

*The
Fairchild Papers*

Agile Combat Support Doctrine and Logistics Officer Training

Do We Need an Integrated Logistics
School for the Expeditionary Air and
Space Force?

J. Reggie Hall
Lt Col, USAF



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Dedicated To
Muir S. Fairchild (1894-1950), the first commander of
Air University and the university's conceptual father.
General Fairchild was part visionary, part keen taskmaster,
and "Air Force to the core." His legacy is one of confidence
about the future of the Air Force and the central
role of Air University in that future.

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Foreword

The Air Force global engagement vision and expeditionary air and space force strategy focus on the agile combat support (ACS) core competency as the foundation for the rapid projection of light, lean, and lethal air and space power forces. Lt Col J. Reggie Hall's *Agile Combat Support Doctrine and Logistics Officer Training: Do We Need an Integrated Logistics School for the Expeditionary Air and Space Force?* examines the evolution of USAF logistics doctrine, the linkage between doctrine, strategy, tactics, and training programs, and the corresponding application of logistics employment and sustainment functions in a deployed environment. In doing so, he analyzes the USAF's diverse logistics officer training programs to determine if there is a deficiency in interdisciplinary logistics employment and sustainment training. He ascertains whether or not that training shortfall reveals a gap between USAF logistics doctrine and expeditionary air and space force combat strategy. His study also investigates the USAF transition to the air and space expeditionary force (AEF) operational employment concept as the force projection mechanism for the expeditionary air and space force and the reliance on ACS as the primary enabler to identify specific areas where the absence of integrated logistics training impacts or potentially degrades mission success.

After these factors have been adequately analyzed and interpreted, Colonel Hall highlights the Army logistics officer training philosophy as a benchmark to gauge the effectiveness of integrated logistics training on expeditionary strategy and logistics officer professional career development. The origins, course development, and utility of the USAF Weapons School are presented as a historical reference for creating congruency between doctrine, tactics, and training. Red Flag training exercises are offered as a model for operational requirements-driven training and as an example of the opportunity to integrate logistics employment training in existing combat exercises. The weapons school is recommended as a model for the development of an integrated agile logistics course to develop multifunctional tactical logistics expertise. An integrated logistics school is recommended

as a means to bridge the gap between logistics officer training and AEF operational employment mechanisms.

Colonel Hall's proposed Agile Logistics School provides a venue to strategically align logistics officer training with expeditionary air and space force strategy and ACS doctrine. His recommendation establishes congruency with the USAF's global engagement vision and leverages logistics as a force multiplier enhancing the effective employment and sustainment of air and space forces. Air University Press is pleased to include *Agile Combat Support Doctrine and Logistics Officer Training: Do We Need an Integrated Logistics School for the Expeditionary Air and Space Force?* as one of its Fairchild Papers.



Dr. Shirley B. Laseter

Director

Air University Library & Press

About the Author



Lt Col J. Reggie Hall is a logistics readiness officer assigned to the Installations and Logistics Directorate, Headquarters USAF (USAF/IL), the Pentagon, as executive officer to the deputy director. He is the 2002 Air Force representative for the National Capital Area Combined Federal Campaign, working as a loaned executive in the DOD Campaign Office; president of the Logistics Officers Association's (LOA) capital chapter; and senior editor of *The Exceptional Release*, LOA's quarterly professional journal. Prior assignments include two squadron command tours (commander, 3415th Transportation Squadron, Lowry AFB, Colorado, from 1991 to 1992, and commander, 56th Transportation Squadron, Luke AFB, Arizona, from 1998 to 1999), major command and numbered air force staff-officer duties (director, Combat Resources and Readiness, Headquarters Air Force Space Command, as well as deputy director, Transportation, Headquarters Seventh Air Force, Osan, Korea, from 1992 to 1993), and AFROTC assistant professor of Aerospace Studies, Detachment 025, Arizona State University, from 1993 to 1996. Colonel Hall is a distinguished graduate of Squadron Officer School and a graduate of Air Command and Staff College (ACSC). This paper is based upon his ACSC thesis, which was a finalist for the Dean's Most Outstanding Research Project. He earned a Master of Science degree in logistics management from the Air Force Institute of Technology, graduating with honors. He and his wife Justine have four children—Justin, Samantha, Jacob, and Joslin.

Preface

I first became interested in the need for integrated logistics officer training during my assignment to Headquarters Seventh Air Force, Republic of Korea, as the deputy director of transportation. I was appointed to the commander's Contingency Operations Bare Base (COBB) assessment team as the logistics representative evaluating the capability of inactive air bases to support the reception, bed down, and sustainment of deployed USAF units during contingency operations. I assessed the full spectrum of support functions ranging from contracting, supply, and services to aircraft maintenance, logistics plans, and transportation. Trained exclusively in transportation, my learning curve proved quite steep as I began to understand and evaluate the critical contributions of each logistics discipline in supporting combat operations. My exposure to all the logistics requirements for force employment and basic understanding of the synergistic relationships between logistics functions served me well as the logistics representative to the director of mobility forces during the Team Spirit 1993 joint and combined forces exercise.

My concerns about the need for integrated logistics officer training increased after attending the Advanced Logistics Officer Course in 1997. I did not believe a two-week orientation on the basic functions of the various logistics disciplines provided the depth of knowledge necessary to meet the qualifications warranting a 21LXX "Logistics Officer" Air Force specialty code designation. After completing the Air Force's capstone logistics officer training program, I did not have sufficient understanding of those critical systems in each logistics discipline needed to discharge the cross-functional duties of a senior logistics officer (i.e., logistics group commander). Nor did I feel I had requisite knowledge of the integrated relationships and processes across the spectrum of logistics disciplines, as well as the in-depth expertise necessary to skillfully leverage those systems and maximize logistics support to the operational mission.

An occurrence during my tenure as a transportation squadron commander reinforced my concerns about the need for interdisciplinary logistics officer training. I received a tasking to de-

ploy a newly promoted captain to Bosnia to fill a provisional logistics squadron commander billet. I called the major command and asked why they were deploying an officer with only three months of career field experience (she had recently cross-trained from the air control specialty) to a critical forward location. I was both shocked and amazed to learn that my cross-trainee was the best available company grade officer in the command! At that moment I realized the Air Force must find a better way of identifying qualified officers to fill critical contingency requirements. I also recognized that we were doing a great disservice to our officers by sending them to perform integrated logistics duties without providing cross-functional logistics training, or, in this case, even initial training in their primary discipline. I knew there must be a way to better prepare logisticians for integrated duties in deployed assignments, and I suspected this lack of training would impact mission support in Bosnia.

Listening to this captain's deployed experiences confirmed my suspicions. Similar to my COBB assessments in Korea, her responsibilities as the provisional logistics commander encompassed the full spectrum of logistics tasks from transportation to supply and contracting. She learned all of these employed logistics functions on the job in an intense joint service environment. Although solid leadership and management skills compensated for the lack of expertise to some extent, the diverse logistics requirements were not mastered until a few weeks prior to departure. Similar reports from commanders who deployed logistics officers to Operation Allied Force corroborated her anecdotal experiences: The Air Force is sending young logistics officers to contingency locations to perform cross-functional logistics duties without the training required to do their jobs. Although these officers did what it took to prevent mission degradation, the time needed to master all the integrated logistics processes hindered their leadership effectiveness and reduced their ability to maximize and leverage logistics capabilities. Numerous conversations with fellow logisticians attending Air Command and Staff College provided further evidence of a deficiency in logistics officer training. Classmates' firsthand accounts of learning on the job while deployed to an

area of responsibility substantiated the requirement for a cross-functional logistics course. I decided to concentrate my research on this problem and investigate the need for cross-functional logistics officer employment training in the Air Force.

Acknowledgments

First and foremost, I thank God for blessing me with the opportunity to attend Air Command and Staff College (ACSC) and for providing me with discernment to see things that should be changed, the courage to change the things I can change, and the vision to pave the road leading to change. I am indebted to Maj Vicki J. Rast for her insightful guidance, timely encouragement, empathetic patience, and sage advice during this research. Special thanks also go to my ACSC logistics colleagues and logisticians in the field who shared their experiences and provided data for this study. My deepest appreciation and gratitude go to my loving wife Justine for always being my best friend and biggest fan—without her understanding, sacrifice, and assistance I could not have completed this study. Finally to my precious children—Justin, Samantha, Jacob, and baby Joslin—you are my love and my life, you are my inspiration.

Chapter 1

Integrated Logistics Officer Training—Do We Have It, Do We Need It, Can We Find It, and How Do We Get It?

Training is not a luxury; it's a necessity!

—Col Gary Buis

Air Warrior Commander, 1995

Training transforms an organization's valuable human resources into a motivated and educated workforce that is prepared to perform its mission. Training is connected directly to doctrine, for when stripped away from all its fanciful language, doctrine is quite simply what we believe and, therefore, what we should teach those who follow.¹ This study investigates the link between military doctrine and training to demonstrate the significance of transforming organizational principles, concepts, and beliefs into corresponding practical and tangible technical training that must equip personnel with the knowledge and expertise necessary to implement strategy and accomplish military objectives.

Methodology

This study examines the historical development of USAF logistics doctrine and explores the correlation between doctrine and logistics officer training programs established to support doctrinal concepts. This study evaluates relationships between USAF's global engagement vision, agile combat support (ACS) doctrinal core competency, expeditionary air and space force strategy, and logistics officer training to determine if there is congruency between vision, doctrine, strategy, and current logistics training programs required for expeditionary airpower projection. Current USAF logistics officer education and training is analyzed to discover if there is an absence of integrated logistics employment and sustainment training in the functional

courses, supplemental classes, and advanced education programs. ACS and air and space expeditionary force (AEF) operational employment procedures are investigated to ascertain whether or not current Air Force logistics officer training philosophy is strategically aligned with operational tactics and training required to employ and sustain combat capability.

Data Collection

A literature review of logistics journals, published professional military papers, and training catalogs provides topical background information from the existing body of knowledge. Personal interviews with doctrine subject matter experts, logistics group commanders, wing commanders, and senior USAF leaders (colonel and above) provide insight on their perspectives of deployed logistics officer responsibilities, impact of current training on combat capability, and the need for integrated logistics officer training. A survey—administered to logistics officers representing a cross section of expertise and experience in Air Force logistics career fields including aircraft maintenance, logistics plans, transportation, supply, and contracting—is the approach used for collecting data on the adequacy of current logistics training and the development of cross-functional expertise within the profession (see the appendix). Surveying the logisticians who possess deployed contingency experience determines whether those officers believe they were trained properly and whether they feel prepared for their duties in deployed locations. Survey data is analyzed using Spearman Rank-Order Correlation Coefficients statistical analysis via SPSS 8.0. Interview informants' perceptions and perspectives are combined with qualitative coding to develop logistics officer training attitudinal categories and to identify themes that respondents perceive as significant. The quantitative analysis highlights relationships that impact logistics officer training, duty requirements, and preparedness. Informants were selected from a variety of logistics officers who had interacted with the author throughout his 14-year career, fellow Air Command and Staff College students, and referrals. This “snowball” selection method simplified contacting informants, survey

administration, data collection, and data analysis. Unfortunately, due to the method of respondent selection, findings of this research cannot be generalized to the larger Air Force logistics officer population.

Benchmarking Officer Training: US Army's Approach, USAF Weapons School and Red Flag Exercises

The US Army Training and Doctrine Command (TRADOC) is reviewed to present a benchmark for organizing and prioritizing the progression of doctrine to training in a military institution's command structure and training philosophy. The Combined Logistics Captains Career (CLCC) course is evaluated to provide a benchmark for developing integrated training to meet the logistical challenges of an expeditionary force projection strategy. Establishment and evolution of the Air Force Fighter Weapons School and Red Flag exercises are offered as historical case studies to analyze the Air Force's response to a similar disparity between combat doctrine and training.

Notes

1. Maj James D. Gorby, USAF, "Air Force Logistics Doctrine," *Air Force Journal of Logistics*, winter 1980, 24.

Chapter 2

In the Beginning . . . There Was Doctrine

You must teach what is in accord with sound doctrine.

—Titus 2:1

Joint Publication 1-02, *Dictionary of Military and Associated Terms*, defines doctrine as, “the fundamental principles by which the military forces or elements guide their actions.”¹ Air Force Doctrine Document (AFDD) 1, *Air Force Basic Doctrine*, defines air and space doctrine as “a statement of officially sanctioned beliefs and warfighting principles . . . what we have come to understand based on our experience . . . fundamental principles . . . [that] guide . . . actions in support of national objectives.”² Distilled to the fundamental essence, Air Force basic doctrine is how we fight. Doctrine is the foundation of military capability; it provides the framework for organizing, training, and equipping forces to defend our nation and support our national objectives. The genesis of doctrine lies in the roots of history, for it is from our past experiences and observations that we devise and discern the best practices and most effective means to accomplish objectives.

The synthesis of historical lessons with our expectations and current environmental factors leads to the development of theories—that which an epistemic community believes and professes to be true based on empirical validation through repetition.³ The transformation of historical truths and theoretical concepts into codified principles about what we believe and profess becomes sanctioned as doctrine. Doctrine is a growing, evolving, and maturing process that requires a fusion of intellectual vision and practical experience to remain relevant and provide direction for strategic development. Prof. Matthew Cafrey’s History-to-Strategy model (fig. 1) graphically depicts the doctrinal development process.

The model depicts the cyclical relationship between experience, theory, doctrine, and strategy; it infers learning and an evolutionary approach to developing strategy. Learning stems

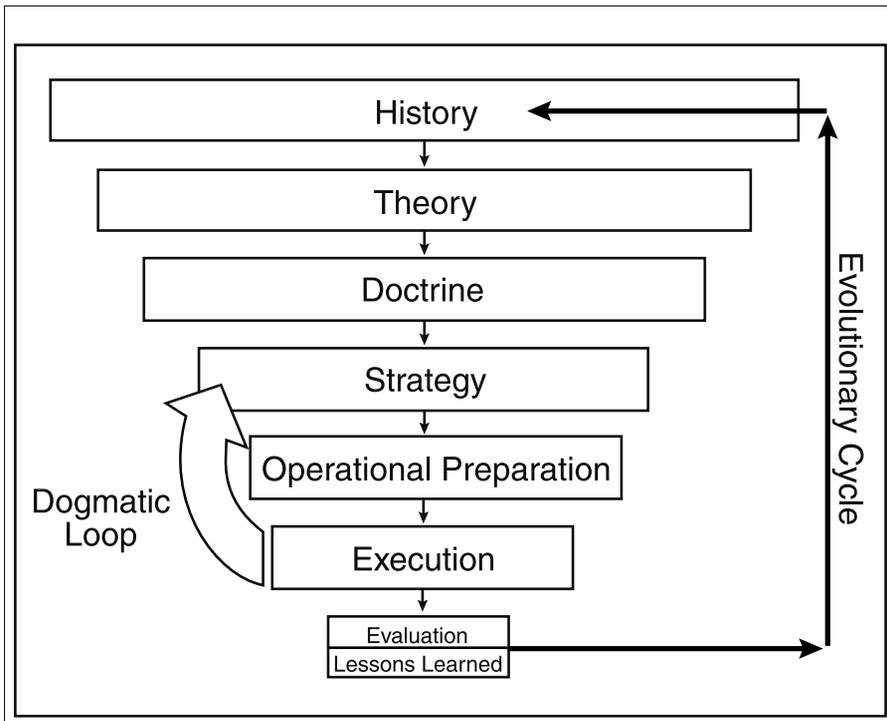


Figure 1. Caffrey History-to-Strategy Model

from the evaluation of strategy execution in the form of lessons learned from experience. These lessons learned enhance historical knowledge and can be interpreted using the historical record of related phenomena to support new theoretical development. This process in turn leads to doctrinal evolution. Professor Caffrey describes the learning process as “the lessons learned from experience drive changes in focus areas of importance and training priorities. Doctrinal development is an iterative process, a continuous loop that identifies the salient concepts strategists should build upon and the procedures tacticians should derive and practice in preparation for execution. If doctrine is not driving training then strategy is stagnant and self-substantiated dogma prevails.”⁴

Creation of Air Force Logistics Doctrine

The earth was without form and void, and darkness was upon the face of the deep.

—Genesis 1:2

The need for logistics doctrine and logistics officers trained to employ those principles supporting airpower operations is not a new requirement driven by shrinking budgets, USAF reorganization, downsizing, or the recent shift to an expeditionary force projection strategy. The search for operational Air Force logistics doctrine and training to develop expert logisticians began before the establishment of an independent Air Force.⁵ The Army Air Corps's initial attempt at Air Force logistics doctrine was the distribution of a general logistics planning document titled the Army Air Corps "Logistics Manual."⁶ From that inauspicious beginning, the logistics support element of airpower continued to develop in a reactive, piecemeal fashion based on technical orders and field experience. The difficulty in attempting to apply primarily Air Corps aircraft maintenance practices to the diverse Air Force logistics functions created problems in communicating roles, missions, responsibilities, and combat support requirements to the operators. Leaders in the USAF recognized this absence of comprehensive logistics doctrine and attempted to fill the void by establishing the Advanced Logistics Officer Course (ALOC) in 1955 at the Air Force Institute of Technology (AFIT) for the main purpose of training logisticians and developing logistics doctrine and philosophy.⁷ The course evolved into the AFIT "School of Systems and Logistics," and in 1967 a team of cross-functional logistics students undertook the task of developing foundational logistics doctrine as their thesis research project. Their AFIT thesis led to the formulation and 1968 publication of Air Force Manual (AFMAN) 440-2, *Air Force Logistics Doctrine*.⁸

As time progressed and missions expanded, the USAF made further attempts to revise and update logistics doctrine in the 1979 version of AFMAN 1-1, *Air Force Basic Doctrine*; the 1985 AFMAN 2-15, *Combat Support Doctrine*; and the April 1987 publication of AFMAN 1-10, *Combat Support Doctrine*.⁹ AFMAN

1-10 stirred heated debate in the logistics community due to exclusion of the word *logistics* from the title of the logistics source document. This debate proved more than mere semantics as AFMAN 1-10 encompassed a broader range of logistics functions than before, including nontraditional disciplines such as security, services, and civil engineering, which was more consistent with the joint concept of combat support. Apparently, the Air Force civil engineering and services communities did not consider themselves logisticians so the title served as a political compromise to push the document through to publication and get something out to the field after almost 10 years.¹⁰ The significance of the debate concerning combat support cannot be overlooked: It reflects an attitude and perception of logistics as a support function or precursor to employing combat power rather than an integrated operational art element available for a commander to influence and leverage combat capability. This separatist notion of logistics as an illegitimate and insignificant bystander in the art of war is epitomized in the German general staff's quote, "Logistics is a necessary evil . . . most often more evil than necessary." That attitude and disdain for logistics requirements would lead to the demise of the German army through the extended logistics lines of World War II campaigns in Russia and North Africa. Given the historical requirements of sustaining deployed forces and current realities of AEF employment practices, messing and housing deployed forces have been—and will continue to be—integral elements of expeditionary logistics. The summation of the Air Force journey towards logistics doctrine to date culminates with the development of ACS as a core competency of the global engagement vision for air and space power projection. However, the troublesome obstacle of linking doctrine to strategy and training to effectively employ air and space forces lingers on.

Development of Agile Combat Support Doctrine

What has been done will be done again; there is nothing new under the sun.

— Ecclesiastes 1:9

Similar to the AFIT interdisciplinary doctrinal development team—although at a much higher level—an integrated doctrine working group representing a cross section of USAF logisticians from the Air Staff, major commands (MAJCOM), and the Air and Space Doctrine Center developed the following ACS definition: “Agile Combat Support is the cornerstone of Global Engagement and the foundation for the other Air Force core competencies. Agile Combat Support creates, sustains, and protects all Air and Space capabilities to accomplish mission objectives across the spectrum of military operations. Agile Combat Support provides the capabilities that distinguish Air and Space power—speed, flexibility, and global perspective.”¹¹ Following the precedence established in AFMAN 1-10, the ACS definition expands the traditional scope of logistics consisting of maintenance, supply, transportation, and logistics plans and includes services, civil engineering, and force protection.¹² By definition, ACS has attained equal billing with combat operations as a foundational tenet of air and space power! What has been recognized by military historians, strategists, and tacticians from antiquity through the Persian Gulf War has been codified in our Air Force doctrine: Logistics is a core military operational art element critical to the successful employment and execution of combat power. As Martin van Creveld states in *Supplying War*, “Although logistics is admittedly an unexciting aspect of war . . . logistics make up as much as nine-tenths of the business of war.”¹³ During a 1996 presentation at the Smithsonian Institution, Gen Ronald R. Fogleman, Air Force chief of staff, emphasized the significance of ACS doctrine to airpower, “ACS is a vital part of what the Air Force provides the nation, this core competency was adopted to make air forces more expeditionary in nature, so we will continue to be the instrument of choice when national leaders want to engage quickly and decisively anywhere on the globe.”¹⁴

Having garnered the sanctioned endorsement of the Air Force chief of staff, it would appear that logistics has reached the pinnacle of operational legitimacy in ACS doctrine. We finally have a core competency that recognizes the criticality of logistics and is focused on the principles of war-fighting doctrine not peacetime organization. Anchored in sound doctrine

we can proceed with teaching the integrated functions that produce combat efficiency. Unfortunately, there is still the troublesome requirement to align training with ACS doctrine and to ensure the concepts we profess as vital to airpower are transferred down in the form of specific tactics, techniques, and procedures (TTP) developed to implement that doctrine effectively. Historically aligning military doctrine with strategy and training philosophies has been difficult, but nonetheless important, to ensure the successful application of strategy to achieve objectives. In 1915, Commodore Dudley W. Knox described the doctrine to training dilemma in the following manner: “To reach the ultimate goal of war efficiency, we must begin with principles, conceptions, and major doctrines before we can safely determine minor doctrines, methods, and rules. We must build from the foundation upwards and not from the roof downwards. . . . *The service which neglects so essential a part of war command as the indoctrination [read training] of its commissioned personnel is destined to fail in its ambitions for great achievement*” (emphasis added).¹⁵

Our aspirations are indeed lofty in establishing ACS as the cornerstone of global engagement. Those lofty ambitions rely on technological system capabilities and rest squarely on the shoulders of junior logisticians who must employ ACS functions in a deployed location and sustain combat airpower operations. The path to creating congruency within our doctrine, strategy, and training is self-contained in the principles of doctrinal congruency and strategic alignment. The road to recovery is paved by adherence to doctrinal priorities in our training methods. While there may be many differences about what doctrine should include and how it should be implemented, ACS clearly provides a comprehensive foundation for educating and training Air Force logisticians for war.¹⁶

Chapter 3 introduces salient data on training needed to achieve the objectives contained in ACS doctrine and necessary to perform the logistics functions mandated in AFDD 2, *Organization and Employment of Aerospace Power*; commander Air Force Forces (COMAFFOR), director of logistics (A-4) responsibilities. An evaluation of the congruency in Japanese World War II doctrine, strategy, tactics, and training philosophy

for gaining air superiority in the Pacific provides compelling evidence of the consequences in misaligning strategy, tactics, and training while employing combat air and space forces to achieve military national objectives.

Notes

1. Air Force Doctrine Document (AFDD) 1, *Air Force Basic Doctrine*, September 1997, 81.
2. Ibid.
3. Matthew Caffrey, Air Command and Staff College, Maxwell AFB, Ala., interviewed by author, 1 March 2000.
4. Ibid.
5. Lt Col Rodney L. Boatright, USAF, "Combat Support Doctrine: Where We've Been, Where We Are, and Where We Should Be Going," *Air Force Journal of Logistics (AFJL)*, summer 1992, 14-17.
6. Ibid.
7. Ibid.
8. Ibid.
9. Ibid.
10. Jerome C. Peppers, "Combat Support Doctrine," *AFJL*, fall 1992, 30.
11. Lt Gen William P. Hallin, USAF, "Agile Combat Support—The New Paradigm," *AFJL*, fall 1994.
12. Ibid.
13. Martin van Creveld, *Supplying War* (Cambridge: Cambridge University Press, 1995), 231.
14. Gen Ronald R. Fogleman, "Air Force Global Engagement Vision and Core Competencies," address at the Smithsonian Institution, Washington, D.C., 21 November 1996, n.p., on-line, Internet, 3 March 2000, available from <http://www.af.mil.news/speechs/current/GlobalEngagement.html>.
15. *AFJL* Special Section, "Combat Support Doctrine," winter 1986, 8.
16. Boatright, 16.

Chapter 3

Integrated Logistics Officer Training—Do We Have It?

Tomorrow's logistician must have a much better, more complete understanding of the entire flow of our logistics process. No longer can we afford to build discrete specialists in maintenance, or munitions, or supply, or transportation.

—Lt Gen Leo Marquez, USAF
Deputy Chief of Staff for Logistics
1985

Although spoken 17 years ago, the truth of the words above by Lt Gen Leo Marquez resonates today. His thought echoes a fact that military historians have recognized throughout the annals of warfare. The mobility and versatility of combat forces are dependent on the integration of operational logistics functions tailored for combat support. Historically, logisticians have been charged with feeding soldiers (services), providing fodder and fuel for horses and vehicles (transportation), and procuring uniforms, equipment, weapons, and ammunition (supplies).¹ Great military strategists—from Hannibal to Frederick the Great to Napoléon—understood the vital link between logistics and campaign success. More recent US leaders such as Generals George S. Patton, Colin L. Powell, and H. Norman Schwarzkopf realized that without logistics, victory in war is impossible.² The ACS core competency codifies that realization by establishing the basic principles that enable Air Force capability; regrettably, Air Force logisticians do not spend time studying the history of military logistics nor are they taught integrated logistics concepts in their basic, supplemental, or functional training programs. A historical perspective of logistics officer training at AFIT, the ALOC, and functional basic officer courses presents a baseline for comparing congruency between training and doctrine. A presentation of the historical evolution of logistics officer training in chapter 4 (Examining AFIT, ALOC, and Functional Area Training) lays the foundation for review-

ing the alignment and congruency between logistics doctrine and training. An examination of the current logistics operating environment and investigation of data trends and themes collected from survey and interview informants provides perspective on the adequacy of logistics training in facilitating the employment of doctrinal tenets in a deployed environment.

Statistical Correlations: Confirmed Relationships on the Absence of Integrated Training

The first correlation significant at the .05 level (.432, $n = 41$) identifying an absence of integrated training is deployed cross-functional logistics duties and having to learn on the job in a deployed location. The data analysis suggests that officers who were required to perform integrated logistics functions in a deployed location had to learn those duties in place. Several noteworthy respondents' comments further substantiate the integrated duty and on-the-job training (OJT) connection.

- Baptism by fire! Senior leaders expect performance based on rank and level of responsibility. If you do not know how, they expect you to find out how. Little or no time for training!
- There was no logistics training for the deployed environment provided prior to deploying. Everyday was a "fly by the seat of my pants" experience.
- Could not answer detailed questions about composition of munitions packages, hydrant compatibility, flow rates, et cetera. Made several WAGs (wild a-- guesses).

These excerpts from past deployments are consistent with the accounts of recently deployed officers. The "trial by fire" analogy also denotes an emergent cultural theme—that learning on the job without adequate training is the accepted method of earning professional credibility; an issue that will be discussed later in the text.

The second match adequately trained to perform deployed duties and having to learn on the job in a deployed location was significant at the .05 level (-.446, $n = 38$). Although this negative correlation was expected—that is, if the respondent was not adequately trained, there would be a strong perceived

need for OJT—the comments illuminated the breadth of cross-functional requirements and depth of knowledge required.

- As a deployed deputy chief of staff for logistics (LG), I was responsible for vehicle maintenance, operations, and fleet management as well as unit rotations, cargo, and passenger movement. My duties also included base supply, individual equipment, fuels, host-nation support, and incoming force bed down. One would think that the enlisted force would provide the missing expertise. However, this is a faulty assumption. Case in point: My passenger terminal noncommissioned officer in charge—a one-deep position—only had household goods experience. Between the two of us it was a challenge, to say the least, to run the Pax operation.
- I was outside the traditional logistics field. I did support group commander duties, responsible for billeting, messing, force protection, and morale, welfare, and recreation. I was really outside my comfort zone—something I had never done or been trained on.

Data analysis points toward a need for extensive cross-functional expertise and training at a level beyond cursory familiarization or introductory exposure. The dynamic and diverse challenges deployed logistics officers face are in accordance with ACS mandates and reach outside traditional logistics boundaries. The relevance of the correlation between necessity of integrated training and potential impact on the expeditionary air and space strategy are also examined.

Integrated Logistics Officer Training—Do We Need It? Connecting ACS Doctrine with Expeditionary Air and Space Force Strategy and Tactical Training

National (security is) endangered by an Air Force whose doctrine and techniques are tied solely to the equipment and processes of the moment. Present equipment is but a step in progress, and any Air Force which does not keep its doc-

trines ahead of its equipment and its vision far into the future can only delude the nation into a false sense of security.

—Gen Henry H. “Hap” Arnold

Gen Henry H. “Hap” Arnold’s prophetic words have particular relevance when applied to our implementation of ACS doctrine. Although diverse and comprehensive in nature, ACS relies heavily on the exploitation of advances in technology, communications, and information systems. ACS combat capability for future contingencies requires support systems to be smarter—needing less maintenance and inventory to reduce the logistics footprint and forward deploy light, lean, and lethal air and space power.³ Much of future logistics relies on the role of information. Information and technology remain paramount to leveraging capability. The fusion of advanced information, logistics, and transportation technologies allows for more precision, flexibility, and responsiveness in supporting and sustaining the war fighter at the point of need.⁴ However, a logistics force structure comprised of skilled and trained people is absolutely essential to forge relationships that will produce agile logistics.⁵ Information technology is essential for the replacement of mass quantities with velocity and time-definite deliveries, but we must have the capability to integrate those innovations in practical combat application. Advanced technologies alone do not equate to ACS. If we do not have trained personnel who can assimilate, analyze, and respond appropriately using system technologies to enable combat performance, we have not fully maximized logistics as a force multiplier. Maj Gen William Farnen, USA, retired, provides a vivid case in point describing the railway operations in Europe during the early phases of Operation Joint Endeavor. “Information could tell through in-transit visibility where the train cars were on the ground, but without any available railway control teams or specialists there was precious little the US could do to influence deteriorating situations. Information is good, but one must have the capability to act on it.”⁶

There is a real danger of becoming enamored with the logistics technological revolution and forgetting the necessity of comprehensive training required for the personnel tasked to

employ those systems in combat. That danger is increased when the information systems are integrated, linking a broad spectrum of diverse logistics disciplines and functions. If we are designing an interdependent system of technologies as the cornerstone of our combat employment strategy, then we must ensure that system includes adequate training for the airmen employing it in combat. We must ensure that not only are our systems smarter but that our personnel are also trained to effectively employ those systems. In an article discussing historical perspectives on future military logistics, Lt Col Karen Wilhelm suggests that intellectual change is essential. "The key change, however, must be intellectual change, for without intellectual change, technological change is essentially meaningless. . . . Logisticians who grasp technological change without making intellectual changes to fully understand and make the best use of the technologies are doomed to failure. Intellectual change is the requirement to make all others meaningful."⁷ Intellectual change begins with realistic training. The most effective implementation of ACS in the area of responsibility (AOR) requires integration of technology and cross-functional training for the tactical practitioners.

Statistical Correlations: Confirmed Relationships on the Need for Integrated Training

The data supported the hypothesis that there is a need to better prepare logistics officers to perform the integrated functions they are tasked to employ in an AOR. The first relationship "fit" deployed cross-functional logistics duties and the Air Force should better prepare officers for cross-functional senior logistics positions was significant at the .05 level (.564, $n = 41$). Logistics officers who performed integrated logistics duties perceived a need for those integrated skills in future leadership positions and also identified the requirement for additional training. The insight from this connection is the indication that cross-functional development is necessary for logistics officer proficiency in peace and in combat.

The second significant correlation identifying a need for expert training in professional development is having to "learn on the job" in a deployed location and attendance at an expert

level school would better prepare one to perform duties in the AOR. Data analysis indicates that those performing integrated logistics duties perceive cross-functional expert training as beneficial preparation. Respondents' observations capture the increasing need to grow cross-functional expertise to effectively implement the expeditionary air and space force strategy and the awareness that sister services have already addressed the training requirement:

- We are heading for an environment in which captains and majors will be required to know about our cross-functional areas as part of our AEF concept. We will deploy into situations where these mid-level managers will be the senior logistics representatives—they will require cross-functional experience long before they become LGs.
- Expert courses such as the Weapons School draw from the collective wisdom of its best and brightest pilots, including experiences learned in combat. Students are taught principles and spend hours perfecting them. Obviously, if we had such training in the logistics area, we would be much better off.
- Other service logisticians are not stovepiped. We need at least an operational-level understanding of all Air Force logistics.

The accounts of recently deployed logisticians and empirical data presented later in this study confirm the thoughts above. The future is now; junior officers are currently performing cross-functional duties and serving as senior logistics representatives in deployed locations.

Opportunity Costs of Strategic Misalignment—ACS Doctrine and Training Gap

The survey results and analyses of current logistics officer training programs reveal a gap between doctrine and training. This disparity in cross-functional training is also misaligned with ACS employment requirements. The gap between doctrine and training represents an opportunity cost in effective and efficient combat capability. The cost of inadequate training manifests itself in the amount of time logistics officers

spend learning on the job at deployed locations instead of arriving in the AOR fully prepared to perform their duties. By realigning training with doctrine, the USAF can capitalize on the opportunity to employ logistics as a force multiplier and eliminate the cost of inefficient training.

Organizations are strategically aligned when their vision, goals, and objectives are congruent. Successful organizations have a direct linkage between a well-conceived vision, well-defined goals, and specific objectives.⁸ The goals are what we plan to do (e.g., rapidly deploy and sustain light, lean, and lethal forces); and the objectives are what we do at the working level to reach those goals.⁹ All actions in the process must be properly balanced and support each other, the tactical competencies that determine how and if the goals will be met must align with the objectives accomplished to facilitate success. Steven W. Semler—noted scholar and speaker on organizational performance—indicates “alignment gives people in the organization the knowledge, capability, or skill [read training] and motivation to perform.”¹⁰ If tactics and procedures such as training are inadequate or missing, the steps required to accomplish the vision are incomplete. Gaps in objective support erode the strategic support structure of the overall mission, setting the stage for mission failure. Adm William J. Crowe Jr., chief naval officer, commented on the significance of alignment saying “we usually get the objectives correct, less so the goals and our vision is usually hopelessly out of date. That is why we win short-term but must react to the future.”¹¹

Air Force strategic misalignment is a slightly different scenario: We have a well-articulated vision and clearly stated goals; however, our methods for obtaining those goals are insufficient. Given the failed historical attempts to develop integrated training and survey data indicating a training deficiency, it would appear that we are locked in a dogmatic cycle driven by either a denial of the need for training or a refusal to develop training based on prevalent cultural biases—that is, “Any loggie worth his salt doesn’t need integrated training.” Figure 2 illustrates the development of a dogmatic training cycle.

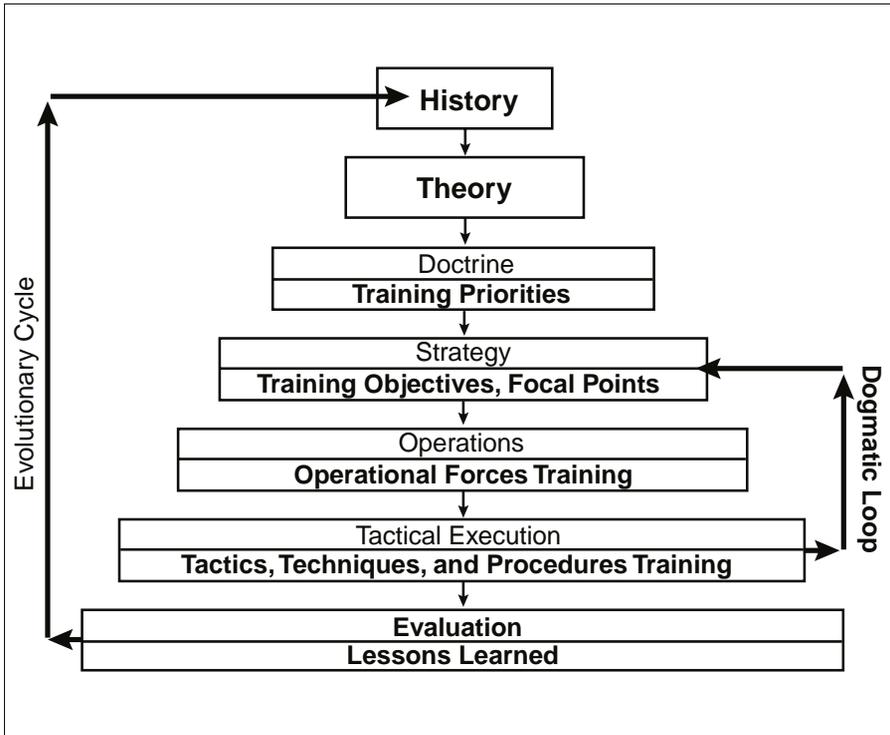


Figure 2. History-to-Training Model

This construct—built on the foundations of the Caffrey model—conceptualizes the progression of training from the specific tenets, which are entailed in doctrinal priorities to the broad TTPs that are developed and implemented to support that doctrine in combat. Similar to the thinking that leads to dogma in the Caffrey loop, when an evaluation of TTPs in the execution phase is either eliminated or ignored learning stagnates. The potential lessons learned are cast aside as an irrelevant anomaly. Cultural or political biases institutionalize preferred tactics regardless of effectiveness.

A historical example of dogma in action is the USAF's adherence to strategic bombing strategy, tactics, and training throughout World War II, the Korean War, and the Vietnam War irrespective of any impact those activities had on the adversary's will to fight. *The United States Strategic Bombing*

Surveys; Setup: What the Air Force Did in Vietnam and Why by Dr. Earl H. Tilford Jr.; and Dennis Showalter's article "The First Jet War" provide a detailed discussion of Air Force aerial warfare operations in the conflicts listed above. The urgency of the situation is heightened by the requirement established during the October 1996 Headquarters USAF AEF conference to rapidly deploy tailored force packages anywhere in the world, set up logistics production processes quickly, commence operations, and fly combat sorties within 48 hours.¹²

Everything Old Is New Again—Expeditionary Air and Space Force: Return to USAF Airpower Projection

The Air Expeditionary Force idea was born of a need to be able to react quickly. It was to get back to the rapid part of deployment. It was something we did very well back in the mid-1950s.

—Gen John P. Jumper
Commander
US Air Forces in Europe

Just as the search for logistics officer expertise dates back to the Army Air Corps, the AEF concept is also not a new endeavor. While renewed and refocused, it is strongly rooted in the history and traditions of airpower.¹³ There are several examples of AEFs deploying in World War I such as the British Number 29 Squadron's deployment from Gosport to Dover and the Royal Air Force involvement in World War II's Operation Torch in North Africa in 1942.¹⁴ In the mid-1950s the job of Nineteenth Air Force was to rapidly deploy anywhere in the world, and they did so to places such as Turkey, Lebanon, and other hot spots around the world.¹⁵ The 1996 Operation Desert Strike required immediate response to Iraq with limited aircraft providing a wide range of capabilities to meet the combatant commander's needs. Although the expeditionary air and space concept was driven by the factors mentioned above, at its core AEF is about structural change to create a more effective force.¹⁶ Maj Gen Michael L. Zettler noted that "since 1989,

which is generally considered the end of the Cold War, the Air Force has drawn down by about one quarter fewer people, yet our overseas deployment commitments have increased by a factor of four; in other words, only 75 percent of the people we used to have are doing over 400 percent more work than we used to do in terms of deployment.”¹⁷

The increased operations tempo and corresponding personnel tempo required to meet objectives of global engagement have driven a need to reduce numbers of personnel supporting deployments. Reducing the logistics footprint in the AOR to the minimum number of specialists necessary is based on the assumption that technicians have a very good knowledge of what they are doing. Unfortunately that baseline assumption is wrong. All survey respondents and interview informants with deployment experience deployed to the AOR without cross-functional expertise or training. In fact, it is not uncommon for company grade logisticians to be responsible for any or all logistics functions at a deployed location. Commanding a team of up to 35 personnel covering the broad spectrum of logistics specialties, they are usually the resident experts and senior logisticians on-site during a 120-day deployment.¹⁸ An account from a transportation officer deployed in 1998 to Tuzla Air Base (AB), Bosnia, as the Provisional AB group director of logistics vividly captures the significance of the current logistics-training dilemma:

There I was, watching the snowfall, contemplating the upcoming Thanksgiving Day. It seemed that everything was going well at my deployed location until the storm struck. One of our two aircraft deicers was inoperative and the snow removal equipment was on its last legs. At the same time, a detachment commander (DETCO) of the Joint Special Operations Task unit was complaining that he still didn't have the bottled water the contracting agent had promised to purchase the day before. Another DETCO [was] preparing to rent a fleet of rental cars on his own American Express card! On top of that, power production equipment just dropped off-line for another unit's mission planning cell, lack of liquid oxygen just became a shortfall for reconnaissance operations, and a C-130 rotator flight still needs to be established here. Critical spares are being held up at customs, and I still don't have commercial airline ticketing capability on-line. *Even though I had vehicle operations, vehicle maintenance, base supply and fuels, traffic management, aerial port, contracting, and civil engineering working for me, I had to figure out how to integrate their efforts to get the equipment running, keep the airfield open, and keep all the deployed organizations*

satisfied with a myriad of logistics concerns. What would have better prepared me for the challenge? An integrated logistics course demonstrating the dynamic and complex nature of providing agile combat support at a deployed location (emphasis added).¹⁹

Our increased expeditionary operations tempo has served to illuminate a long-existing absence in cross-functional logistics officer training and capability. The effects of manpower reductions and increased operations tempo—combined with the turning away from a containment-focused garrison force to a projection-focused expeditionary force—has exacerbated a preexisting condition which we can no longer mitigate with massive manpower. Our doctrine substantiates the reality of this requirement, AFDD 2, the Air Force “capstone operational document,” authoritatively prescribes cross-functional logistics tasks as key responsibilities of the COMAFFOR (A-4) director of logistics staff assistant.

COMAFFOR (A-4) Director of Logistics—A Doctrinal Requirement for Integrated Air Force Logisticians

The AEF response to global contingencies requires a fundamental paradigmatic shift in the way we think about, train for, and employ air and space power. Gen Michael E. Ryan, former USAF chief of staff, describes the cultural change and expeditionary mindset shift by saying “we are in the process of a significant transition in the way we do business, and this will require embracing a new culture and an approach to operations that emphasize rapid response. The AEF is a fundamental shift in the way we *think*, and how we organize, *train*, equip, and sustain aerospace [air and space] forces” (emphasis added).²⁰ USAF operational doctrine formalizes this paradigm and organizational shift in the employment of air and space power by subordinating Air Force elements within a Joint Task Force under a COMAFFOR. Air and space forces will be offered to the supported combat commander as a task-oriented, tailored organization called an air and space expeditionary task force.²¹ The COMAFFOR (A-4) director of logistics is responsible for logistics plans, force bed down, transportation, supply, maintenance, food and exchange services, civil engineering, explosive ordnance disposal, and related logistics activities.²² The A-4’s

job description mirrors the responsibilities prescribed in ACS doctrine: It appears that at least structurally our logistics doctrine and combat strategy are aligned and congruent. Looks can be deceiving; the AEF challenges for ACS require a comprehensive analysis of logistics support to determine how best to meet the war fighters' operational needs. The ability to rapidly deploy a tailored package of air and space power into the AOR and commence operations immediately requires that logisticians anticipate operational support needs and, in a real sense, know what the war fighters need even before they realize they need it. This prerequisite for new skills and the mental agility to arrive quickly and "fight on arrival" points towards more realistic training to ensure integrated logistics functions are executed rapidly and accurately. The experiences of another young logistics officer—captain rank—deployed to the 31st Air Expeditionary Wing, Aviano AB, Italy, as the Operation Allied Force A-4 provide a good example of the need to be proficient in ACS functions as resident logistics expert on the COMAFFOR staff.

Deployed to a provisional air base squadron as the LG and serving as an A-4 officer on the COMAFFOR staff, I was responsible for contract management, vehicle fleet management, vehicle maintenance, POL, TMO, air freight, bioenvironmental, civil engineering, base supply, and logistics plans redeployment functions. I learned loads of information through managing each that I would have not learned otherwise. Fortunately, trial-by-fire worked well for me in each case, but it is not the ideal situation and not a concept we should be comfortable handing to the provisional commanders of EAF/CCs. Working Log Plan assignments exposed me to several of the functions, but in many cases did not prepare me for managing most of them. Many of the processes I was responsible for I saw for the first time once deployed. It took a lot of time to become familiar with the functions I was managing. The learning curve was pegged, which made making key decisions effecting logistics outputs difficult. Exposure to these other logistics functions at an agile logistics school could have helped fill the gap (emphasis added).²³

The initial concept of operations phase for both the AEF and ACS development highlighted additional training requirements to support AEF strategy and ACS doctrine implementation. The USAF Scientific Advisory Board's review of the AEF operational employment procedures suggested that training must shift to an expeditionary emphasis. The advisory board specifically highlighted the need for establishing AEF flag exercise

training and minimal maintenance training, among others.²⁴ The board also recommended the Air Force provide training from classroom to the field that inculcates the AEF philosophy in all members of the Air Force.

The ACS concept white paper identifies training as required to optimize the capabilities of the force and institutionalize the concept.²⁵ The white paper also notes that realistic exercise scenarios are essential to maximize training results and all ACS elements must be properly represented to emphasize the roles these functions play in the employment of airpower. The Air Combat Command ACS concept paper denotes logistics support personnel training requirements for multiple related (cross-functional) skills as well as advanced education and advanced specialty training requirements to maximize effective ACS implementation.²⁶ This prerequisite to somehow acquire instant cross-functional expertise becomes paramount in the AOR where time is precious and every minute wasted learning on the job is a minute closer to mission failure. “If logistics cannot support the sequence of events in the operational plan, it is not a plan at all, but simply an expression of fanciful wishes.”²⁷ Failure to recognize the time required to provide logistics support or the delays caused by logisticians understanding and mastering the requirements on the job may force the operational commander to change his plan, which impacts the air campaign or impedes opportunities to exploit enemy weaknesses. So what does all this mean for the Air Force? What are the potential consequences? What are the answers to the problem?

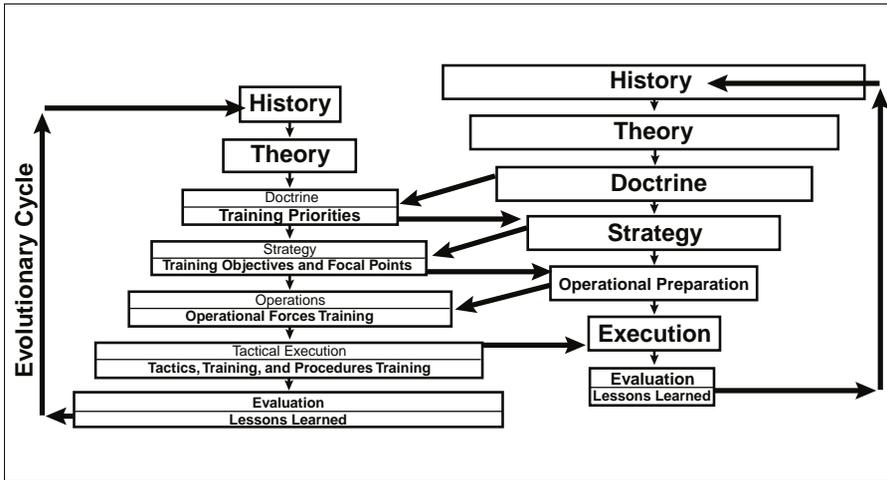
Integrated Logistics Training: The Need for Congruency between ACS Doctrine and Training

History has shown that military forces that did not maintain congruency between their doctrine, strategy, and tactics failed in combat. For example, in 1941 Japan had the most experienced pilots in the world—well trained and motivated—they used effective combat doctrine derived from campaigns against China and the Soviet Union.²⁸ Japan’s air and naval air forces doctrine was offensive and employed rapid combined operations of fighter, bomber, and reconnaissance aircraft to

perform offensive sweeps and close air support.²⁹ Their strategy was simple—destroy US, British, and Dutch power in the Far East, establish a sphere of influence, and defend the perimeter.³⁰ Japan was counting on a short war initially; but after the US response to Pearl Harbor, they prepared for a protracted period followed by a decisive naval battle or a favorably negotiated peace.³¹ Meticulous aircrew training was emphasized to hone operational expertise. However, in the drive towards perfection, the pilot production pipeline was extended over three years!

As the war progressed the congruency between doctrine, strategy, and training dissipated. Occupied territories were far too large to defend, and experienced pilots were lost on extensive long-range missions in places far from the center of the empire. By 1944, 90 percent of pilots with 300–600 hours were lost, yet the aircrew training cycle had not been accelerated to keep up with the attrition warfare strategy. The end of the war had reversed the experienced factor over the Pacific skies, and Japanese pilots with only 100 flying hours were engaging grizzled Allied combat veterans. Although the lack of Japanese raw materials and industrial capacity was a contributing factor in pilot production given the inability to produce adequate trainer aircraft, the emphasis on perfection, inflexibility in training schedules, and absence of surge capability severely hampered Japan's success in the air war.

Similar to the need for congruency between military strategy, operations, and tactics to ensure each level defines the objectives of the next, proper congruency between doctrine, strategy, and training is necessary to support the feasibility of achieving strategic success. Figure 3 depicts this relationship graphically. Doctrine and training evolve through the continual application of lessons learned from the most recent history. Those lessons become part of the wealth of historical knowledge, which provides the foundation for doctrinal development. Combining what we know from history with what we believe theoretically codifies the foundational principles and tenets in doctrine. What we profess as important—what we do—drives training priorities, how we do it. The macro-level training priorities influence strategy development and cascade



**Figure 3. History-to-Doctrine
and Training Evolutionary Congruency Cycle**

down in levels of detail through operational objectives and focal points, translating strategic concepts into training required to prepare operational forces for combat. The micro-level TTPs are developed and taught to hone the tactical skills needed for achieving operational objectives in the combat execution phase. Learning occurs as those tactics employed in combat are evaluated, and the feedback is incorporated in the evolutionary cycle via lessons learned. The vertical arrows leading from history to lessons learned in both pyramids depict the alignment of TTP training with operational objectives to effectively support tactical employment. The diagonal “Z” arrows connecting the History-to-Strategy model to the History-to-Training model represent the congruency between doctrine and training explained in greater detail via the “Z-Diagram.” AFDD 2 describes the need for congruent objectives and strategies, “the ‘Z’ figure illustrates the relationship between the objectives at each level. Objectives are normally derived from the next higher level; assessment of lower-level results lead to changes in higher-level history and aligns those objectives with congruent strategic, operational, and tactical training requirements necessary for the successful execution of

military campaigns, strategies, or objectives.”³² The History-to-Doctrine and Training Evolutionary Congruency model captures the significance of congruent strategy, operations, and tactics chronicled throughout the military.

Structurally, our doctrinal foundation and strategy are aligned and congruent. Conceptually we can illustrate the concurrent evolution of doctrine, strategy, and training to employ combat power. Logistics officer training—the foundational pillar that supports the entire construct—is out of balance. If ACS is the critical link in air and space power that we profess and if we truly regard personnel as our most valuable resource, then should we not provide adequate training to support our cornerstone doctrine and airpower employment strategy? The corrective mechanism for establishing congruency is to reconcile training with the core competencies and requirements of strategy and doctrine. Where can we locate a benchmark to align Air Force ACS doctrine, AEF strategy, and tactical logistics training? We need look no further than the origins from whence the Air Force came to find the road map—the United States Army.

Integrated Logistics Officer Training—Can We Find It?

The Air Force is not the only service that has had to adjust its doctrine to an expeditionary focus. Brig Gen Charles S. Mahan Jr.—commander of the XIII Corps Support Command—captured the need for change in a 1995 article: “There was a time when warfighters focused only on the Soviet threat and the war in Europe; those times are gone . . . The world and the Army have changed . . . The Army’s focus is directed towards multiple threats across the spectrum of conflict. . . . We are restructuring to be a force-projection Army able to rapidly deploy at a moment’s notice. . . . Those changes are driven by doctrinal changes in ‘how’ we fight and ‘how we sustain’ the fight—*multifunctional support doctrine not only compliments warfighting doctrine, it serves as the catalyst for supporting the fight* (emphasis added).³³

Whether it is called the catalyst or the cornerstone, both the Army and Air Force recognize the criticality of logistics in their war-fighting capability. The Army, however, has responded to this doctrinal requirement by restructuring its logistics officer training to develop multifunctional logisticians better prepared to support and sustain combat operations. If we truly embrace the heritage of airpower doctrine cultivated into operational strategy and separate tactics, techniques, and procedures at the Air Corps Tactical School, then it is also appropriate to postulate initial AEF logistics officer training using established Army multifunctional logistics training programs. As stated in Army Field Manual (FM) 100-5, *Operations*, “Logistics applies across the full range of military operations at all levels of war.”³⁴ The origins and evolution of TRADOC and the CLCC course are discussed in chapter 5, “Benchmarking Army Interdisciplinary Logistics Officer Training,” as a representative response to changing operational combat doctrine and strategy by aligning corresponding changes in combat support doctrine and training. Data collected from logistics officers’ firsthand experiences in deployed locations provides additional suggestions for methods to align training with expeditionary force projection requirements.

Statistical Correlations: Confirmed Relationships on Obtaining Integrated Training

The data analysis uncovered two correlating factors in identifying the means to obtain integrated training. *Attendance at an expert level school would better prepare me to perform duties in the AOR*, and *a selective expert level cross-functional school would provide a better career path* were a significant “fit” at the .05 level (.393, $n = 40$). Respondent observations suggest training as a method to improve performance and also as a means to prepare logistics officers for combat responsibilities and senior-level positions:

- Training adds to the competence and preparation of our officers.
- To be qualified to lead multiple logistics disciplines requires more education than is currently provided.

- It would allow training to mirror the AEF and the tasks required of us as the concept develops.
- Be selective, and give those who succeed the opportunity to go to the top!

The data indicating a perceived need for a selective, integrated, expert logistics course combined with the empirical confirmation of the Army's current cross-functional programs suggests that integrated logistics officer training is available.

Integrated Logistics Officer Training—How Do We Get It?

Examining Air Force solutions to pilot combat proficiency requirements as a model for correcting logistics combat training deficiencies is both practical, given our ACS training shortfalls, and relevant as a baseline for developing realistic expeditionary employment training for Air Force logisticians. A discussion of the development and benefits of the USAF Weapons School and Red Flag exercise program is provided in chapter 6.

The data support the benefits of leveraging the legacy of operational training as a pattern for establishing training aligned with doctrinal requirements. A significant correlation .05 (.405, $n = 35$) that occurred *at a selective expert level cross-functional school would provide a better career path and attendance at an expert level course would better prepare officers for integrated senior-level responsibilities*. This relationship is predictable; that is, if a training program provides a better framework for career development, then attendance in the course should better prepare attendees for senior leadership. Respondents' comments illuminate suggested courses of action the Air Force can take to provide integrated logistics officer training:

- Need more formalized and standardized training for our junior officers. Presently there is too much "hit and miss" going on.
- The level of information at ALOC is too basic. It needs to be followed up with higher-level information.

- A formal, in-residence course providing in-depth analysis of the operational tenets of all logistics disciplines—with focus on the interrelationships among each discipline as well as core responsibilities associated with the students' future level of responsibility—is needed.

Emergent Findings

Thirty-four unexpected correlations emerged from the data analysis. Although the quantity is too numerous to discuss in this study, a few of the emergent relationships are noteworthy. There was a relationship at the .05 level of significance (.525, $n = 36$) between *attendance at an expert level course would better prepare officers for integrated senior-level responsibilities and the current logistics Cross Flow Program adds value to the Air Force*. Respondents' comments reflect a perception of mitigating or hedging the extent of value added in cross-flow training:

- I agree that it adds value; I am not sure it works in practice. The USAFE/LG told me that she needed a better understanding of transportation during Allied Force. Learning on the fly was difficult and late to need for the fast moving operation.
- Expanding the base can only aid the participants as well as prepare them for future positions. Right now it is the only thing we have that provides practical experience in other disciplines.

Similar to the sentiment of compromise in the publication of AFMAN 1-10 without logistics in the title to expedite getting something out to the field, the emergent theme appears to be that some level of cross-functional exposure is better than nothing at all. Another emergent relationship with a .05 significance (.410, $n = 41$) was *selective expert level cross-functional school would provide a better career path and perception of the role logistics plays in the implementation of the AEF*. This correlation is somewhat puzzling as it spans peacetime logistics officer career development and the significance of logistics in war-fighting strategy. Respondents' comments again provide insight into the perceptions that integrated logistics train-

ing is critical in peacetime to better prepare logistics tacticians to employ combat strategy in war.

- For the AEF concept to be successful, it must rely heavily on our ability to deploy and sustain. Training is key; if we do not have log officers who know how to do this, then there will be a steep learning curve when someone gets called up.
- Logistics is still the vital link. My guess is that we will be even busier than before as we reach across the “loggie” community to support a myriad of deployments. If we do not have the proper training, each person will have to reinvent the wheel . . . it may get done but it will not get done right.
- My perception is that “logistics will happen somehow and someplace”—a bad way to do our jobs.

Recognizing the criticality of logistics in the viability of the AEF, respondents’ perceptions of the gap in training to support the AEF strategy is in line with the findings of this research.

A final emergent theme was respondent cultural and attitudinal perceptions on the value and need for logistics training. Many respondents indicated that valuable learning was only possible through hands-on training in the “school of hard knocks.” Lt Gen John M. Novak alluded to this mentality in his discussion of changes in career path development: “Officers may be hesitant to leave a familiar environment. However, I believe performance of a leader outside one’s comfort zone is a true test of character and leadership abilities.”³⁵ Although adaptability is a key element of leadership, it is disturbing to discover that, culturally, logisticians believe the measurement of professional expertise is in situational survival and *not* expertise gained through experience combined with training. As Professor Caffrey noted during an interview: “The notion of creating your experts through ‘trial by fire’ rites of passage has been tried by our pilot brethren with catastrophic results. The notion of *élan* as the most critical attribute cost many a French soldier his life in World War I. Ignoring practical training

requirements is not only a reflection of dogma, it's just not a smart way of preparing to fight if you want to win the war."³⁶

Unsupported Hypotheses and Disproved Assumptions

One of the initial assumptions driving this study was that deployed duties would correlate with the questions regarding adequate training, learning on the job, and the need for integrated training. The hypothesis was that deployed logisticians would indicate a need for integrated training to adequately perform deployed duties. However, there were no significant correlations between "deployment over the last 10 years" and any other factor. The faulty assumption was viewing deployment as an operational mechanism instead of as a duty. It appears that the requirement to deploy is not a trigger for training evaluations, but the nature of the duties performed in the AOR is. Cross-functional duties and responsibility for integrated logistics functions are more accurate indicators of training adequacy and the perceived need for interdisciplinary training. Additionally, many respondents deployed and performed duties within their primary career field. Those respondents remained satisfied with their level of training. Data analysis indicates that not all deployed logisticians are required to perform integrated duties at their deployed locations.

A second assumption was that informants would not view ALOC attendance and the Cross Flow Program as adding value to logistics officer training. However, there was an emergent correlation at the .05 level of significance (.356, $n = 34$) between *ALOC adds value to logistics officer education, training, and development* and *the current logistics Cross Flow Program adds value to the Air Force*. Respondents' observations indicate a favorable perception of the value added but are hesitant to fully endorse the current programs:

- ALOC is a good course, however not where it needs to be for cross-functional aptitude, which is necessary.
- ALOC provides some value, but limited.
- Cross Flow could be improved.
- Cross Flow adds value, but people still have a penchant to identify with one specialty over another.

My assumption that logistics officers would find little value in current career development programs was incorrect. The data revealed a personal bias towards ALOC based on my individual experiences. The “something is better than nothing” perspective appears to permeate throughout logistics officers’ perceptions of doctrine, training, and professional development programs.

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Chapter 4

Examining AFIT, ALOC, and Functional Area Training

But everyone who hears these words of mine and does not put them into practice is like a foolish man who built his house on sand. The rain came down, the streams rose, and the winds blew and beat against that house, and it fell with a great crash.

—Matthew 7:26–27

AFIT has a long history of providing graduate logistics education focused on teaching concepts and techniques for managing logistics functions. Critical analyses combined with quantitative as well as qualitative methods are used to establish an intellectual foundation for understanding and applying managerial principles and concepts.

AFIT Graduate Logistics Management and Continuing Education Courses

Following the tradition established in 1955, AFIT creates experts in the traditional logistics disciplines of supply, transportation, contracting, maintenance, management (logistics plans), and several nontraditional functions such as cost analysis and software systems management.¹ The education programs are designed to develop the logistics generalists needed today and in the future by fostering a broader look at the entire logistics field.² Although each program's curriculum includes courses in related logistics areas to increase comprehension of the interdependence of the various functions, the primary purpose is to improve students' skills in a specific functional area.³ Students are being educated to fill specific functional area positions in the field coded as requiring an advanced academic degree.⁴ The Department of Logistics Management education program offers a systems perspective of the overall logistics field aimed at providing the student an

appreciation for the interrelationships of logistics planning, transportation, maintenance, and acquisition.⁵ Concentrated on sharpening graduate level academic expertise, the AFIT courses do not address operational or tactical application of combat logistics techniques and procedures in a wartime environment. In response to the logistics communities' need for a "real world" logistics training course, AFIT established the first combat logistics course in 1985 to expose managers to wartime logistics operations and planning.⁶ AFIT's Department of Logistics Management education programs continue to provide a broader selection of courses to meet operational training requirements.

AFIT offers a series of four developmental classes in cross-disciplinary logistics management to provide exposure to the broad spectrum of logistics systems.⁷ Comprised of lectures, discussions, group activities, and exercises, these professional development courses' primary positive impact is the interaction between the mix of logistics disciplines, officers, enlisted personnel, and civilians.⁸ LOG 299—the current Combat Logistics course—has evolved to examine the impact of logistics on combat operations and the support of national policies. It is a two-week, mid-level professional development course, which provides a multiservice view of logistics in a combat environment that exposes students to wartime roles and responsibilities stressing policy and doctrine and their effects on the ability to conduct combat operations.⁹ The course culminates with student participation in the development of a time-phased force deployment document, which they apply in a war game to help them learn to resolve logistics problems. Although the interdisciplinary interaction is valuable, LOG 299 primarily focuses on the logistics planning process not the ACS logistics employment functions. All the supplemental logistics courses in the Department of Logistics Management catalog focus on policies, programming, and planning not integrated logistics employment functions.

The Air Force *Education and Training Course Announcements* database, which lists all formal schools, contains only two integrated logistics courses: AFIT's LOG 299 and the Air Education and Training Command's (AETC) ALOC. Supplemental training

courses—such as the Contingency Wartime Planners Course, Joint Doctrine Air Campaign Course, and Joint Operation and Execution System class—are focused primarily on deliberate and crisis action planning. Although they enhance understanding of planning, developing, and executing a joint air operations plan to deploy appropriate forces and logistics support and employ the right mix of airframes and munitions, none concentrate on the roles and missions an officer must be familiar with as a deployed provisional squadron or group LG or COMAFFOR (A-4).¹⁰ ALOC emerged as the second formal program developed after the establishment of the AFIT School of Logistics in the long procession towards creating cross-functional logistics expertise.

Advanced Logistics Officer Course—The Attempt to Create Cross-Functional Logisticians Continues

Envisioned as an integrated graduate-level logistics course designed to prepare field grade officers for cross-functional logistics assignments, ALOC was the preliminary means devised to bridge the gap between officers with specialized functional experience and the integrated logistics knowledge required for the newly created 21L “Logistician” Air Force specialty code (AFSC). AETC developed the course to allow field grade officers to put the final touches on their experience and expertise in preparation for increased integrated logistics responsibilities. The thrust was to put their experience and knowledge to the test using case studies, computer simulations, and problem-solving exercises focusing on the interrelationships and complexities of joint war fighting, wholesale and retail logistics, acquisition, and integrated logistics processes at both the staff and unit levels.¹¹ The idea of this capstone program was to make field grade officers fully aware of the process interactions across the entire logistics functional spectrum and expose students to hands-on case studies, computer simulations, operational and problem-solving exercises, and role playing. These applications in near “real” scenarios would serve to better prepare students for senior logistics leadership positions.¹² Regrettably, ALOC did not develop into the rigor-

ous integrated capstone program conceived during inception but evolved into a two-week familiarization seminar.

ALOC was structured as a two-week cross-disciplinary logistics orientation course to provide training in the skills required to apply integrated approaches to logistics disciplines in support of war fighting and operational and training requirements.¹³ Topics included acquisition weapons systems support, wholesale or retail life cycle process, and utilization of the Air Reserve Component.¹⁴ Students were provided cursory level academic instruction in nongraded lessons covering the basic duties of each discipline. Small group exercises, scenario analysis, quizzes, and tours of various commercial logistics operations complete the course offerings. Officers were tasked to prepare a brief presentation on their area of expertise, as an example a transportation officer would brief the responsibilities of the various jobs held in the career field and the duties performed in their current positions. The course was aircraft maintenance-centric with the final exercise being a simulated sortie generation tasking to support an air operations plan, air tasking order. Similar to the LOG 299 course, one of the primary benefits of ALOC is the opportunity to crosstalk logistics topics and share information with logisticians from around the world. Although exchanges and interaction with fellow professionals is beneficial, the scope of ALOC by no means satisfies everything required to meet the material needs of Air Force combat units.

Foolish Builders—Air Force Functional Logistics Officer Courses

Air Force logistics officer training programs across the disciplines as a whole do not provide interdisciplinary training in their basic officer courses. Reviewing the curriculum for each logistics AFSC reveals a concentration on the peacetime activities of each functional area. The six-week transportation basic officer course teaches students the major historic events of transportation, along with the responsibilities of vehicle operations, vehicle maintenance, and combat readiness.¹⁵ Aerial port operations and traffic management are included in the

instruction as well as classroom deployment exercises and an overview of the relationships between base functions. There are no lessons presented on supply, contracting, logistics plans, or aircraft maintenance functions. The basic supply operations officer course covers 54 academic days focused on the skills and knowledge needed to perform the duties of supply officers in the management of the Standard Base Supply System.¹⁶ The program is divided into phases with topics ranging from basic supply functions, stock policies, and equipment management to fuels support and contingency/wartime missions support.¹⁷ Similar to the transportation course, logistics disciplines such as contracting, plans, and aircraft maintenance are not contained in the supply curriculum. The remaining logistics officer initial training courses follow a similar pattern emphasizing functional specialization as a foundational basis in the classroom for acquiring expertise through application and experience in the field. The Career Field Education Training Plans for each career field requiring task qualification for upgrade certification do not contain cross-functional logistics sections or core tasks.

Although the basic logistics officer training courses are structured to build specialty expertise to facilitate company grade officers' technical development, the Air Force provides the opportunity to acquire knowledge in a second logistics discipline through the Cross Flow Program. As they grow, officers cross flow to another logistics area to gain integrated logistics experience. They are initially assigned to a new unit to gain familiarity with the terminology, mission, and organization before they attend a bridge course. The bridge courses are abbreviated versions of the basic officer technical training courses and assist in the transition to the new career field. The objective of cross flow is to develop holistic officers who can effectively manage logistics as a complete process preparing them to meet Air Force requirements.

Notes

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Chapter 5

Benchmarking Army Interdisciplinary Logistics Officer Training

Therefore whoever hears these words of mine and puts them into practice is like a wise man who built his house on rock. The rain came down, the streams rose, and the winds blew and beat against that house; yet it did not fall, because it had its foundation on the rock.

—Matthew 7:24-25

In 1973 the Army reorganized and established TRADOC to incorporate the training, instruction, formulation of fighting doctrine, and weapons requirements activities under one command focused exclusively on training, teaching, and developing the Army.¹ The idea was to put combat development back into the schools, concentrate on doctrine, and train soldiers in that doctrine. The Army needed a performance-oriented program with a train-evaluate-train assessment system that required soldiers to perform to established standards and forged a better link between the classroom and tactical mission requirements.² TRADOC's first commander, Gen William E. Depuy, believed that combat-focused training had been neglected: "I think you should train a man for the job he is going to perform, and then you can educate him so that the intellectual and moral environment in which he pursues his particular job will be enhanced . . . the prime objective should be effective weapons-systems performance and there should be a solid link between doctrine and training."³

Wise Builders—Army Combined Logistics Captains Career Course

Established in 1993, CLCC is one of those revolutionary training courses General Depuy envisioned. Created to meet the logistical challenges of an expeditionary Army, CLCC

produces multifunctional logisticians better prepared to manage the requirements of supporting combat. A 20-week course designed to provide all Army logistics officers formal training in cross-functional logistics, CLCC brings together company grade officers from munitions, supply, transportation, aviation logistics, and the medical services corps.⁴ The course is divided into three phases and prepares officers to serve in positions requiring multifunctional skills similar to those performed by an Air Force COMAFFOR (J-4) director of logistics. Phases one and two are primarily preparatory instruction. Phase one is a seven-week block of professional military education similar to Air Force Squadron Officer School. Phase two contains five weeks of advanced technical development in the student's core specialty.⁵ Phase three is where real multifunctional logistics training occurs. During this eight-week block, students are taught battlefield tactics and challenges of combat support in all areas of logistics including fueling, maintaining, transporting, and sustaining soldiers, equipment, and weapons systems. Phase three culminates with a practical applications logistics estimate exercise.⁶ CLCC graduates understand the details of logistics in war fighting and are conversant in the concepts of cross-functional logistics employment on the battlefield.

CLCC training is also a part of the Army's response to reorganization and reductions in force strength. By creating multifunctional logisticians who can adapt quickly to requirement changes and fill multiple logistics billets, CLCC provides the manning flexibility and versatility to support a force projection strategy. The Army recognizes the criticality of logistics in war fighting and is making a long-term investment in human resources by training technically proficient, tactically competent logisticians to perform multifunctional operations across the spectrum of disciplines. General Mahan emphasized the significance of CLCC in the Army's strategic plan while addressing a 1995 graduating class: "Preparing young officers today for increased senior level responsibility tomorrow begins with providing a doctrinal foundation for everything you do. . . . Not only must you be technically proficient; you must be a creative and innovative trainer, a problem solver, and a leader in

changing times. Learning integrated logistics tactics, techniques, and practices will help you apply that doctrine and make you a better-prepared officer and logistician, regardless of the mission or the place.”⁷ By recognizing that experiences as a captain lay the foundation for logistics officers’ future careers, the Army is developing junior logistics officers with integrated logistics expertise and growing future executives with the capability to leverage the logistics system from “factory to foxhole,” streamlining process times and multiplying combat force capability. The Army has taken integrated training from the classroom and applied it to the battlefield, incorporating realistic logistics integration in the National Training Center (NTC) field training exercise program.

Eliminating the Blind Spot—Using Operational Experience to Align Doctrine and Training

Capitalizing on the wealth of lessons learned from experiences in Southwest Asia, the historical record of proven combat operations over the last 10 years and feedback from logisticians in the field, the Army refined combat support doctrine and operational training to incorporate logistics functions. As an example, one of the valuable lessons learned for Operation Desert Storm was that soldiers and leaders did not understand the critical issues of distribution on the battlefield. Because it is only in the combat environment that leaders deal with “realistic” logistics problems and learn about the integration of the total system, the problem was intensified during the war.⁸ The distribution management problem could have been avoided if high-intensity training in a realistic environment would have been conducted in peacetime, equipping soldiers, leaders, and managers with an understanding of the system.⁹ The training shortfall on the battlefield and the importance of integrated logistics training was substantiated during the joint Army and Air Force Kurdish humanitarian assistance during the second phase of Operation Provide Comfort.

In the second phase of Operation Provide Comfort, the military mission was providing security over a large area of northern Iraq and southeastern Turkey while nonprofit civilian

organizations assumed humanitarian aid distribution responsibilities.¹⁰ The joint staff tasked to support the operation was responsible for the full range of logistics from aviation and vehicle maintenance, transportation, and supply to base operating support including billeting, dining facilities, and subsistence activities.¹¹ The joint staff learned that logistics support consists of much more than delivering food, fuel, and ammunition. It includes understanding the relationships between different functions and knowing how and when to manipulate those activities to maximize support. Consolidating personnel expertise improved logistics capabilities; however, a full cadre of in-place seasoned troops will not be available at most deployed operations.¹² The expeditionary experiences from deployed personnel and need for integrated logistics training were also echoed by participants in field exercises. Col Michael F. Flannery, commander of the 164th Support Group, US Army Reserve, reflected on his responsibilities and training during Exercise Golden Bear '91: "The 164th was assigned multifunctional logistics roles. Responsibilities included personnel services such as clothing and equipping soldiers, arming them, fueling, fixing, and repairing vehicles, moving assets, and protecting operations. . . . Accomplishing the additional logistics functions was difficult and required a broad understanding of almost all disciplines."¹³ According to Colonel Flannery, the two most important lessons learned from Golden Bear '91 were the need for a standardized NTC multifunctional logistics scenario to disseminate integrated doctrine by hands-on experience, and additional security and force protection training for deployed personnel.¹⁴ Combining the operational feedback from the field with the understanding that combat arms leaders at all levels must understand the relationship between combat capability and combat support, the Army incorporated integrated logistics activities into NTC exercises.

Training as You Fight—Integrating Combat Logistics in Operational Training

The training requirement highlighted by Colonel Flannery combined with an emerging emphasis on the Army theater

opening force module concept of integrated logistics infrastructure convinced the NTC commanding general to develop an integrated combat logistics training program.¹⁵ Combat support and combat services support units are tasked to conduct reception, onward movement, staging, and integration (ROSI) and sustainment and regeneration operations to enhance the combat commander's ability to build combat power and move forces for tactical advantage.¹⁶ Units deploy to the NTC and exercise supporting the ROSI, sustaining and regenerating forces, redeploying a brigade, rolling up a logistics base, and redeploying. To maximize training benefits, notional missions including resource shortfalls and other limitations are given to units to further simulate the difficulties—"fog and friction" of integrated logistics wartime operations.¹⁷ Based on demonstrated unit proficiency, NTC personnel can accelerate or reduce the tempo of operations, adding realistic time constraints into planning and executing operations.

Benchmarking Army "doctrine to training" provides precedence for establishing integrated Air Force logistics training to more effectively support expeditionary forces. This interservice comparison also supplies examples to bridge the gap between doctrine, strategy, and training and establishes a framework for integrated logistics officer career development. The NTC "train as you fight" example provides a template for including logistics in combat exercises. Although Army training parallels Air Force logistics training deficiencies, the Weapons School and Red Flag legacies are prime examples of Air Force training programs driven by operational combat requirements to maximize wartime skills proficiency.

Notes

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Chapter 6

Applying the USAF Weapons School and Red Flag Templates

“In the late 1940s a group of veteran combat pilots were assembled in the Nevada desert to pass on lessons learned by themselves and fallen comrades to a new corps of fighter pilots. Highly skilled in aerial combat, their expertise was earned the hard way—in the arena of combat by trial and error. These self-taught experts were brought together for the single purpose of passing on their expertise for others to use in future combat.”¹ The US Army Air Corps recognized an operational requirement for more proficient aerial gunners well before the immediate needs of World War II.

Origins of the Air Corps Gunnery School and Progression to the USAF Weapons School

The Air Corps Gunnery School was established in June 1941 to train and qualify aerial gunners for combat duty.² At that time, the most current Air Corps doctrine emphasized that unescorted bombers—protected only by their gunners—“would always get through” to the target and defeat any air enemy. Although the costly lessons learned over German skies would prove that theory wrong, training to support that doctrine was standardized in the Air Corps. Enlisted gunners gained experience shooting moving targets on railway cars in the Nevada desert *before they were sent into combat*.³

Established in 1949, the USAF Fighter Gunnery School trained instructors in all aspects of gunnery, rocketry, and dive-bombing. Faculty also developed methods and techniques for all related equipment and procedures focused on solving training problems in tactical units.⁴ Designated as the USAF Fighter Weapons School in the 1950s, the program evolved from producing gunnery experts to producing technical experts who would be leaders and top instructor pilots. Driven by feedback from operational squadrons, lessons learned on

the battlefield, the expansion of more advanced threats, and developments in airpower doctrine, the course curriculum expanded.⁵ It was during this time that the school established a tailored syllabus for each aircraft and began pursuing operational research and development initiatives. The Weapons School's focus is concentrated exclusively on training elite pilots to become the most qualified instructors, thus producing weapons systems experts both in the air and on the ground.⁶ Students are taught everything about their weapons system and the most effective tactics in employing all the weapons for their aircraft, as well as advanced levels of all Air Force combat systems.⁷ The origins, history, and mission of the Weapons School reveal a striking similarity between the combat driven need to improve pilots' tactical training and the ACS doctrine and AEF requirement for cross-functional logistics employment training. Highlighting the value these graduates add to the Air Force war-fighting mission—and their return on the training investment—accentuates the potential for similar returns from integrated logistics school graduates.

Value and Utility of Weapons School Training: Leveraging Tactical Expertise to Enhance Air and Space Power

As the Weapons School evolved in the 1950s, USAF also began to assess the foundational elements necessary for success in peacetime and wartime operations. Effective leadership emerged as the central factor in organizing, training, equipping, and employing air and space power for successful operations in peace and in war.⁸ Focusing on leadership as a force multiplier, this school perpetuates leadership qualities typically found at the colonel level by cultivating those attributes through challenging training.⁹ Brig Gen John Barry—56th Fighter Wing commander and Weapons School graduate—describes the focus of Weapons School's training philosophy as "the practice of applying lessons learned is a key element of Weapons School training, each sortie focuses on in-flight leadership as students rapidly react, assess, and adjust to the challenges of the situation. We are not only building expert tacticians but we are also growing future

leaders.”¹⁰ Weapons School graduates set the standard of excellence for Air Force combat units. These leaders return to their units as role models and the next generation of commanders; they are central to the quality, effectiveness, and readiness of combat forces.¹¹ The school’s curriculum teaches graduates how to build a weapons training program in an operational squadron and provide academic and flying programs to the squadron members thereby enhancing unit effectiveness and combat readiness.

The value of the Weapons School training in meeting war-fighting needs of air and space power application and in preparing officers for senior leadership is compounded by the practical utility provided to the field. The school conducts intensive reviews of the most recent lessons learned from major conflicts or wars; and conferences are hosted to determine what worked, what did not, and what training can be improved.¹² Information gained from the conferences is incorporated in training and disseminated to units throughout the Air Force. Weapons School graduates apply their expertise in times of crisis as well. During Operations Desert Storm and Allied Force, instructors deployed to serve as advisors on commanders’ staffs. As Col James Conroy observed, “You want your experts there when you’re fighting the battle; the Weapons School believes that people always perform to the highest level to which they have been trained, and to that degree that they have learned from and applied lessons from the past.” Col Bentley Rayburn, Weapons School commandant from 1993 to 1995, captured the contributions of the Weapons School saying, “We are known in terms of our value to the Air Force. The fighter world has always known who we are and what we do.”¹³ Training tactical aviation experts and building future leaders satisfied one element of the combat aviation training requirement; however, the Air Force still needed realistic threat training to better prepare aircrews for combat challenges.

Origins of Red Flag: The Need for Comprehensive Aerial Combat Training

Red Flag was established in 1975 to more properly prepare aircrews for the challenges faced in actual combat. In

Warfighters: The Story of Weapons School and the 57th Wing, Rick Llinares recounts the pressing need for aircrew combat training, “Aircrew losses in Vietnam were the prime motivator in developing a comprehensive, realistic threat simulation exercise. The majority of losses in Vietnam occurred within the first 10 missions flown, the workload and unfamiliar environment overwhelmed the aircrews. Air Force studies clearly identified the fact that aircrew effectiveness improved significantly once they crossed the ten missions mark.”¹⁴

This Vietnam loss rate stood in stark contrast to the 12:1 kill ratio achieved by the Air Force during the Korean conflict. The significant US advantage was attributed to training and pilot skills in employing better air combat tactics.¹⁵ Recognizing the correlation between training and combat effectiveness, the Air Force applied the historical evolution cycle depicted in the Caffrey History-to-Strategy model and revised training procedures.

Red Flag exercises simulate the rigor of war fighting. Flying against enemy aircraft exposes aircrews to the stresses of battle, better preparing them for their first combat missions.¹⁶ Colonel Conroy notes “the goal is to improve combat capability by reducing the learning curve in that critical initial phase and increasing the experience level through realistic training in an air, ground, and space threat training environment.”¹⁷ The Red Flag combat-oriented training is integrated with joint and combined service components. A typical mission involves more than 50 aircraft launching, employing, and recovering together.¹⁸

Although Red Flag training is a critical element of aircrew training, it is not directly linked to the Weapons School curriculum. Lt Col Barbara Collins explains “Weapons School is not integrated with Red Flag, although we do interact with them. Their mission is training aircrews for their first combat experience, not building expertise. Weapons School students have already honed their combat skills; our job is to make them better instructors and leaders. Both programs, Red Flag and Weapons School, serve the needs of the Air Force and enhance combat capability by providing realistic training.”¹⁹

Red Flag Integrated Combat Training—A Model for Requirements-Driven Logistics Training

Red Flag integrated air combat training aligns joint and Air Force air and space power employment doctrine with training and ensures aircrews are trained in the tactics supporting that doctrine. Red Flag training is also congruent with established air operations strategy and tactics of “how we will fight” and provides an ideal model for addressing integrated logistics training deficiencies. The key factor in applying this template to logistics is a documented operational need for training. As Col Tom Jeffcoat, former Weapons School Space Division director, emphasized during discussions addressing the need for integrated logistics training, “You must avoid backing into a solution or creating a polemic. You must start with real world examples of the requirement for the training (e.g., when wing X deployed to contingency X, the standard aircraft utilization rate could not be supported due to logistics issues that a better trained logistics officer could have overcome.”²⁰ Primary data from interviewees and survey respondents’ personal accounts along with secondary examination of authoritative doctrine and current logistics training programs provides evidence of the combat-driven need for cross-functional training. Two additional accounts from logisticians deployed to Southwest Asia further substantiate the training requirement. A lessons-learned report from a deputy commander for Maintenance during the first 30 days of operations in Saudi Arabia in 1990 indicated that forgotten equipment, lack of spare parts, and interrupted resupply plagued initial F-16 operations.²¹ Over seven years later, a strikingly similar report from an F-15 maintenance officer also deployed to Saudi Arabia indicated several factors, including lack of sustainment capability, which drove the aircraft mission-capable rate below 50 percent after only a month of combat sorties.²²

Although Red Flag exercises and Weapons School training are not connected, opportunity exists to link integrated logistics expertise and tactical application exercises by combining the elements of both programs to meet expeditionary combat requirements. The development of combat TTPs to better prepare fighter pilots for war and the application of that train-

ing in realistic hands-on, performance-based evaluations such as Red Flag serve as conceptual models for the development of an integrated logistics officer course. The need to build integrated logistics experts and provide them realistic combat training is just as critical for successful employment of the AEF operational concept as it was for tactical aviation in Vietnam. Recommendations of recently deployed F-117 maintenance officers capture the similarity in training requirements, "A site for AEF exercises needs to be developed. These exercises are needed to train logisticians on deployment, bed down, sustainment, and redeployment. The operations community trains using Red Flag, joint force air component commander exercises, and command and control exercises. The logistics community needs realistic training as well."²³ Reducing the learning curve in initial combat operations is also vital in supporting AEFs. A RAND feasibility study briefed at the 1998 Agile Logistics Users meeting supported the AEF 48-hour bombs-on-target concept of operations. The study noted that in order to meet the 48-hour mark, challenging logistics support timelines would have to be maintained with little room for error or delay.²⁴ Applying the lessons learned from combat aviation training to create combat logistics training provides an opportunity to leverage the lessons of history. Building agile logisticians from the aviation training template aligns with the legacy and traditions of the Weapons School philosophy, "History teaches that combat capability improves with experience . . . the results of which are lower loss rates and higher effectiveness."²⁵

Notes

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Chapter 7

Conclusions and Recommendations

Logistics and logisticians are always catching up with doctrine. If logistics is to be a success, more emphasis must be placed on logistics earlier in the doctrine cycle. Logistics is not the bill payer. It is the weighted value added for battlefield success. . . . The crux of the problem is that we are without a true azimuth to follow, and we don't practice what we preach.

—Maj Gen William Farman
US Army, Retired

This research identifies a significant deficiency in integrated logistics officer training. The data reveals a disparity between Air Force ACS logistics doctrine, AEF strategy, operational employment practices, and logistics officer training programs: The Air Force logistics core competency, cornerstone logistics doctrine, and combat strategy remain incongruent and misaligned. Corresponding logistics officer professional development deficiencies caused by the absence of multifunctional logistics training are also identified. Logistics officers are not adequately trained to perform integrated duties in deployed locations. The imbalance between our doctrine and training philosophy exposes a fault line originating in the support structure of our global engagement vision continuing through the expeditionary force projection strategy and the logistical TTPs needed to employ that strategy. This logistics training fault line lies at the very heart of our AEF strategy, and the tremors resonate throughout our AEF operational employment procedures. We must bridge the gap and align our objectives and strategy with doctrine by maturing combat capability through training and educating logistics officers to employ systems at the tactical and operational levels.¹ Then, and only then, will our espoused doctrine—what we say and our doctrine in use; what we do—be congruent.

If we do not acknowledge the urgent need for integrated logistics training, we are placing successful execution of the global engagement vision at risk. The scope of the potential problem is vast. At worst, it undermines the Air Force's ability to effectively project air and space power and degrades AEF capability. At best, it delays the employment of air campaigns to the supported joint force commander and degrades the speed, flexibility, and lethality tenets of air and space power. The potential for disaster is magnified if we do not institutionally train our logistics experts to employ light, lean, and lethal air and space power in the AOR.

Recommendations

Several logistics officer training areas requiring further study emerged during this research:

- The Air Force should use the analysis of the logistics officer survey data as an indicator for further investigation into the methods used to “grow, train, groom, and educate” logistics officers. The survey provides a baseline data collection instrument that should be administered to the larger Air Force logistics officer population to acquire and assess logistics officer perceptions.
- The logistics officer cultural values of “rites of passage” learning experiences and “trial by fire” training should be investigated to determine if these beliefs are prevalent within the Air Force logistics officer population.
- Existing logistics officer training programs such as the AFIT Combat Logistics course and ALOC should be evaluated to determine if expansion to include integrated logistics curriculum is feasible. Candidate locations should also be identified to incorporate realistic logistics combat employment exercises with course material.

A cross-functional logistics officer training course modeled after the Army Logistics and Weapons School programs is recommended as a solution to bridge the gap between logistics officer training requirements and ACS doctrinal principles and AEF employment strategy. A selective expert-level integrated

logistics course located at Nellis AFB, Nevada, and interacting with the USAF Weapons School and Red Flag is suggested as the course location. Employment and redeployment aspects of the Red Flag combat exercises offer ideal capstone, hands-on training application and evaluation opportunities for the integration, interaction, and synchronization of integrated logistics training in real-world scenarios.

Logistics officers require a broad base of technical expertise, job knowledge, and work experience to meet the demands of senior logistics positions and manage logistics as an integrated and complete process.² In essence, enhancing logistics officer competency and performance in combat as well as logistics officer professional development hinges on developing multifunctional officers to fill multidisciplined jobs across the logistics spectrum in all grades. “The essential element is training; it is a basic requirement in assuring our logistics officers are prepared for success. Our current training and career paths do not develop officers for key positions that are multidisciplined and multifaceted.”³ An agile combat logistics

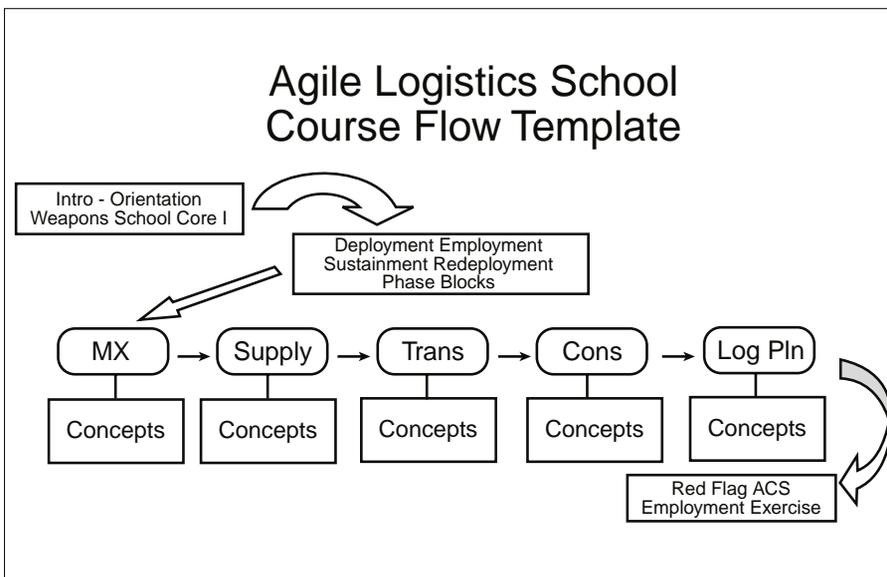


Figure 4. Proposed Agile Logistics School

school, such as the course interacting with Weapons School and Red Flag programs, would better prepare logistics officers for employing logistics in peace and war. Figure 4 outlines the proposed Agile Logistics School course flow and depicts a Weapons School introduction and Red Flag capstone exercise.

Just as the Weapons School creates the “instructor’s instructor” and builds future operational leaders, the Agile Logistics School would “enable the logistics enabler” and prepare logistics officers for the challenges of integrated logistics leadership positions. Nellis AFB provides the ideal environment for teaching the realities of integrated logistics requirements and expeditionary constraints in the “train as we fight” airpower exercises. Creating multifunctional logistics practitioners will leverage the rapid employment of air and space forces.

Notes

1. Lt Col William T. McDaniel Jr., “Combat Support Doctrine: Coming Down to Earth,” *Air Force Journal of Logistics (AFJL)*, spring 1987, 13-16.
2. Lt Gen John M. Novak, “Changing Logistics Career Path,” *AFJL*, fall 1994, 1.
3. Lt Gen John M. Novak, “Logistics Career Development—A Reality,” *AFJL*, spring 1995, 1.

Appendix

Logistics Officer Survey

1. At what level of the Air Force organizational structure are you currently assigned?

- | | |
|---|---|
| <input type="checkbox"/> A. Flight | <input type="checkbox"/> G. Joint Forces Staff |
| <input type="checkbox"/> B. Squadron | <input type="checkbox"/> H. Joint Chiefs of Staff |
| <input type="checkbox"/> C. Group | <input type="checkbox"/> I. Department of Defense |
| <input type="checkbox"/> D. Wing | <input type="checkbox"/> J. Department of Transportation |
| <input type="checkbox"/> E. Numbered Air Force | <input type="checkbox"/> K. Headquarters US Air Force |
| <input type="checkbox"/> F. Major Command | |

2. What was your last duty title and position within your organization?

3. How many years of active duty Air Force experience do you have?

- A. 1-4**
- B. 5-10**
- C. 11-15**
- D. 16-20**
- E. 21-25**
- F. 25 Above**

4. How many years of logistics experience do you have?

- A. 1-4**
- B. 5-10**
- C. 11-15**
- D. 16-20**
- E. 21-25**
- F. 25 Above**

5. Have you been deployed during or in support of a contingency operation (e.g., Desert Storm, Provide Comfort, Deliberate Force, and Allied Force) within the last 10 years?

- A. Yes. If so, list the deployments:**

- B. No**

6. Were your logistics duties and responsibilities in the AOR cross-functional requirements or exclusively in your primary career field?

- A. Cross-Functional Logistics Duties
- B. Career Field Specific Logistics Duties

If you performed cross-functional logistics duties, describe the tasks you were directed to accomplish.

7. I was adequately trained to perform the duties required in the AOR.

- A. Strongly Agree
- B. Agree
- C. Disagree
- D. Strongly Disagree

Please Explain:

8. I had to learn “on the job” to become proficient in the tasks I was required to perform in the AOR.

- A. Strongly Agree
- B. Agree
- C. Disagree
- D. Strongly Disagree

Please Explain:

9. If you had to learn your duties “on the job,” how do you think that affected mission accomplishment?

10. Attendance at an expert level cross-functional course similar to the USAF Weapons School would have better prepared me to perform duties in the AOR.

- A. Strongly Agree
- B. Agree
- C. Disagree
- D. Strongly Disagree

Please Explain:

11. Combining all logistics AFSCs into one 21L AFSC will benefit the Air Force.

- A. Strongly Agree
- B. Agree
- C. Disagree
- D. Strongly Disagree

Please Explain:

12. Leaving the aircraft maintenance AFSC 21A as an independent career field and combining the remaining logistics AFSCs into 21L will benefit the Air Force.

- A. Strongly Agree
- B. Agree
- C. Disagree
- D. Strongly Disagree

Please Explain:

13. The Air Force currently merges the logistics officer AFSCs into the 21L AFSC at the lieutenant colonel (O-5) career point. Do you think this is the appropriate time to consolidate the logistics disciplines?

- A. Yes. Please Explain:

- B. No. Please Explain:

14. Combining all the logistics AFSCs into a 21L AFSC from the logistics officer accession point will benefit the Air Force.

- A. Strongly Agree
- B. Agree
- C. Disagree
- D. Strongly Disagree

Please Explain:

15. At what point in a logistics officer's career do you believe logistics AFSCs should be merged?

Please Explain:

16. What type of education and training do you believe would be required to certify cross-functional logistics qualification at the career point you suggested in question 15?

17. Have you attended the Advanced Logistics Officer Course (ALOC)?

- A. Yes
- B. No

18. Do you understand the mission of ALOC?

- A. Yes
- B. No

Please Explain:

19. ALOC in its current form provides expert level cross-functional logistics training.

- A. Strongly Agree
- B. Agree
- C. Disagree
- D. Strongly Disagree

Please Explain:

20. ALOC adds value to logistics officer education, training, and development.

- A. Strongly Agree
- B. Agree
- C. Disagree
- D. Strongly Disagree

Please Explain:

21. Completing ALOC qualifies an officer to perform the duties required in a 21L position.

- A. Strongly Agree
- B. Agree
- C. Disagree
- D. Strongly Disagree

Please Explain:

22a. Do you believe attendance at ALOC at the major (O-4) career point is the appropriate timing for the course?

- A. Strongly Agree
- B. Agree
- C. Disagree
- D. Strongly Disagree

Please Explain:

22b. In your opinion what is the ideal purpose of ALOC and appropriate career timing for attending the course?

23. Do you believe the development of an expert level cross-functional logistics course would threaten or eliminate the need for ALOC?

- A. Strongly Agree
- B. Agree
- C. Disagree
- D. Strongly Disagree

Please Explain:

24. I understand the current logistics officer Cross Flow Program.

- A. Complete Understanding
- B. Some Understanding
- C. Little Understanding
- D. No Understanding

Please Explain:

25. The current logistics Cross Flow Program adds value to the Air Force.

- A. Strongly Agree
- B. Agree
- C. Disagree
- D. Strongly Disagree

Please Explain:

26. Logistics officers who have completed cross flow get the opportunity to use their cross-functional skills in subsequent assignments outside of their primary AFSC.

- A. Strongly Agree
- B. Agree
- C. Disagree
- D. Strongly Disagree

Please Explain:

27. Being qualified in two logistics AFSCs enables a deployed logistician to perform the cross-functional logistics tasks required in the AOR.

- A. Strongly Agree
- B. Agree
- C. Disagree
- D. Strongly Disagree

Please Explain:

28. The current cross flow career timing (4- to 6-year captain) is the appropriate point for officers to broaden their logistics expertise.

- A. Strongly Agree
- B. Agree
- C. Disagree
- D. Strongly Disagree

Please Explain:

29. An expert level cross-functional logistics course similar to the USAF Weapons School would eliminate the need for a cross flow program.

- A. Strongly Agree
- B. Agree
- C. Disagree
- D. Strongly Disagree

Please Explain:

30. There is a career path identified for logistics officers that provides guideposts for advancement to senior logistics positions (e.g., logistics group commander).

- A. Strongly Agree
- B. Agree
- C. Disagree
- D. Strongly Disagree

Please Explain:

31. There is a need for a more clearly defined career path for logistics officers, which provides guideposts for advancement to senior logistics positions (e.g., logistics group commander).

- A. Strongly Agree
- B. Agree
- C. Disagree
- D. Strongly Disagree

Please Explain:

32. The establishment of a selective expert level cross-functional logistics course would provide a better framework for a logistics officer career path.

- A. Strongly Agree
- B. Agree
- C. Disagree
- D. Strongly Disagree

Please Explain:

33. Current logistics officer career development (e.g., job experience, education, and training) fully prepares logistics officers to adequately perform the duties required in senior logistics positions (e.g., logistics group commander).
- A. Strongly Agree
 - B. Agree
 - C. Disagree
 - D. Strongly Disagree

Please Explain:

34. The Air Force should better prepare logistics officers (e.g., job experience, education, and training) for the responsibilities of senior logistics positions (e.g., logistics group commander).
- A. Strongly Agree
 - B. Agree
 - C. Disagree
 - D. Strongly Disagree

Please Explain:

35. Attendance at an expert level cross-functional logistics course would better prepare logistics officers for the responsibilities of senior logistics positions (e.g., logistics group commander).
- A. Strongly Agree
 - B. Agree
 - C. Disagree
 - D. Strongly Disagree

Please Explain:

36. Employment of the various logistics functions capabilities is operational art.
- A. Strongly Agree
 - B. Agree
 - C. Disagree
 - D. Strongly Disagree

Please Explain:

37. What is your perception of the role logistics plays in the implementation of EAF?

38. In your opinion, how critical is logistics employment and sustainment (agile logistics) to the success of the EAF meeting the Air Force *Global Engagement* strategic goal?

- A. CRITICAL. Foundation upon which all other USAF core competencies depend on.**
- B. IMPORTANT. Coequal with other core competencies.**
- C. NONCRITICAL. Support function necessary for the implementation of other core competencies but not a stand-alone element of airpower projection.**

39. What is your perspective regarding the proliferation of USAF expert level officer training schools in the operational fields such as Air Mobility Warfare, Space Operations, Combat Air Delivery Systems, and the proposed KC-135 Aerial Refueling Course?

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**Agile Combat Support Doctrine and
Logistics Officer Training**

**Do We Need an Integrated Logistics School
for the Expeditionary Air and Space Force?**

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