STRATEGY RESEARCH PROJECT

CONSIDERATIONS FOR USE AND PLACEMENT OF THE JOINT FORCE LAND COMPONENT COMMANDER'S FORWARD BOUNDARY

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ABSTRACT

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The Joint Force Commander (JFC) has the responsibility to integrate and synchronize the application of joint combat power throughout his entire Joint Operations Area (JOA). Recent technological advances have enhanced the ***deeper*** strike interdiction capabilities of all the military services, especially the Army and the Navy. A prevailing significant issue for the JFC that directly affects the operations of the Joint Force Land Component Commander (JFLCC) and the Joint Force Air Component Commander (JFACC) is the emplacement of the forward boundary of JFLCC's area of operations (AO). This issue is rooted in consternation about the battlespace required for these two component commanders to conduct land and air missions assigned by the JFC. It is the thesis of this research project that the JFC establishes the location of the forward boundary of the JFLCC's AO with the purpose of optimizing the application of joint combat power while simultaneously not limiting the integrated employment of subsurface, surface and air firepower in the JOA. Dominant issues that will be researched and assessed include the conditions when a JFC should establish this boundary, where the boundary should be placed, and the ramifications of this positioning. Additionally, doctrinal Joint Staff, Army and Air Force service positions relating to this issue will be discussed and analyzed.

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> A superiority of fire, and therefore a superiority in directing and delivering fire and in making use of fire, will become the main factors upon which the efficiency of a force will depend.
>
> — Marshal of France Ferdinand Foch, 1919

Joint Pub 3-0, Doctrine for Joint Operations, states, "To assist in coordination and deconfliction of joint action, Joint Force Commanders (JFCs) may define operational areas or joint areas (JOAs)."[1] Within this JOA, the JFC is responsible for the integration and coordination of all operations and has the authority to establish an area of operations (AO) for land and naval forces. The size, shape, and positioning of this AO will be established by the JFC based on his concept and projected duration of operations, and the land or naval force commander's requirements for depth to maneuver rapidly and to fight at extended ranges. The AO "...should be large enough for component commanders to accomplish their missions and protect their forces."[2] Within their AOs, commanders "...employ full range of joint and service doctrinal control measures and graphics to delineate responsibilities, deconflict operations, and promote unity of effort."[3]

To assist the JFC in commanding and controlling the forces in his JOA, he establishes functional component organizations led by a joint force component commander. These "functional components provide centralized direction and control of certain functions and types of organizations...when the scope of operations requires that similar functions and capabilities of forces from more than one service be directed toward closely related objectives and unity of command and effort are primary considerations."[4] Furthermore, JFCs "...may also establish a supporting and/or supported relationship between components to facilitate operations."[5] Typical

functional component commanders include a Joint Force Land Component Commander (JFLCC), a Joint Force Air Component Commander (JFACC), a Joint Force Maritime Component Commander (JFMCC) and a Joint Force Special Operations Component Commander (JFSOCC). Based on the responsibilities of and the coordination required between the JFLCC and the JFACC, these two component commanders will be the predominant component commanders discussed in this research project. "The JFLCC provides a JFC the means to maximize the capabilities of landpower in a theater by achieving unity of command and maintaining unity of effort among land forces."[6] Whereas, the primary purpose of the JFACC is "...to provide unity of effort for employing air power for the benefit of the joint force as a whole."[7]

A prevailing significant issue for the JFC that directly affects the operations of the JFLCC and the JFACC is the emplacement of the forward boundary of JFLCC's AO. This issue is rooted in disagreement about the battlespace required for the these two component commanders to conduct land and air missions assigned by the JFC and the required coordination between these supported and supporting commanders in the different AOs. Joint doctrine specifies that the JFLCC is the supported commander in the land AO, extending out to his forward boundary, with the JFACC serving as the supporting commander.

The JFC has the responsibility to integrate and synchronize the application of joint combat power throughout the entire JOA. There are a litany of joint acquisition and surface-to-surface, subsurface-to-surface, and air-to-surface attack assets that must be coordinated with the JFC's concept of operations. Recent technological advances have enhanced the ***deeper*** strike interdiction capabilities of all the military services, especially the Army and the Navy. It is no longer just the Air Force who can attack targets with delivered precision guided munitions at

ranges in excess of 165 kilometers from the forward line of troops (FLOT) in the JOA. Navy Tomahawk Land Attack Missiles (TLAMs), Army AH-64 Apache helicopters and Army Tactical Missile Systems (ATACMS) are lethal, long-range, dominant weapons platforms or munitions that have radically altered the battlespace requirements for sophisticated coordination and control procedures between the JFLCC and the JFACC.

The topic of this Strategic Research Project (SRP) focuses on the positioning of the forward boundary of the JFLCC's AO. Dominant issues that will be researched and assessed include the conditions when a JFC should establish this boundary, where the boundary should be placed, and the ramifications of this positioning. Additionally, it is paramount that the Joint Staff, Army and Air Force service perspectives relating to this issue are analyzed to fully comprehend the complexities of the issue. Unfortunately, all three perspectives differ in specific important aspects. There are significant doctrinal and service staff disconnects that complicate the emplacement of this boundary by the JFC.

Before the JFC decides upon the location of the forward boundary, he should consult with all of his component commanders for advice and recommendations; a seemingly elementary notion that does not always occur. "The JFC needs to have a forward boundary sufficiently far in front of the FLOT to enable the JFLCC to shape and influence the ground battle...it should not be too far forward to unduly constrain the JFACC's overall interdiction effort."[8] The JFC does not want to create a sanctuary where the JFACC cannot effectively perform the missions assigned to him, nor restrict the cooperative application of landforce and seaforce firepower. The emplacing of the JFLCC's forward boundary is a form of art, not a prescriptive science. Thus, it is the thesis of this SRP that the JFC establishes the location of the forward boundary of the JFLCC's AO with the purpose of optimizing the application of joint combat power while

simultaneously not limiting the integrated employment of subsurface, surface and air firepower in the JOA.

This challenge of optimizing the integrated employment of joint firepower throughout the JOA is one of the JFC's top priorities. The various positioning locations of the forward boundary will leverage the amount of firepower the JFC can effectively integrate and synchronize within his JOA. The JFC "...desires combined capabilities to produce a synergistic increase in joint combat power that provides a decisive advantage...with each service optimizing its unique capabilities."[9]

JOINT PERSPECTIVE

> Whereas in previous times we could chop up the battlespace and delegate the various pieces to the components, as battlespace becomes more nonlinear and combat power is applied more asymmetrically, this is a luxury we can no longer afford.
>
> — General George Joulwan, USCINCEUR

According to Joint Pub 3-0, the JFC synchronizes the actions of air, land, sea, space, and special forces to achieve strategic and operational objectives through integrated joint campaigns and major operations. His goal "...is to increase the total effectiveness of the joint force, not necessarily to involve all forces or to involve all forces equally."[10] It is his responsibility to ensure efficient command, control and coordination procedures that effectively optimize the application of joint combat power throughout the JOA are established and functional within the entire Joint Task Force (JTF). One method that the JFC uses to accomplish this task is through the employment of various maneuver control measures and fire support coordination measures.

"Boundaries define surface areas to facilitate coordination and deconfliction of operations...a line by which areas between adjacent units or formations are defined."[11] As the JFC establishes the JFLCC's AO, he has the authority to use lateral, rear and forward boundaries to define the limits of this battlespace. "Such areas are sized, shaped and positioned to enable land or naval commanders to accomplish their missions while protecting deployed forces."[12] Based on many operational environment considerations, these boundaries may require relatively frequent adjustment. However, the airspace above the surface areas is available for use by all platforms, munitions and elements of the JTF. The JFC tasks the JFACC to establish and enforce airspace coordination measures to deconflict the multiple uses of the airspace throughout the entire JOA. "Theater air sorties are not constrained by land boundaries"[13] as the JFACC

allocates resources to accomplish JFC directed theater wide missions. However, the JFACC understands that the battlefield is not an uncoordinated free-fire area where ordnance can be jettisoned at will.

It is imperative that the JFC coordinates and synchronizes maneuver and interdiction operations within the entire JOA as the JTF plans and prosecutes a campaign. "Interdiction and maneuver should not be considered separate operations against a common enemy, but rather complimentary operations designed to achieve the JFC's campaign objectives."[14] The diverse service component capabilities, operations and forces need to complement each other so that desired effects can be readily achieved by the JTF. The framework to satisfy this requirement is established when the JFC determines the JFLCC's AO. As discussed in the introduction, it is the JFLCC's need for battlespace depth to maneuver rapidly and fight at extended ranges that determines the size, shape and positioning of this AO. According to Joint Pub 3-0, within his AO, the JFLCC "...is responsible for the synchronization of maneuver, fires and interdiction. To facilitate this synchronization, such commanders designate the target's priority, effects, and timing of interdiction operations."[15] The JFLCC must be cognizant of JFC priorities to effectively conduct joint operations within his AO. In accordance with joint doctrine, he is the component commander who has the authority and responsibility for synchronizing desired surface effects within this AO, regardless of delivery platform and munitions types.

Figure 1 (page 8) provides a pictorial representation of the key battlespace framework entities and component commander's responsibilities. The coordination and control of interdiction operations is a significant challenge in the joint application of combat power beyond the FSCL and within the JFLCC's forward boundary. Joint Pub 1-02, defines interdiction as "actions to divert, disrupt, delay, or destroy the enemy's surface military potential before it can

be used effectively against friendly forces."[16] Interdiction capable forces include: land and sea based attack aircraft, ships and submarines, conventional land and sea based maneuver forces, and special operations forces. These forces can launch a myriad of different munitions to support interdiction operations as long as they conform to the JFC's scheme of maneuver for the campaign. "Interdiction is not limited to any particular region of joint battle, but generally is conducted forward of or at a distance from friendly forces."[17] However, geographic distance with respect to maneuver graphics should not constitute the primary distinction between different forms of interdiction. Using Figure 1 (page 8) as a basis, interdiction operations are generally conducted beyond the FSCL in the ***deep*** portion of the battlespace, producing more delayed effects on friendly forces. The JFACC is the supported commander for the JFC's overall air interdiction effort for theater wide missions. There are times when the JFC may choose to employ interdiction as his principal means to achieve his objectives with all other component commanders serving as supporting commanders.

For all operations and activities within his AO, the JFLCC is the supported commander. He attempts to strike interdiction targets with organically assigned assets first. There are rarely enough interdiction strike resources to meet all the demands. The JFLCC needs to clearly articulate his vision of maneuver operations to the JFACC who may be required to conduct JFC directed interdiction missions within the JFLCC's AO. The JFLCC should "...clearly state how he envisions interdiction enabling or enhancing their maneuver operations and what they want to accomplish with interdiction, as well as those actions they want to avoid. However, supported commanders should provide supporting commanders as much latitude as possible in the planning and execution of their operations"[18]

Battlespace Framework

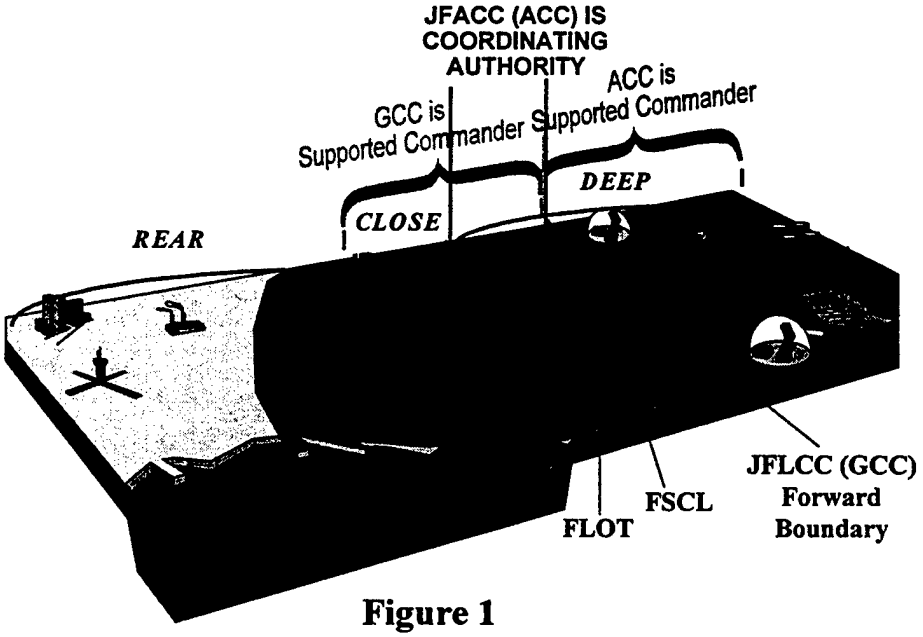

Figure 1

The employment of permissive and restrictive fire support coordination measures (FSCMs) affects the application of joint combat power. FSCMs promote the expeditious attack of targets and provide force protection. The Fire Support Coordination Line (FSCL) plays a dominant role for all attack assets within the JTF. The implementation of the FSCL affects all subsurface, surface, and air launched munitions attacking surface targets. The FSCL is established and adjusted by the JFLCC in consonance with the recommendations of the supporting commanders and ultimate approval of the JFC. Joint Pub 3-09 states that, "...the FSCL does not divide an AO. The FSCL is not a boundary-the synchronization of operations on either side of the FSCL is the responsibility of the establishing commander out to the limits of the land force boundary."[19] Short of the FSCL, it is imperative that the JFLCC coordinates and

controls all surface attack operations. All warfighting assets can attack targets on the far side of the FSCL without coordination as long as the attacking element does not produce adverse effects on or to the rear of the FSCL. However, "...attacks beyond the FSCL must be consistent with the establishing commander's priorities, timing, and desired effects and deconflicted whenever possible with the supported headquarters."[20]

The "location of enemy forces, anticipated rates of movement, concept and tempo of the operation, [and] organic weapon capabilities"[21] are the primary factors the JFLCC considers as he emplaces the FSCL. The JFLCC may be required to frequently adjust the location of the FSCL during high tempo operations. It takes a considerable amount of time to execute this change throughout the JOA. In making this decision, it is important that the JFLCC "strike[s] a balance so as not to unduly inhibit operational tempo while maximizing the effectiveness of organic and joint force assets."[22]

AIR FORCE PERSPECTIVE

> Both the Army and Navy may well possess aerial means to aid their respective military and naval operations; but that does not preclude the possibility, the practicability, even the necessity, of having an air force capable of accomplishing war missions solely with its own means.
>
> — Giulio Douhet, 1921

In Air Force Basic Doctrine (AFDD1), the Air Force outlines their strategic perspective on the nature of airpower. For decades, airpower advocates have believed that airpower could be the dominant and decisive key ingredient in an armed military conflict. However, their view was never convincingly argued or acknowledged by the other services. The Air Force's successes during Operations Desert Shield and Desert Storm have "proven that air power does now have the potential to be the dominant and, at times, the decisive element of combat in modern times."[23] Today, "airpower has become the great enabler that allows all land, sea, and special operations forces to optimize their contributions to America's national security."[24] Additionally, AFDD1 discusses how recent history has clearly demonstrated that "air forces can be supported by surface forces in attaining assigned objectives."[25] It is because of airpower's superior versatility, flexibility and firepower, that surface forces will support the dominant air effort by seizing and holding airfields, suppressing enemy air defenses, or making the enemy vulnerable to air attack by flushing him out from prepared positions.

Traditionally, geographical unified Commanders in Chiefs (CINCs) develop Campaign Plans addressing theater conflicts in three phases: halt the invading force (HALT), buildup combat power and weaken the enemy (BUILD & POUND), and mount the decisive counteroffensive (CA). The Air Force has recently developed Halt Phase Strategy/Doctrine (HALT STRATEGY) that promotes the HALT phase as the conflict's decisive phase, not as a

mere precursor necessary for a buildup of ground forces and other combat power. The overarching purpose of this decisive HALT phase, "...is to force the enemy beyond their culminating point through the early and sustained overwhelming application of airpower."[26]

Proponents of HALT STRATEGY advocate using joint airpower as the primary or supported force in the early days of a conflict. The Air Force claims that airpower can stop enemy forces short of their assigned objective in about two weeks. Once the enemy force has been stopped, the JFC can continue to use airpower to dominate the battlespace by attacking critical high payoff targets throughout the theater of operations while simultaneously bringing additional forces into the theater for the counteroffensive. However, this counterattack would be a mere ***mopping up operation*** since airpower decided the issue in the HALT phase.[27]

Air Force planners designate the FSCL as a control measure that "traditionally delineates air and land operations, and similarly, the missions of close air support and interdiction."[28] Their belief is that the FSCL is a "...***restrictive*** measure where air attacks inside the line need to be controlled by the appropriate ground commander and attacks beyond the line need to be controlled by the air component commander."[29] Thus, all services possessing assets with the range and lethality capable of engaging targets beyond the FSCL should play a supporting role to the primary air operation that is occurring and should be controlled by the JFACC. It is the Air Force's contention that the JFACC should have an equal vote with the JFLCC in the placement of the FSCL. "The most reliable way to maximize the enemy's risk is to place the FSCL at the range where artillery and missiles stop being the greatest threat to the enemy and air attacks become the greatest threat."[30] Furthermore, "the Air Force prefers to keep the line [FSCL] close to friendly ground troops in order to have better access to targets that are not immediately engaged but that may have a near-term effect."[31] The Air Force argues that this ***tight*** positioning

also promotes a better concentration of fire power from CAS assets attacking targets in close proximity to friendly forces.

"The JFACC is the supported commander for the JFC's overall air interdiction effort and will use JFC priorities to plan and execute the theater-wide interdiction effort that should capitalize on the capabilities and shield the vulnerabilities of all participating forces."[32] He is the commander with the preponderance of air assets and the ability to control these assets. The JFACC views his responsibilities from a functional perspective; whereas, the JFLCC takes a more geographic, terrain oriented approach to accomplishing his warfighting tasks. For surface forces to fight effectively, they must divide the overall effort geographically. In contrast, airpower forces possessing theater-wide range divide their efforts by mission (e.g.; counterland, counterair, etc.), campaign phase, or results. "Geographical division of theater air effort has most often resulted when airmen have failed to effectively articulate the best ways to use airpower."[33] The JFACC desires theater air assets having the flexibility and responsiveness to freely access as much of the theater battlespace as possible, while not being constrained by geographical surface boundaries or ground force concentrations.

To properly synchronize and integrate all theater interdiction assets, the JFACC needs to control and coordinate all Air Force sorties, Marine sorties for long-range interdiction and reconnaissance, naval air in excess of maritime air operations requirements, TLAM and ATACMs interdiction missions beyond the FSCL and JFLCC surface boundaries, and all Army aviation assets operating beyond the FSCL and JFLCC surface boundaries.[34] Figure 2 (page 13) depicts the Air Force's concept for air operations authority. The Air Force understands that based on published joint doctrine, any target attacked short of the FSCL must be coordinated in detail during planning and confirmed again prior to execution with the JFLCC. There is no

dispute over this concept. However, they less readily agree, but know they are required to coordinate all surface attacks beyond the FSCL and within the JFLCC's forward boundary.

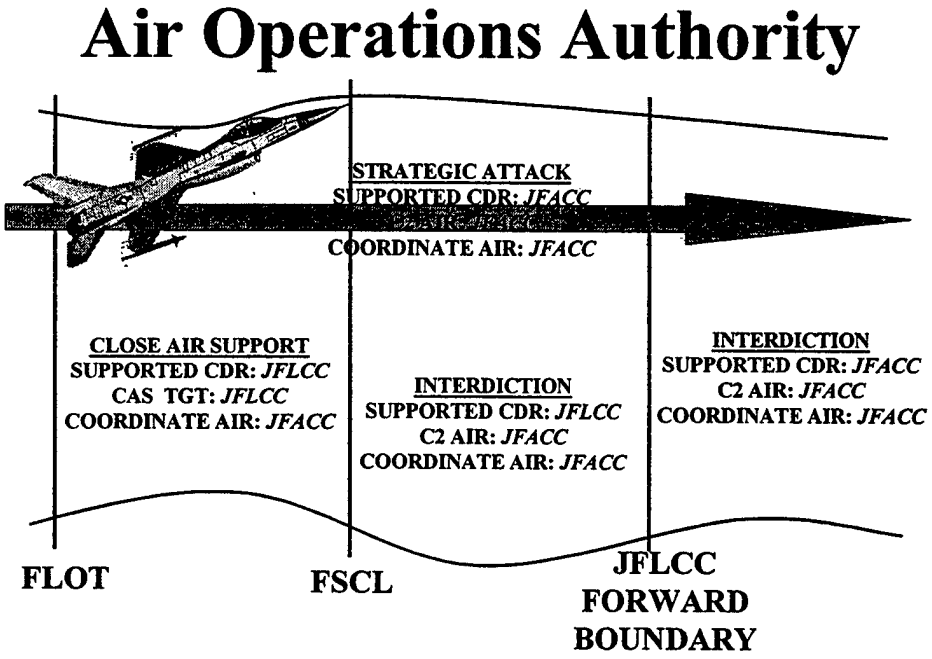

Figure 2

Air Force doctrine has not taken a definitive stance on the positioning of the JFLCC's forward boundary. Much of their concern about this topic is very similar to their consternation pertaining to the emplacement of the FSCL. The Air Force desires maximum unrestricted battlespace so that they can perform JFC directed missions unencumbered by ground forces and surface boundaries. The JFACC can not afford to be unnecessarily constrained from accomplishing theater-wide interdiction missions. Delays caused while achieving coordination with the JFLCC limit the capability and flexibility of airpower.[35]

ARMY PERSPECTIVE

> Battles are won by fire and by movement. The purpose of the movement is to get the fire in a more advantageous place to play on the enemy.
>
> — General George S. Patton, Jr., War As I Know It, 1947

The US military "...is unique in its ability to locate enemy forces at great distances, quickly allocate appropriate weapons to the targets, and engage the enemy at long ranges. Being able to inflict significant damage on our opponent at ranges outside the enemy's ability to effectively engage our forces gives us enormous advantages."[36] Because of an increased technological sophistication of target acquisition assets, field artillery and aviation platforms and munitions, "...the Army's organic deep capability is an essential component of modern, high tempo, combat operations."[37] The Army has the ability to ***see deep*** hundreds of kilometers in real time, ***shoot deep*** hundreds of kilometers in minutes, and ***maneuver deep*** with mechanized and heliborne forces in a matter of hours. Land force commanders "...conduct deep operations to establish favorable conditions for future operations, to protect its forces and to win decisively."[38]

The Army believes that the JFC must develop his campaign plan considering two types of deep operations. He needs to allocate resources from all military services to support deep operations within the JFLCC's AO and simultaneously plan on acquiring and attacking deep targets beyond the JFLCC's forward boundary. By engaging the enemy at depth, the JFC denies enemy freedom of action, complicates his operations, and allows friendly forces to engage enemy forces when they are most vulnerable.[39] Beyond the forward boundary of the JFLCC's AO, the JFACC is the supported commander with the JFLCC serving as one of the supporting commanders. The Army understands that the JFACC may request control and coordination

authority for ATACMs and Navy TLAMs for use in this portion of the battlespace to support JFC directed strategic attack or interdiction missions. Conversely, the Army recognizes that Joint Pub 3-0 dictates that the JFLCC is required to synchronize all maneuver, interdiction, and fires within his surface AO while serving as the supported commander. It is the JFLCC who determines the prioritization, timing, and effects of all interdiction missions and operations within this AO. Other component commanders can conduct operations within the JFLCC's AO, as long as they are complementary to the plans of the supported land component commander and coordinated with him. By synchronizing maneuver and deep interdiction strikes within his AO, the JFLCC is seeking to attain "...a synergy of systems exceeding the sum of the combat potential of the systems used independently."[40] Attacking deep shapes the battlefield for the JFLCC, separates enemy echelons, influences where and when the close battle will take place, and what forces the enemy will bring to the battle.[41]

As a general rule, the service component that has the preponderance of ground forces and requisite command and control capabilities is tasked to provide the JFLCC and his headquarters. "The primary purpose of a JFLCC is to provide unity of command for employing land power for the benefit of the joint force as a whole. The JFLCC must shape the battlespace for subordinate units by focusing on deep operations in space and time (more than 96 hours out)."[42] Thus, the JFLCC needs a forward boundary sufficiently far in front of the FLOT so that he can shape and influence the ground battle, while simultaneously not creating a sanctuary where the JFACC is constrained from accomplishing airpower missions.

The Army agrees with the definition, purpose, and use of the FSCL outlined in Joint Pub 3-09 discussed in the Joint Perspective section of this research project. It is a coordination measure designed to make it easier for all services to deliver ordnance. However, "the FSCL

must complement the JFLCC's concept for deep operations and optimize the synergy between operational maneuver and operational firepower. The JFLCC provides necessary guidance for all operations in the area beyond the FSCL and within designated JFLCC AO."[43]

There exists a strong metering effect between the positioning of the FSCL and JFLCC's forward boundary. The emplacement of these boundaries is based on many variables and is situational dependent (e.g.; mission, enemy, troops and equipment available, movement rates, terrain, etc.). Arguments involving the location of the FSCL usually focus on the maximum range of supporting field artillery systems. Currently, multiple launch rocket system (MLRS) launchers can accurately attack a target up to range of 30 KM. The extended-range MLRS (ER-MLRS) will fire out to 45 KM, while the guided MLRS (GMLRS) improves accuracy and extends range to 60 KM. These ranges provide a starting point for determining FSCL emplacement distances. The Army does not have one doctrinally defined distance that is universally recognized as the ***best*** distance. There may exist scenarios where the FSCL coincides with the FLOT and situations where the JFLCC doubles the value of the above-mentioned MLRS ranges to generate a FSCL distance from the FLOT.

"Ideally, the JFC will set boundaries that maximize component and total combat power, uniting the close and deep battle effort while minimizing mutual interference."[44] The emplacement of the JFLCC's forward boundary by the JFC is predominantly linked to the operational reach of surface maneuver forces and attack assets. Light infantry divisions have an operational reach limited to 30 KM (about the firing range of indirect field artillery fire). Mechanized infantry and armor divisions can reach out to 90 KM if on the offensive or the depth of movement before needing to refuel. An air assault division can reach out to 150 KM because of heliborne lift and AH64 Apache attack assets. Whereas, a unit with dedicated ATACMS

support will soon be able to range out to 300 KM.[45] Current ATACMS range is 165 KM. Another key factor contributing to this debate is the JFLCC's requirement to shape and influence the battlespace for the next 96 hours. He must be provided enough terrain by the JFC so that his flexibility and initiative are not hindered in accomplishing assigned missions, protecting forces, maneuvering rapidly, and fighting at extended ranges. The forward boundary can be adjusted by the JFC as necessary. However, a minimum of six hours lead time is required upon transmission of the message before implementation of the modified boundary takes effect throughout the JOA.

FORWARD BOUNDARY EMPLACEMENT FACTORS

Battles are won by superiority of fire.

— Frederick the Great, 1768

The JFC establishes the location of the forward boundary of the JFLCC's AO with the purpose of optimizing the application of joint combat power while simultaneously not limiting the integrated employment of subsurface, surface and air firepower in the JOA. This challenge of optimizing the integrated employment of joint firepower throughout the JOA is one of the JFC's top priorities. The various positioning locations of the forward boundary will leverage the amount of firepower the JFC can effectively synchronize and integrate within this battlespace.

From a holistic JOA perspective, the JFC has four major options that he can consider as he is determining where he should emplace the forward boundary of the JFLCC's AO:

Option 1-- Coincide the forward boundary with the Forward Line of Troops (FLOT).

Option 2 -- Emplace the forward boundary in the vicinity of 300 KM from the FLOT.

Option 3 -- Emplace the forward boundary somewhere in-between the FSCL and 300 KM from the FLOT.

Option 4 -- Emplace the forward boundary as a series of non-continuous 'line segments' across the front of the JFLCC's AO based on the physical characteristics of the terrain or pockets of enemy resistance between adjacent Corps or Army boundaries (nonlinear asymmetrical view).

The 300 KM forward boundary threshold in options 2 and 3 was derived from the operational reach of surface maneuver forces, attack platforms, and munitions (AH64 Apaches, ATACMS, and TLAMs). As discussed in the previous section, the forward boundary

emplacement option selected by the JFC can be modified as the campaign progresses if the warfighting situation warrants a change. However, it is imperative that the JFLCC's surface AO formed by the rear, lateral, and forward boundaries is large enough for him to shape and influence his battlespace, accomplish assigned missions, protect forces, maneuver rapidly, and fight at extended ranges. These four positioning options available to the JFC will be assessed in the context of perhaps the most dominant forward boundary emplacement factor, METT-T.

Commanders at all levels continuously review and refine their analysis of assigned missions using the Mission, Enemy, Terrain and Weather, Troops and Equipment, and Time Available (METT-T) methodology. These five comprehensive criteria with their entwined synergistic effects provide the JFC a sound basis to determine where to position the JFLCC's forward boundary.

Mission - as a general rule, the JFLCC needs a larger AO during traditional offensive operations vice defensive operations. Thus, forward boundary emplacement options 2, 3 or 4 could be considered during an offensive scenario with options 1 or 3 dominating during a defensive scenario. When encountered with a non-traditional, asymmetrical warfighting environment, option 4 may be the most feasible selection. The significant coupling effects of the remaining METT-T criteria assist the JFC in focusing his choices in all scenarios.

Enemy - the composition, strength and location of the enemy with respect to the FLOT should be analyzed in detail so that the JFC can maximize target coverage throughout the length and breadth of the battlespace. This is a key factor in ensuring that the JFLCC is not provided with too large or too small an AO. Very strong enemy resistance throughout the JFLCC's AO could lead to the initial selection of options 1 or 3 (FLOT to forward boundary distance 100 KM or less). Additional considerations that concern the JFC include enemy warfighting capabilities,

maneuver vulnerabilities, probable courses of action, and sustainment status. Vastly different enemy situations in subordinate adjacent Corps or Army AOs contained within the JFLCC's AO could lead to option 4 being the most optimal.

Terrain and Weather - FM 100-5 describes this phenomenon as the physical dimension of the environment of operations; a phenomenon that includes the effects of geography, terrain, weather and infrastructure.[46] These considerations usually contribute to the time required to accomplish a mission. The friendly and enemy movement rates based on weather conditions, trafficability of road networks and terrain, and battlespace visibility affecting ground and air operations have a definite bearing on the length of any campaign. Thus, the projected length of the phases of a campaign dictate how large an AO the JFLCC will require. Furthermore, the geographical surface borders between non-participating allied partners, and neutral or enemy countries may limit or hinder the desired depth of the JFLCC's forward boundary. These political considerations may significantly restrict the JFC's choices on where the forward boundary can be emplaced.

Troops and Equipment - The types and strengths of military forces available to the JFC based on various arrival times to the theater is perhaps one of the most important factors pertaining to this issue. Limited densities of the required mix of landpower assets may initially force the JFC to rely heavily on the contributions of air and sea generated firepower. In this scenario, it could be argued that option 1 would best optimize the JFC's application of combat power in his JOA. The argument supporting this position is linked to the Air Force's HALT STRATEGY concept discussed earlier. Once significant landpower is available to the JFC, he could employ option 3 by gradually establishing a ***deeper*** JFLCC forward boundary. The operational reach of these forces and their assigned equipment influence this forward boundary

distance. Large quantities of ATACMS, AH64 Apaches, and TLAM attack assets supporting the JFLCC's requirement to shape and influence his battlespace could lead to the JFC emplacing the forward boundary as far out as 300 KM from the FLOT. The warfighting capabilities, limitations, and political ramifications of participatory allied partners must also be taken into consideration. Integrated coalition forces possessing a lesser warfighting capacity could possibly limit the depths of the JFLCC's AO.

Time Available - The discussion of this criteria is similar to the Troops and Equipment criteria. If given ample time by the enemy to buildup overwhelming combat power in theater, the JFC can seriously consider options 2 or 3 as the campaign begins. If presented minimal time for combat power buildup, option 1 is a viable option. Additionally, longer times required to prosecute the entire campaign could pose significant resourcing challenges that could adversely affect friendly combat strength and ultimately the amount of battlespace allotted to the JFLCC.

CONCLUSION

> Air and ground commanders must be constantly on the alert to devise, and use, new methods of cooperation. There can never be too many projectiles in a battle. The purpose of these instruments is identical-namely, to deluge the enemy with fire. Nor is it necessary that these projectiles be discharged on the ground.
>
> — General George S. Patton, Jr., War As I Know It, 1947

The Chiefs of Staff of the United States Army and Air Force have jointly stated that, "national security depends upon distinct warfighting capabilities on land, at sea, and in the air...each service brings separate core capabilities-the missions they perform best-to the joint table. Each service optimizes its unique strengths."[47] Recent technological innovations have increased the inter-service redundancy of some of the core capabilities to which the two service chiefs were referring. All military services now possess a ***deeper*** strike interdiction capability to attack targets within the JOA. As a result, both the JFLCC and the JFACC are attempting to maximize warfighting surface effects between the FSCL and the JFLCC's forward boundary. Unfortunately, these efforts sometimes promote a confliction of land and air objectives. Thus, it is the JFC's responsibility to ensure that the individual military services and functional component commanders are not sub-optimizing their own warfighting efforts to the detriment of the joint force as a whole.

Optimizing the synchronized employment of joint combat power throughout the various phases of a campaign plan is arguably one of the more difficult tasks a JFC must execute. There are three recommended areas of improvement to assist the JFC in better optimizing the application of joint combat power within his JOA based on his emplacement of the JFLCC's forward boundary.

There is a belief among service leaders that a lack of trust and confidence exists between Army and Air Force senior military personnel. The perceived concern is that the JFLCC, the JFACC, and their respective staffs conduct campaign planning and execution activities that are self serving based on parochial service interests and positions. It is feared that each service is in competition with the others for future Department of Defense resourcing priorities. Thus, joint planners attempt to dominate the employment of his or her service's equipment and forces versus attempting to best integrate all service's warfighting assets. These perceived activities do not support an optimized application of joint combat power within the JFC's JOA as he establishes locations for maneuver control and fire support coordination measures.

Both service chiefs have addressed this issue in a Joint Forces Quarterly article entitled, "Joint Warfare and the Army-Air Force Team." General's Reimer and Fogleman state, "trust is based on insight and familiarity, knowing who will do the right thing in the proper way. A soldier's expectation of airpower must be based on the realization that airmen have theater-wide perspectives and responsibilities. An airman must appreciate the vital role of airpower in land combat and understand that air flown in support of JFLCCs must complement the plans of JFLCCs."[48] Thus, it is imperative that we develop and incorporate ideas that promote an increased trust and confidence among senior service personnel. This paradigm shift is one important way to assist the JFC in optimizing the application of joint combat power in his JOA.

A second recommended area of improvement involves the validity of and adherence to published doctrine. Unquestionably, service doctrine must support joint doctrine. This research project highlights some significant disconnects between Army, Air Force and Joint doctrine. Conflicting doctrine promulgates questions over control, coordination and integration of warfighting assets within the JTF. The purpose of joint doctrine is to ascribe authority and

responsibilities to JFCs, establish a foundation for the conduct of all joint operations, and "...provide flexibility to allow the JFC maximum latitude to devise the best solution for a mission."[49] Joint doctrine, not service specific doctrine, should be used as a basis for assisting JFCs and component commanders in efforts to resolve any battlespace or mission overlapping issues. These efforts include the JFC's emplacement of the JFLCC's forward boundary.

The third recommended area of improvement to assist the JFC in best optimizing the application of joint combat power within his JOA involves the exercising and training of joint forces. This topic is closely linked to the previous two areas of lack of trust and confidence and use of published doctrine. Service personnel need to better understand the requirements, capabilities, limitations, and doctrine of their sister services. This knowledge is acquired through formal educational schooling and gleaned in repeated joint training exercises. Understanding service needs and doctrine can not help but foster increased trust and confidence between service personnel.

The JFC establishes the location of the forward boundary of the JFLCC's AO with the purpose of optimizing the application of joint combat power while simultaneously not limiting the integrated employment of subsurface, surface and air firepower in the JOA. This challenge of optimizing the integrated employment of joint firepower throughout the JOA is one of the JFC's top priorities. The various positioning locations of the forward boundary will leverage the amount of firepower the JFC can effectively synchronize within his JOA.

This research project has analyzed prevalent joint and service doctrine pertaining to emplacement of the JFLCC's forward boundary, and addressed the conditions when a JFC should establish this boundary, where the boundary could be placed, and the ramifications of this positioning. One of the worst decisions a JFC could make as he is guiding his staff in the

development and prosecution of a campaign plan, is to emplace the JFLCC's forward boundary in a position that does not maximize the contributions of his joint warfighting assets while simultaneously limiting the employment of subsurface, surface and air firepower in his JOA.

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GLOSSARY[50]

Air Interdiction -- (DOD, NATO) 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.

Area of Operations (AO) -- (DOD) An operational area defined by the joint force commander for land and naval forces. Areas of operation do not typically encompass the entire operational area of the joint force commander, but should be large enough for component commanders to accomplish their missions and protect their forces.

Area of Responsibility (AOR) -- (DOD) The geographical area associated with a combatant command within which a combatant commander has authority to plan and conduct operations.

Close Air Support (CAS) -- (DOD) Air action by fixed- and rotary-wing aircraft against hostile targets which are in close proximity to friendly forces and which require detailed integration of each air mission with the fire and movement of those forces.

Command and Control (C2) -- (DOD) The exercise of authority and direction by a properly designated commander over assigned and attached forces in the accomplishment of the mission. Command and control functions are performed through an arrangement of personnel, equipment, communications, facilities, and procedures employed by a commander in planning, directing, coordinating, and controlling forces and operations in the accomplishment of the mission.

Coordinating Authority -- (DOD) A commander or individual assigned responsibility for coordinating specific functions or activities involving forces of two or more Military Departments or two or more forces of the same Service. The commander or individual has the authority to require consultation between the agencies involved, but does not have the authority to compel agreement. In the event that essential agreement cannot be obtained, the matter shall be referred to the appointing authority. Coordinating authority is a consultation relationship, not an authority through which command may be exercised. Coordinating authority is more applicable to planning and similar activities than to operations.

Fires -- (DOD) The effects of lethal or nonlethal weapons.

Fire Support Coordinating Measure (FSCM) -- (DOD) A measure employed by land or amphibious commanders to facilitate the rapid engagement of targets and simultaneously provide safeguards for friendly forces.

Fire Support Coordination Line (FSCL) -- (DOD) A fire support coordination measure that is established and adjusted by appropriate land or amphibious force commanders within their boundaries in consultation with superior, subordinate, supporting, and affected commanders. Fire support coordination lines (FSCLs) facilitate the expeditious attack of surface targets of opportunity beyond the coordinating measure. An FSCL does not divide an area of operations by defining a boundary between close and deep operations or a zone for close air support. The FSCL applies to all fires of air, land, and sea-based weapon systems using any type of ammunition. 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 ensure that the attack will not produce adverse effects on, or to the rear of, the line. Short of an FSCL, all air-to-ground and surface-to-surface attack operations are controlled by the appropriate land or amphibious force commander. The FSCL should follow well defined terrain features. 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. However, failure to do so may increase the risk of fratricide and could waste limited resources.

Interdiction -- (DOD) An action to divert, disrupt, delay, or destroy the enemy's surface military potential before it can be used effectively against friendly forces.

Joint Force Air Component Commander (JFACC) -- (DOD) The joint force air component commander derives authority from the joint force commander who has the authority to exercise operational control, assign missions, direct coordination among subordinate commanders, redirect and organize forces to ensure unity of effort in the accomplishment of the overall mission. The joint force commander will normally designate a joint force air component commander. The joint force air component commander 's responsibilities will be assigned by the joint force commander (normally these would include, but not be limited to, planning, coordination, allocation, and tasking based on the joint force commander's apportionment decision). Using the joint force commander's guidance and authority, and in coordination with other Service component commanders and other assigned or supporting commanders, the joint

force air component commander will recommend to the joint force commander apportionment of air sorties to various missions or geographic areas.

Joint Force Commander (JFC) -- (DOD) A general term applied to a combatant commander, subunified commander, or joint task force commander authorized to exercise combatant command (command authority) or operational control over a joint force.

Joint Force Land Component Commander (JFLCC) -- (DOD) The commander within a unified command, subordinate unified command, or joint task force responsible to the establishing commander for making recommendations on the proper employment of land forces, planning and coordinating land operations, or accomplishing such operational missions as may be assigned. The joint force land component commander is given the authority necessary to accomplish missions and tasks assigned by the establishing commander. The joint force land component commander will normally be the commander with the preponderance of land forces and the requisite command and control capabilities.

Joint Force Maritime Component Commander (JFMCC) --(DOD) The commander within a unified command, subordinate unified command, or joint task force responsible to the establishing commander for making recommendations on the proper employment of maritime forces and assets, planning and coordinating maritime operations, or accomplishing such operational missions as may be assigned. The joint force maritime component commander is given the authority necessary to accomplish missions and tasks assigned by the establishing

commander. The joint force maritime component commander will normally be the commander with the preponderance of maritime forces and the requisite command and control capabilities.

Joint Operations Area (JOA) -- (DOD) An area of land, sea, and airspace, defined by a geographic combatant commander or subordinate unified commander, in which a joint force commander (normally a joint task force commander) conducts military operations to accomplish a specific mission. Joint operations areas are particularly useful when operations are limited in scope and geographic area or when operations are to be conducted on the boundaries between theaters.

Supported Commander -- (DOD) The commander having primary responsibility for all aspects of a task assigned by the Joint Strategic Capabilities Plan or other joint operation planning authority. In the context of joint operation planning, this term refers to the commander who prepares operation plans or operation orders in response to requirements of the Chairman of the Joint Chiefs of Staff.

Supporting Commander -- (DOD) A commander who provides augmentation forces or other support to a supported commander or who develops a supporting plan. Includes the designated combatant commands and Defense agencies as appropriate.

ENDNOTES

[1] U.S. Joint Chiefs of Staff, Doctrine for Joint Operations, Joint Pub 3-0 (Washington, D.C.: U.S. Joint Chiefs of Staff, 1 February 1995), II-17.

[2] Ibid, II-19.

[3] Ibid.

[4] Ibid, II-14.

[5] Ibid.

[6] Army War College, Joint Forces Land Component Commander (JFLCC) Primer (Carlisle Barracks, PA: Department of Military Strategy, Planning, and Operations, June 1998), 1.

[7] Department of the Air Force, JFACC Primer, 2nd edition (Washington, D.C.: U.S. Department of the Air Force, February 1994), 11.

[8] JFLCC Primer, 25.

[9] General Dennis J. Reimer and General Ronald R. Fogleman, "Joint Warfare and the Army-Air Force Team," Joint Forces Quarterly 11 (Spring 1996): 9.

[10] Joint Pub 3-0, II-5.

[11] Ibid, III-33.

[12] Ibid.

[13] Ibid.

[14] Ibid, IV-13.

[15] Ibid, IV-15.

[16] Ibid, GL-IV.

[17] Ibid, IV-13.

[18] Ibid, IV-15.

[19] U.S. Joint Chiefs of Staff, Doctrine for Joint Fire Support, Joint Pub 3-09 (Washington, D.C.: U.S. Joint Chiefs of Staff, 12 May 1998), A-2.

[20] Ibid.

[21] Ibid, A-3.

[22] U.S. Joint Chiefs of Staff, Doctrine for Joint Interdiction Operations, Joint Pub 3-03 (Washington, D.C.: U.S. Joint Chiefs of Staff, 10 April 1997), x.

[23] Department of the Air Force, Air Force Basic Doctrine (AFDD1) (Washington, D.C.: U.S. Department of the Air Force, September 1997), 43.

[24] Ibid.

[25] Ibid, 41.

[26] Ibid, 42.

[27] Earl H. Tilford, Jr., Halt Phase Strategy: New Wine in Old Skins...With Powerpoint (Carlisle Barracks, PA: U.S. Army War College Strategic Studies Institute, 23 July 1998), 1-2.

[28] LtCol Terry L. New, "Where to Draw the Line Between Air and Land Battle," Airpower Journal (Fall 1996): 37.

[29] Ibid, 40.

[30] JFACC Primer, 34.

[31] New, 44.

[32] JFACC Primer, 15.

[33] Ibid, 8.

[34] Ibid, 32 & Reimer and Fogleman, 10 and 13.

[35] "AFA on Roles and Missions," Air Force Magazine vol. 78, no. 4 (April 1995): 74.

[36] MG Edward Anderson and LTC John Gordon, "Deep Battle: An Army Perspective," Army Magazine vol. 45, no. 3 (March 1995), 9.

[37] Roles and Missions, Deep Operations-Battle Dominance (Washington, D.C.: U.S. Department of the Army Roles and Missions Directorate, 31 October 1994), 4.

[38] Anderson & Gordon, 10.

[39] Ibid.

[40] Roles and Missions, 2.

[41] LTG Jerry R. Rutherford, "Shaping the Battlefield-Deep Operations in V Corps," Field Artillery Journal (April 1993): 7.

[42] JFLCC Primer, 8.

[43] Department of the Army, Decisive Force: The Army in Theater Operations, FM 100-7 (Washington, D.C.: U.S. Department of the Army, 31 May 1995), 7-8.

[44] Roles and Missions, 5.

[45] US Army War College Course 4, Lesson 4 Briefing Slides.

[46] Department of the Army, Operations, FM 100-5 (Washington, D.C.: U.S. Department of the Army, 14 June 1993), 14-3.

[47] Reimer and Fogleman, 10.

[48] Ibid, 15.

[49] Ibid, 12.

[50] Joint Pub 1-02.

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