provide a challenge to U.S. forces and the Army's Air Defense Artillery branch. Given the potential consequences of an air and missile attack, developing a synergistic "single battle"[5] air and missile defense strategy based on thought, systems, and actions, should be one of the highest priorities for the Army and the Air Defense Artillery branch.

Study Methodology

The purpose of this paper is to examine Air Defense Artillery (ADA) doctrine with regard to creating operational synergy. It is an attempt to find a method for Air Defense to create a counterair "single battle" from the tactical to strategic levels of war. This paper will examine theory, doctrine, and tactics, techniques, and procedures (TTPs) in order to find the means and ways necessary in creating operational synergy.

The specific research question of this paper is "Should Air Defense Artillery (ADA) doctrinally adopt the Army targeting methodology for the planning and execution of air and missile defense operations?" Chapter Two will examine the theory of operational synergy in a modern and historical context. This will establish the theoretical foundation describing the conditions associated with the creation of operational synergy (Ends).

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[4] Theater missile defense doctrine does incorporate attack operations.

[5] The notion of "Single Battle" is derived from Marine Corps Doctrine, MCDP 1-0, *Operations*. In the single battle, the commander views his entire AO as an "indivisible entity" and conducts operations within this context.

Chapter Three is an examination of joint counter air and counter missile doctrine, and Army air defense doctrine. The chapter will examine the strategy currently used to implement counter air and counter missile operations (Ways) and to determine if these doctrines are based in principle on the theory of operational synergy.

Chapter Four is an examination of the joint and Army targeting process. This chapter will examine the targeting process as a method to synchronize and integrate air and missile defense into the overall joint counterair campaign (Means). It will also examine the ability of the targeting process to assist the Air Defense Artillery branch in assuming a leading role in the planning and execution of the joint counterair campaign.

The final chapter, Chapter Five: Recommendations and Conclusions, will provide a proposed framework for creating operational synergy with regard to air and missile defense and provide recommendations that will translate the proposed strategy into a plan of action. While the focus of this monograph is primarily at the operational level of war, due to the nature of air and missile defense, the recommendations provided in this paper will transcend the entire spectrum of war, from the tactical to the strategic, from “mud to space.”

Chapter Two

The Theory of Synergy

The ultimate goal of U.S. military forces is to accomplish objectives as directed by the President and the Secretary of Defense. For joint operations, "this will be achieved through full spectrum dominance--the ability of US forces operating unilaterally or in combination with multinational and interagency partners, to defeat any adversary or dominate any situation across the full range of military operations."[6] According to doctrine, U.S. forces will dominate not only across the full spectrum of conflict, but within all levels of war: strategic, operational, and tactical. This will only occur, however, through a concerted effort to synchronize and integrate all air, land, sea, and space forces necessary to complete an operation. The immediate effect of synchronizing and integrating all of the assets available to the Joint Forces Commander (JFC) is synergy, or creating a sum much greater than its individual parts.

While the focus of this monograph is air and missile defense, the underlying theme is operational synergy, or the ability to create a synergistic, cohesive effect, both vertically, from the tactical level through the strategic level, and horizontally, across the service components and within individual branches and functions. The requirement to create a synergistic force stems from the Chairman of the Joint Chiefs of Staff's Joint Vision 2010 and the imperative of "jointness." Joint Vision 2010 states that in order to

[6] Joint Publication 3-0, *Doctrine for Joint Operations*, 10 Sep 2001, p. xi-xii.

retain our effectiveness with less redundancy, "we will need to wring every once of capability from every source available. That outcome can only be accomplished through a more seamless integration of Service capabilities."[7]

Joint Vision 2010

In order to achieve this integration, Joint Vision 2010 states that "we must be fully joint: institutionally, organizationally, intellectually, and technically."[8] This implies a synergy of thought, systems, and actions throughout the force, to include the ability to introduce allies and coalition partners into the system. According to JV2010, this synergy must not stop with the joint force, but extend to America's allies and friends. The imperative is to seek synergy, but also "find the most effective methods for integrating and improving interoperability with allied and coalition partners."[9] Although the U.S. can and will act unilaterally, U.S. forces can expect to work in concert with allies and coalition forces in most future operations.

Joint Vision 2010, although now being superceded by Joint Vision 2020, establishes the requirement for change in the immediate future. Change must occur in technology, structure, doctrine, and most of all in the methods of applying America's combat power. "By 2010, we should be able to change how we conduct the most intense joint operations. Instead of relying on massed forces and sequential operations, we will achieve massed effects in other ways."[10] This "other way" is to concentrate all available combat power, to include maneuver, precision engagement, focused logistics, and full

[7] Joint Chiefs of Staff, *Joint Vision 2010*, 19XX, p. 8.
[8] Ibid., p. 9.
[9] Ibid., p. 9.
[10] Ibid., p. 17.

dimensional protection, across the full spectrum of operations at the decisive time and place.

A synergistic approach to warfare creates the massed effects required by Joint Vision 2010, without the need for massed forces. The result of operational synergy is the ability of American forces to dominate any situation through full spectrum dominance. Joint Vision 2010 provides a vision for the not so distant future and requires immediate action with regard to thought, systems, and actions, to fulfill its demands.[11]

The Soviet Concept of Synergy

Although the term "synergy" is found in most doctrinal manuals and theories, there is question as to the precise definition of synergy. According to Shimon Naveh, in his book *In Pursuit of Excellence: the Evolution of Operational Theory*, the Soviet military theorists of the 1920s were the first to identify the modern idea of "synergy." The Soviet idea, according to Naveh, was revolutionary because it focused at the operational level and "did not depend upon the organization or operating of a single combat element, but was anchored in system logic."[12]

Operational synergy centered on the interaction between two operational elements: the holding and the strike elements. The holding element was designed to "wear down the rival system and produce the appropriate conditions for its brother element."[13] The strike element was "designed to develop successively the operational

[11] Although Joint Vision 2020 exists, the requirements of JV 2020 are not as immediately attainable as Joint Vision 2010 requirements that can be met today.
[12] Shimon Naveh, *In Pursuit of Military Excellence: The Evolution of Operational Theory*, Frank Cass Publishers: Portland, OR, 1997, p. 221.
[13] Ibid, p. 222.

manoeuvre into depth."[14] The combining of the two elements created the conceptual framework of a "single battle" throughout the depth, width, and breadth of the battlefield.

Soviet theoreticians, according to Naveh, perceived the systemic interaction between the operational holding and strike elements as "an essential precondition for the implementation of a large-scale, successive, and dynamic manoeuvre."[15] The concept of synergy constituted "a principal determinant" in the system's ability to achieve its designed objects and goals. In other words, the Soviets determined the need for both the holding force and the strike force to operate simultaneously throughout the depth of the battlefield in support of both tactical and operational objectives. From this discussion, the Soviets determined that this concept created a theoretical and doctrinal bridge between the tactical and operational levels of war.

Operationally, while the holding force is fixing the enemy, the strike force is conducting attack operations in depth. These two actions occur simultaneously, and at different levels. Throughout each level of the organizational hierarchy, holding forces conduct echeloned defensive operations, while simultaneously strike forces conduct attacks throughout the depth of the enemy's battlespace. These actions occur throughout the tactical and operational levels of war.

Through this complex interaction, the concepts of simultaneity, fragmentation, and momentum simply become part of the operation. This synergistic approach theoretically provided the Soviets the necessary conditions to seize the initiative, surprise the enemy, and destroy the enemy's forces. The shock provided by this approach resulted in the destruction of the enemy and the loss of the will to fight. "The application

[14] Ibid.
[15] Ibid.

of operational synergism," according to Naveh, "paved the way to the materialization of *udar*,"[16] or operational shock.

The simultaneous interaction between the offense and the defense throughout the depth of the battlefield is what the Soviets believed to be the essential condition for the development of dynamic operations. In 1974, Steven Canby, in a study conducted for the International Institute for Strategic Studies, identified the operational fundamentals of the Soviet theory of maneuver. The objective of Soviet maneuver, according to Canby, is operational shock.

Operational shock causes the enemy's system to function ineffectively. It is created by combining the actions of the holding and striking echelons in the direction of the rival system's entire depth. This combination of actions can only be achieved through "an integration of mechanical and cognitive activities within the scope of the operational maneuver."[17] Canby asserts that synergy is not created in terms of organizations and equipment, but in a cognitive system of logic, combining thought, systems, and actions.

According to Naveh, the Soviets defined three layers within operational synergy. They devised these layers during the Russian Civil War and while observing the Germans and the development of the *Blitzkrieg* doctrine. The three layers within the theory of operational synergy include tactical synthesis, synchronization, and coordination.

Tactical synthesis, or all-arms combat, combines several combat arm elements against a single objective. Synchronization occurs between the operation's director and

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[16] Ibid, p. 223.
[17] S.L. Canby, *The Alliance and Europe: Part IV, Military Doctgrine and Technology – Adelphi Papers* (The Institute for Strategic Studies, London, 1974), p. 16.

the commanders of the system's components aimed at achieving simultaneity. Simultaneity and synchronization were seen by the Soviet theorists as two sides of the same coin, each supporting the other. Coordination focused on the technical qualities that make operations run smoothly. These three layers "created the practical framework for the application of synchronization"[18] and provided the ability to think and act on the concept of a single battle throughout the depth of the battlefield.

The German Approach

While the Soviets are the acclaimed fathers of modern operational art, much attention is given to the German concept of *Blitzkrieg*. According to Naveh, the Soviet idea of operational synergy differs from that of the concept of *Blitzkrieg* in that the Germans took "a techno-tactical approach" to warfare, applying tactical and technical synergy to conduct operations versus the logical, operational, systems approach of the Soviets. The second difference, noted by Naveh, is that the German concept of operational synergy does not take into consideration the notion of depth. *Blitzkrieg* is tactical combined arms tactics, whereas the Soviet concept of operational synergy stems from the idea of combined arms synchronization and cooperation throughout the depth of the enemies battlespace. Finally, *Blitzkrieg* had a "tankocentric" approach. The Germans simply focused on the close fight using tanks to achieve limited tactical objectives versus the concept of the Soviet Operational Maneuver Group. According to Naveh, "the lack of operational insight frustrated the enormous efforts exercised by the tactical echelons of the *Wehrmacht* to apply tactical synergy (*Zusammenwirken*)."[19]

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[18] Shimon Naveh, *In Pursuit of Military Excellence: The Evolution of Operational Theory*, Frank Cass Publishers: Portland, OR, 1997, p. 223.
[19] Ibid, p. 221.

Classical Theory

While the Soviets receive credit for establishing the modern idea of operational synergy, combining simultaneous offensive and defensive operations throughout the depth of the battlefield, the concept is not new. In *The Art of War*, Sun Tzu identifies a similar approach with the reciprocal concept of *Cheng* and *Ch'i*. *Cheng*, is the direct, or fixing force, and *Ch'i* is the indirect, or flanking "force of decision." Their effects, according to Sun Tzu, "are mutually reproductive" and "their blows are correlated."[20] Sun Tzu compares the *Cheng* and *Ch'i* to two interlocking rings. He states, "'Who can tell where one begins and the other ends?' Their permutations are infinite; the *cheng* effort may be transformed into a *ch'i*, a *ch'i* into a *cheng*."[21]

The *ch'i* attack is made "where decision is speedily attainable at the least cost in an area characterized by voids or fissures in the enemies defences."[22] While the *ch'i* is an act of surprise or the unexpected, the *cheng* is a more deliberate, obvious operation. According to Sun Tzu, engagement with the enemy is conducted with the *cheng*, but victory is achieved with the *ch'i*.

Like the Soviets, the concept of c*heng* and *ch'i* is not limited to the tactical level of war. Sun Tzu states "C*h'i* and *cheng* operations may be launched as well on strategic levels."[23] This indicates that Sun Tzu may have had an understanding that simultaneous offensive and defensive operations conducted simultaneously throughout the levels of war were critical to success.

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[20] Sun Tzu, *The Art of War*, translated by Samuel B. Griffith, Oxford University Press: New York 1963, p. 42.
[21] Ibid.
[22] Ibid.
[23] Ibid, p. 43.

The other great classical theorist to mention the synergy created by a simultaneous offensive-defensive strategy is Carl von Clausewitz. In *On War*, Clausewitz defined the two forms of war as the offense and the defense. Although he states, "the two are very different and unique in strength," he does suggest that the aim of both forms of war are the same, the destruction of the enemy's forces. While Clausewitz suggests "the defense is a stronger form of fighting than attack,"[24] he also notes that "within the limits of strength, a defender must always seek to change over to the attack as soon as he has gained the benefit of the defense."[25]

While the defense may be "the stronger form of fighting," it is the offense that makes victory possible. It is the attack that surprises the enemy, and it is surprise, according to Clausewitz, that provides the means to gaining superiority. Clausewitz, like the Soviets, understood the relationship of surprise and shock. In order to be victorious in war, Clausewitz suggests that surprise is needed at the decisive point and time, not only for the physical effect, but for the psychological effect as well.

Therefore, according to Clausewitz, it is the combination of these two forms of war, the defense combined with the offense, which ultimately causes physical and psychological shock. A foreshadowing of the Soviet concept of *udar*, Clausewitz asserts that shock is what ultimately leads to the defeat of the enemy's will to fight. Although written long ago, this same concept, espoused by Sun Tzu, Clausewitz, and later the Soviets, is what forms the basis of operational doctrine today.

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[24] Carl von Clausewitz, *On War*, ed. by Michael Howard and Peter Paret, Princeton University Press: Princeton 1976, p. 84.
[25] Ibid, p. 600.

Modern Doctrine

The concept of synergy, as defined by the Soviets and supported by the classical theorists, consists of combining simultaneous offensive and defensive operations in depth, breadth, time, and space in order to create a synergistic effect throughout the battlefield. The aim of this synergy is to create surprise, resulting in operational shock, enabling fires and maneuver to defeat the enemy.[26] This theory is pervasive in American military doctrine today, and provides the basis for the conduct of current and future joint operations.

Joint Doctrine

According to *The Joint Doctrine Encyclopedia*, "Synergy results when the elements of the joint force are so effectively employed that their total military impact exceeds the sum of their individual contributions."[27] Synergy is reinforced when "operations are integrated and extended throughout the theater."[28] The ultimate aim of synergy has remained constant over time. In accordance with classical military theory, and the Soviet theory of operational synergy, the overall objective of the joint force, according to the *Joint Doctrine Encyclopedia*, is "not only the enemy's physical capabilities, but also the enemy's morale and will."[29] Synergistic operations enable the joint force to conduct

[26] According to FM 3-0, *Operations*, June 2001, "Maneuver implies more than the use of fire and movement to secure an objective; it aims at the complete overthrow of the enemy's operational design." Fires and maneuver at the tactical level are interrelated like the *Ch'i* and *Cheng*, each supporting the other. Fires can be used to shape the situation and create conditions for operational and tactical maneuver. Maneuver can also shape the situation and create the conditions for operational and tactical fires.
[27] Joint Publication, *The Joint Doctrine Encyclopedia*, 16 July 1997, p. 674.
[28] Ibid.
[29] Ibid.

integrated and synchronized operations "in a manner that applies force from different dimensions to shock, disrupt, and defeat opponents."[30]

Joint Publication 3-0

The term "synergy" is not found in Joint Publication 3-0, *Doctrine for Joint Operations*, with regard to joint operations. However, the term "joint operations" is used with similar connotations. The manual states that joint operations are the "effects of teamwork and unity of effort and the synchronization and integration of military operations in time, space, and purpose."[31] Joint operations integrate all of the capabilities available to the Joint Forces Commander, who is responsible for the integration and synchronization of "the actions of air, land, sea, space, and special operations forces to achieve strategic and operational objectives through integrated, joint campaigns and major operations."[32] These campaigns and operations, as per Clausewitz and the Soviets, are designed to "not only attack the adversary's physical capabilities, but also the adversary's morale and will."[33]

While JP 3-0 does not refer to the term "synergy" within joint operations, it does mention it when referring to "unified action." JP 3-0 makes a distinction between operations coordinated within the armed forces, or "joint operations," and the term "unified action," which has a broader connotation. Unified action includes the integration and synchronization of joint operations within time, space, and purpose, but also highlights "the synergistic application of all of the instruments of national and

[30] Ibid.
[31] Joint Chiefs of Staff, Joint Publication 3-0, *Doctrine for Joint Operations*, 10 September 2001, p. II-1.
[32] Ibid, p. II-4.
[33] Ibid, p. III-9.

multinational power."[34] Unified actions include not only U.S. governmental assets, but also multinational operations, and non-military organizations. Like "joint operations," the Joint Force Commander is also responsible for ensuring all unified actions are planned and conducted within the guidance and direction of senior authorities.

Synergy, as presented in JP 3-0, reflects the Soviet definition of operational synergy. However, JP 3-0 considers synergy, along with simultaneity and depth, simply as elements of the "facets of operational art." According to JP 3-0, "synergy" is achieved "by integrating and synchronizing actions…in multiple dimensions…that present no seams or vulnerabilities to an adversary to exploit."[35] In concert with previous definitions, through the integration and synchronization of action, joint operations are "designed to shock, disrupt, and defeat opponents."[36]

According to JP 3-0, simultaneity and depth are also viewed as key components of operational art. In order to overwhelm and cripple enemy capabilities and the will to resist, JP 3-0 suggests that operations must be conducted simultaneously and in depth. "Simultaneity," as stated in JP 3-0, "refers to the simultaneous application of power against key adversary capabilities and sources of strength."[37] In contrast, "synergy," as defined by "unified action," incorporates this idea and implies that operations occur simultaneously at the tactical, operational, and strategic levels and throughout the depth and breadth of the battlefield. This is directly in concert with Soviet operational theory.

[34] Joint Chiefs of Staff, Joint Publication 3-0, *Doctrine for Joint Operations*, 10 September 2001, p. II-3.
[35] Ibid, p. III-11.
[36] Ibid.
[37] Ibid.

Army Doctrine

Current Army doctrine, like joint doctrine, also incorporates the Soviet theory of operational synergy. Within the Army's operational doctrine, Field Manual 3-0, *Operations*, the theory of synergy falls under the auspices of "full spectrum operations." However, unlike the operational framework designed by the Soviets, which only emphasizes offensive and defensive operations, the Army definition of "full spectrum operations" includes offense, defense, stability, and support operations.

As defined in FM 3-0, offensive operations aim at destroying or defeating an enemy. Their purpose is to impose US will on the enemy and achieve decisive victory. Defensive operations defeat an enemy attack, buy time, economize forces, or develop conditions favorable for offensive operations. Defensive operations alone normally cannot achieve decision. Their purpose is to create conditions for a counteroffensive that allows Army forces to regain the intiative. These definitions are in keeping with Clausewitz's concepts and support the Soviet concept of operational synergy.

Stability and support operations are not noted by the Soviets, as they did not consider this a part of war. Stability operations, according to FM 3-0, promote and protect US national interests by influencing the threat, political, and information dimensions of the operational environment through a combination of peacetime developmental, cooperative activities and coercive actions in response to crisis. Support operations employ Army forces to assist civil authorities, foreign or domestic, as they prepare for or respond to crises and relieve suffering. When conducting full spectrum

operations, "commanders combine and sequence offensive, defensive, stability, and support operations to accomplish the mission."[38]

Full spectrum operational design, according to FM 3-0, accomplishes more than one strategic purpose and may be executed simultaneously, sequentially, or both. This is, in part, due to the ability of U.S. forces to conduct non-contiguous operations within a theater of war. While large units may conduct simultaneous operations, progressively lower echelons will conduct fewer combinations. For example, "an Army corps acting as the joint force land component may allocate two divisions to attack (offense), while a third division secures a port and airfield complex (defense). The defending division may order one brigade to eliminate small pockets of resistance (offense) while two others prepare defenses in depth. Around the airfield and port, designated units distribute food and provide medical support to refugees (support). Still other corps units and Army Special Operations Forces equip and train host nation forces (stability)"[39]

As in joint doctrine, FM 3-0 distinguishes between the strategic, operational, and tactical levels of war. However, the Army manual states "without tactical success, a campaign cannot achieve its operational goals."[40] Like joint doctrine and the Soviet theory of operational synergy, integration and synchronization must occur vertically, throughout the levels of war, and horizontally, through the full spectrum of conflict.

Also, in accordance with Soviet operational theory, there exists a synergistic relationship between offensive and defensive operations. Although the focus of modern warfare is offensive in nature, there remains an inherent synergy between offensive and

[38] U.S. Army Field Manual 3-0, *Operations*, June 2001, p. 1-16.
[39] Ibid, p. 1-17.
[40] Ibid, p. 2-4.

defensive operations. At the tactical level, defensive operations defeat enemy attacks. However, the defense is "not a passive activity."[41] Army commander's seek out enemy forces and strike them to weaken enemy before close combat begins. At the operational level, "defensive operations buy time, economize forces, and develop conditions favorable for resuming offensive operations." Therefore, according to FM 3-0, major operations and campaigns combine offensive and defensive operations in order to maximize the effects of physical and psychological shock.

Conclusion

In conclusion, the Soviet theory of synergy has had a profound effect on the development of modern American operational doctrine. In concert with the great masters of classical military theory, Sun Tzu and Clausewitz, Soviet military theorists devised a comprehensive system for the conduct of modern warfare based not on organizations or equipment, but the synergy of thought, systems, and actions.

Due to the operational environment, and the size and scope of operations today, including the ability to conduct full spectrum operations simultaneously throughout a theater of war, the synergistic approach to warfare has become a necessity. In order to defeat the enemy's forces and his will to fight, all actions and activities must occur simultaneously and throughout the joint battlespace. Only then, will the concept of fighting the "single battle" come to fruition, ensuring that all activities conducted within the battlespace support the commander's intent.

America's shift from an attrition-based theory of warfare to a maneuver-based theory has also lended itself to supporting the desire for synergy. It is no longer the

[41] Ibid, p. 8-1.

desire of commanders to gain direct contact with the enemy in order to destroy the physical components of the enemy's army, but the imperative is to "preempt the enemy, that is disarm or neutralize him before the fight."[42] Combat is no longer characterized solely by defensive or offensive operations, but rather the simultaneous use of both the offense and the defense causing physical and psychological shock to occur.

The U.S. military of today has accepted the Soviet theory of operational synergy. The need to conduct hierarchically interwoven offensive and defensive operations simultaneously throughout the depth and breadth of the battlefield toward an objective is the basis of modern operational doctrine. Not only has the U.S. adopted the Soviet concept of synergy, but U.S. doctrine has further encompassed the idea of "multiple dimensions" in order to create the "multidimensional synergistic effect" needed in today's operational environment.

Soviet operational synergy theory has reached the pinnacle of thought, according to Clausewitz. No longer is the theory just a concept, but it has become doctrine. As Clausewitz notes, "Once an improved theory helps the study of the conduct of war, and educates the mind and judgment of the senior commanders, routine methods will no longer reach so high."[43] The Soviet theory of operational synergy rests solidly within joint and operational doctrine. However, while joint and Army doctrine mandate the application of this theory, what remains to be seen is the application of the theory within

[42] Robert Leonard, *The Art of Maneuver: Maneuver Warfare Theory and AirLand Battle*, Presidio Press: Novato, CA, 1991, p. 19.
[43] Carl von Clausewitz, *On War*, ed. by Michael Howard and Peter Paret, Princeton University Press: Princeton 1976, p. 154.

the force. The following chapter examines how the Air Defense Artillery Branch implements the theory of operational synergy.

Chapter Three

Counterair Doctrine

As noted in the previous chapter, the Soviet theory of operational synergy provides a logical conceptual model for the execution of operations at the operational and tactical levels of war and throughout the spectrum of conflict. Operational synergy, as a theoretical basis, ensures the integration and synchronization of thought, systems, and actions in order to achieve the desired end state. Joint counterair operations support this theory by providing the assets capable of exploiting multiple dimensions to counter air and missile threats, and provide the joint force commander with the ability to create a multidimensional synergistic effect within the overall campaign.

Like joint operational doctrine, joint doctrine for countering air and missile threats should also be based on the theory of operational synergy. Joint counter air and missile doctrine should include both offensive and defensive operations, which occur simultaneously throughout the breadth and depth of the battlefield and all levels of war. The objective of counterair operations is to deny the enemy use of all air and missile assets, while gaining control of the airspace in order to provide freedom of action for the joint force commander. This chapter will examine the extent to which joint and Army counterair doctrine support this concept.

Countering Air and Missile Threats

In order to create a multidimensional synergy, synergistic thought, systems, and actions must also occur within the airspace environment. Counterair doctrine is the basis for this strategy. Counterair doctrine enables the force commander to control the airspace environment and defend against air or missile attacks, while simultaneously denying the enemy the ability to launch future air and missile attacks. Joint counterair doctrine should provide the thought, system, and actions necessary to create operational synergy within the joint airspace.

Joint Countair Doctrine

The overarching doctrine for countering air and missile threats within the joint force is Joint Publication (JP) 3-01, *Joint Doctrine for Countering Air and Missile Threats*. While each component has a branch specific air and missile defense doctrine, JP 3-01 provides the basis for all other counterair and missile defense doctrine within the joint force. In keeping with the Soviet theory of operational synergy, the counterair framework provided in JP 3-01 consists of both offensive and defensive counterair operations, which enables the commander to deter attacks, protect the force, and pre-empt enemy air and missile attacks.

Offensive counter air (OCA) seeks to dominate the enemy's airspace and prevent the launch of air and missile attacks. OCA missions consist of Attack Operations, Fighter Sweep, Fighter Escort, Suppression of Enemy Air Defenses (SEAD) and Electronic Warfare (EW). The primary systems for offensive counterair operations are aircraft, UAVs, missiles, special operations forces, surface fire support, armed helicopters, and C4I systems.

Defensive counter air (DCA) operations are described as operations conducted to defeat enemy air threats after launch and consists of Active and Passive Defense. DCA employs a mix of weapon systems and sensors from all of the armed forces to create an integrated air and missile defense network that deters the enemy from conducting offensive air and missile operations, and protects friendly "forces, population centers, and interests from enemy air and missile threats."[44]

Active defense consists of intercepting ballistic missiles, cruise missiles, and aircraft, and is the primary mission of the Army's Air Defense Artillery branch. Passive defense "provides individual and collective protection for friendly forces and critical assets."[45] Passive measures are implemented throughout the force and include camouflage, hardening, reconstitution, NBC defense, redundancy, detection and warning, dispersal, and mobility.

Within the context of operational synergy, joint counterair doctrine provides the necessary framework to conduct simultaneous counterair operations. It is a viable framework enabling the commander to combine capabilities and forces through time and space in order to defeat the enemy throughout the depth and breadth of the battlefield.

Army Theater Air Defense Doctrine

Unlike joint counterair doctrine, Army counterair doctrine, governed by Field Manual (FM) 44-100, *Army Air and Missile Defense Operations*, consists solely of a defensive counterair strategy. While joint counterair doctrine conceptually meets the criteria of operational synergy with regard to the employment of offensive and defensive

[44] Joint Publication 3-01, *Joint Doctrine for Countering Air and Missile Threats*, 19 October 1999, p. V-1.
[45] Ibid., p.V-2.

operations, Army theater air defense doctrine does not. FM 44-100, *Army Air and Missile Defense Operations* states that theater air defense consists solely of active, and passive air defense and makes no reference to offensive counterair or attack operations within the Army counterair strategy.

While the joint definition of active air defense makes reference to "intercepting" missiles and aircraft, a more offensively oriented term, the definition of Army active air defense consists of "direct defensive action taken to nullify or reduce the effectiveness of hostile air action."[46] The emphasis of the Army definition is on defensive actions versus the more offensive oriented joint definition. The definition of passive air defense, as stated in FM 44-100, is similar to the joint definition and consists of all other measures taken to "minimize the effectiveness of hostile air and missile threats against friendly forces and assets."[47] With regard to the theory of operational synergy, Army counterair doctrine lacks the necessary element of offensive operations, and focuses entirely too much on the defensive aspect of counterair doctrine.

Unlike joint doctrine, Army air defense doctrine focuses almost exclusively on defensive counterair (DCA), which has lead to an increased momentum to distinguish between "counter air" operations, seen primarily as an Air Force mission, and "counter missile" operations, which are recognized as primarily an Army domain on land, or a Naval domain on the littorals and at sea. While both counterair and counter missile operations are considered part of the overall joint counterair campaign, offensive counterair has been left to the Air Force.

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[46] U.S. Army Field Manual 44-100, *U.S. Army Air and Missile Defense Operations*, 15 June 2000, Ch. 3.
[47] Ibid.

There are, however, several reasons for the defensive orientation of Air Defense Artillery. First, according to joint doctrine, the majority of the Offensive Counterair tasks are primarily Air Force missions, such as Attack, Fighter Sweep, Fighter Escort, Suppression of Enemy Air Defenses (SEAD), and electronic warfare (EW). Although Air Defense Artillery can support these operations in a limited manner through airspace management, information, and targeting data, Air Defense Artillery lacks the necessary resources and doctrine to assist with the majority of the tasks.

Second, the majority of the Offensive Counterair targets seen as critical to the JFC and the JFACC are beyond the Fire Support Coordination Line (FSCL) and out of the range of most tactical weapon systems. Targets beyond the FSCL are considered outside of the tactical level of influence and require operational level assets requiring coordination through the Joint Forces Air Component Commander (JFACC).[48] Third, although air defense can provide sensors and targeting information to the JFACC for the offensive counterair campaign, air defense systems are currently physically incapable of conducting traditional offensive or attack operations.[49] Currently, the only exception to this is an "air defense ambush" or "air defense raid" at the tactical level of war via division or corps level Forward Area Air Defense (FAAD) assets. Thus, along with the belief that offensive counterair is conducted primarily by the Air Force, particularly at the operational level of war, the current focus for Army Air Defense remains limited to active and passive defensive counterair operations.

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[48] Joint Publication 3-09, *Doctrine for Joint Fire Support*, 12 May 1998, p. A-2 and Deputy, Chief of Staff, Plans and Operations, Headquarters, U.S. Air Force, *JFACC Primer*, 10 January 1994, p. 19-20.

[49] This may change in the future as testing has recently been conducted on surface-to-surface fires from Patriot. See *Inside the Army*, "Army Studying Potential Offensive Role for Patriot Missile System," September 10, 2001, http://www.ebird.dtic.mil/Sep2001/s20010910studying.htm accessed on 13 Sept 01.

Joint Theater Missile Defense

While there exists a distinction between joint and Army counterair strategy, primarily due to the fact that Army counterair doctrine is based solely on defensive counterair operations, there is only one overarching doctrine for missile defense applicable to the joint force. Joint theater missile defense (JTMD) doctrine provides a synergistic strategy for countering ballistic and cruise missile attacks from the tactical to strategic levels of war, and provides an acceptable framework for countering all air and missile threats.

JP 3-01.5, *Doctrine for Joint Theater Missile Defense* (JTMD), is a subset of JP 3-01, *Joint Doctrine for Countering Air and Missile Threats*. According to the doctrine, the primary task of JTMD is to defeat the ballistic and cruise missiles threat. Within the framework of operational synergy, JTMD doctrine, like joint counterair doctrine, includes both offensive and defensive operations to deter the use of air and missile threats, protect the force, and pre-empt any and all enemy air and missile attacks.

Offensive operations within JTMD are defined as "attack operations." JTMD attack operations are a subset of the overall joint offensive counterair campaign. Attack operations "prevents launch of theater missiles by destroying every element of the system, including launch platforms; reconnaissance, surveillance, and target acquisition platforms; command and control nodes; and missile stocks and infrustructure."[50]

The primary difference between joint counterair and JTMD doctrine is the focus on the importance of command, control, communications, computers, and intelligence (C4I) in JTMD operations. C4I, as it pertains to JTMD, is critical because of the need for

[50] Watanabe, Nathan K. and Shannon M. Huffman, "Missile Defense Attack Operations," *Joint Forces Quarterly* (Winter 00-01), p. 71-76.

"time-sensitive" or "time-critical" targeting information and actions needed to counter tactical ballistic missiles and their supporting infrastructure.

JTMD consists of four operational elements, which include active defense, passive defense, attack operations, and command, control, communications, computers, and intelligence (C4I). Active missile defense operations, like active counterair operations, are initiated to protect against a tactical missile attack by destroying airborne missile launch platforms or tactical missiles in flight. Passive missile defense are measures initiated to reduce vulnerability and minimize the effect of damage caused by tactical missile attacks. Attack operations are initiated to destroy, disrupt, or neutralize tactical missile launch platforms and their supporting elements. Attack operations can be pre-emptive or reactive in nature. The final element, C4I, provides the overall intelligence and information connectivity of the theater missile defense system.

The emphasis placed on C4I within JTMD doctrine, as noted earlier, is one of the primary differences between joint counter air and JTMD doctrine. According to JTMD doctrine, C4I is the integrating system of "doctrine, procedures, organizational structures, facilities, communications, computers and supporting intelligence that provides timely and accurate data and systems to plan, monitor, direct, control, and report theater missile defense operations."[51] JTMD C4I capabilities "allow the commander to integrate military operations across the joint battlespace during war or stability and support operations."[52]

[51] Ibid, Chapter 3.
[52] U.S. Army Field Manual 100-12, Army Theater Missile Defense Operations, 31 March 2000, http://www.adtdl.army.mil/cgi-bin/atdl.dll/fm/100-12/toc.htm accessed on 13 September 2001.

Another distinction of JTMD is that it is not only inherently joint, but it is also dependent on national intelligence and communications assets. While both joint counterair and counter missile operations include the need for a combined and/or joint force, JTMD demands a greater interagency effort in order to conduct early warning, and simultaneous and sequential operations throughout the battlefield. This includes not only capabilities within the Army and the joint services, such as aircraft, surface-to-air missiles, surface-to-surface missiles, air-to-surface missiles, special operations forces, and information operations, but also the inclusion of national and theater space and intelligence assets. Joint and national capabilities are a key component of an integrated counter missile defense system and provide the necessary information and data needed to conduct a synergistic counter missile fight.

Background

Due to the changes in the operational environment since the early 1990s and the current emerging threat, JTMD has been at the forefront of air and missile defense. In fact, JTMD has not only gained in prominence, but it is now considered "part of strategic attack and offensive counterair."[53] Not only has the preponderance of air defense doctrine focused on the missile threat over the past decade, but air defense training, organizations, material, leadership and soldier management and development, have also leaned toward this endeavor. The creation of several missile defense organizations within the joint force are examples of this phenomenon.

The Army's "operational lead" for theater missile defense is the 32d Army Air and Missile Defense Command (32d AAMDC). Officially activated at Fort Bliss, Texas

[53] Ibid. Chapter 4.

on 16 October 1998, the sole purpose of the 32d AAMDC is to plan, integrate, coordinate, and execute Army air and missile defense at the theater level. The 32nd AAMDC is a combined arms headquarters capable of deploying world-wide and establishing a theater air and missile defense headquarters in support of the JFACC or JFC. Operations within the 32d AAMDC mimic the four elements of theater missile defense.

According to doctrine, the 32d AAMDC "coordinates and integrates the four operational elements (or pillars) of theater missile defense (TMD): passive defense, active defense, attack operations, and battle management/command, control, communications, computers, and intelligence (BM/C4I) to protect contingency, forward deployed, and reinforcing forces, as well as designated theater strategic assets."[54]

There is also a sister National Guard air and missile defense command, the 263d AAMDC of the South Carolina National Guard, able to "strategically deploy combat ready air defense artillery units and perform air and missile defense planning, coordination, integration, and execution in support of the CINC's priorities." [55] The headquarters is reportedly capable of conducting simultaneous operations in a second theater of war, when necessary.

While the mission of the 32d and the 263d AAMDC is air and missile defense, the majority of the doctrine surrounding the 32d AAMDC is focused on JTMD.[56] As noted in FM 44-94, *Army Air and Missile Defense Command Operations*, all thought, systems,

[54] 32d AAMDC homepage, http://www.bliss.army.mil/LocalUnitLinks/32aamdc/niper/aamdc.htm, accessed on 31 January 2002.
[55] 263d AAMDC homepage, http:// www.scguard.com/263aamdc/index.htm, accessed on 31 January 2002.
[56] U.S. Army Field Manual 44-94, *Army Air and Missile Defense Command Operations*, 31 March 2000.

and actions of the AAMDC are configured to correspond to the four operational elements of theater missile defense.

Like the Army, the Air Force has also established a theater missile defense headquarters, the 32d Air Operations Squadron (32d AOS), based in Ramstein, Germany. Although the 32d AOS has a more regional focus, the primary mission of the headquarters is solely the coordination of Joint Theater Missile Defense (JTMD). Like the 32d AAMDC, the 32d AOS uses joint theater missile defense doctrine as its basis for all counterair operations.

While all three headquarters mentioned claim to maintain the ability to conduct both air and missile defense, the primary focus of the 32d AAMDC, 263d AAMDC, and the 32d AOS, is missile defense. However, within the headquarters all air and missile defense operations are coordinated and synchronized via the JTMD operational framework. According to the doctrine and configuration of the headquarters, JTMD doctrine appears to provide an effective framework for conducting effective air and missile defense operations and may provide the model for use as the Army's overall single counterair and missile doctrine.

Army Theater Missile Defense Doctrine

The Army uses the joint missile defense doctrine as described in JP 3-01.5, *Doctrine for Joint Theater Missile Defense,* as the basis for missile defense operations. However, within Army doctrine, missile defense is governed by FM 100-12, *Army Theater Missile Defense Operations.* The fact that there are distinct doctrines governing the conduct of counter missile versus counter air operations immediately brings the tension between the two to the forefront. This tension exists due to the difference in the

focus toward either the more defensive "counterair" posture posited by the Army counterair doctrine and the focus on defensive counterair, or the more balanced missile defense posture described in JTMD doctrine, which combines offensive and defensive operations.

Although doctrinally, they have "highly related mission areas,"[57] Army doctrine focuses primarily on a defensive counterair role, defending critical assets from attack or observation. Counterair operations, within the Army, protects these assets by destroying fixed wing aircraft, helicopters, cruise missiles, and Unmanned Aerial Vehicles (UAVs) in flight. In contrast, Theater Missile Defense (TMD) focuses entirely on the destruction of tactical ballistic missiles (TBMs) before, during, and after launch through offensive and defensive counterair operations.

According to air defense doctrine the primary reason behind the separation in doctrine between counterair and theater missile defense stems from the size of the operational battlespace needed to engage aircraft versus missiles. The opportunities available to engage aircraft in terms of time and space, according to doctrine, is much greater than the opportunity to engage a missile. Aircraft engagements are "measured in minutes" versus missile engagement opportunities that are "measured in seconds."[58]

While the size of the airspace does matter, the real issue is doctrine. The entire system of air defense depends upon the thought, systems, and actions required by the prevailing governing doctrine. The emphasis on defensive counterair as the sole mission

[57] U.S. Army Field Manual 44-100, *U.S. Army Air and Missile Defense Operations*, June 2000, http://www.adtdl.army.mil/cgi-bin/atdl.dll/fm/44-100/ch4.htm accessed on 8 Sep 01.
[58] Ibid.

for Air Defense is not only found in Air Defense joint and Army manuals, but also within operational doctrine and missions.

Army Operational Doctrine

Within Army operational doctrine, as described in FM 3-0, *Operations*, Air Defense is given an active defense role, making no reference to offensive counterair operations. According to FM 3-0, Air Defense is part of the protection element of combat power. It is not mentioned as a part of firepower or maneuver, nor is it mentioned as an enabling force for offensive operations. FM 3-0 does state that air and missile defense does "contribute" to all five of the elements of combat power, including maneuver, firepower, leadership, protection, and information. However, the focus is on defense and the protection of "installations and civilian populations from over-the-horizon strikes by conventional warheads and WMD (Weapons of Mass Destruction)."[59] "Air, space, and missile defense," states FM 3-0, "is the first component of the force protection element of combat power."[60]

By definition force protection "minimizes the effects of enemy firepower, maneuver, and information,"[61] and "prevents or mitigates hostile actions against DOD personnel, resources, facilities, and critical information."[62] While these definitions do leave room for interpretation, within the current military lexicon, the term "force protection" has assumed a defensive orientation, therefore further reemphasizing the focus on defensive counterair operations.

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[59] U.S. Army Field Manual 3-0, *Operations*, June 2001, p. 4-8.
[60] Ibid.
[61] Ibid.
[62] Ibid.

Army Field Manual 100-7, *Decisive Force: The Army in Theater Operations*, also speaks to the defensive orientation of Air Defense. Although the manual initially states "The current approach to theater missile and air defense places emphasis on leveraging the synergy of joint capabilities to the maximum extent possible,"[63] it further notes that air defense forces conduct only DCA operations using both active and passive measures.

Air Defense Artillery Mission

As an extension of joint and Army counterair and operational doctrine, the current mission statement for Air Defense has also contributed to the focus on defensive counterair operations. The overall mission, as published by the Air Defense Artillery Branch, is "to protect the force and selected geopolitical assets from air attack, missile attack, and surveillance."[64] This statement, and the inclusion of air defense as an integral part of the force protection element of combat power, provides the impetus for a defensive orientation. Instead of using air defense as a joint battlefield enabler to create effects and shape the battlefield, air defense is used solely to "minimize the effects" of incoming attacks. Shaping the battlefield is left to the other attack resources of Fire Support System. This positions Air Defense, particularly at the tactical level, to assume a position focused solely on fighting a defensive counterair campaign and establishes the division between theater air defense and theater missile defense doctrine.

[63] U.S. Army Field Manual 100-7, *Decisive Force: The Army in Theater Operations*, May 1995, p. 5-10 – 5-11.
[64] Ibid.

Conclusion

Within joint counterair operations, Army Air Defense Artillery has assumed the primary role of synchronizing and coordinating both active and passive air defense operations for the joint and component force commander. While doctrinally not limited to a strictly defensive role within joint doctrine, due to current operational and Army counterair doctrine and system capabilities, Air Defense Artillery continues to maintain a defensive orientation. As such, Army Air Defense Artillery doctrine does not meet the objectives of operational synergy with regard to counterair operations.

The basis of the defensive orientation within Army counterair doctrine stems not from resources, or technology, but originates from a defensive oriented doctrine and mode of thought. To counter the imbalance of a defensive dominated doctrine and in order to instill a more offensive orientation, Air Defense Artillery should do two things. First, Air Defense Artillery should adopt the JTMD doctrine as the overarching Theater Air and Missile Defense (TAMD) doctrine and framework to counter all air and missile threats. Second, Air Defense Artillery must also adopt an offensive methodology for integrating offensive counterair operations into the overall campaign plan. Such a methodology would ensure tactical synthesis, synchronization, and coordination from the tactical level of war to the strategic.

While "joint counterair" doctrine provides a foundation for conducting offensive and defensive counterair operations, it does not meet the needs of Air Defense Artillery. JTMD doctrine, however, provides the necessary framework to conduct the full range of operations necessary to counter all air and missile threats and takes into account the importance of C4I. JTMD, as exemplified by the creation and organizational structure of

the Air and Missile Defense Commands, and the rapid growth of counter missile doctrine, provides a valid framework to countering all air and missile threats, and meets the criteria needed to create a synergistic air and missile defense system. In terms of "ends, ways, means," if synergy is the "end," then JTMD doctrine provides the "way."

Allowing JTMD doctrine to govern the counterair "single battle" for all air and missile defense, also allows tactical level air defense organizations to participate in the offensive and defensive counterair campaign. As noted earlier, within current doctrine there is no mention of offensive counterair operations within Army counterair doctrine at the tactical level. However, while Air Defense may not currently have the ability to conduct attack operations itself, Air Defense can take a lead role in the planning and coordinating of offensive counterair operations, and provide procedural, technical, and tactical support. Through aggressive C4I, sensor planning and integration, airspace management, and inclusion of ADA assets and capabilities into the planning process, Army air defense could have a much greater role in attack operations and controlling the air environment within the overall joint land and air campaign.

While Air Defense Artillery serves as the primary agent for defensive counterair operations, it does not do this alone. Defensive counterair demands the participation of all services, branches, and capabilities. However, with regard to offensive counterair operations, ADA provides only a limited role as a force enabler. The actual planning and execution of offensive counterair operations lies primarily in the fire support system. In order for ADA to assume a greater role in the offensive counterair campaign, ADA must increase its participation within the overall fire support system. What is missing is

the method, or “means,” to do this. The following chapter will examine the Army’s targeting process as a possible method for attaining this goal.

Chapter Four

Targeting

It is not the object of war to annihilate those who have given provocation for it, but to cause them to mend their ways.

—Polybius, *Histories* (second century B.C.)

Targeting, as defined by a Senior Observer/Controller at the Joint Readiness Training Center (JRTC), "is an important procedural link between our concept for defeating the enemy, on the one hand, and our actual synchronization of combat power on the other." This definition is important, because it suggests that the targeting process is the link between our concepts or theories of warfare, and the synchronization of combat power. What this also infers, is that the Army targeting process, as outlined by FM 6-20-10, *Tactics, Techniques, and Procedures for the Targeting Process*, may provide the methodology needed to attain operational synergy, ensuring tactical synthesis, synchronization, and cooperation throughout the force. It may further provide Air Defense Artillery with the methodology needed to attain a more offensive nature, and increase the synchronization and integration of thought, systems, and actions to counter enemy air and missile threats.

Targeting Doctrine

In the past, targeting doctrine resided exclusively in the realm of field artillery. With the advent of AirLand Battle doctrine in the early 1980s, targeting doctrine came to

the forefront as an attempt to stop the Soviet echeloned attack through "the deep battle." It was not, however, until some years later, following the demise of the Soviet Union, that targeting came to represent a viable method for integrating and synchronizing the elements of combat power and began to incorporate the other branches and functions of the Army.

In 1996, the Army published the latest version of FM 6-20-10. The manual encouraged further integration of the battlefield operating systems and functions, and referred to targeting as "part of the tactical decision making process used to focus the battlefield operating systems to achieve the commander's intent."[65] With regard to the theory of operational synergy, the targeting process provides a viable methodology for ensuring synchronization, and coordination, both horizontally and vertically, throughout the levels of war.

The Joint Targeting Process

According to JP 1-02, *Department of Defense Dictionary of Military and Associated Terms*, targeting is "the process of selecting targets and matching the appropriate response to them, taking account of operational requirements and capabilities."[66] Targeting, however, is much more than just selecting a target, and attacking it. The primary goal of joint targeting is to "provide the most efficient use of joint force assets and capitalize on their synergistic effects."[67] The targeting methodology provides the tool to synchronize or "nest" the commander's intent, throughout the

[65] Field Manual 6-20-10, *Tactics, Techniques, and Procedures for the Targeting Process*, Washington, D.C. 1996.
[66] Joint Publication 1-02, *DOD Dictionary of Military and Associated Terms*, Washington, D.C., 1995.
[67] U.S. Department of the Army, Field Manual 90-36, *Targeting: The Joint Targeting Process and Procedures for Targeting Time-Critical Targets*, July 1997, p. viii.

hierarchy of organization, and the desired effects from the strategic to the tactical levels of war, or in Air Defense terms, "from mud to space." It provides the model for creating a synchronized, integrated, unity of effort focused on achieving the commander's desired endstate and intent.

At the tactical level, targeting is governed by the Decide, Detect, Deliver, and Assess (D3A) model.[68] At the operational level of war, however, the targeting methodology is based on the six components of the joint targeting cycle. The components include the Commander's Objectives and Guidance, Target Development, Weaponeering Assessment, Force Application, Execution Planning/Force Execution, and Combat Assessment. While at first glance the joint targeting cycle appears significantly different than the Army targeting methodology, the Joint Targeting Cycle is in fact in concert with the Decide, Detect, Deliver, and Assess methodology.

According to Joint and Army doctrine, targeting is a subset of the decision making process and a command responsibility. The targeting process enables the commander to synchronize and focus the elements of combat power in order to achieve his/her intent, goals, and objectives. Planning and targeting begins with the senior commander and works its way down through an organization, resulting in the "nesting" of guidance and intent from the highest authority to the lowest tactical echelon.

Targeting at the Operational Level

At the operational level of war, planning and targeting begins with the President or Secretary of State. The President or Secretary provides guidance to the Chairman of

[68] U.S. Department of the Army, Field Manual 6-20-10, *Tactics, Techniques and Procedures for Targeting*, 1992, p. 1-2.

the Joint Chiefs of Staff (CJCS). The CJCS relays this guidance and direction to the regional or functional Commander in Chief (CINC). The CINC refines the guidance and direction and presents it to a Joint Forces Commander (JFC). The JFC will be either a subunified command or a joint task force (JTF). If it is a subunified command, the JFC will be the subunified commander. If it is a JTF, the JFC will be the designated Commander, Joint Task Force (CJTF), or the CINC, if the contingency is of sufficient scope or importance.

It is the Joint Force Commander, however, who plays the greatest role with regard to planning and targeting at the operational level. According to Joint Publication 1, *Joint Warfare*, the Joint Force Commander is responsible for synchronizing "the actions of air, land, sea, space, and special operations forces to achieve strategic and operational objectives through integrated joint campaign and major operations." [69] It is the JFC, who takes the strategic guidance passed down from the NCA and turns it into operational objectives.

The JFC translates guidance into clearly defined, attainable, and measurable objectives and defines military success. The JFC also establishes and defines command relationships, sets priorities, and weight of effort for operations, and issues mission orders to his subordinate commanders. Most importantly, the JFC provides targeting guidance and the effects desired to achieve the desired end state. Subordinate commanders are then required to provide advice and recommendations back to the JFC, write supporting plans, and nominate additional targets. The subordinate commanders will execute

[69] Joint Publication 1, *Joint Warfare of the Armed Forces of the United States*, U.S. Government Printing Office, Washington, D.C., 1995

operations per the JFCs intent and concept, and ensure the effects achieved at their level are consistent with those of the commander and two levels above.

The targeting cycle has come full circle, beginning with guidance from the NCA, down to the tactical commander and returned as nested task and purposes, and target nominations in accordance with the guidance and intent provided. This system provides the procedural ability to "nest" the goals and objectives of commanders from the strategic to the tactical levels of war. It also provides the means to synchronize combat power vertically and horizontally, ensuring the attainment of the desired effects of the higher command.

The Objective of the Targeting Process

While targeting ensures synchronization between echelons, targeting also ensures synchronization and coordination between the elements of combat power. Targeting is "the process of identifying enemy targets, and determining the appropriate attack system to be used to capture, destroy, degrade, or neutralize the target in question."[70] The purpose of "identifying an enemy target" is to identify the resources an enemy can least afford to loose. A target can be an enemy function, formation, equipment, facility or terrain. By denying these resources, the enemy is stripped of the initiative, and is forced to conform to friendly battle plans.

The objective of targeting is to apply the necessary lethal and non-lethal fires to disrupt, delay, limit, divert, or destroy the enemy's air, surface, and subsurface military potential throughout the depth of the battlefield. These terms describe the effects attacks

[70] U.S. Department of the Army, Field Manual 6-20-10, *Tactics, Techniques and Procedures for Targeting*, 1992, p. 1-1.

will have on enemy capabilities. They should, however, not be confused with the terms harass, suppress, neutralize, or destroy, which are used as attack criteria by the Field Artillery community to determine the degree of damage or duration of the effects on a specific target.

Targeting provides a methodology of ensuring all thought, systems, and actions are synchronized, coordinated, and integrated to achieve the desired effect required to accomplish a mission. It is a not only a tool used for conducting artillery fires, but a synchronizing method used throughout the military-decision making process. Most importantly, targeting provides a cognitive means of thinking to ensure the synergistic application of combat power at the decisive time and place.

Military Decision Making and the Targeting Process

Once guidance, goals and objectives are received from higher echelons, tactical combined arms commanders begin to develop their concept of the operation and their intent. As the commander begins the command decision cycle, staffs begin the targeting process in conjunction with the development of the Military Decision Making Process (MDMP). It is the commander and higher commander's intent that drives the direction of the military plan. The commander's intent is "a clear, concise statement of what the force must do and the conditions the force must meet to succeed with respect to the enemy, terrain, and the desired end state."[71] Basically, the intent describes the conditions and effects needed in order for an operation to be successful. Commander's intent "drives the train."

[71] U.S. Department of the Army, Field Manual 3-0, *Operations*, June 2001, p. 5-14.

The commander's intent is, therefore, directly linked to the decision-making process and the targeting processes. The intent provides the description of the commander's vision, which provides the direction and guidance for planning and targeting. Plans describe the method for achieving the goals outlined in the guidance, and targeting provides a framework for the application of combat power and synchronizes fires and maneuver. The ultimate goal of targeting is summed up in one question. "With so much to attack and so little time (and space and assets…) what do we attack, how do we find it and how do we attack it with synchronized fires and maneuver to achieve the commander's intent?"[72] Hence, the targeting process was developed in concert with the decision making process as an integral part of the command decision cycle.

Army Targeting Methodology

The methodology use by the Army to conduct the targeting process is based on decide, detect, deliver, and assess (D3A) functions. The methodology is used in conjunction with the command decision cycle during the MDMP. The targeting process is a way to organize the efforts of the commander and staff in order to "determine which enemy targets to attack (decide), how to find those targets (detect), and how to attack them (deliver)."[73]

Each part of the targeting process occurs simultaneous to the MDMP and sequentially. The decide and detect functions are conducted during the mission analysis, course of action development and course of action analysis phase of the MDMP. The

[72] Richard P. McEvoy, *Targeting for the Maneuver Task Force*, Http://call.army.mil/products/trngqtr/tq4-97/article2.htm, accessed on 15 Aug 01.
[73] Ibid.

targeting plan is further refined during the Course of Action (COA) analysis (wargaming) process and incorporated into the operations order. Finally, during the execution phase, the deliver and assess functions are accomplished.

Decide

The decide function is the most important and requires close interaction between the commander and his/her staff. During the initial phase of the mission analysis portion of the MDMP, the G-2/S-2 develops a list of high-value targets (HVTs). These targets are the assets the enemy commander must have for the successful completion of his mission. The targets derived from the Intelligence Preparation of the Battlefield (IPB) and the mission analysis set the stage for the decide function of targeting. Furthermore, mission analysis provides the initial Commander's Critical Information Requirements (CCIRs), the high payoff target list (HPTL), the priority intelligence requirements (PIRs), the target selection standards (TSS), and the attack guidance matrix (AGM).

During the course of action (COA) development phase of the MDMP, the commander and staff prioritize targets and make initial decisions on how to attack them. This creates the initial high pay-off target list (HPTL). High pay-off targets (HPTs) are those HVTs "whose loss to the enemy will contribute to the success of the friendly course of action."[74] The targets identified during COA development must be "selected on the basis of the mission, the commander's intent, and the commanders planning guidance, as articulated at the conclusion of the mission analysis brief."[75] The selection of the assets to

[74] United States Army, Field Manual 6-20-10, *Tactics, Techniques, and Procedures for the Targeting Process*, 1992.
[75] Ibid.

use in attacking a particular enemy target should be based on a combat power analysis and damage requirements.

The targeting process also provides a framework within the MDMP when creating the scheme of maneuver. "The logical first step in COA development is to determine how to *deliver* the attack on the highest priority target or decisive point. For example, during an attack of an enemy strongpoint, the most critical target to ensure the success of the unit mission may be the enemy platoon covering the selected breach point. This becomes the tentative scheme of maneuver for the main effort."[76]

The next step of the decide function is to analyze other enemy forces (HVTs) to determine their ability to interfere with or prevent the success of the main effort. These HVTs become HPTs, or targets that friendly assets must defeat to accomplish the mission. Friendly assets allocated against these targets are supporting efforts. Enemy HVTs that cannot influence the main effort do not become HPTs. The staff should not allocate friendly assets against them. "This approach crafts a scheme of maneuver that begins with the main effort and establishes clear links to supporting efforts. It sets the conditions for a successful attack at the decisive point."[77]

The goal during COA development "is to decide, in order of priority, which enemy targets must be attacked to ensure friendly unit success, the degree of damage required for each target, and how to deliver the attack on these targets."[78] This information is entered into the High Payoff Target List (HPTL) and provides the basis for

[76] Richard P. McEvoy, *Targeting for the Manuever Task Force*, Http://call.army.mil/products/trngqtr/tq4-97/article2.htm, accessed 15 Aug 01.
[77] Ibid.
[78] Ibid.

future targeting and planning products. The intelligence collection matrix is also updated with detection assets for the identified HPTs.

During COA analysis (wargaming), the commander and staff refine the priority of targets, attack mechanisms, and the sensor plan to detect the targets. Usually, units will use the action, reaction, counter-action method of wargaming. During each phase, the staff refines and updates the HPTs and attack assets to ensure success.

There are two other requirements for the staff during wargaming. First, is to determine the target selection standards (TSS). Second is to determine whether there is a need to assess the results of the attack on an enemy target. The TSS are the time and accuracy requirements necessary to launch an attack on an HPT. For example, in order to initiate an indirect attack on a UAV node, the standard might be direct observation on the enemy with the past two minutes. TSS provides the necessary guidance needed for everyone to clearly understand the standards for launching an attack on various targets. For the second requirement, the staff must determine what assets will conduct the assessment and when it will occur.

The Attack Guidance Matrix (AGM) is used during the wargaming process to record the results of the wargame as it applies to targeting. If time permits, the staff can also determine contingency means of attacking HPTs. These contingencies might require the use of the reserve or a branch from the original plan. Again, these wargaming tasks tie directly to the formation of a well developed decision support template (DST).

Another tool that has recently come of use in order to ensure synchronization between sensor based intelligence collection and attack systems is the Sensor/Attack Matrix. The Sensor/Attack Matrix graphically portrays the ability of sensors and attack

systems available to the division or corps, to acquire and attack HPTs during a specific time during the battle. When sensor or attack system capabilities change, a new matrix is generated. Information from the Sensor/Attack Matrix helps the staff develop the Attack Guidance Matrix and provides targeting input to the Intelligence Collection Plan and Intelligence Synchronization Matrix.

Detect

The detect function is conducted during the execution of the operations order. During the detect phase, the collection manager supervises the execution of the collection plan. The G2/S2, however, is the main driver in the collection effort. The focus is on detecting and tracking targets identified in the decide function.

The key to the detection phase is the Collection and/or the Reconnaissance and Surveillance Plan. The Collection and/or the R&S plan is essential in identifying, and tracking targets. Target acquisition assets gather information and report on possible targets. Some reports will produce actual targets, others will require further processing. Targets that are identified, but not submitted for attack are tracked in accordance with the AGM. As targets become available, attack systems are tasked in accordance with AGM, TSS, and location requirements of the system.

Deliver

The primary objective of this targeting function is the attack of targets in accordance with the AGM. Attacking of targets must satisfy the attack guidance developed in the decide function and identified and tracked during the detect function. The tactical solution (the selection of attack systems or combination of systems) leads to a technical

solution. The technical solution identifies: desired effect, specific attack unit, type of ordinance, time of attack, and coordination.

Assess

It is important to note here that targeting is an ever evolving process and does not end with the publication of the plan. Targets must be continuously assessed to determine the overall effectiveness of force employment during military operations. The staff and commander conduct combat assessments following an attack operation. The comabat assessment is composed of battle damage assessment (BDA), munitions effects assessment (MEA), and re-attack recommendations. Commanders use BDA to get a series of timely and accurate snapshots of effects on the enemy. As part of the targeting process, BDA helps to determine if a re-strike is necessary.

The Fire Support System

Targeting is conducted at the operational and tactical levels of war through the fire support system. The fire support system, as defined by the initial draft of FM 3-09, *Doctrine for Fire Support*, consists of fires that directly support land, maritime, amphibious, and special operations forces by engaging enemy forces, combat formations, and facilities in pursuit of tactical and operational objectives. Doctrinally, fire support integrates and synchronizes fires and effects to delay, disrupt, or destroy enemy forces, systems, and facilities.[79]

The fire support system includes the collective and coordinated use of target acquisition data, indirect fire weapons, armed aircraft, electronic warfare, information

[79] U.S. Department of the Army, Field Manual 3-09, *Doctrine for Fire Support* (Initial Draft), 21 March 2001, p. 1-2.

operations, and other lethal and non-lethal means to attack targets. Fire support operations support the combined arms commander with responsive, accurate lethal and non-lethal fires and effects to achieve a specified purpose in time and space. The net result of combining targeting and the fires support system is tactical synergy, synchronized operations, and coordination. Targeting insures the integration and synchronization of fires, which increases the total effectiveness of the combined arms force.

Fire support is the product of a system consisting of three parts: target acquisition, command and control, and attack resources. However, the fire support system as a whole must function in a coordinated manner to support the commander's concept of operations. Each member of the fire support system has a key role to play in the overall achievement of meeting the commander's intent and creating the effects desired.

Conclusion

Targeting is an effective method for ensuring tactical synthesis, synchronization, and coordination. It ensures operational plans are nested with the commander's intent, and all available assets are integrated into the overall operation in order to achieve a synergy of effects. Targeting and the fire support system form a key component to the overall synergy of a campaign through thought, systems, and actions. Adopting the targeting method into Air Defense doctrine would not only increase the level of synchronization and coordination within the branch, but could extend it throughout the force.

The use of the Decide, Detect, Deliver, and Assess (D3A) model is not solely about process, but rather, it is a way of thinking. Targeting offers a time-tested methodology to plan, execute, and achieve the commander's intent. The targeting process, like the

MDMP, is a model for producing a decision and determining the steps to achieve that decision. Targeting, combined with the MDMP, provides the tool to ensure synergy occurs simultaneously at every level and within every dimension. If synergy is the "end," and JTMD doctrine the "way," then the targeting process can provide the procedural "means" to that end.

Chapter Five

Recommendations and Conclusions

On 24 July 2001, at the Annual Air Defense Commander's Conference, Fort Bliss, Texas, Major General (MG) Stanley Green, Commander, U.S. Air Defense Artillery, presented the Air Defense Artillery State of the Branch Briefing.[80] During his briefing, MG Green stated that the Air Defense Artillery branch was undergoing a major transformation in concert with the current transformation occurring within the Army and throughout the Department of Defense. Due to changes in the operational environment of the 21st Century, and emerging threat capabilities, MG Green proposed the transformation of Air Defense Artillery into the Air and Missile Defense (AMD) branch, a single, integrated and synchronized air and missile defense system.

During the conference, the general also proposed a restated mission statement that reads, "Army Air and Missile Defense forces, together with joint forces, will dominate, control, and exploit the 3rd dimension of the joint battle space to win across the full spectrum of operations."[81] This new mission and the proposed transformation of Air Defense Artillery into Air and Missile Defense (AMD) calls for significant changes

[80] MG Stanley Green's Power Point Presentation for the World Wide Air and Missile Defense Conference, El Paso, Texas, 4 July 2001, Internet, http://147.71.210.21/wwamdc/state_of_ada/2001SADA_files/frame.htm. Accessed 10 December 2001.
[81] Ibid.

throughout the Air Defense Artillery branch in thought, systems, and actions. However, the real impetus for change will begin with doctrine.

In order to create the synergistic air and missile defense force envisioned by the Chief of Air Defense, Air Defense Artillery must change the way it thinks with regard to defeating the air threat. Thought is driven by a vision and a theory, resulting in doctrine, systems, and practice. Currently, the proposed vision and changes to Air Defense Artillery as outlined in the AMD Operational and Organizational Work Group does not fundamentally change the thought, systems, or actions of the Air Defense branch as they are today.[82] Other than newer systems based on limited laser engagements and enhanced missile systems, Air Defense remains a technologically driven defensive force. In order for Air Defense Artillery to break this paradigm, and make a fundamental change away from a technologically driven defensive orientation, three things must occur.

First, Army air defense doctrine should be firmly based on the theory of operational synergy, ensuring a combination of offensive and defensive operations are conducted simultaneously throughout the depth, breadth, and height of the joint battlespace. Second, Air Defense Artillery must assume a more offensively oriented posture, denying the enemy the capability of conducting an air or missile attack from the pre-launch phase to near impact. Third, Air Defense Artillery must also adopt an operational methodology for the planning and executing of operations in accordance with the more offensively oriented doctrine.

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[82] AMD Operational and Organizational Work Group, *Shield*, Internet http://www.lavenpublishing.com/filecabinet/shield.htm, Accessed on 07 Feb 02.

With regard to the first two requirements, ADA must adopt the JTMD doctrine as the single "Theater Air and Missile Defense" (TAMD) doctrine. There should be no distinction between counterair and counter missile operations, organizations, and doctrine. JTMD doctrine not only meets the intent of operational synergy, but it also provides an effective framework for conducting operations within the new operational environment and the ability to counter emerging threat capabilities. Air Defense Artillery can no longer rely solely on a defensive orientation, but must adopt a more aggressive stance against threat air and missile platforms. Adopting JTMD doctrine as the TAMD doctrine is the key to achieving air superiority and control of the airspace at the tactical level.

With regard to adopting a methodology that will incorporate all of the elements of the JTMD doctrine including attack, active and passive defense, and C4I, Air Defense Artillery should doctrinally adopt the Army targeting process. While Air Defense currently uses the criticality, vulnerability, recouperability, and threat (CVRT) model to determine what friendly assets should be protected, there does not currently exist a model within Air Defense doctrine to determine what enemy assets should be attacked in order to support the joint counterair fight and the joint and component commander's intent. While at the operational level, the Army Air Defense and Missile Commands utilizes the JTMD framework to conduct operations, at the tactical level there is doctrinally no such framework. Adopting the Army targeting process would ensure the integration and synchronization of air defense assets and capabilities into the overall campaign plan, and ensure counterair targets are incorporated into the collection and fire support plan as well.

While Air Defense Artillery is doctrinally part of the targeting team, there is currently no formal basis within Air Defense doctrine for Air Defense Artillery to conduct the targeting process or incorporate the targeting process into the military decision making process (MDMP). Historically, targeting has been the domain of the fire support officer within the corps or division. However, in order for Air Defense to take a more active leading role in the offensive counterair campaign, Air Defense officers must understand the targeting process, and be an integral part of that process.

Air Defense Artillery is the primary advocate for counterair targets at the tactical level, to include SCUD TELs, UAV control nodes, cruise missile launch platforms, helicopter forward operating bases, etc. The objective of offensive, or attack operations is to preempt or prevent the launch of the air and missile systems by attacking each element of the overall system, including such actions as destroying launch platforms, RSTA platforms, C2 nodes, and missile stocks and infrastructure. Incorporating the targeting process into air defense doctrine would allow air defense to actively participate in counterair attack operations from the lowest levels, greatly improving the ability to target enemy air and missile platforms before, during, and after launch.

At the tactical level, the Air Defense commander must also be comfortable with the targeting process and be able to provide input into the fire support plan and the counter air (CA) fight both within the Army and at the Joint level. While Offensive Counter Air (OCA) operations are conducted primarily at the operational level of war, they are also an integral part of the “deep” fight within the tactical commander’s battlespace. With the future ability of Army forces to conduct vertical envelopment and non-contiguous battles, as outlined in the recently published Concepts for the Objective Force, and the increased

ranges of new weapon systems, tactical commanders may find themselves in a position to influence the deep fight to a far greater extent. Commanders will be able to shape the battlespace at much greater distances in what was once perceived as "out of range."

The method for integrating counterair targets into the overall targeting system is the adaptation of the Army's targeting process, as outlined in FM 6-20-10, *Tactics, Techniques, and Procedures for The Targeting Process*, into Air Defense doctrine. Incorporating the targeting doctrine should occur not only at the operational level, but at the tactical level as well. While current air defense doctrine discusses targeting, it is only within the context of JTMD. While targeting reportedly is occurring within some tactical organizations, it is occurring sporadically and is not doctrinally based. The result is a lack of standardization, and a lack of horizontal and vertical synchronization and coordination.

The adoption of the targeting process into air defense doctrine would increase the horizontal level of integration and synchronization of all available division and corps assets into the counter air campaign at the tactical and operational levels of war. Within the division and/or corps, integration of the targeting process into air defense planning would ensure counterair targets are incorporated into the division/corps collection plan, as described by FM 34-2, *Collection Management and Synchronization Planning*[83], and the fire support sensor/attack plan[84]. It would also ensure air defense sensors and systems are integrated into collection and sensor plans as a force multiplier.

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[83] U.S. Department of the Army Field Manual 34-2, *Collection Management and Synchronization Planning*, 8 March 1994.
[84] U.S. Department of the Army Field Manual 6-20-10, *Tactics, Techniques, and Procedures for the Targeting Process*, 8 May 1996, p. 2-3.

Active participation of air defense in the overall targeting process would ensure visibility of air threats, and a plan to counter those threats. By adopting the targeting process and methodology, Air Defense could also create Essential Air Defense Tasks (EADTs) and Essential Air Defense Artillery Tasks (EADATs), similar to the Essential Fire Support Tasks (EFSTs) and Essential Field Artillery Tasks (EFATs) used by the fire support community, which ensures the integration, coordination, and synchronization of all available assets against specific targets.

EFSTs are defined as "A task for fire support to accomplish that is required to support a combined arms operation. Failure to achieve a EFST may require the commander to alter his tactical and operational plan. A fully developed EFST has a task, purpose, method, and effects. The task describes what targeting objective (delay, disrupt, limit or destroy) fires must achieve on an enemy's formation or capability. The purpose describes why the task contributes to maneuver. The method describes how the task will be accomplished by assigning responsibility to observers or units and delivery assets and providing amplifying information restrictions. Typically, the method is described by covering three categories: priority, allocation, and resources. Effects quantify successful accomplishment of the task."[85]

EFATs are defined as "a task for the field artillery that must be accomplished to achieve an EFST. A fully developed EFAT has a task, purpose, method and effects. The task describes the effects of fires against a specific enemy formation (effects of fires=suppress, neutralize, destroy, screen, or obscure). The purpose is a summary of the task and purpose from the EFST. The method describes how the task will be

[85] United States Field Artillery School, White Paper, *Fire Support Planning for the Brigade and Below,* Fort Sill Oklahoma, 16 Sep 1998. p. 16.

accomplished by assigning responsibilities to the Field Artillery batteries, survey and Bn TOC. Typically, the method is described by covering three catetories: priority, allocation, and restrictions. Priority provides the batteries with POF and priority of survey. Allocation includes movement triggers, routes, Pas, AOF, TGTs (priority and FPFs), and radar zones. Effects is a quantification of the FA task and positioning of FA units."[86]

By planning and briefing the EADTs and EADATs, the force commander is provided a snapshot of the counterair campaign and can visualize the air and missile defense plan within the area of operations. The EADTs and EADATs of the targeting process provide yet another method for ensuring the integration and synchronization of all the available assets into the counter air campaign.

Participation in the targeting process and briefing the counter air campaign plan to the commander would further assist in attaining the necessary support needed for air and missile defense operations in terms of engineer support, communications, and protection of air and missile defense assets. It also assists in promoting the concept of all arms for air defense (AAFADS) by ensuring the participation of the other elements of combat power into the counter air campaign. This is critical in creating an overall synergistic counter air campaign, making use of all Army and joint assets available. Air and missile defense of military forces in a theater of war or during operations is an operational level task. Therefore, operations conducted by division or corps air defense units should be conducted within the operational level of planning.

The use of the targeting process within tactical formations to strategic level organizations also ensures the vertical integration, coordination, and synchronization of

[86] Ibid.

offensive and defensive counter air operations from the brigade to the division, from the division to the corps, and from the corps to the Joint Forces Air Component Commander (JFACC) and the JFC. The process begins with the divisional ADA battalion to counter the tactical level threats, and ends with the AOC, who is responsible for countering all threats within the theater of war. The system, as noted in previous chapters, also extends from higher to lower.

Conclusion

Due to the emerging threat and the growth of air and missile technologies, there must be a change in the overall orientation of the Air Defense Artillery branch away from a primarily defensive stance to a more offensive orientation and posture. Adaptation of the JTMD operational framework provides the ability of Air Defense Artillery to conduct operations throughout the full spectrum operations. The formal adaptation of the targeting process will further provide the process and methodology necessary to support those operations.

True changes in thought, systems, and actions will only occur, however, once these changes have been incorporated into doctrine and into the curriculum of the Air Defense Artillery professional education system. It is critical that future leaders think in terms of synergy and incorporate all of the assets available to counter the threat. Leaders must be able to think operationally, but act tactically, with a common understanding and method for planning and executing counter air operations within a theater campaign plan.

By streamlining Air Defense doctrine, and incorporating the Army targeting methodology into air defense planning and execution, Air Defense Artillery can take a leading role in the joint counterair campaign and assist in creating the synergy mandated

by Joint Vision 2010. The potential synergy of dominant maneuver, precision engagement, focused logistics, and full dimension protection is not a goal for the distant future, but a possibility of tomorrow. Air Defense Artillery must assume its place as a leader of change, and join the effort to create th*e* system of systems, and create the joint force of tomorrow today.

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