CSC2 *AS-IS* ARCHITECTURE: DESCRIPTION AND ANALYSIS

For many reasons, the Air Force does not have a defined and well-understood *AS-IS* C2 operational architecture for CS. First, in our interviews with informed service members, we noted the absence of a defined and documented baseline. Most responses were limited to personal experiences rather than well-documented processes and activities. Many interviewees identified shortfalls (described in Chapter Five) that are merely symptoms of the larger issue of not having a well-defined and documented operational architectural baseline. Second, responsibility for CS is fragmented, leading to planning and execution activities that are more decentralized than those of operations.[1] This decentralization of functions contributes to the variability in process descriptions and adds to the dilemma of who the operational planner should turn to for an overall view of combat support.[2]

We start with a process description of the *AS-IS* architecture that summarizes CS execution planning and control activities in several general steps. We examine the key tasks, operational elements, and information flows in the current system. The picture is Air Force-centric but will include joint-service entities and decisions as they pertain to Air Force CS activities. Finally, we discuss several process deficiencies, derived from our interviews and lessons learned from ONA,[3] that have hindered the ability of the CS system to support AEF operational goals.

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[1]Col Bill McGill, AC2ISRC, Langley Air Force Base, indicated that "Combat support is done by committee, not by command."

[2]LGen Lance Smith, 7AF Commander, Osan Air Base, Korea, indicated that it is difficult to get a complete picture of combat support because there are so many players (e.g., force protection, logistics, civil engineering, and services). For this reason, it is also difficult to determine who the commander should go to to get the whole picture. MGen (S) Donald Wetekam (ACC/LG), Langley Air Force Base, indicated that Air Combat Command (ACC) co-located AFFOR A-4/7 Rear functions of civil engineering, services, and logistics to provide an integrated view of Operation Enduring Freedom. A senior combat support person could then speak for all these CS functions in planning for OEF with the forward echelon AFFOR staff. Throughout this report are references to a COMAFFOR and associated staff functions. Per Air Force Doctrine Document 2 (AFDD-2), the COMAFFOR is the Commander of Air Force Forces participating in a joint military operation. The COMAFFOR staff is organized into an Air Operations Center (AOC) that performs the operations tasks and an A-Staff that performs the support tasks. The A-staff is further organized along functional lines with the A-1 responsible for manpower and personnel, the A-2 responsible for intelligence, the A-3 responsible for operations (normally the director of the AOC), the A-4 responsible for combat support (logistics and installations), the A-5 responsible for planning, and the A-6 responsible for command, control, communications and computer systems. In some instances, the A-4 responsibilities are separated into an A-4 responsible for logistics and an A-7 responsible for installations.

[3]Feinberg et al., 2002.

AS-IS PROCESS MAPS AND DESCRIPTIONS

We have categorized the many activities and decisions of the CS execution planning and control system into six basic activities—high-level guidance, operational planning, CS tasks, assessment, execution, and evaluation.[4] Figure 3.1 provides a graphical representation of this condensed process.

The process is initiated by guidance that generates the demand for operational performance or output. The guidance generally provides the high-level objectives the operators will try to achieve. The operations plan will describe how forces will be used to achieve the operational objectives and often includes measures of effectiveness (MOEs) against which the iterations of the plan and its execution will be evaluated. During planning, operational effectiveness assessments are used to evaluate whether the plan will produce the intended results and lead to accomplishment of the objectives. Oftentimes, the operations plan will assume the availability of needed CS resources.

Once an operationally feasible plan has been developed, the CS community starts to prescribe tasks for supporting the plan. Combat support tasks flow from the planning outputs in the prescribed time frames.

When operations commence, CS tasks must keep pace with the dynamic operational requirements. Changes are executed in response to short-notice requests for support or to CS shortfalls.
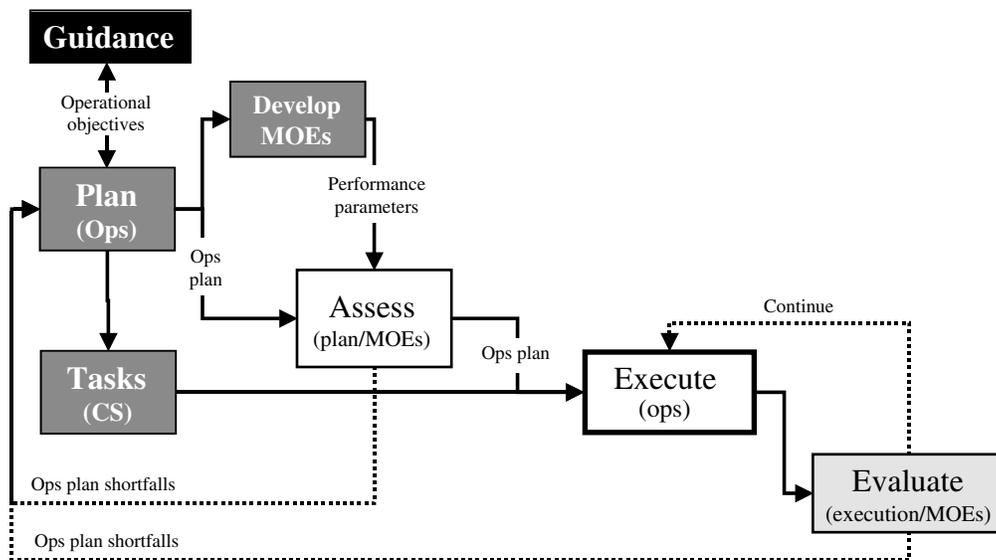

Figure 3.1—CSC2 High-Level *AS-IS* Process Description

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[4]Although the six basic activities are not specifically discussed in doctrine or policy, they are generally described in AFDD-2, *Organization and Employment of Aerospace Power,* and related implementing instructions.

Combat operations effectiveness is evaluated daily; the operational assessment feed-back loop is a critical input to planning the next day's sorties. Adjustments are made to the long- and short-range operations plans based on the effectiveness of each day's operations.

MORE DETAILED *AS-IS* ARCHITECTURE DESCRIPTION

We next highlight key tasks, operational elements, and information flows in the current CS execution planning and control operational architecture. Figure 3.2 shows at a lower level of detail the activities described above in the high-level process. Appendix B contains a detailed diagram of these activities along with the sources from which these activities were taken.

The Joint Chiefs of Staff (JCS) and theater combatant commanders continually monitor world situations and evaluate the need for military action. The activities associated with day-to-day operations are reflected in the first gray-shaded area in Figure 3.2. The Air Force focuses on training, equipping, and readying the force for combat. The Air Staff provides the service policy and guidance. *Force providing* MAJCOMs are responsible for maintaining the forces, while *support providing* MAJCOMs such as Air Force Materiel Command (AFMC) are responsible for maintaining sufficient support resources and processes. Both types of MAJCOM are responsible for ensuring that personnel are trained and equipment is maintained. Numbered Air Forces are identified by doctrine as the Air Force's "senior warfighting echelon."[5] They are responsible for developing host nation (HN) relationships and agreements, performing site surveys, and developing deliberate plans for their area of responsibility (AOR). Units are responsible for training their personnel, maintaining their equipment, and reporting status[6] up to their MAJCOM. Depots are responsible for maintaining materiel and processes needed to support peacetime and wartime operational requirements.

According to *AS-IS* doctrine, when a world situation induces the JCS to pursue a military COA, the JCS issues a warning order. The activities associated with strategy development in response to a crisis are reflected in the second gray-shaded area in Figure 3.2. The theater combatant commander creates a Joint Task Force (JTF) and appoints a JTF commander, who begins strategy development by planning a COA. If there is a standing JTF or sub-unified command, the combatant commander directs planning to begin. During strategy development, the NAF moves to its role as the Air

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[5]AFDD-2.

[6]Unit preparedness status is accomplished through Status of Resources and Training System (SORTS) reports prescribed in Air Force Policy Directive 10-2, *Readiness*, and Air Force Instruction 10-201, *Status of Resources and Training System.*

Figure 3.2—CSC2 Mid-Level *AS-IS* Process Description

Force Forces (AFFOR) staff[7] and is augmented to the appropriate level.[8] The AFFOR Battle Staff/Crisis Action Team (CAT) becomes the center of Air Force planning, monitoring, and decisionmaking during a contingency. The AFFOR personnel proceed with campaign planning (if the planning was initiated by a MAJCOM or special planning cell; otherwise the AFFOR staff initiates the operations planning and identifies logistics and installations support requirements) and survey potential beddown locations. During this stage, the AFFOR CAT receives general force requirements from the combatant commander/JTF and identifies specific combat and support ca-

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[7]AFDD-2 outlines the doctrine. Each NAF has augmentation plans. For instance, for a major theater war (MTW) 7th Air Force receives 34 augmenters in A-4 functions from the 701st Combat Operations Squadron, and its 18 augmenters for A-7 (if established) functions from the Air National Guard S-Team. (Interviews with 7th Air Force, Osan, Korea.)

[8]Interviews with 32nd Air Operations Squadron (AOS), Ramstein Air Base, Germany, April 4, 2001.

pability requirements, designated by Unit Type Codes (UTCs). The AFFOR staff might have an initial plan, developed during peacetime, with which to work. Force selection and deployment timing information is documented in the Time Phased Force and Deployment List.[9] The TPFDD is developed by the AFFOR A-5, Director of Plans, in conjunction with combat support planners, who estimate CS requirements based on the operational plans provided and a series of logistics and installations support planning factors. Units that might be tasked are notified to prepare for possible deployment. The TPFDD is further refined and taskings are finalized as a COA is developed. The TPFDD then undergoes a validation review with the JTF and U.S. Transportation Command (USTRANSCOM), which is responsible for supporting strategic moves.[10] The planned force package (UTC) requirements are forwarded to the supporting commands, which, in turn, task specific units to provide military forces. Units are notified of their deployment schedule and await their deployment orders. Personnel in supporting commands monitor the deployment preparation and execution activities of their units and report limiting factors (LIMFACs) and shortfalls to the AFFOR and AF levels.

Once the COA is selected, the JCS issues an alert order and operational planning is further refined. The third gray-shaded area in Figure 3.2 reflects the activities associated with deployment and employment planning. Planners start with a high-level Joint Air Operations Plan (JAOP) that identifies the various air operations phases. During this planning activity, the air campaign plan can provide long-range (weeks to months) expectations of the demands on weapon systems. Once the campaign plan is developed, the operators begin the mid-term (typically 72–96 hours) planning called strategy, guidance, apportionment, and targeting (STRAT/GAT), during which they apportion weapon systems to general target sets in accordance with Joint Forces Air Component Commander (JFACC) guidance and provide some indication of the munitions types that will be used against the target sets. During the Master Air Attack Plan (MAAP) planning activity (48–72 hours), the operators start assigning mission sets to specific units.[11] The MAAP phase leads into the Air Tasking Order (ATO)/Air Coordination Order phase. During this phase, the operators assign specific times-over-target and standard conventional munitions loads. Operational planners determine daily mission tasking to support the combatant commander and JFACC objectives.

In parallel, or ahead of the detailed operational planning just discussed, the AFFOR A-4 should plan resupply and sustainment and estimate intratheater movements to the joint command that is responsible for planning and executing intratheater transportation. This plan is then executed by the service assigned as the executive agent for the Theater Distribution System (TDS). Concurrently, the JCS assigns movement priorities among theaters and services to balance strategic lift allocations among

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[9]This is often referred to as Time Phased Force and Deployment Data (TPFDD), which is the data in the information system from which the Time Phased Force and Deployment List can be produced.

[10]A detailed description of the TPFDD development process is contained in Air Force Manual 10-401, *Operation Plan and Concept Plan Development and Implementation.*

[11]While we reflect a range of days and hours of planning provided by JAOP, STRAT/GAT, MAAP, and ATO planners, the number of days and hours can vary by scenario.

competing demands. USTRANSCOM subsequently develops transportation schedules for strategic lift of units deploying. After units receive their deployment orders, they arrive at their reception sites, prepare for sortie generation, and commence operations upon receipt of the ATO. In addition, the AFFOR installations support functional planners, determine base development, and build-up requirements for ramp space, utilities, billeting capacity, etc. to meet the timing for arrival of operational forces. The AFFOR monitors and assesses base development and reception and reports to the JTF. The supporting commands ready sustainment UTCs in preparation for ongoing operations.

When the JCS gives the execution order, units begin sortie production and execute their prepared ATOs. Employment, sustainment, and beddown activities are reflected in the right-most gray-shaded area in Figure 3.2. The results of the daily missions are fed back to the planners and are a key factor in determining future missions. This execution evaluation, using metrics such as kill rate and battle damage, is passed up through the AOC to the joint-service level. The AFFOR logistics planners receive logistics status reports and situation reports for each resource commodity and summarize them in a daily report for the AFFOR A-4, who in turn reports to the JTF J-4. The AFFOR installations support planners receive facilities, services, and infrastructure status reports and integrate them for the AFFOR and, in turn, for the JTF.

While ATO planning and execution continues, sustainment resources (food, water, ammo, fuel, spares, etc.) flow through the strategic and theater distribution system to FOLs and Forward Support Locations (FSLs) where they are needed. The Director, Mobility Forces (DIRMOBFOR), the JFACC's air mobility adviser, coordinates between transportation providers (Theater Airlift Control Center, Air Mobility Control Center, Air Mobility Division) and the services that require transportation. The Joint Movement Center (JMC) adjudicates competing demands for transportation resources and allocates daily flights for sustainment cargo. During execution, units with repair capability and Centralized Intermediate Repair Facilities (CIRF) perform maintenance to support sortie production. Base development and construction requirements flow to the Regional Wartime Construction Manager (RWCM), who coordinates them with the Joint Command for allocation to the services according to combatant commander priorities.

Redeployment, triggered by an order issued by the JCS, returns personnel and assets to their home bases. Following the order, joint-service and Air Force redeployment assistance teams are activated to assess redeployment. Once the JCS and combatant commander approve force removal, the AFFOR prepares the redeployment TPFDD. Upon receipt, units redeploy and assess resources.

ANALYSIS OF *AS-IS* PROCESS SHORTFALLS

Our analysis of the Air Force's CSC2 process revealed shortfalls in the *AS-IS* system that can be categorized as follows:

- Poor integration of CS (logistics and installations support) inputs into operational planning

- Absence of feedback loops and the ability to dynamically reconfigure the CS infrastructure

- Poor coordination of CS activities with the joint-service community

- Absence of resource allocation arbitration across competing services and theaters

- Inadequate understanding that combat support means not only logistics but installations support as well.

Poor Integration of CS Input into Operational Planning

The conventional roles of the operations and combat support communities often entail separate and relatively independent C2 activities. Operational plans may be developed without adequate regard to CS feasibility.[12] Figure 3.3 shows where this disconnect affects the planning and execution process. Early in the planning process, the strategy cell, consisting of A-3 and A-5 planners, recommends COAs to the JFACC. A-4 (and A-7 if established) representatives may be present during plan development but not be called upon to evaluate plan feasibility. Combat support personnel must then generate the appropriate resources to support a particular TPFDD or ATO. This serial approach can result in prolonged development of unsupportable plans and require major restructuring when CS factors are eventually brought to light, or result in unnecessary resource expenditures. An example of this occurred in ONA. One combat support person from munitions was involved in the development of the evolving COA.[13] As a result of the poor interface between CS personnel and operational planners, munitions personnel responsible for resupplying FOLs sometimes wrongly estimated the munitions requirements. Because resupply had to be taken in advance, on occasion quantities of munitions just sent to an FOL (e.g., Aviano Air Base) would have to be returned to the munitions storage area (e.g., Camp Darby) because of limited storage at the FOL and the estimated expenditures not materializing. This double movement is costly and can be avoided with better interface between operations planners and CS personnel.[14] In another case, operational planners chose the location for a potential beddown area without sufficient installation support planning input, resulting in the tent city having to be relocated both because of flooding and interference with explosive safety areas.

The traditional separation between the combat support and operational planning communities hinders effective integration. Most logisticians, for example, are not trained in and do not participate in air campaign planning. They therefore have little

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[12]Col Ed Groeninger, PACAF 502/CC, March 8, 2001.

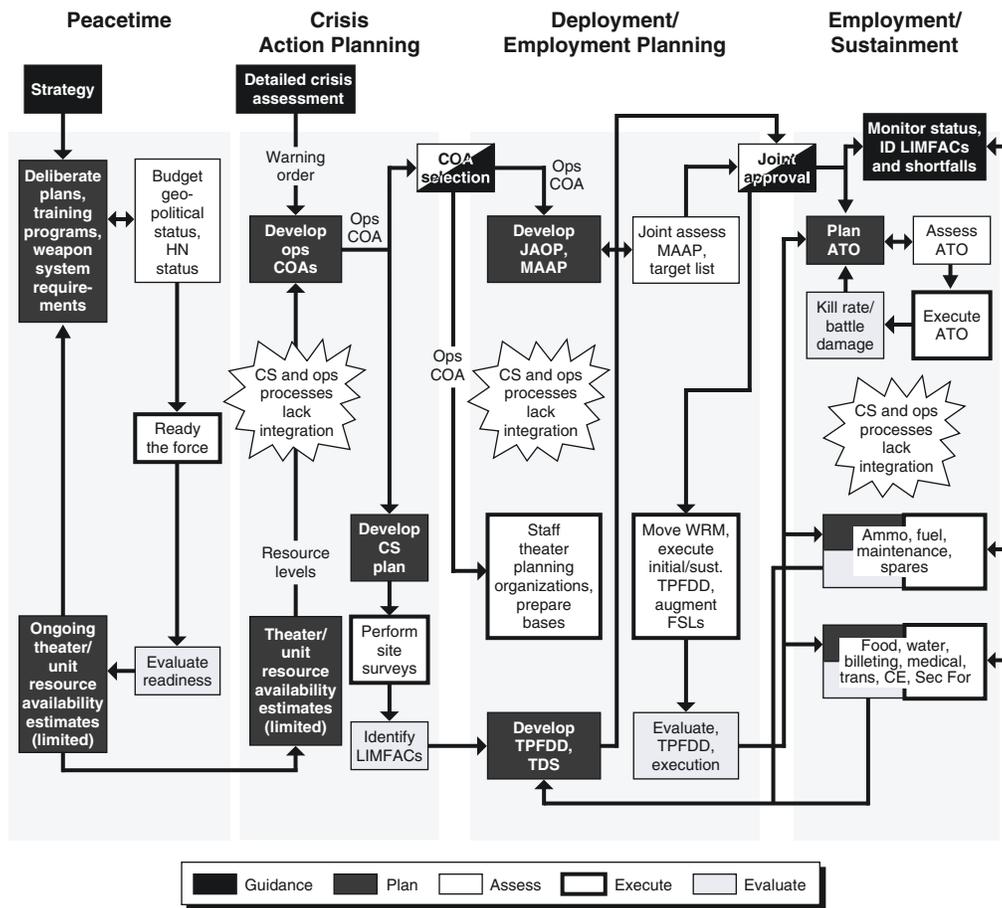[13]Feinberg et al., 2002.

[14]Feinberg et al., 2002.

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Peacetime	Crisis Action Planning	Deployment/ Employment Planning	Employment/ Sustainment

Strategy

Detailed crisis assessment

Deliberate plans, training programs, weapon system requirements

Budget geo-political status, HN status

Warning order

COA selection

Ops COA

Monitor status, ID LIMFACs and shortfalls

Joint approval

Develop ops COAs

Ops COA

Develop JAOP, MAAP

Joint assess MAAP, target list

Plan ATO

Assess ATO

Ready the force

CS and ops processes lack integration

Ops COA

CS and ops processes lack integration

Kill rate/ battle damage

Execute ATO

CS and ops processes lack integration

Develop CS plan

Staff theater planning organizations, prepare bases

Move WRM, execute initial/sust. TPFDD, augment FSLs

Ammo, fuel, maintenance, spares

Resource levels

Perform site surveys

Food, water, billeting, medical, trans, CE, Sec For

Ongoing theater/ unit resource availability estimates (limited)

Evaluate readiness

Theater/ unit resource availability estimates (limited)

Identify LIMFACs

Develop TPFDD, TDS

Evaluate, TPFDD, execution

■ Guidance	■ Plan	□ Assess	□ Execute	□ Evaluate

Figure 3.3—CS and Operations Process Integration Shortfalls

understanding of how and when the broad effects of CS considerations enter the planning process.[15] CS personnel are not equipped to communicate essential aspects of CS options in operationally understood metrics. For the most part, the tools to accomplish this translation do not exist. For instance, a delay in setting up resupply could result in sortie degradation, and yet the tools do not exist to translate added resupply time to weapon system availability. As a result, CS information tends to be provided to planners in the form of inventory levels or process performance (e.g., resupply time) rather than base beddown capability, sortie generation capability, or other metrics more relevant to operational planning.[16]

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[15]Lt Col Stephen Luxion, Hq CENTAF A-3/A-5, February 8, 2001; Mr. Van Hazel, 7th Air Force operations research analyst, December 10, 2001; Major Parker Northrup, 7th Air Force Air Operations Group, December 10, 2001; Major Steen, PACAF/XPXX, December 17, 2001; Lt Col Levault, 13th Air Force/A-3/5, December 13, 2001.

[16]Lt Col Stephen Luxion, Hq CENTAF A-3/A-5, February 8, 2001; Mr. Van Hazel, 7th Air Force operations research analyst, December 10, 2001; Major Parker Northrup, 7th Air Force Air Operations Group,

At the same time, operators lack logistics or installation support training, and hence tend not to consider the effect that support capabilities have on planned missions. When reliable CS information throughout the operational planning process is not valued, CS aspects of plans are likely to be overlooked, resulting in overly optimistic operational plans that may have to be altered during execution.

An additional hindrance to incorporating CS input into operational planning is a lack of CS assessment capabilities and up-to-date and reliable CS resource information. Assessments may be available for some high-priority situations as a part of the deliberate planning process, but there is no standard, quick procedure for conducting assessments. Even where good logistics or installations support assessment tools exist, they are unique to that command and not readily accepted or interoperable with other MAJCOMs. Thus, when the situation departs from deliberate planning, the system has difficulty making the appropriate assessment quickly and adapting accordingly. Departures from planning can lead to the command "flying blind."

A commonly described shortcoming of crisis action planning was that operators had to plan with incomplete logistics and base support data.[17] As a result, aspects of plans were often made based on outdated information and assumptions, with the CS information typically requested in piece-meal fashion as it became necessary.

Absence of Feedback Loops and the Ability to Reconfigure the CS Infrastructure Dynamically

Combat support and operations activities must be continuously monitored for changes in performance and regulated to keep within planned objectives. Today, asset visibility is limited and in-transit visibility is poor. Thus, it is difficult to estimate current resource levels and future arrival times. Combat support feedback data— resource levels, rates of consumption, critical component removal rates, and critical process performance times such as repair times, munitions build-up times, in-transit times, infrastructure capacity, and site preparation times—may not be recorded routinely. Even when these data are available, they are typically the focus of planning and deployment rather than employment and sustainment. Because operations can change suddenly, these data must be continuously available throughout operations in order to make needed adjustments.

When monitoring reveals a mismatch between desired and actual resource or process performance levels, it may be difficult to find the source, particularly for activities supporting multiple theaters (such as depot repair), or multiple services (such as a TDS or construction priority). Discrepancies between desired and actual levels of support may arise from changes in CS performance or in operations. Assessment must be able to quickly address CS performance problems or changes and estimate

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December 10, 2001; Major Steen, PACAF/XPXX, December 17, 2001; Lt Col Levault, 13th Air Force/A-3/5, December 13, 2001.

[17]Lt Col Stephen Luxion, Hq CENTAF A-3/A-5, February 8, 2001; Mr. Van Hazel, 7th Air Force operations research analyst, December 10, 2001; Major Parker Northrup, 7th Air Force Air Operations Group, December 10, 2001; Major Steen, PACAF/XPXX, December 17, 2001; Lt Col Levault, 13th Air Force/A-3/5, December 13, 2001.
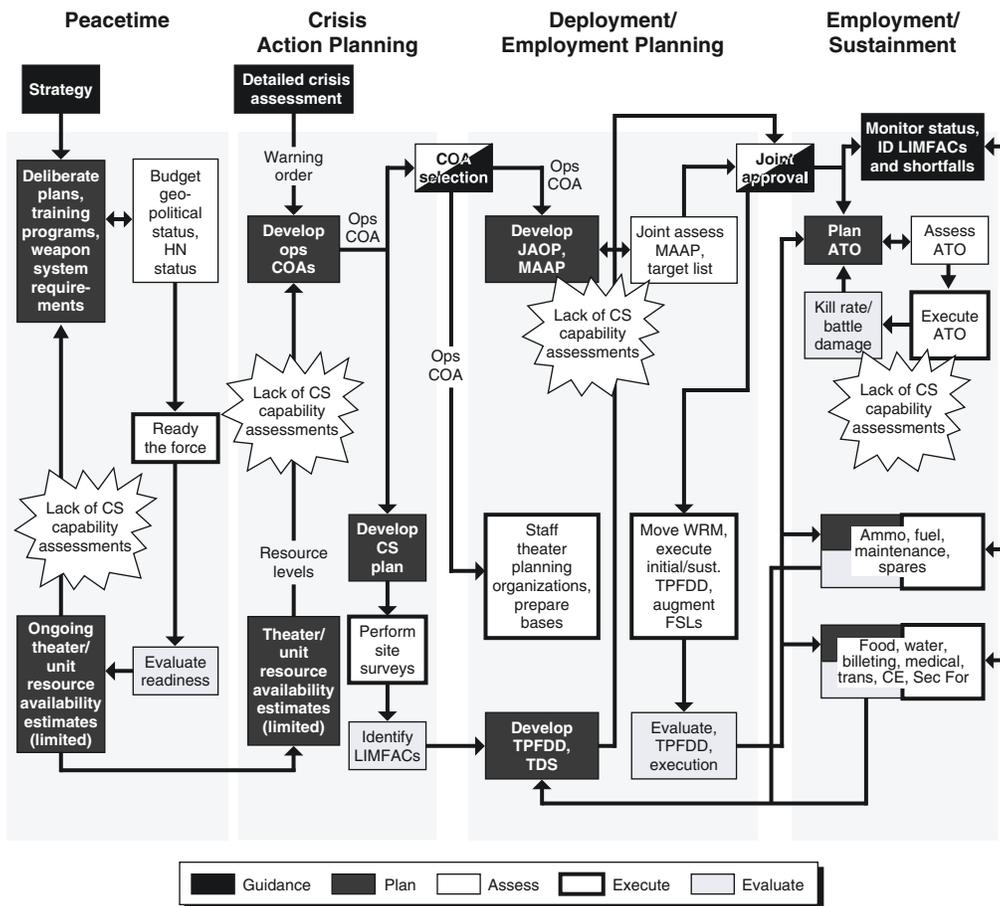
Figure 3.4—Capability Assessment Shortfalls

CS requirements to meet changing operational objectives. Figure 3.4 highlights where the lack of capability assessments affects process execution.

With limited monitoring and performance assessment, it is hard to know when to intervene and adjust CS activities in real time.

Poor Coordination of CS Activities with the Joint/Allied/Coalition Communities

Ultimately, most CS (logistics and installation) activities entail coordination among the services and the joint-service community. Examples include infrastructure repairs, fuels management, the distribution and storage of munitions and housekeeping sets, and transportation. Nowhere is such coordination more important and troublesome than in transportation and distribution management. Inter- and intratheater distribution relies upon the combined efforts of the Air Force, Army, Navy, commercial carriers, and the theater Joint Forces Command, all of which have sepa-

rate responsibilities and all of which depend on the others for successful operation. Nominally, the Air Force is responsible for providing airlift, the Army for providing surface lift and port management, the Navy for providing sealift, and the combatant commander for theater distribution, often through the appointment of one service component as the executive agent for managing distribution operations.

In principle, the distribution system can operate smoothly if everyone does their job and knows their role; troubles can arise when the relative roles of the different contributors in an operation are not understood, expectations differ on anticipated performance, or priorities differ among the major players. In ONA, the Air Force played a much bigger role than the Army, and there may have been very different expectations for distribution system performance. As part of the AEF, the Air Force relies on deploying rapidly with small amounts of resources deployed with the forces. This structure requires rapid resupply to sustain the forces. However, this requirement was not effectively communicated to the European Command (EUCOM) before the conflict, and EUCOM policies were not set up to support rapid distribution. EUCOM policies required the identification of specific movement requirements before transport assets could be set in motion. The Air Force lean logistics policies had relied on frequency-based distribution rather than on "full transport vehicle" policies that EUCOM was practicing at the beginning of ONA. This difference in expectations and lack of understanding of Air Force needs created distribution problems for the Air Force during ONA. As a result, despite the mature infrastructure available in Europe, the distribution system that supported the Air Force during ONA was slow to start, often relied on ad hoc solutions that bypassed standard procedures, and may not have kept pace with Air Force needs.[18]

Because the AEF relies on rapid distribution logistics and CS depends on rapid and reliable transportation, rapid theater distribution systems should be implemented that take full advantage of cooperation with the Army, Navy, joint-service community, and allied/coalition forces (if applicable). If rapid resupply cannot be established, the Air Force may have to rethink lean policies and deploy with more resources to sustain operations, which would negatively affect deployment and employment timelines.

Just as CS needs and capabilities must be communicated to operations planners, so too must they be communicated, agreed upon, and resourced with other services, the joint-service community, and allied/coalition organizations. In considering intratheater movement to better support the AEF, the Air Force must estimate transportation requirements based on anticipated sortie production goals and understand in what form those requirements should be communicated to the agency responsible for theater distribution. These estimates can be used to help structure demand-based distribution services.

Similarly, CS personnel should clearly define base capabilities to execute beddown plans and be prepared to provide those requirements to coalition/allied forces that may host Air Force units in a contingency. Such communications with al-

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[18]Feinberg et al., 2002.

lied/coalition forces could accelerate site survey, base development, and beddown planning during the time-critical crisis action planning process. They are essential to laying the foundation for coalition support and participation in execution of beddown and sustainment activities. They are also vital to how command and control of coalition installation support forces is established. For example, in ONA, only when an integrated coalition engineer organization was established with unity of command did beddown activities fully align with theater commander priorities.

Absence of Mechanisms to Facilitate Resource Allocation Arbitration Across Competing Theaters

Resources planned for other regions must often be diverted to support a theater preparing for or engaged in a contingency. However, although the current process can allocate resources among units within a theater, it cannot formally allocate scarce resources across competing theater and JTF demands or support analyses that should accompany requests for scarce resources. As shown in Figure 3.5, the ability
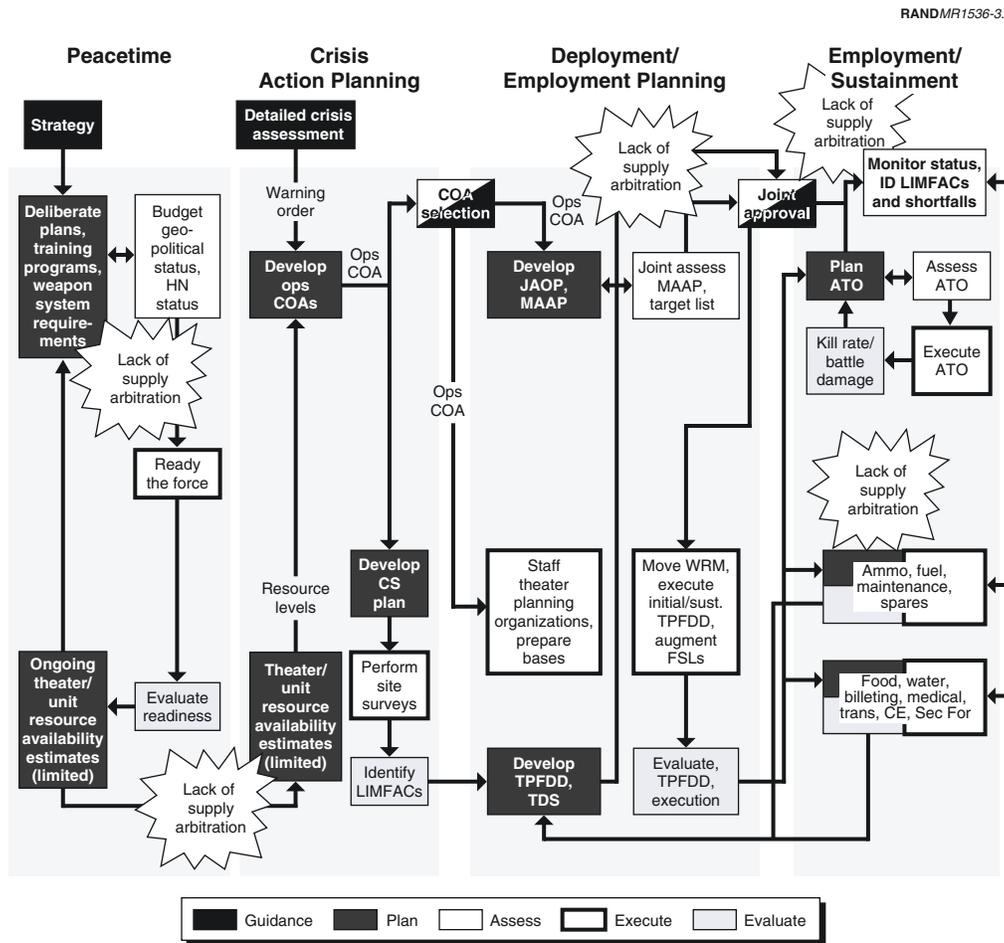

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Figure 3.5—Global Supply Allocation Arbitration Shortfalls

to quickly assess the effect on readiness of moving resources from one theater to another is missing across all phases of conflict.

For example, the Ammunition Control Point (ACP) at Hill Air Force Base, Utah, controls the global prepositioning and movement of munitions. However, assessment procedures are not formalized and automated decisiontools may not be in place if they exist at all. How to use them may not be straightforward.[19]

Seventh Air Force can now assess munitions availability in their AOR using standard Air Force munitions computation models.[20] Seventh Air Force A-5 and A-4 organizations are attempting to use this model to show how the reallocation of smart munitions from their AOR to Operation Enduring Freedom (the war in Afghanistan) will affect other war plans. And 5th Air Force engineer planners can now assess and adjust explosive storage capacity in near-real-time to assist in rapid decisionmaking of munitions relocation.[21] This type of assessment must be done before resources are reallocated so that high-level decisionmakers (up to and including the JCS) can see the effect of their allocation decisions before the fact.

Inadequate Understanding That Combat Support Refers Not Only to Logistics But to Installation Support as Well

Attempts to incorporate CS inputs into operational planning not only faced the traditional separation between operations and logistics but also the separation between logistics and installation support. Logistics and their installation support counterparts grow from experience and training in two very different career paths. It is false to assume that in a contingency logisticians or installation support can rapidly become well-versed in each other's diverse activities.[22]

For example, during Operation Desert Shield the 3rd Air Force staff was quickly overwhelmed by requests for detailed logistics information for supporting units deploying to Saudi Arabia at the same time the staff was trying to build up contingency bases for B-52s, tankers, and contingency hospitals in the UK. A split AFFOR role evolved, with 3rd Air Force/Logistics (3AF/LG) having the lead as A-4 for combat support flow to Southwest Asia and 3rd Air Force/Civil Engineering (3AF/CE) having the lead as A-7 for contingency base activation in the UK.

Similarly, during JTF Noble Anvil (NA), 16th Air Force staff initially assumed AFFOR activities in their AOR. However, as the force laydown grew, it flowed to non-16th Air Force locations, forcing the small 16th Air Force staff to rely on HQ USAFE and 3rd Air Force staffs to fully manage CS for NA missions. Eventually, the expanded combat force size led to USAFE/LG assuming the NA AFFOR A-4 logistics responsibilities and the USAFE/CE taking on the NA AFFOR A-7 civil engineer/installations role.

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[19]Lt Col Carl Puntureri, JCS/J-4 Munitions and NBC Defense Equipment, February 23, 2001.

[20]Mr. Van Hazel, 7th Air Force, Osan Air Base, Korea, December 10, 2001.

[21]Col Brian Fisher, 5th Air Force A-7, Yokota Air Base, Japan, January 15, 2002.

[22]MGen Marcus Andersen, 3rd Air Force/CC, Operation Desert Shield, October 1990.

More recently, during OEF, parallel rapid growth in logistics sustainment and base build-up/relocation motivated U.S. Central Command Air Forces (CENTAF) Forward to reinforce A-4 logistics capability while creating an A-7 installations support function. That action provided CENTAF both senior-level experienced decisionmakers and trained staff to team up on the complicated dual CS challenges of logistics and installation support.

Analysis of the CSC2 processes associated with the above three examples showed duplication of some activities when these CS functions acted independently but synergistic improvement when they teamed up. For example, initial CENTAF AFFOR logistics plans preliminary site surveys did not match up with engineer runway, parking, and infrastructure estimates. But when the information was combined in an automated tool,[23] rapid beddown planning flowed superbly. Another example was A-4 logistics dilemmas with fuel off-load, flow, and storage at a few Southwest Asia basing locations. When CENTAF A-4 integrated technically feasible COAs for solving the urgent fuel dilemma, with inputs from ACC CAT, A-4/7, and CENTAF A-7, a mission solution was quickly identified and executed in half the estimated time.[24]

Thus, CS needs must (1) be managed by staff with adequate depth/experience/rank and (2) integrated with CSC2 processes to focus the results.

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[23]See footnote 5 in Chapter Four.

[24]BGen Patrick A. Burns, ACC/CE, February 26, 2002.