EFFECTIVE TEAMING FOR

EXPEDITIONARY COMBAT SUPPORT

GRADUATE RESEARCH PROJECT

Melanie J. Stewart, Major, USAF

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DEPARTMENT OF THE AIR FORCE
AIR UNIVERSITY

AIR FORCE INSTITUTE OF TECHNOLOGY

Wright-Patterson Air Force Base, Ohio

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Melanie J. Stewart, BA, MA

Major, USAF

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Approved:

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Major Gary W. Kinney (Advisor) Date

Abstract

The purpose of this research was to study and assess the teaming process employed by Aerospace Expeditionary Force Center (AEFC) when sourcing and aggregating Expeditionary Combat Support (ECS) assets and develop a decision analysis-based value model for their internal use. The study gathered and analyzed input from recently deployed commanders and homestation commanders to solidify factors of importance in relation to team cohesion and mission effectiveness. In addition, it compared AEFC sourcing cell and field commander inputs on the importance of factors that contribute to meeting Combatant Commander and homestation mission objectives.

The culmination of this effort is the development of a value model to guide members of the ECS sourcing team toward maximizing effective utilization of available assets within the constraints of deployment rule sets. Results indicate that a common value model cannot be applied to all ECS functional areas individually due to wide variance in operational stress and career field health levels. However, the research determined that a value model can be used to assess and compare the overall desirability of ECS sourcing solutions. Additionally, it identified several value measures for AEFC leadership to consider using during their teaming analysis process.

Acknowledgments

I would to thank Major Tammy Hinkston for her insight and assistance in developing the value hierarchy which serves as the foundation for my teaming research

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Melanie J. Stewart

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List of Acronyms

ACC	Air Combat Command
AD	Active Duty
AEF	Air and Space Expeditionary Forces
AEFC	AEF Center
AEFCI	AEFC Instruction
AF	Air Force
AFI	Air Force Instruction
AFPC	Air Force Personnel Center
AFSC	Air Force Specialty Code
AFSLMO	Air Force Senior Leader Management Office
AFSO 21	Air Force Smart Operations for the 21st Century
AMC	Air Mobility Command
AOR	Area of Responsibility
ARC	Air Reserve Component
ART	AEF UTC Reporting Tool
CAF	Combat Air Forces
CC	Commander
CENTAF	Central Command Air Forces
DA	Decision Analysis
DoD	Department of Defense
DRI	Date Required In-place
ECS	Expeditionary Combat Support
EOD	Explosive Ordinance Disposal
FAM	Functional Area Manager
FOL	Forward Operating Location
GWOT	Global War on Terrorism
IA	Individual Augmentation
LDHD	low-density, high-demand
MAJCOM	Major Command
OIF	Operation Iraqi Freedom
OPSTEMPO	Operations Tempo
OSI	Office of Special Investigation
PACAF	Pacific Air Forces
PALACE TENURE	Palace Tenure Manpower Sourcing Method
RED HORSE	Rapid Engineer Deployable Heavy Operations Repair Squadron
SEI	Special Experience Identifier
SME	Subject Matter Expert
TDY	Temporary Duty
USAFE	United States Air Forces in Europe
USCENTCOM	United States Central Command
USTRANSCOM	United States Transportation Command
UTC	Unit Type Code
VFT	Value-Focused Thinking

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1 INTRODUCTION

This chapter summarizes the background and justification for research and defines the objectives of the study. Additionally, this chapter gives an overview of the research methodology, discusses the scope and limitations of the paper, and previews following chapters.

1.1 BACKGROUND AND MOTIVATION

Since 1989, the number of personnel deployed by the United States Air Force has steadily risen while the number of personnel on active duty has declined. In the late 1990s, the Air Force recognized that Cold War deployment templates and PALACE TENURE, the personnel deployment management program of the 1980s and 1990s, were not adaptable to our ever-increasing docket of expeditionary operations (Zuhlsdorf, 2002). PALACE TENURE, specifically, did not provide for stability, predictability, or appropriate teaming at forward operating locations (FOL). In order to rectify this situation, Air Force leadership unveiled a new concept that was designed to handle sustained deployment commitments and pop-up contingencies where commanders and troops would have a clear idea of when they could expect to deploy. This concept was labeled Expeditionary Aerospace Force (EAF). EAF, now simply called Air and Space Expeditionary Force (AEF), was designed primarily to mitigate operational strains on combat air forces and, at the same time, increase deployment predictability and base-level teaming for most Air Force members. (AFI 10-400, 2002)

AEF Center (AEFC) is the single-source capability provider for enabling AEF deployments. Its mission is to execute the battle rhythm by centrally sourcing combatant commander requirements (AFI 10-401, 2005). AEFC sourcing cell personnel carry out this mission for their functional area every cycle. Due to increasing demand for Expeditionary Combat Support (ECS) skill sets after the terrorist attacks on Sep 11 and an ever-shortening supply after 3 years of downsizing, AEFC functional area

managers (FAM) often have a challenge distributing assets in a way that is desirable to both FOL and homestation leadership. In addition, because of the dynamic nature of AEF policies and differing levels of functional area requirements, a monolithic standard is not feasible for AEFC to enact. There is a need for a more deliberate approach to enable the best use of scarce resources. This research uses current AEFC procedures and objectives as a launching point to develop a tool that assists the sourcing cell in choosing and justifying the best teaming alternative available.

1.2 RESEARCH OBJECTIVES

Competing and synergizing priorities in teaming are continuously examined by AEFC to maximize the utility of Unit Type Code (UTC) matches. In light of looming challenges faced by AEFC in sourcing and teaming ECS assets, the goal of this research is to utilize AEFC objectives to develop a decision analysis (DA) tool, a value model that helps codify best practices for internal use and continuity efforts.

Specifically, over the past year, the AEFC has developed a primary and secondary objective for meeting combatant commander (COCOM) needs for ready, synergistic teams while addressing homestation commander concerns about base integrity (i.e. not breaking the base). The primary objective is to enable squadron level integrity to the maximum extent possible when matching UTCs to a deployed location. This ensures that deploying units have trained together and are ready to operate effectively upon arrival. The secondary objective is to enable wing-level integrity to the maximum extent possible when matching UTCs to a deployed location.

Overall, the value model will assist ECS career field managers at AEFC in identifying the most desirable solutions available at the aggregation phase of operations—the phase after initial sourcing plans are developed through Best Fit Matrix or other means. The model will enable the sourcing cell to

measure the value of the options available and assign a rating of desirability, thus ranking the alternatives.

While creating the model, this research will explore the following areas:

(1) Determine what factors are important to deployed and homestation commanders when measuring the effectiveness and cohesion of a team.

(2) Determine what factors commanders believe contribute to team failure on deployment.

(3) Determine if AEF sourcing cell and field commanders have agreement on what factors optimize ECS asset teaming.

(4) Determine if there is a set of sourcing values that applies universally across ECS career fields.

(5) Determine what weights can be applied to values to score alternatives.

1.3 METHODOLOGY

This research will review current AEFC measurements of sourcing quality and will canvass field commanders about their concerns when serving with deployed teams and when sending teams on deployment. The research will match values of current field commanders with values captured by AEFC from past conferences and individual commander feedback. Lastly, the research will apply a value-focused thinking (VFT) approach to create a value model for AEFC sourcing cell utilization.

1.4 RESEARCH IMPACT

The value model will be flexible enough to address differing career field rule sets while still measuring a level of success based on AEFC prioritized objectives. The value model could easily be adopted as a training tool to highlight how and why specific solutions are more desirable than others. This is especially important because indoctrination training for AEFC sourcing personnel is less than one week of presentations from in-house trainers and AEFC guidance is not updated to outline current

teaming priorities. The value model could also be used by sourcing cell personnel during each AEF in the aggregation phase of teaming. Lastly, it could be used to justify overall sourcing selections since it is based on objectives established by field commander feedback.

1.5 SCOPE AND LIMITATIONS OF RESEARCH

This research will focus on the ECS teaming process for tasking troops to go on 120-day deployments. This will exclude ECS career fields routinely tasked to go on longer deployments (Security Forces, Fuels, Transportation, etc.) or who are augmenting Joint missions. The research will also exclude exploration of different sourcing methods for Air Reserve Component (ARC) forces. Lastly, it will exclude study of how to better team leadership packages with associated base UTCs. The leadership sourcing process involves agencies who are focused on individual officers' development and who are working outside of AEF window requirements to fill senior leadership billets (Hinkston, 2006).

Chapter 2 provides a historical perspective on the AEF deployment concept, an overview of AEFC procedures for sourcing and teaming, a discussion of barriers to teaming, and a review of team cohesion and VFT literature. Chapter 3 discusses the methodology used to gather and assess data collected. Chapter 4 analyzes and displays the questionnaire results as well as applies the findings to develop the model. Lastly, Chapter 5 explores the implications and limitations of the model by relating the results back to the areas of exploration outlined in Chapter 1. In addition, it will identify areas for further research in the AEF sourcing and teaming field.

2 LITERATURE REVIEW

2.1 INTRODUCTION

This chapter briefly explains the evolution of the AEF concept since its inception in the late 1990s. It then discusses AEFC procedures in sourcing assets for deployment. With that foundation established, this chapter will outline barriers to team-oriented sourcing and resulting AEFC procedures to maximize teaming amongst ECS assets. Finally, it will explore the relationship between team cohesion and mission effectiveness and briefly review the VFT process.

2.2 AEF CONCEPT EVOLUTION

The AEF concept came about in the late 1990s as a result of changing deployment patterns and the on-going limitations of the PALACE TENURE program. PALACE TENURE did not focus on deploying personnel as a team; instead, it filled required positions on an individual basis from locations across the Air Force. In addition, deployed commanders did not have visibility of incoming forces, which made long-term planning at the deployment site and homestation almost impossible. Overall, it lacked stability and predictability for deploying members and their commanders. (Haug, 2000) The AEF construct promised to provide stability and predictability for forces while still allowing for flexibility as operations tempos varied.

As Cook et al note in *Strategic Implications of the Expeditionary Aerospace Force*, "The expeditionary aerospace force effort is a promising new force-management framework to maintain the Air Force as a global-force provider…it has begun to charter a path to become a more expeditionary, integrated, and effective instrument of power that our nation can flexibly apply as a seamless element of our joint war-fighting capability." They went on to note that the AEF concept looks beyond simple aircraft counts to measure combat support force tempo. (Cook, *et al*, 2000) As this research will

uncover later, measuring combat support force tempo has become more and more important to the Air Force as combat support deployments have increased and manpower has decreased.

Fully implemented in current Air Force operations, AEF is the methodology for organizing, training, equipping, and sustaining rapidly responsive air and space forces to meet defense strategy requirements. Employing AEF, the Air Force supports defense requirements through a combination of both permanently assigned and rotational forces. Rotational forces are organized into 10 similarly-capable AEFs and one Enabler force. The packages of capability that make up each AEF and the Enabling force are organized into libraries that are comprised of Unit Type Codes (UTCs) from installations across the Air Force. UTCs are a unit of capability (consisting of manpower, equipment, or both) focused upon accomplishment of a specific mission that the military service component provides. UTC availability data is used to identify total Air Force capability. (AFI 10-401, 2005)

Some deployable assets do not fit into the AEF deployment timeline. Those assets are referred to as Enablers and they can be employed any time during the window in which they are on call. Space, inter-theater airlift, Air Mobility Operations and low density/high demand (LD/HD) assets are postured in the Enabler library and not allocated to individual AEFs. (AFI 10-401, 2005)

Other capabilities are designed not to deploy from homestation. However, in accordance with the Air Force Chief of Staff direction, UTC availability data must include all personnel authorizations (AFI 10-401, 2005). Therefore, major commands have been directed to identify authorizations which have valid homestation missions. Once identified, they are assigned a *posturing code* in the library that highlights their in-garrison, operational mission during wartime. Examples of positions that may fall into this category are: recruiting, instructor, and student billets. (Air Force Audit Agency Report, 2005)

This coding system allows for all Air Force requirements to be tied to the deployed mission, attempting to maximize capability. Aligning forces to the 10 AEFs and the Enabler Force enables

teaming, systematic scheduling, and mirrors a concept in deliberate and crisis action planning that tries to minimize the transportation requirements for a plan. (AFI 10-401, 2005)

Figure 1 depicts the pool of resources provided by the Air Force: UTC-postured positions for deployment in AEF buckets, UTC-postured positions for in-garrison operational missions, and Enablers.

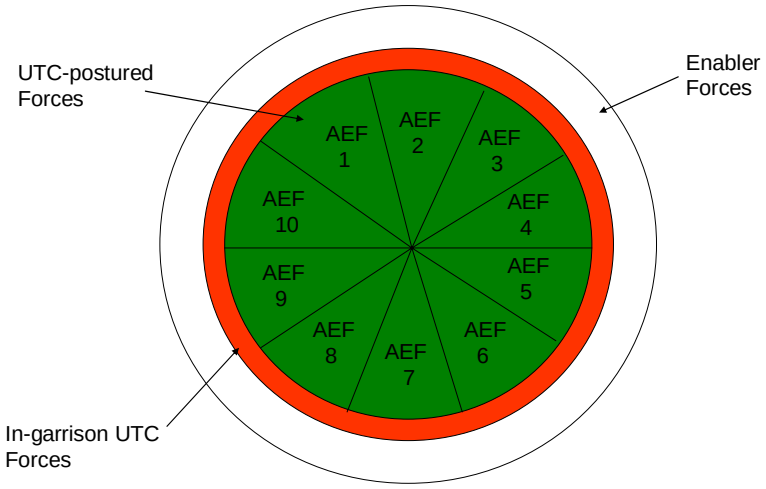

Figure 1. AEF Deployment Model

Originally the AEF timeline was designed to follow a 15-month cycle with each base following a *2-hit policy*. The 2-hit policy allows for roughly half of available base UTCs to deploy for a 90-day period within a fixed window, followed by the other half during another 90-day fixed window. This was enacted to allow for ECS and aircraft/maintenance packages from the same base to deploy, in most cases, as a team, thus increasing FOL cohesion. However, this was not able to be fully exploited because wing ECS packages were not systematically placed in to the same AEF buckets as their related aircraft/maintenance packages. More discussion will occur on this subject later.

After the terrorist attacks on the United States in 2001, the subsequent military response tripled the amount of Airmen deployed compared to previous years and the AEF concept was tested to its limits. Air Force leadership responded quickly with updated deployment policy messages and, when time allowed, updated Air Force Instructions to adapt AEF rule sets to meet Global War on Terrorism (GWOT) commitments. In September 2004, the Air Force Chief of Staff, General John P. Jumper, implemented a new expeditionary deployment schedule in which each UTC will be on-call to deploy for 120 days each 20-month AEF cycle. (Hebert, 2004)

Figure 2. 20-Month AEF Cycle

AEFC responded to the increased deployment tempo and decreased force level by solidifying detailed scheduling procedures in AEFCI 10-1, dated 28 Jul 04. A portion of the instruction provides guidance on scheduler use of two sourcing templates: the ECS Target Base Alignment Template and the Installation to FOL Alignment Template. These templates were the starting point for sourcing cell members to begin each AEF cycle matching process. AEFCI 10-1 states, "These two documents establish AEF rotational timeframes for each force-providing base and also provide initial sourcing guidance to determine which base will be the prime force providers for specific FOLs."

Specifically the following is outlined on the ECS Target Base Alignment Template:

> It lists the bases designated to provide forces for each AEF rotation, and also serves as a guide for MAJCOMs to posture UTCs into their appropriate on-call periods. This document is determined by a review of current operational requirements and the ability of major wings to support those requirements. When aviation wings are selected by the Combat Air Forces Scheduling Integrated Product Team panel to support specific AEFs, their ECS units are typically aligned with those aviation units to support the AEF teaming goal. Those units and MAJCOMs without deployable aviation wings are included to provide additional ECS support as required. (AEFCI 10-1, 2004)

The instruction also outlines the procedures AEFC uses to populate the Installation to FOL Alignment Template. This second template is based on requirements in place prior to each AEF cycle and considers the probability of specific bases within the Target Base Alignment Template being able to support the majority of requirements for a specific FOL.

Procedures for matching on the Installation to FOL Alignment Template are as follows:

> Large FOLs (those with aviation missions) will often be matched with 3-4 force providing bases, while smaller FOLs may have only 1-2 aligned bases. This does not exclude other force provider bases from being used for specific requirements to maximize teaming. (AEFCI 10-1, 2004)

Both templates covered only USCENTCOM requirements because it is the theater with the majority of activity since AEF's inception. These alignment templates were designed to facilitate rapid sourcing. Interestingly, their use for maximizing ECS teaming became obsolete in less than one year. This was precipitated by the shift in AEFC leadership's focus in 2005 from ECS following organic aviation as a first priority to ECS being teamed as a squadron first. A secondary priority became teaming as a group or wing entity. (Hinkston, 2006) This change came about when it was emphasized from the field that ECS forces do not always align into the same AEF buckets as organic aviation packages and trying to match ECS to aviation as a first priority was hurting overall teaming. In fact, aviation packages from a typical Combat Air Force installation are on back-to-back rotations (i.e. AEF 5/6 and AEF 7/8) whereas, ECS forces are typically assigned to non-adjoining AEF buckets (Air Force Audit Agency, 2003).

Unfortunately, ECS cannot easily be realigned to match organic aviation packages since that could potentially leave an installation without the majority of base support functions for a significant time period, especially if forces are frozen in-place while the next bucket is deployed during surge operations (Bladorn, 2006). This is one barrier to teaming that exists today. There are several other barriers that sourcing personnel, field commanders, and AF policymakers need to be aware of when making decisions on ways to increase teaming in the future.

2.3 BARRIERS TO TEAM-ORIENTED SOURCING

2.3.1 Different Deployment Lengths Amongst ECS Career Fields

Strains on Air Force deployment assets require that some career fields, mostly those working with the Army or backfilling their requirements, deploy their personnel for 6 months or longer at a time (Hebert, 2004). Because of their unique deployment windows, security forces, transportation and fuels functional communities are not considered for possible teaming with other ECS from their homestations (Stanton, 2006). These taskings make up a significant portion of AF deployment requirements and they are usually a priority fill. In fact, one in four requirements filled by the Air Force in 2005/2006 was a Joint or Army-shortfall tasking (Hinkston, 2006).

2.3.2 Increased Demand for ECS Assets

In addition to Army-related taskings being on the rise, overall ECS taskings have increased relative to aviation taskings. To put the increased deployment burden on ECS troops in perspective, this research reviewed trends in the AF deployment mix over the past five years. In the early 2000s, aviation packages used to make up almost half of AF troops sent to the Gulf--at 42 percent of total personnel deployed. Now, the nature of continuing operations in Iraq and Afghanistan require less aircraft packages and more ECS. In 2004, aviation only accounted for 18 percent of total deployed AF assets;

yet the deployed AF troop levels were nearly the same. The AEF concept still, in large part, allows for predictability for ECS UTCs. (Herbert, 2004) However, some ECS capabilities are not being fully utilized because of poor reporting by wings and higher headquarters.

2.3.3 Inaccurate UTC coding and AEF Reporting

As noted in a May 05 Air Force Audit Agency report on AEF Force Management, "Approximately 80,000 of 343,000 (23 percent) authorizations were not included in the UTC Availability Data. Additionally, planners excluded, without adequate support, 2,400 of the 80,000 authorizations that were identified for a Competitive Sourcing or Privatization Study." (Air Force Audit Agency, 2005) As a result of inaccurate UTC coding, capability that could be available for sourcing was not visible to AEFC planners, requiring additional time for them to verbally confirm and identify UTCs and resources to fill AEF requirements. Another barrier for AEFC is inaccurate AEF UTC Reporting Tool (ART) reporting by commanders. Some commanders will code a UTC as *Yellow*, unable to meet some mission requirements, or *Red*, unable to meet mission requirements, for incorrect reasons, thus reducing the initial pool of available resources for an AEF cycle. When this happens, sourcing cell personnel have to individually address each miscoded UTC to discover its true availability. This problem has been acted on and mostly eradicated through ongoing training by AEFC and through tools, like the Commander's Toolkit, made available on the AEFC website. (Stanton, 2006)

2.3.4 ARC Buy Process

The ARC sourcing process or "ARC buy" occurs shortly after requirement validation is complete each cycle. The timing is designed to ensure maximum ARC participation, thus reducing Active Duty (AD) tempo as much as feasible. Once the ARC buy is complete, those positions are matched and the active duty AF is tasked to fill the remaining requirements. One unintended consequence of the ARC buy is a negative impact on teaming. For example, the ARC is not required to fill an entire UTC or

squadron function when volunteering for an AEF requirement; therefore, AD UTCs sometimes have to be split to ensure full coverage at an FOL. (Bladorn, 2006)

2.3.5 Incomplete and Changing Requirements in a Sourcing Cycle

According to Major Hinkston at AEFC, leadership packages are considered first to start the ECS alignment at most FOLs. If subsequent sourcing is based on the leadership packages, and a leadership package is subsequently "shortfalled", unable to be filled, the resulting teaming will not be as effective as first designed. In addition, changing requirements at the UTC level may force shifts in resources that also degrade teaming efforts. (Hinkston, 2006)

2.3.6 Leadership Element Tasking Process

Currently, the Air Force maintains deployed levels of over 20,000 airmen during each AEF. An overwhelming portion of those 20,000 deployment commitments are tasked by the AEFC. Other positions that are filled for 1 year (usually the more senior ranking positions) are tasked by the Air Force Personnel Center (AFPC) and selection is based more on assignment regulations and volunteerism rather than deployment rule sets. Senior officer positions are filled selectively by the Air Force Senior Leader Management Office (AFSLMO). (AFI 10-401, 2005)

Because leadership positions at the colonel and above level are selected without AEFC input, teaming of forces under the command of their group or wing commanders is nearly impossible. In addition, squadron leadership positions are increasingly being sourced for 1-year tours. This stymies efforts to match ECS with their leadership at the squadron level. (Hinkston, 2006)

2.3.7 Future Cuts to Air Force Support Forces

Starting in Fiscal Year (FY) 07 and ending in FY11, the Air Force is facing cuts of up to 40,000 personnel with a goal of reducing the overall force to 316,500 Airmen. Career fields that are protected

from cuts are: Space/Missiles, Explosive Ordinance Disposal (EOD), Linguists, RED HORSE, Security Forces, Aircrew, Acquisitions, and Office of Special Investigation (OSI). Therefore, a majority of those cuts will come from remaining ECS, maintenance, and operations support fields; with 53% of officer billets cut and 15% of enlisted billets cut overall. (Brady, 2006) This round of deep cuts, in conjunction with sustained 120-day deployments of around 20,000 personnel, could drive OPSTEMPO for remaining ECS troops to levels not seen before in Air Force history. (Burgess, 2005)

2.4 CURRENT AEFC PROCEDURES TO MAXIMIZE TEAMING

Despite these barriers, teaming is focused at the UTC and squadron level to ensure cohesion exists within a functional community at FOLs. In addition, AEFC has developed a plan to systematically look at FOL requirements and match as much ECS from the same base together as possible. (Hinkston, 2006)

Therefore, ECS teaming at the squadron level has become the primary focus of AEFC with total FOL (aircraft, maintenance, medical, ECS, etc.) teaming as a secondary priority. The AEFC website, available at https://aefcenter.acc.af.mil, is a good source of information on sourcing and teaming. Briefings and policy letters contained on the website span areas relevant to this research. However, because of the fast-paced changes in AEF policy, very few of the operating instructions and Air Force instructions listed are current enough to outline relevant steps for sourcing ECS UTCs according to the current objectives. As a result, research from personal interviews and group meetings provided much of the background for this section.

The teaming process begins each cycle with members of the AEFC Data and Analysis Division matching available UTCs that are coded as *mission ready* and *deployable* in deployment systems with validated requirements, minus the ARC buy, from combatant commanders. As mentioned earlier, the

ARC buy is done before AD UTCs are matched to ensure that the ARC has full participation each AEF cycle. (Bladorn, 2006) Their Excel-based product is known as the Best Fit Matrix.

In constructing the Best Fit Matrix, the AEFC Data and Analysis division uses algorithms to best match UTCs to FOL requirements and to team UTCs where possible. The algorithms were designed by Signal Solutions contractors in conjunction with sourcing cell SMEs. The best match is determined by first matching large UTC ECS assets to FOL requirements. An attempt is made to match ECS to FOLs where homestation aircraft and maintenance are scheduled to deploy, when feasible. Next smaller UTCs from the same homestation are matched to the FOL to maximize teaming at FOLs. Unfortunately, the algorithm does not match nonstandard UTCs or individual augmentation requirements. The end product does indicate residual capability for each functional area once the matrix is finalized by highlighting manpower and equipment not yet tasked. Breaking the information down by percentage of total capability allows action officers to see which functional areas have the most excess capability and at which bases. (Stanton, 2006) This product ostensibly replaces the two alignment templates mentioned previously. Overall, it provides the baseline for the AEFC sourcing program and enables deliberate planning within the sourcing cell. It also enables further time savings for sourcing cell members by highlighting units who have been potentially under or over tasked. (Bladorn, 2006)

Depending on the functional area, the Best Fit Matrix provides anywhere from 40 percent to 70 percent of the solution for an AEF cycle. A computer could conceivably match almost 100 percent of the UTC requirements. Teaming beyond the current Best Fit Matrix starting point, with all the previously mentioned barriers in place, is more of an art than a science. Additionally, many of the UTCs and individual augmentation requirements carry line remarks which require human interaction to source. Again this highlights a need for a systematic method to measure the effectiveness solution once it is compiled.

From the 40 to 70 percent solution provided by the Best Fit Matrix, action officers take recommended matches and validate system accuracy. Next, the action officers of the four largest deployable ECS functional communities with traditional AEF tours (Civil Engineering, Logistics Readiness, Communications, and Services) meet to discuss how they can further maximize teaming at the FOLs. The highest importance is given to bare base FOLs where cohesion may have the biggest impact on operational success. Once they have found the best solution based on available resources, the more lightly-tasked functional communities (Personnel, Contracting, Information Management, etc.) are given the template with updated large-unit sourcing plans to continue matching. Unfortunately, because tasking is a dynamic process, sometimes well-thought-out teaming plans are undermined due to last-minute shifts in leadership packages or missions. Nevertheless, this new approach to teaming has produced promising statistics in 2005 and early 2006. (Hinkston, 2006)

Results from the first use of this matching approach enabled squadron-level teaming to increase from 30 percent teamed at the functional level in Cycle 5, AEF 7/8, to 49 percent teamed in Cycle 5, AEF 9/10. Further AEFC analysis showed that the overall number of bases at any deployed location dropped by an average of 10. This is important to deployed commanders for cohesion and mission effectiveness reasons and it is also a factor in enhancing US Transportation Command's (USTRANSCOM) ability to aggregate airlift for personnel deploying to the area of responsibility (AOR). (AEFC/AES Combat Support Division Award Nomination, 2005) A value model to enable measurement of effectiveness in terms of these objectives as the process is ongoing will help solidify best practices and further assist AEFC in meeting teaming objectives.

2.5 MISSION EFFECTIVENESS, COHESION, AND TEAMING

Teaming personnel who have previously trained together and know each other's strengths, weaknesses, and work habits is clearly linked to cohesion and mission effectiveness. The link between

teaming and mission effectiveness on deployment is the basis of AEFC's objective to maximize teaming at FOLs. Teaming is seen as most vital amongst small units under stress (i.e. a very similar situation to sending UTC-sized groups into a combat zone).

According to recent research, pre-deployment training and familiarity is valuable for several reasons. Familiarization allows individuals to share ideas and experiences, build group identity, understand the dynamics of interpersonal relationships, and get to know their own strengths and weaknesses and those of their co-workers (Noe *et al*., 1997). Based on AF after action reports, deployed AOR commanders feel that maintaining team integrity is critical to AEF group and team cohesiveness, which enhances mission success (Agency Group 09, 2001).

Studies also indicate that team cohesion has synergistic effects on military operations and is critical to mission success. Oser suggests that teams who are effective in training develop procedures to identify and resolve errors, coordinate information gathering, and reinforce each other (Oser, 1989). Capt Zuhlsdorf, in his 2002 AFIT thesis, confirmed that the AEF deployment process (where members deploy as a team) has positively affected cohesion and perceived effectiveness (Zuhldorf, 2002). The body of research on teaming synergy clearly reinforces the link between AEFC's squadron-level teaming objective and deployed mission effectiveness in dynamic, stressful conditions.

In addition to keeping a team of workers together, it is important to have homestation (familiar) leadership elements deployed to the same location with subordinate teams as much as possible. A case study, included in the Air Command and Staff College curriculum, highlights this point. In *Wagner Dodge Retreats in Mann Gulch,* Useem tells of a firefighting team who lost many members to fire because they were unfamiliar with their leader (and each other) and a crisis forced them to make a snap decision based on their trust in his judgment. Specifically, when the team was in imminent danger of being overrun by raging fire, the leader lit a backfire and jumped into it to avoid being burned by

incoming flames. No one heeded his command to come, "This way!" and most of them burned to death while the leader survived unscathed. (Useem, 1998)

In the analysis of this tragedy, many salient points were reinforced. First, if a leader doesn't have a record of credibility with workers before leading a team in crisis, any poor or misunderstood decision made by the leader can cause workers to lose faith in him or her. Useem also states that, "panic overwhelms smart decision making." It can make individuals revert to "last learned behavior." If leadership and their team have never trained together, a crisis may lead to members operating in different fashions. Lastly, Useem notes, "For well-formed, highly committed groups, the panic point is shifted far to the right [on the stress continuum]." In this case, leadership performance continues to rise under stress beyond normal operations." (Useem, 1998) Figure 3 depicts this phenomenon.

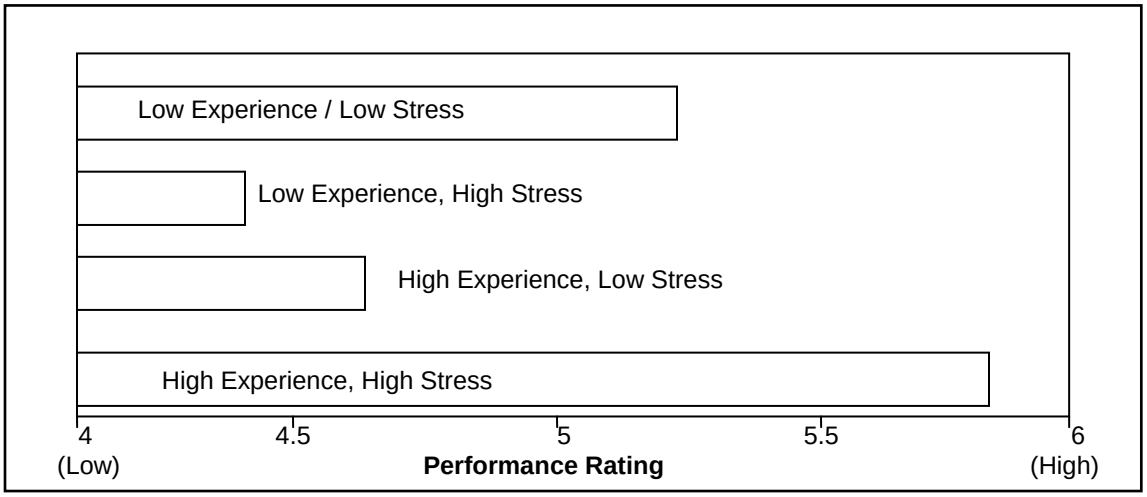

Figure 3. Performance of Fire Department Captains and Lieutenants Under Normal and High-Stress (Fire Combat) Conditions (Useem, 1998)

Useem concludes with the following advice:

> If your organization is facing a period of uncertainty, change or stress, now is the time to build a strong culture with good lines of communication, mutual understanding, and shared obligation. A clear sense of common purpose and a well-formed camaraderie are

> essential ingredients to ensure that your team, your organization, or your company will perform to its utmost when it is most needed. (Useem, 1998)

This article translates very well to the conditions faced by deploying teams as they fill combat or combat support roles in unfamiliar environments. As stress levels increase on deployment, members will rely increasingly on each other and familiar leadership to ensure mission success.

2.6 DECISION ANALYSIS

The field of Decision Analysis (DA) is provides tools and techniques to add structure to the decision-making process and assist in making complex decisions. The first step in the decision-making process is to identify the decision context and understand the objectives for a situation. Defining the objectives fully and correctly is important. The second step in the process is to identify alternatives. The third step is to decompose and model the problem. This involves outlining the problem structure, uncertainties, and preferences. This step will be discussed further in the overview of value-focused thinking (VFT) one of the more common DA techniques. (Clemen, 2001)

2.7 VALUE FOCUSED THINKING (VFT)

The method applied in this research is VFT. It is a multi-objective DA technique that highlights what a decision-maker or organization values in an alternative. Values are the things the stakeholders in the decision care about and should be the driving force for decision-making. In VFT, decision-makers identify what things they value and then choose a course of action that maximizes achievement of those values. It allows for the values to be reconciled with each other so the most important values in the decision are given the most weight. VFT is also a helpful in identifying value conflicts and assisting with consistent measurement of value achievement. Lastly, it provides structure to appraise how well an organization is doing in meeting their values and related objectives. (Keeney, 1992)

Because there are many objectives in measuring effective teaming and the AEF sourcing process is complex, VFT is well-suited in providing structure to the teaming process and decision-maker values. VFT offers a 10-step approach to reaching conclusions and recommendations (Keeney, 1992):

Step 1: Problem Identification – defines, "what is the problem?"

Step 2: Create Value Hierarchy – the value hierarchy is a graphical way to organize values in a top-down structure. The top tier reflects the high-level objectives in the decision and the lower tiers decompose these objectives into smaller subobjectives whose accomplishment can be measured. This structure helps decision-makers fully understand the breadth of considerations that relate to values and objectives.

Important characteristics for a value hierarchy are completeness, non-redundancy, independence, and small size. For a value hierarchy to be complete, the evaluation considerations at the bottom tier should cover all concerns necessary to evaluate the overall objective of the decision. In addition to being complete, evaluation considerations should not overlap. For independence, the preference for the level of one evaluation measure should not depend on the level of the other evaluation measure. Smaller value hierarchies are preferred as they are easier to communicate to stake holders. (Kirkwood, 1997)

Step 3: Develop Evaluation Measures – evaluation measures are a clear way of rating how well an alternative meets an objective. The scales can be natural or constructed as well as either direct or proxy. Natural scales are ones that are commonly used, like *price in dollars* or *number of casualties*. Constructed scales are created to measure the level of objective attainment when a natural scale does not exist. A direct scale is one that directly measures the objective (i.e. *profit in dollars*) whereas, a proxy scale measures a related factor when a direct method is not available (i.e. *annual snowfall* for availability of winter sports).

Step 4: Create Value Functions – value functions convert measurement achievement to common scores between 0 and 1 so that all measurements are considered on the same scale. The least preferred value would have a score of 0 and the most preferred alternative would have a score of 1. The function can be piecewise linear or continuous (represented by exponential decay function) from 0 to 1.

Step 5: Weigh Value Hierarchy – a value model requires the decision maker to indicate the degree of relative importance for each value and measure. The local weights (on each tier) sum to 1. The global weights are indicators of the measures importance relative to all other considerations in the hierarchy (all tiers).

Step 6: Alternative Generation – the alternative generation is a process where focusing on values may help find new alternatives not considered prior to VFT exercise.

Step 7: Alternative Scoring – scoring each measure for the alternatives involves subject matter expert (SME) consultation and data collection. Ensuring credible data is the key to determining realistic outcomes in this step.

Step 8: Deterministic Analysis – deterministic analysis is the mathematical process of combining the score of every measure and the weight for each alternative to produce an overall score for each alternative. The result is a ranking of all the alternatives.

Step 9: Sensitivity Analysis – sensitivity analysis identifies which factors have the most influence in the decision and the chosen alternative. It shows how sensitive the chosen alternative is to weights and scoring measures.

Step 10: Conclusions and Recommendations – after understanding how factors affect the ranking of alternatives, the analyst will present conclusions to the decision-maker along with recommendations. The goal of VFT is to provide insight, not necessarily the best answer.

Because AEFC data is not available for scoring, this research will encompass only Steps 1 – 5 and culminate with a notional value model. Additionally, this research will provide a roadmap toward scoring alternatives and applying scores based on relative FOL importance.

3 METHODOLOGY

3.1 INTRODUCTION

This chapter summarizes the research and data collection methods used during this project. It explains how subject matter expert (SME) interviews and questionnaires were used to identify factors relevant to teaming and to construct a weighted value hierarchy. It concludes by outlining the purpose for distributing commander questionnaires in this study.

3.2 RESEARCH METHODS

3.2.1 AEFC Site Visit and Website Material Review

Initial research was conducted in person during a 16 Feb 06 site visit to the AEFC. During that visit, an introductory briefing was held on the evolution of the Best Fit Matrix. Additional meeting time was used to review the sourcing process that occurs after the Best Fit Matrix is provided to sourcing cell members. This briefing highlighted ways in which sourcing cell members strive to meet COCOM needs while maximizing use of available resources and balancing *best use* and *fair share* concepts.

Best use relates to ensuring the best match of available UTCs to downrange mission needs. It could mean merely matching the correct UTC to the requirement or it could mean finding an available UTC that performs the same mission at homestation as they would be performing at the FOL. Other considerations that go into *best fit* include sending a matching UTC to the same FOL as other ECS from their base or sending a matching UTC to the same FOL as an iron package from their base.

Fair share concepts involve ensuring that one base is not 100% tasked within a functional community while another is only 50% tasked. Parity is a consideration in ECS sourcing since a homestation's support missions rarely slow down during their AEF deployment window. Sometimes,

attempting to get the best fit will cause tasking parity to get off-balance. Trying to achieve balance between *best fit* and *fair share* is a difficult task where a value tool could prove helpful in making decisions to best meet AEFC objectives.

The briefing concluded with a discussion of the criteria associated with meeting FOL and homestation commanders' needs and the obstacles to achieving AEFC objectives. The 16 Feb 06 briefing, along with a thorough AEFC website review, provided the background information needed for one-on-one SME interviews.

3.2.2 One-on-One Interviews

SME interviews where conducted over the phone and, when possible, in person. Interviews were completed with the AEFC Chief of Services Sourcing and Operations Interface, Major Tammy Hinkston, and the AEFC Chief of Force Management, Captain Harley Smith. Both members have worked at the AEFC in ECS sourcing roles prior to assuming their current positions. In addition, both members have deployed under the AEF construct. Their interviews focused on outlining: AEFC sourcing objectives, perceived priorities within those objectives, barriers to achieving objectives, and measures of success for sourcing cell solutions. Best Fit Matrix utility was also discussed. Lastly, the interview with Major Tammy Hinkston produced a complete list of functional areas that should be focused on for this study--those being Civil Engineering, Communications, Logistics, and Services.

Additional interviews were conducted to provide background information on the AEFC sourcing process to fill Component shortfall and Joint requirements. Senior Master Sergeant William Jackson, former CENTAF Transportation Functional Area Manager (FAM), and Captain Harley Smith provided background information on those subjects. SME interviews identified sourcing methods used to maximize teaming. Sourcing methods, along with identified barriers to teaming, formed a key portion of the homestation commander and the AEFC sourcing cell questionnaires. The sourcing cell

questionnaire was designed to capture FAM input on importance (relative weight) placed on key factors when sourcing for their functional area. The homestation commander questionnaire captures the priority that leaders assign to sourcing criteria as they relate to deployment mission success, team cohesion, and homestation mission fulfillment. Questionnaires and SME interviews helped narrow the scope of this study, excluding which ECS functional areas are currently deployed outside the standard 120-day AEF rotation construct.

3.2.3 Internet / Library Search

Internet and library catalog search provided background information in the areas of: deployment rates, AEF construct history, AEF policy changes, and proposed models for future AEF management of ECS resources. All of this information highlighted the tough balance of competing priorities between ensuring predictability and stability of deployments and meeting emerging and growing COCOM needs. In addition, one AFIT thesis from 2002 linked team cohesion and mission effectiveness on AEF deployments (Zuhlsdorf, 2002). This information formed the framework for the deployed commander questionnaire designed to capture the priorities deployed leaders assign to factors affecting cohesion and mission effectiveness.

3.2.4 Questionnaire Development

The questionnaires were developed to elicit commander and sourcing cell member responses as to the relative weight specific ECS teaming values should be given. Commanders were asked to distribute 100 points over given values based on their perceived importance, with the higher priority values receiving more points. This method allows relative weights of the values to be developed. Commanders were also permitted add other teaming factors they felt were important and to assign a score of 0 to factors they do not consider relevant. Sourcing cell members were asked to score values on teaming using the same method as commanders—distributing 100 points over the different values based

on their perceived importance. Additionally, sourcing cell members were asked to weight the importance of deployed commander versus homestation commander needs using 100 points total.

To show the complete range of commander concerns, the questionnaire included factors that AEFC Sourcing personnel have no control over. It is surmised that the omission of non-relevant factors to sourcing would make the survey unrepresentative of commanders' total concerns about AEF deployments. This would detract from getting a realistic measure of concerns for the value tool. In addition, the information received about non-sourcing related factors could provide the basis for further analysis of AEF policy.

Lastly, the survey contained a few open-ended questions that allowed commanders the chance to address concerns involving AEF policy and teaming that could be relevant to this and future research studies. This also provides commanders the opportunity to expand on the numerical responses they provided in previous questions. Commander concerns are recorded verbatim in Appendices H and I. Sourcing cell concerns and comments are recorded in Appendix J.

3.2.5 Questionnaire Dissemination

Sourcing cell questionnaires were approved for use by the AEFC Deputy of the Combat Support Division, Lieutenant Colonel Wanda Davies, and distributed by electronic means through the Lead Scheduler, Chief Master Sergeant James Moore. Sourcing cell members returned completed questionnaires directly to AFIT through Major Melanie Stewart. This method allowed for their appropriate dissemination and rapid return.

Homestation and deployed commander surveys were disseminated to squadron and group commanders in ECS fields which are currently sourced for 120-day AEF rotations. Commanders were selected from 4 MAJCOMs [Air Combat Command (ACC), Air Mobility Command (AMC), United States Air Forces in Europe (USAFE), and Pacific Air Forces (PACAF)] to ensure a broad spectrum of

homestation response. This sample could also show a disparity in ECS CC priorities reflected by differing homestation missions. For instance, an ECS commander at a fighter base may find value in deploying with the iron package from his or her base. Whereas, an ECS commander from a mobility base may not find value in this concept since it is not applicable to their homestation (mobility aircraft are not traditionally assigned to an AEF). Because the ARC buy processes is handled differently and teaming is achieved by homestation self-selection, National Guard and Reserve commanders were excluded from data collection via questionnaires.

Deployment locations varied along a spectrum from small, more austere FOLs (Manas, Kyrgyzstan and Balad, Iraq) to large, well-established FOLs (Al-Udeid, Qatar). Therefore, the weights assigned to factors that detract from cohesion and mission effectiveness could differ by location. The focus of this study is to look for commonalities in responses to develop a universal value tool for ECS sourcing personnel. These questionnaires are a real-time way to crosscheck, and likely reinforce, the current AEFC ECS teaming priorities and sourcing cell expert opinions. This will provide a standard measure to evaluate sourcing alternatives and to display ECS teaming progress over time.

As described above, data was collected using a variety of methods. These methods of data collection ensured the development of a thorough value hierarchy and a complete list of relevant sourcing factors. A complete data collection delineation is shown in Table 1.

Table 1. Data Collection Method

Type of Collection Medium:	Data/Narratives Reviewed For:
Subject Matter Expert Interviews	- AEFC Sourcing Leadership - AEFC Data and Analysis Contractors - AEFC Joint Requirements Manager - CENTAF Sourcing Manager
Archival Records Review	- AEF Team Deployment Process - Team Cohesion - AEF Management - Air Force Deployment History
Electronic Mail Questionnaire of AEFC Sourcing Cell	- FOL Sourcing Factors (Weights) - Homestation Sourcing Factors (Weights) - Weighted priority for FOL / Homestation
Electronic Mail Questionnaire of Commanders	- FOL Deployment Mission Failure Factors - FOL Deployment Cohesion Factors - Homestation AEF Sourcing Factors - AEF Policy Concerns

4 RESEARCH RESULTS

This chapter will provide an analysis of findings resulting from expert opinions, questionnaire results and background research. Findings will clarify the problem and point toward significant factors which should be measured in the AEF teaming value model. Responses from commander and sourcing cell surveys will provide baseline weighting data for the model. Evaluation measures will be derived from current AEFC measures of success and from factors identified by commander and sourcing cell questionnaires. Lastly, data will be linked back to areas of interest outlined in Chapter 1.

4.1 Problem Identification

Surveys indicate that AEFC sourcing cell members' use the same factors to source that field commanders (both homestation and deployed) feel are important. Even more encouraging information is contained in the weights assigned by commanders and AEFC sourcing cell. The weights assigned through returned questionnaires ranked the factors in the same order importance and assigned similar weights to the factors. This indicates two important points: sourcing cell members are well aware of commander/AF mission needs and field commanders understand the balance that AEFC has to keep when tasking troops to deployment billets.

This confirms that AEFC leadership and action officers fully understand the priorities and challenges associated with their mission. Sending teams on deployment that have already trained together and making the squadron a primary building block is the agreed upon objective. The ultimate goal is to maximize this teaming as much as possible at every forward location. Additionally, AEFC focus on the deployed commander needs over the homestation commander needs while attempting to maintain balance appears to be appropriate. To this end, AEFC needs a way to comprehensively measure their progress towards these goals while sourcing for an AEF rotation.

4.2 Create Value Hierarchy

From the objective identified above, research concluded that the top tier will be labeled *Maximize AEF Teaming Solution*. This indicates that the decision is: how best to team available resources within existing rule sets through exploration of alternative solutions. As mentioned before, some career fields define success solely by being able to meet all COCOM requirements while others have leeway into how their functional areas can fill taskings due to residual capability. Teaming is maximized based on how effectively FAMs communicate and work together (from the same set of values) to source each AEF cycle.

The next tier delineates the two shareholders in this process. An additional shareholder, the ARC, is ignored since it is outside of the AEFC's realm of responsibility and influence. The first branch is *Meet COCOM Needs* and the second branch is *Meet Homestation Needs.* The research uncovered several possible factors to measure under each category and the questionnaire responses narrowed down the factors into five measurable candidates (discussed in more detail later).

Unfortunately, the measures do not meet all the properties that Kirkwood states are highly desirable for a value hierarchy. For instance, independence is not met in all cases. In most cases, a homestation commander would like their UTCs to deploy together even if that means less personnel are left at the base to work the mission. Deployed commanders would also like to receive intact UTCs from the same base. During this research it was difficult in some cases to determine which evaluation measures should fall under which stakeholder. In the end, the research relied on the most strongly-held value attributed by the commander questionnaires to determine which category a measure would fall under. This also contributed to the weights applied to the two shareholder branches—instead of relying solely on sourcing cell weight attributions.

The following were assumptions prior to questionnaire completion by deployed commanders:

- AEFC-controlled factors would make the most difference to team cohesion
- Non AEFC-controlled factors would make the most difference to mission effectiveness

In addition, the following were assumptions prior to questionnaire completion for all parties:

- AEFC sourcing factors will be scored with similar weights by sourcing cell and commanders
- Sourcing cell members would score COCOM needs higher than homestation needs
- Deployed and homestation commanders would identify the same factors as important and assign similar weights

The following section discusses scoring in the homestation commanders' survey. The italicized items are factors that AEFC sourcing cell members have some control over. The non-italicized items are factors that are controlled by outside influences (e.g. homestation commanders, Air Staff, and deployed operations) but were included to provide a complete list of contributing factors for scoring.

The factors below were scored to ascertain their relative value in the context of how UTCs should be sourced.

- *Aircraft and maintenance package from homestation was going to same FOL*
- *Other ECS was going to same FOL*
- *Homestation mission was similar to FOL mission*
- *Base/MAJCOM was closest physically to the FOL*
- Another unit from a lead base shortfalled the requirement

Homestation commanders were also asked addressed factors that could contribute to deployed mission failure.

- Lack of job skills
- Lack of deployment skills
- Urgency/stress of mission

- Length of TDY (too short)
- Length of TDY (too long)
- *UTC/Sq leadership was from different base than workers*
- *UTC workers split between several bases*
- *Homestation and FOL missions differed significantly*

Deployed commanders were also asked to score the previous factors in terms of the cohesiveness and effectiveness of their deployed unit. As a follow-up, the deployed commanders were asked what factors can detract from attainment of cohesion and mission effectiveness. Both homestation and deployed commanders were also given a space to add comments and add factors with associated weights if they perceived the list was not complete.

Sourcing cell members were first asked to score the deployed sourcing factors.

- Match UTC to FOL where other ECS resources are assigned from same base
- Match UTC to FOL where aircraft/maintenance are assigned from same base
- Match UTC to FOL whose mission most closely matches homestation mission
- Match UTC to bare base FOL that minimize the number of bases supporting it

Next, sourcing cell members were asked to score homestation sourcing factors.

- Match UTC to FOLs to ensure residual capabilities are close to even across bases
- Match UTC to FOL that minimizes the # of FOLs a homestation is supporting
- Match UTC to same location as squadron/group/wing leadership from its base

Lastly, sourcing cell members were asked to score the importance of the deployed CC concerns versus homestation CC concerns.

The results from deployed and homestation commander surveys are shown in Tables 2 and 3. Factors scoring less than 10 value points out of 100 on average were eliminated.

Table 2. Deployed Commander Questionnaire Results

Rank Order	Cohesion Factor	Value Score	Std Dev
1	*UTC Leadership Different*	*32.67*	*15.28*
2	*UTC Workers Split*	*27.17*	*20.50*

Rank Order	Msn Readiness Factor	Value Score	Std Dev
1	Job Skills	20.17	21.88
2	Deployed Skills	17.00	15.17
3	*Home/FOL mission different*	*12.00*	*11.66*
4	Urgency/Stress of Mission	11.33	17.74

Table 3. Homestation Commander Questionnaire Results

Rank Order	UTC Selection Factor	Value Score	Std Dev
1	*Leadership from Base to FOL*	*50.00*	*31.02*
2	*Mission Match*	*17.80*	*16.25*
3	*Other ECS from Base at FOL*	*16.80*	*20.52*
4	*Aircraft/MX from Base at FOL*	*12.80*	*15.39*

Rank Order	Failure Factor	Value Score	Std Dev
1	Lack of Job Skills	32.20	16.16
2	Lack of Deployment Skills	20.20	11.86
3	*UTC Workers Split*	*14.20*	*7.98*
4	*UTC Leadership from Diff Base*	*11.40*	*9.50*

Sourcing cell survey results are shown in Table 4. Factors scoring less than 10 value points out of 100 on average were eliminated.

Table 4. Sourcing Cell Questionnaire Results

Rank Order	FOL Factors	Average Value	Std Dev

1	Match UTCs from base to same FOL	45.00	21.79
2	Minimize # of bases supporting an FOL	32.00	14.83
3	UTC mission match between base/FOL	12.00	7.58
4	Match UTC to Aircraft from Base	11.00	11.40

Rank Order	Homestation Factors	Average Value	Std Dev
1	Match UTCs to wg/gp/sq leadership	47.00	27.75
2	Minimize # of FOLs a base supports	36.00	16.73
3	Residual Parity	17.00	39.80

Rank Order	AEFC Sourcing Objectives	Average Weight	Std Dev
1	COCOM	60.00	15.41
2	Homestation	40.00	15.41

Due to the large standard deviation of factor weights the assumption that similar weights would be applied to factors by the stakeholders is difficult to verify. The standard deviations are large due to small numbers of respondents and wide variations in response from different career fields. Based on the questionnaire results, the following factors were determined to be significant enough for inclusion under the *Meet COCOM Needs* objective of the value model:

- Minimize # of bases supporting an FOL
- Match the mission
- Match ECS UTCs from a base to the same FOL
- Match ECS UTCs and aircraft/maintenance from same base to the same FOL
- Keep UTCs intact

One AEFC-controlled factor noted as important to mission effectiveness was matching home and FOL missions. This can be thought of as matching a UTC to the same UTC requirement (i.e. no inexact substitutions) or this can be thought of as matching the overall type of wing mission. AEFC sourcing cell members can match correct UTCs and match a wing mission to an FOL's aircraft and maintenance operations. However, very few bases have the same flying mission as an FOL. In fact, at 2006 RAND

report noted, "…bases to which the aircraft were deployed support anywhere from fewer than ten to about 150 aircraft, and, in 17 of the 30 cases illustrated, the Air Force shared the deployed location with another service or with coalition partners." The report also mentions that FOLs support almost all aircraft mixes with few only supporting a single airframe type. (Snyder, *et al.*, 2006) Therefore, this factor is not easily measured. Instead, the value model will measure the *percentage of personnel from the lead base at an FOL*. This will measure the following factors by proxy: mission/FOL match, ECS from lead base at FOL, and aircraft/maintenance from lead base at FOL.

The following factors were determined to be significant enough for inclusion under the *Meet Homestation Needs* objective of the value model:

- Match UTCs to wing/group/squadron leadership
- Minimize number of FOLs supported by a base

The factor *residual parity* was excluded from the value model after further review because it is functional area-dependent and, since tasking levels vary widely between functional areas, it would be difficult to measure as an overall factor. Lastly, COCOM needs were ranked higher than homestation needs by a factor of 60 to 40. However, as a result of several SME inputs ranking COCOM needs higher than 60% of total weight, the value model will reflect a weight of 75 to 25 respectively for COCOM and homestation needs. The value hierarchy resulting from questionnaires and SME inputs is shown with local weights in Figure 4 and with global weights in Figure 5.

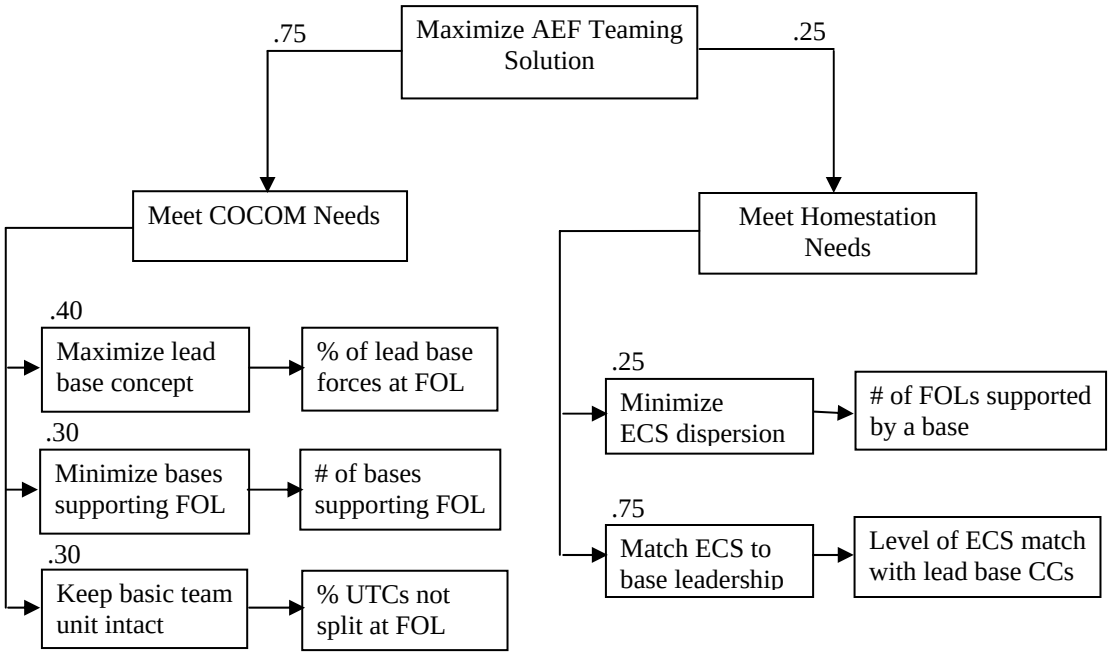

Figure 4. AEF Teaming Value Hierarchy (Local Weights)

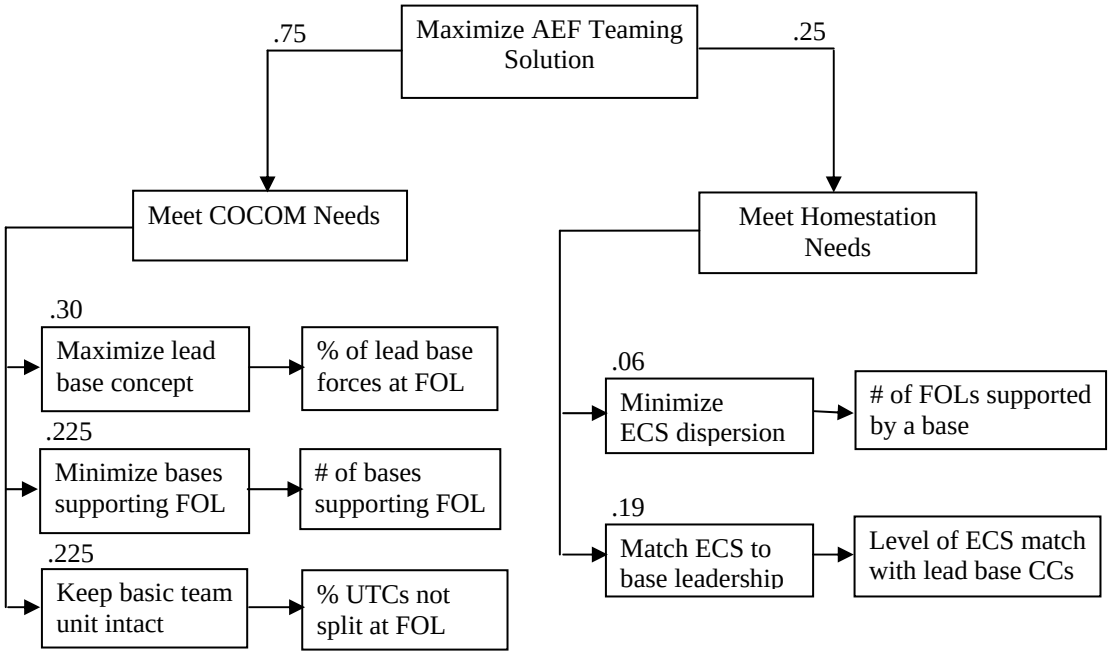

Figure 5. AEF Teaming Value Hierarchy (Global Weights)

4.3 Develop Evaluation Measures

The evaluation measures used in this value model are natural, with the exception of *Match ECS with lead base CCs, Number of bases supporting an FOL,* and *Number of FOLs supported by a base,* which have a constructed scale of: high, medium, or low. Evaluation measure scales are direct, with the exception of *Match ECS with lead base CCs.* It is a proxy scale of leadership matches based on the lead base match percent.

These measures are all relatively easy for AEFC to track and report. In fact, AEFC recently began measuring number of bases supporting an FOL and number of FOLs supported by a base in the CENTCOM AOR. They also track percent of lead base forces at an FOL, however, they only look at the top two or top three contributing bases based on size of FOL. Currently, the nine smaller FOLs with AEWs in CENTCOM are grouped together equally while Al Udeid, Qatar, is put in a category by itself (Kelly, 2006). Perhaps larger FOLs could be tracked as a *Percent of Top Three Base Forces at an FOL* and smaller FOLs could be tracked with the currently proposed measure of *Percent of Lead Base Forces at an FOL.* The topic of defining FOL precedence is an area for further research.

4.4 Value Functions

Single dimensional value functions are used to convert measurement scores to a value on a scale of 0 to 1. This enables measuremes to be compared on the same scale. For each value function, higher values will be preferred (i.e. 1 is the maximum value).

For the evaluation measure, *Match ECS with lead base CCs,* the low category covers 0 to 25 percent of a leadership match and receives a value of 0. The medium category covers 26-50 percent of a leadership match and receives a value of .5. The high category covers 51-100 percent leadership match and receives a value of 1.

The evaluation measures of *Number of bases supporting an FOL* and *Number of FOLs supported by a base* are categorized by low, medium, and high based on the following criteria: 0 - 10 is low, 11-

20 is medium, and 21 and above is high. The score for low is 1, the score for medium is .5, and the score for high is 0.

Percent of lead base forces at FOL is determined by the amount of personnel present at an FOL from an AEFC-designated lead base divided by the total number of AF assets at an FOL. The value corresponds directly to the percent computed, where 50% would equal .50. The higher the percent, the better the teaming solution score. This also applies to the evaluation measure, *Percent UTCs not split at FOL*.

4.5 Weight Value Hierarchy

The weights for the hierarchy are based on the survey results and can be used to determine the overall score of a sourcing solution. They are displayed on the value hierarchy in Figures 4 and 5 respectively.

Each FOL can be scored on the COCOM measures and each contributing homestation can be scored using the homestation measures. At the moment, each homestation and FOL is weighted equally. As such the scores for the FOLs and the homestation can be averaged to provide a score for the left and right branches of the hierarchy respectively. A final teaming score is produced by using the top tier weights to add the COCOM and Homestation needs.

In this chapter findings resulting from expert opinions, questionnaire results and background research were examined to create a value hierarchy for measuring teaming objectives. Evaluation measures and associated value functions were proposed. Lastly, a methodology for scoring a sourcing solution was provided.

5 CONCLUSIONS AND FUTURE RESEARCH

This chapter will address the research exploration areas outlined in Chapter 1 and recommend an outside measure to identify the ECS deployment stress level each cycle. Lastly, it will identify items of future research that could build on this foundation for AEF teaming.

It was clear from SME inputs and questionnaire responses that teaming is a very important concept to continue to work towards on AEF deployments. The only factors that commanders ranked higher than teaming-related concerns were job skills and deployment skills. No factors outside of ones identified on the survey were mentioned by commanders to add to the hierarchy. The factors that commanders identified as least important to cohesion and mission effectiveness were *length of TDY* and proximity *of TDY to homestation location*. The most important factor overall was enabling *lead base teaming at an FOL*. This element encompasses *teaming ECS with other ECS, ECS with aircraft and maintenance packages*, and, to some extent, *matching the mission from homestation to FOL*. The most important factor for homestation commanders was keeping troops with their leadership elements. This was noted as one of the most important factors to avoid failure, along with not having job skills, deployment skills or a full team sent from one base (UTC split).

Weights for these factors varied greatly between career fields. This is perhaps due to each career field having a different task saturation level when it comes to AEF deployments. Therefore, a general value tool should not be applied across all ECS career fields when sourcing requirements. As part of future research, career field specific value models could be developed from the general model for this purpose. However, the general value model could be applied by ECS sourcing leaders after the current teaming process is complete. This would allow for re-looks if scores vary widely compared to previously tasked cycles. Stress on the AEF system, therefore could be measured in some fashion.

As highlighted previously in the research, factors outside AEFC sourcing cell control affect teaming viability to a great extent. Two of the areas that seem to affect teaming the most are the amount of taskings in an AEF cycle and the percentage of those taskings that require nonstandard capability packages. The overall *capability saturation level* (# of positions tasked / # of positions available) for an AEF cycle can be used to measured resource utilization. The percentage of taskings not tied to preexisting UTCs, (# of IA taskings / total # of tasked positions) can be used to measure the nonstandard taskings. These measures provide a good indication of the demand and tasking difficulty of each AEF cycle.

A few areas are recommended for future research. First, recommend that AEFC sponsor an external or internal assessment of FOLs. This assessment should have the objective of rank ordering FOLs to outline which require higher levels of teaming to achieve successful operations.

Second, recommend the AF research a more deliberate system to train geographically separated ECS resources according to the likelihood that they will deploy together. This system would reach beyond wing level to match homestations who support the same AEF windows to train together in exercise-like conditions.

Lastly, trends with recent AF vectors on manpower and deployment workload demand a look at how drawdowns will affect ECS capabilities for deployment. A career field-specific study should be enacted for every ECS field facing future manpower cuts to determine what their maximum capability will be in future AEFs. This may prevent reactive measures from taking place after a cycle has been entered. For instance, it may drive certain career fields to deploy for longer periods to ensure uninterrupted AEF support.

AEFC is taking a proactive approach to address teaming concerns. However, outside influences will drive the extent to which AEFC can produce effective teaming solutions. By monitoring the outside

constraints and measuring teaming trends, AF and AEFC leaders can responsibly make policy recommendations and teaming decisions to ensure successful deployments.

Appendix A: Personal Interview Records

Subject Matter Expert Meeting at 1100 on 16 Feb 06
AEF Center, Langley AFB, VA

Participants: Mr. Michael Bladorn, Mr. Larry Hopkins, Lt Col Mike Harbison, Major Greg Williams, and Captain Doug Stanton

Meeting began with a slide presentation by Mr. Bladorn on AEFC ops and how best fit matrix was developed / improved.

Sourcing Process (soup to nuts):
Assumptions are that supply, demand are validated. Methods for validating supply are UTC coding, AEF Reporting Tool (ART) Method for validating demand lies with Joint and Air Staff validation in DCAPES. AFI 10-401 outlines that the AFWUS and AEF library be updated by Air Staff A5XW.

ART is a website that shows status of equipment and personnel; shows availability of a UTC, shows any shortfalls between UTC tasking and readiness level. There is usually a 2-hit policy for each squadron where ECS is divided between 2 AEF cycles so only half a squadron is gone at once.

There is also a requirement for bases to use NS UTC P-coding. It shows if a UTC is available without constraint (DW), available with constraint (DXW) or not available for deployment (DXX).

The Air Reserve Component (ARC) "buy" occurs shortly after validation is complete. This is allowed to ensure maximum ARC participation. The reasoning behind this policy is: if ARC assets get to choose mission and location, they will more readily participate given all the hardships of leaving jobs, disrupting normal ops. Once the ARC buy is complete, those positions are matched and the active duty is looked at to fill the rest. ARC historically chooses places that they are familiar with…like Diego Garcia.

Best fit matrix is designed to assist in matching the AD ECS piece. It is an Excel-based tool which has been in existence since 2005. It imports all validated ECS requirements (demand) for an AEF and then filters (supply) ECS assets by which UTCs are: in the appropriate bucket, DW or DX coded, and showing as "green" in ART. All of the coding mentioned is conducted at the squadron/wing level and reviewed by MAJCOMs monthly.

Best fit matrix will take the current information and match available UTCs to FOLs. The matrix attempts to match a base to an FOL in the biggest "chunks" possible while ensuring UTC matches. Teaming is not looked at beyond the base level—i.e. MAJCOM matches not looked for. Unit and squadron level is looked at primarily at both ends of the process.

There is a demand list and it outlines at a broad level the different functional breakouts. For instance, CE has 7 separate schedulers because firefighters, EOD, Environmental, etc are totally different areas to fill—not interchangeable at all. There could be 23 UTCs on a particular demand list and they would be

labeled “UTC Demand”. There could be 131 requirements and they would be labeled “UTC Auth Demand.” The best fit matrix will look for a unique demand by UTCs at a unit.

The “best fit” is said to be the solution with the lowest amount of residual (untasked but available) assets left at bases across the board. It does this to try to allow for a fair share of assets while still focusing on matching squadrons/bases to FOLs if possible. This product is then put in E-CAST and shared with the sourcing FAMs as a starting point for each AEF.

FAMs see this E-CAST tool as anywhere from a 30% solution to a 70% solution.

Exclusions: Some FAMs are not included in this best fit process because they have been sourced solely for 6 month tours (especially if they are backfilling Army requirements). Therefore, SFS, Transportation and Fuels are excluded from this drill, although they are traditionally considered “ECS.” Also aircraft, maintenance, intelligence, base operations, space and several other UTCs are excluded from this process. Aircraft and maintenance naturally go as a single package on back-to-back AEFs. Entire Ops squadrons deploy while half the AMXS (AMU 1) squadron deploys with them. Then the other Ops squadron deploys with the other half of AMXS (AMU 2). Enablers, LD/HD assets are considered available at all times and teaming is not explored for these AFSCs.

Shifting teaming focus/priorities:
Previous focus of AEFC was on teaming ECS with same-base aircraft packages. Looked at # of aircraft taskings vs. support; the ECS isn’t necessarily in the same bucket. Now the focus is on squadron level teaming then, if possible group and wing-level teaming. The efficiencies here are that people who train together can fight together best.

Other obstacles:
AFSLMO works group/cc and above taskings independently of base UTC availability/tasking. In addition, a fair amount of expeditionary squadron command positions have been shifted to 6-month to 1-year tours. This gives a discontinuity to teaming at several leadership levels. Base leadership rarely deploys with their troops in the ECS world.

The post-best fit matrix look by sourcing cell personnel is where additional efficiencies should be strived for.

Current 2nd look/finalization process:
Biggest “rocks” are looked at first; top 4-tasked ECS career fields: CES, LRS, CS, SVS
Prioritization for teaming is matching most austere location first and then look at multinational vs. traditional missions for best match possibilities.

They look to see where the synergies lie to team these base UTCs at the same FOLs. This template for which “lead base” goes to an FOL is finalized at a meeting and then distributed to smaller UTC FAMs for further synergies (Contracting, FM, PERSCO) This all takes place within a 10-day window.

Idea for future tool use:

Provide a hierarchy indicating importance if each objective relative to others. Provide a tool which shows trade-offs between teaming solutions. Could provide a sensitivity analysis for overall solutions.

Areas for future study:
AEFC would also like to see a tool that assists them in singling out the prime residual pools for the next taskings that pop up. For instance a color coding system centered around the average FAM residual—showing the 3 sigma outliers in one color and the 2 sigma outliers in another color. This could make the best fit matrix product easier to manage for sourcing personnel.

Look at a value hierarchy tool for determining FOL priority for sourcing. How is "most austere" defined? How do missions stack up against each other for priority?

Subject Matter Expert Meeting with SMSgt William Jackson, CENTAF 2T2XX Functional Area Manager (FAM), WPAFB, 10 Apr 06

SMSgt William Jackson worked at Shaw AFB from April 2003 – August 2005 as a FAM for the Aerial Port career field. He is currently an AFIT student studying Logistics Management.

Description of duties/challenges of FAM at CENTAF:
CENTAF reviews and approves/disapproves change requests from established locales for Lt Col and below.

TALCEs were a part of his sourcing duties in the post-9/11 environment. Other 2T2XX UTCs were also in high demand. For instance, Al Udied has 5 or 6 21-person packages rotating + 5 permanent party positions

CENTCOM reviews 2 – 3 times a week (CENTCOM PID augmentation)

He worked to stand down some PIDs (Jordan and Saudi Arabia) AMC was looking to CENTCOM and CENTAF for guidance on where to take assets. The relocation took 3 months of airlift to complete. There was massive airlift required to shut know the Kuwait location.

Guard and Reserve pose a challenge because they rotate in an out in 60 day periods.

MAJCOMs work with AEF Center to make all of this happen. 85% of TALCEs are scheduled with AMC / TACC. Then TALCEs go away when a location is considered steady state (command structure, comm, PERSCO, other UTCs take over functions).

As a FAM, he talked with sourcing cell at AEF center two to three times a week.

When staffing positions he looked for specific skill certs like HAZMAT, etc and filled those first. Also, looked at the size/requirement at a location and filled most austere first.
The 2T2XX LIMFAC was manpower during each AEF rotation along with logistics readiness officers (LRO).

When he did ACR change requests, he had to review what Joint Forces command submitted. Some were for restructuring; others were for mission change or routine purposes.

Challenges:
Army had additional requirements for training. Training skewed the timeline for movement and sustainment through rotations.

Joint requirements are usually asking for higher ranks than what is necessary for actual duties. The enlisted ranks especially do not translate well amongst services. A SNCO requirement would come in for duties that an AF SSgt would normally do. Most Joint requirements are not usually questioned though.

Line remarks for positions are also a challenge. Meeting every line remark narrows the field down considerably and sometimes makes a position unsourceable.

They had a conference in 2005 with deployed Wing/CCs, CENTAF, AEFC, CENTCOM, AMC for transportation execution. It improved communication and understanding. The main issues were 1) on time arrivals, 2) intransit visibility (aggregation).

Subject Matter Expert Meeting with Major Tammy Hinkston, Chief, Services Scheduling and Operations Interface, Beavercreek, OH , 15 Apr 06

Air Staff sets the policy and AEF library pair balancing. The UTC library shows groups of requirements called force modules to meet a capability. In addition, there are hard-to-fill areas: LRO, Army transport models, Intel, EOD, RED HORSE, Medical Specialties, and Aero Evac. Even Protocol officer requirements are beginning to be hard to fill and seen as too taxing on base resources.

There are rule sets for each rotation in addition to existing AEFC OI (which is dtd 2004 but already seen as outdated due to volume of operating changes) and AFIs in the 400 series…specifically AFI 10-401 dtd 2005.

Challenges:

Following the iron vs teaming at unit level is a disconnect since aviation runs back-to-back and ECS does not e.g. Diego Garcia (had to fill one bucket with AEFC units (no match) or look harder at residuals from other bases

Base support is different for each AEF bucket.

Leadership packages are sometimes shortfalled after sourcing which skews basis that entire sourcing plan was formed on.

Some bases ask for a waiver to have different buckets for each functional area depending on their homestation mission needs. Waiver process works and is used.

Some requirements are hard to source because it isn't apparent who has certain types of experience. Protocol is a good example of that. It may get an SEI identified to help target officers and NCOs with prior experience.

Requests for Forces (RFF) from Army are getting tough to fill.

Missing DRIs is still a big problem.

ANG and Reserve mobilization issues are also a challenge – 2 weeks at a time is a strain on airlift and FOL.

How do you count Guard and Reserve units—right now they are counted as one unit. How are they teaming in actuality?

Best fit matrix is not fully utilized yet in AEFC. This is because, in some instances, the AEF library doesn't match what is in ART. Therefore the best fit matrix doesn't give the best solution—since it feeds partially from ART status.

ECAST doesn't always like (accept) non-postured assets (volunteers) or substitutes. It causes system glitches and forces sourcing personnel to double enter information into E-CAST and DCAPES. DCAPES will flow info into ECAST but ECAST will not flow information into DCAPES. This causes disconnects and doubles the work. ECAST is run by contractors so it is somewhat difficult to get changes made.

Training for AEFC Sourcing members: CWPC training is mandated only for branch and section chiefs, JOPES is offered at Fort Eustis only by contractors, DCAPES training is offered locally but ECAST is only learned by OJT. Formal training is limited to only 1 week for sourcing cell members. The OJT seems to be trial by fire since few formal courses are scheduled on a routine basis for these positions.

Processes That Enable Success:

1) Match unit level ECS with leadership (O-5 and below) scheduled for that FOL (Big 4 Meeting)
2) Publish list for schedulers with smaller UTC loads
3) Schedulers with smaller UTC loads match
4) Do overall teaming analysis
    a. What percentage of a unit came from same base?
    b. Look at unit at an FOL LRS from Al Dafra 14 bases vs. 4 bases

Defining Success:

Sourcing within 10 days is one part of defining success…overall, adhering to AEFC timelines is a key measure.

Electronic products to assist would be a help here…what % is sourced by the end of 10 days.

1. Best teaming at unit
2. Best teaming at wing

From there they develop an alignment template after Big 4 meeting. Then the document is 80-85% built.

Subject Matter Expert Telephonic Interivew with Captain Harley Smith, AEFC, Chief Force Management Branch, 21 Apr 06

Capt Smith was previously a sourcing FAM at AEFC. He currently works Joint requirement fills for AEFC. They are characterized by being short-fused (fast fill, deployments), lasting from 6 months to 1 year.

They are very different than filling standard UTC requirements and usually end up breaking away part of an available UTC. These positions usually involve 6-week combat skills training at locations like Fort Hood, Fort Carson, Fort Shelby, or Camp Atterbury. These Joint requirements can affect UTCs in the following AFSCs: Transportation, SFS, Air Traffic Control, CES, Intel, Personnel, Information Management, and Supply.

Because of this, residual capabilities vary greatly between AFSCs / functional areas.

Air Staff fights the "battles" that exist when Joint requirements tap our already strapped resources. This clears the way to sometimes allow for substitutions with less strapped functional areas while still meeting the mission. Especially strapped AFSCs include: LROs, CES, and SFS.

Capt Smith communicates with his Air Staff and Joint POCs via secure video teleconferences. This seems to work very well.

He had no formal training for this job although he did previously deploy with the Army and attended Combat Skills Training prior to the deployment.

Appendix B: Deployed Commander Questionnaire (Reduced)

My research project is to develop a tool that would identify and measure **what factors matter most to a supported commander as it pertains to ECS mission effectiveness at a forward operating location (FOL)**. This tool would help "score" AEF teaming options in order to find the optimal choice based primarily on deployed CC priorities. Because you are a recently deployed leader, your input is vital to defining those priorities**.** Thank you for providing your perspective!

Supported Commander Name: Grade/AFSC:
Current Duty Title: Deployed Duty Title:

1. What was the location and timeframe of your deployment? (If classified, leave blank)

2. Was your deployment during a: build-up, sustainment, or drawdown phase?

3. Who were you functionally in charge of during deployment (i.e. CE, SVS, Comm, etc)

4. Scale: 1-10 (10 = best) How cohesive was your unit? _____
How able to meet your mission was your unit? _____

5. What factors **detracted** most from unit's ability to **attain cohesion**? (assign points to factors that most detracted from cohesion out of **a total of 100**)

Lack of job skills	_____	
Lack of deployed skills	_____	
Urgency/stress of mission	_____	
Length of TDY (too short)	_____	(Leave factors blank
Length of TDY (too long)	_____	that don't apply)
UTC leadership from different base than workers	_____	
UTC workers split between several bases	_____	
Homestation & FOL missions differed	_____	
Other _____	_____	

6. What factors **detracted** most from ability to **meet the mission**? (assign points to factors that most detracted from meeting the mission out of a **total of 100**)

Lack of job skills	_____	
Lack of deployed skills	_____	
Urgency/stress of mission	_____	(Leave factors blank
Length of TDY (too short)	_____	that don't apply)
Length of TDY (too long)	_____	
UTC leadership from different base than workers	_____	
UTC workers split between several bases	_____	
Homestation & FOL missions differed	_____	
Other _____	_____	

Appendix C: Homestation Commander Questionnaire (Reduced)

My research project is to develop a tool that would identify and measure **what factors matter to a commander as it pertains to ECS mission effectiveness at a forward operating location (FOL)**. This tool would help "score" AEF teaming options in order to find the optimal choice based primarily on deployed CC and homestation CC priorities. As a homestation commander, your inputs are key to defining those priorities**.** Thank you for providing your perspective!

Commander Name: Grade/AFSC:

1. What was the location and timeframe of your troops' deployment?

2. What functional area (i.e. CE, Comm, SVS) and UTC package did they deploy from?

3. Assign points (out of 100 total) as to which elements should be considered when selecting troops to go to a FOL Leave blank those that don't apply.

Aircraft and MX package from your base are going there	_____
Other ECS from your base are going there	_____
Your homestation mission is similar to the FOL mission	_____
Your base/MAJCOM is closest physically to the FOL	_____
Homestation leadership elements are going to the FOL	_____
Other _____	_____

4. Assign points (out of 100 total) as to which elements can contribute to UTC failure in an FOL:
Leave blank those that don't apply.

Lack of job skills	_____
Lack of deployment skills	_____
Urgency/stress of mission	_____
Length of TDY (too short)	_____
Length of TDY (too long)	_____
UTC/Sq leadership was from a different base than workers	_____
UTC workers split between several bases	_____
Homestation and FOL missions differed significantly	_____
Other _____	_____

5. What could the AEFC have done differently to better match your troops' capabilities when tasking them for an FOL?

6. What policy that AEFC currently follows would you most like to see changed? Why?

Appendix D: AEFC Sourcing Cell Survey (Reduced)

My research project is to develop a tool that would measure functional area sourcing solutions based on forward operating location (FOL) and home station commander value criteria. It will allow for "scoring" of alternative solutions based on the relative weights assigned to sourcing considerations. This tool will be designed to enhance, not replace, existing AEFC teaming initiatives across ECS functional communities.

1. **For which ECS functional area do you source requirements?**

2. **How long have you worked in sourcing at AEFC?**

3. **Given 100 points to distribute to the FOL sourcing factors listed below, with the number of points signifying relative importance and more points implies more important, how would you distribute the points?**

FOL Factor	**Points**
Match UTCs to FOL where other ECS resources from same base are assigned	_____
Match UTCs to FOL where iron/MX packages from same base are assigned	_____
Match UTCs to FOL whose mission most closely matches its base mission	_____
Match UTCs to FOLs to minimize the number of bases supporting the FOL	_____
Other significant factor you consider (if any). _____	
_____	_____
Total = 100 pts	

4. **Given 100 points to distribute to the homestation sourcing factors listed below, with the number of points signifying relative importance and more points implies more important, how would you distribute the points?**

Homestation Factor	**Points**
Select UTCs for deployment to ensure residual capabilities are even	_____
Match UTCs to FOLs to minimizes the number of FOLs a base is supporting	_____
Match UTCs to same location as homestation squadron/group/wing leadership	_____
Other significant factor you consider (if any). _____	
_____	_____
Total = 100 pts	

5**. Given 100 points to distribute to the deployed and homestation commander, with the number of points signifying relative importance of that commanders concerns and more points implies more important, how would you distribute the points?**

Deployed CC	_____
Homestation CC	_____
Total = 100 pts	

Appendix E: Deployed Commander Questionnaire Comments

For CE, equipment usage – a lot of the WRM assets are old, broken and need repairs – rental equipment has helped tremendously. Nothing distracts more from the cohesion of a unit when you do not have the tools to complete the job right. That is frustration! *(CE/Flt CC, Balad AB)*

Cobbling leadership teams from different bases sometimes caused problems, but that is largely personality dependent. Skill levels were good, although in some cases because we have merged so many specialties into one AFSC the depth of knowledge dictated moving people around within the squadron to best utilize expertise. Their association with where we put them and the UTC position didn't always turn out to be the same. *(ESVS/CC; Manas AB Kyrgyzstan)*

The cohesion (what detracts from cohesion) question does not apply as unit cohesion was great. We had take-charge SrNCOs who made things happen and kept morale high from the on-set. We just ran out of time here to accomplish all that we and the Wg leadership wanted us to complete. I think the factors you list above (mission accomplishment detractors) can all be overcome by identifying those people in an organization that have the skills to lead others to complete the mission. If not, then CCs have other avenues available with support from HHQs to accomplish the mission. *(ECES/CC; Manas AB Kyrgyzstan)*

We were frozen in place with AEF 7/8 (Nov 02 – May 03) w/no know end date. *(ECONS/CC; Ganci AB, Kyrgyzstan)*

The biggest problem I experienced was a result of the unwillingness of previous and higher leadership to deal with personnel issues regarding incompetence, negligence, and poor leadership at lower levels. This allowed the organization to suffer a "cancer" in which mission degradation and morale continued to get worse. Getting leadership to deal with these issues was difficult and time consuming, but the dividends were enormous when they were finally addressed. *(EMSG NATO/CC; Baghdad, Iraq)*

Appendix F: Homestation Commander Questionnaire Comments

Security Forces capabilities should all be equal—depending on skill level. We're all trained to deploy and "defend the force." But capability doesn't account for teamwork. The more troops are around each other, the more truly can trust each other. Teams should train and deploy to the same location doing the same operations, same shifts. *(SFS/CC; Airlift Base)*

We need to be in the same AEF bucket as our A/C. Currently support is in a different AEF than our flyers and maintainers. This is not a good way to work. *(CS/CC; Fighter Base)*

I haven't seen failure yet so don't know if you even have the right factors identified (ref #4 in homestation commander questionnaire). AEFC tasked the UTC based on the published capabilities of those UTCs. It's up to CCs to ensure the UTCs are filled with personnel who can perform that capability and have them postured for their AEF. I would like to see the AEFs lined up with the wing's iron so the home station impacts of an AEF deployment are seen throughout the wing – not just the support side. *(CES/CC; Fighter Base)*

If UTCs are for deployment then let's deploy the UTC; don't pick a person for this and a person for that. *(CS/CC; Fighter Base)*

Leadership is key, it is nice to deploy with your leadership since you already know how they operate from back home…since you are only deployed for 4-6 months, you sometimes spend the first 5-7 weeks trying to understand your new commander's intent…the learning curve is too great, and the mission suffers. *(CES/ Flt CC; Airlift Base)*

Ensure if a position is reclama'd, they find a replacement fast…this has taken too long at times, and those that finally get notified have only a few days to pack. And, do not "rush" to fill the job just to satisfy "filling the square"…the 'one up, two down' philosophy can end up hurting the deployed commander as he will most always get an inexperienced troop. *(CES Flt/CC; Airlift Base)*

Get dedicated missions out of base and have the teams travel together…the teams get scatter to the wind when you have to buy commercial tickets and lug 4-6 pieces of baggage around the US just to get to our POE. *(CES Flt/CC; Airlift Base*)

They (the AEFC) did fine matching capabilities. AEFC has made solid progress at improving organization and ID of personnel for deployments. *(MSG/CC; Fighter Base)*

Matching is done fairly well for the Contracting career field. AEFC needs to be linked with AFPC. That's happening. (CONS/CC; Fighter Base)

Appendix G: AEFC Sourcing Cell Questionnaire Comments

Most important in CE is unit teaming of bigger UTCs with smaller ones. *(CES FAM)*

30 points should be given to matching SEI / rank requirements; 30 points should be given for filing as many priority taskings as possible and Air Force shortfalling the rest. Career field is about 50% manned. *(ATC FAM)*

FOL Factor Comment: We have 9 CC positions which equals to 9 FOL LRSs. Within logistics we try to team one base with a CC in the AEF library to an FOL LRS. Then we get together with SVS, CE, COMM and others within the group to team at that level. Iron must be considered from many functional areas but it's no longer the driver for teaming all ECS. [*Logistics Readiness Officer (LRO) FAM]*

Homestation Factor Comment: For LROs every CGO and FGO is deployed that's available each AEF--exceptions are broken UTCs or 2d Lts and some 1st Lts. *(Therefore her response was 0 pts of value for residual parity). (LRO FAM)*

FOL Factor Comment: To improve teaming, for CES/EOD, I try to follow large CE UTCs. When sourcing TCN escorts, I align bases with final teaming analysis. *(CES & EOD FAM)*

Homestation Factor Comment: My first priority for sourcing functional requirements (CES) is to team EOD with their respective squadrons. Next I try to place same base at same FOL and finally consider grouping EOD within same MAJCOM together at same FOL. *(CES & EOD FAM)*

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Air Force Institute of Technology
Graduate School of Engineering and Management (AFIT/EN)
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14. ABSTRACT The purpose of this research was to study and assess the teaming process employed by Aerospace Expeditionary Force Center (AEFC) when sourcing and aggregating Expeditionary Combat Support (ECS) assets and develop a decision analysis-based value model for their internal use. The study gathered and analyzed input from recently deployed commanders and homestation commanders to solidify factors of importance in relation to team cohesion and mission effectiveness. In addition, it compared AEFC sourcing cell and field commander inputs on the importance of factors that contribute to meeting Combatant Commander and homestation mission objectives.

The culmination of this effort is the development of a value model to guide members of the ECS sourcing team toward maximizing effective utilization of available assets within the constraints of deployment rule sets. Results indicate that a common value model cannot be applied to all ECS functional areas individually due to wide variance in operational stress and career field health levels. However, the research determined that a value model can be used to assess and compare the overall desirability of ECS sourcing solutions. Additionally, it identified several value measures for AEFC leadership to consider using during their teaming analysis process.

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U	**U**	**U**	**UU**	69	**19b. TELEPHONE NUMBER** *(Include area code)* (937) 255-6565, ext 4601; e-mail: gary.kinney@afit.edu

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