

AIRPOWER LIAISON FOR THE LAND COMPONENT:
THE PRIMACY OF THE USAF TACP CONSTRUCT

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by

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The opinions and conclusions expressed herein are those of the student author and do not necessarily represent the views of the U.S. Army Command and General Staff College or any other governmental agency. (References to this study should include the foregoing statement.)

ABSTRACT

AIRPOWER LIAISON FOR THE LAND COMPONENT: THE PRIMACY OF THE USAF TACP CONSTRUCT, by Major Jayson Schmiedt, 172 pages.

Combat operations from World War II to present day, along with technological advances, have had a profound effect on airpower development and liaison. Initially airpower was either strategic or tactical, since the operational level concept did not exist. Airpower was considered the tactical level of war when supporting the land component, which is where the Tactical Air Control Party (TACP) developed. The United States Air Force (USAF) TACP construct became the primary USAF liaison element to integrate airpower with the land component. Recent operations facilitated the institution of the operational level of war, driving the requirement for an operational level airpower liaison to the land component. Yet, the USAF TACP is considered a tactical level liaison only, even though it has inherent capabilities and advantages above the tactical level of war. This thesis examines the USAF TACP's ability to provide airpower liaison above the tactical level of war. Specifically, it provides a basic theory and primer behind current airpower liaison concepts, related to the TACP and the conventional land component. The primacy of the USAF TACP construct as the land component's airpower liaison and command and control (C2) element above the tactical level of war is illustrated.

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ACRONYMS

AAGS	Army Air-Ground System
ACCE	Air Component Coordination Element
AFDD	Air Force Doctrine Document
AFSC	Air Force Specialty Code
AFUTL	Air Force Universal Task List
AI	Air Interdiction
ALO	Air Liaison Officer
AMLO	Air Mobility Liaison Officer
ASOC	Air Support Operations Center
ASOS	Air Support Operations Squadron
BALO	Battalion Air Liaison Officers
BCT	Brigade Combat Team
BN	Battalion
C2	Command and Control
CAS	Close Air Support
CFETP	Career Field Education and Training Plan
CJCS	Chairman of the Joint Chiefs of Staff
CONOPS	Concept of Operations
DOTmLPF-P	Doctrine, Organization, Training, Material, Leadership and Education, Personnel, Facilities and Policy
EW	Electronic Warfare
EWO	Electronic Warfare Officer
FM	Field Manual

ISR	Intelligence, Surveillance, and Reconnaissance
ISR NCO	ISR Non-Commissioned Officer
ISRLO	Intelligence, Surveillance and Reconnaissance Liaison Officer
JACCE	Joint Air Component Coordination Element
JFACC	Joint Force Air Component Commander
JFC	Joint Force Commander
JOA	Joint Operations Area
JP	Joint Publication
JTAC	Joint Terminal Attack Controller
JTF	Joint Task Force
METL	Mission Essential Task List
MOA	Memorandum of Agreement
SME	Subject Matter Expert
TACS	Theater Air Control System
TACP	Tactical Air Control Party
TTP	Tactics, Techniques, and Procedures
UJT	Universal Joint Task
UJTL	Universal Joint Task List
U.S.	United States
USAAF	U.S. Army Air Forces
USAF	United States Air Force
USMC	United States Marine Corps

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CHAPTER 1

INTRODUCTION

The United States Air Force (USAF) Tactical Air Control Party (TACP) is the principal USAF liaison to U.S. Army ground forces with two primary missions; advise ground commanders on the capabilities and limitations of air operations, and provide the primary terminal attack control of Close Air Support (CAS). USAF TACPs are doctrinally organized, trained and equipped to provide air component liaison and integrate airpower with the land component's ground scheme of maneuver to achieve desired effects for the joint force. Recent contingency operations, coupled with expanding technological capabilities, harkened a deliberate paradigm shift in the concept of airpower. Currently, joint operations demand the integration of expanding nonlethal capabilities with lethal capabilities for synergistic results. As a result, "airpower" now encompasses these vital nonlethal capabilities (e.g. space and cyber), and requires appropriate liaison expertise for integration into joint operations. The USAF TACP provided the necessary liaison support to the land component, during recent contingency operations, especially at the tactical level of war.

This study will analyze the USAF TACP capability to integrate USAF airpower above the tactical level of war. First, it will address the historical development of the USAF TACP in order to understand its original intent, and identify any shifts or biases in the TACP mission. Second, an examination of current doctrine and task lists, senior leadership guidance, and contemporary airpower studies is used to identify airpower liaison responsibilities and trends, related to the USAF TACP. Next, TACP training requirements and this author's personal experience demonstrate how the TACP integrate

airpower for the land component. The intent is to gain general understanding of airpower liaison requirements and identify issues that impede the USAF TACP's ability to integrate airpower for the U.S. land component.

Research Questions

The primary research question shaping the overall intent of this thesis is the following: Can the USAF TACP provide airpower liaison and integration to meet U.S. land component requirements above the tactical level of war? To establish a sound foundation for data analysis, the following questions were addressed:

1. What is the history of USAF TACP development?
2. What doctrine, agreements, future guidance relates to USAF liaison support to the U.S. conventional land component and expanding airpower capabilities?
3. What tasks, by levels of war, does the USAF TACP execute in support of the U.S. conventional land component?
4. Can USAF TACPs integrate expanding joint airpower capabilities (lethal and nonlethal) to meet U.S. conventional land component requirements?
5. What other USAF personnel or organizations provide airpower liaison support to the U.S. conventional land component?
6. What joint functions does the USAF TACP integrate airpower in support of conventional land component operations?

Background

There is a consistent recognition to provide liaison support in some capacity with the advent of any new technology for military operations. For instance, the invention of

the airplane ushered in a new way of war, which eventually drove the requirement for liaisons between air and ground forces. Yet, there was one important point that directly influenced the development of air liaison support, the theory governing the use of airpower. Initial airpower theorists, such as Giulio Douhet and Billy Mitchell, offered opposing views of how this new capability was to support warfare. Douhet advocated for strategic bombing with airpower to force enemy capitulation, while Mitchell argued (initially at least) for balanced airpower that would provide tactical support to engaged ground forces.¹ Consequently, airpower theory and its joint integration evolved from very hard lessons learned throughout various wars. Ultimately, it led to the Joint Air-Ground Operations manual to be published in 1957 and the refinement of an Air-Ground structure through extensive testing; all which led to an initiative in 1965 to formalize the improvement of air-ground coordination.²

The Chief of Staff of the Air Force and the Chief of Staff of the Army signed an agreement in 1965 that formalized the improved Tactical Air Control System.³ This improved system established the requirement for liaison support between the services. This specific Memorandum of Agreement (MOA), dictating the U.S. Army and USAF liaison support, was updated throughout the years and is current as of 31 March 2011. The intent is the following: increase joint capabilities; identify joint interdependencies;

¹David MacIsaac, "Voices from the Central Blue: The Airpower Theorists," in *Makers of Modern Strategy: From Machiavelli to the Nuclear Age*, ed. Peter Paret (Princeton, NJ: Princeton University Press, 1986), 631.

²Lt Col David C. Collins, "Doctrine Development for the Employment of Tactical Air Forces," *Air and Space Power Journal* (November-December 1967).

³*Ibid.*

and standardize air-ground training, equipment interoperability, and combat operations between the U.S. Army and USAF.⁴ The MOA provides guidance for liaison support during deployment operations and home station. The current MOA stipulates requirements for nonlethal capability subject matter experts (SMEs) to augment the TACP, as needed.

Specifically, these SMEs are aligned with the following nonlethal capabilities: Electronic Warfare (EW), Intelligence, Surveillance and Reconnaissance (ISR), Space and Cyberspace. USAF TACPs are the principal liaison to U.S. Army forces they provide airpower subject matter expertise, which includes these emerging nonlethal capabilities. They provide liaison support to plan, integrate, and apply airpower (lethal and nonlethal) for the U.S. land component. Currently, the predominant TACP integration of airpower resides at the tactical level of war.

In the past few years the U.S. Army was provided specific nonlethal capability SMEs for liaison support, but these liaisons remained outside of the TACP organization. The typical low-density, high-demand nature and requisite authorities and legalities to integrate these nonlethal capabilities, required the liaisons to reside at operational and strategic level organizations. Plus, the U.S. Army typically received additional liaison support at their deployed location only, not in garrison (unless liaisons were available for an exercise). Therefore, these nonlethal capability liaisons could not establish habitual relationships to integrate and train with their land component counterparts. USAF TACPs are habitually aligned with U.S. Army units, and recently being augmented with

⁴Chief of Staff of the Army and Chief of Staff of the US Air Force, “Memorandum of Agreement Between the United States Army and the United States Air Force for Army/Air Force Liaison Support,” 31 March 2011, 3.

additional EW, ISR, Space and Cyberspace liaisons. Yet, there is little guidance for integration of nonlethal airpower capability liaisons into the TACP. Plus, the existing guidance has disparities concerning comprehensive airpower liaison support to the land component. The predominant documentation exists at the tactical level, within basic concept of operations (CONOPs) and tactics, techniques, and procedures (TTP) manuals. It is this thesis' aim to demonstrate this deficiency and provide corresponding recommendations.

Assumptions

There are several assumptions required to frame the thesis within a specific environment. Government fiscal constraints are driving military force reductions, both in personnel and equipment. The financial challenges, force restructuring, and Asia-Pacific focus have initiated discussions on recommended and required changes to meet National Security Strategy objectives, without the fiscal cart blanche during recent Iraq and Afghanistan operations. The assumptions are:

1. TACP-related Air Force Specialty Codes (AFSCs) will remain functional and will not be consolidated or absorbed into another AFSC.
2. Budget constraints and personnel reorganization will not lower TACP end strength below current numbers.
3. The current U.S. Army-Air Force MOA will not be reviewed and modified before completion of this thesis.
4. No changes will be made to TACP and SME allocation per the current MOA.

Definitions

Any jointly recognized terms and definitions were pulled from the Department of Defense Dictionary, JP 1-02, for standardization. The definitions in JP 1-02 are defined in accordance with their source publication, and the source publication is listed with the definition. Additionally, each joint publication has a glossary of definitions that are inserted in JP 1-02. It is imperative to note there are discrepancies regarding the definitions of some joint terms. For instance, there is a slight difference between the glossary and main text definitions for a TACP. Within JP 3-09.3, TACP is defined differently within the main publication text and its glossary for JP 1-02 insertion. Unfortunately, some discrepancies have significant impacts, and are not simply “cosmetic” or abbreviated changes. This thesis will highlight key discrepancies that impact the overall meaning, and are relevant to the analysis of this thesis. Finally, any definitions that are not jointly recognized will be defined by their source document.

Air Liaison Officer (ALO): The senior TACP member attached to a ground unit who functions as the primary advisor to the ground commander on air operations. An ALO is usually an aeronautically rated officer.⁵

Airpower: (not jointly recognized) The ability to project military power or influence through the control and exploitation of air, space, and cyberspace to achieve strategic, operational, or tactical objectives.⁶

⁵Joint Chiefs of Staff, Joint Publication (JP) *Department of Defense Dictionary of Military Associated Terms* (Washington, DC: Government Printing Office, January 2013), 8.

⁶Chief of Staff of the Air Force, Air Force Doctrine Document, Volume I, *Basic Doctrine* (Maxwell AFB, AL: Curtis Lemay Center, October 2011), <https://doctrine.af.mil/> (accessed 8 April 2014), 24.

Close Air Support (CAS): Air action by fixed- and rotary-wing aircraft against hostile targets that are in close proximity to friendly forces and that require detailed integration of each air mission with the fire and movement of those forces.⁷ Note: Interestingly, JP 3-0 is the source document for this term, not JP 3-09.3 *Close Air Support*. In JP 3-0 it is mentioned only once in the publication main text, within a case study, other than the glossary. Otherwise, it is only defined in the glossary.

Cyberspace: A global domain within the information environment consisting of the interdependent network of information technology infrastructures and resident data, including the Internet, telecommunications networks, computer systems, and embedded processors and controllers.⁸

Cyberspace Operations: The employment of cyberspace capabilities where the primary purpose is to achieve objectives in or through cyberspace.⁹

Electronic Warfare (EW): Military action involving the use of electromagnetic and directed energy to control the electromagnetic spectrum or to attack the enemy.¹⁰

Fires: The use of weapon systems to create specific lethal or nonlethal effects on a target.¹¹

Global Integrated Intelligence, Surveillance, and Reconnaissance (GIISR): Cross-domain synchronization and integration of the planning and operation of ISR assets;

⁷Joint Chiefs of Staff, JP 1-02, 39.

⁸Ibid., 64.

⁹Ibid.

¹⁰Ibid., 84.

¹¹Ibid., 96.

sensors; processing, exploitation and dissemination systems; and, analysis and production capabilities across the globe to enable current and future operations.¹²

Intelligence, Surveillance, and Reconnaissance (ISR): An activity that synchronizes and integrates the planning and operation of sensors, assets, and processing, exploitation, and dissemination systems in direct support of current and future operations. This is an integrated intelligence and operations function.¹³

Joint Air Component Coordination Element (JACCE): A general term for the liaison element that serves as the direct representative of the Joint Force Air Component Commander (JFACC) for joint air operations.¹⁴

Joint Fires: Fires delivered during the employment of forces from two or more components in coordinated action to produce desired effects in support of a common objective.¹⁵

Joint Terminal Attack Controller (JTAC): (JP 1-02 definition) A qualified (certified) Service member who, from a forward position, directs the action of combat aircraft engaged in close air support and other offensive air operations. A qualified and current JTAC will be recognized across the Department of Defense as capable and authorized to perform terminal attack control.¹⁶ (JP 3-09.3 in text definition) The JTAC is

¹²Chief of Staff of the Air Force, Air Force Doctrine Document, Volume IV, *Operations* (Maxwell AFB, AL: Curtis Lemay Center, June 2013), <https://doctrine.af.mil/> (accessed 3 March 2014), 40.

¹³Joint Chiefs of Staff, JP 1-02, 134.

¹⁴*Ibid.*, 139.

¹⁵*Ibid.*, 143.

¹⁶*Ibid.*, 151.

the forward Army ground commander's qualified (certified) Service member, who, from a forward position, directs the action of combat aircraft engaged in CAS and other air operations in the ground commander's operational area.¹⁷

Space Asset: Equipment that is an individual part of a space system, which is or can be placed in space or directly supports space activity terrestrially.¹⁸

Space Capability: 1) The ability of a space asset to accomplish a mission. 2) The ability of a terrestrial-based asset to accomplish a mission in or through space.¹⁹

Tactical Air Control Party (TACP): (JP 1-02 definition) A subordinate operational component of a tactical air control system designed to provide air liaison to land forces and for the control of aircraft.²⁰ (JP 3-09.3 in text definition) The principal Air Force liaison unit collocated with army maneuver units from Battalion (BN) to corps.²¹ Note: Throughout this document all references to "TACP" are references to USAF TACPs only. Any other TACP mentioned in this thesis will be specifically identified as such, e.g. a United States Marine Corps (USMC) TACP.

Scope

For a more reliable and holistic viewpoint this thesis examined TACP operations and structure from inception to now. There is focus on the TACP and additional SMEs

¹⁷Joint Chiefs of Staff, Joint Publication (JP) 3-09.3, *Close Air Support* (Washington, DC: Government Printing Office, July 2009), II-9.

¹⁸Joint Chiefs of Staff, JP 1-02, 242.

¹⁹*Ibid.*

²⁰*Ibid.*, 257.

²¹Joint Chiefs of Staff, JP 3-09.3, II-9.

being integrated in the organization, which provides holistic airpower liaison support ability. Specifically, it is bounded by examining the conventional TACP organizational structure, aligned from the U.S. Army corps level to company level, and relating it the levels of war. It will utilize data from sister services and or nations with similar TACP organizations, e.g. the USMC TACP, which may coincide with USAF TACP data. There is no analysis of the specific issues affecting other similar TACP organizations.

Due to the relationship between training and wartime operations, data from both environments was examined. For wartime operations, TACP liaison support, specific to integrating all airpower capabilities, in relation to the levels of war was examined. Similarly, data from the training environment facilitated a more coherent picture of TACP preparation to integrate expanding joint capabilities within airpower. Specifically, the study analyzed the relationship of TACP training tasks to the Universal Joint Task List (UJTL) and Air Force Universal Task List (AFUTL). Plus, this study will analyze the relationship of the TACP to the joint functions, in the context of providing airpower liaison support.

Strategic or operational level guidance affecting the TACP or integration of airpower is examined. This guidance extends to anticipated (e.g. draft) guidance and new initiatives similar to the TACP design for airpower integration. Additionally, any lack of data regarding the TACP integration of airpower, required examination of information outside of TACP-specific operations. The intent was to derive some inferences on how airpower is integrated, if the TACP was to integrate airpower above the tactical level.

Limitations

The main limitation is the little TACP-specific documentation of airpower integration either at the operational or strategic level, or integration of airpower not specifically related to CAS. Essentially, the predominant literature regarding TACP integration of airpower is specific to tactical integration to facilitate execution of CAS. The presupposition is that airpower capabilities are employed in a combat environment, with the infrastructure and means to employ them, and the appropriate liaison support to plan and execute the missions. In other words, most documentation is based off Central Command organizations and counterinsurgency operations in Iraq or Afghanistan; not necessarily a universal organization and structure that is transferable to Major Combat Operations. Furthermore, there is little to no guidance of how a TACP should incorporate training of expanding airpower capabilities within a training environment.

Additionally, there is little published writing from professional development environments regarding a topic similar to this thesis. This could be due to the TACP career field's fluctuation in leadership continuity. Until recently, the TACP officer corps was limited to aviators filling two year rotations as ALOs, from flight commander to squadron commander. Officer TACP leadership only stayed in TACP positions for a couple years and then returned back their aircraft. Consequently, the main TACP continuity was within the enlisted career field, which fostered only tactical level TTP writing. There is professional literature and studies on airpower liaison support to the land component, most of which is not TACP-specific.

Delimitations

This thesis does not focus on addressing material that extends outside of the classification of “unclassified”. There are research materials that reside at “UNCLASSIFIED—FOUO,” “SECRET,” and higher classifications that address airpower and SME integration assigned to a TACP, but they are focused on tactical-level TTP for combat operations. Second, specific TTPs to integrate all aspects of airpower (the “how”) with the TACP are not addressed. There is no examination of AFSC or personnel issues related to integrating additional airpower SMEs into the TACP. Additionally, while USAF TACPs are aligned with special operations forces they are task organized differently than conventional TACP, and are not addressed in this thesis. Specific guidance or challenges related to integrating airpower liaisons outside of TACP units are not addressed. When this study references nonlethal airpower capabilities, it will only be referencing the nonlethal capabilities of the following: ISR, EW, Cyber and Space. This thesis uses joint terminology, unless otherwise noted.

Significance of the Study

This study is significant since it directly ties into the relationship between the Army land component and Air Force air component. The air-ground relationship between these services has been and continues to be a point contention, focused on who ultimately controls airpower integration and how airpower it is employed. The mediators of the air-ground relationship are designated liaisons from both services, who essentially to act as linguists, interpreters, translators, and cultural advisors. Their main responsibility is to facilitate all aspects of airpower integration in support of military objectives, across the range of military operations. More importantly, it is vital to provide airpower liaison and

integration during training, in order to facilitate support of joint force objectives in the current joint operational environment.

CHAPTER 2

LITERATURE REVIEW

Historical Literature

Every air force has learnt some faulty lessons from historical experience and has neglected to note lessons of enduring merit. Examples abound. Most clearly of all perhaps, the U.S. Army Air Forces (USAAF) and then the U.S. Air Force were obliged to rediscover the feasibility and importance of close air support (from the lessons of 1918) no fewer than three times (1941-45, 1950-53, 1965-72).

— Colin S. Gray, “Understanding Airpower: Bonfire of the Fallacies”

[I]t is really more sensible not to contrast land power and airpower, but rather to consider them as inherently complimentary dimensions of variable relative significance within a single military, strategic, and political effort.

— Colin S. Gray, “Understanding Airpower: Bonfire of the Fallacies”

First, a basic overview of existing theses and books provided the historical basis for TACP development, and highlighted the need for liaison support between the air and land forces. The intent is to provide key highlights and trends of the TACP responsibilities, air-ground relationships, and airpower integration; it is not to solely endeavor a historical analysis of TACP and airpower. The historical literature regarding the TACP centers on the development of airpower, and more specifically CAS. The most relevant research that includes details of liaison support development for the CAS mission is from Major Patrick Gallogly, USMC. Additional theses and literature are included in the historical evidence below. This historical synopsis of liaison support and airpower development spans from WWI through the Vietnam War, while remaining a brief synopsis of salient points pertinent to this thesis.

Gallogly published a detailed thesis on integrated CAS, and provided an analysis of the historical development of CAS. Specifically, his research question was, “Why is

integrated CAS important, and how can the US best leverage its capacities across time and in varied operational conditions?”²² Within his research he discussed the development of liaison elements required to achieve “air-ground synergy” and the resulting doctrine development during 1918 to 1953.²³ Gallogly discovered through his research that integrated CAS development occurred at the same time, 1944 to 1945, for different services and nations; without shared knowledge and cooperative lessons learned. His thesis addressed development and integration of CAS and corresponding airpower liaison support for the Luftwaffe, the USAAF, and the USMC.²⁴

Luftwaffe (WWII)

During the Spanish Civil War in 1936, Germany’s CAS innovator, Wolfram von Richthofen, realized the vital importance of energizing detailed coordination between air and ground commanders. He assigned ALOs to the combat front and army headquarters, and even had senior air commanders on the ground during actual ground operations. All of this ensured air commanders were familiar with ground operations, and had a mutual understanding with ground commanders.²⁵ The German Luftwaffe initiated the first steps of air-ground integration in 1938, with the institution of *Fliegerverbundungsoffiziere* [air liaison officers] or *Flivos*. These *Flivos* were the tactical-level liaisons, from the

²²Major Patrick Coffey Gallogly, “The Evolution of Integrated Close Air Support: World War II, Korea, and the Future of Air-Ground Combined Arms Synergy” (Thesis, School of Advanced Air and Space Studies, Air University, Maxwell Air Force Base, 2011), 11.

²³*Ibid.*, 12.

²⁴*Ibid.*, 10.

²⁵*Ibid.*, 32.

Luftwaffe, to the German *Wehrmacht*.²⁶ The *Flivos* were assigned to army corps and division headquarters, with the primary responsibility to integrate Luftwaffe capabilities with the needs of the *Wehrmacht*.²⁷ The *Flivo* system was modified by von Richthofen based on lessons learned in the 1939 Polish campaign; realizing that air and ground commanders had to fully cooperate, plan and work together.²⁸ Plus, they created the “*Fliegerleitoffizier (Schlacht)* or air control officer-ground attack” team to directly coordinate and integrate CAS into the *Wehrmacht*’s ground scheme of maneuver, similar in concept to today’s JTAC.²⁹ As a result, the evolution of the Luftwaffe liaison system fostered integrated CAS in 1944, prior to any other military.

United States Marine Corps (WWII)

The USMC began its CAS development in the Pacific under the leadership of Lieutenant Colonel Keith B. McCutcheon. The USMC published the “Tentative Manual for Landing Operations” in 1934, which stipulated the expectation of close coordination between the air and land forces with liaisons to ensure proper air support.³⁰ McCutcheon realized leading into WWII the lack of air-ground training or liaisons between USMC aviators and ground troops, partly due to the fiscal restraints in the interwar period.³¹ In 1939, the USMC understood the value of air and ground force liaising with the creation

²⁶Ibid., 22.

²⁷Ibid., 38.

²⁸Ibid., 39.

²⁹Ibid., 42.

³⁰Ibid., 55.

³¹Ibid., 56.

of an ALO position. This ALO was responsible for advising the ground commander on capabilities and limitations of Marine aviation.³² Furthermore, it was a requirement for Marine aviators to spend two years as a ground officer before becoming an aviator; to ensure a shared understanding of ground operations. However, at the outset of WWII that requirement ceased to meet wartime demands; new pilots were younger and without a ground force frame of reference. CAS integration suffered due to the lack of aviators having no understanding of ground operations.³³

The USMC extensively tested a new liaison element coined the Air Liaison Party, during operations in Guadalcanal and New Georgia. In Guadalcanal, Cactus Air Force pilots, Marine aviators, went to the front line prior to flying CAS sorties; and viewed impending ground targets firsthand to increase their situational awareness.³⁴

Additionally, the USMC learned a valuable lesson during WWII regarding capability synergy. Before the 1943 Battle of Tarawa, planners and liaisons believed Naval gunfire and air support had to be sequentially deconflicted; versus maintaining synergistic and simultaneous effects through other means of deconfliction, e.g. vertical and lateral separation.³⁵ One main TACP purpose is the integration airpower (and all its inherent capabilities) with land power capabilities to achieve maximum operational effects through understanding ground force capabilities, requirements and intent. Additionally, USMC Air Liaison Party leveraged expertise of ground Forward Air Controllers to advise

³²Ibid., 59.

³³Ibid., 58.

³⁴Ibid., 64.

³⁵Ibid., 74.

on the capabilities and limitations of Marine airpower. These Air Liaison Party and Cactus Air Force pilot methods evolved into the USMC's TACP system implemented in the Battle of Okinawa in 1945. Overall, the intent led to synthesized air-ground integration into ground force operations and intent.³⁶

United States Army Air Forces (WWII)

The USAAF was the first American force to achieve integrated CAS in June 1944, but not without its own hiccups.³⁷ In WWI, the need to for dedicated air-ground liaison training was identified and implemented. However, the strategic direction for the USAAF shifted to strategic bombing in the interwar period, and the cognitive bias towards close support of ground troops faded. This was especially apparent when national financial policies drove defense budget reductions and the services fought for relevancy and monetary support.³⁸ This drove a wedge between the U.S. Army land and air force leaders, and the creation of opposing doctrinal uses of airpower.

Amidst the turmoil, the USAAF's primary advocate and innovator Major General Elwood "Pete" Quesada displayed foresight during his CGSC tour in 1936. His prophetic comment is still valid today: "although his fellow flyers would disagree with him, he thought that future war will require all sorts of arrangements between the air and the ground, and the two will have to work closer than a lot of people think or want."³⁹ It was

³⁶Ibid., 65.

³⁷Ibid., 87.

³⁸Ibid., 90.

³⁹Ibid., 99.

in the USAAF WWII support of British operations in the North African Campaign that highlighted the USAAF's cognitive bias and lack of coordination with ground forces. The distribution of airpower into "penny packets" and stove-piped planning, with little liaison between air and ground forces contributed to heavy Allied losses, such as in the February 1943 Battle of Kasserine Pass.⁴⁰ Airpower effects were parceled with no ability to mass and concentrate fires, especially when attempting close support of ground troops.⁴¹ It was unsuccessful operations like Kasserine Pass that became the impetus for change. British General Bernard Montgomery emphasized the value of air and ground staff collocation to plan and ensure a mutual understanding.⁴² After Operation TORCH in North Africa, American air and land leadership realized their inability to integrate airpower in support of ground troops, and aimed to remedy the problem.⁴³

Senior leadership, both air and ground, had to agree on the utilization of airpower to achieve any synergy. The WWII development of airpower, to include the U.S. air-ground system, was based on two primary theories. The first theory strictly used airpower for strategic bombing, while the other theory allowed airpower to support tactical ground forces. Initial U.S. doctrine and service regulations emphasized strategic bombing, at the

⁴⁰Ibid., 102.

⁴¹LTC George DeGovanni, "Air Force Support of Army Ground Operations-Lessons Learned During World War II, Korea, and Vietnam" (Study Project, US Army War College, Carlisle Barracks, 6 March 1989), 5.

⁴²Gallogly, 109.

⁴³DeGovanni, 5.

cost of developing CAS and air-ground liaison doctrine until 1943.⁴⁴ In July 1943, the U.S. Army Air Corps published Field Manual (FM) 100-20, which dictated the Command and Employment of Air Power.⁴⁵ It was the first step to recovery even with FM's emphasis was on battlefield interdiction and air superiority.

Interestingly, this WWII-era regulation specifically states that land power and air power were “coequal and interdependent forces,” that neither of them was auxiliary to the other.⁴⁶ Keep in mind that at this time the U.S. Air Force had not been created, and the Air Corps resided within the U.S. Army. Basic tenets of the regulation stipulated the employment of air forces to primarily secure air superiority in order to minimize air attacks against land forces and maximize the mobility of land and air forces.⁴⁷ In relation to commanding air power, the tenets were flexibility, concentration, centralized control and command of air forces through an air force commander. The overall intent was to retain the ability to concentrate air power against particular targets, with flexibility to retask them anywhere in the theater of operations.⁴⁸

⁴⁴LTC Kenneth A. Steadman, “A Comparative Look At Air-Ground Support Doctrine and Practice in World War II” (Research Paper, Combat Studies Institute, Fort Leavenworth, 1 September 1982), 8.

⁴⁵War Department, War Department Field Manual FM 100-20, *Command and Employment of Air Power* (Washington, DC: Government Printing Office. 21 July 1943). www.ibiblio.org/hyperwar/USA/ref/FM/FM100-20/index.html (accessed 4 March 2014), 9.

⁴⁶*Ibid.*, Ch 1, Section I, para 1.

⁴⁷*Ibid.*, Ch 1, Section I, para 2.

⁴⁸*Ibid.*, Ch 1, Section I, para 3.

The only way to facilitate such ability was to ensure centralized command of air forces under an air force commander.⁴⁹ The regulation stipulated there would normally be one air force in a theater of operations. More importantly, this air force would not be a standard prescribed air force, but tailored and equipped to appropriately accomplish its task. The regulation outlined the following basic organizational structures of a “normal” air force: strategic air force, tactical air force, air defense command, and an air service command.⁵⁰

The regulation provided the definitions, missions and compositions of the basic air force organizations. The Strategic Air Force focused on defeating the enemy nation through targeting lines of communications, economic infrastructure, and enemy air forces.⁵¹ The Tactical Air Force was to support ground force operations, such that success was derived from how well air power was employed. The Tactical Air Force had three specific priorities: gain air superiority, prevent movement of enemy forces and supplies, and work with ground forces to gain objectives immediately in front of ground forces.⁵² The most important point within this regulation, pertinent to this thesis, is the specific requirement for close coordination. This close coordination was detailed by the following: “Tactical air force operations and ground force operations in the theater or task force will be coordinated by means of timely planning conferences of pertinent commanders and staffs, and through the exchange of liaison officers. Air and ground

⁴⁹Ibid., Ch 1, Section II, para 4.

⁵⁰Ibid., Ch 1, Section III, para 6.

⁵¹Ibid., Ch 2, Section II, para 12.

⁵²Ibid., Ch 2, Section III, para 16.

liaison officers will be officers who are well versed in air and ground tactics.”⁵³

Furthermore, the details of the Tactical Air Force’s third priority, “destruction of selected objectives in front of ground forces”, required this explanation: “in furtherance of the combined air-ground effort, teamwork, mutual understanding, and cooperation are essential for the success of the combined effort in the battle area.”⁵⁴ Yet, the development of CAS and liaison support still suffered until the Fifth Army’s Italian operations in September 1943.

It was in Italy, that the G-3 ALO was created and assigned from Army to Division level. The G-3 ALOs integrated with G-2 air officers to incorporate reconnaissance aircraft for CAS targeting; similar to current coordination between ISR and CAS assets executed by TACP. In other words, these early ALOs integrated airpower capabilities and prioritized air requests that followed ground commander intent. This liaison and integration extended into creating “Rover Joes,” who called in CAS missions from the front line to corps headquarters.⁵⁵

In January 1944, the ALO program was established to facilitate the liaison between the U.S. Army and USAAF.⁵⁶ The ALOs were only a liaison element for planning, and did not provide control of CAS assets. It was prior to the Normandy invasion when these positions were formalized into Air Ground Coordination Parties. Air support requests were sent through the Air Ground Coordination Parties to division level,

⁵³Ibid., Ch 2, Section III, para 14.d and 14.e.

⁵⁴Ibid., Ch 2, Section III, para 16.b.3.

⁵⁵Steadman, 9-10.

⁵⁶Gallogly, 113.

who in turn coordinated with air and ground commanders to assign air assets.⁵⁷ In June 1944, General Patton stated that, “We could not possibly have gotten as far as we did, as fast as we did, and with as few casualties without the wonderful air support that we persistently had . . . the best example of the combined use of air and ground troops that I have ever witnessed.”⁵⁸ This level of support was furthered in July 1945 by General Quesada’s initiative with General Bradley, which developed the USAAF Forward Air Controller concept.⁵⁹ This additional liaison element enabled CAS integration to achieve superior lethal effects on the battlefield. Yet, these improvements and lessons learned were short lived.

United States Air Force (Korean War)

Once WWII ended, the USAAF became the USAF in 1947 and budget constraints reemerged leading to dwindled airpower contribution to CAS.⁶⁰ The USAF aloofness and insensitivity to support ground operations became apparent in the Korean War. The challenges originally inherent with intra-service coordination were exacerbated with inter-service coordination between the Army and the Air Force.⁶¹ The USAF changed Air Ground Coordination Parties to Tactical Air Control Parties (TACPs), assigned to each

⁵⁷DeGiovanni, 16.

⁵⁸Ibid., 18.

⁵⁹Gallogly, 120.

⁶⁰Ibid., 125.

⁶¹DeGiovanni, 22.

ground unit from division to Battalion-level.⁶² This change aligned with the USAF division between Strategic and Tactical Air Forces. Since the Tactical Air Force supported the land component, the “Tactical” in TACP aligned accordingly. The USAF only provided one trained TACP officer per division, who was capable of liaising and planning alongside Army counterparts. The USAF also did not provide ground Forward Air Controllers, only airborne Forward Air Controllers who were not aligned or integrated with ground force units. Requisite air-ground liaison and integration was not existent to effectively support ground troops.⁶³ These challenges extended into Vietnam leading to modifications of the liaison system and evolved into the current system today.

United States Air Force (Vietnam War)

The Vietnam War proved the necessity of airpower flexibility and the requisite ability to re-task CAS sorties. This need drove the creation of a centralized control agency called the Direct Air Support Center, later changed to the Air Support Operations Center (ASOC). The ASOC was brought under the TACP umbrella and aligned with Corps headquarters, improving airpower’s responsiveness to ground commander needs.⁶⁴ Lieutenant Colonel David C. Collins wrote an Air University article in 1967 detailing the doctrine development of Tactical Air Forces, the same air forces stipulated in FM 100-20. The premise of his article centered on joint operations with the Army to provide the support it needed. He stated that extensive testing of procedural arrangements dictated in

⁶²Ibid., 16.

⁶³Gallogly, 130.

⁶⁴DeGiovanni, 33.

the 1957 Tactical Air Command Manual, *Joint Air-Ground Operations*, led to the revised Tactical Air Control System. The new Tactical Air Control System was implemented with great success in Vietnam by a Chief of Staff of the Army and Chief of Staff of the Air Force agreement in 1965. The Chief of Staff of the Army and Chief of Staff of the Air Force agreement was the origin of the current MOA dictating liaison support today.⁶⁵

Agreements, Guidance, Doctrinal,
and Senior Leadership Literature

United States Army and Air Force MOA

The current 2011 MOA stipulates the following liaisons are provided by the USAF: Air Component Coordination Elements (ACCE), Air Liaison Officers (ALOs), Air Mobility Liaison Officers (AMLOs), Air Support Operations Centers (ASOCs), Battalion Air Liaison Officers (BALOs), Intelligence, Surveillance and Reconnaissance Liaison Officers (ISRLOs), Intelligence Surveillance Reconnaissance Non-Commissioned Officers (ISR NCO), Space Liaison Officers and NCOs, Tactical Air Control Parties (TACP) and TACP Joint Terminal Attack Controllers (JTACs), USAF Electronic Warfare Officers (EWO). The MOA provides basic guidance for each liaison that dictates support relationships, level of support and appropriate integration into U.S. Army operations. More specifically, the USAF TACP and liaisons that support CAS operations compromise the bulk of the MOA.⁶⁶

⁶⁵Collins.

⁶⁶Chief of Staff of the Army and Chief of Staff of the US Air Force, 3-5, Section V.A.

The TACP is the overall liaison support organization that is task organized within a USAF Air Support Operations Squadron (ASOS). In order to facilitate habitual training and operational relationships an ASOS is typically stationed on a fort with its aligned U.S. Army units. Each ASOS is assigned appropriate USAF personnel to meet their overall mission of supporting their aligned Army units, in accordance with MOA. The USAF personnel assigned fulfill a liaison role to the U.S. Army, other than administrative personnel, which all together compromise multiple TACPs within the ASOS. The MOA also stipulates that depending upon the echelon supported, the TACP may be augmented by USAF Intelligence, Space or other SME as required to meet Joint Force Commander (JFC) objectives. Some TACPs are assigned the following additional liaison support: EWO, ISRLO, ISR NCO, Space and Cyberspace personnel. In summary, a current ASOS may have the following liaison personnel assigned: ALO, BALO, JTAC, EWO, ISRLO, ISR NCO, Intelligence Officers, Space and Cyberspace personnel.⁶⁷ Unfortunately, not each liaison role is provided additional guidance within the MOA.

The 2011 MOA provides additional guidance for the following USAF liaisons: TACP, ALO, BALO, JTAC, EWO and ISR elements. First, a TACP is in Direct Support to each U.S. Army corps, division, Brigade Combat Team (BCT), and each maneuver BN. The TACP will provide liaison and terminal attack control of CAS missions. Second, ALOs are aligned with Army corps, divisions, and BCTs to provide liaison and special staff assistance to the ground unit commander. BALOs are aligned with each maneuver BN, with a maneuver BN defined as: Infantry BN, Stryker BN, Combined Arms BN, and Reconnaissance Squadrons. BALOs provide liaison and terminal attack control of CAS

⁶⁷Ibid., 4-5, Section V.A.6.

missions. A JTAC is an individual with a joint certification to provide terminal attack control of CAS missions, which could be an ALO, BALO or a USAF enlisted technician. The MOA stipulates that TACPs will include ALOs, BALOs, and enlisted technicians capable of planning and integrating air support into ground combat operations, and qualified JTACs to execute those operations. Plus, the MOA allows for other SMEs to be assigned as needed as mentioned earlier.⁶⁸

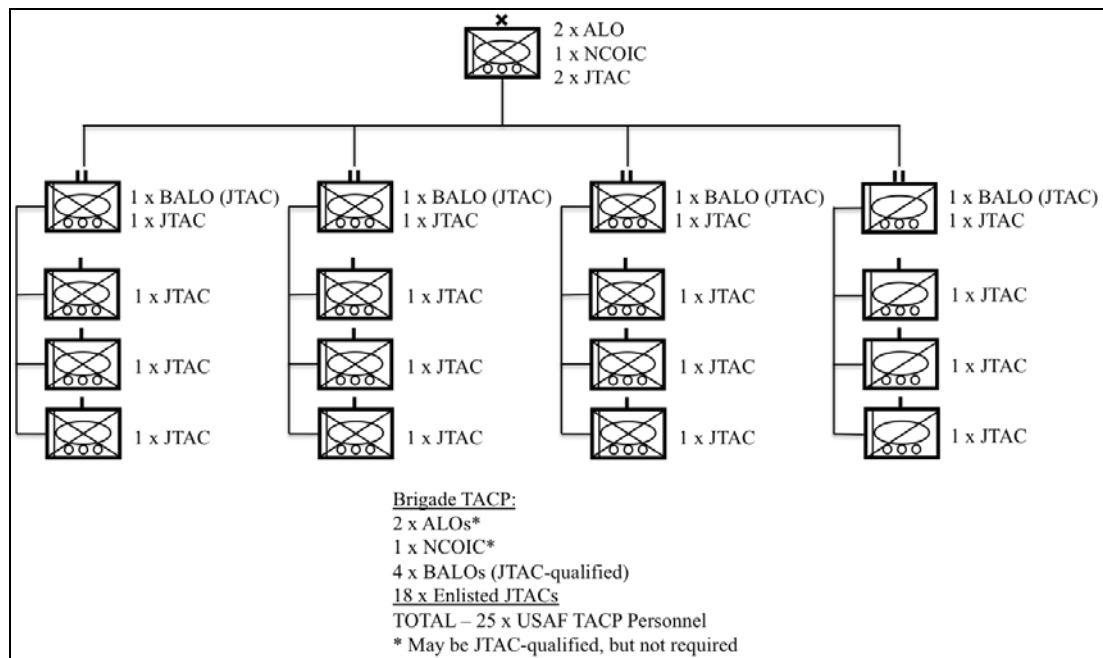


Figure 1. Sample Stryker Brigade Combat Team TACP

Source: Created by author.

The only two SMEs that are provided additional guidance are EWOs and ISR elements. First, USAF EWOs are assigned to EW Coordination Cells and the Corps and

⁶⁸Ibid., 4-5, Section V.A.6.

Division level, and EW elements at the BCT level. They are responsible for coordinating with U.S. Army EWOs to integrate EW at the tactical and operational level.⁶⁹ USAF ISR elements are aligned with U.S. Army corps, divisions and other jointly validate headquarters to provide USAF ISR capabilities and limitations and special staff assistance to the ground commander.⁷⁰ It is an assumption that “ISR liaison elements” are similar to the ISRLO and ISR NCO mentioned earlier in the MOA. It is important to note that the MOA does not stipulate any additional guidance for USAF Space and Cyberspace personnel, other than they can augment a TACP if needed. This lack of guidance may cause integration issues with Space and Cyberspace SMEs.

Joint Doctrine

Joint doctrine provides the overarching concept and common language that provides the separate services the ability to operate within in a joint environment. JP 1, *Doctrine for the Armed Forces of the United States*, provides the overarching guidance for unified action by the U.S. military.⁷¹ It is the link between policy and doctrine, establishing joint doctrine to enhance the operational effectiveness of joint forces through fundamental principles to guide the employment of forces.⁷² Joint doctrine is supplemented with the UJTL program, to maintain an authoritative list of approved

⁶⁹Ibid., 5, Section V.A.10.

⁷⁰Ibid., 5, Section V.A.9.

⁷¹Joint Chiefs of Staff, Joint Publication (JP) 1, *Doctrine for the Armed Forces of the United States*, Joint Electronic Library Plus, 25 March 2013, <https://jdeis.js.mil/jdeis/index.jsp?pindex=2> (accessed 28 March 2014), i.

⁷²Ibid., I-1.

Universal Joint Tasks (UJTs). The intent of the review of joint doctrine and the UJTL was to determine how the TACP fits into the overall joint structure and its contribution, in relation to the tasks it performs.

Joint Publication 1 also defines a joint function that aligns a series of related tasks into a broad, enduring role. Each joint function provides the general role an organization fills, which is aligned with their design, equipment, and training.⁷³ There are six joint functions that a joint force uses to integrate, synchronize, and direct joint operations: command and control (C2), intelligence, fires, movement and maneuver (M2), protection and sustainment.⁷⁴ The joint functions are explained in chapter 3 of this thesis, since they are used in the analysis of the TACP airpower liaison support.

Universal Joint Task List

The UJTL translates the National Defense Strategy, National Military Strategy, and other policy and direction into a common language of joint tasks for the DoD.⁷⁵ A UJT is defined as, “a clearly defined action or activity specifically assigned to an individual or organization that must be done as it is imposed by an appropriate authority.”⁷⁶ UJTs are categorized into four categories to align with the levels of warfare. The first two categories are subdivisions of the strategic level of warfare, strategic

⁷³Ibid., I-9.

⁷⁴Ibid.

⁷⁵Chairman of the Joint Chiefs of Staff, Chairman of the Joint Chiefs of Staff Instruction (CJCSI) 3500.02B, *Universal Joint Task List Program*, 15 January 2014, http://www.dtic.mil/cjcs_directives/cdata/unlimit/3500_02.pdf (accessed 18 March 2014), A-1.

⁷⁶Ibid., GL-4.

national (SN) and strategic theater (ST).⁷⁷ The remaining two UJT categories are operational (OP) and Tactical (TA) tasks. This categorization mirrors JP 1 description of the levels of war, as depicted in figure 2.

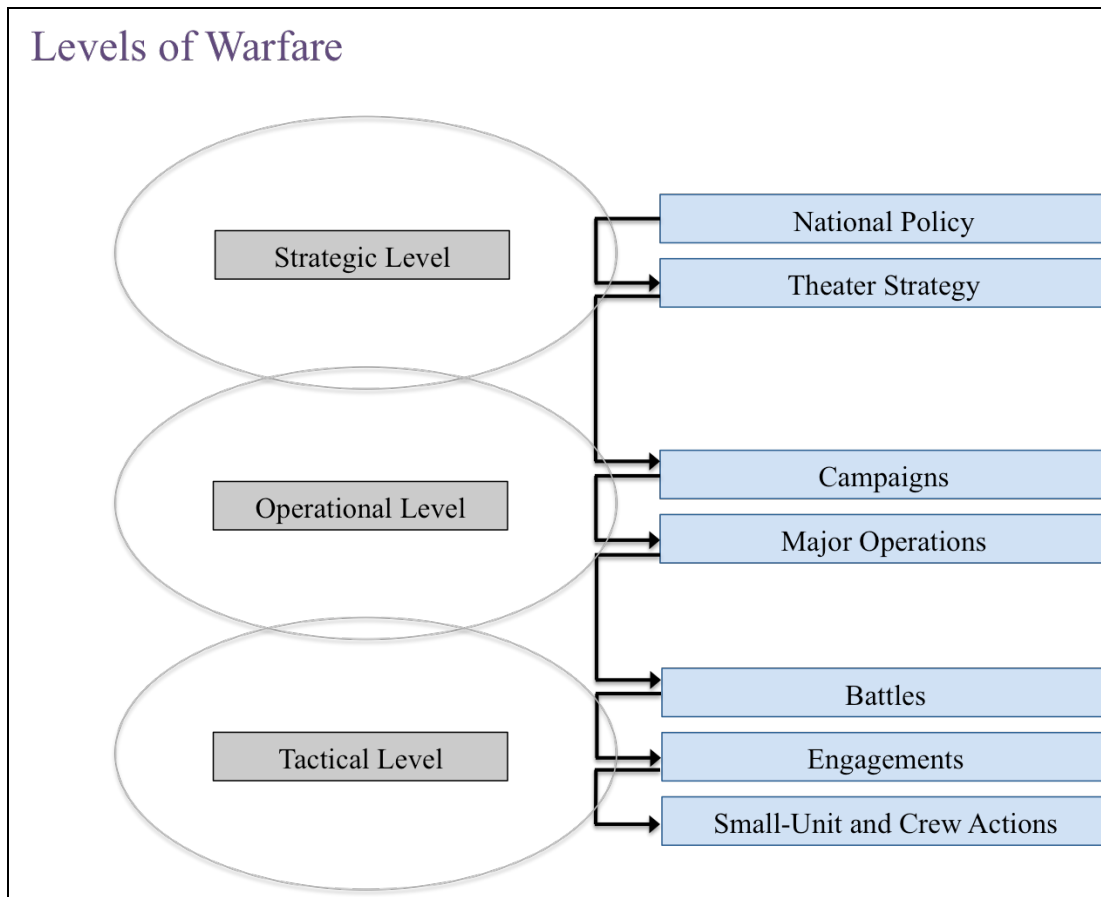


Figure 2. Level of Warfare

Source: Joint Chiefs of Staff, Joint Publication (JP 1), *Doctrine for the Armed Forces of the United States*, Joint Electronic Library Plus, 25 March 2013, <https://jdeis.js.mil/jdeis/index.jsp?pinde=2> (accessed 28 March 2014), I-7.

⁷⁷Ibid., GL-1.

At the strategic level is where a nation determines the national guidance to attain objectives in support of strategic end states, and develops and uses national resources to achieve them, e.g. the U.S. military.⁷⁸ Strategic level UJTs are subdivided into SN tasks to account for overall national policy and security goals, while ST tasks account for theater-specific strategic goals supporting national strategy. The operational level is the link between strategy and tactics by establishing objectives to meet strategic objectives and military end states. The tasks at this level (OP tasks) focus on operational planning to organize and employ military forces, which sequences tactical actions to achieve operational and strategic objectives.⁷⁹ The tactical level is the specific employment and arrangement of forces to achieve military objectives, where battles and engagements are planned and executed. It is at the tactical level where units use tactics to execute TA tasks to achieve combat objectives.⁸⁰

The current UJTL is a comprehensive 1,375-page document with 1,269 tasks, current as of 13 December 2013. Since the UJTL is a joint document, not specific to any DoD service component, it has no references to the TACP, JACCE, or any other similar force organization. The task listing in Table 1 includes UJTs relevant to the TACP and conventional land component, understanding force organizations nest their tasks with higher-level tasks (e.g. a TA task supporting an OP task, which supports a ST or SN task). The table is only a small sample from the UJTL, loosely arranged by joint

⁷⁸Joint Chiefs of Staff, JP 1, I-7.

⁷⁹Ibid., I-8.

⁸⁰Ibid.

functions, and is not a comprehensive list of UJT's applicable to the TACP and conventional land component.

Table 1. Universal Joint Task List Sample

Fires	
<u>Strategic-Level</u>	
SN 3 Employ Forces	ST 3 Employ Fires
SN 3.2 Synchronize Joint Fire Support	ST 3.2.1 Conduct Attack on Theater Strategic Targets/Target Systems Using Lethal Means
SN 3.3 Employ Joint Fire Support	ST 3.2.2 Conduct Attack on Theater Strategic Targets/Target Systems Using Nonlethal Means
SN 3.3.1 Employ Joint Fires	ST 3.2.3 Synchronize Theater Strategic Firepower
SN 3.3.4 Apply Nonlethal Capabilities	
<u>Operational-Level</u>	
OP 3 Employ Fires	OP 3.2.4 Suppress Enemy Air Defenses
OP 3.1.7 Employ Fire Support Coordination Measures	OP 3.2.5 Interdict Operational Forces/Targets
OP 3.2.1 Provide Close Air Support Integration for Surface Forces	OP 3.2.6 Provide Firepower in Support of Operational Maneuver
OP 3.2.2 Conduct Nonlethal Attack	OP 3.2.7 Synchronize Operational Firepower
<u>Tactical-Level</u>	
TA 3 Employ Firepower	TA 3.2.4 Conduct Joint Suppression of Enemy Air Defenses
TA 3.2.1 Conduct Joint Fires	TA 3.2.6 Conduct Attacks Using Nonlethal Means
TA 3.2.2 Conduct Close Air Support	TA 3.3 Coordinate Battlespace Maneuver and Integrate with Firepower
TA 3.2.3 Conduct Interdiction	
	TA 3.5 Employ Space Capabilities
Movement and Maneuver	
<u>Strategic-Level</u>	
SN 1 Conduct Strategic Deployment and Redeployment	ST 1 Deploy Forces

Operational-Level	
OP 1 Conduct Operational Maneuver	OP 1.2.4.3 Conduct Forcible Entry: Airborne, Amphibious, and Air Assault
Tactical-Level	
TA 1 Deploy/Conduct Maneuver	TA 1.2.1 Conduct Air Assault
TA 1.2.2 Conduct Airborne Operations	
Command and Control	
Strategic-Level	
SN 5.4.2.1 Provide Friendly Force Tracking	ST 5.3.1.4 Conduct Mission Analysis
	ST 5.4.3.3 Develop Joint Force Liaison Structure
SN 5.5.11 Manage Cyberspace Operations	
ST 5 Provide Command and Control	
Operational-Level	
OP 5 Provide Command and Control	OP 5.4.5 Coordinate/Integrate Component, Theater, and Other Support
OP 5.1 Integrate Information	OP 5.5.2 Develop Joint Force Liaison Structure
OP 5.1.4 Process Information	
OP 5.3.1 Conduct Mission Analysis	OP 5.6.4 Conduct Electronic Warfare in the Joint Operations Area
OP 5.4.4 Synchronize and Integrate Operations	
Tactical-Level	
TA 5 Exercise Command and Control	TA 5.6.4 Employ Electronic Warfare
TA 5.1 Provide Command, Control, Communications, and Computer Systems	TA 5.6.5 Employ Computer Network Operations
Intelligence	
Strategic-Level	
SN 2.2.2 Provide Intelligence, Surveillance and Reconnaissance	ST 2.4.1 Conduct Joint Intelligence Preparation of the Operational Environment
SN 2.2.4 Manage Intelligence, Surveillance, and Reconnaissance Capabilities	
	ST 2.8 Integrate Intelligence Capabilities
Operational-Level	
OP 2.3.5 Disseminate and Integrate Operational Intelligence	OP 2.4 Conduct Joint Intelligence Preparation of the Operational Environment
OP 2.7.1 Manage Intelligence, Surveillance, and Reconnaissance	

<u>Tactical-Level</u>	
TA 2 Share Intelligence	

Source: Created by author, pulled from UJTL tasklist 13 December 2013, and arranged in joint functions by this author.

Note: These task titles are commensurate with the tasks in Appendix B of this thesis. Reference the specific task in Appendix B for additional UJT details and citation information.

The UJTL provides an overarching focus that demonstrates tasks related to airpower liaison nested from the tactical-level to the strategic-level. This is especially interesting when analyzed in relation to the TACP tasks in the AFUTL; some tasks the TACP accomplish, e.g. UJTL OP 3.2.1 Provide CAS Integration for Surface Forces, are operational level tasks.

JP 3-09, Joint Fire Support

The TACP has an integral role in joint fire support that is not just limited to CAS. Appendix A of this thesis contains the Air Force tasks for the ASOG and ASOS, which are discussed in the Air Force core doctrine section of this thesis. A key TACP task is to plan and conduct joint fires, air, space, and cyber operations in support of U.S. Army forces. So, it benefits this thesis to highlight key points on joint fires doctrine.

Fires are defined as the use of weapon systems to create specific lethal or nonlethal effects on a target, delivered by air, land, and maritime forces.⁸¹ Joint fires are delivered during coordinate force employment from two or more components to produce desired effects supporting a common objective. Joint fires assist forces to conduct

⁸¹Joint Chiefs of Staff, Joint Publication (JP) 3-09, *Joint Fires Support* (Washington, DC: Government Printing Office, June 2010), I-1.

operations across the range of military operations.⁸² Joint fire support is defined as joint fires that assist joint forces to move, maneuver, and control territory, populations, airspace, and key waters supporting the JFC's scheme of maneuver.⁸³ Integration and synchronization with the movement and maneuver of forces is crucial to joint fire support. Two key requirements for effective joint fire support, pertinent to the TACP, are the following: the understanding of the strengths, limitations, and application of service-specific capabilities; and clear agreement on capability integration in any operational setting.⁸⁴

Interestingly, TACP integration of fires also includes “nonlethal” fires defined as, “any fires that do not directly seek the physical destruction of the intended target and are designed to impair, disrupt, or delay the performance of enemy forces, functions, or facilities, or to alter the behavior of an adversary.”⁸⁵ Nonlethal fires include nonlethal capabilities (coined “non-kinetic” capabilities by USAF), such as EW, space and cyberspace operations to deceive the enemy or disable enemy C2 systems. These nonlethal capabilities are integrated into joint operations to produce synergistic results.⁸⁶

The TACP and JACCE are discussed as part of the C2 of joint fire support. The discussion is limited to basic definitions and responsibilities, which are discussed later in

⁸²Ibid., I-2.

⁸³Ibid.

⁸⁴Ibid.

⁸⁵Ibid., I-5.

⁸⁶Ibid.

this thesis. There is a consistent theme throughout this publication concerning the need for liaison support for detailed planning, integration, and execution of joint fire support.

JP 3-09.3, *Joint Close Air Support*

Joint Publication 3-09.3, *Joint Close Air Support* is the source joint doctrine publication for CAS operations. This document has the most joint documentation related to CAS, TACPs, CAS C2 agencies, and is generally a tactical level document.

Specifically, JP 3-09.3 states the following, “CAS is planned and executed to support ground tactical units. CAS execution is tightly integrated at the tactical level with the fire and maneuver of supported ground forces. The air apportionment and allocation process for CAS occurs at the operational level.”⁸⁷ For instance, it details the tactical procedures for coordinating a CAS attack in a nine-line format, and techniques for target correlation between JTACs and CAS aircrew. However, CAS integration must start at the operational level to ensure the JFC prioritizes joint air operations for CAS to support overall operations.⁸⁸ Additionally, CAS requires a C2 structure that is flexible and integrated to plan and coordinate the entire process from identifying requirements to execution of CAS on enemy targets.⁸⁹

The Theater Air-Ground System (TAGS) is the system of systems that orchestrates the planning and execution of air-ground operations through the synergy of

⁸⁷Joint Chiefs of Staff, JP 3-09.3, I-1.

⁸⁸*Ibid.*, I-5.

⁸⁹*Ibid.*, I-8.

various service component air-ground systems, at the operational level of war.⁹⁰ The service component equivalents for the U.S. Army and USAF are Army Air-Ground System (AAGS) and the Theater Air Control System (TACS) respectively. The TACS is the modified and current version of the original Tactical Air Control System developed in the Vietnam era. The TACS—AAGS systems combine to detail the liaisons and agencies required to plan, integrate, execute, and C2 joint air operations in support of conventional land forces. The TACP is an integral link between the U.S. Army and USAF as depicted in the TACS—AAGS diagram below.

⁹⁰Air Land Sea Application Center, *Multi-Service Tactics, Techniques, and Procedures for the Theater Air Ground System* (Langley AFB, VA: Air Land Sea Application Center, 2007). i.

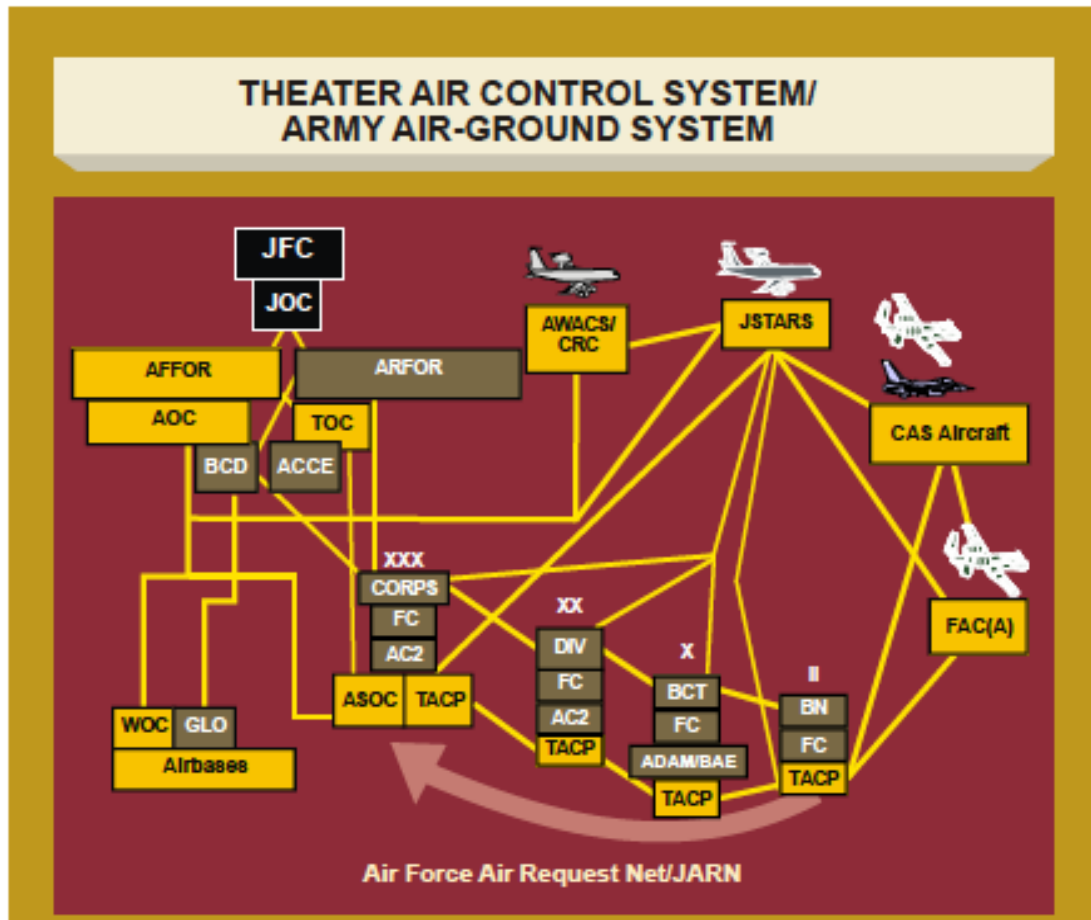


Figure 3. TACS—AAGS

Source: Joint Chiefs of Staff, Joint Publication 3-09.3, *Close Air Support* (Washington, DC: Government Printing Office, July 2009), II-5.

The TACP is defined in JP 3-09.3 after the following statement, “Terminal attack control of CAS assets is the final step in the TACS for CAS execution.”⁹¹ It is after this statement the TACP is defined, along with only two members, the ALO and JTAC. If any inference is made concerning the context in which the TACP was defined, the JP 3-09.3 text leans towards a more specific and limited liaison responsibilities with respect to CAS

⁹¹Joint Chiefs of Staff, JP 3-09.3, II-8.

for the land component. In other words, the primary purpose of the TACP is the tactical level liaison, integration and execution of CAS for ground forces. It is important to note that JP 3-09.3 is currently undergoing final approval process for a revision (the revised final coordination draft is dated 18 Oct 2013), but this thesis “officially” used the approved 8 July 2009 version. Yet, in the draft JP 3-09.3, the aforementioned statement (regarding the “final step in the TACS”) is removed and the TACP definition is provided within a general list of TACS entities. Additionally, the draft JP 3-09.3 lists the TACP members to include the ALO, JTAC and the ISRLO. The reader must realize that while the JP 3-09.3 draft exists on the Joint Electronic Library website, it is an unapproved draft and provided only for situational awareness.

Overall, CAS is a very interdependent and integrated mission set that relies on a myriad of liaison support. Understand that CAS is only one mission that a TACP executes, a point explained further in the Air Force Doctrine section. The integrated nature of CAS illustrates the same concept as the small UJT list in table 1, the TACP’s broad reaching influence in joint operations. In order to properly execute CAS, the TACP must directly support and or execute additional missions and functions. Consequently, JP 3-09.3 references other joint publications required to fully implement and integrate CAS. See below for the sample joint publication list:

1. Intelligence function references—JP 2-01, *Joint and National Intelligence Support to Military Operations* and JP 2-01.3, *Joint Intelligence Preparation of the Operational Environment*.
2. Fires function references—JP 3-09, *Joint Fire Support* and JP 3-60, *Joint Targeting*.

3. Command and Control function references—JP 3-30, *Command and Control of Joint Air Operations* and JP 3-52, *Joint Airspace Control*.

Joint Publication 3-09.3 provides invaluable tactical level doctrine and TTP to standardize CAS operations. Additionally, it is evident the TACP directly or indirectly supports multiple joint functions (e.g. Intelligence, Fires), which is indicative of broad-reaching liaison support and capability. Yet, it seems to highlight the TACP as having one overall priority, provide only tactical-level liaison and C2 of CAS to the land component.

JP 3-30, *Command and Control of Joint Air Operations*

This JP provides the doctrine and responsibilities of the JFACC and C2 options for planning, integration, and employment of joint airpower.⁹² The document does provide discussion of the liaison elements required by the air component, which is most pertinent to this thesis. The TACP is mentioned briefly and only within the context of the ASOC as a C2 element within the TACS. The text implies the TACP is primarily aligned for C2 of CAS and advising on air operations only, not a liaison and C2 entity for airpower.⁹³ The JACCE is discussed throughout the publication and has an entire appendix dedicated to provide details. More importantly, it is inferred that the JACCE is the responsible organization for operational level airpower liaison and integration. It states “Typically, when Army units are designated to provide the JTF or JFLCC and the

⁹²Joint Chiefs of Staff, Joint Publication (JP) 3-30, *Command and Control of Joint Air Operations*, Joint Electronic Library Plus, 10 February 2014, <https://jdeis.js.mil/jdeis/index.jsp?pindex=2> (accessed 31 March 2014), I-1.

⁹³*Ibid.*, II-9.

COMAFFOR is designated the JFACC, the habitually aligned air support operations group will provide the JACCE nucleus due to the established working relationships.”⁹⁴

The ASOG is a formal force presentation for a Corps level TACP. The JACCE discussion in JP 3-30 is nearly identical with Air Force doctrine, so JACCE additional details are discussed in the Air Force Core Doctrine section below.

Air Force Core Doctrine

To illustrate the Air Force perspective on the integration between air and land power, USAF doctrine must be referenced. According to Air Force Doctrine Document (AFDD) Volume I, “Air Force doctrine describes and guides the proper use of airpower in military operations.”⁹⁵ Some USAF doctrine definitions and concepts are not identical to joint definitions or even jointly recognized terms. It is imperative to understand the USAF narrative as it relates to providing liaison support, e.g. TACP, to the conventional land component. Finally, USAF Doctrine is supplemented by AFUTLs and Core-Unit Mission Essential Task Lists (METLs), which provide an authoritative list of tasks that, support Chairman of the Joint Chiefs of Staff (CJCS) UJTL Program.

AFDD Volume I Basic Doctrine

Air Force Doctrine Document Volume I, Basic Doctrine lays the foundation of USAF-specific doctrine and how it relates to joint doctrine. It defines “doctrine” within an Air Force context, by stating “doctrine is about warfighting, not physics.”⁹⁶ The intent

⁹⁴Ibid., App G.

⁹⁵Chief of Staff of the Air Force, Air Force Doctrine Document, Volume I, 10.

⁹⁶Ibid., 14.

is to recognize there are inherent differences between air, space, and cyberspace operations due to their physical domains, which impacts how a liaison element presents airpower to the land component. Airpower is defined as “the ability to project military power or influence through the control and exploitation of air, space, and cyberspace to achieve strategic, operational, or tactical objectives.” Airpower is applied across the strategic, operational, and tactical levels of war simultaneously, which requires corresponding liaison support at each level.⁹⁷

This AFDD highlights the following key insight relevant to liaison support, “Thus, in the Air Force’s capstone doctrine document, it is appropriate to use concepts and language that bind Airmen together instead of presenting the Air Force as a collection of tribes broken out in technological stovepipes according to the domains of air, space, and cyberspace.”⁹⁸ This is another key principle affecting statement how airpower is presented to the land and other joint components.

Air Force Doctrine Document Volume I dedicates discussion of “airmindedness” and the unique perspective of the Airman. Three key principles are highlighted, which relate to airpower liaison support to the land component.

1. Airpower results from the effective integration of capabilities, people, weapons, bases, logistics, and all supporting infrastructures.⁹⁹
2. The choice of appropriate capabilities is a key aspect in the realization of airpower.¹⁰⁰

⁹⁷Ibid., 24.

⁹⁸Ibid., 25.

⁹⁹Ibid., 34.

3. Airpower's unique characteristics necessitate that it be centrally controlled by Airmen.¹⁰¹

Additionally, AFDD Volume I highlights command relationships, force organization, and command and control relationships that are beyond the scope of this thesis. It discusses relevant points concerning the integration of the USAF capabilities into joint operations. Specifically, it addresses how the USAF presents forces to a JFC and liaison support. The USAF presents its forces to the JFC in the following three different models: theater-level component, sub-theater-level component, and sub-theater-level Air Expeditionary Task Force in support of a Joint Task Force (JTF). Though regardless of force presentation, the primary airpower liaison element discussed is the JACCE.

The JACCE is a jointly recognized and is defined as, “a general term for the liaison element that serves as the direct representative of the JFACC for joint air operations”.¹⁰² The source document for the JACCE is JP 3-30, *Command and Control*, but AFDD Volume I's JACCE discussion is nearly identical. The JACCE is comprised of tailored airpower SMEs to liaise, coordinate, and integrate airpower to meet the JTF's specific requirements (mission). It is important to understand that current doctrine states the JACCE is “not” a C2 node, but is “only” a liaison element to facilitate integration.¹⁰³ The JACCE coordinates the integration of JFACC requirements for airspace coordinating

¹⁰⁰Ibid.

¹⁰¹Ibid.

¹⁰²Joint Chiefs of Staff, JP 1-02, 139.

¹⁰³Chief of Staff of the Air Force, Air Force Doctrine Document, Volume I, 123.

measures, fire support coordination measures, close air support, air mobility, and space requirements through exchange of intelligence, operational data, and support requirements.¹⁰⁴ Interestingly, AFDD Vol I and JP 3-30 also highlight the requirement for the JACCE Director to have sufficient rank to function as a liaison with the JTF commander, since he or—she is the JFACC’s official representative.¹⁰⁵ This requirement is relevant to TACP, since TACP execute a similar mission.

Finally, AFDD Volume I highlights the importance of relationships and personal interaction to facilitate more effective liaison. It stipulates “the JFACC should establish a close working relationship with the JFC to ensure the best representation of airpower’s potential.”¹⁰⁶ It states JFACC co-location with the JFC fosters the personal trust essential to joint operations. The co-location ensures a greater air component presence in the JTF, which is vital during planning. This prevents the JTF staff from planning and directing operations in the perceived absence of the JFC’s senior Airman. AFDD even states that in some situations the JFACC should co-locate with the JFC at the expense of staying in the AOC.¹⁰⁷ These points are relevant to airpower liaison support at all levels of war.

AFDD Volume III Command

AFDD Volume III discusses two points relevant to this thesis; parallel and asymmetric operations, and effects-based approach to operations. Parallel operations are

¹⁰⁴Ibid.

¹⁰⁵Ibid.

¹⁰⁶Ibid., 125.

¹⁰⁷Ibid., 126.

executed concurrently and apply pressure to many points of an enemy system in a short period of time to generate maximum shock and dislocation effects.¹⁰⁸ Asymmetric, as defined in AFDD Volume III, is any capability that confers an advantage for which an adversary cannot directly compensate.¹⁰⁹ Parallel, asymmetric operations create opportunities to maximize effects synergy through simultaneous and rapid attacks on adversary key nodes and forces.¹¹⁰ Effects-based approach to operations is defined as “an approach in which operations are planned, executed, assessed and adapted to influence or change systems or capabilities in order to achieve desired outcomes.”¹¹¹ This approach is considered an overarching method of thinking, relative to military action, that encompasses operational design, planning, execution, and assessment of operations across the range of military operations; it is not defined by available forces or capabilities.¹¹² In other words, a planning and liaison staff applying effects-based approach to operations requires airpower SMEs to integrate all aspects of airpower across all domains.

¹⁰⁸Chief of Staff of the Air Force, Air Force Doctrine Document, Volume III, *Command* (Maxwell AFB, AL: Curtis Lemay Center, June 2013), <https://doctrine.af.mil/> (accessed 3 March 2014), 10.

¹⁰⁹*Ibid.*

¹¹⁰*Ibid.*

¹¹¹*Ibid.*, 18.

¹¹²*Ibid.*

AFDD Volume IV Operations

Air Force Doctrine Document Volume IV stipulates airpower's organic air, space, and cyberspace capabilities are used with a "broader focus" to achieve theater-wide and national-level objectives, applied across the strategic, operational, and tactical levels of war. Airpower is "flexible in organization and presentation; since it encompasses a wide range of capabilities and operating environments, it defies a single general model for organization, planning, and employment."¹¹³ Plus, airpower is employed in consideration of land forces, but not just against enemy forces but to aid friendly forces as well.¹¹⁴ AFDD defines counterland operations, which entails airpower integration and support to the land component.

Counterland operations are "airpower operations against enemy land force capabilities to create effects that achieve JFC objectives." The intent of counterland operations is to support friendly land force maneuver and engage enemy land forces. It is broken down into two distinct support operations, air interdiction (AI) and CAS. AI is airpower that supports land forces indirectly or directly supports JFC objectives in the absence of friendly land forces; CAS is airpower that directly supports land maneuver.¹¹⁵ It is inferred that airpower liaison support to the land component is limited to CAS and AI operations only.

Air Force Doctrine Document Volume IV discusses space operations involving space superiority and mission assurance; with the latter most pertinent to TACP and

¹¹³Chief of Staff of the Air Force, Air Force Doctrine Document, Volume IV, 15.

¹¹⁴Ibid., 12.

¹¹⁵Ibid., 23.

counterland operations, since much of the technology used relies on Space assets, e.g. Global Positioning System and satellite communications.¹¹⁶ Cyberspace operations are the employment of cyberspace capabilities where the primary purpose is to achieve objectives in or through cyberspace. Cyberspace operations enable other vital activities and operations, e.g. cyber systems used to the space capability satellite communications.¹¹⁷ Regarding ISR, AFDD Volume IV utilizes the term Global Integrated ISR, and defines it as, “cross-domain synchronization and integration of the planning and operation of ISR assets; sensors; processing, exploitation and dissemination systems; and, analysis and production capabilities across the globe to enable current and future operations.” The definitions of these nonlethal airpower capabilities are relevant to how an airpower liaison integrates them into land component operations.

Air Force Doctrine Summary

United States Air Force doctrine provides key insights to the Air Force narrative and its “airmindedness”, which are crucial to understand and relate the TACP’s integration with conventional land forces. There is an apparent disconnect in the literature with regard to the TACP’s inherent capability to integrate airpower outside of CAS and above the tactical level.

AFUTL and Core-Unit METLs

The USAF has a comprehensive list of tasks organized into two main categories; generic tasks organized by levels of war, and tasks organized by core USAF units. The

¹¹⁶Ibid., 28.

¹¹⁷Ibid., 29.

AFUTL mirrors the UJTL task setup and are organized by the three levels of war; strategic-national and strategic-theater, operational, and tactical. The core-unit METL is a combined list of core AF units with their missions and relevant tasks. TACPs are organized into Air Ground Operations Wings (AGOWs), ASOGs, and ASOSs. The AGOW is a relatively new organization, in that the first of its kind was activated in 2008. There are only two operational AGOWs, the 93rd AGOW at Moody AFB, GA, and the 435th AGOW at Ramstein AB, Germany. Currently, the AGOW itself is not a deployable unit, or an organization presented to a U.S. Army unit or joint force. As a result, the AFUTL does not list the AGOW as a core-unit, but only lists the ASOG and ASOS. The AFUTL is a comprehensive 811-page document, so only the most relevant highlights are discussed. Appendix A includes the complete ASOG and ASOS core-unit METL tables. Below is the list of task names only within the ASOG and ASOS core-unit METLs:

1. AFTA 1.8.1 Provide a Corps TACP in Support of a U.S. Army Corps Operation.¹¹⁸
2. AFTA 1.8.2.1 Deploy a Division TACP in Support of U.S. Army Division Operations.¹¹⁹
3. AFTA 1.8.2.2 Deploy a Brigade TACP in Support of U.S. Army BCT (Stryker, Armored, and/or Infantry as Applicable) Operation.¹²⁰

¹¹⁸HQ USAF/A3O-IR, *Air Force Universal Task List (AFUTL) and Core-Unit Mission Essential Task Lists (METLs)*, Joint Electronic Library Plus, February 2013, <https://jdeis.js.mil/jdeis/index.jsp?pindex=43> (accessed 18 March 2014), 107.

¹¹⁹*Ibid.*, 107-108.

¹²⁰*Ibid.*, 108.

4. AFTA 1.8.2.1.1 Deploy an Air Support Operations Center (ASOC) Capability in Support of a Division TACP Mission.¹²¹
5. AFOP 1.8.3 Perform C2 of All TACP Subordinate to the Corps TACP.¹²²
6. AFTA 1.8.3.1 Perform C2 of All TACP Subordinate to the Division TACP.¹²³
7. AFTA 1.8.3.2 Perform C2 of All TACP Subordinate to the Brigade TACP.¹²⁴
8. AFTA 1.8.4 Plan and Conduct Joint Fires, Air, Space, and Cyber Operations in Support of U.S. Army Corps Operations.¹²⁵
9. AFTA 1.8.4.1 Plan and Conduct Joint Fires, Air, Space, and Cyber Operations in Support of U.S. Army Division Operations¹²⁶.
10. AFTA 1.8.4.2 Plan and Conduct Joint Fires, Air, Space, and Cyber Operations in Support of U.S. Army BCT (Stryker, Armored, and-or Infantry as Applicable) Operations.¹²⁷
11. AFTA 1.8.5 Conduct Airborne Operations with U.S. Army Corps.¹²⁸
12. AFTA 1.8.5.1 Conduct Airborne Operations with U.S. Army Division.¹²⁹

¹²¹Ibid.

¹²²Ibid., 109.

¹²³Ibid.

¹²⁴Ibid.

¹²⁵Ibid., 107.

¹²⁶Ibid., 110.

¹²⁷Ibid.

¹²⁸Ibid., 110-111.

¹²⁹Ibid., 111.

13. AFTA 1.8.5.2 Conduct Airborne Operations with U.S. Army Airborne Brigade.¹³⁰

14. AFTA 1.8.5.3 Conduct Air Assault Operations with U.S. Army Division and its Associated BCTs.¹³¹

There is only one operational-level task assigned to a TACP, and the rest are tactical-level tasks. The most relevant ASOG and ASOS task description is the main task description for each TACP echelon (i.e., Corps, Division, Brigade). Each echelon task description contains the same key phrase, “provides liaison and planning expertise on all aspects of air and space power required to integrate with the ground scheme of maneuver.” Conversely, the AFUTL document does not have any reference to a JACCE. Overall, the AFUTL provides interesting insight into with “who” is tasked and with what task(s).

TACP Career Field Education and Training Plans

A USAF CFETP is the comprehensive core-training document that identifies life-cycle training and education requirements, support resources, and minimum core task requirements for an AFSC.¹³² The Career Field Education and Training Plans (CFETPs) for TACP personnel, 1C4X1 (enlisted TACP personnel) and 13LXX (ALO), provide

¹³⁰Ibid.

¹³¹Ibid.

¹³²Department of the Air Force, *Tactical Air Control Party AFSC 1C4X1 CFETP* (Washington, DC: Headquarters, U.S. Air Force, 15 November 2009, Change 1, 28 September 2012), http://static.e-publishing.af.mil/production/1/af_a3_5/publication/cfetp1c4x1/cfetp1c4x1.pdf (accessed 6 April 2014), 1.

insight into the responsibilities and training items that ensure appropriate career-specific certification and expertise. The CFETP provides the foundation to ensure USAF personnel are able to support tasks within the AFUTL and UJTL. These two CFETPs illustrate the requirement for airpower liaison support to the land component. More importantly, the required training and schools are specifically tailored to build provide airpower liaison expertise. This entails understanding not only air component operations, but land component operations as well. Key points and excerpts from the two TACP AFSC CFETPs are in Appendix C.

A Seat at the Table—Beyond the Air Component Coordination Element

General Mike Hostage is the USAF's Air Combat Command Commander, after being the commander of U.S. Air Forces Central Command, Southwest Asia. In U.S. Air Forces Central Command he acted as the Combined Forces Air Component Commander from August 2009 to August 2011. As the Combined Forces Air Component Commander, Hostage was responsible for developing contingency plans and conducting air operations in a 20 nation AOR, spanning both Iraq and Afghanistan joint operations.¹³³ He wrote an article highlighting key points centering on airpower liaison and the ACCE halfway through his tour, based on his perspective in the Central Command AOR.

He acknowledged the significance of face-to-face liaison to develop the personal relationship and trust needed between land and air component commanders, as

¹³³Lt Gen Mike Hostage, "A Seat at the Table: Beyond the Air Component Coordination Element," *Air and Space Power Journal* (Winter 2010): 20.

highlighted in the relationship between General Douglas MacArthur and Lieutenant General George Kenney during WWII. However, the current Combined Air and Space Operations Center lacked (and still does) the portability to allow a Combined Forces Air Component Commander to co-locate with every ground commander. The challenge of providing C2 to multiple joint operating areas (JOAs) coupled with no colocation, hampered vital liaison efforts with joint partners.¹³⁴ The USAF identified the problem in 2003 and implemented the ACCE concept, but seven years later Hostage “found the ACCE construct wanting.”¹³⁵

The problem was not solved by close proximity alone; it required more robust ACCE staff, empowering the ACCE Director with responsibility over forces in their JOA, and appropriate authorities to respond to JFC needs. Hostage realized to integrate airpower with the ground scheme of maneuver his ACCEs (one in Iraq and one in Afghanistan) required limited C2 authority to provide direction to their respective air expeditionary wings and coordinate directly with the Combined Air and Space Operations Center. Hostage emphasized the significance of the Combined Forces Air Component Commander maintaining a theater-wide focus to maximize the full capabilities of airpower to meet demands across multiple JOAs.¹³⁶

Hostage closed his article with three key points, which he believed that current doctrine should incorporate. His points are quoted to prevent misrepresenting their meaning and intent, and arranged in an “ends, ways, means” construct. First, he

¹³⁴Ibid., 19.

¹³⁵Ibid.

¹³⁶Ibid.

communicated his intent or objective (“ends”): “My intent, as I have emphasized to Airmen throughout the theater and especially to the ACCEs, is to make the ground commander more successful.”¹³⁷ Then, he focuses on Airmen and their relationship with the JFC (“ways”): “Airmen must have a seat at the table when the JFC organizes, plans, and executes operations. Guaranteeing that seat requires meaningful daily interaction and the resources and authorities to make a difference.”¹³⁸ The third point centers on the solution, (“means”): “Empowering the ACCE is the key to this meaningful interaction and improved execution.”¹³⁹

Hostage’s article provides key insights to airpower liaison requirements at the operational level, during operations. It is these insights that are applicable and relevant to the TACP’s liaison responsibilities, especially above the tactical level.

Capstone Concept for Joint Operations: Joint Force 2020

It is important to understand how senior leadership envisions the future operational environment and the U.S. military’s interaction within it. In the current fiscal environment and impending military drawdowns, it is even more important to ensure integration of all joint capabilities through key liaison elements. Since, the U.S. TACP is receiving additional nonlethal SMEs and is the principal liaison to the U.S. Army, the CJCS developed “Capstone Concept for Joint Operations” was reviewed. The CJCS

¹³⁷Ibid., 20.

¹³⁸Ibid.

¹³⁹Ibid.

developed the plan for the “Joint Force 2020” in September 2012, which highlighted key focus and future development areas pertinent to TACP.

The CJCS main concept centers on globally integrated operations. This concept requires the joint force to combine capabilities across domains, echelons, geographic boundaries, and organizations. The intent is to increase the integration of emerging capabilities, specifically SOF, Cyber and ISR, to facilitate the acceleration and expansion of a decisive Joint Force. In order to achieve globally integrated operations eight elements are listed, with three particularly relevant to airpower liaison to the land component.¹⁴⁰

The first element, “use of flexible, low-signature capabilities”, includes space and cyberspace domains having important roles in the future force.¹⁴¹ Second, the “flexibility in establishing Joint Forces” element is an expectation for new force structures based on functional or mission-based Joint Forces, and the requisite need for lateral coordination.¹⁴² Similarly, the “cross-domain synergy” element is a CJCS call for Joint Force integration improvement. The concept centers on the complementary versus additive employment of capabilities. Interestingly, cross-domain synergy, coupled with emerging capabilities and doctrine, will become available to lower echelons.¹⁴³

¹⁴⁰Center for Army Lessons Learned (CALL), *Capstone Concept for Joint Operations: Joint Force 2020*, Joint Electronic Library Plus, 12 September 2012, https://jdeis.js.mil/jdeis/jel/concepts/ccjo_2020.pdf (accessed 3 March 2014), 4.

¹⁴¹*Ibid.*, 2.

¹⁴²*Ibid.*, 6.

¹⁴³*Ibid.*, 7.

Finally, the CJSC stipulated 23 Force Development Implications, in response to the Capstone Concept for Joint Operations (CCJO). Four of the implications are pertinent to airpower liaison to the land component in the future:

1. The concept of mutual supporting commands and experimenting with hybrid command structures tailored to specific threats. Again, the concept is to tailor the joint force based on the specific threat, not on pre-established geographic or functional commands.¹⁴⁴
2. Fire support coordination should maximize cross-domain synergy to integrate all fire, including cyber. A new system for planning, requesting, and directing all available fires will be required to ensure access to all joint forces. The key point is to make “niche” capabilities available, e.g. cyber, available to joint forces.¹⁴⁵
3. The threat of anti-access and area denial threats requires the development of fires capabilities to defeat those threats. The priority is to develop fires to gain and maintain operational access and freedom of action, against anti-access and area denial threats.¹⁴⁶
4. The Joint Force must refocus on their ability to maneuver over a distance, breaking the relatively static operations during the past counterinsurgency and

¹⁴⁴Ibid., 10.

¹⁴⁵Ibid., 11.

¹⁴⁶Ibid.

stability operations. The Joint Force must develop innovative and collaborative training approaches to restore this ability economically.¹⁴⁷

The CCJO provides the foundation that guides the reengineering and refinement of the joint force. More specifically, it provides the Chairman's intent that directs the future of liaison support within the joint force, and directly impacts the USAF's responsibility to provide airpower liaison to the joint force.

Contemporary Studies on Airpower and Air-Land Component Relationships

RAND Corporation: RAND Project AIR FORCE 2005 Study

The RAND Corporation, in conjunction with the USAF, created a specific division to study USAF issues. In 2005, RAND Project AIR FORCE completed a meticulous study on CAS and Air-Ground relationships. In this study the researchers addressed three policy questions, with the most relevant question to this thesis being: "How should air attack and ground maneuver be integrated?"¹⁴⁸ The study analyzes the relationship between air and land powers and trends in counterland operations. For this thesis, it is important to caveat that the RAND study is nine years old, and the 2005 operational environment was different than today's. The RAND study offered historical analysis of trends and relationships that are still prevalent today. The study provided an examination of air-land relationships and the predominant views of their interaction. These varying relationships have direct impact on the existence and type of relationship

¹⁴⁷Ibid., 12.

¹⁴⁸Bruce R. Pirnie, Alan Vick, Adam Grissom, Karl Mueller, and David T. Orletsky, *Beyond Close Air Support: Forging a New Air-Ground Partnership* (Santa Monica: RAND Corporation, 2005), xiii.

between the USAF and U.S. Army; which it turn drives TACP liaison responsibilities with the land component and at what level the TACP operates. The table below illustrates the different perspectives that influence the use of airpower and subsequent requirement for liaison elements.

Table 2. Perspectives on the Air-Land Relationship

Relationship of Air to Land Power	Air Augments Land	Air Complements Land	Air Partners with Land	Air Dominates Land	Air Trumps Land
Supported Force	Land	Land	-	Air	Air
Typical Air Missions	CAS and AI	AI	AI and direct attack	Direct Attack	Strategic attack
Key airpower contribution	Flying artillery	Shaping the battlefield	Hammer and anvil	Death from above	Going downtown
Likely future appropriateness	Occasional	Sometimes, especially against unconventional forces	Frequent	Sometimes, especially against conventional forces	Infrequent

Source: Bruce R. Pirnie, Alan Vick, Adam Grissom, Karl Mueller, and David T. Orletsky, *Beyond Close Air Support: Forging a New Air-Ground Partnership* (Santa Monica: RAND Corporation, 2005), 13.

Note: These labels are deliberately colloquial and provocative. “Flying artillery” implies a concept that would treat aircraft like indirect-fire weapons. “Going downtown” implies attacking targets of strategic importance other than fielded forces. In all cases, air superiority is prerequisite.

In order to understand the table, a summary of the individual perspectives is essential.

1. Air Power Augments Land Power

a. In this perspective, air power is viewed similar to land-based fires; air power

becomes air-based fires to augment a land force’s organic fires capability. The

primary presupposition is that land forces are the primary force to defeat an enemy. Air-based fires become supplemental to land forces within close combat scenarios. In other words, if land-based fires cannot fulfill ground commander requirements, air-based fires would mitigate the land-based fires shortfall. Essentially, air-based fires could be substituted temporarily or become a long-term substitution. For instance, the USMC relies on its organic air power to mitigate their lack of artillery and armor, when compared to the U.S. Army. Even the U.S. Army in Vietnam fielded “aerial rocket artillery” when helicopters were armed with rockets to support ground forces.¹⁴⁹ The use of air power in this perspective is reduced to providing fires at the behest of ground forces to attack fielded enemy forces in contact with them. This perspective is predominantly ground-force centric, and contrary to the overall image of USAF Airmen have of the operational and strategic use of airpower to strike the enemy rear echelon and uncommitted forces.¹⁵⁰

2. Air Power Complements Land Power

- a. Similar to the previous perspective, the main presupposition requires land forces to be the primary force to defeat the enemy. However, the difference lies in that air power is used to attack the enemy in ways the land forces cannot. This perspective utilizes air power’s ability to strike targets further than organic land-based fires, to affect an enemy’s rear-echelon forces.¹⁵¹ In other words,

¹⁴⁹Ibid., 14.

¹⁵⁰Ibid., 15.

¹⁵¹Ibid.

this concept was embodied by the AirLand Battle doctrine of the 1980s, where air power would attrite second- and third-echelon Soviet forces before they could maneuver against friendly land-based forces. The effects of this perspective were illustrated during the 1991 Persian Gulf War, when the use of air power reduced Iraqi ground forces before Coalition forces advanced.¹⁵² This perspective still assumes that the ground forces will execute the final blow needed to defeat enemy forces.¹⁵³ Currently, this concept is advocated in Major Combat Operations using airpower to “shape operations” for follow-on land forces. Specifically, in a Division-level ground fight, the division would use airpower to shape the battlefield for their brigades, as their brigades fight close combat with lead echelon enemy forces (with airpower supplementing brigade operations).

3. Air Power Partners with Land Power

- a. Interestingly, RAND Project AIR FORCE considers this perspective, in 2005, to be the least familiar perspective within the U.S. military, and the focus of their overall study. Here the air and land forces are deemed relatively equal at the operational and strategic levels. This perspective is either ground-or air-centric at the tactical level, depending upon the operational environment. Consequently, the air forces may be the supported tactical force, with land forces supporting an air-centric tactical scheme of maneuver. Conversely, the land forces could be the supported force, and the air power is supporting a

¹⁵²Ibid., 16.

¹⁵³Ibid., 15.

ground-centric scheme maneuver.¹⁵⁴ The concept assumes that air and land powers matured enough to be “mutually reinforcing,” depending upon which force could provide the most beneficial effects. In this case, air power becomes the “hammer” that slams into the ground force “anvil” for synergistic effects. As a result, air power attacks large force concentrations to destroy them, and if they disperse land forces destroy them. The only imperfect example of this perspective was in 2003, as air and land forces exchanged the lead in attacking the Iraqi Army.¹⁵⁵ The RAND researchers postulated that this perspective provided the greatest challenge for our military to embrace, since it relied on identifying command relationships as either supported or supporting.

4. Air Power Dominates Land Power

- a. This perspective is also unfamiliar to the military, in that counterland operations are actually air-centric. The concept is that air power would be the predominant action arm to destroy enemy forces, to mitigate the risk of friendly forces. The land forces either support the air attacks or would not be present at all. The presupposition is that air forces will guide if, when and where land forces are needed, versus the other way around. An example of this perspective is the use in special operations forces to penetrate into enemy territory to identify and designate targets that air forces deemed vital to the enemy.¹⁵⁶

Another example is the use of land forces in Operation DESERT STORM to put

¹⁵⁴Ibid., 17.

¹⁵⁵Ibid.

¹⁵⁶Ibid., 18.

Iraqi forces into defensive positions that were ultimately targeted by Air power during a six-week air campaign.¹⁵⁷

5. Air Power Trumps Land Power

a. Here this perspective is similar to the post WWI concept of using air power for strategic bombing to attack enemy centers of gravity. Theorists such as Giulio Douhet and Billy Mitchell were early proponents of strategic bombing that ultimately lead to enemy defeat without the use of land forces. The concept of attacking the enemy's leadership, infrastructure, and C2 systems could generate victory, and only require land forces to protect air bases and occupy land once the enemy capitulated.¹⁵⁸ This perspective was revisited in a sense during Operation ALLIED FORCE, when strategic attacks were focused on the Serbian heartland versus the line forces in Kosovo. However, land forces were employed, but the air campaign had much greater success in determining the conflict's outcome.¹⁵⁹ Traditionally this perspective has had little success, especially when viewed in light of the WWII bombing campaign. There ground forces were still heavily involved, and even the strategic bombing campaign became a war of attrition that countered the prerequisite to minimize risk to friendly forces.

¹⁵⁷Ibid., 19.

¹⁵⁸Ibid.

¹⁵⁹Ibid., 20.

From this study it is derived that the TACP could only prove useful within certain perspectives. It is important to note that this RAND study did not incorporate the AFDD definition of “airpower,” which includes nonlethal capabilities.

Seeing the Forest from the Sky: Joint Airpower
through the Lens of Complex Systems Theory

Lieutenant Colonel David Lyle, as a School of Advanced Air and Space Studies student, researched and wrote a thesis to apply complex systems theory to joint airpower. He is diligent to explain complex systems theory basics and its application to airpower. His intent was to assist Airmen to better understand their operating environment, define problems, and integrate with joint partners.¹⁶⁰ It is his third point that is most pertinent to this thesis; so there is no discussion on complex systems theory itself within this thesis.

Joint C2 staffs (air and land components), within complex systems theories, are viewed as complex adaptive systems. Liaison elements are viewed as hubs that link staffs, which use hub fitness concepts to determine their appropriate role.¹⁶¹ An important tendency highlighted through complex systems theory, stipulates planning between geographically separated staffs becomes stove-piped. This leads to the reinforcing the following cognitive biases: air component more theater-level focused, and the ground component more locally focused. As a result, a human being (a liaison) physically working with each staff (air and land) is the best information carrier to mitigate the

¹⁶⁰Lt Col David Lyle, “Seeing the Forest from the Sky: Joint Airpower through the Lens of Complex Systems Theory” (Thesis, School of Advanced Air and Space Studies, Air University, Maxwell Air Force Base, 2010), 7.

¹⁶¹*Ibid.*, 109.

biases.¹⁶² The liaison element must act as a super-connected hub that is tied into both systems (staffs) to facilitate a common operating picture.¹⁶³ This helps to reconcile the differing levels of complexity and scale each staff views their operations, which more adequately addresses the contention between effective and efficient operations.¹⁶⁴

The JACCE, as mentioned earlier, was developed to address airpower integration and coordination issues between the ground and air components. Lyle states the JACCE it did not resolve the problem, but only highlighted a problem related to complex systems theory. The JACCE had degraded ability to advise and coordinate with the JTF staff.¹⁶⁵ As an airpower liaison, it did not account for varying “scale vs. complexity” problems inherent in joint airpower integration.¹⁶⁶ Yet, Lyle infers that the TACP is only a tactical level liaison; and the JACCE is the best operational level planner and liaison to integrate airpower with the land component.¹⁶⁷

Lyle applied complex systems theory to joint airpower integration with the following presuppositions: the air and ground components are two specialized networks, and liaison elements are super-connected hubs linking the two networks.¹⁶⁸ The liaison element must be highly connected to each network and function to translate information

¹⁶²Ibid., 110.

¹⁶³Ibid., 111.

¹⁶⁴Ibid., 113.

¹⁶⁵Ibid., 114-115.

¹⁶⁶Ibid., 117.

¹⁶⁷Ibid., 115.

¹⁶⁸Ibid., 117.

and variations between the components. This is especially imperative when the components work at different levels of scale and complexity, e.g. the liaison element is the bridge between operational and tactical levels. Therefore, the liaison element is required to possess high-levels of competency in the logic and language of their respective components; this facilitates accurate translation of requirements into beneficial actions.¹⁶⁹

One observation centered on the JACCE and its members, similar to his ALO and TACP personnel lack of operational level training observation. JACCE members receive no formal training before assuming their role, and there is no guarantee they have any operational-level, joint planning, or AOC experience. As a result, the JACCE may not provide the requisite expertise to plan and coordinate requirements between air and land component staffs.¹⁷⁰

The JACCE is viewed as a critical liaison element to link and translate between the operational and tactical levels of war. Complex systems theory applied to the JACCE generates the requirement for primary expertise in airpower, followed by proficiency in land power. JACCE members are the linguists and cultural advisors between two components and levels of war, relating requirements between the two components.¹⁷¹ They must build trust with both components and bridge the bureaucratic gap through personal interaction. Thus, JACCE members must have the aptitude, experience, and social skills to wade through bureaucracy and joint operational processes to effectively

¹⁶⁹Ibid., 118.

¹⁷⁰Ibid., 119.

¹⁷¹Ibid.

interpret and translate requirements for joint airpower integration. He stated the ALO focus should remain mostly at the tactical-level, and the JACCE should be enlarged and provided more extensive training as the overall solution.¹⁷²

Lyle's "Takeaways for Airmen" revolve around applying complex systems theory and concepts as the method to transform airpower application and liaison. The primary problem with current airpower application and liaison is the "lack of understanding of the fundamental trade-offs between various levels of scale and complexity."¹⁷³ This problem manifested itself into a superbly tactically proficient and effective joint force, with little focus and ability to bridge the gap between the tactical and operational level of war. Using complex systems theory will broaden the aperture of joint airpower application and presentation.¹⁷⁴

Integrated Non-Kinetic Operations: the Frontier of Warfare in Search of Doctrine

Space and cyberspace capabilities are rapidly evolving as an integral part of airpower. Liaison expertise and integration of these capabilities are crucial to joint operations, which is evident with the U.S. Army-Air Force MOA. The USAF has implemented terminology related to space and cyberspace that is not jointly accepted, specifically "kinetic and non-kinetic". When the phrase "non-kinetic operations" is used, it typically applies to EW, space and cyberspace operations. Since EW operations are more widely understood, at least in basic concepts, this specific literature review focuses

¹⁷²Ibid., 120.

¹⁷³Ibid., 130.

¹⁷⁴Ibid.

on space and cyberspace operations. Lieutenant Colonel Ericka Flanigan drafted a thesis specifically addressing space and cyberspace operations, or referred to as non-kinetic operations.

Space and cyberspace capabilities possess unique attributes that act as force-multipliers and force-enablers. Common examples are Global Positioning Satellites for navigation and satellite communications for C2.¹⁷⁵ It is important to consider space and cyberspace as interdependent and inseparable functions, which require concurrent planning and integration. In order to operate and control space systems (e.g. a satellite) a cyber system is required; and to ensure global cyberspace access, space assets are required.¹⁷⁶ The effects of space and cyberspace operations have a significant impact and influence on force projection from air, land, and sea.¹⁷⁷

Space and cyberspace operations are typically discrete, precise, and unattributable if needed.¹⁷⁸ Hence, space and cyberspace capabilities must not be undervalued and considered coequal with traditional “kinetic” capabilities. In other words, joint operations must integrate all facets of airpower to include space and cyberspace capabilities.¹⁷⁹ Challenges exist with the authorities and legalities associated with space and cyberspace capabilities that hinder planning, integration and employment efforts. As a result, space

¹⁷⁵Ericka R. Flanigan, “Integrated Non-Kinetic Operations: The Frontier of Warfare in Search of Doctrine” (Thesis, School of Advanced Air and Space Studies, Air University, Maxwell Air Force Base, June 2010), 7.

¹⁷⁶*Ibid.*, 8.

¹⁷⁷*Ibid.*, 9.

¹⁷⁸*Ibid.*, 11.

¹⁷⁹*Ibid.*

and cyberspace capabilities are executed no lower than the operational level of war, and typically exclusively at the strategic level.¹⁸⁰ This has implications for space and cyber SME organizational placement with regard to what level of war they reside and operate, which has integration implications for the TACP.

Employing Intelligence, Surveillance, and Reconnaissance:
Organizing, Training, and Equipping to get it right

This interesting article, by Captain Adam Young, indirectly highlights this thesis' primary research question and the need to rethink the TACP. Recent operations in Iraq and Afghanistan were a driving factor in the exponential increase in ISR capabilities and assets. As a result, there has been a development of new organizations and processes to manage ISR capability and asset employment. There is a dialogue increase concerning the most appropriate method to mitigate ISR C2 challenges, including doctrinal and organizational remedies. One result of this dialogue led to the development of the Theater ISR CONOPs and guidance for the ISRLO. The details of the Theater ISR CONOPs are outside of this thesis, but do provide the framework of how ISR, ISRLOs, and ISR NCOs are integrated into joint operations.¹⁸¹ This framework is relevant to future research concerning TACP SME and airpower integration. Young's focus is analyzing and recommending joint and service-specific guidance to define how ISR is employed and

¹⁸⁰Ibid., 38-43.

¹⁸¹Capt Adam Young, USAF, "Employing Intelligence, Surveillance, and Reconnaissance," *Air and Space Power Journal* (January-February 2014): 32.

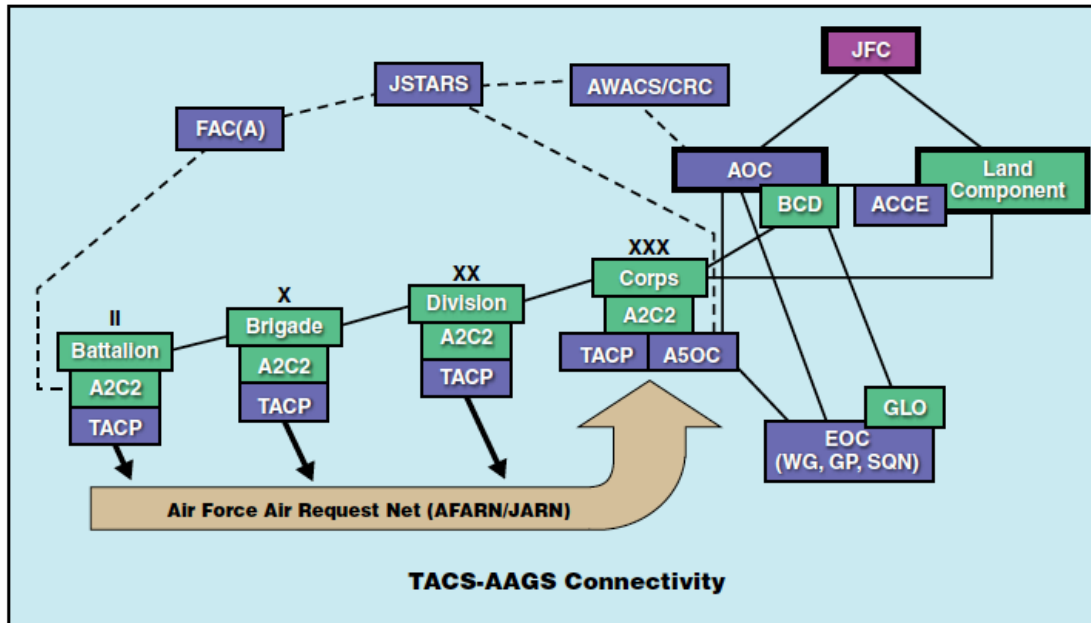
who is qualified to provide ISR C2 at the tactical-level. His primary comparison model is the JP 3-09.3 and the CAS mission coupled with the TACP organization.¹⁸²

The bulk of this article discusses Young's analysis to highlight the lack of tactical-level guidance for ISR employment, especially when compared to the robust guidance for CAS employment. His recommended solution is "applying the CAS/JTAC framework for ISR control."¹⁸³ This solution is based off the success Special Operations Forces have had employing the ISR Tactical Controller (ITC) concept, a concept vaguely similar to a JTAC.¹⁸⁴ Essentially, Young's solution is mirroring the TACS—AAGS for ISR, which is better illustrated in the figures below.

¹⁸²Ibid., 27-28.

¹⁸³Ibid., 35.

¹⁸⁴Ibid., 34-35.



A2C2 - Army airspace command and control
AAGS - Army air-ground system
ACCE - air component coordination element
AOC - air and space operations center
ASOC - air support operations center
AWACS/CRC - Airborne Warning and Control System / control and reporting center
BCD - battlefield coordination detachment
EOC - expeditionary operations center
FAC(A) - forward air controller (airborne)

GLO - ground liaison officer
GP - group
JARN - joint air request net
JFC - joint force commander
JSTARS - Joint Surveillance Target Attack Radar System
SQN - squadron
TACP - tactical air control party
TACS - theater air control system
WG - wing

Figure 4. Current TACS—AAGS

Source: Captain Adam B. Young, USAF, “Employing Intelligence, Surveillance, and Reconnaissance,” *Air and Space Power Journal* (January-February 2014): 26-44.

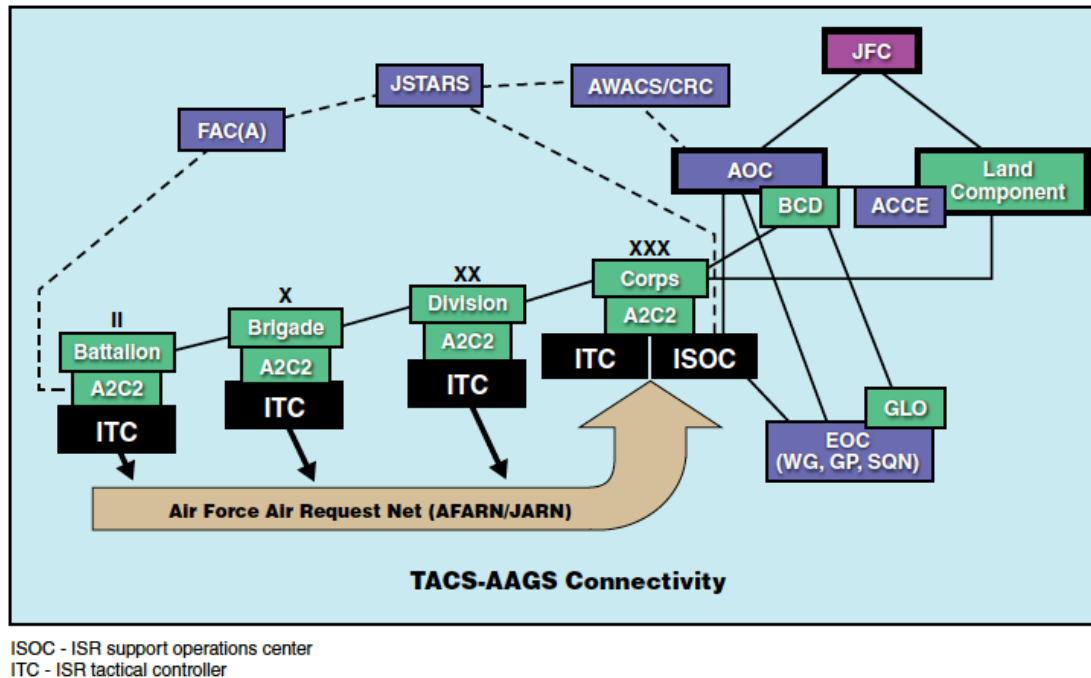


Figure 5. Placement of ITCs and ISOC

Source: Captain Adam B. Young, USAF, "Employing Intelligence, Surveillance, and Reconnaissance," *Air and Space Power Journal* (January-February 2014): 26-44.

Even though Young's emphasis is codifying ISR employment doctrine and guidance at the tactical-level, his solution impacts and conflicts with integrating joint airpower at the tactical and operational-levels. There are ISR application and liaison issues, but this solution is indicative of a larger lack of communication between the joint functions and airpower liaison to the land component.

Joint Air-Ground Integration Cell

There is an initiative to facilitate more effective horizontal integration of airpower and fire support between the U.S. Army and USAF. Unfortunately, due to its conceptual nature, history of vacillating interest, and current documentation classification, there is little information that can be inserted into this thesis. The Combined Arms Center has a

JAGIC definition and scope posted on their website that is nearly similar to the current draft version, see below:

A Joint Air Ground Integration Cell (JAGIC) is a modular and scalable cell designed to fully integrate and coordinate fires and air operations over and within the division commander's AO. The JAGIC collocates decision making authorities from the land and air components with the highest levels of situational awareness to support the maneuver commander's concept of operations, JFACC objectives and intent, and requirements of JFC designated authorities; e.g. ACA, AADC, etc. This cell collaborates to more effectively execute the mission and reduce risk at the lowest tactical levels. Cell composed of ASOC, TACP, Fires, Intel, AC2, Air Defense, and other elements as required. JAGIC does not replace any of these cells or C2 nodes; it defines the way they integrate organizationally and procedurally to conduct operations. It was previously called the Joint Air Ground Control Cell.¹⁸⁵

The significance of the JAGIC is related to the identification of existing air and land component integration challenges specific to C2 and mission execution at the tactical level. In other words, JAGIC is an attempt to remedy the liaison challenges previously highlighted, but is more of a joint effort between the U.S. Army and USAF. JP 3-30 has this small note regarding the JAGIC: "United States Air Force (USAF) ASOC and TACP personnel at the Army division will normally be integrated with the division fires cell and airspace element to form a joint air-ground integration center (JAGIC). A JAGIC is designed to fully integrate and coordinate fires and air operations over and within the division commander's AO."¹⁸⁶ The main point is the continued requirement for airpower liaison at the tactical level, which depends upon robust airpower liaison support at the operational level for success.

¹⁸⁵Center for Army Lessons Learned (CALL), "Joint Air Ground Integration Cell," Center for Army Lessons Learned, 17 September 2008, <http://usacac.army.mil/cac2/call/thesaurus/toc.asp?id=35155> (accessed 23 April 2014).

¹⁸⁶Joint Chiefs of Staff, JP 3-30, II-9.

Liaison Officer Concept of Operations

There are recent initiatives to address the lack of guidance for particular SMEs designated in the U.S. Army-Air Force MOA. Specific liaison officer CONOPs were created to provide the required interim guidance for their capability integration. ISRLO CONOPs and Space Liaison Officer (SpaceLO) CONOPs were developed to provide basic guidance on their respective roles within a TACP. Currently, there are no similar CONOPs for the CyberLO and EWOs with respect to TACP integration. CONOPs are classified at the UNCLASSIFIED//FOUO level and cannot be included in this thesis. The overarching theme of the CONOPs focuses on specifics of the liaison officer requirements, (e.g. basic responsibilities, rank, security clearance, selection criteria, training, and command relationships). So the need for individual liaison officer guidance is recognized to support airpower integration in joint operations, but not definitive guidance on for an enduring (in peacetime and wartime) airpower liaison organization at the operational level.

Corps Air Liaison Element Initiative

The Corps Air Liaison Element (CALE) initiative is a relatively new concept to reinforce liaison support to a U.S. Army Corps headquarters, and is a joint effort between the U.S. Army and Air Force. This concept is still in draft form and full details are not releasable at the UNCLASSIFIED level. However, there is a memorandum for record that provides basic information.

The CALE is a result of discussions during the Army-Air Force Warfighter Talks in 2013. The CALE construct is planned for inclusion within the Army-Air Force MOA

and to be “institutionalized.”¹⁸⁷ The CALE is defined as the following: “the habitually associated USAF element capable of planning, coordinating, synchronizing, integrating, and controlling (as required) all elements of airpower ISO Corps unified operations.” The CALE will also be capable of planning, monitoring, integrating, assessing, and executing (as required) joint air operations. If the Corps is required to control airpower and execute joint air operations while assigned as a Tactical HQs, the Corps requires the direct support of an Air Component ASOC (Air Support Operations Center).¹⁸⁸ Additionally, the memo states that the CALE will be sufficiently manned, equipped, and trained for the following: ISR, collection management, space, cyber, EW, air mobility, air strike (attack), and airspace management.¹⁸⁹ More importantly, is that there is no specific reference to the CALE functioning as an operational level airpower liaison, but it is inferred by its proponents.

Summary

The predominant theme within the literature review highlights the general need for liaison elements between the air and land components. Specifically, USAF airpower has broad reaching applications and effects that span across all levels of war. This is due the inclusion of the air, space and cyberspace domains within the definition of airpower. Airpower capability integration is interwoven in joint operations, either directly or

¹⁸⁷Headquarters, United States Army Fires Center of Excellence, *Army-Air Force Warfighter Talks 2013, Refine the Capabilities Resident in the Corps Air Liaison Element*, Memorandum, Fort Sill: Fires Center of Excellence, 2013, 1.

¹⁸⁸*Ibid.*, 2.

¹⁸⁹*Ibid.*

indirectly supporting most UJT's required in joint operations. Airpower capabilities have significantly advanced from its birth in 1903, requiring more complex integration efforts to achieve success. Yet, the liaison between air and land components remains the most vital and consistent requirement.

Literature concerning the integration of emerging nonlethal capabilities, (e.g. space and cyber), into joint operations is abundant. But, most of the documents are from an individual perspective of how a specific capability is leveraged in operations. For instance, there is recent influx of documents explaining how Space and Cyberspace are vital capabilities and must be leveraged within the joint operational environment. Additionally, there is growing number of research papers and documentation focused on joint-service integration of ISR, EW, Space, and Cyberspace capabilities, but they are maintained at higher classification levels than this thesis. More importantly, literature concerning integration of nonlethal capabilities and liaisons is not from a USAF TACP perspective; nor is it necessarily focused on conventional land component integration.

Another literature trend is the underlying inference that the TACP is only relevant to the land component when providing airpower integration for CAS. It seems the TACP is not a consideration for operational-level airpower integration. Yet, literature illustrates the TACP have a clear capability and the only official enduring requirement to provide airpower liaison support. Plus, USAF TACPs are being allocated additional airpower capability liaisons (e.g. EWO, ISRLO) without a defined framework to appropriately integrate them.

CHAPTER 3

METHODOLOGY

To frame the methodology used in this thesis the primary and sub research questions are restated below:

1. Primary Question: Can the USAF TACP provide airpower liaison and integration to meet U.S. land component requirements above the tactical level of war?
2. Sub Question: What is the history behind USAF TACP development?
3. Sub Question: What doctrine, agreements, future guidance relates to USAF liaison support to the U.S. conventional land forces and expanding airpower capabilities?
4. Sub Question: What tasks, by levels of war, does the USAF TACP execute in support of the U.S. conventional land component?
5. Sub Question: Can USAF TACPs plan and integrate expanding joint airpower capabilities (lethal and nonlethal) to meet U.S. conventional land component requirements?
6. Sub Question: What other USAF personnel or organizations provide airpower liaison support to the U.S. conventional land component?
7. Sub Question: What joint functions does the USAF TACP integrate airpower in support of conventional land component operations?

This thesis utilizes a qualitative research method based on collecting and working with data, which do not indicate ordinate values. The method is outcome oriented to avoid generalizations and allows for inclusion of grounded theory and case studies. This

topic does not facilitate a quantitative method because the predominant experience base of current TACPs is based within recent conflicts in Iraq and Afghanistan. Specifically, the predominant percentage of the TACP enlisted career field has 10 years or less time in service. Additionally, predominant Army officers (O-4 to O-7) executing with TACPs in combat operations have TACP experience only in Iraq and Afghanistan. Overall, to base research from a quantitative methodology, using current test subjects, will only provide a limited perspective of how TACPs provide airpower liaison to the conventional land component.

Grounded theory allows for the discovery or generation of a theory based on data from the field that is particular to the process being studied.¹⁹⁰ This approach is helpful when a theory does not exist to explain the process, or the available theories are deemed incomplete by the researcher.¹⁹¹ The general lack of literature specific to this thesis creates an opportunity to develop a basic theory to address the primary research. There are two approaches to grounded theory, systematic and constructivist. The systematic approach utilizes detailed analytic procedures for collecting documentation and observations to generate a substantive-level theory, since this author is very close to the thesis topic.¹⁹² A substantive-level theory contains the following elements: a central phenomenon, casual conditions, strategies, conditions and context, and consequences.¹⁹³

¹⁹⁰John W.Creswell, *Qualitative Inquiry and Research Design: Choosing Among Five Approaches*, edited by Denise Santoyo, 2nd ed. (Thousand Oaks, CA: Sage Publications, 2007), 63.

¹⁹¹*Ibid.*, 66.

¹⁹²*Ibid.*, 67.

¹⁹³*Ibid.*, 68.

The constructivist approach provides more flexibility, since it allows the researcher to bring personal experiences, values, and priorities into the theory.¹⁹⁴ Consequently, this thesis uses a blending of the two approaches to portray the author's experiences and to remain transparent with any cognitive bias in the research.

The intent is to identify current and competing narratives concerning airpower liaison to the land component. Similarly, it is crucial to determine objective characteristics of a liaison element that can be applied to airpower liaison between the air and land components, regardless of the organization providing it. This provides the foundation to apply two other types of analysis to identify shortfalls, impediments, and recommendation to airpower liaison above the tactical level for the land component.

This thesis utilized the Joint Capabilities Integration and Development System's analysis process to establish criteria to evaluate the TACP's ability to integrate airpower and provide airpower liaison to the land component above the tactical level. Joint Capabilities Integration and Development System uses the Doctrine, Organization, Training, Material, Leadership and Education, Personnel, Facilities and Policy (DOTmLPF-P) analysis, which has eight areas to determine solutions to military related capability issues.¹⁹⁵

1. Doctrine-Fundamental principles that guide the employment of U.S. military forces in coordinated action toward a common objective. Joint doctrine is

¹⁹⁴Ibid., 66.

¹⁹⁵Chairman of the Joint Chiefs of Staff, Chairman of the Joint Chiefs of Staff Instruction (CJCSI), 3170.01H, *Joint Capabilities Integration and Development System*, 19 January 2012, http://www.dtic.mil/cjcs_directives/cdata/unlimit/3170_01.pdf (accessed 9 November 2013), A-4.

authoritative guidance and will be followed except when, in the judgment of the commander, exceptional circumstances dictate otherwise.¹⁹⁶

2. Organization-A joint unit or element with varied functions enabled by a structure through which individuals cooperate systematically to accomplish a common mission and directly provide or support joint warfighting capabilities. Subordinate units and elements coordinate with other units and elements and, as a whole, enable the higher-level joint unit or element to accomplish its mission.¹⁹⁷
3. Training-Training, including mission rehearsals, of individuals, units, and staffs using joint doctrine or joint TTP to prepare joint forces or joint staffs to respond to strategic, operational, or tactical requirements considered necessary by the Combatant Commands to execute their assigned or anticipated missions.¹⁹⁸
4. Material-All items (including ships, tanks, self-propelled weapons, aircraft, etc., and related spares, repair parts, and support equipment, but excluding real property, installations, and utilities) necessary to equip, operate, maintain, and support joint military activities without distinction as to its application for administrative or combat purposes.¹⁹⁹

¹⁹⁶Ibid.

¹⁹⁷Ibid., A-5.

¹⁹⁸Ibid.

¹⁹⁹Ibid.

5. Leadership and Education-Professional development of the joint leader is the product of a learning continuum that comprises training, experience, education, and self-improvement.²⁰⁰
6. Personnel-The personnel component primarily ensures that qualified personnel exist to support joint capability requirements.²⁰¹
7. Facilities-Key facilities are defined as command installations and industrial facilities of primary importance to the support of military operations or military production programs.²⁰²
8. Policy-Any Department of Defense, interagency, or international policy issues that may prevent effective implementation of changes in the other seven DOTmLPP-P elemental areas.²⁰³

The joint functions were used to analyze how the TACP mission and capabilities relate; since there is not a document that specifically dictates how the TACP aligns with joint functions other than Fires (which is discussed in JP 3-09.3, *Joint Close Air Support*).

Below are abbreviated joint function descriptions:

1. Command and Control. Encompasses the exercise of authority, responsibility, and direction by a commander over assigned and attached forces to accomplish the mission.²⁰⁴

²⁰⁰Ibid.

²⁰¹Ibid.

²⁰²Ibid.

²⁰³Ibid., A-6.

²⁰⁴Joint Chiefs of Staff, JP 1, I-18.

2. Intelligence. Facilitates understanding of the operational environment and information superiority.²⁰⁵
3. Fires. The employment of available weapons and systems to create specific lethal or nonlethal effects on a target.²⁰⁶
4. Movement and Maneuver. The joint force disposition to conduct operations by securing positional advantages before or during execution. Includes moving or deploying forces as necessary to achieve objectives.²⁰⁷
5. Protection. Conserves the joint force fighting potential through active defensive measures to protect from enemy attack; passive defensive measures to protect friendly forces; mitigate fratricide; and emergency management and response.²⁰⁸
6. Sustainment. Provides logistics and personnel services to maintain operations until mission completion. It extends the JFC's operational reach by providing flexibility and endurance.²⁰⁹

²⁰⁵Ibid.

²⁰⁶Ibid.

²⁰⁷Ibid.

²⁰⁸Ibid., I-18.

²⁰⁹Ibid., I-19.

CHAPTER 4

ANALYSIS

Grounded Theory Analysis

Grounded theory analysis was used to relate the TACP's airpower liaison to the land component. First, open coding was used to determine a set of consistent themes (categories) that illustrated and centered on a core phenomenon.²¹⁰ Axial coding highlighted key points surrounding the core phenomenon into the following categories: causal conditions (reasons for core phenomenon), contextual conditions (reasons governing the strategies developed), intervening conditions (reasons for the choice of strategies), strategies (actions in response to core phenomenon) and consequences (results of the strategies).²¹¹ Selective coding allowed supporting data and research to develop into propositions to support the overall theory.²¹² Please note that some of the propositions have effects within multiple categories, which is due to the propositions' relationship and nature between the categories. For instance, doctrine provides the context surrounding the core phenomenon, but is also a causal condition of the core phenomenon.

The basic theory is illustrated below to provide the framework of the analysis discussion. The theory was developed to better understand how airpower liaison support is provided to the land component (with specific focus on the TACP and JACCE). It was

²¹⁰Creswell, 64.

²¹¹Ibid.

²¹²Ibid., 65.

imperative to develop this theory to facilitate further analysis and determine if the TACP can provide airpower liaison support to the land component above the tactical level.

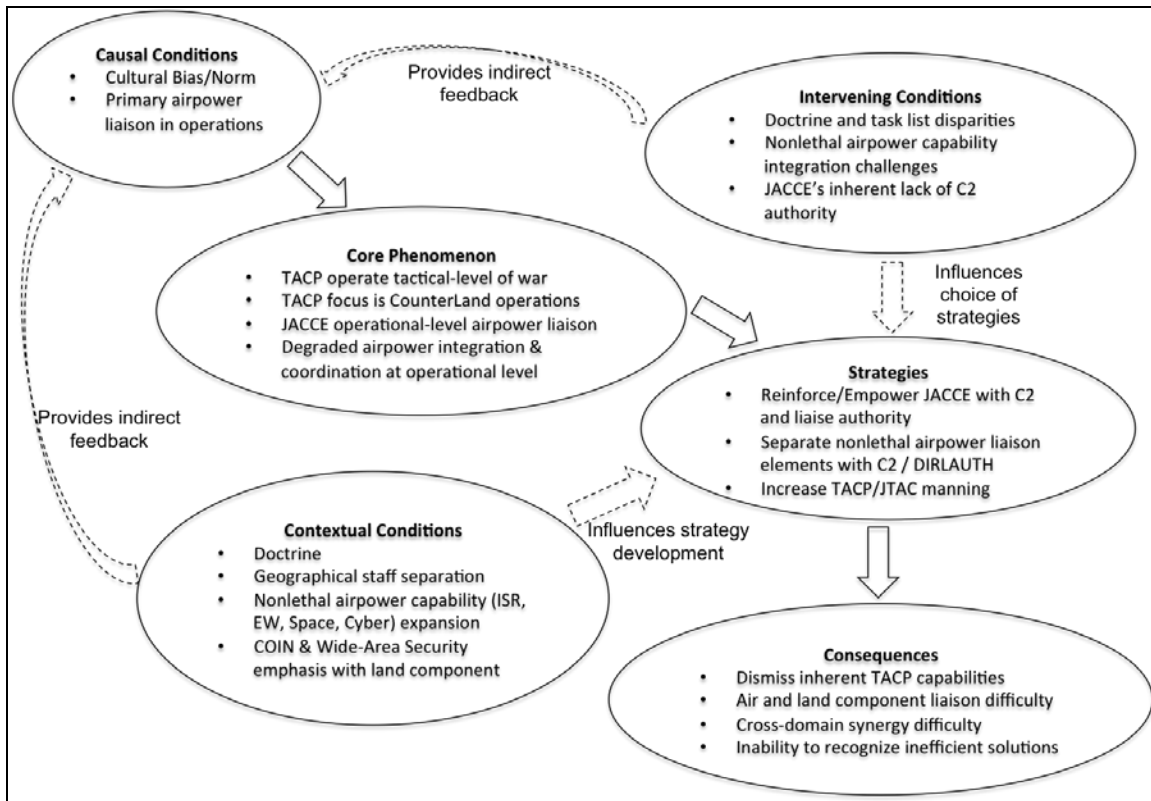


Figure 6. Theory on Airpower Liaison Issues to Land Component

Source: Created by author.

Causal Conditions

There are two main causal conditions that lead to airpower liaison issues, each specifically related to the TACP and JACCE. It is important to caveat that the intervening and contextual conditions provide indirect feedback into the causal conditions, due to the far-reaching effects of their propositions. The causal conditions discussion will contain

references to the propositions within the conditions categories. The two central causal conditions are culture bias and norms, and the primary airpower liaisons within operations.

Culture bias and norms are specific to the air and land components, which have developed since airpower liaison requirements were identified. First and foremost, the fact is that airpower grew underneath the auspices of the U.S. Army. Airpower developed under the U.S. Army Signal Corps, and then branched out into the USAAF. Airpower officers had distinct, subservient relations with U.S. Army officers, until the USAAF separated and became the USAF in 1947. However, airpower officers had an increased knowledge and familiarity of U.S. Army requirements, since they were still a part of the U.S. Army. The dichotomy between airpower theorists still created two distinct camps between using airpower either as a strategic or tactical method of war. It is apparent the utilization of airpower to attain military objectives affected the requirement, development, and integration of an airpower liaison element. For instance, strategic airpower theorists, (e.g. Douhet) believed airpower should only be used for strategic bombing, with little to no integration with the land component. Yet, airpower theory developments in WWII led to using airpower to support close combat situations with the land component.

Two airpower camps developed; strategic airpower primarily relying upon itself to achieve strategic objectives (i.e. “daylight strategic bombing”); and tactical airpower primarily supporting land component objectives. This dichotomy is plainly evident within FM 100-20 implemented in 1943, which specifically divided airpower into strategic and

tactical air forces.²¹³ Yet, the requirement was identified for liaison elements to effectively integrate airpower with the land component, which was labelled as a tactical requirement. This is where the initial concepts and bias of the airpower liaison support to the land component developed, with a focus at the tactical level of war.

Major Gallogly's thesis illustrated the development of airpower liaison to the land component was nearly an absolute logical surety. The near simultaneous development of airpower liaisons, CAS-specific, and with little to no shared knowledge between three entities validated a tactical necessity for "tactical-level" airpower liaisons to the land component. The common focus between the Luftwaffe, the USMC and the USAAF was to effectively integrate airpower into the ground scheme of maneuver. This focus emphasized the development of particular airpower perspectives, effectively illustrated by the RAND Project AIR FORCE study on air-ground relationships. Two of the five airpower perspectives developed require the air component to be subservient to the land component; airpower augment land power and airpower compliments land power.²¹⁴ These airpower perspectives were prevalent even into the 1980s, and influenced the land component bias of airpower integration at the tactical level. The requirement to integrate airpower into the ground scheme of maneuver, focused mostly on the lethal, counterland mission. In other words, the primary airpower support needed by the land component was the force-multiplying firepower brought to bear on enemy forces the land component was responsible for engaging.

²¹³War Department, Ch 1, Section III, para 6.

²¹⁴Pirnie et al., 14-15.

Development of airpower support at the tactical level relied on liaison support to request and plan airpower into operations, and control its execution and integration with land forces conducting tactical maneuver. Air Ground Coordination Parties developed to meet this tactical liaison requirement, and were eventually advanced to include terminal attack control. Plus, the associated liaison officers had to be proficient in air and ground tactics.²¹⁵ The complexity of integrating airpower with the ground scheme of maneuver requires detailed integration, to mitigate risk to friendly forces and ensure tactical success. The complexity is evident in JP 3-09.3 *Close Air Support* as a primarily tactical-level publication, which provides foundational doctrine and TTP for the tactical execution of airpower in support of the land component. The airpower integration bias for the land component formalized the TACS, which was developed by the Tactical Air Command during the Vietnam, based on initial joint air-ground doctrine in 1957.²¹⁶ This leads into the second causal condition of airpower liaison during operations.

Airpower liaison during operations focused on the C2 of airpower during land operations, considered at the time a tactical task. Lieutenant Colonel Collins' 1963 Air University article provides key insights to airpower liaison and C2 development for the land component; creating the current foundation of today's airpower liaison and C2 structure (the TACS). In the era with nuclear capabilities, political trends moved the U.S. military to a flexible response option in the 1960s, leading to limited wars vice massive nuclear retaliation. This levied the responsibility on the Army and the Air Force to fight wars with conventional munitions and focus on lethal means and effects. The concepts of

²¹⁵War Department, 7, Section III, section 14, para d.

²¹⁶Collins.

nonlethal airpower capabilities was not emphasized nor were they integrated. As a result, the need was identified to plan, coordinate, and integrate tactical, lethal capabilities of airpower. Tactical Air Command established the Tactical Air Warfare Center to specifically develop tactical air concepts and TTP to integrate into joint operations. It is from this foundation that TAC worked with the Army Combat Developments Command to develop the following first-ever joint tactical doctrine manuals: airborne operations and tactical air support of land forces.²¹⁷

There was emphasis on joint air-ground coordination efforts related to the following: fire-support coordination, increased responsiveness of immediate CAS and tactical air reconnaissance. It was these efforts that led to the TACS that has stayed relatively unchanged. Even Collins infers in his article that Tactical Air Command was rectifying a lack of knowledge in the land component's capabilities and doctrine that apparently caused skepticism of the liaison and trust relationships between the air and land component. Specifically, he stated the following, "to develop concepts of employment of tactical air forces that will . . . also permit the Army to operate with greater confidence in the Air Force's ability to provide the support the Army needs."²¹⁸

Current joint air-ground operations doctrine continues to follow the same mantra concerning airpower liaison. Remember, the primary airpower liaison was the TACP, until the JACCE was implemented in 2003. Due to the cultural bias already mentioned, joint doctrine followed suit and placed the TACP at the tactical-level focused primarily on counterland operations (CAS and AI). In relation to joint functions, the TACP was and

²¹⁷Ibid.

²¹⁸Ibid.

still is primarily aligned with the Fires function. The TACP priorities are to integrate airpower with joint fire support at the tactical level, and provide certified C2 of airpower assigned to their respective land component. The TACP was born out of the airpower liaison requirement between the U.S. Army and USAF. Essentially, the U.S. Army-Air Force MOA is the agreement to ensure each service receives requisite liaison support to ultimately aid the land component's attainment of objectives. The MOA details the robust alignment of airpower and land liaisons, and C2 elements, mostly at the tactical level and is land component centric.

Core Phenomenon

The causal conditions led to the following core phenomenon being identified, which are currently prevalent: the TACP is the tactical-level airpower liaison with a focus on counterland operations; the JACCE is the primary operational level airpower liaison, and degraded operational level airpower integration and coordination. Lieutenant Colonel Lyle's research and application of complex systems theory to airpower provides invaluable insights to these phenomena. Essentially, his assessment of an overall lack of understanding between scale versus complexity caused liaison challenges between the air and land components.²¹⁹ As illustrated in the causal conditions, the cultural bias and tendencies to focused on the complexities of detailed integration of airpower into the ground scheme of maneuver.

The tactical level bias towards to the complexities of the tactical coordination, integration, and execution of airpower contributed to a tactically proficient force; but

²¹⁹Lyle, 117.

have weak operational level ability and systems to bridge the tactical and strategic-level network gap. Additionally, Lyle highlighted face-to-face relationships as the most effective method to ensure a liaison element (a superconnected hub) interfaces with its corresponding networks. Conversely, the point of geographically separated staffs will tend to gravitate toward their “comfort-zone,” leading to airpower being more strategically focused across a theater, and land power being more tactically focused within their local theater.²²⁰ Plus, applying the same logic, most TACP organizations (ASOGs and ASOSs) are assigned to Army posts, segregated from Air Force influence and integrated with their locally aligned Army units. Consequently, TACP units may have a tendency to mirror the focus of their aligned Army unit, creating a more tactically oriented airpower liaison relationship.

The key difference between the JACCE and TACP is the proficiency of understanding the language and logic of the air and land components. JACCE personnel will tend to be more proficient in the strategic-level language and logic of airpower, while TACPs are more proficient at the tactical-level language and logic of land power. The more effective integration of airpower relies on an airpower liaison closer to the strategic planning and integration level. This maximizes airpower employment across a theatre, since the Air Force primarily considers airpower as a strategic force. Therefore, the JACCE seems to be the favored option to provide operational level airpower liaison, as stipulated in doctrine, complex systems theory, the MOA, and by senior leaders.

Even senior leaders, such as General Hostage, recognized the JACCE construct was not flawless. Particularly, he also highlighted the challenges of geo-graphically

²²⁰Lyle, 102.

separated staffs, especially across multiple JOAs inside a large theatre. Hostage agreed that physical interaction with the land component and joint staffs was key to establishing the required trust to facilitate effective airpower liaison and integration. Accordingly, two JACCEs were established in Iraq and Afghanistan to facilitate the requisite interaction and liaison. However, he still noticed coordination issues between the strategic level Combined Air and Space Operations Center and the tactical-level air force units. The crux was related to the lack of C2 authority the JACCE had, it must be directed and given by the JFACC. As a result, Hostage imparted limited C2 authority to the JACCE Director and staff to coordinate directly with the Combined Air and Space Operations Center and work with the Air Expeditionary Wings to enable planning with their operational level land component counterparts.²²¹ This remedy provided a template for the strategy Hostage advocated for in his article.

Contextual Conditions

Likewise, network-centric logic applied to the JACCE is equally enlightening. According the JACCE's existence is tied to the combatant commander or JFACC identifying the requirement and establishing it in accordance with the creation of a JTF; the JACCE is not a pre-existing force presentation available to the joint force. JACCE personnel are typically more "airminded", since they are pulled from Air Force bases, and the personnel may have little to no experience working tactical level Army units or Army personnel in general. Thus, the JACCE personnel will tend to have a more strategic

²²¹Hostage, 19.

focus of airpower, and not necessarily positioned to affect airpower planning and integration effectively with the land component.

The primary supported component is the land component, which remains true in Afghanistan. Additionally, the focus of operations, within the U.S. Army decisive action construct, is Stability operations. As a result, the strategic focus is on counterinsurgency, prioritizing the U.S. Army's Wide-Area Security competency; is not the wholesale destruction of a uniformed enemy military through Combined Arms Maneuver. There was a collective emphasis within the joint force to maximize the integration of available joint capabilities, specifically nonlethal, to facilitate the land component's tactical level actions to achieve strategic success. In other words, how can strategic-level assets, e.g. EW, support tactical level ground units? Due to the classification of this thesis, specific examples of nonlethal airpower support cannot be provided. The requirement to integrate and coordinate the tactical level execution of these airpower capabilities was levied on the airpower liaison closest to the land component. The TACP became responsible to provide the tactical level liaison and C2 of airpower assets allocated to land component units. For example, a TACP supporting a Battalion-size operation in Afghanistan would plan and request the following airpower support: CAS, EW and coordinate with the S-2 for additional airpower intelligence assets. The TACP, through qualified JTACs, would then provide C2 of the assets during the operation. The TACP's tactical level integration of airpower facilitated some of the following effects: provide early warning of insurgent activity, impede enemy coordinated attacks, refine and quicken the; find, fix, target, track, engage, and assess cycle, mitigate collateral damage.

Operations in Iraq and Afghanistan were the test bed for the implementation of many new airpower capabilities, to include nonlethal capabilities. The level of integration of nonlethal capabilities was and still is exponential, but much of the integration focused on supporting counterland operations in a low-intensity counterinsurgency environment. More specifically, many of the capabilities, especially EW and ISR provided new tactics to increase the lethality air and land components. It is imperative to first understand the context in which these nonlethal airpower capabilities were integrated.

Nonlethal airpower capabilities (ISR, EW, Space, Cyber) pose unique challenges for planning and integration. These airpower capabilities are predominantly considered low-density, high-demand, requiring a higher level of management to ensure they are properly and prioritized in accordance with the JFC's intent. Additionally, Space and Cyber airpower assets typically require high levels of authority to use, and have associated legal concerns (again specifics are outside the scope and classification of this thesis).²²² Lieutenant Colonel Flanigan highlighted these issues within her non-kinetic operations discussion. Due to the increase in demand and requirement to integrate nonlethal airpower capabilities, liaison at the appropriate level of war is required. The tactical level is focused on the execution of the airpower capabilities, so operational level management and liaison is required to coordinate with the strategic level.

Intervening Conditions

Some of the intervening conditions are function of key disparities in the following areas: doctrine (joint and service-specific); task lists (joint and service-specific); conflicts

²²²Flanigan, 38-40.

between doctrine and the task lists. It is apparent (and understandable) that there are disparities within joint and service-specific (Army and USAF) doctrine due to the varying rewrite cycles, which is detailed on their respective doctrine websites (not discussed in this thesis). The intent is to only highlight possible discrepancies that possibly contribute to the core phenomena experienced.

Core AFDD highlights liaison support as a vital requirement to any joint operation and the integration of airpower. The discussion infers mostly a strategic-level context, and does not highlight liaison support at the operational and tactical levels. Similarly, the primary liaison support element discussed in AFDD is the JACCE, not the TACP, even though both of these elements have similar liaison missions and responsibilities. This point is easily illustrated through a quick digital word search of the five core AFDDs for terms related to the TACP (word search included reference terms: “TACP,” “JTAC,” “ALO,” “EASOS,” and “EASOG”):

1. AFDD Volume I-Two times (terms found: “TACP” and “JTAC”).
2. AFDD Volume II-Not discussed in thesis since this AFDD references leadership. Regardless, none of the reference terms were mentioned.
3. AFDD Volume III-None of the reference terms were mentioned.
4. AFDD Volume IV-None of the reference terms were mentioned.
5. AFDD Volume V-Not discussed in thesis since this AFDD references support. Regardless, none of the reference terms were mentioned.

Core AFDD discusses the requirement of effective liaison support, but does not relate the TACP to liaison support. Below is the excerpt within AFDD Volume I in context of a TACS discussion: “The TACS provides the COMAFFOR/JFACC with

connectivity from the theater strategic level down through control and reporting centers (CRCs) and expeditionary air support operations groups (EASOGs) or expeditionary air support operations squadrons (EASOSs), and eventually to tactical air control parties (TACPs) and joint terminal attack controllers (JTACs).”²²³ A possible extraneous disparity (maybe an inadvertent error or editing mistake) is the author of this AFDD excerpt implies that EASOGs/EASOSs and TACPs are separate and distinct entities; when in fact TACPs are organized in EASOGs and EASOSs. Nonetheless, the main point is that the TACP, with historical liaison roots to WWII, is not mentioned in core AFDD as an airpower liaison element. Conversely, the JACCE has an entire chapter dedicated in core AFDD Volume I and Volume III, specifically related to providing airpower liaison support. In an effort to remove possible bias, the CounterLand Annex to AFDD (3-03) was reviewed, especially since it is current of 16 April 2014.

The AFDD Annex 3-03 provides a few surprising updates, the first is the TACP definition, highlighted in the following excerpt: “the TACP is the principal Air Force liaison element aligned with Army maneuver units from division to battalion.”²²⁴ This new Air Force 2014 definition is conflict with the 2011 definition outlined in the U.S. Army-Air Force MOA. The new definition implies that the TACP is not aligned with the Corps TACP, which the MOA stipulates TACP alignment with U.S. Army Corps. The Air Force TACP definition also further stipulates the TACP is the JFACC’s primary representative to the tactical level land commander. Furthermore, the definition states the

²²³Chief of Staff of the Air Force, Air Force Doctrine Document, Volume I, 127.

²²⁴Chief of Staff of the Air Force, Air Force Doctrine Document, Annex 3-03, *Counterland Operations* (Maxwell AFB, AL: Curtis E. Lemay Center, 16 April 2014), <https://doctrine.af.mil/> (accessed 28 April 2014), 71.

TACP consists of only ALOs and JTACs.²²⁵ Yet, in the definition of an ALO, Air Force states that ALOs are assigned to all land maneuver units at the corps down to the BN.²²⁶ Interestingly, the annex relates counterland operations to the levels of war; stating effects are focused at the tactical and operational level of war.²²⁷ Overall, according to Air Force doctrine the TACP is only a tactical level airpower liaison specific to counterland operations; the JACCE is the operational level airpower liaison across all operations. A closer comparison between the JACCE and the TACP is needed; but note that for an effective comparison joint, USAF and MOA data was used (see citations).

See below for the definition and responsibility comparison of the JACCE and the TACP:

1. Joint Air Component Coordination Element: A general term for the liaison element that serves as the direct representative of the JFACC for joint air operations.²²⁸
 - a. Responsibilities: The JACCE coordinates the integration of JFACC requirements for airspace coordinating measures (ACMs), fire support coordination measures (FSCMs), close air support, air mobility, and space requirements through exchange of intelligence, operational data, and support requirements.²²⁹ JACCE expertise should include plans, operations, ISR, space,

²²⁵Ibid.

²²⁶Ibid.

²²⁷Ibid., 8.

²²⁸Joint Chiefs of Staff, JP 1-02, 139.

²²⁹Chief of Staff of the Air Force, Air Force Doctrine Document, Volume I, 123.

airspace management, air mobility, and administrative and communications support.²³⁰

2. Tactical Air Control Party: A subordinate operational component of a tactical air control system designed to provide air liaison to land forces and for the control of aircraft.²³¹

a. Responsibilities: Advise ground commanders on air operations and provide terminal attack control of CAS. TACPs coordinate ACMs and deconflict the aircraft with Army fire support (which includes FSCMs).²³² The TACP is part of the TACS—AAGS system as a liaison required to plan, integrate, execute, and C2 joint air operations in support of conventional land forces. TACP expertise includes plans, operations, ISR, space, cyberspace, EW, airspace management, and communications support.²³³

The JACCE and the TACP have near identical missions and expertise with four key differences. First, the TACP is a liaison element “and” a C2 node for integrating airpower into joint operations, while the JACCE is only a liaison element. Second, the JACCE presents liaison support only at the JTF-level, and only when the JTF and-or JFACC direct it. The TACP presents liaison support at the Corps-level down to the Battalion-level (per the MOA). Lastly, the JACCE is created and dissolved at the mercy of JTF/JFACC guidance, in relation to the establishment and dissolution of a JTF. In

²³⁰Joint Chiefs of Staff, JP 3-30, II-15.

²³¹Joint Chiefs of Staff, JP 1-02, 257.

²³²Joint Chiefs of Staff, JP 3-09.3, II-9.

²³³Chief of Staff of the Army and Chief of Staff of the US Air Force.

other words, a JACCE is not a normalized, peacetime unit; without a JTF contingency operation there is no JACCE. Conversely, TACPs are organized into existing units (ASOGs and ASOSs) habitually aligned with U.S. Army units, both in peacetime and wartime (most TACP organizations are assigned to U.S. Army installations).

The AFUTL (includes Core-unit METLs) demonstrates further disparities with doctrine related to the JACCE, the TACP, and airpower liaison. Most evident is the lack of mention of a JACCE, including the core-unit METLs, and the listing of TACP-specific tasks. In fact, any reference to providing the land component commanders advice and liaison support on airpower is only referenced with the TACP. The AFUTL nests TACP tasks under the core-unit METLs of an ASOG and ASOS, the only force presentation in the AFUTL as an airpower liaison. The definitions and descriptions of the various TACP echelons (Corps, Division, Brigade) each have the same following key phrase: “provides liaison and planning expertise on all aspects of air and space power required to integrate with the ground scheme of maneuver.”²³⁴ This task description is only mentioned in the context of the TACP, and is not mentioned in relation to any other unit with the AFUTL document. More specifically, it stipulates the TACP are responsible for integrating “all aspects” of air and space power. There is no other unit, within the AFUTL, with the same requirement and mission to liaise, plan, and integrate airpower.

Another small nuance is related to the TACP task description and the task of joint fires. The Corps TACP has the following specific tactical-level task: “AFTA 1.8.4 Plan and Conduct Joint Fires, Air, Space, and Cyber Operations in Support of U.S. Army

²³⁴HQ USAF/A3O-IR, 108.

Corps Operations.”²³⁵ This task is more comprehensive in detailing what a Corps TACP does, versus the task description of “all aspects of air and space power”. The general Corps TACP task description, described in the core-unit METL, seems to provide the overall “liaison responsibilities.” Task AFTA 1.8.4 provides the specific task to “plan and conduct” (C2 authority implied) airpower operations. The point is made clearer with AFTA 1.8.4 task description below:

To plan and assist with preplanned requests, coordinate, and integrate aircraft conducting joint fires in support of ground forces. Includes conducting detailed integration and execution of Close Air Support (CAS), Air Interdiction (AI), Strike Coordination and Armed Reconnaissance (SCAR), Intelligence, Surveillance, and Reconnaissance (ISR), Suppression of Enemy Air Defenses (SEAD), Combat Search and Rescue (CSAR), airland, airdrop, Armed Reconnaissance, and Electronic Warfare (EW) missions in support of U.S. Army Corps ground troops.²³⁶

Similarly, there is an interesting discontinuity with primary Corps TACP tasks. All TACP tasks listed in the AFUTL, Corps through Brigade, are considered tactical level tasks, except for one. The Corps TACP task AFOP 1.8.3 is an operational level task to “perform C2 of all TACP subordinate to the Corps TACP.” However, the task to provide a Corps TACP, which conducts operational level C2, is considered a tactical task (AFTA 1.8.1). This disparity has serious conflicts with Air Force and joint doctrine; noting Air Force doctrine does not acknowledge the Corps TACP, while joint doctrine allows for the ASOG (Corps TACP) to be the JACCE nucleus. Regardless of the disparities, the AFUTL implies the ASOG and ASOS are the only USAF organizations

²³⁵Ibid., 107.

²³⁶Ibid.

presented to provide comprehensive airpower liaison support to the land component and joint force.

Joint doctrine and Army doctrine also demonstrate disparities, which conflict with Air Force doctrine. Army doctrine states U.S. Army Corps is the primary candidate as a JTF or JFLCC headquarters within a joint operational environment.²³⁷ Concurrently, joint doctrine states a JTF operates at the operational level of war.²³⁸ Army doctrine states that the U.S. Army Division is the primary tactical headquarters, and subordinate organizations operate at the tactical level of war.²³⁹ Applying the TACP alignment requirement per the U.S. Army–Air Force MOA, the following inferences are made. The highest level of war a TACP can operate is the operational level of war with the Corps TACP. All remaining TACP alignments at U.S. Army division-level and lower operate at the tactical level of war. This implies an underlying understanding that the TACP can provide operational level airpower liaison and C2, especially if designated as a JACCE nucleus. Yet, this point, along with Corps TACP responsibilities, is not highlighted in doctrine. JP 3-09.3 is the primary joint publication discussing the TACP, but provides little operational airpower liaison discussion in favor of tactical level doctrine and TTP.

²³⁷Department of the Army, Field Manual (FM) 3-0, *Operations* (Washington, DC: Government Printing Office, 2008, Change 1, 22 February 2011), C-4.

²³⁸Joint Chiefs of Staff, Joint Publication (JP) 3-0, *Joint Operations* (Washington, DC: Government Printing Office, August 2011), I-13.

²³⁹Department of the Army, FM 3-0, C-5.

The UJTL is interesting in that there is only one specific joint task regarding airpower liaison, which is related to CAS integration (OP 3.2.1).²⁴⁰ Otherwise, the primary UJTL task for liaison is generic, and provides the operational-level task to develop a joint force liaison structure (OP 5.5.2).²⁴¹ Otherwise, the other 110 references to liaison support in the UJTL are related to interagency cooperation, non-governmental organizations, foreign and coalition organizations, security cooperation, and specific joint missions (i.e. intelligence and religious support). When compared with the TACP tasks in the AFUTL, the UJTL provides an interesting higher-level joint perspective.

The TACP tasks listed in the AFUTL directly support many of the UJTs listed that relate to airpower capabilities. More importantly, it illustrates the influence and impact a TACP has in a joint operation that reaches beyond the tactical level, into the operational level. For instance, notice the comparison between the UJTL fires joint function task and the Corps TACP task below:

Table 3. Universal Joint Task List Tasks for Fires Function Sample

OP 3 Employ Fires	OP 3.2.4 Suppress Enemy Air Defenses
OP 3.1.7 Employ Fire Support Coordination Measures	OP 3.2.5 Interdict Operational Forces/Targets
OP 3.2.1 Provide Close Air Support Integration for Surface Forces	OP 3.2.6 Provide Firepower in Support of Operational Maneuver
OP 3.2.2 Conduct Nonlethal Attack	OP 3.2.7 Synchronize Operational Firepower

Source: Created by author.

²⁴⁰Joint Chiefs of Staff, *Universal Joint Task List (UJTL)*, Joint Electronic Library Plus, J7 Directorate, 13 December 2013, <https://jdeis.js.mil/jdeis/index.jsp?pinde=43> (accessed 18 March 2014), 997.

²⁴¹*Ibid.*, 1138.

AFTA 1.8.4 Plan and Conduct Joint Fires, Air, Space, and Cyber Operations in Support of U.S. Army Corps Operations. An abbreviated task description: plan, assist, coordinate integrate CAS, AI, SCAR, ISR, SEAD, CSAR and EW airpower operations, which includes planning and employing FSCM and airspace coordinating measures.²⁴²

It is apparent through the Fires function comparison between UJTL and AFUTL tasks, that a Corps TACP does provide operational level airpower liaison to the land component. There is a discontinuity between the UJTL stating a task is operational level, while the AFUTL states it is at the tactical level. For example, UJTL OP 3.2.1 “Provide CAS Integration for Surface Forces” is an operational level task, but the AFUTL encompasses CAS integration in a tactical level task.²⁴³ Similar comparisons highlight the same point in other joint functions: C2, Intelligence, Movement and Maneuver, and sustainment (indirect through providing airdrop support). A larger disparity is in Air Force doctrine and AFUTL. Air Force doctrine does not officially recognize the Corps TACP, but recognizes the JACCE for operational level liaison. There is no specific AFUTL task for the JACCE to provide operational level liaison, it is not even mentioned in the AFUTL. How does the Air Force fulfill its joint tasking requirement for operational level airpower liaison?

Strategies

To address the challenges of airpower liaison in recent operations the following strategies (“responses” is more appropriate) were implemented: employ a reinforced

²⁴²HQ USAF/A3O-IR, 110.

²⁴³Joint Chiefs of Staff, *UJTL*, 997.

JACCE (multiple if needed) empowered with appropriate C2 and liaison authorities, implement separate nonlethal airpower liaison elements with C2 and liaison authority, and increase TACP manning (i.e. qualified JTACs) at the tactical level. The intent of an empowered JACCE, with liaison and C2 authority tailored to the JTF or component commander requirements, provides the operational level airpower expertise and liaison needed in joint operations. Specifically, General Hostage advocated and enabled his intent to make the JFC and his ground commanders more successful. He ensured that his first-tier representative had appropriate seniority, resources, and authorities to plan and execute airpower at the JFC's table.²⁴⁴ Nevertheless, the JACCE still did not provide coordination and C2 of all individual airpower capabilities.

The U.S. Army-Air Force MOA stipulates that the USAF is required to provide EW liaison support through an EW coordination cell (EWCC) in theater.²⁴⁵ It is my experience that the EWCC resided at the Corps level, close to but aligned with the ASOC. The EWCC provided the operational level liaison and planning to coordinate EW airpower support for the JOA. Yet, the MOA actually stipulates that EWCCs would actually exist at Division and EW liaison elements would reside at brigade.²⁴⁶ Due to USAF EW officer manning shortfalls, both during Iraq and Afghanistan, I never saw USAF EW liaisons lower than Corps (there were Army EW officers, but only one at brigade and per battalion). Likewise, the MOA stipulates ISR liaison elements to be provided at Army Corps, Divisions and other jointly validated headquarters. In

²⁴⁴Hostage, 19.

²⁴⁵Chief of Staff of the Army and Chief of Staff of the US Air Force, 5.

²⁴⁶Ibid.

Afghanistan, the Intelligence, Surveillance And Reconnaissance Cell (ISARC) provided the airpower ISR C2 and liaison to the land component. Understand that this was in addition to the TACP receiving ISRLO and ISR NCO support as needed (typically at Division only).²⁴⁷ Furthermore, the separate liaison element concept in place for air mobility liaison support, from Army Corps to selected brigade echelons, as well. Liaison elements for space and cyber are not codified in the current MOA, other than augmenting a TACP as individual SMEs if needed. Yet, neither the JACCE nor separate liaison elements were able to provide the tactical-level detailed integration of airpower with the ground scheme of maneuver, hence the need for more TACP.

The last strategy used to remedy airpower liaison issues during Afghanistan operations was to increase TACP manning, especially the amount of qualified JTACs. During this author's tour in Afghanistan, full UTC manning was mandated by the Central Command Commander, in response to the challenges with airpower liaison at the tactical level. The increase in TACP manning, at the tactical level (Division and lower) was over double the previous numbers. For instance, as the lead ALO for 3-4 ID in 2007-2008, I was only responsible for a 10-man Brigade TACP. As the lead ALO for 4-4 ID in 2009-2010, I had a 25-man TACP. This enabled TACP and JTAC manning down to every maneuver company. The overall intent and effect was to ensure airpower access and coordination to the lowest tactical land component echelon possible.

²⁴⁷Ibid.

Consequences

When the Air Force implements strategies to cope with airpower liaison issues, inevitable consequences occur. First, the contextual and intervening conditions that feed into the strategies dismiss the capability and advantages inherent in a TACP. The TACP, organized into ASOGs and ASOSs, is the Air Force's primary airpower liaison that exists in peacetime and wartime. TACP alignment with U.S. Army units at U.S. Army installations provides the personal interaction required to develop the relationship and trust needed by an airpower liaison. The TACP are incorporated into U.S. Army training and exercises, which is actually mandated by the MOA. More importantly, the TACP are considered capable of providing tactical level airpower liaison to the land component during counterland operations only. So, the opportunity to forge operational level relationships is mitigated. This is especially apparent in the disparity in seniority of the Corps TACP in relation to a Corps commander. Joint and Air Force doctrine states that sufficient rank is required for the JACCE Director to interface with a JTF commander. Yet, the TACP is not given the same level of consideration as the JACCE. Typically, "sufficient" rank equates to one rank below the JTF commander or JFACC. In Iraq and Afghanistan, each respective JACCE director was a two-star general; since the JFACC was a three-star general (the respective JTF commanders were four-star generals). The senior ALO responsible for a Corps TACP is a Colonel (both in peacetime and wartime). The senior USAF representative at the Corps level is three ranks below the Corps commander (a three-star general). Does a Colonel have "sufficient" rank to interact on the JFACC's behalf with a three-star general? During peacetime operations operational

level airpower liaison suffers at the hands of dismissing the TACP's inherent capabilities, leading to air and land component liaison issues.

General Hostage highlighted key operational level airpower liaison issues between the air and land component during combat operations. The main reasons were highlighted in Lieutenant Colonel Lyle's research. The JACCE is not an aligned organization in peacetime, and is assembled when a JTF is created. The staff will not have worked together as a unit, nor have worked with their respective component staff. The JACCE staff will suffer from the lack of requisite training as the linguists and cultural advisors between two components and levels of war, relating requirements between the two components.²⁴⁸ Their ability to build trust with both components and bridge the bureaucratic gap through personal interaction is degraded. Thus, the Air Force's primary operational level airpower liaison lacks the aptitude, experience, and social skills to wade through bureaucracy and joint operational processes to effectively interpret and translate requirements for joint airpower integration. Essentially, the JACCE with requisite seniority and position to remedy operational level airpower issues is out of synch with tactical level airpower liaisons (the TACP). On the other hand, the Corps TACP is in touch with tactical level TACPs and in position to remedy operational level issues, but does not have the requisite seniority and authority to interact with the JFLCC. This disparity is highlighted when operational level airpower issues center on cross-domain synergy problems.

Another key consequence is difficulty with cross-domain synergy separate liaison elements (related to airpower), which is a direct contradiction of Air Force core doctrine.

²⁴⁸Lyle, 119.

AFDD core doctrine stipulates the requirement bind Airmen together and present airpower in a holistic manner, not as a collection of technological stovepipes in the air, space, and cyberspace domains.²⁴⁹ But, the implementation of separate airpower liaisons only thickens operational level bureaucracy, and impedes tactical level execution to the detriment of mission success. For instance, the following vignette was typical of my experience, as an ALO/JTAC in Afghanistan, of providing synergistic airpower effects for the land component.

The 4-4 ID area of operations (AO) in Regional Command–East, between June 2009–June 2010, was a period high insurgent activity. Significant events happened in this AO during this time period, e.g. Barge Matal operations, the overrun of COP Keating, and the insurgent attack in Ganjgal. The US maneuver units in this AO were regularly engaged in contact with the enemy, so heavy at times that only airpower could enable ground forces to break contact. As the lead ALO/JTAC it was my responsibility to enable effective airpower integration for my JTACs supporting units in contact. Requests for airpower support would come from units in contact to the brigade, and the brigade TACP would coordinate with the ASOC for CAS platforms.

The ASOC only had authority to retask designated CAS platforms (e.g. an A-10 or F-16), which did not include ISR and EW assets. ISR and EW assets facilitated increased situational awareness to the ground units, stopped enemy attack coordination, and quicken the F2T2EA (find, fix, target, track, engage, and assess) cycle. In order to facilitate getting CAS, ISR and EW assets on station, coordination was required between the ASOC, EWCC and ISARC. The Brigade TACP was only allowed to coordinate with the ASOC, and could not coordinate directly with the EWCC or ISARC. Of course, the EWCC and ISARC had bureaucratic procedures to dynamically retask an EW or ISR asset. As a result, “under the table” deals were made to get EW and ISR assets in support of troops-in-contact, which were rarely successful and drew much criticism.

The bureaucracy of the EWCC and ISARC facilitated the denial of timely support if designated CAS asset response time was extended. For instance, assume the closest 2-ship of A-10s (designated CAS assets) were 30 minutes away, and an armed MQ-1 Predator (designated ISR asset) was 5 minutes away. The unit in contact would have to wait for the CAS asset to arrive, if the ISARC did not authorize the MQ-1 to support the unit. This scenario was prevalent as an MQ-9

²⁴⁹Chief of Staff of the Air Force, Air Force Doctrine Document, Volume I, 25.

pilot supporting operations in Afghanistan. I would receive notification of a troops-in-contact that could be supported from my current orbit, but was not allowed to support it due to ISARC disapproval.

Overall, cross-domain synergy proved cumbersome and sometimes impossible to orchestrate due to separate airpower liaison elements. Needless bureaucracy hindered even the provision of responsive airpower support, but cross-domain synergy problems pale to the inability to recognize inefficient solutions.

The ability to recognize inefficient solutions is related to overall focus and perspective. The tendency of airpower liaisons is to be tactically focused and proficient, especially with respect to recent Iraq and Afghanistan operations. For instance, there are well-intentioned efforts to transfer tactical lessons learned from SOF operations to conventional operations. While some lessons learned are transferrable, the SOF force structure and mission focus is different than the conventional force. Subsequently, some best practices are not transferable to the conventional, which is made apparent in recommendations such as mirroring the TACS for ISR. Captain Young's recommendation of creating an entirely separate ISR C2 system would further solidify separate airpower liaison element methodology and bureaucracy. As previously stated, the effects of separate liaison elements have far-reaching operational level airpower integration effects. Similarly, some recommended solutions prove to be nothing other than relabeling of an existing concept.

The current CALE initiative is essentially just renaming the Corps TACP the Corps Air Liaison Element, but considered another remedy for airpower liaison. The CALE will be led by an ASOG Commander, the O-6 commander responsible for the Corps TACP, and act as the senior ALO aligned with a U.S. Army Corps. The CALE

definition and responsibilities are nearly identical to the Corps TACP's, which highlights the cultural bias that "TACP" is associated with tactical level airpower liaison. The tactical in TACP does imply employment at the tactical level only; but TACP is residual from a time the USAF was divided into Strategic and Tactical Air Forces. The CALE responsibilities and name (liaison) do not imply the C2 ability inherent in a Corps TACP. This leads to needless discussion and effort that does not identify the root cause of the problem or even frame the actual problem.

DOTmPLF-P Analysis

The grounded theory analysis provides the core data for further analysis by DOTmLPF-P. Essentially, the results from the grounded theory are arranged into a more recognizable military format to formulate recommendations. Each section of DOTmPLF-P is addressed below, except Material and Facilities.

Doctrine

Joint doctrine is based on existing capabilities, authoritative guidance and is to be followed; unless the judgment deems exceptional circumstances dictate otherwise.²⁵⁰ It appears that recent doctrinal changes tend to be more specific, (i.e. to recent operations), environments and cultural norms; instead of fundamental principles transferrable between different operational environments, "requiring judgment in application." In other words, current doctrine related to airpower liaison support, especially above the tactical level, is tailored to operations conducted in Iraq and Afghanistan.

²⁵⁰Chairman of the Joint Chiefs of Staff, CJCSI, 3170.01H, A-4.

For instance, doctrine (joint, Air Force, and Army) has relegated the TACP to the tactical-level of war, especially due to the tactical focus of Iraq and Afghanistan operations. This point is made clear with the subtle removal of the Corps TACP in doctrine. Remember, the U.S. Army-Air Force MOA (dated 31 March 2011) and the AFUTL (dated 1 February 2013) both discuss the Corps TACP (definition and responsibilities). Two recent doctrinal releases completely omit the Corps TACP, but mention TACP alignment at Division and lower. Air Force Doctrine Annex 3-03, *Counterland* (dated 16 April 2014) and FM 3-94, *Theater Army, Corps, and Division Operations* (dated 21 April 2014) both stipulate the TACP is only aligned at Division and lower. Yet, the ASOG (the force presentation of a Corps TACP) is mentioned as providing “specially configured liaison packages to assist the Corps commander.”²⁵¹ The current CALE initiative further reinforces this subtle doctrinal change. More importantly, the doctrine was changed before the official U.S. Army-Air Force MOA was modified. Is doctrine being used to ensure operational effectiveness or provide the justification to approve a cultural bias and/or less viable concepts?

Field Manual 3-94 states that when the Corps is designated as a JTF headquarters, the ASOG will form the JACCE nucleus. The JACCE would “coordinate and integrate airpower into land operations at the operational level of war.”²⁵² Yet, only “coordinate” and “integrate” are used, there is no implication of any C2 authority, which is identical to joint and Air Force doctrine. Consequently, doctrine does not account for the entity

²⁵¹Department of the Army, Field Manual (FM) 3-94, *Theater Army, Corps, and Division Operations* (Washington, DC: Department of the Army, April 2014), 5-11.

²⁵²*Ibid.*

responsible for the C2 of all TACPs subordinate to the Corps. Remember, the only operational level task assigned to a Corps TACP in the AFUTL is the C2 of subordinate TACPs. Plus, a senior leader stated the doctrinal JACCE construct suffered from maladies, which required a significant booster to be combat effective. Once again, is doctrine being modified to ensure operational effectiveness as stated in JP 1? No! Current doctrine does not provide the fundamental principles for operational effectiveness. More importantly, it suppresses the best-suited and approved force organization to provide airpower liaison above the tactical level.

There is considerable current doctrine and TTP the details the TACP ability to plan, integrate, and C2 airpower for the land component at the tactical level with extreme discrimination and precision. However, current doctrine does not facilitate or acknowledge its operational-level ability to provide airpower liaison, other than hint to it as a JACCE nucleus. The lack of doctrine stating the TACP provides airpower liaison above the tactical level does not imply it has an inability to do so.

Organization

The Joint Capabilities Integration and Development System uses the following key words and phrases for “organization”: joint, varied functions, common mission, and enable higher-level units.²⁵³ In order to determine the best-suited force organization to provide airpower liaison and C2 above the tactical level for the land component certain variables must be considered. The first variable is that the TACP is the tactical level airpower liaison for the land component; confirmed by doctrine, task lists, the U.S.

²⁵³Chairman of the Joint Chiefs of Staff, CJCSI 3170.01H, A-5.

Army-Air Force MOA, TTP manuals, and operations. The other two variables are the key words (phrases) defining an organization, and the liaison element acting as a superconnected hub.

According to complex systems theory, historical documentation, and other multiple sources, a liaison element must have high proficiency and understanding with the logic and language of the networks they connect. The liaison elements not only connect networks horizontally (air component to land component), they also connect networks vertically (tactical level to operational level, within their component). See the diagram below for clarification:

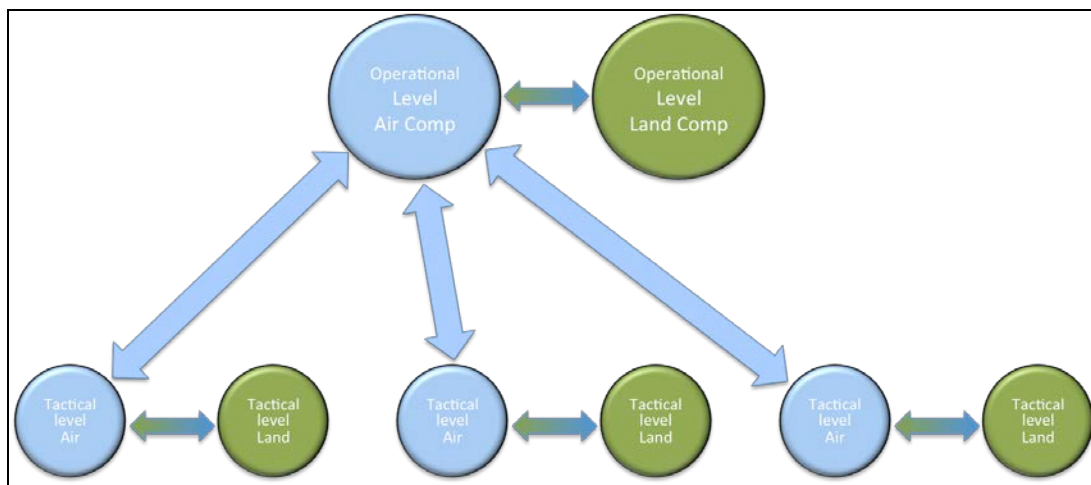


Figure 7. Sample of Vertical Liaison Network

Source: Created by author.

Using the above logic, coupled with key words for organization, the Corps TACP is in the best position to liaison both horizontally and vertically. Both tactical level TACP

(Division and lower) and Corps TACP are comprised of the same type of personnel, the same training and previously held tactical level TACP positions. All TACPs are inherently joint and trained in various airpower functions; even though some individual personnel may not have operational level training or experience. Yet, all TACPs (Corps thru Battalion) have the same mission (provide airpower liaison and C2 to the land component), are manned by the same personnel with shared experience (same AFSCs), are habitually aligned with Army units, habitually train within their own component, and are proficient and trained to enable their higher echelons. If the resident tactical level airpower liaison is within the TACP, the Corps TACP is in the best position to manage the TACP at the operational level.

The Corps TACP maintains the personal relationships, in peacetime and war time, with subordinate TACP and their aligned Corps headquarters. A JACCE simply cannot attain the same level of personal interaction, especially in peacetime (since it does not exist in peacetime) to facilitate effective airpower liaison horizontally and vertically. More importantly, not all operational contingencies last a decade, e.g. OPERATION ODYSSEY DAWN. If a JACCE is stood up for a short-term operation (e.g. 90 days or less), precious time is spent developing relationships and trust needed for overall mission success. The TACP, organized by ASOG and ASOS, is and must remain the official force presentation for airpower liaison to the land component, especially above the tactical level.

Training, Leadership and Education

Training, as previously highlighted, is imperative for airpower liaison above the tactical level. Baseline requirements for training must support the use of joint doctrine

and joint TTP to support joint staffs and operations. Interestingly, much of the training for providing airpower liaison and C2 is resident in TACP training, as illustrated in the 1C4X1 and 13LXX CFETPs in Appendix C. While most of the training is initially at the tactical level, it provides the requisite foundational training for future operational level experience and training. Senior TACP leadership, comprised of officers previously holding TACP-related positions, have recognized the vital requirement to build upon the TACP foundation of airpower liaison expertise. As a result, the 13LXX career ALO AFSC was created to establish continuity within the TACP career field, both in officer leadership and the complexities of airpower liaison.

It is imperative to delineate the core responsibility of a career ALO, which dictates the type and level of required training. It is not the ALO's responsibility to be the SME in every operational airpower area. In other words, the ALO is not responsible for "graduate" level knowledge and performance in every airpower discipline, (e.g. Cyber and Space), at every level of war. The ALO's responsibility is the management of airpower expertise within the TACP, inherent in the airpower capability SMEs assigned through the U.S. Army–Air Force MOA. An ALO develops the proficiency and competency levels to enable common understanding of the logic and language for any airpower capability assigned to the TACP. The ALO uses liaison expertise and experience to maximize airpower integration with the land component, since they are also proficient in the land component's language and logic. The required training stipulated in the 13LXX CFETP, both specific tasks and required schools, emphasize the robust focus on understanding the holistic airpower integration; in the context, logic and language discernable to partnered land component counterparts.

Since the 13LXX career field is nascent, senior TACP leadership mitigated shortfalls in expertise and knowledge by establishing a mentor program with more senior ALOs. Additionally, professional development of current ALOs by providing operational level expertise through broadening training and experience will mitigate training experience shortfalls. This is essential to grow the current foundation of TACP personnel to fulfill operational level positions. Relegating TACP training to only the tactical level of execution stunts future potential and necessary growth within the ranks.

The TACP is inherently a joint career field by the requisite training to understand, integrate, and operate with a sister-service as a daily job responsibility (U.S. Army). Furthermore, TACP personnel train and integrate capabilities from the U.S. Navy and USMC. TACP leadership must capitalize on this requirement and institute additional officer and non-commissioned officer professional development (OPD and NCOPD) programs within their units. It is my experience that ASOS personnel are either deployed or preparing to deploy, so there was no official squadron professional development program. It is imperative as major contingency operations slow down, OPD and NCOPD programs are implemented to plant seeds of professional growth beyond the tactical level for airpower liaison.

Personnel

Personnel considerations must encompass the qualifications of personnel to support joint requirements. The key is to optimize personnel for the joint force in peacetime, contingency, and wartime operations.²⁵⁴ Even though the organization is

²⁵⁴Ibid.

crucial to how airpower is presented to the land component, the organization is still comprised of personnel. The TACP must maximize the personnel assigned to it, if it is the best-suited force organization to provide airpower liaison above the tactical level. In other words, the TACP must maximize the additional airpower SMEs assigned to them by the MOA, which are assigned in peacetime and wartime. Once again, apply network-centric complex systems theory to the TACP and airpower liaison. The TACP has key airpower SMEs assigned, in peacetime and wartime, which establish and nurture personal relationships with their respective land component partners.

As stated earlier, the ALO manages and integrates the airpower SMEs to coordinate, integrate, and C2 airpower for their respective land component. The airpower SMEs provide the “graduate” level execution expertise and interface within the respective joint functions (or Army warfighting functions) to ensure effective airpower integration. Understand that airpower capability can provide effects for more than joint function e.g. EW supports the protection and fires functions. More importantly, the ALO provides the direct, combined airpower liaison to the land component commander, versus multiple separate airpower liaisons at the same level. Reference the liaison graphic, figure 8, in the joint function analysis section, to see the innate network connectivity a TACP has within itself and their respective land component.

The provision of additional airpower SMEs to the TACP is vital to the comprehensive ability to provide airpower liaison to the land component. The additional SMEs provide the TACP with local liaison expertise to ensure mutual understanding between the air and land component staffs within the same level of war. Thus, continued airpower liaison support to the TACP, within ASOGs and ASOSs, must continue and be

expanded. The additional SME assignments to the ASOGs and ASOSs not only provide the TACP with robust liaison ability, but cross-pollinize joint experience in airpower capability areas. In other words, when an airpower SME (e.g. EW or Space) is moved out of the TACP (e.g. back to their original career field), that SME shares their experience with their counterparts. This in turn broadens key Air Force organizations (e.g. ISR, EW, Cyber squadrons) with shared liaison experience for the land component. Essentially, this provides other USAF personnel with basic airpower liaison foundations from “one of their own”, a source familiar in their own logic and language.

Policy

The primary policy governing the liaison requirements between the air and land component is the U.S. Army–Air Force MOA. But, there are current policies being promulgated, (e.g. recent CALE memorandums), which have influential effects on key DOTmLPF-P areas on the official review of the U.S. Army–Air Force MOA. For instance, there is an inextricable link between the advancement of the recent CALE initiative and the doctrinal changes in AFDD Annex 3-03 and FM 3-94 omitting the Corps TACP. Plus, the current MOA also enables the use of separate airpower liaison elements to the land component, which has proven too cumbersome and inflexible.

Understandably, recent policy changes were in response to Iraq and Afghanistan operations, which were attempts to provide immediate solutions. These solutions were based on “joint urgent operational needs” and used “ample” resources (budget and manning) to solve the problem. The situation and circumstances did not foster an environment to critically analyze and devise enduring solutions, which were transferrable to any operational and resource environment. It is readily apparent our current joint force

structure cannot be sustained within our current resource constrained environment. As a result, the U.S. military is enduring another drawdown and summarily does and will not have the same level of resourcing before sequestration took effect. Why are current policies enabling unsustainable DOTmLPP changes for airpower liaison to the land component? It is due to inaccurate assumptions drawn from recent operations.

There has been tremendous reliance on the TACP to integrate airpower into the ground scheme of maneuver at the tactical level of war. It is my experience that the TACP is typically aligned with the U.S. Army's "Fires" warfighting functions, with emphasis on planning, integration and control of fires employed by airpower assets. We (the TACP) leveraged recent technological advances and joint integration TTP, (e.g. ISR and EW), to provide effective joint fires for the ground commander. However, the rapid expansion and demand for integration of new airpower capabilities exceeded TACP capabilities. We expanded our training and operational requirements to meet the land component demand. But, we could only focus on tactical level execution and integration knowledge, due to our primary deployment training requirements. More importantly, all of the additional training was completed as ad hoc, "just-in-time" training immediately prior to deployment. We were unable to fulfil the comprehensive operational level airpower liaison, integration, and C2 requirements; since TACP manning requirements were increased and focused to the land component at the tactical level. The manning requirements to provide increased airpower access to the tactical level, did not allow the TACP to provide operational level airpower liaison (we simply did not have the manning). Hence the implementation of separate liaison elements for multiple airpower disciplines presented to the land component. It was a policy change to provide an

immediate solution easing the TACP burden and providing the requisite airpower expertise to the land component above the tactical level. It was not a policy change due to inherent TACP ineptitude or inefficiency to provide airpower liaison above the tactical level.

Existing and future policy governing and influencing airpower liaison to the land component must remain impartial to recent operations. Honest reflection and assessment of airpower liaison DOTmLPF-P areas must understand “why” certain liaison solutions were implemented, and “how” current airpower liaison constructs (to the land component) are not conducive or sustainable to future joint operations. It must be understood that current policies regarding airpower liaison to the land component are actually steering away from core Air Force doctrine and CJCS intent. To intent is to present airpower holistically and enable progression to the Joint Force 2020 concept as previously discussed.

Joint Function Analysis

It is important to illustrate the TACP’s broad reach across the joint functions in providing airpower liaison to the land component. This brief illustration demonstrates the foundational liaison access and influence the TACP has both in peacetime and wartime; a trait that is not inherent in any other USAF force presentation to the land component and joint force. The figure below depicts a sample connection and influence of the TACP with joint functions. One airpower capability can either directly or indirectly support activities in multiple joint functions.

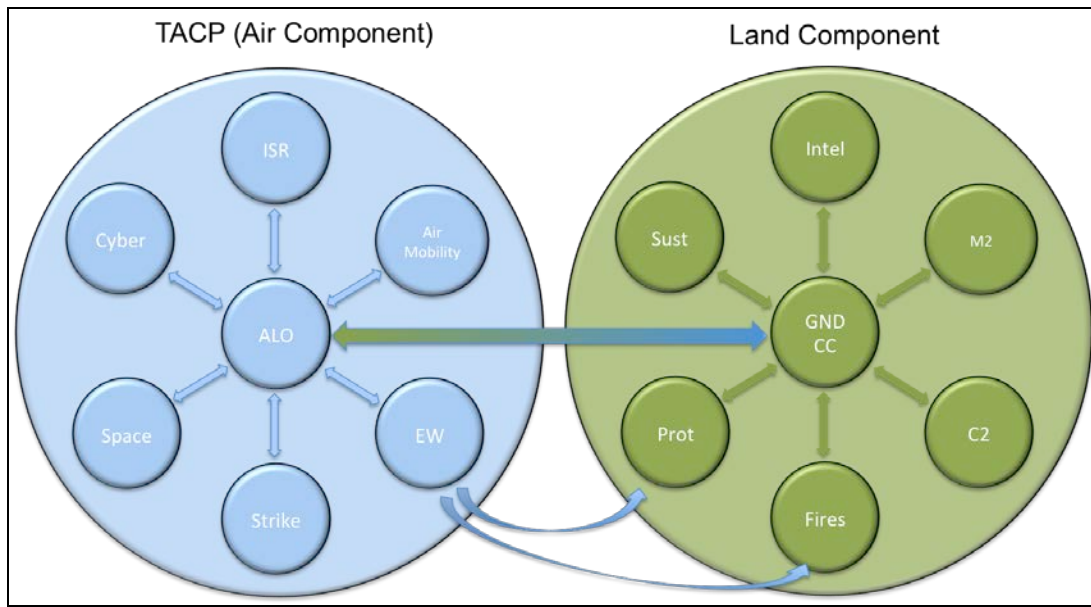


Figure 8. Sample of Joint Function Liaison Network

Source: Created by author.

1. Command and Control: the TACP provides C2 capabilities to the land component. Support of this function is presented directly through the C2 of subordinate TACP units and the C2 of airpower capabilities within the land component's AO. Support is provided through indirect means, e.g. Space and Cyber capabilities providing the communications means that allows C2 execution (satellite communications and secure computer networks). Additionally, the C2 of physical airpower assets, e.g. strike and ISR platforms, extends the TACP's C2 capability across the operational environment.
2. Intelligence: the combination of an ALO's understanding and experience of land component intelligence requirements with ISR SME integration provides the land component intelligence function the ability to develop a holistic

understanding of the operational environment. More importantly, the TACP's influence and cooperation with the intelligence function ensures appropriate considerations are made for air component intelligence requirements (e.g. surface-to-air missile systems). The TACP is able to inject airpower capabilities and requirements into the intelligence function, enabling joint force effectiveness.

3. Movement and Maneuver: The TACP is the best USAF organization to understand and integrate into this joint function, especially with regards to operational maneuver. TACP personnel have an intimate understanding of operational maneuver requirements, since they are required to maneuver with their land component counterparts. This integration occurs in fostered and nurtured in training environments, which enables the personal relationship and trust during combat operations. The "Movement" aspect does reside at the operational and strategic levels of war. Support from AMLOs can provide the requisite expertise within the TACP to facilitate airpower's integration into movement requirements to and from and within a combat operational environment. AMLOs are currently Air Mobility Command assets and not assigned to an ASOG or ASOS, though they sometimes share the same building.
4. Fires: the TACP provides access to and C2 of airpower capabilities. The TACP is intimately aware of land component fires capabilities, and facilitates airpower integration, at times even controlling land component assets, to synchronize joint fire support and achieve synergistic effects for the joint force. Nearly all

airpower capabilities in figure 8 either directly or indirectly support the Fires function.

5. Sustainment: the TACP mostly provides indirect support of the sustainment function, by enabling sustainment operations. Direct support of sustainment is provided via the AMLO support previously mentioned. The AMLOs may plan air drop resupplies for the land component, and then rely on TACP support to integrate and C2 air drop missions. Additionally, primary indirect sustainment support may be presented through using airpower capabilities to ensure land component sustainment operations are successful, (e.g. convoy and communications support).
6. Protection: the TACP provide direct and indirect support to land component protection activities through airpower integration. For instance, synergistic use of ISR and EW airpower may facilitate base defense for the land component, and enable coordination with other protection assets. This function will become increasingly important in future anti-access and area-denial challenges. Particular skill sets have atrophied in recent operations, e.g. air defense operations, since U.S. air supremacy was and is not truly challenged. This does not deny the TACP's requirement or ability to support this function. For instance, enemy surface-to-air assets directly impact airpower integration for the TACP, and will require a refocus in future joint operations. The best liaison to educate and integrate air component protection requirements with the land component is the TACP.

Joint function analysis demonstrates the level of influence TACP airpower liaison has with the joint force and operations, especially with the land component. This is truly undeniable at the tactical level, but is dismissed at the operational level by the challenges previously shown through grounded theory and DOTmLPF-P analysis.

CHAPTER 5

CONCLUSIONS AND RECOMMENDATIONS

Conclusions

This thesis and research are focused on providing a foundation to initiate further research and discussion on the future of the TACP and airpower liaison to the land component above the tactical level. The need for an airpower liaison element between the air and land components was identified prior to WWII. FM 100-20 further highlighted the requirement for airpower liaisons to proficient in air and ground tactics. The TACP gained its historical roots beginning in WWII, and was tested and matured through multiple wars and combat operations. It was proven multiple times, as inferred by Colin S. Gray, that airpower liaison to support joint air and land operations will always be needed. It is not a matter “if” airpower liaison is needed, it is a matter of “how” airpower liaison is provided to link the air and land components.

Previous airpower liaison efforts provided the existing foundation of doctrine, service agreements, and guidance governing airpower liaison between the air and land components. It is imperative to extract the essential elements of airpower liaison that have been consistent throughout its inception, in an effort to remove any bias.

1. Personal interaction, trust, and enduring relationships. There is a saying relevant to this element, “Virtual presence is actual absence.” The most effective liaisons in history, airpower related or not, relied on consistent physical interaction with the parties they connected. Current technology does afford some opportunity to conduct liaison operations from distributed locations. Yet, even video-teleconferencing cannot provide the level fidelity and

context of human interaction required for enduring liaison relationships. It is my experience as an ALO that consistent personal interaction with land component staff built a foundation of trust, through shared experiences. It was only after a foundation of trust and shared experiences was established, could liaison operations be maintained through distributed operations with minimal personal interaction.

2. Language, logic, and cultural fluency. Essentially, liaisons are the hermeneutical experts between the parties they work with, understanding that liaisons are not a neutral mediator. For instance, an airpower liaison is ultimately representative of the air component, but that allegiance should not detract from the general relationship with the land component. The liaison must understand and accurately translate requirements from one party to the other; which is only done through deliberate training and experience to understand the respective components' language, logic and cultural nuances.
3. Truthfulness, Objectivity, and follow-through. The liaison must be truthful and objective to not promise a capability or support outside of their authority or beyond the other component's ability. This requires the liaison element to understand the capabilities and limitations of the respective components, or admit to a knowledge gap and commit to identifying a solution. Likewise, a liaison element between two components must maintain and convey balance between competing component priorities. More importantly, a liaison must remain as objective as possible to guard against the insidious nature of biases, to provide equal representation of component priorities to the other. Essentially,

this is expectation management to ensure actions are followed through to completion; in other words a “yes” means, yes, and “no” means, no. This is crucial to the formation of trust and maintaining it between the liaison element and components.

The essence of these key liaison elements are promulgated throughout doctrine, guidance and agreements. Airpower liaison to the land component seems to suffer a bias that does not fully acknowledge the capabilities and advantages inherent within a TACP. The bias has resulted in disparities within doctrine, task lists, guidance, and agreements; all of which must be reconciled. More importantly, the current direction of airpower liaison to the land component is departing from the Capstone Concept for Joint Operations issued by the CJCS. Of course, the presupposition is that the CCJO is the appropriate standard and direction for the joint force. I believe the CCJO provides the guidance required to refine airpower liaison to the land component. More importantly, effort, time and reflection are required to analyze our airpower liaison operations in Iraq and Afghanistan and other recent contingency operations in their appropriate context. We must assess our current constructs, biases, and habits to determine which are not sustainable and drive airpower liaison for the joint force in an untenable direction. For example, the bureaucracy created by separate liaison elements has not proven successful in maximizing airpower for the land component.

The research demonstrates that the TACP has the ability to provide airpower liaison support to the land component above the tactical level. When comparing the JACCE and TACP constructs, the TACP has the clear advantage in building relationships with the land component, due to its peacetime existence and alignment. The TACP has

inherent expertise, training, and experience to plan and integrate airpower capabilities that are transferrable above the tactical level. But, it is crucial that the TACP has additional airpower liaison SMEs assigned to it, ideally in peacetime at ASOGs and ASOSs. Additionally, the ASOGs and ASOSs are not provided the same level of consideration as a JACCE (with respect to seniority and empowerment); even though ASOGs and ASOSs are officially approved force organizations, with officially approved tasks to provide airpower liaison and perform airpower C2.

There may also be consternation over the name of the TACP, which implies a tactical level focus only. In other words, how can a TACP provide airpower liaison above the tactical level, (e.g. the operational level)? Proposed solutions, e.g. the CALE or JACCE, should not discount the inherent capabilities and advantages of a TACP. The proposed solutions not only change the name, albeit they may be more appropriate names, but restrict the liaison element for reasons previously discussed. Overall, the current direction of airpower liaison must be reconsidered.

Recommendations

The TACP construct must be considered the primary airpower liaison above the tactical. The TACP construct possesses the requisite characteristics of the ideal liaison and C2 element to the conventional land component. The TACP retains the following vital traits as a superconnected hub: peacetime and wartime alignment and stationing; existing training, experience, and force organization; detailed understanding and shared experiences. These characteristics are crucial to develop and nurture the personal relationships required for detailed airpower liaison and integration with the land

component. For the TACP construct to be considered the primary airpower liaison to the land component, it requires the following additional proposals to ensure success:

1. Halt the CALE construct in favor of the Corps TACP construct.
2. Continue the assignment of additional airpower SMEs to ASOGs and ASOSs to facilitate the holistic presentation of airpower to the land component.
3. Refine airpower SME CONOPs to ensure appropriate integration guidance into TACPs (ASOGs and ASOSs) especially at the operational level.
4. Modify current doctrinal guidance, through actual doctrine rewrite or policy letters (for doctrine in between rewrite cycles), stipulating the Corps TACP construct as the primary operational level airpower liaison to the land component.
5. Reinforce professional development programs for the TACP construct.
 - a. Establish OPD and NCOPD programs to initiate operational level airpower liaison training within ASOGs and ASOSs
 - b. Establish more robust ALO mentoring program with senior leadership, with prior and or current TACP experience, to mentor mid-level TACP officers in operational level airpower liaison and career broadening opportunities.
6. Modify the U.S. Army–Air Force MOA to allow for tailorable and scalable TACP constructs to provide airpower liaison and C2 at the operational and tactical levels.
 - a. Determine minimum-essential TACP construct structure, which includes additional airpower liaisons (ISR, EW, Space, Cyber, AMLO), at each respective level.

- b. MOA language must allow for scalability and tailoring that account for fluctuations in resourcing and JFC requirements. For example, is my experience (and most other ALOs' experience) that not every maneuver company needed a JTAC. Ideally, TACP personnel would be treated like actual airpower assets, and apportioned and allocated in the same manner. There would still be a core TACP construct to provide airpower liaison, which ensures minimum access to airpower for all land component units. This allows TACP support to be massed where airpower assets are being massed.
7. Modify the current TACP moniker to reduce confusion and bias to the tactical level of war only. A crude example is to consider replacing Tactical, in TACP with "Joint" and create a Joint Air Control Party, which also aligns with "Joint", in JTAC.

These recommendations should be considered in the context of the CCJO, future operational environments, and current resourcing challenges. Airpower presented holistically in scalable and tailored TACPs, who are habitually aligned with the land component will meet the CJCS intent for globally integrated operations. These recommendations instill flexibility in a joint force structure and maximize cross-domain synergy with "low-signature" airpower capabilities. The current options, the JACCE and the CALE, are simply a TACP-like organization stripped of inherent TACP advantages. It is understandable that the TACP moniker may need modification to facilitate appropriate alignment with the levels of war. A similar change occurred during the Korean War when "Air Ground Control Party" was changed to "Tactical Air Control Party," along with the multiple changes leading to the current "JTAC" term. The name

change may also facilitate force presentation to a tailorable and scalable joint force. Regardless of name, the current TACP construct (DOTmLPF aspects) is best-suited, over any current solution, to provide airpower liaison to land component above the tactical level.

Future Research

Several TACP research questions remain unaddressed. Examination of any or all could potentially preserve the future growth of airpower liaison with the TACP construct:

1. How should the TACP construct be renamed to align with current and future joint force requirements, which correspond to airpower liaison requirements of varying land component and joint force organizations?
2. Can the TACP provide airpower liaison support to the maritime component?
3. Conduct similar research to this thesis, but supporting the special operations component, considering the TACP provide support to SOF.
4. Is an Air Ground Operations Wing a feasible option for operational airpower liaison to the land component?
5. Are additional airpower SME assignments to ASOGs and ASOSs feasible as career-broadening assignments? Is the development of airpower SMEs permanently assigned to TACP duties, similar to the 13LXX AFSC, a feasible option?
6. What is the ideal and minimum SME (capability) requirement within a USAF TACP to provide appropriate effects for land component? Is it a scalable and tailorable concept or organization?

7. What authorities (e.g. Direct Liaison Authorized) do additional airpower liaison SMEs require to facilitate planning and integration of their respective joint capability in peacetime and wartime operations?
8. How is an integrated training approach developed for USAF TACP that includes the addition of new SMEs and-or capabilities? What training events are required to meet combatant commander requirements?
9. How are exercises and training events modified to develop innovative airpower liaison training methods within a resource constrained environment?

APPENDIX A

AFUTL AND TABLES

The below tables were recreated from the AFUTL and Core-unit METLs document developed and maintained by HQ USAF/A3O-IR, dated 1 February 2013. The data tables were recreated to ensure readability in this document, since the tables did not transfer from the original document.

ASOG			
DETAILS			
Task Number		Title	
AFTA 1.8.1		Provide a Corps Tactical Air Control Party (TACP) in Support of a U.S. Army Corps Operation	
Task Description		Represents the Joint Force Air Component Commander (JFACC)/Commander Air Force Forces (COMAFFOR) to the senior U.S. Army Corps HQ commander and staff. The Corps TACP provides liaison and planning expertise on all aspects of air and space power required to integrate with the ground scheme of maneuver. The Corps TACP may provide the nucleus of an Air Expeditionary Task Force (AETF) staff when the supported U.S. Army Corps assumes the responsibility as a Joint Task Force (JTF) or Joint Force Land Component Command (JFLCC/Army Force (ARFOR) headquarters. (JP 3-09, JP 3-30, and JP 3-52)	
CONDITIONS			
Condition Number	C 2.1.5.2	Title	Mission Duration
Description	The time a unit is expected to conduct a mission.		
Condition Descriptors	Long (180 to 365 days)		
Condition Number	C 2.2.4	Title	Personnel Capability
Description	The extent to which personnel are capable of performing assigned tasks.		
Condition Descriptors	High (Fully trained and equipped)		
Condition Number	C 2.3.1.3	Title	Staff Expertise
Description	The level of skill and experience that staff personnel can provide to the commander, with regards to operational art and logistics, the capabilities and limitations of force elements, and tactics, techniques, and procedures.		

Condition Descriptors	High (Staff works well together and has a good grasp of the technical, tactical, and logistic aspects of the forces assigned or likely to be assigned)		
Condition Number	C 2.5.1.2	Title	Deployment Lead Time
Description	The amount of time to travel from home station to arrival when unit will be deployed.		
Condition Descriptors	Moderate (Days to weeks)		
STANDARDS			
MEASURE		SCALE	CRITERION
M1 -- Of required UTC tasked personnel assigned and available		Percent	>= 85
M2 -- Of UTC personnel trained IAW applicable instructions		Percent	>= 85
M3 -- Of authorized equipment/supplies on-hand to support the Corps TACP		Percent	>= 90
M4 -- Able to support aligned Corps that is in the U.S. Army’s ARFORGEN TRAIN/READY and AVAILABLE force pool		Yes/No	= Yes
DETAILS			
Task Number	Title		
AFOP 1.8.3	Perform Command and Control (C2) of All Tactical Air Control Parties (TACP) Subordinate to the Corps TACP		
Task Description	Exercise of authority and direction by a properly designated commander over assigned and attached TACP forces to accomplish the mission. When deployed, the senior Air Liaison Officer (ALO), within the Corps TACP provides command and control of all subordinate forces aligned with or supporting other U.S. Army units assigned, aligned, attached, OPCON or TACON to that U.S. Army Corps. The senior ALO is designated as the Expeditionary Air Support Operations Group (EASOG) commander when an EASOG is formally activated. (JP 3-09 and AFDD 2-8)		
CONDITIONS			
Condition Number	C 2.2.6	Title	Interoperability
Description	The ability of systems, units, or forces to interact and operate effectively with other systems, units, or forces.		
Condition Descriptors	High (Systems, units, or forces can integrate, both vertical and horizontally with few work-rounds)		
Condition Number	C 2.3.1.4	Title	Pre-Existing Command
Description	The extent to which a command and staff headquarters structure exists.		

Condition Descriptors	Strong (Existing and functional)		
Condition Number	C 2.3.1.6	Title	Communications Connectivity
Description	The degree to which communications can be maintained up and down the chain of command and horizontally.		
Condition Descriptors	Continuous (Operates with almost no interruptions)		
Condition Number	C 2.3.1.8	Title	Information Exchange
Description	The freedom with which information (Intelligent, logistic data and operations plans) can be distributed and released with a staff or to operating units, to include among allies or coalition partners.		
Condition Descriptors	Unrestricted		
STANDARDS			
MEASURE		SCALE	CRITERION
M1 -- To complete planning for forces and operations		Hours	<= 72
M2 -- To establish initial command and control of forces and operations		Hours	<= 24
M3 -- Ability to maintain command and control of assigned forces		Yes/No	= Yes
DETAILS			
Task Number	Title		
AFTA 1.8.4	Plan and Conduct Joint Fires, Air, Space, and Cyber Operations in Support of U.S. Army Corps Operations		
Task Description	To plan and assist with preplanned requests, coordinate, and integrate aircraft conducting joint fires in support of ground forces. Includes conducting detailed integration and execution of Close Air Support (CAS), Air Interdiction (AI), Strike Coordination and Armed Reconnaissance (SCAR), Intelligence, Surveillance, and Reconnaissance (ISR), Suppression of Enemy Air Defenses (SEAD), Combat Search and Rescue (CSAR), airland, airdrop, Armed Reconnaissance, and Electronic Warfare (EW) missions in support of U.S. Army Corps ground troops. (JP 1-02 and JP 3-09)		
CONDITIONS			
Condition Number	C 2.1.5.2	Title	Mission Duration
Description	The time a unit is expected to conduct a mission		
Condition Descriptors	Long (180 to 365 days)		
Condition Number	C 2.2.4	Title	Personnel Capability
Description	The extent to which personnel are capable of performing assigned tasks.		

Condition Descriptors	High (Fully trained and equipped)		
Condition Number	C 2.2.6	Title	Interoperability
Description	The ability of systems, units, or forces to interact and operate effectively with other systems, units, or forces.		
Condition Descriptors	High (Systems, units, or forces can integrate, both vertical and horizontally with few work-rounds)		
Condition Number	C 2.3.1.6	Title	Communications Connectivity
Description	The degree to which communications can be maintained up and down the chain of command and horizontally.		
Condition Descriptors	Continuous (Operates with almost no interruptions)		
Condition Number	C 2.5.1.2	Title	Deployment Lead Time
Description	The amount of time to travel from home station to arrival when unit will be deployed.		
Condition Descriptors	Moderate (Days to weeks)		
STANDARDS			
MEASURE		SCALE	CRITERION
M1 -- Of required UTC tasked Joint Terminal Attack Controllers (JTACs) assigned and available		Percent	>= 90
M2 -- Of UTC JTACs trained IAW applicable instructions		Percent	>= 90
M3 -- Of required UTC tasked 11/12/13/14XX assigned and available		Percent	>= 90
M4 -- Of required UTC tasked 11/12/13/14XX trained IAW applicable instructions		Percent	>= 90
DETAILS			
Task Number	Title		
AFTA 1.8.5	Conduct Airborne Operations with U.S. Army Corps		
Task Description	Perform airborne operations in conjunction with the supported U.S. Army Corps.(JP 3-0, JP 3-17, and JP 3-18)		
CONDITIONS			
Condition Number	C 2.1.3	Title	Mission Preparation
Description	Degree to which preparations for mission have been completed at time of mission execution.		
Condition Descriptors	Completed (Fully developed plan, including approval)		
Condition Number	C 2.1.5.1	Title	Lead Time
Description	The time from receipt of a warning or directive to initiation of military operations.		
Condition Descriptors	Short (Hours to Days)		
Condition Number	C 2.1.5.2	Title	Mission Duration
Description	The time a unit is expected to continue to conduct a		

	mission		
Condition Descriptors	Short (30 to 90 days)		
Condition Number	C 2.2.6	Title	Interoperability
Description	The ability of systems, units, or forces to interact and operate effectively with other systems, units, or forces.		
Condition Descriptors	High (Systems, units, or forces can integrate, both vertical and horizontally with few work-rounds)		
STANDARDS			
MEASURE		SCALE	CRITERION
M1 -- To marshal forces to staging area		Hours	<= 72
M2 -- Of supplies and equipment moved in Joint Airborne Operations IAW OPLAN/OPORD		Percent	>= 90
M3 -- Of Corps TACP personnel airborne qualified and available to support the Corps Assault Command Post		Number	>= 4
M4 -- Of Unit Manning Document “J” coded positions filled with jump qualified personnel		Percent	>= 85

ASOS			
DETAILS			
Task Number	Title		
AFTA 1.8.2.1	Deploy a Division Tactical Air Control Party (TACP) in Support of U.S. Army Division Operations		
Task Description	Represents the Joint Force Air Component Commander (JFACC)/Commander Air Force Forces (COMAFFOR) to the senior U.S. Army Division HQ commander and staff. The Division TACP provides liaison and planning expertise on all aspects of air and space power required to integrate with the ground scheme of maneuver as part of the USAF Theater Air Control System (TACS)/Army Air-Ground System (AAGS). (JP 1-02 and JP 3-09.3)		
CONDITIONS			
Condition Number	C 2.1.5.2	Title	Mission Duration
Description	The time a unit is expected to conduct a mission.		
Condition Descriptors	Long (180 to 365 days)		
Condition Number	C 2.2.4	Title	Personnel Capability
Description	The extent to which personnel are capable of performing assigned tasks.		
Condition Descriptors	High (Fully trained and equipped)		
Condition Number	C 2.3.1.3	Title	Staff Expertise
Description	The level of skill and experience that staff personnel can		

	provide to the commander, with regards to operational art and logistics, the capabilities and limitations of force elements, and tactics, techniques, and procedures.		
Condition Descriptors	High (Staff works well together and has a good grasp of the technical, tactical, and logistic aspects of the forces assigned or likely to be assigned)		
Condition Number	C 2.5.1.2	Title	Deployment Lead Time
Description	The amount of time to travel from home station to arrival when unit will be deployed.		
Condition Descriptors	Moderate (Days to weeks)		
STANDARDS			
MEASURE		SCALE	CRITERION
M1 -- Of required UTC tasked personnel assigned and available		Percent	>= 85
M2 -- Of UTC personnel trained IAW applicable instructions		Percent	>= 85
M3 -- Of authorized equipment/supplies on-hand to support the Corps TACP		Percent	>= 90
M4 -- Able to support aligned Corps that is in the U.S. Army’s ARFORGEN TRAIN/READY and AVAILABLE force pool		Yes/No	= Yes
DETAILS			
Task Number	Title		
AFTA 1.8.2.2	Deploy a Brigade Tactical Air Control Party (TACP) in Support of U.S. Army Brigade Combat Team (Stryker, Armored, and/or Infantry as Applicable) Operation		
Task Description	Represents the Joint Force Air Component Commander (JFACC)/Commander Air Force Forces (COMAFFOR) to the senior U.S. Army Brigade HQ commander and staff and its associated Battalions. The Brigade and Battalion TACP provides liaison and planning expertise on all aspects of air and space power required to integrate with the ground scheme of maneuver as part of the USAF Theater Air Control System (TACS)/Army Air-Ground System (AAGS). (JP 1-02 and JP 3-09.3)		
CONDITIONS			
Condition Number	C 2.1.5.2	Title	Mission Duration
Description	The time a unit is expected to conduct a mission		
Condition Descriptors	Long (180 to 365 days)		
Condition Number	C 2.2.4	Title	Personnel Capability
Description	The extent to which personnel are capable of performing assigned tasks.		
Condition Descriptors	High (Fully trained and equipped)		

Condition Number	C 2.3.1.3	Title	Staff Expertise
Description	The level of skill and experience that staff personnel can provide to the commander, with regards to operational art and logistics, the capabilities and limitations of force elements, and tactics, techniques, and procedures.		
Condition Descriptors	High (Staff works well together and has a good grasp of the technical, tactical, and logistic aspects of the forces assigned or likely to be assigned)		
Condition Number	C 2.5.1.2	Title	Deployment Lead Time
Description	The amount of time to travel from home station to arrival when unit will be deployed.		
Condition Descriptors	Moderate (Days to weeks)		
STANDARDS			
MEASURE		SCALE	CRITERION
M1 -- Of required UTC tasked personnel assigned and available		Percent	>= 85
M2 -- Of UTC personnel trained IAW applicable instructions		Percent	>= 85
M3 -- Of authorized equipment/supplies on-hand to support the Brigade and associated Battalion TACP		Percent	>= 90
M4 -- Able to support aligned BCT(s) that is/are in the U.S. Army’s ARFORGEN TRAIN/READY and AVAILABLE force pool		Yes/No	= Yes
DETAILS			
Task Number	Title		
AFTA 1.8.2.1.1	Deploy an Air Support Operations Center (ASOC) Capability in Support of a Division Tactical Air Control Party (TACP) Mission		
Task Description	Provides tactical C2 to ensure the proper, real-time integration of offensive air power. Coordinates air missions requiring integration with other supporting arms and ground forces. The principal air control agency of the Theater Air Control System (TACS) responsible for the direction and control of air operations directly supporting the ground combat elements primarily at Division level. The ASOC and Division TACP merge to form one combat organization under the command of a single Airman, but is equipped and manned to perform distinct functions. (JP 3-09.3)		
CONDITIONS			
Condition Number	C 2.1.3	Title	Mission Preparation
Description	Degree to which preparations for mission have been		

	completed at time of mission execution.		
Condition Descriptors	Completed (Fully developed plan, including approval)		
Condition Number	C 2.1.5.2	Title	Mission Duration
Description	The time a unit is expected to conduct a mission		
Condition Descriptors	Long (180 to 365 days)		
Condition Number	C 2.2.4	Title	Personnel Capability
Description	The extent to which personnel are capable of performing assigned tasks.		
Condition Descriptors	High (Fully trained and equipped)		
Condition Number	C 2.2.6	Title	Interoperability
Description	The ability of systems, units, or forces to interact and operate effectively with other systems, units, or forces.		
Condition Descriptors	High (Systems, units, or forces can integrate, both vertical and horizontally with few work-rounds)		
Condition Number	C 2.3.1.3	Title	Staff Expertise
Description	The level of skill and experience that staff personnel can provide to the commander, with regards to operational art and logistics, the capabilities and limitations of force elements, and tactics, techniques, and procedures.		
Condition Descriptors	High (Staff works well together and has a good grasp of the technical, tactical, and logistic aspects of the forces assigned or likely to be assigned)		
Condition Number	C 2.5.1.2	Title	Deployment Lead Time
Description	The amount of time to travel from home station to arrival when unit will be deployed.		
Condition Descriptors	Moderate (Days to weeks)		
STANDARDS			
MEASURE		SCALE	CRITERION
M1 -- Of required UTC tasked personnel assigned and available		Percent	>= 85
M2 -- Of UTC personnel trained IAW applicable instructions		Percent	>= 85
M3 -- Of authorized equipment/supplies on-hand		Percent	>= 90
M4 -- Able to provide decentralized control of CAS aircraft operating in the AO inside the FSCL		Yes/No	= Yes
M5 -- Able to provide decentralized execution of immediate air support in coordination with the established ground commander’s weight of effort and priority of fires		Yes/No	= Yes
M6 -- Able to assist with time-sensitive targeting and friendly force location information within the AO		Yes/No	= Yes
M7 -- Able to assist the ground forces with airspace management and control		Yes/No	= Yes

DETAILS			
Task Number	Title		
AFTA 1.8.3.1	Perform Command and Control (C2) of All Tactical Air Control Party (TACP) Subordinate to the Division TACP		
Task Description	Exercise of authority and direction by a properly designated commander over assigned and attached forces to accomplish the mission. When deployed, the senior Air Liaison Officer (ALO), within the Division TACP, provides command and control of all subordinate forces aligned with or supporting other U.S. Army units assigned, aligned, attached, OPCON or TACON to that U.S. Army Division. Senior ALO is designated as the Expeditionary Air Support Operations Squadron (EASOS) commander when an EASOS is activated. (JP 3-09 and AFDD 2-8)		
CONDITIONS			
Condition Number	C 2.2.6	Title	Interoperability
Description	The ability of systems, units, or forces to interact and operate effectively with other systems, units, or forces.		
Condition Descriptors	High (Systems, units, or forces can integrate, both vertical and horizontally with few work-rounds)		
Condition Number	C2.3.1.4	Title	Pre-Existing Command
Description	The extent to which a command and staff headquarters structure exists		
Condition Descriptors	Strong (Existing and functional)		
Condition Number	C 2.3.1.6	Title	Communications Connectivity
Description	The degree to which communications can be maintained up and down the chain of command and horizontally.		
Condition Descriptors	Continuous (Operates with almost no interruptions)		
Condition Number	C 2.3.1.8	Title	Information Exchange
Description	The freedom with which information (Intelligent, logistic data and operations plans) can be distributed and released with a staff or to operating units, to include among allies or coalition partners		
Condition Descriptors	Unrestricted		
STANDARDS			
MEASURE		SCALE	CRITERION
M1 -- To complete planning for forces and operations		Hours	<= 72
M2 -- To establish initial command and control of forces and operations		Hours	<= 24

M3 -- Ability to maintain command and control of assigned forces		Yes/No	= Yes
<u>DETAILS</u>			
Task Number	Title		
AFTA 1.8.3.2	Perform Command and Control (C2) of All Tactical Air Control Party (TACP) Subordinate to the Brigade TACP		
Task Description	Exercise of authority and direction by a properly designated commander over assigned and attached forces to accomplish the mission. When deployed, the senior Air Liaison Officer (ALO), within the Brigade TACP, provides command and control of all subordinate forces aligned with or supporting other U.S. Army units assigned, aligned, attached, OPCON or TACON to that U.S. Army Brigade. (JP 3-09 and AFDD 2-8)		
CONDITIONS			
Condition Number	C 2.2.6	Title	Interoperability
Description	The ability of systems, units, or forces to interact and operate effectively with other systems, units, or forces.		
Condition Descriptors	High (Systems, units, or forces can integrate, both vertical and horizontally with few work-rounds)		
Condition Number	C2.3.1.4	Title	Pre-Existing Command
Description	The extent to which a command and staff headquarters structure exists		
Condition Descriptors	Strong (Existing and functional)		
Condition Number	C 2.3.1.6	Title	Communications Connectivity
Description	The degree to which communications can be maintained up and down the chain of command and horizontally.		
Condition Descriptors	Continuous (Operates with almost no interruptions)		
Condition Number	C 2.3.1.8	Title	Information Exchange
Description	The freedom with which information (Intelligent, logistic data and operations plans) can be distributed and released with a staff or to operating units, to include among allies or coalition partners		
Condition Descriptors	Unrestricted		
STANDARDS			
MEASURE		SCALE	CRITERION
M1 -- To complete planning for forces and operations		Hours	<= 72
M2 -- To establish initial command and control of forces and operations		Hours	<= 24
M3 -- Ability to maintain command and control of assigned forces		Yes/No	= Yes

DETAILS			
Task Number	Title		
AFTA 1.8.4.1	Plan and Conduct Joint Fires, Air, Space, and Cyber Operations in Support of U.S. Army Division Operations		
Task Description	To plan and assist with preplanned requests, coordinate, and integrate aircraft conducting joint fires in support of ground forces. Includes conducting detailed integration and execution of Close Air Support (CAS), Air Interdiction (AI), Strike Coordination and Armed Reconnaissance (SCAR), Intelligence, Surveillance, and Reconnaissance (ISR), Suppression of Enemy Air Defenses (SEAD), Combat Search and Rescue (CSAR), airland, airdrop, Armed Reconnaissance, and Electronic Warfare (EW) missions in support of U.S. Army Division ground troops. (JP 1-02 and JP 3-09)		
CONDITIONS			
Condition Number	C 2.1.5.2	Title	Mission Duration
Description	The time a unit is expected to conduct a mission		
Condition Descriptors	Long (180 to 365 days)		
Condition Number	C 2.2.4	Title	Personnel Capability
Description	The extent to which personnel are capable of performing assigned tasks.		
Condition Descriptors	High (Fully trained and equipped)		
Condition Number	C 2.2.6	Title	Interoperability
Description	The ability of systems, units, or forces to interact and operate effectively with other systems, units, or forces.		
Condition Descriptors	High (Systems, units, or forces can integrate, both vertical and horizontally with few work-rounds)		
Condition Number	C 2.3.1.6	Title	Communications Connectivity
Description	The degree to which communications can be maintained up and down the chain of command and horizontally.		
Condition Descriptors	Continuous (Operates with almost no interruptions)		
Condition Number	C 2.5.1.2	Title	Deployment Lead Time
Description	The amount of time to travel from home station to arrival when unit will be deployed.		
Condition Descriptors	Moderate (Days to weeks)		
STANDARDS			
MEASURE		SCALE	CRITERION
M1 -- Of required UTC tasked Joint Terminal Attack Controllers (JTACs) assigned and available		Percent	>= 90
M2 -- Of UTC JTACs trained IAW applicable		Percent	>= 90

instructions			
M3 -- Of required UTC tasked 11/12/13/14XX assigned and available		Percent	>= 90
M4 -- Of required UTC tasked 11/12/13/14XX trained IAW applicable instructions		Percent	>= 90
<u>DETAILS</u>			
Task Number	Title		
AFTA 1.8.4.2	Plan and Conduct Joint Fires, Air, Space, and Cyber Operations in Support of U.S. Army Brigade Combat Team (Stryker, Armored, and/or Infantry as Applicable) Operations		
Task Description	To plan and assist with preplanned requests, coordinate, and integrate aircraft conducting joint fires in support of ground forces. Conduct detailed integration to control joint tactical aircraft in the execution of Close Air Support (CAS) and non CAS missions in support of the U.S. Army Brigade ground troops. (JP 3-09.3)		
CONDITIONS			
Condition Number	C 2.1.5.2	Title	Mission Duration
Description	The time a unit is expected to conduct a mission		
Condition Descriptors	Long (180 to 365 days)		
Condition Number	C 2.2.4	Title	Personnel Capability
Description	The extent to which personnel are capable of performing assigned tasks.		
Condition Descriptors	High (Fully trained and equipped)		
Condition Number	C 2.2.6	Title	Interoperability
Description	The ability of systems, units, or forces to interact and operate effectively with other systems, units, or forces.		
Condition Descriptors	High (Systems, units, or forces can integrate, both vertical and horizontally with few work-rounds)		
Condition Number	C 2.3.1.6	Title	Communications Connectivity
Description	The degree to which communications can be maintained up and down the chain of command and horizontally.		
Condition Descriptors	Continuous (Operates with almost no interruptions)		
Condition Number	C 2.5.1.2	Title	Deployment Lead Time
Description	The amount of time to travel from home station to arrival when unit will be deployed.		
Condition Descriptors	Moderate (Days to weeks)		
STANDARDS			
MEASURE		SCALE	CRITERION
M1 -- Of required UTC tasked Joint Terminal		Percent	>= 90

Attack Controllers (JTACs) assigned and available			
M2 -- Of UTC JTACs trained IAW applicable instructions		Percent	>= 90
M3 -- Of equipment and supply authorized specifically for Joint Terminal Attack Controller operations		Percent	>= 90
<u>DETAILS</u>			
Task Number	Title		
AFTA 1.8.5.1	Conduct Airborne Operations with U.S. Army Division		
Task Description	Perform airborne operations in conjunction with the supported U.S. Army Division. (JP 3-0, JP 3-17, and JP 3-18)		
Condition Number	C 2.1.3	Title	Mission Preparation
Description	Degree to which preparations for mission have been completed at time of mission execution.		
Condition Descriptors	Completed (Fully developed plan, including approval)		
Condition Number	C 2.1.5.1	Title	Lead Time
Description	The time from receipt of a warning or directive to initiation of military operations.		
Condition Descriptors	Short (Hours to Days)		
Condition Number	C 2.1.5.2	Title	Mission Duration
Description	The time a unit is expected to continue to conduct a mission		
Condition Descriptors	Short (30 to 90 days)		
Condition Number	C 2.2.6	Title	Interoperability
Description	The ability of systems, units, or forces to interact and operate effectively with other systems, units, or forces.		
Condition Descriptors	High (Systems, units, or forces can integrate, both vertical and horizontally with few work-rounds)		
<u>STANDARDS</u>			
MEASURE		SCALE	CRITERION
M1 -- To marshal forces to staging area		Hours	<= 72
M2 -- Of supplies and equipment moved in Joint Airborne Operations IAW OPLAN/OPORD		Percent	>= 90
M3 -- Of Division TACP personnel airborne qualified and available		Percent	>= 85
M4 -- Of Unit Manning Document “J” coded positions filled with jump qualified personnel		Percent	>= 85
<u>DETAILS</u>			
Task Number	Title		
AFTA 1.8.5.2	Conduct Airborne Operations with U.S. Army Airborne		

	Brigade			
Task Description	Perform airborne operations in conjunction with the supported U.S. Army Brigade and its associated Battalions. (JP 3-0, JP 3-17, and JP 3-18)			
CONDITIONS				
Condition Number	C 2.1.3	Title	Mission Preparation	
Description	Degree to which preparations for mission have been completed at time of mission execution.			
Condition Descriptors	Completed (Fully developed plan, including approval)			
Condition Number	C 2.1.5.1	Title	Lead Time	
Description	The time from receipt of a warning or directive to initiation of military operations.			
Condition Descriptors	Short (Hours to Days)			
Condition Number	C 2.1.5.2	Title	Mission Duration	
Description	The time a unit is expected to continue to conduct a mission			
Condition Descriptors	Short (30 to 90 days)			
Condition Number	C 2.2.6	Title	Interoperability	
Description	The ability of systems, units, or forces to interact and operate effectively with other systems, units, or forces.			
Condition Descriptors	High (Systems, units, or forces can integrate, both vertical and horizontally with few work-rounds)			
STANDARDS				
MEASURE			SCALE	CRITERION
M1 -- To marshal forces to staging area			Hours	<= 72
M2 -- Of supplies and equipment moved in Joint Airborne Operations IAW OPLAN/OPORD			Percent	>= 90
M3 -- Of Division TACP personnel airborne qualified and available			Percent	>= 85
M4 -- Of Unit Manning Document “J” coded positions filled with jump qualified personnel			Percent	>= 85
DETAILS				
Task Number	Title			
AFTA 1.8.5.3	Conduct Air Assault Operations with U.S. Army Division and its Associated Brigade Combat Teams (BCT)			
Task Description	Conduct tactical Helicopter-borne air assault operations in conjunction with the supported U.S. Army Air Assault Division and its assigned BCTs. (JP 3-17 and JP 3-18)			
CONDITIONS				
Condition Number	C 2.1.3	Title	Mission Preparation	
Description	Degree to which preparations for mission have been			

	completed at time of mission execution.			
Condition Descriptors	Completed (Fully developed plan, including approval)			
Condition Number	C 2.1.5.1	Title	Lead Time	
Description	The time from receipt of a warning or directive to initiation of military operations.			
Condition Descriptors	Short (Hours to Days)			
Condition Number	C 2.1.5.2	Title	Mission Duration	
Description	The time a unit is expected to continue to conduct a mission			
Condition Descriptors	Short (30 to 90 days)			
Condition Number	C 2.2.6	Title	Interoperability	
Description	The ability of systems, units, or forces to interact and operate effectively with other systems, units, or forces.			
Condition Descriptors	High (Systems, units, or forces can integrate, both vertical and horizontally with few work-rounds)			
STANDARDS				
MEASURE			SCALE	CRITERION
M1 -- Of UTC assigned personnel trained in Air Assault Operations			Percent	>= 85

APPENDIX B

TACP APPLICABLE UJTL TASKS

This appendix is an abbreviated version of the master UJTL. These specific tasks were chosen for their relevance to the TACP and airpower liaison, at and above the tactical level of war. The list below is arranged by the following joint functions; fires, movement and maneuver, intelligence, and command and control. Additionally, this list has the measures and task descriptions for each task removed, since they can be referenced on the actual UJTL. The tasks were pulled from the 13 December 2013 document posted on the Joint Electronic Library Plus website; reference the bibliography for further details on where to download the current UJTL.

Fires

SN 3 Employ Forces

SN 3.2 Synchronize Joint Fire Support

SN 3.3 Employ Joint Fire Support

SN 3.3.1 Employ Joint Fires

SN 3.3.4 Apply Nonlethal Capabilities

SN 3.3.5 Synchronize Combat Assessment

SN 3.5 Provide Space Capabilities

SN 3.5.1.3 Resolve Satellite Anomalies

ST 3 Employ Fires

ST 3.1.1 Attack Targets

ST 3.1.3 Conduct Combat Assessment

ST 3.2.1 Conduct Attack on Theater Strategic Targets/Target Systems Using
Lethal Means

ST 3.2.2 Conduct Attack on Theater Strategic Targets/Target Systems Using
Nonlethal Means

ST 3.2.3 Synchronize Theater Strategic Firepower

ST 3.5 Coordinate Space Capabilities

ST 3.7 Conduct Cyberspace Operations

OP 2.8 Coordinate Target Engagement

OP 3 Employ Fires

OP 3.1 Conduct Targeting

OP 3.1.7 Employ Fire Support Coordination Measures

OP 3.2.1 Provide Close Air Support Integration for Surface Forces

OP 3.2.2 Conduct Nonlethal Attack

OP 3.2.2.4 Conduct Nonlethal Attack on Personnel, Equipment, and Installations
Using Nonlethal Means

OP 3.2.4 Suppress Enemy Air Defenses

OP 3.2.5 Interdict Operational Forces/Targets

OP 3.2.5.1 Conduct Air Interdiction of Operational Forces/Targets

OP 3.2.5.2 Conduct Surface/Subsurface Firepower Interdiction of Operational
Forces/Targets

OP 3.2.5.3 Conduct Interdiction

OP 3.2.6 Provide Firepower in Support of Operational Maneuver

OP 3.2.7 Synchronize Operational Firepower

OP 3.5.1.3 Conduct Satellite Anomaly Resolution

OP 3.5.2.1 Conduct Offensive Space Control

OP 3.5.2.3 Conduct Space Negation

OP 3.9 Conduct Target Validation

TA 2.7 Conduct Physical Assessment

TA 3 Employ Firepower

TA 3.12 Conduct Collateral Damage Assessment

TA 3.2.1 Conduct Joint Fires

TA 3.2.1.2 Conduct Collateral Damage Estimation

TA 3.2.2 Conduct Close Air Support

TA 3.2.3 Conduct Interdiction

TA 3.2.4 Conduct Joint Suppression of Enemy Air Defenses

TA 3.2.6 Conduct Attacks Using Nonlethal Means

TA 3.3 Coordinate Battlespace Maneuver and Integrate with Firepower

TA 3.5 Employ Space Capabilities

Movement and Maneuver

SN 1 Conduct Strategic Deployment and Redeployment

ST 1 Deploy Forces

OP 1 Conduct Operational Maneuver

OP 1.2.4.3 Conduct Forcible Entry: Airborne, Amphibious, and Air Assault

TA 1 Deploy/Conduct Maneuver

TA 1.2.1 Conduct Air Assault

TA 1.2.2 Conduct Airborne Operations

TA 1.2.3 Conduct Amphibious Assault

Command and Control

SN 5.1.2.4 Provide Electromagnetic Spectrum Access

SN 5.4.1 Prepare and Issue Strategic Estimates, Priorities, and Joint Operation
Plans

SN 5.4.2.1 Provide Friendly Force Tracking

SN 5.5.11 Manage Cyberspace Operations

SN 5.7.3.1 Planning

ST 5 Provide Command and Control

ST 5.3.1.4 Conduct Mission Analysis

ST 5.4.3.3 Develop Joint Force Liaison Structure

ST 5.5.7 Direct Computer Network Operations

ST 5.5.7.2 (URGENT PROPOSED) Provide Cyberspace Attack

ST 5.5.10 Direct Electronic Warfare

OP 5 Provide Command and Control

OP 5.1 Integrate Information

OP 5.1.1 Communicate Operational Information

OP 5.1.3 Determine Commander's Critical Information Requirements

OP 5.1.4 Process Information

OP 5.1.10 Implement Electromagnetic Spectrum Management, Policy, Plans,
Programs, and Direction

OP 5.1.11 Provide Combat Identification

OP 5.3 Prepare Plans and Orders

OP 5.3.1 Conduct Mission Analysis

OP 5.3.1.1 Identify Desired and Undesired Effects in Developing Operational Objectives

OP 5.3.1.3 Conduct Campaign Assessment

OP 5.3.1.4 Conduct Effects Assessment

OP 5.3.2 Issue Planning Guidance

OP 5.3.4 Develop Courses of Action/Prepare Staff Estimates

OP 5.3.5 Analyze Courses of Action

OP 5.3.8 Issue Commander's Estimate

OP 5.4.4 Synchronize and Integrate Operations

OP 5.4.5 Coordinate/Integrate Component, Theater, and Other Support

OP 5.4.6 Conduct Operational Rehearsals

OP 5.5.2 Develop Joint Force Liaison Structure

OP 5.6.4 Conduct Electronic Warfare in the Joint Operations Area

OP 5.6.4.1 Coordinate Electronic Warfare in the Joint Operations Area

OP 5.6.4.2 Conduct Electronic Attack

OP 5.6.4.3 Conduct Electronic Warfare Support in the Joint Operations Area

OP 5.6.4.4 Conduct Electronic Protection in the Joint Operations Area

OP 5.6.5 Conduct Computer Network Operations

OP 5.6.5.1 Coordinate Computer Network Operations

OP 5.7.6 Coordinate Coalition Support

TA 5 Exercise Command and Control

TA 5.1 Provide Command, Control, Communications, and Computer Systems

TA 5.6.4 Employ Electronic Warfare

TA 5.6.4.1 Coordinate Employment of Electronic Warfare

TA 5.6.4.2 Employ Electronic Attack

TA 5.6.4.3 Employ Electronic Warfare Support

TA 5.6.5 Employ Computer Network Operations

TA 5.6.5.1 Coordinate Employment of Computer Network Operations

Intelligence

SN 2.2.2 Provide Intelligence, Surveillance and Reconnaissance

SN 2.2.4 Manage Intelligence, Surveillance, and Reconnaissance Capabilities

ST 2.4.1 Conduct Joint Intelligence Preparation of the Operational Environment

ST 2.8 Integrate Intelligence Capabilities

ST 2.11 Manage Target Development

OP 2.3.1 Plan and Direct Intelligence Operations

OP 2.3.5 Disseminate and Integrate Operational Intelligence

OP 2.4 Conduct Joint Intelligence Preparation of the Operational Environment

OP 2.7.1 Manage Intelligence, Surveillance, and Reconnaissance

OP 2.8.4.1 Conduct Battle Damage Assessment

TA 2 Share Intelligence

APPENDIX C

TACP CFETPs

The following are key highlights from the 1C4X1 and 13LXX CFETPs, which illustrate the requirement for airpower liaison support to the land component. More importantly, these are AFSCs with dedicated training and requirements specifically tailored to provide airpower liaison.

TACP AFSC 1C4X1

The following are excerpts from the 1C4X1 CFETP regarding the overall AFSC description and responsibilities:

1. Specialty Summary.

Engages enemy forces utilizing advanced technologies and weapon systems to direct airstrikes in close proximity of friendly forces. Controls and executes operational air and space power. Operates in austere combat environments independent of an established airbase or its perimeter defenses. Employed as part of a joint, interagency or coalition force to support Combatant Commander objectives. Primarily assigned to U.S. Army Installations.²⁵⁵

2. Duties and Responsibilities.

Operates communications, digital networks and video targeting equipment. Integrates, plans and briefs maneuver commanders and staff on combat capabilities of air and space power. Processes and requests air and space resources to support ground maneuver units. Targets and controls surface-to-surface and air-to-surface-fires. Plans, coordinates and conducts fires to accomplish supported commander's objectives, includes Close Air Support (CAS) and supporting arms for surface elements, command, control, communications, computers, intelligence, surveillance and reconnaissance (C4ISR) in support of Combined Forces Air Component Commander's assets. Employs visual, electronic and

7. ²⁵⁵Department of the Air Force, *Tactical Air Control Party AFSC 1C4X1 CFETP*,

marking equipment to direct aviation assets to target. Issues weapons release clearance.²⁵⁶

There is one core-training task specific to understanding the air-ground operations system and theater air support operations. This includes study of the following documents: doctrine (Air Force, Army, and joint); specific Air Force Tactics, Techniques, and Procedures (TTP) manuals (e.g. JTAC, TACS and AOC). TACP are required to have an “analysis” subject level of knowledge in EW and ISR C2.²⁵⁷ (Note: Understand that this is a “subject level of knowledge,” not a “task performance level” or “task knowledge level”).²⁵⁸ In other words, TACP are not required to perform EW or ISR C2 tasks. They are only required to understand the subject to provide liaison support) However, there are no specific tasks or subject areas specifically related to space or cyberspace capabilities or operations.

TACP AFSC 13LXX

This CFETP and the AFSC are relatively new (the CFETP is dated 28 May 2013) and are current with the updated definitions of airpower and expanding nonlethal capabilities. The following are excerpts from the 13LXX CFETP regarding the overall AFSC description and responsibilities:

1. Specialty Description.

The Air Liaison Officer (ALO) specialty (13LXX) is the senior Tactical Air Control Party member who functions as the primary advisor to the ground commander on Airpower. This specialty conducts strategic, operational and tactical level planning, and provides battle staff expertise, advocacy, liaison, and

²⁵⁶Ibid., 1.

²⁵⁷Ibid., 32.

²⁵⁸Ibid., 24.

offensive air support C2 operations and employment in the conduct of combat operations.²⁵⁹

2. Specialty Summary.

The ALO leads, plans, organizes, and supervises day-to-day Tactical Air Control Party (TACP) and Air Support Operations Center (ASOC) operations and personnel both in garrison and while deployed. The ALO represents the Joint/Combined Forces Air Component Commander as a supporting member of the Army Commander's staff at the Battalion through Corps echelons in a coalition, joint, or interagency force. The ALO provides subject matter expertise to lead, plan, and execute Command-and-Control and terminal control of Air, Space, and Cyber operations in direct support of land component forces from Battalion through Corps, or as required, as part of a coalition, joint, or interagency force. The ALO may engage enemy forces utilizing advanced technologies and weapon systems to direct lethal and non-lethal fires and effects in close proximity to friendly forces as a Joint Terminal Attack Controller (JTAC).²⁶⁰

Leads, plans, and organizes TACP and ASOC operations. Advises and educates ground commanders on all aspects of air, space, and cyber power and integration of air, space, and cyber assets into the ground scheme of maneuver. Plans, processes, requests and conducts infiltration, surface movement, and ex-filtration functions with ground maneuver forces of operations that include air, space and cyber resources. Performs specified small unit tactics, mounted and dismounted navigation, and operates tactical combat vehicles in austere field conditions and environments.²⁶¹

3. Additional Responsibilities.

Plans, coordinates, and conducts joint fires to include close air support (CAS), air interdiction (AI), intelligence, surveillance and reconnaissance (ISR), and suppression/destruction of enemy air defenses (SEAD/DEAD). Oversees integration and effects of electronic warfare (EW) missions. Provides command and control and de-confliction of air and space assets directly supporting land component combat maneuver units. Synchronizes Air, Space, and Cyber operations with Army maneuver/Fires through the Military Decision Making

²⁵⁹Department of the Air Force, *Air Liaison Officer AFSC 13LXX CFETP* (Washington, DC: Headquarters, U.S. Air Force, 21 May 2013), http://static.e-publishing.af.mil/production/1/af_a3_5/publication/cfetp13lxx/cfetp13lxx.pdf (accessed 16 April 2014), 7.

²⁶⁰*Ibid.*

²⁶¹*Ibid.*

Process (MDMP), or other planning processes, to deliver and integrate lethal and non-lethal fires to enable joint and maneuver commanders to dominate their operational environment across the spectrum of conflict.²⁶²

Engages enemy forces utilizing advanced technologies and weapon systems to direct lethal and non-lethal fires and effects in close proximity to friendly forces. Employs visual and electronic marking equipment to direct airborne assets to desired targets or area of interest. If JTAC qualified, issues weapons release clearance during terminal attack control operations.²⁶³

The AFSC description and responsibilities illustrate a much different picture of the ALO, which contrasts with current joint and Air Force doctrine depiction. There is inclusion of training tasks and subject area knowledge that address liaison support. A list of relevant specific tasks and subject knowledge areas are below:

1. Subject level knowledge of understanding the basic principles of the following liaison officers: AMLO, ISRLO, SpaceLO and EWO²⁶⁴
2. Subject level knowledge to analyze liaison duties and responsibilities and air-ground integration²⁶⁵
3. Competent task knowledge and performance level to integrate air component functions and capabilities into the ground scheme of maneuver, e.g. CAS, ISR, EW, and Space.²⁶⁶
4. Subject level knowledge of understanding the basic principles of the following Air Force core functions: space, cyber, and airlift²⁶⁷

²⁶²Ibid.

²⁶³Ibid.

²⁶⁴Ibid., 22.

²⁶⁵Ibid., 31.

²⁶⁶Ibid., 33.

5. Subject level knowledge of understanding to identify basic facts of space impacts on air-ground integration and space support agencies.²⁶⁸

The 13LXX CFETP is comprehensive and addresses the desired traits of an ideal airpower expert to provide liaison support to the conventional land component. However, understand the 13LXX career ALO program is still nascent and in development.

²⁶⁷Ibid.

²⁶⁸Ibid., 35-36.

BIBLIOGRAPHY

- Air Land Sea Application Center. *Multi-Service Tactics, Techniques, and Procedures for the Theater Air Ground System*. Langley AFB, VA: Air Land Sea Application Center, 2007.
- Army Fires Center of Excellence Joint and Combined Integration Directorate and Air Combat Command Joint Integration Division. "Joint Air Ground Integration Cell (JAGIC)." Powerpoint briefing, 1 November 2012.
- Center for Army Lessons Learned (CALL). "Joint Air Ground Integration Cell." Center for Army Lessons Learned. 17 September 2008. <http://usacac.army.mil/cac2/call/thesaurus/toc.asp?id=35155> (accessed 23 April 2014).
- . *Capstone Concept for Joint Operations: Joint Force 2020*. Joint Electronic Library Plus. 12 September 2012. https://jdeis.js.mil/jdeis/jel/concepts/ccjo_2020.pdf (accessed 3 March 2014).
- . Chairman of the Joint Chiefs of Staff Instruction (CJCSI), 3170.01H, *Joint Capabilities Integration and Development System*. 10 January 2012. http://www.dtic.mil/cjcs_directives/cdata/unlimit/3170_01.pdf (accessed 9 November 2013).
- . Chairman of the Joint Chiefs of Staff Instruction (CJCSI), 3500.02B, *Universal Joint Task List Program*, 15 January 2014. http://www.dtic.mil/cjcs_directives/cdata/unlimit/3500_02.pdf (accessed 18 March 2014).
- Chief of Staff of the Air Force. Air Force Doctrine Document, Annex 3-03, *Counterland Operations*. Maxwell AFB, AL: Curtis E. Lemay Center. Updated 16 April 2014. <https://doctrine.af.mil/> (accessed 28 April 2014).
- . Air Force Doctrine Document, Volume I, *Basic Doctrine*. Maxwell AFB, AL: Curtis Lemay Center, October 2011. <https://doctrine.af.mil/> (accessed 8 April 2014).
- . Air Force Doctrine Document, Volume III, *Command*. Maxwell AFB, AL: Curtis Lemay Center, June 2013. <https://doctrine.af.mil/> (accessed 3 March 2014).
- . Air Force Doctrine Document, Volume IV, *Operations*. Maxwell AFB, AL: Curtis Lemay Center, June 2013. <https://doctrine.af.mil/> (accessed 3 March 2014).
- Chief of Staff of the Army and Chief of Staff of the US Air Force. "Memorandum of Agreement Between the United States Army and the United States Air Force for Army/Air Force Liaison Support." 31 March 2011.

- Collins, LTC David C. "Doctrine Development for the Employment of Tactical Air Forces." *Air and Space Power Journal* (November-December 1967). www.airpower.maxwell.af.mil/airchronicles/aureview/1967/nov-dec/collins.html (accessed 4 March 2014).
- Creswell, John W. *Qualitative Inquiry and Research Design: Choosing Among Five Approaches*. Edited by Denise Santoyo. 2nd ed. Thousand Oaks, CA: Sage Publications, 2007.
- DeGiovanni, LTC George. "Air Force Support of Army Ground Operations-Lessons Learned During World War II, Korea, and Vietnam." Study Project, US Army War College, Carlisle Barracks, 6 March 1989.
- Delmore, Erin, David Perera, Brian Fung, and Andrei Lvov. "Cyberspace/Cyber Warfare." *NSSI Space Weekly* (1 March 2013): 24-35.
- Department of the Air Force. *Air Liaison Officer AFSC 13LXX CFETP*. Washington, DC: Headquarters, U.S. Air Force, 21 May 2013. http://static.e-publishing.af.mil/production/1/af_a3_5/publication/cfetp13lxx/cfetp13lxx.pdf (accessed 16 April 2014).
- . *Tactical Air Control Party AFSC 1C4X1 CFETP*. Washington, DC: Headquarters, U.S. Air Force, 15 November 2009, Change 1, 28 September 2012. http://static.e-publishing.af.mil/production/1/af_a3_5/publication/cfetp1c4x1/cfetp1c4x1.pdf (accessed 6 April 2014).
- Department of the Army. ADRP 3-0, *Unified Land Operations*. May 2012. <https://armypubs.us.army.mil/doctrine/index.html> (accessed 27 April 2014).
- . Field Manual (FM) 3-0 C1, *Operations*. Washington, DC: Government Printing Office, 2008, Change 1, 22 February 2011.
- . Field Manual (FM) 3-92, *Corps Operations*. Washington, DC: Department of the Army, November 2010.
- . Field Manual (FM) 3-94, *Theater Army, Corps, and Division Operations*. Washington, DC: Department of the Army, April 2014.
- Flanigan, Ericka R. "Integrated Non-Kinetic Operations: The Frontier of Warfare in Search of Doctrine." Thesis, School of Advanced Air and Space Studies, Air University, Maxwell Air Force Base, June 2010.
- Gallooly, Major Patrick Coffey. "The Evolution of Integrated Close Air Support: World War II, Korea, and the Future of Air-Ground Combined Arms Synergy." Thesis, School of Advanced Air and Space Studies, Air University, Maxwell Air Force Base, 2011.

Gray, Colin S. "Understanding Airpower: Bonfire of the Fallacies." Research paper, Air Force Research Institute, Maxwell Air Force Base, 2009.

Headquarters, United States Army Fires Center of Excellence. *Army-Air Force Warfighter Talks 2013, Refine the Capabilities Resident in the Corps Air Liaison Element*. Memorandum, Fort Sill: Fires Center of Excellence, 2013.

Hostage, Lt Gen Mike USAF. "A Seat at the Table: Beyond the Air Component Coordination Element." *Air and Space Power Journal* (Winter 2010): 18-20.

HQ USAF/A3O-IR. *Air Force Universal Task List (AFUTL) and Core-Unit Mission Essential Task Lists (METLs)*. Joint Electronic Library Plus. February 2013. <https://jdeis.js.mil/jdeis/index.jsp?pindex=43> (accessed 18 March 2014).

Joint Chiefs of Staff. *Joint Doctrine Publications Current and Development*. 5 May 2014. <https://jdeis.js.mil/jdeis/index.jsp?pindex=2> (accessed 1 October 2013).

———. Joint Publication (JP) 1, *Doctrine for the Armed Forces of the United States*. Joint Electronic Library Plus. 25 March 2013. <https://jdeis.js.mil/jdeis/index.jsp?pindex=2> (accessed 28 March 2014).

———. Joint Publication (JP) 1-02, *Department of Defense Dictionary of Military Associated Terms*. Washington, DC: Government Printing Office, January 2014.

———. Joint Publication (JP) 2-01, *Joint and National Intelligence Support to Military Operations*. Washington, DC: Government Printing Office, January 2012.

———. Joint Publication (JP) 3-0, *Joint Operations*. Washington, DC: Government Printing Office, August 2011.

———. Joint Publication (JP) 3-03, *Joint Interdiction*. Washington, DC: Government Printing Office, October 2011.

———. Joint Publication (JP) 3-09, *Joint Fires Support*. Washington, DC: Government Printing Office, June 2010.

———. Joint Publication (JP) 3-09.3, *Close Air Support*. Washington, DC: Government Printing Office, July 2009.

———. Joint Publication (JP) 3-13.1, *Electronic Warfare*. Washington, DC: Government Printing Office, February 2012.

———. Joint Publication (JP) 3-14, *Space Operations*. Washington, DC: Government Printing Office, May 2013.

- . Joint Publication (JP) 3-30, *Command and Control of Joint Air Operations*. Joint Electronic Library Plus. 10 February 2014. <https://jdeis.js.mil/jdeis/index.jsp?pindex=2> (accessed 31 March 2014).
- . Joint Publication (JP) 3-60, *Joint Targeting*. Washington, DC: Government Printing Office, January 2013.
- . *Universal Joint Task List (UJTL)*. Joint Electronic Library Plus. J7 Directorate. 13 December 2013. <https://jdeis.js.mil/jdeis/index.jsp?pindex=43> (accessed 18 March 2014).
- . *Universal Joint Task List Policy and Guidance*. Joint Electronic Library Plus. J7 Directorate. 15 January 2014. <https://jdeis.js.mil/jdeis/index.jsp?pindex=43> (accessed 18 March 2014).
- . *Universal Joint Task List (UJTL)*. 5 May 2014. <https://jdeis.js.mil/jdeis/index.jsp?pindex=43> (accessed 1 October 2013).
- Lyle, Lt Col David J. “Seeing the Forest from the Sky: Joint Airpower through the Lens of Complex Systems Theory.” Thesis, School of Advanced Air and Space Studies, Air University, Maxwell Air Force Base, 2010.
- MacIsaac, David. “Voices from the Central Blue: The Airpower Theorists.” In *Makers of Modern Strategy: From Machiavelli to the Nuclear Age*, edited by Peter Paret, 624-647. Princeton, NJ: Princeton University Press, 1986.
- Odierno, GEN Raymond T., GEN James F. Amos, and ADM William H. McRaven. “Strategic Landpower: Winning the Clash of Wills.” White Paper, 2013.
- Organizational Development Branch, CDID, Concepts Development Division. Maneuver Center of Excellence Supplemental Manual 3-90, Force Structure Reference Data. Powerpoint Presentation, Fort Benning, GA, September 2013.
- Pirnie, Bruce R., Alan Vick, Adam Grissom, Karl Mueller, and David T. Orletsky. *Beyond Close Air Support: Forging a New Air-Ground Partnership*. Santa Monica: RAND Corporation, 2005.
- Schnelle, James A. “Tactical Air Control Party Support in Distributed and Special Operations.” Thesis, Marine Corps Command and Staff College, Quantico, VA, 2008.
- Steadman, LTC Kenneth A. “A Comparative Look At Air-Ground Support Doctrine and Practice in World War II.” Research Paper, Combat Studies Institute, Fort Leavenworth, 1 September 1982.

- TACP/ASOC Systems Branch. *A3FC - TACP/ASOC Systems Branch*.
<https://www.my.af.mil/gcss-af/USAF/ep/globalTab.do?channelPageId=s6925EC1344720FB5E044080020E329A9> (accessed 31-October 2013).
- Tielemans, Stephen S. "Transitions and Roman Gates Unbarred: The Joint Integration of Air and Ground Power in Past, Present and Future Operations." Thesis, School of Advanced Air and Space Studies, Air University, 2005.
- Tippett, Daniel W. "Proctoring the Joint Force: Networks, Hierarchy, and 21st Century Warfare." Thesis, School of Advanced Air and Space Studies, Air University, 2005.
- War Department. War Department Field Manual, FM 100-20, *Command and Employment of Air Power*. Washington, DC: Government Printing Office, 21 July 1943. www.ibiblio.org/hyperwar/USA/ref/FM/FM100-20/index.html (accessed 4 March 2014).
- Young, Capt Adam B., USAF. "Employing Intelligence, Surveillance, and Reconnaissance." *Air and Space Power Journal* (January-February 2014): 26-44.