Supporting Air and Space Expeditionary Forces

Lessons from

Operation Enduring Freedom

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SUMMARY

The Air and Space Expeditionary Force (AEF) concept was developed to enable the Air Force to respond quickly to any national security issue with a tailored, sustainable force. The major theme of substituting speed of deployment and employment for presence has significant resource implications. Since 1997, the RAND Corporation and the Air Force Logistics Management Agency have studied and refined a framework for an Agile Combat Support (ACS) system to support the AEF concept (Galway et al., 2000; Tripp et al., 1999).

AGILE COMBAT SUPPORT SYSTEM BACKGROUND

As described in Tripp et al. (2000), the AEF operational goals are to

- rapidly configure support needed to achieve the desired operational effects
- quickly deploy both large and small tailored force packages with the capability to deliver substantial firepower anywhere in the world
- immediately employ such forces upon arrival
- smoothly shift from deployment to operational sustainment
- meet the demands of small-scale contingencies and peacekeeping commitments while maintaining readiness for potential contingencies outlined in defense guidance.

Key elements of an ACS system to enable these AEF operational goals include the following (Tripp et al., 1999):

- A combat support execution planning and control (CSC2) system to assess, organize, and direct combat support[1] activities, meet operational requirements, and be responsive to rapidly changing circumstances. The CSC2 capability would help combat support personnel
  - — Estimate combat support resource requirements and process performances needed to achieve the desired operational effects for the specific scenario.
  - — Configure supply chains for deployment and sustainment, including the military and commercial transportation needed to meet deployment and sustainment needs.
  - — Establish control parameters for the performance of various combat support processes required to meet specific operational needs.
  - — Track actual combat support performance against control parameters.
  - — Signal when a process is outside accepted control parameters so that plans can be developed to get the process back within control limits.
- A quickly configured and responsive distribution network to connect forward operating locations (FOLs), forward support locations (FSLs), and continental United States (CONUS) support locations (CSLs)
- A network of FOLs resourced to support varying deployment/employment timelines
- A network of FSLs configured outside CONUS to provide storage capabilities for heavy war reserve materiel (WRM), such as munitions and tents, and selected maintenance capabilities, such as centralized intermediate repair facilities (CIRFs) that service jet engines of units deployed to FOLs. FSLs could be collocated with transportation hubs.

[1] In this report, the term *combat support* is defined as anything other than the actual flying operation. Combat support consists of civil engineering, communications, security forces, maintenance, service, munitions, etc.

- A network of CSLs, including Air Force depots, CIRFs, and contractor support facilities. As with FSLs, a variety of different activities may be set up at major Air Force bases, convenient civilian transportation hubs, or Air Force or other defense repair depots.

In 2000, Project AIR FORCE helped evaluate agile combat support lessons from Joint Task Force Noble Anvil (JTF NA),[2] in Serbia. Some of the concepts and lessons learned from JTF NA were implemented in supporting Operation Enduring Freedom (OEF), in Afghanistan. This analysis allowed the opportunity to compare findings and implications from JTF NA and OEF. Specifically, the objectives of the analysis were to indicate how combat support performed in the OEF scenario, examine how ACS concepts were implemented in OEF, and compare JTF NA and OEF experiences to determine similarities and applicability of lessons across experiences and to determine whether some experiences are unique to particular scenarios.

JTF NA and OEF provide important opportunities to study how AEF ACS concepts were implemented during contingency operations and how they have been refined to better support AEF goals. In this report, we address five areas that correspond to the above elements of an ACS system: CSC2 structure, the development of forward operating locations, the use of forward support locations and CONUS support locations, the transportation system, and resourcing to meet current operational requirements. Understanding these experiences could be of value for combat support and operational personnel who may be called upon to support future contingency operations. Task Force Enduring Look (AF/CVAX) sponsored this research in coordination with the Air Force Deputy Chief of Staff for Installations and Logistics (AF/IL).

COMBAT SUPPORT CHARACTERISTICS OF JTF NA AND OEF

Since every military operation has its own unique characteristics, neither the performance of the current support system nor the de-

[2]Joint Task Force Noble Anvil was the organization overseeing U.S. forces involved in Operation Allied Force. This report concentrates on Air Force operations conducted by Joint Task Force Noble Anvil.

sign of a future combat support system should be assessed or based solely on any one experience. However, both JTF NA and OEF provide important experiences that warrant study for combat support operations.

By some measures, OEF could be considered a small combat operation, given the number of aircraft and personnel deployed, the number of beddown locations employed,[3] and the number of sorties flown, all of which are small compared with other recent Air Force operations (see Table S.1). However, the combination of short planning timelines and poor existing infrastructure created especially demanding requirements for combat support operations. By comparison, JTF NA had the benefit of a long buildup time and was conducted from bases with good infrastructure.

Since, as the Chief of Staff of the Air Force recently observed, "[The Air Force's] heightened tempo of operations is likely to continue at its current pace for the foreseeable future" (Jumper, 2002), the Air Force must be able to support the deployment of a large number of forces, either in large-scale deployments, such as in Operation Desert Storm, or in an accumulation of a number of small-scale contingencies, such as JTF NA and OEF. Furthermore, it must be able to provide such support on short notice and in austere environments,

Table S.1

Dimensions of Support in JTF NA and OEF

	JTF NA	OEF
Number of Air Force aircraft deployed	500	200
Number of Air Force personnel deployed	44,000	12,000
Number of munitions expended (in short tons)	7,000	7,000
Number of beddown locations	25	14
Number of sorties flown	30,000	11,000

[3]We use the term *beddown location* to refer to locations at which personnel and/or aircraft were based during operations.

particularly as the War on Terrorism continues around the world. For these reasons, JTF NA and OEF are worthy of study.

In both JTF NA and OEF, the effectiveness of combat support was due, in part, to many ad hoc innovations and adaptations made by combat support personnel to overcome shortcomings in doctrine, training, organizations, and systems, and to shortfalls in resources. These shortcomings and shortfalls can be placed into four general categories: CSC2 doctrine, training, and tools; forward operating location development; the role of the Air Force in joint activities, including development of the theater distribution system (TDS) and installation construction; and the misalignment of resource-planning assumptions and the realities of resource employment of today's boiling peace and contingency operations. We discuss the findings and implications for each of these categories in turn, below.

COMBAT SUPPORT EXECUTION PLANNING AND CONTROL

Findings (see pp. 19–32)

Processes for combat support execution planning and control and organizational alignments have improved since JTF NA, but OEF shows that more attention is still needed in this area. CSC2 was not well understood, so an ad hoc organizational structure developed that varied from doctrine and continued to evolve throughout the operation.

Lessons learned from operations in Serbia indicated problems in CSC2. As a result, AF/IL asked RAND Project AIR FORCE to develop a CSC2 future, or "TO-BE," operational architecture to address the needs of the AEF. Work began in 2000 and was concluding when operations began in Afghanistan in September 2001. Although the TO-BE operational architecture was not used during OEF, OEF provided an opportunity to test its design.

The organizational command structure of OEF combat support differed from the structure delineated in doctrine. As roles and responsibilities developed on an ad hoc basis, this difference led to several difficulties, and some organizations were not prepared for the evolving responsibilities. The global nature of OEF and other ongoing operations further complicated the command structure.

Responsibilities were distributed across commands and regions, increasing information-sharing burdens.

The necessity to prioritize among competing demands for time and resources increased with multiple commitments to ongoing operations, such as homeland defense (Operation Noble Eagle, a Northern Command [formerly Air Combat Command] responsibility); Central Command's exercise Bright Star; support of Bosnia, a U.S. Air Forces, Europe (USAFE) responsibility; Operation Northern Watch, a USAFE responsibility; Operation Southern Watch, a U.S. Air Forces, Central Command (CENTAF) responsibility; and others. Even though developed on an ad hoc basis, the command relationships developed during OEF evolved to closely resemble the CSC2 TO-BE architecture (Leftwich et al., 2002) (described in Appendix A).

Measuring the performance of combat support was another issue faced in OEF; such measurement was continuously deficient. Commercial carriers, for example, had end-to-end visibility of their assets and could track delivery time; the military did not/could not. More performance metrics were defined and tracked in OEF than in prior conflicts, and OEF has shown an improvement in the use of combat support feedback mechanisms. However, many of these metrics did not have goals or standards established to gauge performance levels of combat support processes against those needed to meet operational needs or requirements.

Implications (see pp. 33–34)

As a result of JTF NA experiences, for which CSC2 doctrine and training were underdeveloped, the Air Force has developed a TO-BE CSC2 operational architecture that outlines how CSC2 doctrine, training, organizations, and tools need to be developed to meet agile combat support needs. At the time of OEF, this work was just being completed and the recommendations in these areas were not fully understood or endorsed by the Air Force's senior leaders. Consequently, the Air Force developed ad hoc CSC2 command lines and organizational alignments during OEF, as it did in JTF NA.

OEF has shown an improvement in the use of combat support feedback mechanisms. Although tracking metrics represents an improvement in command and control, and better information has be-

come available, further efforts are needed to establish a closed-loop[4] combat support control system, as described in the CSC2 TO-BE operational architecture and Appendix B.

FORWARD OPERATING LOCATIONS AND SITE PREPARATION

Findings (see pp. 35–46)

Austere FOLs and an immature theater infrastructure during OEF emphasized the importance of early planning, knowledge of the theater, and FOL preparation. Even with a more-developed infrastructure, FOL developed during JTF NA was delayed by host-nation support and site surveys. Host-nation support was difficult to negotiate. Site surveys were ad hoc and nonstandardized in both JTF NA and OEF. Resultant deployment timelines varied widely in both operations.

Timelines for force package deployment varied and depended heavily on preparation activities at forward operating locations. FOLs that were partially developed or at which the Air Force had experience from previous deployments facilitated rapid force deployments—for example, in as few as 17 days during OEF. However, FOLs selected in unanticipated locations took up to 70+ days to become fully developed. Preparation of FOLs was slowed by, among other things, establishing host-nation support, the time used to conduct site surveys, the quality of the data received from the surveys, the amount of development needed to bed down forces, and the amount of contract support available. Even when country clearance had been granted, access to specific bases was often not granted at the same time. These same issues were faced during JTF NA.

Risks were taken by the Air Force to satisfy operational objectives. During OEF, some forces were bedded down at locations that were not yet fully developed. Living conditions were sometimes unsani-

[4]A *closed-loop process* takes the output and uses it as an input for the next iteration of the process.

tary. To meet operational requirements, these conditions were accepted and some creature comforts were sacrificed.

During both operations, no standard site-survey tool was used. During OEF, Air Combat Command (ACC) personnel used GEOReach[5] to conduct surveys, whereas Air Mobility Command (AMC) personnel did not use an automated tool. Often, the data gathered were not shared between commands. The lack of standards and tools between the Air Force, coalition partners, and other services led to delays in developing FOLs.

Preparation efforts conducted by Civil Engineer (CE) personnel played a large role in getting OEF FOLs ready for deploying forces. Civil Engineer personnel and resources were overextended in construction efforts for ongoing Operation Southern Watch deployments, as well as in new-construction efforts to support OEF deployments. Development of installations in support of OEF was the largest such effort since Vietnam.

In addition, during OEF, the Air Force accepted more responsibility for site developments than originally planned, many times getting its assets in place more quickly than the Army did. As a result, the Air Force developed some joint sites or portions of jointly occupied sites that were originally planned for Army development. The Air Force developed more than 75 percent of the FOLs in OEF, many of which supported joint operations.

Finally, contractor support facilitated FOL development. WRM contractors, who were in place prior to OEF at forward support locations that also served as forward operating locations, were able to support FOL-development actions for some of the first units to arrive in the area of responsibility (AOR). The CENTAF WRM support contractor in the AOR assisted in initial activities associated with FOL development, including building tent cities, setting up fuel farms, operating power plants, and providing food and services for the airmen. Contractor support was vital to fast FOL development during OEF.

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[5]GEOReach is a program that combines tabular data with a visual image to provide commanders with situational awareness.

Implications (see pp. 46–48)

Both JTF NA and OEF illustrate that more attention should be focused on political agreements and engagement policies required to develop FOLs. Successes include development of the bomber islands, such as Diego Garcia, which was used effectively in OEF. Other examples include evolving and enhancing capabilities such as those at Shaikh Isa Air Base, Al Udeid Air Base, and Al Dhafra Air Base. The Air Force has also recognized the need to develop site survey tools, standardize the procedures for collecting data on FOLs, and develop assessments of rapid-beddown capability. Some funded developments in this area—programs such as Survey Tool for Employment Planning (STEP) and Beddown Capability Assessment Tool (BCAT)—did not meet with as much success during OEF partly because these tools required classified networks and partly because of the phasing of their development cycles. Other tools, such as GEOReach, were used effectively during OEF. More can be done to standardize site-survey procedures and processes within the Air Force, with U.S. allies, and with other services. The Air Force recognizes this and has taken steps to improve these areas.

During OEF, the Air Force accepted some additional responsibilities for developing base infrastructure when the Air Force and the Army were located at sites where the Army was the responsible agent, partly because of the Air Force's "need for speed" and partly because the development assets for Army installations were palletized, preventing Army assets from being transported fast enough to build infrastructure to support Air Force operations. Executive Agency responsibility is an area that needs to be addressed by Air Force and Army combat support planners.

FORWARD SUPPORT LOCATION/CONUS SUPPORT LOCATION PREPARATION FOR MEETING UNCERTAIN FOL REQUIREMENTS

Findings (see pp. 49–56)

The current AEF force structure of light, lean, and lethal response forces is highly dependent upon FSL capacities and throughput.

Austere FOLs and the immature theater infrastructure illustrated the importance of using FSLs efficiently during OEF. Because of problems identified during JTF NA, improvements have been made in linking FSLs and CSLs to dynamic warfighter needs. But, much more can be done in this area.

Effective agile combat support enabled rapid force deployment, employment, and uninterrupted sustainment of operations in both JTF NA and OEF. As a result of JTF NA experiences, the Air Force has taken several actions to enhance agile combat support. Our analyses indicate that these actions directly contributed to the effectiveness of ACS in OEF. Air Force actions to enhance selected FSLs and develop a global strategy for positioning heavy non-unit resources have been steps in the right direction and have directly contributed to OEF combat support successes. They include selecting and resourcing an additional Afloat Prepositioned Ship (APS); putting munitions in containers on APS; sponsoring an additional WRM ship (a forward support location, afloat); creating formal maintenance FSLs (called CIRFs); and recognizing that improving throughput at WRM forward support locations is key to rapid deployments. These actions facilitated rapid deployment and sustainment of OEF operations, but more can be done.

As in JTF NA, moving assets from FSLs to the FOLs satisfied most FOL combat support requirements. But potential throughput constraints at some FSLs were uncovered during OEF that could adversely affect large force-package deployment timelines if not corrected.

During JTF NA, resource constraints such as backorders hindered the effectiveness of CONUS support locations by adding substantial resupply time and variability during the conflict. Although backorder rates improved, they remained high throughout Operation Allied Force.

CSLs were used more effectively during OEF. Because of JTF NA experiences, attention was given to creating better links between CSLs and the warfighters. Air Force Materiel Command's (AFMC's) Logistics Support Office and the High Impact Target (HIT) list—the most important repair parts for AFMC to monitor in the various Air

Logistics Centers—enhanced CSLs' responsiveness to warfighters during OEF.

Forward support locations for aircraft maintenance were used successfully during both JTF NA and OEF. JTF NA showed that preselection and resourcing—with personnel and equipment—of centralized support facilities can improve flexibility and reduce the assets necessary to deploy to an FOL. During OEF, CIRFs satisfied intermediate maintenance requirements for a number of reparable items for deployed fighter units, not only reducing the forward deployed equipment and personnel but also supporting forward bombers' phase maintenance. Goals were established to link warfighter needs to the CIRF maintenance process and theater distribution system performance. More attention needs to be placed on examining the direct linkages between the performance of the CSL combat support process and operational goals, such as that established at the CIRF.

Implications (see p. 57)

Both JTF NA and OEF proved the Air Force's enhancement of selected FSLs and development of a prepositioning strategy for WRM to be steps in the right direction. However, many FSL developments are still oriented toward specific AORs. A more global development strategy is needed to achieve a more integrated and global ACS posture.

Because of the experiences with backorders during JTF NA, the Air Force has recognized the need for and given attention to creating better links between the CSLs and the warfighters. Examples include AFMC's Logistics Support Office and High Impact Target list to enhance responsiveness to the warfighters from CSLs. However, much more can be done, in this area. For example, a closed-loop feedback capability could be developed to measure actual performance of CSL processes against those needed (planned) to achieve specific operational objectives (see Appendix B).

RELIABLE TRANSPORTATION TO MEET FOL NEEDS (THEATER DISTRIBUTION SYSTEM)

Findings (see pp. 59–72)

AEF operational goals are dependent upon capabilities for assured and reliable end-to-end deployment and distribution that can be configured quickly to connect the selected sets of FOLs, FSLs, and CSLs in contingency operations. Under current joint doctrine, the service with the preponderance of force may be delegated the responsibility for developing and operating the TDS. Since the Air Force may be the predominant user of TDS in early phases of future campaigns, the Air Force may be delegated the TDS responsibility. Even if this responsibility is delegated to another service, the Air Force should play an active role in determining TDS capacities and capabilities. AEF success depends on the early establishment of reliable and responsive TDS capabilities. The Air Force, as well as other services, depends on joint, global, multimodal, end-to-end transportation capabilities.

In both JTF NA and OEF, problems encountered with establishing a responsive TDS and the problems associated with integrating the strategic movements system with TDS led to gaps in an end-to-end military deployment and resupply system that were not encountered by commercial carriers. During OEF, Federal Express and other carriers had end-to-end visibility and could track their responsiveness in meeting deliveries. This same kind of capability was not established until several months after operations began in the military portion of the system.

Even with a well-developed transportation infrastructure in Western Europe during JTF NA, the configuration and performance of the theater distribution system required continuous refinement to ensure that supplies were delivered to operational units, and innovative approaches were taken and adaptations made to mitigate TDS shortfalls. OEF, by contrast, took place in an AOR with a very poor transportation infrastructure. Issues with TDS performance arose.

Regardless of the richness or poorness of the transportation infrastructure, TDS development and operation will require more attention in all future operations, because the Air Force relies on robust

and reliable resupply and because most materiel needed to initiate and sustain operations is located at FSLs.

In OEF, Central Command tasked the Air Force to develop and manage TDS, including the Joint Movement Center—an Army responsibility in the past. Although the Air Force may not have expected the TDS role and may not have had personnel adequately trained to accomplish that role, the TDS role is vitally important to the accomplishment of AEF operational goals, including rapid deployment and uninterrupted sustainment.

As OEF unfolded, the theater distribution system continued to evolve. Fuel dominated movement requirements. Assets such as FOL support, munitions, and rations also accounted for a significant portion of movements. Although spares account for only a small portion of the transportation requirements, the light, lean, and lethal AEF depends upon rapid and reliable resupply. Another issue arose when materiel from one AOR had to be transported to another AOR.

To move all the assets required to sustain an operation, many modes of transportation are used. Distribution planners need to consider multiple modes and both commercial and military carriers when planning the end-to-end distribution network to support AEFs at deployed sites. During OEF, in addition to Air Force assets, commercial airlift and land transportation were contracted, and sealift was used. As in JTF NA, the transportation system was complex and involved coordination between services, among coalition partners, and between different AORs. No single supply chain dominated or consistently outperformed all other chains to each deployment location.

TDS has two components: In the first component, assets are moved from the FSLs to the FOLs. This part of the distribution system is required to move initial deployment and sustainment items to the point of need, and many of those items are stored in the AOR. The second component provides the onward movement of resources from CONUS and the movement of reparable parts to and from FSLs.

During both JTF NA and OEF, the complex intratheater movement system was not always well coordinated with the strategic (intertheater) movement system. Gaps exist between the two systems. Cargo stacked up at transshipment points, and a significant

portion of the total customer wait time was accounted for by the time cargo spent in the transshipment hubs.

Implications (see pp. 72–73)

Another area that needs considerable attention is the Air Force's role in the development of the TDS. As JTF NA made evident, even in well-developed countries, TDS can be problematic.

Joint publications and combatant commander concepts of operations indicate that the combatant commander can delegate the development of the TDS to one service, which is generally the predominant user of the system, and that service will develop the system with coordination from the other services. In the past in the Central Command AOR, this responsibility was given to the Army. In OEF, the Air Force became the predominant user in the early phases of the operation. Current joint doctrine places the responsibility for the development of the strategic movement system on the U.S. Transportation Command (USTRANSCOM). Thus, current doctrine splits the responsibility for developing the "end-to-end" deployment and resupply system among multiple parties.

In today's world of global warfare and having those combat support facilities located in one AOR supporting a combatant commander in another AOR, what could be considered TDS and what could be considered strategic movements are confused. For instance, is the system that moves WRM or repaired spares from the European Command AOR to the Central Command AOR a TDS or a strategic movement system? Current joint doctrine may be inappropriate for expeditionary forces that rely on fast deployment, immediate employment, and reliance on responsive resupply of lean, forward-deployed forces. In today's global War on Terrorism, it may be more appropriate for USTRANSCOM to develop capabilities for end-to-end distribution channels rather than split distribution responsibilities amoung USTRANSCOM and multiple combatant commanders.

Another solution may be to develop Distribution Units in each service. Similar to a Federal Express or a United Postal Service regional office, such units would be trained to fill in the gaps between the strategic and the tactical distribution systems. They could have

common training, tools, and performance metrics and could seamlessly merge into the TDS gap during contingency operations.[6]

If new joint doctrine is developed, and even if the current doctrine is retained, the Air Force must be prepared to play a lead role in developing the end-to-end distribution channels. Reliance on light and lean deployments and responsive resupply of deployed units places great importance on the rapid development of contingency end-to-end deployment and distribution capabilities. Air Force Logistics Readiness Officers and enlisted personnel are logical candidates for carrying out this development, but they lack sufficient training to fulfill the responsibilities. Additional policies for training and personnel development are needed for the Air Force to meet these future distribution responsibilities.

RESOURCING TO MEET CONTINGENCY, ROTATIONAL, AND MAJOR REGIONAL CONFLICT REQUIREMENTS

Findings (see pp. 75–86)

Although JTF NA and OEF combat scenarios differed from each other in many ways, they also differed from wartime planning factors in significant ways. The usage factors associated with supporting permanent rotational commitments such as Operation Southern Watch and unanticipated contingency operations are different from those used to make programming decisions to obtain resources. The Air Force is operating today with a resource base that was created largely using previous guidance, for which resources were computed to meet the requirements of major regional conflicts (MRCs). Under this programming paradigm, non-MRC requirements—for example, those needed to meet permanent rotations, peacekeeping, and smaller contingency operations—were assumed to be subsets of the MRC resource base. The current combat support system and programmed resource base have difficulty simultaneously supporting small-scale contingencies and current rotational deployment requirements.

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[6]For more information about this Distribution Unit concept, see Halliday and Moore (1994).

Shortages in combat support assets, particularly in high-demand, low-density areas, such as combat communications, civil engineering, and force protection, stressed the AEF construct, resulting in the Air Force's borrowing against future AEFs during OEF. The current AEF scheduling rules, which allow personnel to be eligible for deployment for only 90 days in a 15-month cycle, may be an effective and efficient way to schedule and deploy aircraft and aircraft support units, but they may not be the best way for scheduling ACS. Specifically, balances must be struck between home-station support disruption and deployment commitments.

To evaluate combat support options in today's uncertain world requires a capability-based assessment method. Such a method provides insights into the capabilities that exist to meet a wide variety of scenarios with alternative levels of investments in combat support resources. For instance, how many bare bases can be opened and sustained within any given AEF cycle? What is the constraint, personnel or equipment? If personnel, which career fields? What are reasonable options for alleviating the constraints? A capabilities view of resources may be a more appropriate way than a scenario-specific view to consider resource investments today.

Finally, the AEF is a transformational construct and has many implications for what types of resources will be provided and how those resources will be provided in the future. The major theme of substituting speed of deployment and employment for presence has significant resource implications. It also has significant implications for the types of resources that need to be procured. The deployment of lean initial support packages to get quickly to the fight places emphasis on reliable transportation and CSC2.

Implications (see pp. 86–88)

The planning factors and assumptions that are used to determine resource requirements differ significantly from those that are encountered in current rotational and contingency operations. As found in many cases in JTF NA and OEF, the current resource-usage factors are more demanding than the assumptions used to fund resources. This imbalance creates the resource shortages that appear in contingency operations. In addition, the current AEF scheduling

rules must be routinely violated in some key combat support areas, such as fire protection and combat communications. Alternatives for providing combat support capabilities to AEFs need to be reviewed. The current approach creates stress and limits combat power-projection capabilities.

CONCLUSIONS

Table S.2 summarizes combat support in the five areas investigated during this study.

Opportunities for improving combat support for the AEF of the future—for making it more congruent with agile combat support—are described in the following recommendations.

Combat Support Execution Planning and Control

- Establish clear doctrine for combat support execution planning and control.
- Clearly define command relationships.

Table S.2

Assessing Combat Service Support

	Operation Allied Force, JTF NA	Operation Enduring Freedom
Combat support execution planning and control	Ad hoc	Improved, but still ad hoc
Forward operating location development and site preparation	Varied	Varied
Forward support location and CONUS support location preparation and operation	Inefficiently used	Better linked to warfighter needs
Reliable transportation to meet forward operating location needs	Not prepared for responsibility	Inadequate; built on existing Operation Southern Watch system
Resourcing to meet contingency, rotational, and MRC requirements	Differed from planning factors	Differed from planning factors

- Integrate combat support planning with the operational campaign planning process.
- Develop control mechanisms.

FOL and Site Preparation

- Focus attention on political agreements and engagement policies.
- Standardize site-survey procedures and processes within the Air Force, with other services, and with U.S. allies.

FSL/CSL Preparation for Meeting Uncertain FOL Requirements

- Further develop the existing global network of FSLs and CSLs.
- Continue improvements in linking FSLs and CSLs to dynamic warfighter needs.

Reliable Transportation to Meet FOL Needs (TDS)

- Be prepared to play an active role in determining TDS capacities and capabilities
  - — Identify lift requirements, including airlift, sealift, and movement by land
  - — Initiate training and enhance personnel development policies to prepare for TDS responsibility
  - — Work with joint commands to develop and resource plans to support the AEF with adequate TDS capabilities.
- Review joint doctrine on the transportation system
  - — Consider having USTRANSCOM develop an end-to-end distribution channel
  - — Consider establishing Distribtuion Units in each service to fill in TDS gaps during contingency operations

  - Consider ways to improve TDS performance, including better in-transit visibility and demand-forcasting mechanisms.

Resourcing to Meet Contingency, Rotational, and MRC Requirements

- Reevaluate current processes and policies for AEF assignments and the current Program Objective Memorandum (POM) assumptions with respect to combat support resources
  - Align current employment practices with resource-planning factors.
- Enhance the capabilities-based planning and assessment methods that RAND is currently developing.
- Evaluate existing scheduling rules for combat support with respect to how that support will affect the performance of home-station and deployed combat support.