# THE FIRE SUPPORT UNCOORDINATION LINE

A MONOGRAPH
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SECOND TERM AY 96-97

# REPORT DOCUMENTATION PAGE

Form Approved
OMB No. 0704-0188



| 1. AGENCY USE ONLY (Leave blank) | 2. REPORT DATE | 3. REPORT TYPE AND DATES COVERED |
|---|---|---|
| | | MONOGRAPH |

**4. TITLE AND SUBTITLE**
THE FIRE SUPPORT UNCOORDINATION LINE

**5. FUNDING NUMBERS**

**6. AUTHOR(S)**
MAJ DOUGLAS M. KING, USMC

**7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES)**
School of Advanced Military Studies
Command and General Staff College
Fort Leavenworth, Kansas 66027

**8. PERFORMING ORGANIZATION REPORT NUMBER**

**9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)**
Command and General Staff College
Fort Leavenworth, Kansas 66027

**10. SPONSORING/MONITORING AGENCY REPORT NUMBER**

**11. SUPPLEMENTARY NOTES**

**12a. DISTRIBUTION/AVAILABILITY STATEMENT**
APPROVED FOR PUBLIC RELEASE:
DISTRIBUTION UNLIMITED.

**12b. DISTRIBUTION CODE**

**13. ABSTRACT** (Maximum 200 words)
SEE ATTACHED



**14. SUBJECT TERMS**
FIRE SUPPORT COORDINATION LINE
FSCL
AIRPOWER
CAS
AI

**15. NUMBER OF PAGES**
59

**16. PRICE CODE**

| 17. SECURITY CLASSIFICATION OF REPORT | 18. SECURITY CLASSIFICATION OF THIS PAGE | 19. SECURITY CLASSIFICATION OF ABSTRACT | 20. LIMITATION OF ABSTRAC |
|---|---|---|---|
| UNCLASSIFIED | UNCLASSIFIED | UNCLASSIFIED | UNLIMITED |

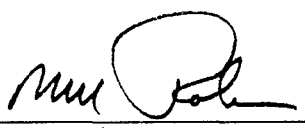
SCHOOL OF ADVANCED MILITARY STUDIES

MONOGRAPH APPROVAL

Major Douglas M. King

Title of Monograph: *The Fire Support Uncoordination Line*

Approved by:



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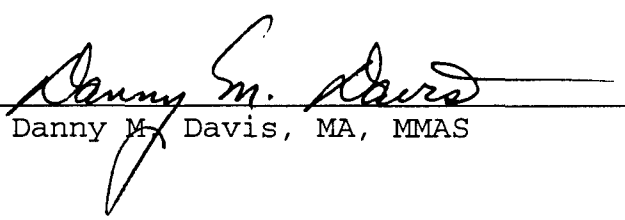

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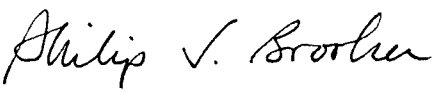

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Accepted this 22d Day of May 1997

# THE FIRE SUPPORT UNCOORDINATION LINE

A Monograph
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Second Term

ABSTRACT

THE FIRE SUPPORT UNCOORDINATION LINE by Major Douglas M. King, USMC, 43 pages.

Successful combat operations require application of joint warfighting systems throughout the battlefield depth. Engagement capabilities available within joint forces include indirect, direct, and aviation delivered fires. Clearly relating these engagement capabilities within the joint force forms the basis for applying combat power throughout the battlefield depth. Central to the relationship of engagement capability and addressing the battlefield depth is the Fire Support Coordination Line (FSCL).

In the past, shallow ranges of surface fires often warranted FSCLs closer to ground forces and allowed air interdiction (AI) to dominate the deep battlefield. Limited long range surface delivered fires led ground commanders to look to air support to shape the close fight. Furthermore, the lack of organic deep fire capability within the ground force resulted in ignoring deep battle planning or shifting responsibility to the US Air Force.

Today's extended helicopter and rocket ranges change this equation. Now a ground commander seeks a deeper FSCL to accommodate employment of all his systems with close air support (CAS) and ground maneuver. Theoretically this provides the ground commander the opportunity to shape his close fight. Joint doctrine calls for integrated combined arms approaches throughout the battlespace. Effective combined arms employment requires a common understanding of terms and doctrine within the joint community. However, Service background, doctrine, and perspective impact upon a clear understanding within the joint community. This monograph examines whether the current definition of the FSCL facilitates efficient air support of ground operations.

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## SECTION I. INTRODUCTION

Successful combat operations require application of joint warfighting systems throughout the battlefield depth. Addressing the battlefield depth requires the command, control, communications, intelligence, and engagement capabilities harnessed in joint forces. Engagement capabilities available within joint forces include indirect, direct, and aviation delivered fires. Clearly relating these engagement capabilities within the joint force forms the basis for applying combat power throughout the battlefield depth. Central to the relationship of engagement capability and addressing the battlefield depth is the Fire Support Coordination Line (FSCL).

In the past, shallow ranges of surface fires often warranted FSCLs closer to ground forces and allowed air interdiction (AI) to dominate the deep battlefield. Limited long range surface delivered fires led ground commanders to look to air support to shape the close fight. Furthermore, the lack of organic deep fire capability within the ground force resulted in ignoring deep battle planning or shifting responsibility to the air force.

Today's extended helicopter and rocket ranges change this equation. Now a ground commander seeks a deeper FSCL to accommodate employment of all his systems with close air support (CAS) and ground maneuver. Theoretically this provides the ground commander the opportunity to shape his close fight. The air commander looks for the FSCL closer to ground units to allow centralized employment of AI and a coordinated air operation to accomplish his mission. Joint doctrine

calls for integrated combined arms approaches throughout the battlespace. Effective combined arms employment requires a common understanding of terms and doctrine within the joint community. However, Service background, doctrine, and perspective impact upon a clear understanding within the joint community.[1]

This monograph examines whether the current definition of the FSCL facilitates efficient air support of ground operations. The monograph limits the examination to situations requiring ground combat to defeat an enemy ground maneuver force. In this situation the ground force commander must simultaneously address the battlefield framework of deep, close, and rear. Mission, enemy, terrain and weather, enemy and friendly forces, time, space, and logistics assist in defining the ground commander's perception of the battlefield framework.

## Methodology

The initial step in the monograph is to develop the background. Framing the problem requires definition of key terms and concepts associated with air support of ground operations. Equally important to understanding this issue is the historical and theoretical background of the various Services. The varied backgrounds help to explain the Service cultural biases present today. The monograph then examines the organic capabilities for fires and deep operations within the ground combat organization. This examination includes the effects of force projection on ground capabilities. Considering these issues, the monograph then examines the requirement for air support of ground operations. The monograph then examines how the FSCL affects air support of ground operations. This examination considers Service

perspectives on the FSCL and air support for ground operations. Then the monograph assesses whether the current FSCL supports air support of ground operations or detracts from efficient support. The monograph concludes with potential changes to doctrine involving the FSCL.

## Background

Proper FSCL employment and effective air support of ground operations require a common understanding of terms and doctrine within the joint community. Currently, the FSCL, close air support (CAS), and air interdiction (AI) are unclear terms effecting the issue. Fundamental to the monograph is understanding air support for ground operations and how it fits in the battlefield framework. A complete understanding of how air support fits in the battlefield framework encompasses understanding the FSCL. The definition and evolution of CAS and AI provide the required understanding of air support. The evolution of air support contributes to understanding the FSCL evolution. The relationship between air support and the FSCL ensures a complete understanding of the central issue of this monograph.

### Defining Air Support Terms

Close air support enhances ground force operations by delivering a wide range of weapons and massed firepower at decisive points critical to ground maneuver. Additional CAS roles include: create maneuver opportunities through concentrated attack preceding ground maneuver; protect the flanks of maneuver units; and protect the rear of retrograding surface forces. Joint Pub 1-02, *DOD Dictionary of Military and Associated Terms*, defines CAS as:

> Air action by fixed and rotary-wing aircraft against hostile targets in close proximity to friendly forces and requiring detailed

> integration of each air mission with the fire and movement of those forces. Joint CAS is CAS conducted through joint air operations.[2]

JPub 3-09, *Doctrine for Joint Fire Support*, states that, "CAS is a supplement, not a substitute for ground firepower." This statement best describes CAS's currently understood joint role. CAS, unlike other forms of airpower, attacks targets chosen by a ground commander and controlled by the ground commander through positive or procedural control.[3] Joint doctrine states that CAS supports military objectives assigned to tactical units or task forces, and provides firepower in offensive and defensive operations in proximity to friendly forces. The three-dimensional mobility and speed of aircraft strike the enemy swiftly and unexpectedly when integrated with other fire support assets. Commanders focus CAS at decisive places and times to achieve tactical objectives. Although CAS is a tactical operation, air apportionment links it to the operational art. The Joint Force Commander's (JFC) priorities and planning guidance for CAS provide another tool for orchestrating a campaign.[4]

Another type of air support of ground operations is air interdiction. Joint Pub 1-02, *DOD Dictionary of Military and Associated Terms*, defines Air Interdiction as:

> Air operations conducted to destroy, neutralize, or delay the enemy's military potential before it can be brought to bear effectively against friendly forces at such distance from friendly forces that detailed integration of each air mission with the fire and movement of friendly forces is not required.[5]

No requirement exists for detailed integration of each air interdiction mission with the fire and movement of ground maneuver forces. However, AI creates favorable conditions for friendly ground maneuver, limits an enemy's maneuver and fires capability, and assists in destruction of enemy forces. AI and ground maneuver complement each other to place the

enemy in an operational dilemna. Solely countering the air interdiction or ground maneuver threat exposes the enemy to a greater threat from the other. The JFC must orchestrate air interdiction and maneuver to maximize capability. The Joint Force Air Component Commander (JFACC) plans and directs AI according to the JFC's guidance.

Joint Pub 1-02, *DOD Dictionary of Military and Associated Terms*, defines JFACC as the authority to exercise operational control, assign missions, direct coordination among subordinate commanders, and redirect and organize forces ensuring unity of effort in the overall air mission. Responsibilities normally include: planning, coordination, allocation, and tasking based on the JFC's apportionment decision. Using the JFC's guidance and authority, the JFACC recommends apportionment of air sorties to various missions or geographic areas.[6] Relevant to this examination are Air Force application missions including CAS, interdiction, and strategic attack.[7]

Confusion often occurs between the force application missions. Interdiction may have tactical, operational, or strategic effects. Interdiction conducted far from the close fight or not coordinated with ground maneuver forces appears like strategic attack, while interdiction near the close fight appears like with CAS. Often interdiction achieves the effects of all missions.

While both CAS and AI provide the air support essential for ground operations, the JFACC plans and commands AI, while the ground commander directly plans and controls CAS. However, the critical difference is coordination, command and control, and location within the battlefield geometry. Common thinking places CAS inside the fire support coordination line (FSCL) and AI beyond. Placement of the FSCL,

regardless of the ground commander's area of operations, remains important in establishing conditions for and fighting the close battle.

## Defining the FSCL

The current FSCL definition facilitates joint force deep engagement of the enemy. Joint Pub 1-02, *DOD Dictionary of Military and Associated Terms*, provides the current doctrinal definition of the FSCL:

> A line established by the appropriate land or amphibious force commander to ensure coordination of fire not under the commander's control but which may affect current tactical operations. The fire support coordination line is used to coordinate fires of air, ground, or sea weapons systems using any type of ammunition against surface targets. The fire support coordination line should follow well-defined terrain features. The establishment of the fire support coordination line must be coordinated with the appropriate tactical air commander and other supporting elements. Supporting elements may attack targets forward of the fire support coordination line without prior coordination with the land or amphibious force commander provided the attack will not produce adverse surface effects on or to the rear of the line. Attacks against surface targets behind this line must be coordinated with the appropriate land or amphibious force commander.[8]

This definition only requires coordination for fires short of the FSCL. The definition requires no coordination beyond the FSCL. More significantly the ground commander establishes the FSCL rather than the JFC.

## Historical Background of the FSCL

Although the modern definition of the FSCL stems from the 00 Bomb Line of World War II (WW II), the FSCL traces its history to World War I (WW I) and the beginnings of air support. During WW I the commanders used phase lines to deconflict air support from ground maneuver. Using restrictive measures assisted in avoiding fratricide from air support. Initially airpower focused deep, but airpower's effectiveness enticed ground commanders to employ air in close support of maneuver. However, the limited capability for communications and

target identification required restrictive control measures to preclude fratricide. Before WW II, US Army doctrine, FM 6-20, *Fire Support*, called for zones of fire to employ air support.[9] Moreover, the Army Air Corps dedicated itself to strategic bombing and insisted on operational independence for ground support missions. Thus, no ties existed between air support and any specific division, corps, or even army. Air power ranged over the entire theater and decisions for support remained with the air officer in command. This autonomy allowed central focus for airpower but eliminated any possibility for coordination with the ground forces.

One definitive moment in air support and FSCL development occurred in WW II during Operation Cobra. The plan called for close to 3000 airplanes to support ground maneuver. Coordination for these missions merely put ground troops on one side of the 00 Bomb line and air attacking on the other.[10] The air component controlled the attack although many missions were close to friendly forces. Control of air simply required bombs beyond the 00 Bomb Line while maneuver forces remained in the "safe" area short of the 00 Bomb Line. The plan appeared simple, but the plan lacked coordination between air and ground organizations. The units involved in the operation lacked experience in air support of ground operations. Initially, no attempt to synchronize and coordinate the air and ground maneuver or fires occurred at the tactical levels. An ad hoc command and control headquarters orchestrated the air support. More importantly, no procedural control or supporting to supported relationships existed between ground and air organizations fighting on the same battlefield.[11] During the initial phases of Operation Cobra, air freely attacked both short and beyond the

00 Bomb Line while no positive or procedural control existed between the front-lines and the air. Although the Air Corps understood the operation "Good Faith" replaced command and control, mission, intent, and synchronization.[12]

The result was ineffective close support and over 600 friendly casualties from friendly air in the initial days of Operation Cobra. Afterwards General Bradley expressed shock and anger at the air performance. Although close support performed poorly deeper operations against second echelon forces and sustainment were highly successful.[13]

Eventually, a common interest in winning the war prevailed and air and ground forces worked together for success. The realities of war drove battlefield changes and facilitating airpower coordination with ground operations. However, doctrinal politics before and during WW II, continued coordination problems, and a climate of distrust furthered the separation between air and ground. Linear separation between air and ground with the 00 Bomb Line contributed to the separation of command, control, and capability.

Following WW II, the 00 Bomb Line delineated responsibility between ground and air forces. Additionally, doctrine required the Bomb Line along terrain easily identified from the air. This requirement established an area for air attack without ground coordination. The Bomb Line intent was safety and flexible employment, but it caused separation of planning and thinking.[14]

In the early 1960s the FSCL replaced the Bomb Line in doctrine. The FSCL took no steps toward synchronization, rather it merely separated corps from echelons above corps and battlefield responsibility of air and ground forces. The FSCL became a dividing line between the

Army and Air Force concerning operational and tactical fires. Operational fires surfaced as the application of lethal and non-lethal firepower to achieve a decisive impact on the conduct of the campaign or major operation. Operational fires focus largely on three general tasks: facilitating maneuver, isolating the battlefield, and destroying critical functions and facilities.

During the Vietnam War the FSCL evolved into:

> . . . a line established by the appropriate ground commander in coordination with the tactical Air Commander. . . .used to coordinate supporting fire by forces not under control of the land force commander which may effect tactical operations . . . The FSCL should be as close to the forward elements as possible consistent with troop safety and the tactical situation. Furthermore the FSCL should be easy to define on a map and identify from the air.

This FSCL definition protected ground troops and freed all fires to engage beyond the FSCL. The desire to employ firepower in Vietnam and against the potential Soviet threat in Europe required a linear FSCL that prevented fratricide and allowed free fires on a greater portion of the battlefield.

The FSCL definition has grown. By 1977, the FSCL became a permissive fire control measure. Targets beyond the FSCL were open to attack by any means, while fires short of the FSCL required detailed coordination. All air missions short of the FSCL became CAS and missions beyond the FSCL were interdiction. This FSCL definition promoted the control of resources rather than coordination. The linear FSCL approach separated the battlefield with the FSCL often dividing battlefield responsibility. When the target was beyond the FSCL, Air Force or echelons above Corps could attack within a Corps' area of operations without coordination. Essentially, the ground commander relinquished battlefield responsibility for his area of operations

beyond the FSCL. As such, it was often in the ground commander's best interest to place the FSCL deeper. This allowed him to directly shape the battlefield he would fight on.[15]

FSCL evolution continued with the AirLand Battle Concept. Facing the echeloned Warsaw Pact Forces required thorough integration of air and ground attack. Moreover, delay and defeat of the second echelon became essential in creating manageable conditions for the close fight. The FSCL grew into a permissive measure designed for coordination. Additionally a new category of air support, Battlefield Air Interdiction (BAI), addressed targets on either side of the FSCL, that effected ground force maneuver. BAI directly supported the ground commander by attacking enemy forces not in proximity to friendly forces. BAI allowed the ground commander to influence the battlefield through coordination with the Air Force and created conditions necessary for close battle. In 1985, Lieutenant General Merril McPeak stated that:

> TAC and TRADOC have now moved beyond coordination to concept and procedures giving the ground commander a leading role in selecting and prioritizing BAI targets on both sides of the FSCL . . . The Army Battlefield Coordination Element will coordinate employment of organic Army assets used in interdiction, ensuring that air and ground interdiction operations are deconflicted and mutually supporting.[16]

With the emergence of joint operations and doctrine, the FSCL evolution continued. The evolved definition allowed attack without coordination beyond the FSCL and within a ground commander's area of operations. The attack could not produce adverse effects short of, or on the FSCL and attacking targets inside the FSCL required coordination. Moreover under this doctrine, ground commanders should coordinate surface fires beyond the FSCL with the air component commander but, the inability to coordinate with the air component would not preclude a

surface attack.[17] This definition provided a compromise environment. It allowed attack by air or ground beyond the FSCL, but suggested sufficient coordination to satisfy basic safety needs. Moreover, the definition stopped short of demanding levels of coordination that would frustrate the ground commander's ability to engage immediate threats.

The aftermath of the 00 Bomb Line and WW II coordination problems, as well as those experienced during Korea and Vietnam, remains today. The FSCL or Bomb Line remains a room divider separating responsibility, control, and often interest. Additionally BAI is no longer a doctrinal form of support. The result is a ground force requiring a deep battle area and an Air Force trying to restrict ground operations to a close fight. The FSCL has developed into a boundary between CAS and AI. Establishing or moving the FSCL involves layers of ground and air command and the Joint Force Headquarters. To completely understanding the FSCL relationship requires a look into the historical background of air support.

## Historical Background of Air Support

Historic airpower employment and theory led to current airpower doctrine. The history of deploying United States air forces started with the US Marine Corps' First Aeronautical Company. Eventually this aviation element included 340 aircraft supporting air superiority and ground support missions for American and Allied forces throughout WW I. Following WW I, US Marine Corps aviation developed into an integral part of Marine expeditionary units during combat in Haiti and Nicaragua.[18] Aviation's role expanded to include interdiction, security, communications, reconnaissance, logistics, medical evacuation, fires,

and maneuver. However, the refinement of close air support occurred in WW II when pilots on the ground began controlling CAS and air support requirements supporting ground commanders. This relationship bred familiarity with air capability and limitations, and provided expeditionary forces a capability for rapid massing of combat power.[19]

While the Marine Corps refined ground support, two airpower theorists influenced the development of the Army Air Corps. Guilio Douhet and Billy Mitchell provided the preeminent airpower theory. Douhet developed a theory suggesting an independent air force capable of launching decisive and pre-emptive strikes against an enemy's support and mobilization centers. According to Douhet:

> The purpose of aerial warfare is the conquest of the command of the air. Having the command of the air, aerial forces should direct their offensives against surface objectives with the intention of crushing the material and moral resistance of the enemy. We should seek no other purposes except the two described above . . .The only effective instrument for these purposes is an independent air force. . . No aerial resources should be diverted.[20]

Douhet's theory provided a theoretical background for a single air force, strategic bombing, air interdiction, and air superiority. Mitchell focused on the independence of an air force and the need for centralized control of airpower.[21]

WW II demonstrated the soundness in these theories as well as the effectiveness of CAS. Following WW II, conflicts reinforced the need for AI and CAS. The new and independent US Air Force adopted the ideology of air superiority, air interdiction, and then CAS. Moreover, the Air Force believed they had sole responsibility for all combat occurring more than 50 miles into the enemy's rear.[22] The US Army and US Marine Corps recognized the combat power and the psychological effects on both enemy and friendly troops that air support brought to

the battlefield. Following WW II, land forces recognized that air support, both air interdiction and CAS, had become essential in land combat. During the Korean War, the US Marine Corps maintained a close air-ground relationship to multiply the effects of maneuver units and overcome shortages in organic artillery. Without organic air support, the US Army suffered from a lack of air support. US Army dissatisfaction with air support resulted in a formal proposal from the US Army requesting one Air Force fighter-bomber squadron as a permanent attachment to each US Army Corps.[23] This dissatisfaction was a contributing issue to the US Army's development of future deep fire capabilities and the continuing schism between air and ground planners.

Modern airpower theory, as explained by Colonel John Warden US Air Force, modernized earlier theory. Moreover, Warden promoted the need for a centrally planned and coordinated air campaign. Air superiority had always been an important step in air planning and execution, but it now became a requirement for campaign success. Following air superiority, Warden discussed the roles of CAS and AI. He defined interdiction as: separating the enemy from his base; inhibiting the flow of men or materiel from the source to the front, and inhibiting laterally movement behind the front. Warden believed interdiction should never occur in place of air superiority, however, some air superiority missions such as destroying fuel support also supported interdiction. Additionally, interdiction destroyed the enemy before closing with friendly ground forces. Warden maintained that it was more efficient to destroy forces at or close to the source (interdiction) rather than destroying them at the front with CAS.[24] However, the AI plan had to support the overall joint force and the ground force.

Following this theory an air component should plan and control the employment of airpower to achieve the desired endstate.

Warden viewed CAS as any air operation, which theoretically ground force systems can accomplish with sufficient troops or artillery.[25] Warden believed ground commanders focused on the close fight and could plan and control CAS, but the reality of the close fight clouded the vision necessary to plan air interdiction or operations beyond the FSCL. Warden believed employing CAS at the expense of allocating airpower for AI, results in reactive airpower planning. Warden's thinking employed massed CAS after exhausting the tactical options, similar to committing an operational reserve. However, CAS remained a vital and decisive element of combat power in the Air Force and Warden's theory. These theories and definitions culturally shaped the thinking of the Air Force today.

## Ground Force Relationship to Air Support

Before WW II, the Air Force, as a part of the US Army, remained under tight control of the ground force commander. Airpower focused on support of ground maneuver. However, Mitchell's evolutionary thinking caused a US' preoccupation with strategic bombing of Germany early in WW II. This preoccupation resulted in a mindset within the Army Air Corps that refused to attack targets within artillery range and planned without regard to ground maneuver. However, the realities of WW II led to new doctrine for employing airpower. This doctrine employed airpower as a separate force concentrated under a single commander. However, it called for strategic bombing and tactical operations including

superiority, interdiction, and CAS. Air in support of ground maneuver became a critical element of combat power.[26]

Following WW II, the US Air Force was established as a separate service. Additionally, the Nation preoccupied itself with the Soviet and nuclear threat. The Air Forces perceived its role as a strategic asset designed to carry out the theory of "Massive Retaliation". Tactical support such as CAS and AI received little attention. General Maxwell Taylor, US Army Chief of Staff, stated in 1956 that:

> We haven't had close effective tactical air support; we cannot expect it in the future. The high performance Air Force planes are flying away from us; they have left the battlefield.[27]

This statement characterized Army thoughts on air support and led to the Army's development of an organic deep fire capability.

Entering Vietnam a deep schism between the Air Force and Army existed. The nature of warfare in Vietnam favored air support to ground maneuver rather than strategic attack capabilities. Both interdiction and CAS supporting the ground commander proved necessary during the Vietnam era. Additionally, during this time the single air manager concept came about. The Air Force desired control of all aircraft to support the battlefield requirements for close air support, interdiction, and strategic attacks. However, resistance among the Services forestalled creation of a true single air manager.[28]

However, during this time-frame air support and the FSCL became complicated with advancing technology and fighting in a different environment. Helicopters increased ground range and capability. Additionally, the closed nature of terrain and the nature of fighting in Vietnam shortened the ranges of the battlefield. Given restricted terrain and dismounted operations, ground weapons easily supported close

and deep operations. The requirements for support evolved; from air independently attacking beyond the FSCL to synchronized operations conducted deep to shape the close fight.

In the past, shallow ranges of ground weapons systems warranted FSCLs closer to ground forces allowing AI to dominate the deep battlefield. Limited long range ground weapons systems led ground commanders to look to air support to shape the close fight. Furthermore, the lack of organic capability in the ground force resulted in ignoring deep battle planning or shifting responsibility to the air force.

US Army doctrinal innovations occurring within the last twenty years, initiated by AirLand battle concepts, along with technological increases in detection and engagement ranges resulted in extended battlefields for ground commanders. Ground commanders must focus on the battlefield depth to influence or shape their portion of the theater of operations. Instead of waging the main battle at the forward line of own troops (FLOT), commanders desire to influence enemy activity beyond the forward edge of the battle area (FEBA) in order to create favorable conditions for the close fight. Current practices expand the battlefield depth and require deep strike and tactical reconnaissance beyond the FSCL.[29]

## The Joint Model for Coordinated Air Support

The US Marine Corps, an air-ground force or self-contained joint force, traditionally depends on air support to meet its fires requirements. Moreover, Marine Corps planners routinely employ air organizations as maneuver elements. The planning difference between the

US Army and US Marine Corps stems from the US Marine Corps' crisis-response role. Projecting combat power from a seabase into an often limited infrastructure requires expeditionary forces with significant combat power and a limited ground logistics tail. The expeditionary force routinely engages deep to shape an enemy's capability and maneuver against the expeditionary force's own combat power build-up and maneuver. The need for expeditionary systems, along with limitations of amphibious lift, ship-to-shore maneuver, and Naval Surface Fire Support (NSFS) require the US Marine Corps' to employ combined arms with an emphasis on aviation capabilities.[30]

## SECTION II. CURRENT DOCTRINE AND FIRE SUPPORT CAPABILITY

"The enemy is best defeated by fighting him close and deep simultaneously."[31] Fighting in depth finds its origins in the writings of Mikhail Tukhachevski and Valdimir Triandafilov. The interactions of these two Soviet military theorists created a doctrine requiring simultaneous combined arms attack throughout the battlefield depth.[32] This combined arms doctrine was successfully tested during WW II and influenced recent US combined arms thinking.

Today's combined arms doctrine employs fire and maneuver into the battlefield depth to regulate the enemy maneuver and create conditions for a successful close fight.[33] Using the battlefield depth denies the enemy the ability to maneuver and mass combat power, controls the battlefield tempo, and dictates the terms for decisive operations. Additionally, addressing the battlefield depth reduces the enemy capability to employ weapons of mass destruction, effective command and control, and fires thereby enhancing force protection.[34]

Deep operations attack enemy forces and functions beyond the close battle. These operations include both fires and maneuver of organic and systems belonging to other Services or coalition partners. Deep operations not only effect an enemy's maneuver, combat power, coherence, and tempo, but effect functions such as command, logistics, infrastructure, and air defense. The key to effective deep operations is synchronization of deep attack assets both internally and with close operations.[35]

Close operations describes forces in immediate contact with the enemy. These operations most often include the maneuver of ground combat organizations against enemy formations. Under current US Army doctrine ground combat units dominate these operations. Additionally, the perception is that close operations expose the force to the greatest risks on today's non-linear battlefield.[36] The successful commander attacks an enemy simultaneously throughout the battlefield depth using combined arms which includes air and surface delivered fires.

Current doctrine prescribes that the land commander establishes the FSCL for integrating air and surface fires. The FSCL facilitates fires beyond the FSCL without coordination, while fires short of the FSCL require coordination. Additionally, commanders should coordinate fires beyond the FSCL.[37] This definition facilitates attacks throughout the battlefield depth and permits fires of all systems beyond the FSCL. Not requiring coordination beyond the FSCL infers that fires beyond this line do not require integration with maneuver. Without direction from senior headquarters, such as a JFC, the area beyond the FSCL remains an uncoordinated fire area. Failure to coordinate diminishes the effectiveness of air and surface fires in this area.

## Current Surface Fire Capability

Examining whether the current FSCL facilitates efficient employment of air by the ground commander requires an understanding of current surface fire capability. Until recently, overseas forward basing and forward deployment allowed US forces to position heavy forces in support of national interests. Prepositioned or forward-deployed surface fire support systems, attack helicopters, and overwhelming direct fire systems provided abundant capability for ground delivered fires throughout the battlefield depth. Heavy self-propelled artillery and rockets, tanks, and armored personnel and weapons platforms characterized most overseas land combat organizations. Additionally, organic attack helicopters expanded the range and flexibility of the ground commander. Today's surface fire support capabilities have changed significantly. Enhancements in acquisition means, artillery, rockets, missiles, and helicopters continue to expand the ground commander's area of influence.[38] Recent technological enhancements, such as the M270 Multiple Launch Rocket System (MLRS) and the Army Tactical Missile System (ATACMS), increased the capability to attack deep into the battlefield depth. This capability change impacts on requirements for air support and coordination.

Leading the evolution in surface fires is the MLRS and ATACMS. MLRS provides a mobile and protected platform capable of delivering sub-munitions to a range between ten and thirty-two kilometers. These munitions effect both armored and personnel targets. Within the near future, the effectiveness and range improvements will support ranges out to forty-five kilometers. ATACMS provides internally guided missiles with anti-personnel and anti-material sub-munitions out to ranges

between twenty-five and 165 kilometers. The ATACMS Block IA increases this range to between 100 and 300 kilometers.[39]

The M109A6 Paladin howitzer provides a mobile, responsive fire support system capable of delivering unassisted munitions to ranges of twenty-two kilometers. Moreover, this system incorporates automatic fire control systems to improve employment flexibility and allow the Palladin to maneuver with traditional ground maneuver forces. Additionally, new advances in 155mm cannon munitions support extended ranges and greater lethality against armored targets. These munitions extend Palladin and the M198 howitzer employed by both the US Army and US Marine Corps to twenty-eight kilometers when employing Dual-Purpose Improved-Conventional Munitions (DPICM).[40]

Sense and destroy armor munitions (SADARM) also improve lethality of surface fires at extended ranges. SADARM destroys armor out to twenty-two kilometers in day or night and adverse weather. An older munition, Copperhead destroys armor at ranges between three and sixteen kilometers, but requires a separate platform to laser designate the target.[41]

Finally, attack helicopters provide increase depth to the ground commander. The US Army considers attack helicopters a ground maneuver or surface fire asset. Current doctrine allows attack helicopter support of the close fight, but emphasizes deep operations to shape the ground commander's fight.

With the significant organic fire capability within ground organizations why does a ground commander require air? Several factors work to constrain the effect of surface fire support systems. Range, lethality, deployability, and survivability factors combine to limit the

capability of organic ground fire support. Battlefield depth is obviously dependent upon mission, enemy, terrain, time, and friendly capability. Achieving depth in operations assists force protection and initiative. While depth most often infers distance, the real measure of depth is often time.

The range of surface fire support determines engagement depth and effect on the enemy. Successfully engaging throughout the battlefield depth assists in controlling the tempo, increasing time for friendly decisions and maneuver, and decreasing an enemy's reaction time. The MLRS current range of thirty-two kilometers and future range of forty-five kilometers extends the ground commander's reach.[42] Translating this capability to time provides one indication of why a ground commander requires air support. On a mechanized battlefield, when deployed well forward, MLRS can engage an enemy one to two hours forward of friendly defenses. In the attack, MLRS may maneuver to engage the enemy artillery or reserves. In closed terrain the reach of MLRS into second echelons improves. The MLRS can engage an enemy formation up to ten hours forward of friendly positions.[43] The MLRS launcher increases ground force's reach when employing ATACMS. ATACMS engages targets over twenty-fours hours from the close fight. However, current ATACMS ammunition provides limited capability against targets other than personnel or very soft platforms. Artillery provides multiple effects but the limited ranges allow engagement of targets near the close fight.[44] Engaging deep enough to effect time is the ground commander's dilemna. Attack helicopters provide a partial solution when organized for deep attack. In fact, recent US Army division deep attacks have relied solely on attack helicopters and indirect fire.[45]

Night offers the best chance for survivability when conducting operations beyond the forward line of troops (FLOT) while daytime operations are generally short of the FLOT. Night requirements, limited assets, planning time requiring seventy-two hours to develop a potential course of action to execution, maintainability, and crew rest limit continual support of the ground organization. Moreover, the attack helicopter deep attack requires detailed coordination and planning time to ensure survivability. Additionally, conducting these operations beyond the FSCL further complicates joint fires supporting the entire operation. Ensuring safety beyond the FSCL requires ATO integration for optimum efficiency.[46]

## Current FSCL Relationship

During Desert Storm, increased surface capabilities and their relation to the FSCL spurred a conflict within the Joint Force. The current FSCL definition, viewed by ground forces as a permissive fire support coordinating measure, was used by ground forces to integrate fires and maneuver and to protect friendly maneuver from fratricide resulting from uncoordinated air support. The JFACC envisioned that all fires beyond the FSCL, including rockets, missiles, and attack helicopters, would be controlled through the JFACC and integrated into the Air Tasking Order (ATO).[47] Additionally the JFACC required three hours advance notification for an FSCL change. This advance notice allowed the JFACC to notify air elements. However, during the fast-paced maneuver ground units were unable to provide the notice frustrating commander's who doctrinally established the FSCL.[48]

Initially, the JFC restricted FSCL employment to the Saudi Border. This restriction removed the deep battle from ground forces and removed the deep fire and air support envisioned under doctrine. Upon initiation of land combat, Corps Commanders pushed the FSCL well forward of maneuver units to reserve space for unconstrained employment of MLRS, ATACMS, and attack helicopters. Placing the FSCL well forward of maneuver units helped retain the ability to conduct tactical deep operations and influence the close battle. The result of this FSCL employment hampered the JFACC capability to destroy escaping Iraqi forces.[49]

FSCL employment by the Joint Force in Desert Storm became a line separating tactical and operational fires. The JFC, through his JFACC, controlled the area beyond the FSCL, while the ground commander controlled the area short of the FSCL. The JFACC had the primary responsibility for preparing the battlefield. However, the nature of that preparation remained a question for ground commanders. The significant difference in preparation stems from the differences between tactical deep and operational fires. Operational fires directly support the operational scheme and attacked significant operational targets. Tactical deep fire supports the tactical scheme of maneuver. The difference is not the range, but the nature of the targets.[50]

Surface fire support assets participated in operational fires during Desert Storm. ATACMS and attack helicopters destroyed radar, SAM sites, and enemy operational sustainment facilities. The necessity of these operations was not in question.[51] Desert Storm's ground commander's questioned how the close fight would be shaped. Lieutenant General Walter Boomer, MARCENT Commander and Lieutenant General

Frederick Franks, Commander VII Corps both objected to fires beyond the FSCL concentrating on tanks. Both ground commanders agreed that the tactical deep fires under JFACC control should have focused on artillery. Both perceived Iraqi massed artillery and chemical munitions as the greatest threat to mission success. However, without control of the tactical deep fires neither commander was able to shape this enemy capability. As a result, the preponderance of fires beyond the FSCL did not target artillery.[52]

Desert Storm affected the perception of the FSCL and its relation to fires. Employing the FSCL as a boundary between the ground forces and the JFACC separated fires rather than coordinating fires. The JFACC's concerns were operational, while the ground commander focused at the tactical level. This perception leads to viewing the FSCL as a boundary between operational and tactical deep fires. Consequently the ground commander's desire to establish the FSCL deep enough to allow his own tactical deep fires. By definition, the FSCL would not preclude fires short of or beyond the FSCL, but only requires coordination. However, perceptions result in the FSCL precluding operational fires and a loss of operational flexibility. During Desert Storm these perceptions worked to preclude air interdiction of Iraqi ground forces withdrawing from Kuwait.[53] The gravity of this situation increases when the limitations inherent in force projection operations reduces joint fires capability.

## Impact of Force Projection

Force projection limits the availability of the plentiful ground organic fires in forward deployed or prepositioned forces. For example,

a single MLRS launcher can deploy to a region aboard either a C141-B, C5A, or C17. However, the lift requirements of MLRS, ATACMs, self-propelled artillery, tanks, and their associated support equipment far exceed airlift capacities. Deploying the combined arms force necessitates shipboard deployment or prepositioning. Prepositioned assets are limited to specific regions such as Southwest Asia or one US Army heavy brigade afloat and three US Marine Corps prepositioned sets. Although afloat prepositioned systems include heavier capabilities they contain limited artillery, tanks, and rockets. The US Army prepositions nine MLRS launchers aboard the single set of prepositioned ships located in Diego Garcia. The US Marine Corps maintains no MLRS in the prepositioned sets.

Since the Cold War's conclusion, force reductions overseas and a global focus requires force projection operations in support of increased national interests. Operation Desert Shield exposed the weakness of lightly equipped force projection units. While potential future enemies observed the Desert Shield deployment, lethality problems inherent with light forces and lift limitations restricting deployment of US Army heavy ground forces surfaced.[54] TRADOC Pamphlet 525-200-2 Early Entry Lethality and Survivability Concepts describes the future of force projection forces:

> Early entry forces, to remain survivable, must have the capability to rapidly expand the battlespace in all dimensions, including time, against a formidable armored force.[55]

Moreover, the concept maintains that synchronizing joint force capabilities provides the combat power necessary for force projection operations.[56]

The paradigm shift of US forces to force projection alters combined arms air support requirements. Infrastructure, sealift, and airlift impede the timely deployment of ground fire support systems that ground commanders require. This reduction in ground combat power reduces the ground force's capability to fight simultaneously throughout the battlefield depth. However, the operational shift toward force projection increases the requirement for the deployable engagement capabilities. Moreover, offsetting reduced ground maneuver capability and permitting force projection operations require systems capable of attacking deep into the battlespace. This capability currently exists in fixed-wing air support.[57]

Airpower's increased role in force projection operations was evidenced during the initial weeks of Desert Shield. Although the Gulf War deployment represented a benign entry into a developed infrastructure, even deployment of sufficient ground force for a defense required weeks. During this period airpower provided the combat power for the defense of key facilities and bases in Saudi Arabia.[58]

The necessity of airpower in force projection or expeditionary operations was recognized long ago by the US Marine Corps. Limited amphibious lift, ship to objective maneuver constraints, uncertain foreign infrastructures, and the expeditionary nature of operations created a requirement for immediately available air support to reach deep into the area of operations and create favorable conditions for the ground forces. The Marine Corps structured itself into Marine Air-Ground Task Forces to meet fire and maneuver requirements.

The organizational and planning difference between the US Army, US Air Force, and US Marine Corps stems from the US Marine Corps' crisis

response role. Projecting combat power from a seabase into an often limited infrastructure requires an expeditionary force with significant combat power and little ground logistics tail. The expeditionary force engages deep to shape an enemy's capabilities in relation to friendly combat power build-up and maneuver. The need for expeditionary systems, along with limitations of amphibious lift, ship-to-shore maneuver, and Naval Surface Fire Support (NSFS) demands meeting the US Marine Corps' combined arms needs with aviation capabilities.

## Current Problems

Addressing the battlefield framework requires indirect, direct, and aviation delivered fires for the close and deep battle. Surface fire support systems deploy to an operational area during force projection operations. Lift limitations, staging base requirements, worldwide infrastructure decline, and US forcible entry capability limitations slow the ability to build ground combat power in an operational area.[59] Slow ground combat power build-up impacts on the joint force's capability to fight simultaneously throughout the battlefield framework.

The joint force relies on air support as its primary flexible deterrent option. During force projection operations, air support overcomes slow combat power build-up and protects ground forces during the lodgment phase. However, the ground commander's requirement for air to support the close and deep battle remains a debated question within the joint community. The debate centers on command and control of aviation, coordination of fires, and air prioritization ground planning rather than employment in the air campaign.

Since this debate began, technological advances in sensors, target acquisition radars, and data processing capabilities have increased Air Force detection and engagement ranges. Likewise, long range rocket systems, ATACMS, and attack helicopters provide ground commanders with a capability to strike deep using ground force assets. This significant organic capability provides tremendous operational depth to the ground commander and an increased area of influence. The greater engagement range increases the opportunity for massed fires and coordination within the joint force. However, these developments further complicated an already complex coordination problem.[60]

Fueling the debate is confusion over employment of the FSCL. The area of the battlefield with immediate effect (24-48 hours away) on ground maneuver and the close battle is often beyond the FSCL. Ground force commanders desire control of operations within this area. These operations directly impact on ground maneuver and establishing the conditions for the future close fight. The Air Force perspective desires air planners coordinating the attack on targets beyond the FSCL. Centrally managing air attacks ensures concentration of limited assets against decisive points, but may not provide the support required by the ground commander.[61]

In the past enemy forces 100 kilometers deep were days away from ground maneuver engagement. Today that engagement occurs immediately. Moreover, maneuvering ground forces can close this distance in hours. The ability of ground units to acquire and engage enemy forces and rapidly maneuver throughout the battlefield depth clouds the distinction between tactical deep fires and operational fires. However, when FSCL employment separates battlefield responsibility between the Joint Force

and ground maneuver units, support of operational or tactical purposes declines.

As the future battlefield evolves, the criticality of FSCL employment and fires responsibility increases. The predominance of future force projection operations also changes the air support requirements for future joint forces. The joint force tasked with force projection requires expeditionary capabilities for immediate engagement well into the battlefield depth. The limitations of sea and airlift will impede the timely deployment of ground fire support systems. *Joint Vision 2010* envisions future forces employing long range engagement capability in a wide array of delivery systems. Moreover, increased tempo and massed fires will dominate the battlefield.[62] Under these circumstances the joint force can not afford confusion in battlefield responsibility and fires.

## SECTION III. FUTURE OUTLOOK

### Emerging Capability

Technologically advanced weapons and information systems characterize the future combat environment. This increased technology will certainly increase the capabilities of small non-state groups and organized state sponsored armies. With this advanced, technology engagement can occur from dispersed positions to extended battlefield depths. Joint Vision 2010 addresses this threat with forces capable of massing effects at greater ranges. This vision requires forces capable of synchronizing combat power at the decisive time and place throughout the battlefield depth with improved technology.[63]

These technological improvements include increases across the Services. The US Army projects increased deep fire lethality and range through improvements in ATACMS, MLRS, and attack helicopters.[64] The US Marine Corps continues its reliance on airpower and deep fires to support the expeditionary operations of the future.[65] Also supporting expeditionary operations, the US Navy continues developments of TLAMs, NSFS, and an Arsenal Ship to support littoral operations.[66] The US Air Force continues to improve airpower's capability in both flexible deterrent and expeditionary operations. Centrally managed airpower attacks throughout the battlefield depth massing to destroy and delay enemy forces before they close with ground or naval forces.[67]

These Service capabilities will operate jointly on both linear and asymmetrical battlefields. However, increased capability coupled with limited resources and reduced lift provides fewer forces in an extended battlespace. These forces will rely on simultaneous engagement throughout the battlespace to overwhelm an enemy force. Deep operations or operations characterized as beyond the FSCL become a routine part of the simultaneous engagement. Simultaneous engagement requires integration of operational and tactical planning, maneuver, and fires rather than the sequential approaches employed in the past.[68]

Joint Vision 2010 requires synergistic forces capable of integrating deep fire and maneuver.

> Dominant Maneuver is the multi-dimensional application of information engagement and mobility to position and employ widely dispersed joint forces. . . it allows control of the breadth, depth, and height of the battlespace.[69]

Continued improvements in capability and extended battlefields increase the need for effectively coordinated fires. Force projection and limitations of the future force increase the need for integrated

operational and tactical fires. This integration only occurs with a joint headquarters responsible for integrating planning and coordinating fires.

## Emerging Doctrine

Coordinating simultaneous operations in depth requires a well-integrated joint force. Doctrine or procedures should reduce ambiguity, but current emerging joint doctrine continues with ambiguity regarding the FSCL. Emerging doctrine defines the FSCL as:

> A fire support coordinating measure that is established and adjusted by the appropriate land force commanders within their boundaries in consultation with superior, subordinate, supporting and affected commanders. FSCLs facilitate the expeditious attack of surface targets of opportunity beyond the coordinating measure. Forces attacking targets beyond an FSCL must inform all affected commanders in sufficient time to allow necessary reaction to avoid fratricide. Supporting elements attacking targets beyond the FSCL must insure that the attack will not produce adverse surface effects on, or to the rear of, the line. The FSCL should follow well defined terrain features. Short of an FSCL, all air-to-ground and surface-to-surface attack operations are controlled by the appropriate land force commander. Coordination of attacks beyond the FSCL is especially critical to commanders of air, land, and special operations forces. In exceptional circumstances, the inability to conduct this coordination will not preclude the attack of targets beyond the FSCL.[70]

The US Army attempts to resolve the FSCL issue with the following draft definition:

> A permissive fire control measure, established and adjusted by the ground commander, in consultation with superior, subordinate, supporting and other affected commanders. It is not a boundary; synchronization of operations on either side of the FSCL is the responsibility of the establishing commander out to the limits of the land component forward boundary. It applies to all fires of air, land and sea weapons using any type of ammunition against surface targets. Forces attacking targets beyond the FSCL must inform all affected commanders to allow necessary coordination to avoid fratricide.[71]

The forward boundary, although defining responsibility, can confuse the issue by placing another control measure into an unclear situation.

> The farthest limit, in the enemy direction, of an organization's responsibility. Unit is responsible for deep operations to that limit. The next higher headquarters is responsible for coordinating deep operations beyond that limit. In offensive operations it may

move from phase line to phase line dependent on the battlefield situation.[72]

These definitions attempt to clarify the FSCL issue with more definite language. However, only informing an affected headquarters of fires beyond the FSCL defeats the purpose of coordination. The ground commander still maintains the authority for establishing the FSCL which detracts from the joint coordination of fires. This doctrinal authority to place the FSCL can detract from other joint force fires and reduce joint force synergism. Placement of the FSCL and establishing a forward boundary are both critical to coordinating and planning the joint operation.

When provided an area of operations with a forward boundary, the LCC may establish a FSCL short of his forward boundary. When the establishes a FSCL, he removes coordination requirements for fires beyond the FSCL but within his area of operations. Although responsible for the entire area of operations, the LCC focuses surface fire and maneuver short of the FSCL. Beyond the FSCL, the battlefield is open to attack by any system. Occasionally, the LCC attacks beyond the FSCL for a specific result. The LCC's intent is to facilitate fires beyond the FSCL. The air component of a joint force expresses concern that uncoordinated attacks into the area beyond the FSCL endanger air forces and special operating forces and detract from efficient employment of limited joint fires.[73]

*Joint Warfare and the Army-Air Force Team*, an article written by General D. J. Reimer and General R. R. Fogelman discusses this very issue. The article explains that the LCC is a supported commander in operations beyond the FSCL and short of the LCC forward boundary. In this situation, the LCC must coordinate fires with the Air Component

Commander (ACC) when possible. LCCs must judiciously consider FSCL placement and should coordinate the FSCL placement with the ACC. Finally, the article states that ACCs must trust that the LCC will position the FSCL to optimize achieving the JFC's objectives.[74] The article explains the required understanding and cooperation necessary for FSCL employment and efficient fires. However, the requirement for trust requires overcoming Service parochialism and background. The lack of a jointly determined FSCL and the option for a LCC to establish or not establish a FSCL create ambiguity.

## SECTION IV. PROPOSED SOLUTIONS

This monograph proposes several improvements to the existing doctrinal definition and employment of the FSCL. For discussion purposes the monograph will now apply each proposal to the Operation Cobra scenario discussed earlier.

### Common Understanding of Current Doctrine

Maintaining current doctrine and FSCL employment provides the simplest answer. Improving the situation requires increased understanding and awareness, elimination of Service parochialism, and established joint doctrine. The article written by General Reimer and General Fogelman provides a start toward thorough understanding. Given this doctrine and current organization previous problems appear less likely.

Employing today's FSCL during Operation Cobra would have clarified operations. The ACC would have been directed by the JFC's guidance through the JFACC, resulting in efficient fires. The planned 00 Bomb Line would have been adjusted deeper and would have become the

initial FSCL. The LCC forward boundary would have encompassed the operational objectives for the breakout and required LCC planning and control of air and surface fires. The area between the FSCL and forward boundary would have allowed uninterrupted ACC attack of first and second echelon defenses. The ACC as a supporting command would have conducted AI without LCC coordination, but in relation to LCC plans. However, fires affecting forces on or short of the FSCL would have required coordination. These measures would have reduced fratricide and resulted in timely support. As the LCC attacked, the FSCL would have shifted forward establishing the requirement for LCC and ACC coordination short of the FSCL. Operations beyond the FSCL would remain linked to LCC maneuver when coordination was possible, but the LCC focus would have been short of the FSCL. However, no headquarters would have been designated to coordinate activities beyond the FSCL. With no headquarters coordinating it is doubtful whether integration of fires and maneuver would have occurred throughout the operation. Fires delivered beyond the LCC forward boundary would have been part of the strategic air campaign.

One foreseeable problem arose when opportunities occurred for the LCC to exploit beyond the FSCL with maneuver or surface fires. These opportunities would not have necessarily required coordination through the JFC or with the ACC. Aggressive offensive action could have risked fratricide of either air or land forces. This proposal continues to rely on mutual understanding, trust, and "good faith"; removing Service parochialism; and when possible coordination.

## Beyond the FSCL Coordinating Authority

During Prairie Warrior '96 an alternative to standard doctrine was employed to resolve the FSCL interpretation problems. The problem recognized by Prairie Warrior planners was that joint doctrine was unclear. Specifically informing affected commanders of operations beyond the FSCL did not mean the necessary coordination would occur. The Prairie Warrior answer was to designate a large land component area of operations with no forward boundary. The LCC retained responsibility for the area of operations, while the ACC supported operations within the area of operations. A resulting supporting ACC to supported LCC relationship resulted. Beyond the FSCL, the Combined Forces Air Component Commander (CFACC) was designated coordinating authority for fires and maneuver. To mitigate the restriction requiring CFACC coordination beyond the FSCL, the JFC defined exceptional circumstances for engaging targets beyond the FSCL without coordination. These circumstances included high priority targets of sufficient danger to friendly forces that the risk of fratricide or dual engagement was warranted.[75]

During Prairie Warrior '96 the JFC approved the FSCL placement and specifically defined the FSCL and coordination procedures. Although clear, the guidance had limited flexibility. Planned FSCLs were designated throughout the area of operations and linked to a friendly maneuver schedule. When II Corps experienced unexpected success in one portion of the area of operations, the opportunity to exploit early success was frustrated by an inability to shift the FSCL. Land forces with supporting surface and aviation fires waited approximately eight hours to advance forward. Eventually, the FSCL shifted, but enemy

forces were afforded an opportunity to reposition with limited interference. Although cross FSCL procedures were not discussed in planning, a coordinated attack could have occurred beyond the FSCL. However, coordination with the CFACC and JFC was cumbersome.[76]

The problem in moving the FSCL or coordinating maneuver beyond the FSCL presents another issue. Additional JFC guidance before operations could simplify procedures under this arrangement. The key to this alternative is the JFC. The JFC must synchronize tactical and operational aspects. Additionally, the JFC is the only central authority capable of precluding conflict.

Once again this alternative applied to Operation Cobra would have clarified operations. The ACC would have been directed by the JFC's guidance through the CFACC and provided more responsive fires. Employing the FSCL deeper than the 00 Bomb Line would have allowed LCC preparation of the battlefield and separated LCC and CFACC coordinating authority. The ACC's could have conducted AI beyond the FSCL without LCC coordination, but in support of the JFC's plans. Fires affecting forces on or short of the FSCL would have required coordination. These measures would have reduced fratricide and resulted in timely support. As the LCC attacked, the JFC would shift the FSCL forward establishing requirements for LCC and ACC coordination short of the FSCL. Operations beyond the FSCL would have been coordinated by the CFACC and remained linked to LCC maneuver through JFC guidance.

Foreseen problems would have been CFACC's preoccupation with strategic air responsibilities and linking AI to LCC maneuver. LCC problems would have included exploiting beyond the FSCL with maneuver or surface fires. These opportunities would have required coordination

with the CFACC. Lacking a forward boundary, the LCC would have been concerned about the large area of operations and the ability to move the FSCL. The inability to move the FSCL would have slowed LCC initiative and risked fratricide if aggressive offensive action would have occurred across the FSCL.

Joint problems could arise out of specific joint force procedures. Although specific FSCL employment and coordination guidance can clarify operations, specific procedures for each joint force can contradict previous training. Adapting to procedures of each joint force, rather than employing doctrinally accepted practices detracts from the synergism required on today's battlefield.

## Task Organized Forces

Another alternative would divide the area of operations into specific zones. The JFC task organizes the joint force to specific zones and related tasks and purposes. Each element within the joint force maintains responsibility for a zone within the battlefield framework. The LCC's zone coincides with planned operations for that particular phase. The JFC assesses the LCC's capability and allocates airpower based on mission analysis. The JFC also assigns the ACC a zone. One assignment corresponds to strategic attack. Another assignment corresponds to battlefield preparation or interdiction. In the interdiction zone the ACC could be assigned ground forces, intelligence collection assets, or surface fires to assist in the interdiction operation determined by the JFC. Additionally, task organization designs the force for the particular mission. Coordination occurs prior to execution. Each force, with a zone, receives a task and

purpose nested to that particular phase's main effort. The need for engagement outside of a zone requires cross-boundary coordination. Targets of strategic importance inside the LCC zone or interdiction zone are coordinated.

Although this alternative appears simplistic it defines forces and tasks relative to the battlefield framework. Clearly, each commander understands his responsibilities for that phase and zone. This alternative requires a truly joint force. The JFC must assess, organize, and coordinate the application of combat power throughout his battlespace. For example, in a force projection operation the main effort would be the ACC's interdiction effort. Early deploying ground forces support the ACC through ground operations designed to expose the enemy to airpower. Upon deploying greater forces to the region, the main effort becomes the ACC in both preparation and strategic attack. These operations parallel the Desert Storm Air Campaign. Finally, when ground forces are committed, the JFC re-evaluates the main effort. The ground operations task could be to shape enemy ground forces into engagement areas for the ACC. Conversely, if the ground force becomes the main effort, airpower shapes enemy forces relative to ground maneuver. Regardless of the option, evaluating and task organizing joint force capabilities becomes critical. If a ground force requires airpower for employment within the zone, the JFC allocates the necessary air during planning.

Under this alternative, during Operation Cobra, the 00 Bomb Line would have been moved forward to accommodate LCC preparation fires. The ACC would have had a zone allowing the attack of second echelon forces, reserve forces, and sustainment. Additionally, deeper strategic level

attacks would have occurred under ACC control. The operation would have been phased and as ground objectives were secured, boundaries between forces would have shifted. The phase termination and boundary shifts would have been event rather than time driven. Additionally, the LCC would have had sufficient airpower allocated for both CAS and AI. ACC attacks into the LCC zone of attack would have been coordinated as cross boundary fires at the tactical level.

The ACC becomes another maneuver element and each force receiving a zone of action also receives a task supporting the JFC main effort. No FSCL exists because the JFC assigns portions of the entire battlefield to each maneuver commander.

Initially this alternative appears to contradict the existing JFACC policy. However, no reason exists to forego the JFACC policy. The JFACC continues to assist the ACC efforts, allocates forces to the LCC, coordinates air maneuver through an Air Tasking Order (ATO), and evaluates requirements for the JFC.

## Additional Improvements

Incorporating joint targeting boards and additional control measures provide additional means for improving operations. Joint targeting boards provide an organization for overseeing the application of fires across the joint force. Both the US Army and US Air Force leadership agree that these boards should not become involved in targeting or details, but must maintain a campaign level perspective.[77] Joint Targeting Boards provide a representation from each component to the joint staff and may assist. However, they are not standing

organizations with a defined role. The danger is that they become another layer in the planning bureaucracy.

Employing additional control measures provides one way to adapt to changing situations. These control measures work with the current FSCL or in any of the alternatives. Potential control measures include Restricted Operating Zones (ROZ)s and High Density Airspace Control Zones (HIDACZ)s. A ROZ restricts airspace for a given mission.[78] If required, a maneuver commander develops routes and ROZs to permit a deep attacks beyond the FSCL within his area of operations. This allows the ACC to continue operations beyond the FSCL while the LCC attack a specific deep target.

If the ground maneuver commander experiences unexpected maneuver success, employing a HIDACZ may facilitate his attack across the FSCL. While coordinating the adjustment of the FSCL, a HIDACZ established across the FSCL within a specific ground maneuver zone allows ground exploitation in a specific area. The HIDACZ requires aircraft coordination to fly through the HIDACZ and restrict actions while in the HIDACZ.[79] However, the ACC can transit or fly above and around the HIDACZ to continue operations. Additionally, ACC fires within the HIDACZ are coordinated with the ground commander. Fires above, beyond, and outside of the HIDACZ follow procedures for fires beyond the FSCL.

## SECTION V. CONCLUSION

Today's maneuver based doctrine and emphasis on simultaneous attack throughout the battlespace requires integrated planning and coordinated execution within the joint force. The question is not whether a ground commander requires air support or its effects, but how

will the JFC integrate air, ground, and naval forces into a coordinated effort. Throughout this monograph different parochial and doctrinal interpretations of the FSCL were presented. Most interpretations relate back to the WW II 00 Bomb Line and linear warfare. Additionally, pre-conceived biases and Service parochialism regarding planning and execution of air support detract from integration of joint forces.

Defeating these detractors requires a joint solution that provides clarity. At a minimum, a better understanding of the FSCL will improve air and ground operations. The ability of air interdiction and close air support to destroy and disrupt enemy forces provide important contributions to the success of a campaign. These missions require nesting task and purpose to the joint force's main effort.

It is easy to imagine a ground element as the main effort with AI specifically tasked to shape the close fight and CAS available to support that fight. However, limitations in the ground element's deployability may result in a ground element supporting an air element. In force projection operations, airpower deploys rapidly with decisive combat power. The ground element may only fix an enemy, while the air element, as the main effort, destroys enemy forces. Joint understanding of not only CAS and AI, but air components and ground components remains a part of the continuing task to develop and refine doctrine. Moreover, clarity during operations requires the Joint Force headquarters to delineate these relationships for the mission assigned.[80]

## Recommendation

Resolving air support relationships requires doctrinal and procedural change that removes the FSCL from existing doctrine and

requires joint forces to assign responsibility and inter-related missions to each portion of the joint force. Removing the FSCL from joint doctrine provides the initial step in clarifying the issue. The emotional baggage and Service parochialism associated with the FSCL hamper using the FSCL effectively. However, the final solution lies in the authority of the JFC vice doctrine.

Doctrine provides the common framework for operations and training. The doctrine provides a point of departure for the joint force. The JFC is responsible for the integration of forces and systems in each operation. Without the FSCL, the JFC must determine how fires will be coordinated and relative responsibility for each portion of the battlefield framework. Responsibility for portions of the battlefield can be delineated through boundaries separating component responsibility and battlefield tasks. Exceptional situations can be addressed with restricted fire lines and phase lines. These terms are clearly understood within the joint community. The air component as another maneuver element requires coordination within the battlefield framework and simplifies the integration of air and ground forces.

The critical task for the JFC is task organizing the appropriate force for the area of responsibility and task. Air support provides an essential element of a task organized combined arms force. The joint force's mission analysis and concept development determine whether a ground force requires air support or whether an air force requires ground support. Careful analysis of the mission; area of operations; concept of operations; composition of air, ground, and naval forces; and enemy capability provide the appropriate task organization and coordination requirements for the situation. Providing the required air

support to ground forces may extend beyond allocating CAS sorties. Air support must include airpower subject to ground planning but not closely integrated with ground maneuver.

Offensive air support, as described in US Marine Corps doctrine, includes both CAS and Deep Air Support (DAS). DAS does not require detailed integration with friendly ground force maneuver, but requires understanding of the ground scheme of maneuver and intent. DAS includes AI and reconnaissance linked to ground maneuver and provides the means to attack targets beyond the capability of ground systems or more adequately attacked from the air."[1]

Successfully resolving air support relationships remains critical to a functioning joint force. Each element of the joint force offers unique capabilities to unique situations. The JFC must retain the flexibility to establish the task organization, battlefield framework, and support relationships for each force and situation.

ENDNOTES

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[6]Ibid., 220.

[7]US Air Force, AFM 1-1, *Basic Aerospace Doctrine of the United States Air Force* (Washington, DC: Headquarters, US Air Force 1992) 11.

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[9]War Department, Field Manual 6-20, *Field Artillery Tactics and Technique* (Washington, DC: US Government Printing Office, 1940), 42.

[10]Max Hastings, *Overlord: D-Day and the Battle for Normandy* (New York: Simon and Schuster, Inc., 1984), 254.

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[14]US Army, FM 6-20, *Field Artillery Tactics and Techniques* (Washington, DC: Department of the Army, 1948), 94-97.

[15]US Army, FM 6-20, *Fire Support in Combined Arms Operations* (Washington, DC: Department of the Army, 1977), D-4.

[16]LTG Merrill A. McPeak, USAF, "TACAIR Missions and the FSCL," *Air University Review*, (September-October, 1985): 71. Battlefield Coordination Element (BCE) is an Army liaison cell with the located with the Air Force. BCE ensures Army priorities are addressed and is the link between the JFLCC and JFACC.

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