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LOGISTICAL IMPLICATIONS OF ARMY AIRLAND OPERATIONS

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Colonel B. T. Babin USMC
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19. ABSTRACT (Continue on reverse if necessary and identify by block number) The report examines the logistical implications of the U.S. Army's doctrinal evolution for Airland Operations. The operational cycle for Airland Operations is reviewed to determine possible logistical requirements. Particular emphasis is placed on command, control, organization, plans, execution, and functions for logistics. Both combat support and combat service support are analyzed to assess support needs for the nonlinear battlefield. The role of the multifunctional support organization is also examined. The report concludes that new concepts for logistics will be needed.			
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LOGISTICAL IMPLICATIONS OF ARMY AIRLAND OPERATIONS

"The AirLand Operations Concept recognizes change in the strategic environment and threat. It describes how Army forces will operate as a land component of military forces... It introduces...precepts for future military operations."¹

AirLand Operations² is a conceptual evolution from the AirLand Battle doctrine of the 1980's to an operational level concept for the strategic U.S. Army of the 1990's and beyond. During 1991, several articles were published making various system, technology, and organizational proposals for this concept. Logistical proposals in particular have appeared in relatively large numbers. The recurring conclusion is that significant improvements are needed in logistical approaches for the less structured battlefield envisioned by AirLand Operations.³

The following discussion examines the logistical implications of AirLand Operations combat stages. The purpose is to determine in greater detail the likely logistic conceptual requirements which AirLand Operations proposals ought to resolve. In particular, this paper will summarize some general background materiel, state key support principles which are applicable, assess the logistical facets of AirLand Operation's operational cycle, and derive logistic implications.

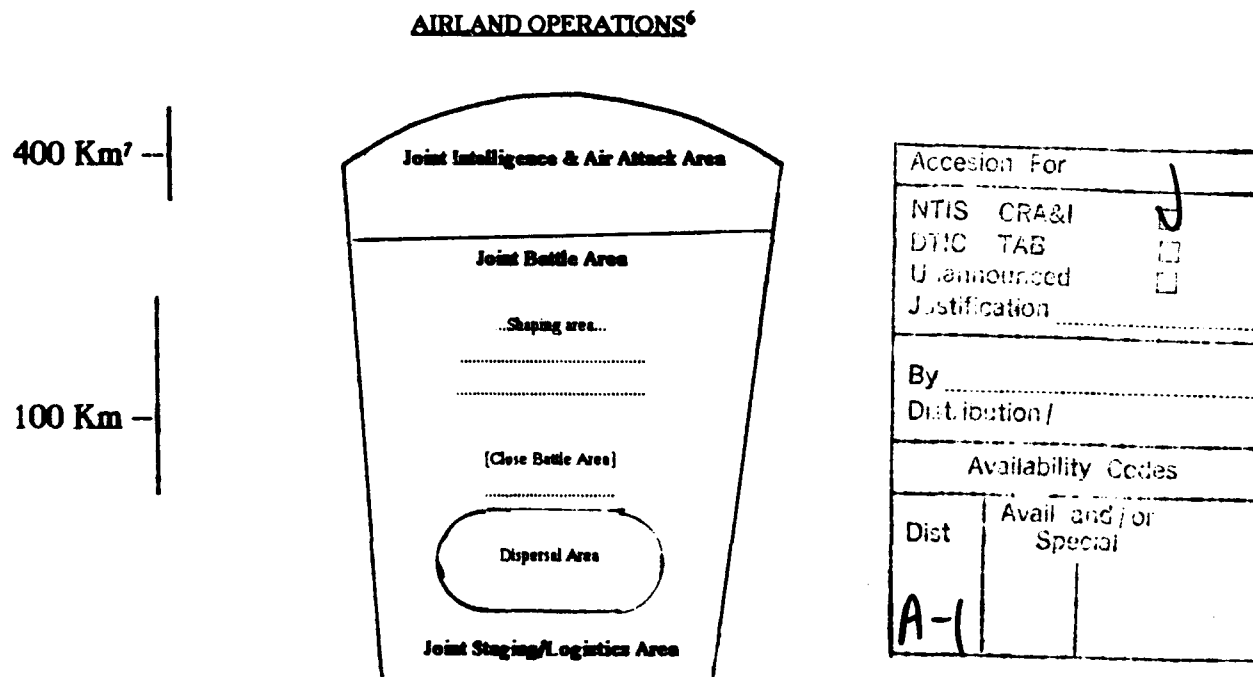
Background

AirLand Operations has among its characteristics: (1) Emphasis on the primacy of warfighting while recognizing the likelihood of operations short of war; (2) Swiftly and decisive application of combat power; (3) Joint, combined, and interagency operations as the norm; (4) Battlefield "nonlinearity" to capitalize on superior technology, agility, and doctrine; (5) Rapidly tailorable units; and (6) Logistics "pushing" needed supplies to unit locations on a mission basis.⁴

AirLand Operations envisions the battlefield dynamics of force projection and the battlefield geometry dictated by both the military area of operations and the

constraints of policy. Battlefields are expected to include more breadth and depth. Mission, enemy, terrain, troops, and time available (METT-T) will continue to be influential factors. Positional advantage and operational maneuver will be sought. Operational maneuver should provide the opportunity to attack selected elements of the enemy force to prevent it from interfering with the friendly force's plan and avoid the attrition of mass-on-mass warfare inherent in linear operations. Operational maneuver requires superior intelligence, the ability to shape or condition the battlefield at depth, and the agility to quickly exploit conditions.⁵

The AirLand joint operational theater is depicted below:



Linear operations will occur on the tactical level for particular times, purposes, and locations. Critical activities may may still happen in the spatial and sequential relationships characteristic of traditional deep, close, and rear operations. Synchronization remains essential. The integrated, mutually supporting activities will occur on one extended battlefield where operations are oriented on activities and the enemy rather than terrain:

- "(a) The joint battle area is where Army forces fight to the depth of all their weapons systems and where Army and Air Force capabilities overlap.
- (b) The shaping area must be large enough to locate and develop the enemy situation and establish and initiate the operation plan as well as to provide security.
- (c) The close battle area is where the commander chooses to conduct decisive operations.
- (d) Maneuver forces can be held in relatively secure staging and dispersal areas until committed.
- (e) Logistics is anticipated and projected when and where needed.
- (f) Areas are not fixed in their relationship to each other....they can be exclusive...they can overlap. Areas can represent a linear, nonlinear, or a combination battlefield...[for] arranging operational and tactical activities in three-dimensional space and time."⁶

The operational cycle for AirLand Operations has four interrelated functions:

STAGES AT THE OPERATIONAL LEVEL⁹

[Stage I: Detection / Preparation]

[Stage II: Establishing Conditions]

[Stage III: Decisive Operations]

[Stage IV: Force Reconstitution]

-----Sustainment----->

Stage I is the preparation for the operation. The next stage uses all means necessary to set the conditions for the best use of capabilities. During Stage III, actions are conducted to achieve the desired end result. Finally, preparations for further follow-on or new engagements are made.¹⁰ Sustainment is an on-going function throughout all stages.

A recent unpublished research paper made an initial assessment of probable combat support (CS) and combat service support (CSS) requirements generated by AirLand Battle-Future. The assessment was based on four contingency scenarios. Several findings, summarized next, provide a springboard for a more detailed examination of the logistic implications of AirLand Operations:

- In operations short of war, CS and CSS commands must be prepared to operate in the role of either a supporting or supported commands.
- CS and CSS units on the battalion level and above must be prepared and capable to operate as the nucleus of a multi-functional task force.
- CS/CSS organizations must be able to quickly transition back-in-forth between functional and multi-functional modes.
- Overall CS/CSS organization and organizational relationships will be situation specific.
- Relatively static operating environments will probably not place unusual demands on the CS/CSS organization and operating requirements even when the number of CS/CSS activities is large.
- As the battlefield geometry becomes less linear, more decentralization of CSS becomes necessary while CS tends to remain relatively centralized and functionally aligned.¹¹

The background information reviewed shows that AirLand Operations does indeed generate a basis for rethinking logistical concepts. The next step is to propose principles of support which can help determine logistical implications.

Logistic Principles

The idea of logistic *anticipation* is the "cornerstone" of Airland Operations' CSS concept.¹² It is the key to furnishing the combat commander with sustaining resources. Anticipation demands that the logistician plan and preposition logistics projected forward in expectation of requirements (rather than reacting to requirements).¹³ The principle of *responsiveness* is often used interchangeably with anticipation. Both are based on the idea of getting the right support at the right time and place. As a sustainment imperative, responsiveness has sometimes been characterized as the measure of how quickly support units react to requirements.¹⁴ Responsiveness includes a trade-off: responsiveness can usually be improved by decentralization, but often at the expense of the principle of economy.¹⁵

Simplicity is the converse of complexity. Mission-type orders and standardized procedures contribute to this principle. Priorities, stream-lined operations, pre-allocation, and direct liaison all contribute to this principle.¹⁶

Flexibility is the ability to adapt structure, organization, systems, and procedures to meet changing situations, missions, and concepts of operation. This principle also has trade-offs. Flexibility usually requires positive command and control (While implying centralization, total centralization would reduce flexibility and responsiveness) over subordinate elements.¹⁷

Economy is the minimization of cost to provide necessary support. This principle recognizes that resources are limited. Again, another trade-off presents itself: centralization of assets tends to foster economy, but sometimes at the expense of responsiveness. Centralized control with decentralized execution can often help attain the necessary balance between responsiveness and economy.¹⁸

Attainability is the principle of ensuring the ability to provide minimum essential supplies and services required to begin combat operations.¹⁹ For AirLand Operations, it can be viewed as the front end of the *Sustainability* principle. "Sustainability is the ability to maintain support throughout an operation...focus[ing]...on long-term objectives and requirements..."²⁰ The "enduring imperatives" for sustainment are anticipation, continuity, integration, responsiveness, and improvisation.²¹

Finally, the principle of *Survivability* is the capability to prevail when faced with potential destruction. Active measures include plans and actions for defense (e.g., rear area security measures). Passive measures include decentralization, dispersion, deception, and limits on "signature." This principle also entails trade-offs: dispersion and decentralization are usually at the expense of economy.²²

The succeeding sections will consider these principles as each stage in the operational cycle is examined for AirLand Operations' logistic implications.

Detection/Preparation Stage

Stage I encompasses those activities to deploy forces and prepare the battlefield. It includes intelligence, planning, security organization, and support

activities necessary to protect forces and prepare them for combat operations.²³ Receipt of a Warning or Alert Order will usually initiate this stage and begin the planning steps²⁴.

Receipt of a mission starts planning for specific actions in the operational cycle (This is not meant to imply that there are no standing contingency plans or orders, but rather that even existing plans will normally undergo some changes). Mission analysis for AirLand Operations will probably occur primarily at a unified command's Army Component headquarters. The analysis will determine specified and implied tasks. The commander must ensure that the logistic staff is a participant in the process from the beginning because tasks will generate or otherwise affect the logistic support. In most cases, the analysis will be conducted by a small, probably compartmentalized, group for operational security (OPSEC) purposes. Thus, the initially planning steps are characterized by a very extreme degree of centralization. Information requirements will be generated, but the logistician will probably find logistic information requirements competing, usually at a lower priority, for scarce intelligence resource support. In the absence of definitive or updated logistic information, the tendency will be to keep planning very centralized until the operational picture is "fleshed out." The staff orientation will be the likely point where the operational picture becomes clearer. At this time, the logistics staff should have completed its initial survey of logistical factors in support of the mission (e.g., logistical infrastructure of the operating area, critical logistic nodes, deployment sequencing and flow under existing plans, etc.). The orientation, coupled with the commander's planning guidance (and, if applicable, courses of action) begin the gradual decentralization of the logistic planning effort.

As planning continues, preparation of logistic estimates of supportability will broaden the participation base—particularly those staff actions for determining critical support and sustainment limitations and problems which must be overcome.

As planning moves on to the commander's estimate, decision, and concept of operations, operational requirements become more specific. Logistic planning becomes more expansive and decentralized as the deployment and employment order(s) are subsequently updated and developed in detail.

Ideally, the Stage I events would occur sequentially. The more likely situation is that deployment will have commenced concurrent with planning. The political and military requirements to stabilize the crisis will create the need for rapid, initial deployment of at least a brigade-size force (The brigade is the Army's lowest level of combined arms force for conducting the close battle). The rapid deploying and echeloning to division strength can be expected next because the division is the primary echelon for planning and conducting tactical operations and accepting reinforcing support from the corps.²⁵ Strategic lift constraints make it reasonable to assume that the forces initially deployed will be relatively light. They will have limited support and sustainment unless pre-positioned support, host nation support, and/or forward based/deployed forces are already in place. As a consequence of the centralized planning and early buildup and stabilization requirements, logistics will be in a "catch-up" situation until detailed logistic information and planning permeates to all staff levels. Logistic forces flowing early in the deployment will have little time to forecast requirements or tailor for specific situations. The lead logistic elements will, therefore, have to be organized to be robust in capability, light enough to move with the lead combat forces, and designed to furnish anticipatory support.

The single, most important attribute of AirLand Operations is initiative.²⁶ The proper blend of intelligence, reconnaissance, security, air defense, sustainment, and combat forces is critical to implementing Stage I and creating conditions favorable for taking the initiative. Force packages balanced with combat, CS, and CSS forces as needed for forcible entry and/or buildup are required.²⁷ Support and

sustainment demands in the Staging/Dispersal and Battle Areas will exceed resources. Logistic forces will not only be supporting the command and combat elements flowing into the theater, but will also have to establish, support, and secure their own areas and operations. If the conditions for initiative are to be established early, every logistic operation and activity must be efficient and effective. Priorities must be established. Logistic actions, while possibly dispersed, cannot be fragmented. Sequencing and actions must maximize time, opportunity, and capability. Therefore, the logistic effort will likely be characterized by continued centralization of command and control. The selection of methods of control and employment can be crucial. Logistic execution will tend to be centralized (and functionally organized) in the rear areas, but may be more decentralized and multifunctionally organized in the more forward areas.²⁸

During Stage I, the commander must make a decision on how to structure and fight the battle. This decision is critical to integrating the efforts of the force.²⁹ Logistic forces are probably still flowing into the theater. The demands of getting oriented, established, and operating will make continued centralization of planning and tasking of logistics likely.

Stage I of AirLand Operations has several logistic implications:

- (1). As the preliminary indicators of a contingency evolve, steps should already be in-place or in-process to establish a logistic infrastructure (i.e., prepositioning or near-propositioning, basing, host nation agreements, interservice support agreements, etc.). The absence of such an infrastructure increases the time and effort for logistics to be established and truly anticipatory.

- (2). Logistic staffs at the upper echelons must have a broad base of experience and knowledge on joint/combined operations/logistics as well as logistics from the battalion-level upward to meet the challenges of early, centralized planning and control.

(3). The logistic planning/tasking/execution timelags for the force as a whole, which are inherent in the early phases of planning and deployment, require that the layers of echelons and staff to the executing CS/CSS unit(s) be minimized (simplicity) to accelerate information flow and responsiveness.

(4). Centralization will dominate. Though the deployment and buildup can be characterized as "surge and mass," the requirements will be for responsiveness, flexibility, survivability and attainability. Achieving these principles will be difficult for a time. The need to decide among competing demands while resources are still building will keep control and much of the effort centralized throughout Stage I. This can be expected to be particularly true if forces are already engaged, and the operational commander must ensure that every activity is optimized.

(5). Finally, on the tactical level, the maneuver element commander(s) must have organic or reinforcing support and sustainment as part of their combined arms force. Centralized, upper level decisions cannot accurately and completely forecast the situation specific logistic requirements which the subordinate commander(s) will encounter. An important hedge is to ensure that some logistics capability is organic, attached, or in direct support (DS) of the maneuver elements during this stage. Logistic execution should be expected to be decentralized in the Battle Area.

Establishing Conditions

During Stage II, the operational commander establishes conditions which will result in decisive operations. Initiative and control of the battle must be established from this stage forward. "Major elements include shaping the battlefield by fires, positioning of maneuver and CSS assets, conducting psychological ad deception operations, maintenance of operational security, and protecting the force." This stage can include tactical operations, including defensive operations, with the objectives of attacking, separating, isolating, and attriting designated enemy forces through deep operations. The expected outcome is that enemy forces will lose the

ability to synchronize and coordinate its combat power, and be denied time and space to recover, adjust, mass, and gain/maintain momentum. The operational commander will seek "...maximum leverage from corps combat power, while preserving divisional forces...[and] continues to cut off and isolate the battle area while sustaining those functions which allow the maneuver commander to concentrate on closure with and destruction of the target force."³⁰

Ideally, during Stage I, "...both the front loading of logistical receiving capability and sustaining base resources...are critical considerations."³¹ These actions should be accomplished to the extent possible in Stage I to establish the availability of resources and capability to push logistics forward during Stage II. Realistically, except in mature theaters with a logistic infrastructure, Stage I logistical requirements and efforts will carry over into the next stage. Facility, activity, transportation network, and physical security demands can exceed the availability and capacity of logistic units. Because these efforts take time as well as resources, logistics will still be trying to "catch-up" with operations. At the same time that the logistical surge is well underway to complete essential Staging/Logistic Area requirements, the requirements in forward areas can be expected to increase—probably significantly.

The need to push logistics forward and the operational requirements to shape the battlefield will cause logistics to become increasingly complex. In the Dispersal Area, transportation, sustainment, and support for security and deception operations will probably constitute the preponderance of the effort. At the same time, supply, maintenance, and transportation support will be needed in and forward of the Dispersal Area to insure uninterrupted operations. Other activities will be conducted throughout parts of the Battle Area to establish lines of communication, forward sites and/or basing, caches and supply/maintenance points, and other critical logistic nodes. Almost all forward activities can most

likely be characterized as dispersed, often mobile, and frequently multifunctional if the operational imperatives of deception, maneuver, integration, and synchronization are to be achieved.

Decentralization will be driven by the rapidly expanding scope of operations, increasing span of control and coordination (particularly joint/combined logistics), demands for timely resource allocation and task execution decisions, and dispersion to reduce vulnerability and signature. Mobility will be needed for positioning both maneuver and support forces, responding rapidly to developing tactical opportunities, and covering more area/units in a given period. Tailored logistic efforts and organizations will be used to consolidate and economize effort, spread capability while avoiding vulnerability to catastrophic loss of any one particular functional capability through the advantages of dispersal, and to ensure a robust support capability on-scene to the maneuver elements. The multifunctional concept also implies an logistical organizational ability to function in the role of a forward, single logistic manager for the supported elements.

The following logistic implication are derived from Stage II:

(1). During Stage I, and no later than early Stage II, the logistical command, control, communications, computer, and intelligence architecture needs to be established and operating. This architecture must be designed to be user-friendly, efficient, responsive, accessible, and survivable, and ought to be dedicated to the logistical effort. Establishing this system is essential to timely, two-way transmitting of requirements and information, facilitating movement control, and maintaining overall control of support. It must furnish the mechanisms (development and application of technology, forecast tools, and decision aids to determine "push" requirements) for anticipation and responsiveness.

(2). All echelons must have a plan to facilitate the decentralization of either execution or control and execution of at least a significant portion of the logistics

effort. The requirements and demands of Stage II will make this decentralization inevitable. The surge of the support, sustainment, and facility activities coupled with the fluidity of operations and need to exploit opportunities require that this transition be understood and orderly without degrading support even temporarily.

(3). Support activities in the Staging/Logistic Area will probably remain relatively centralized and functionally organized.³² More forward, the tendency will be to achieve anticipation, responsiveness, flexibility and sustainability through more decentralized and possibly multifunctionally organized execution.

(4). The need for simplicity in allocating and re-allocating resources and forming and reforming logistical organizations between functional and multifunctional roles requires a minimization of logistic organizational layers. Moreover, organic to those layers which have logistic organizations must be the command, staff, and organizational capability and experience to quickly and efficiently operate as a supported unit with respect to reinforcement/attachment of dissimilar CS/CSS elements (to attain tailored multifunctionality). These units must be able to concurrently operate as an integrated supporting unit and logistics manager to one or more maneuver elements.

Decisive Operations

Having shaped the battlefield and confirmed that favorable conditions exist, the operational commander moves to Stage III. "The focus of this stage is on culminating the effort of previous stages with tactical and operational decisions." This stage encompasses the characteristics of force agility, mobility, and rapid generation of combat power. "Maneuver units are given missions to attack, defend, exploit, or pursue and defeat the designated enemy force." Brigade level close combat maneuver actions are envisioned to last for shorter rather than longer periods, and are organized and resourced accordingly. Force agility is achieved by tailoring, use of multiple routes, mobility, and engineering capabilities.

Subordinate commanders are expected to exercise initiative by use of mission tactics, well-understood commander's intent/concept of operation, and designation of main effort. The integration, synchronization, and application of intelligence, combined arms, and support are used to maintain momentum and the favorable conditions for decision. "Timing is critical. Delay of ground maneuver may cause loss of the established conditions."³³

AirLand Operations requires for Stage III that: "CSS that is anticipated and required forward during decisive operations...is tailored, up-loaded, and integrated with the commander's intent and concept."³⁴ This means careful allocation of logistic resources in, and rearward of, the extended battlefield, and choice of methods of control/employment. Those logistic forces in the Battle Area should be no more than needed to sustain the engaging forces with essential support. Yet, those logistic forces must also be sufficiently capable for "[t]he continuous nature of the operational cycle is to keep the pressure on the enemy."³⁵ The fluidity and potential nonlinearity of the battlefield on the tactical level means that forward logistic support organizations may have to operate dispersed and even temporarily isolated with maneuver elements. Although brigade level actions are expected to be relatively short, the overall operational situation will create uncertainty about opportunities for resupply and/or reinforcement. Forward logistic forces will also have to be sufficiently mobile and survivable to meet the demands and lethality of the battlefield. The flow of the battle and the relative position/location of forces can quickly change based on engagement results and enemy reactions to events. The operational commander must be able to shift and reinforce logistic resources in consonance with the changing conditions. Thus, there must also be the capability to rapidly bring additional logistical resources onto the battlefield as needed.

The following logistic implications are derived for Stage III:

(1). Logistic organizations operating in or near the Close Battle Area must be capable of operating independently. They must also have both the mobility and speed to keep up with the maneuver elements they are supporting. These organizations and their materiel must be survivable.

(2). The principles which govern combined arms operations and employment need to be examined for applicability to multifunctional support. The multifunctional organization is a combined logistical arm which must maneuver, organize and operate multi-disciplinary, and synchronize and apply its resources at decisive points and times in response to the tactical situation.

(3). "The operational commander, in conjunction with the tactical commander, determines the appropriate allocation of supporting assets or the point at which control is passed..."³⁶ Either way, from the tactical commander down to the maneuver element commander there must be the command, control, and organizational capability to make allocations and changes to support.

(4). A philosophy must be engrained at every echelon that the logistic capabilities at all echelons are ultimately the operational commander's assets to be allocated and aligned as the situation dictates. Support organization and command relationships will have to be flexible for AirLand Operations to succeed.

Force Reconstitution

Stage IV is oriented towards the reconstitution of at least some portion of combat capability given considerations of METT-T and CSS resources. In addition to normal sustainment, this stage includes reorganization, regeneration, and/or redeployment. Upon completion of decisive operations the forces are dispersed, and security is established to facilitate future mission actions and reconstitution. "Maintenance of combat power and force agility is dependent on anticipatory, real-time...[s]upport." Heavy attrition will be avoided to the extent possible during Stage III—ideally limiting reconstitution requirements to primarily

sustainment (fuel, ammunition, water, and rations) and some reorganization. Reorganization is normally at the tactical level at the direction, and within the capability, of the commander directing it. At the tactical level, some regeneration may be needed. The "[a]nticipation, planning, and execution of regeneration is normally at the operational level or higher" since regeneration requires resources and synchronization beyond the means of the force being regenerated. Finally, redeployment completes the campaign.³⁷

Logistic decisions and actions in Stages I through III must reflect not only the mission, intent, operational concept, and requirements for battle, but also for post-battle. Even successful operations will entail battle damage, losses, and consumption of supplies by maneuver and support forces alike. Forward support forces may need at least some reconstitution; therefore, their own contributions to reconstitution of maneuver elements will be limited. Most support for reconstitution will have to come from the more secure areas. Support must be organized to move forward as early as possible, even before the actual support requirements are known. Capabilities must encompass both the forward push of support and the ability to recover/evacuate. The surge in support requirements coupled with limited logistic assets and the consequential need to closely manage priorities and economize activities will probably result in greater centralization of control. Execution may also become more centralized—particularly in cases of high losses, urgency, and/or very limited residual support capability. Reorganization will probably occur in the Battle Area; however, regeneration activities will be conducted in the Staging/Logistic Area. The logistic effort for regeneration will probably be organized along functional lines with centralized control. Redeployment will require the same careful planning, sequencing, and integration of effort as needed for Stage I activities. Redeployment requires exceptional

discipline, coordination, and movement management; hence, further centralization of control will be the tendency.

The logistic implications for this stage are:

(1). Logistic organizations and activities in more secure areas should be positioned, supplied, equipped, and otherwise prepared in the earlier stages to immediately support reconstitution as Stage IV begins.

(2). Logistic organizations supporting reconstitution should be ready to function in either DS or general support (GS) of sustainment, GS of reorganization, and/or DS of regeneration. This support is most likely to be functionally organized in the Staging/Logistic Area, and be either functional or multifunctional in the Battle Area. Support capabilities must include the ability and capacity for rapid evacuation, and retrograde activities.

(3). Logistical planning must be continuous. If the planning fails to be anticipatory, logistic execution cannot be fully anticipatory. Planning for the latter stage of the operational cycle is just as critical as during the earlier stages. Inherent in the force design must be the flexibility to quickly re-orient, reorganize, and respond to changing plans and conditions.

Sustainment

Sustainment is ongoing throughout the operational cycle. "[It] is characterized at the tactical level by unit distribution of critical consumables..., essential recovery, responsive repair support, and timely evacuation of casualties and equipment." There must be continuity of support achieved through integration and synchronization with mission, intent, concept of operations, and support systems across all echelons. The objective of sustainment is "...to provide the commander the freedom of action to execute his plan throughout the operational cycle."³⁸

Throughout Airland Operations there is emphasis on "unweighting" some echelons from having to plan, direct, and manage support so that maneuver

commanders at those echelons can concentrate on the battle. Meeting the sustainment standards required for this emerging doctrine will require that the Logistics' Enabling Concepts be met—proactiveness, tailorability, streamlining, and improved maintenance.³⁹ The key to sustainability execution will be training. Sustainability itself will depend on system, materiel, and organizational design.

The transition from deployment to employment requires that the principle of attainability be achieved. Competition for strategic lift means that brigade-force-packages must be carefully reviewed to ensure essential support and sustainment is a part of those packages which are scheduled early in the sequencing. Positive control and economy will characterize the early sustainment effort. Once the build-up is progressing, the expansion of the distribution system and the magnitude of the logistic stockages will lead to greater decentralization with resultant decrease in economy, but increase in responsiveness. Stages II and III will likely lead to sustainment requirements exceeding support capabilities in some commodities and functions despite the efforts to be "anticipatory". As battle becomes more imminent, the natural tendency is to over-estimate and over-demand sustainment requirements, or discover that some aspect of sustainment is now a bottleneck or an impediment to rapid transition into, and/or execution of, Stage III. Resolution of these types of problems should be handled at the lowest echelon possible.

There are three logistic implications for sustainment besides those already covered for Stages I through IV:

- (1). Sustainment activities should be expected to fluctuate in intensity throughout the operational cycle. The period from the latter part of Stage II through the early part of Stage IV will frequently be the most critical. Economy will often have to be traded off for responsiveness; traditional structure traded off for flexibility and improvisation.

(2). The conditions and situations resulting from the nonlinearity of the battlefield and its three dimensions will require that both forward supporting and supported maneuver element commanders have as much discretionary authority as possible to modify command relationships and methods of control/employment. This autonomy and flexibility will be needed to ensure that sustainment keeps pace with the dynamics of the Close Battle Area during Stage III. In addition, the division level echelon will need at least one support organization under its control in a tactical support reserve role to respond to essential requirements when committed forward support cannot be shifted, or support is needed to rapidly augment and exploit an opportunity.

(3). The ideal is for sustainment to be so responsive and automatic that tactical commanders are not distracted from "warfighting." There is, however, a risk to this approach. Tactical commanders can become so sufficiently removed from the logistics effort that logistical constraints are not adequately understood or considered before selecting and executing tactical courses of action. Thus, the support element commanders must be an integral member of the maneuver element commander's decisionmaking process.

Command, Control, and Organization

The logistical implications found thus far indicate that AirLand Operations' logistic command and control (C2), and organization need further examination.

"C2 is echeloned to facilitate efficient application of force packages...The nonlinear battlefield is more open, less structured, more fluid, with changes occurring more rapidly..." Command focus must be on the operational level, and battles fought which contribute to operational success. Commander's intent must be communicated and understood. C2 must be mobile, capable of controlling forces and capabilities, and a means to facilitate maintenance of the operational

perspective. Unit design will probably have to balance agility, controllability, and sufficiency of capability while considering span of control.⁴⁰

Organization affects C2. Organizational and C2 simplicity and agility are best achieved when cross-attachments can be minimized. Streamlining will entail minimization of horizontal as well as vertical unit structure to keep C2 manageable. Whenever possible, the organizational design should reflect its most likely operating mode and internal C2 needs; yet, allow for flexibility to change modes and reorganize, if necessary.

The operating mode has at least three elements: (1) method of control, (2) method of employment, and (3) economies of scale. The methods of control are GS, DS, and attachment. These methods, per se, usually do not imply functionality or multifunctionality of logistic support. There are also three methods of employment. If the employment is task assignment, the logistic effort is likely specialized (i.e., functional) although the assets employed may be multifunctional (e.g., build a road through a sector). Area assignment can be either functional (e.g., provide all heavy motor transport for a given area) or multifunctional (e.g., provide sustainment support for all units in a given area). The same is true for the combination assignment. Economies of scale can be characterized by organizational entities which are elastic (i.e., significant degradation of functional efficiency and effectiveness does not occur when the organization operates in smaller, separate units) and inelastic (i.e., significant degradation does occur). Elastic logistical organizations can either serve as the nucleus of, or provider to a multifunctional organization. They can also operate functionally. Inelastic organizations will be more limited to the possible role of being the nucleus of a multifunctional organization or remaining functional.

The following are some general logistic implications:

(1). The logistic C2 architecture at each echelon must be able to exercise control down to the next echelon and influence activities down to the supported echelon, or arrangements must be made to pass or delegate control downward.

(2). Not only the number of logistic echelons, but also the number of logistic organizations in an echelon, should be minimized. Functional organizations critical to the mission and needed on an almost continuous basis should remain at the division level echelon for GS or DS operations. However, the more inelastic the unit and/or likely that it will remain in GS, the more it should be considered for placement in higher echelons. Responsiveness does not have to be lost because, when the situation demands, that unit can be placed in DS to a division.

(3). Multifunctional units should be activated organizations with at least the nucleus of their capability already intact. If established, their normal operating mode would most logically be GS or DS (depending on echelon/requirement) performing area or combination assignments. Conditions may arise when C2 requirements dictate attachment to a division or temporarily to a brigade.

Conclusion

AirLand Operations will indeed require new concepts and ways of thinking about logistics. Approaches may have to be nontraditional in many cases. Rigidity of structure and procedures will be incompatible with the requirements of the "anticipated" battlefield. Several of the logistic implications are not new, but the examination just conducted should furnish an additional basis for discussion and debate. To support this operational concept, logistics may have to be more than evolutionary—it may have to be revolutionary.

ENDNOTES

¹ U.S. Department of the Army, AIRLAND OPERATIONS, TRADOC PAM 525-5, (Ft Monroe, VA: 1 Aug 91), p. 1.

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- ² The term "AirLand Battle-Future" was used in the literature until recently, but AirLand Operations has now replaced the previous term.
- ³ B. T. Babin, "Support for Contingency Forces." Unpublished Research Paper, U.S. Naval War College, Newport, RI: 1991, p. 2.
- ⁴ AirLand Operations, p. 45.
- ⁵ Ibid., pp. 12-13.
- ⁶ Ibid., pp. 11 and 15.
- ⁷ John W. Foss, "AirLand Battle-Future," ARMY, February 1991, p. 22.
- ⁸ Information and quotations in this paragraph have been obtained from Airland Operations, p. 25.
- ⁹ AirLand Operations, p. 16.
- ¹⁰ Ibid., pp. 16-17.
- ¹¹ Babin, pp. 6-12.
- ¹² "Anticipation is the Key to Future Logistics in Motion," ARMY, February 1991, p. 34.
- ¹³ William G. T. Tuttle, Jr., "Sustaining Army Combat Forces," Army Logistician, Sept-October 1991, p. 6.
- ¹⁴ Ibid.
- ¹⁵ U.S. Marine Corps, Combat Service Support, FMFM 4, (Washington: 23 January 1987), p. 3-1.
- ¹⁶ Ibid.
- ¹⁷ Ibid., p 3-2.
- ¹⁸ Ibid.
- ¹⁹ Ibid.
- ²⁰ Ibid.
- ²¹ Tuttle, p. 6.
- ²² Combat Service Support, p. 3-2.
- ²³ AirLand Operations, p. 17.
- ²⁴ The planning steps used in this discussion are derived from information contained in the U.S. Marine Corps, Command and Staff Action, FMFM 3-1, (Washington: 21 May 1979), Section IV.
- ²⁵ AirLand Operations, p. 33.
- ²⁶ Ibid., p. 14.
- ²⁷ Ibid., p. 18.
- ²⁸ This conclusion is drawn primarily from Scenarios 1 through 3 of Support for Contingency Forces.
- ²⁹ AirLand Operations, p. 19.
- ³⁰ Information and quotations in this paragraph have been obtained from Airland Operations, pp. 20-21.
- ³¹ AirLand Operations, p. 18.
- ³² Babin, p. 10.
- ³³ Information and quotations in this paragraph have been obtained from Airland Operations, pp. 22-23.
- ³⁴ AirLand Operations, p. 23.
- ³⁵ Ibid., p. 24.
- ³⁶ Ibid., p. 23.
- ³⁷ Information and quotations in this paragraph have been obtained from Airland Operations, pp. 24-25.
- ³⁸ Information and quotations in this paragraph have been obtained from Airland Operations, p. 25.
- ³⁹ AirLand Operations, p. 31.
- ⁴⁰ Information and quotations in this paragraph have been obtained from Airland Operations, p. 30.