STRATEGY RESEARCH PROJECT

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MOBILITY REQUIREMENTS STUDIES: TIME FOR A NEW APPROACH

BY

COLONEL TOM E. THOMPSON
United States Army

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by

Colonel Tom E. Thompson
United States Army

Colonel Michael J. Mestemaker
United States Air Force
Project Advisor

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U.S. Army War College
Carlisle Barracks, Pennsylvania 17013

ABSTRACT

AUTHOR: Tom E. Thompson (COL), USA

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This study examines the Department of Defense mobility requirements study process. The thesis of the study is that while past efforts at mobility requirements determination have provided needed answers, the existing process must be revised to provide more timely and more accurate results. Mobility requirements studies are used by the Office of the Secretary of Defense, the Joint Staff, and the Services to determine strategic lift requirements in terms of pre-positioning, sealift, airlift, and intratheater lift. The study analyzes data input, simulation models, and the processes used to conduct the Mobility Requirements Study and the Mobility Requirements Study Bottom-Up Review Update. The study concludes that the adoption of specific suggested changes to the current process will result in faster and more accurate results.

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INTRODUCTION

Changes in United States National Security Strategy and National Military Strategy have resulted in varying efforts to size our forces to meet current and future threats. Such efforts as the Base Force and the Bottom-Up Review (BUR) have provided the methodologies for recent force structure reductions. Our national strategies clearly recognize the critical role that strategic mobility plays in power projection. The key components of strategic mobility are intertheater airlift, sealift, pre-positioned equipment, and intratheater lift. In terms of military capability, strategic mobility provides enhancements that "greatly improve the power projection capability of our forces."[1]

As a result of the Base Force effort, the Mobility Requirements Study (MRS) was undertaken beginning in 1991, to determine requirements for intertheater airlift and sealift, pre-positioned equipment, and intratheater lift.[2] Following completion of the BUR in 1993, the Mobility Requirements Study Bottom-Up Review Update (MRS BURU), was initiated in the fall of 1993, to re-look intertheater lift and pre-positioning requirements.[3] The Intratheater Lift Analysis (ILA) followed in 1995, to determine the in-theater transportation requirements for a two nearly simultaneous major regional contingencies scenario.[4] These mobility studies created an accepted mobility requirements process, sanctioned by the Secretary of Defense, that continues today. The purpose of this study is to examine the Department of Defense mobility requirements study process, identify strengths and weaknesses of past efforts, and make recommendations to improve the process for the future.

The thesis of this study is that while past efforts have provided needed answers, the existing process must be revised to provide more timely and more accurate results.

Each past effort at determining mobility requirements has taken over a year to complete, and in each case left questions unanswered. Improvements to the process can and should be made. This paper seeks to document needed improvements.

Strategic mobility requirements for airlift, sealift, pre-positioned equipment, and intratheater lift are determined by the Joint Staff in conjunction with the Office of the Secretary of Defense, Program Analysis and Evaluation (OSD PA&E), the Unified Commands, and the Services. Requirements determinations also include consideration of transportation infrastructure needs both in the United States and at overseas locations. Studies traditionally rely upon illustrative war gaming scenarios, existing war plans, updated intelligence estimates, projected military force structure, computerized war gaming, and transportation simulations. The war game results dictate the forces required and the transportation required to move those forces to meet timelines, under conditions of moderate risk and predicted victory. Secretary of Defense approved mobility requirements studies typically result in Service developed programs for airlift, sealift, pre-positioned equipment, trucks, rail cars, containers, container handling equipment, and transportation related facilities and support equipment.

The ongoing Quadrennial Defense Review is the most current look at National Military Strategy, force structure, and mobility requirements. Current indications are that the results of the most recent studies relative to the MRS BURU will be used as long as the two nearly simultaneous major regional contingencies are under consideration.[5] Questions raised under other scenarios will have to be addressed in relatively short order, given the established timelines requiring a report to Congress not later than May 15, 1997.[6] Lessons learned from previous studies should be helpful in this regard.

MOBILITY REQUIREMENTS STUDY (MRS)

As part of the National Defense Authorization Act for FY 1991, Congress directed the Department of Defense to determine the future strategic mobility requirements for the Armed Forces and to develop an integrated mobility plan. To meet this requirement, the Director for Force Structure, Resources, and Assessment (J-8), Joint Staff, was placed in-charge of conducting the MRS.

> The Director, J-8 chaired an Advisory Group and met with a Coordinating Committee that was responsible for reviewing plans, examining work in progress, and developing recommendations. A working group was established by the Director, J-8 under the chairmanship of the Chief, Integration and Assessment Division, J-8, Joint Staff. The working group executed all study tasks and included representatives from the Joint Staff, Office of the Secretary of Defense, USTRANSCOM, and the Military Departments.[7]

The methodology used in the MRS was evolutionary, initially focusing on assessing mobility requirements using delivery profiles based upon a set of detailed scenarios. "The study methodology was broadened to include examination of varying assumptions of potential threats, warning time, allied participation, reduced forward presence, overseas base access, and availability of US, allied, and foreign shipping."[8] This resulted in the use of detailed computer-assisted war games and transportation simulations to determine the mobility requirement. Additionally, a range of options were developed to reduce identified shortfalls.

Data inputs for the MRS were provided by the Military Departments in the form of Time Phased Force Deployment Data (TPFDD)-like data bases designed to replicate the combat and support force flows required to meet war gamed results. The Services used their own doctrine and force structure programmed for FY 1999, to construct the

detailed data bases. The data was fed into computer models that developed delivery profiles used for analysis of the strategic airlift, sealift, and pre-positioned equipment requirements.

Required delivery profiles were compared to base force mobility capabilities. Requirements exceeding the projected capabilities were identified as shortfalls. The study sought to identify not only the shortfalls, but also affordable options that could be applied under conditions of moderate risk. This application of fiscal constraint constituted a different approach from "the past practice of defining military requirements without considering cost, then proposing programs that fall far short of meeting the requirement, and calling the shortfall risk."[9]

The initial results of the study were published in the MRS Volume I, dated 23 January 1992. This was over a year later than originally requested by Congress. It summarized the results and made recommendations in the following areas: intertheater airlift and sealift, pre-positioned equipment, amphibious lift, CONUS infrastructure, logistics-over-the-shore (LOTS) operations, and civil sector support required to meet airlift and sealift demands.[10] Volume II containing the detailed analysis supporting the results reported in Volume I was promised for April 1992, but not published until 5 June 1993. Volume III was to provide the analysis, conclusions, and recommendations for the intratheater and tanker sections of the study, but was never published beyond the draft stage in 1994, being outdated by the effects of the Bottom-Up Review before it could be put to print.

The MRS resulted in a comprehensive review of our mobility requirements. Although it analyzed both major and lesser regional contingencies, the study concluded

that major regional contingencies drove strategic mobility requirements. Specifically, the study recommended:

> - acquisition of an additional 380,000 sq. ft. of sealift capacity, equal to 19 large medium speed roll-on/roll-off ships (LMSRs), using eight of the LMSRs to pre-position afloat an Army heavy brigade and combat support equipment, and using 11 LMSRs to expand surge sealift capability.
> - expansion of the Ready Reserve Force (RRF) to 101 dry cargo ships by adding 19 roll-on/roll-off ships and increasing fleet readiness levels.
> -continuation of the C-17 program to acquire 120 aircraft.
> -improvement of the CONUS infrastructure to move military forces from fort-to-port. [11]

These recommendations resulted in Service sponsored plans and programs for equipment acquisition and needed infrastructure and readiness improvements that continue today.

MOBILITY REQUIREMENTS STUDY BOTTOM-UP REVIEW UPDATE (MRS BURU)

With the completion of the Bottom-Up Review (BUR) came changes to defense strategy and force structure, as well as, an increased emphasis on having the capability to execute two nearly simultaneous major regional contingencies. All of these changes had potential impact on mobility requirements developed under the MRS. Consequently, in the fall of 1993, the Joint Staff began organizing a follow-on study to the MRS. Congressional interest resulted in a more formal tasking. The Deputy Secretary of Defense signed a memorandum, "Mobility Requirements Study Bottom-Up Review Update," on 4 April 1994, tasking the Joint Staff to perform the study in order to validate existing mobility requirements and to provide updated requirements resulting from the BUR.[12]

The study used a team similar to the one used in the MRS. The approach differed from the MRS in that the Director for Logistics, J-4 was given the lead, vice the J-8; however, extensive assistance was provided by the J-8 staff and OSD PA&E Projection Forces Division. A flag officer advisory panel was also formed, chaired by the J-4, with representation by OSD PA&E, the Services, the Service Secretaries, the Unified Commands, Defense Intelligence Agency, and the other Joint Staff functional directors.[13] The panel provided both guidance and oversight for the study effort, meeting frequently over the course of the study to review and approve the methods used and findings and recommendations developed by the study team.

The methodology used was very similar to that of the MRS. The effort focused on examination of major regional contingencies, using illustrative scenarios from the Defense Planning Guidance (DPG). The following scenarios were used: Major Regional Contingency East, Major Regional Contingency West, Nearly Simultaneous Major Regional Contingency East-West, and Nearly Simultaneous Major Regional Contingency West-East.[14] Computerized warfighting analysis, using the BUR force programmed for FY 2001, was conducted by the J-8 staff, providing force requirements and employment timelines under conditions of moderate risk. The J-4 staff then developed delivery profiles using transportation simulation modeling, an effort much like that of the MRS, to determine closure shortfalls and assess force closure effectiveness. Using the baseline mobility asset capabilities programmed as a result of the MRS, the effort assessed the closure profiles produced and considered the cost of the mobility program options in arriving at a moderate risk solution for each scenario. The study concluded with an

integrated mobility recommendation based on the most demanding aspects of each scenario.

The Services developed force movement packages for each of the scenarios which provided the data inputs required to run the transportation simulations. The Army's input was provided by the Office of the Deputy Chief of Staff for Plans and Operations (ODCSOPS) and reflected force structure developed under Total Army Analysis 2001 (TAA-01). Sustainment requirements were calculated for all of the forces based on the Logistics Factors File, and the resulting sustainment workloads were added as input to the transportation simulations. The transportation simulation model also received inputs providing the transportation characteristics of the various installations originating forces, the sea and aerial ports used, the cargo ships and aircraft employed for movements, the sea and air lines of communication, pre-positioned equipment both ashore and afloat, and the port handling and onward movement capabilities of the ports designated for use. The inputs in total reflected both the forces to be moved and the baseline mobility assets assumed to be available by FY 2001.[15]

The MRS BURU sought to answer two questions:

> 1. Does the United States have the strategic lift to execute and win two nearly simultaneous major regional contingencies?
> 2. What changes, if any, are recommended to the strategic mobility mix to ensure the successful execution of the new (BUR) strategy?[16]

The answers were to be expressed in terms of airlift, sealift, and pre-positioning of equipment requirements, in the same manner as the MRS. An accurate update of strategic mobility requirements, reflecting the BUR strategy and force structure, was the required objective.

The MRS BURU results were published on 28 March 1995, in a format similar to MRS Volume I. The study validated the MRS sealift recommendations for 19 LMSRs and 19 additional roll-on/roll-off ships for the RRF. It recommended a total airlift capacity of between 49.4 and 51.8 million ton miles per day or buying between 120 and 140 C-17 aircraft, which was later refined to 49.7 million ton miles per day or just over 120 C-17 aircraft. The study also recommended shifting 280,000 sq. ft. of surge sealift capacity to Army afloat pre-positioning and identified a need to regenerate Army Afloat Package (AWR-3) immediately upon use, tailoring the contents for the most likely second major regional contingency. Finally, it recommended continued review of strategic mobility requirements, under the then evolving Joint Warfighting Capabilities Assessment (JWCA) process.[17]

INTRATHEATER LIFT ANALYSIS (ILA)

The ILA became the first strategic mobility study to be conducted under the JWCA process. The purpose of the study was to determine common user intratheater transportation and container handling requirements for a nearly simultaneous two major regional contingency scenario. The analysis was a follow-on effort to the MRS BURU.

The study made use of the same team organization and flag advisory panel as the MRS BURU. To add additional expertise, each of the Services were encouraged to bring in subordinate activities to assist in modeling efforts. Accordingly, the Army brought in representatives from Combined Arms Support Command (CASCOM) and the Military Traffic Management Command (MTMC). The Air Force brought in representatives from Air Force Studies and Analysis (AFSA), the Air Mobility Command (AMC), and the Air

Combat Command (ACC). Additional support was provided by the staffs of U.S. Atlantic Command (USACOM), U.S. Central Command (USCENTCOM), U.S. Pacific Command (USPACOM), U.S. Transportation Command (USTRANSCOM), and US Forces Korea (USFK).[18]

The ILA used a methodology pioneered by the MRS in its intratheater lift analysis. The forces moved in the MRS BURU and the resulting force closure profiles provided input for a computer based intratheater transportation simulation model. The model flowed the forces into the overseas sea and aerial ports and then continued their movement through the halting, build-up, and counterattack phases of the MRS BURU war game battles. The ILA focused on the MRS BURU nearly simultaneous major regional contingency West-East scenario, which provided the most demanding case for intratheater lift. Where the computer based model failed to offer needed fidelity, specialized desk top spread sheet models were employed to generate needed answers. Sustainment flows were modeled based upon each Service's doctrine, including containerized sustainment. Requirements were determined by mode, equipment category, and Service for major regional contingencies West and East.

Data inputs for this effort were extensive. The MRS BURU output provided force and sustainment flows into the overseas theaters. The intratheater transportation infrastructure characteristics of highways, railroads, waterways, petroleum pipelines, air routes, water ports, and aerial ports for two major regional contingencies provided basic input for the model. Equipment characteristics for Army trucks, Marine Corps trucks, 20 and 40 ft. International Standards Organization (ISO) cargo containers, heavy-lift rail cars, Army watercraft, and Air Force C-130 and C-17 aircraft provided additional

required inputs.[19] The Services and Unified Commands provided these inputs based on doctrinal requirements and planned or programmed capabilities.

The study sought to determine intratheater workloads for Army common-user dry cargo trucks, bulk liquid trucks, heavy equipment transporters, Army heavy-lift railroad flat cars in Korea, Army LCU 2000 and LSV watercraft, Marine Corps dry cargo and bulk liquid trucks, and Air Force C-130 and C-17 aircraft.[20] Additionally, the study sought to determine the container handling workload for each theater by Service. Solutions were developed for the halting, build-up, and counterattack phases of the war gamed scenarios.

The study published results in a report dated 15 July 1996. The report identified workloads and resulting equipment requirements. Service equipment inventories and programs were then assessed for their ability to meet the identified intratheater lift requirements. Shortfalls were identified and solutions offered. Specific recommendations are not included here because of their classified nature. Being part of the JWCA process, the results were used to assess the ability of specific Service programs to meet projected requirements. Certain results were available prior to actual publication; results on use of the C-17 in an intratheater role were available and used in the 1996 Defense Acquisition Board decision to buy 120 C-17 aircraft. The study results were also used by the Air Force to develop its C-130 basing plan.

EVALUATION OF THE PROCESSES USED

The MRS, MRS BURU, and ILA represent a series of evolutionary processes that built on the strengths of each previous effort. The ILA being the latest effort was able to benefit most from previous experiences. The study processes in terms of organization, methodology, modeling, and assessment techniques provide both strengths and weaknesses that need to be identified and evaluated with an eye on future efforts.

Strengths.

Team composition evolved over time and became a valued strength in conducting each of the mobility studies. The MRS started the team building process, bringing together the experts from the Joint Staff, Service staffs, Unified Commands, and OSD PA&E and incorporating the use of an advisory panel of flag officers. MRS BURU continued this same effort with some coordinating improvements. The team process and use of the flag advisory panel was so successful, that the Secretary of Defense recommended that it continue to be used for all future mobility requirements determinations.[21] The ILA effort went one step farther by inviting lower level organizations to participate in the study effort in order to ensure technical accuracy in the requirements being developed. This proved to be not only invaluable but also totally necessary in working containerization issues and aircraft requirements. The experts will do a better job faster every time.

The unsung heroes of each of the team efforts were the government contractors, hired to do the computerized war game and transportation simulation modeling and to provide expert assistance. General Research Corporation (GRC) was contracted by the

Joint Staff and OSD PA&E for transportation model development and operation. Additionally, Federally Funded Research and Development Corporations, such as the Institute for Defense Analyses (IDA) and the Logistics Management Institute (LMI) provided expertise that ensured that important aspects of the transportation modeling were adequately addressed and incorporated. In every case, the contractors were fully integrated into the study effort. Given the complexity of each study, the contract assistance proved to be both valuable and absolutely necessary.

The DPG provided the initial direction and basic assumptions need to focus each of the studies. This ensured common and firm ground on which to base the analyses. The illustrative scenarios of the DPG provided the needed cornerstone for development of war gaming and transportation simulations. The requirements developed by the studies therefore have as their basis the capabilities documented in the DPG. Using the DPG provides a basis for warfighting assumptions that can be agreed upon by all the team players, albeit sometimes reluctantly by some. Getting consensus on anything joint, especially when it impacts force structure, is very difficult. Using the DPG, at least made consensus possible.

Mobility modeling and simulation provided the backbone for each of the studies. Intertheater lift requirements have been determined using the Model for Intertheater Deployment by Air and Sea (MIDAS). To add fidelity to airlift asset requirements, the Mobility Analysis Support System (MASS) has been relied upon. For intratheater lift analysis, the Scenario Unrestricted Mobility Model for Intratheater Simulation (SUMMITS) has been employed. Each of these models offers distinct advantages in determining complex mobility requirements.

MIDAS was developed under contract by GRC for OSD PA&E, beginning in 1977. Additional development and enhancements continue today, including integration of MIDAS into the new Analysis of Mobility Platform (AMP) being developed by the U.S. Transportation Command. AMP's design allows use of a common data base with other models, producing the desired capability and benefits of shared inputs and outputs. While AMP offers greater flexibility in using an array of models, it is still developmental at this time.

MIDAS also operates in a stand alone mode. The model generates schedules for deployment of forces under conditions and scenarios defined by the user. "MIDAS is a strategic deployment scheduling model that uses heuristic scheduling algorithms to select the mode of deployment of each unit in a force, schedules the movement of units by aircraft and/or ships, and simulates the activities of the ships, aircraft, port facilities, and attrition."[22] "MIDAS is capable of dynamically generating supply shipments to support forces arriving at each destination."[23] The model provides a well respected methodology for determining intertheater lift requirements.

Air mobility modeling is performed in detail by the Air Mobility Command using MASS. The model has been used to support both the MRS and MRS BURU efforts and is also being added to the AMP. MASS takes user defined input concerning the air mobility network, the concept of operations, movement requirements, aircraft fleet characteristics, logistics constraints, and aircrew limitations and provides outputs in terms of throughput, unit and force closure, aircraft status, aircrew status, cargo disposition, and network/airfield status.[24] MASS provides a greater level of aircraft operating detail than

MIDAS, enabling a more refined solution for the air operator when combined with MIDAS inputs and outputs.

SUMMITS was developed under contract by GRC for OSD PA&E beginning in 1981, as a major update of the GRC Build-Up Model. Enhancements to the model were developed most recently in 1996. Using MIDAS outputs, SUMMITS produces deployment solutions for in-theater transportation movement by highway, railroad, watercraft, aircraft, and/or pipeline. The model also provides the capability to move 20 and 40 ft. ISO containers via user defined modes. Other critical inputs include the characteristics of all theater transportation assets, modal network capacities, airfield constraints, and vehicle availability.[25] SUMMITS provides detailed modal solutions for a highly complex in-theater movement process.

Other models have been used effectively in support of the mobility requirements determination process. Desk top models have been used to refine rail car, watercraft, and aircraft requirements. They are normally simple spreadsheets that may or may not be computer based. Other complex computer based models exist or are in development by activities such as the Army's Concepts Analysis Agency and the Military Traffic Management Command's Transportation Engineering Agency. Major studies such as the MRS or MRS BURU have not used these models because of their current limitations. As these models progress in their development, they may be integrated into the AMP and be able to more readily contribute to the major efforts of the future.

One of the biggest strengths of the current mobility requirements determination process is the extensive coordination among activities having a stake in the outcome. The coordination effort fosters outcomes from the process that result in a far superior product,

than if a single agency had undertaken the project on its own. The enhanced quality, given the active participation of the Joint Staff, OSD PA&E, the Services and the Unified Commands, makes arriving at needed consensus in the final approval process much more achievable.

While each of the Services is capable of conducting its own mobility requirements studies, efforts chaired by the Joint Staff and participated in by OSD PA&E, the Services and the Unified Commands produce a unique "joint" solution set. Given that mobility requirements must be reviewed and approved by the Joint Requirements Oversight Council (JROC), the Joint Staff led efforts as part of the JWCA process provide the needed venue for achieving supportable joint results.

Weaknesses.

While the team approach has its strengths, not all team members are created equal in terms of the knowledge or abilities they bring to the process. The ability of a Service or Unified Command to influence and contribute to a study is determined directly by the personality, experience, and capabilities of the representatives assigned. The best qualified personnel are frequently not available. At times during the conduct of the MRS BURU and the ILA, Service representatives were changed so often that progress was significantly slowed because new members had not a clue as to what was already agreed to or in progress. Getting people to attend meetings and keeping everyone on track and productive proved to be a continual challenge.

The quality of the data provided by the Services for input to the computer based models dictates the quality of the output. In transportation modeling, force composition

and unique movement characteristics are critical. A unit left out, improperly characterized, or assigned the wrong movement priority leads the model to a solution that is "precisely right but exactly wrong." The TPFDD-like data inputs are so extensive that quality checks are seldom performed adequately. When checks are made, usually while running a small scale excursion such as deployment using direct delivery by air, the findings can be particularly bothersome. Typically, units that should not be air eligible are coded for movement by air instead of by sea. Critical units required to open ports or facilitate reception, staging, onward movement, and integration (RSOI) may be left out altogether. Above the line forces (defined as division level forces for modeling purposes) seldom suffer these fates; however, critical below the line forces, which constitute two-thirds of the movement requirements, are often missing or improperly prioritized for movement. TPFDD sequencing and mode specifications are key inputs into the process that can have an overwhelming impact on the results. A system of quality control over the Service provided inputs is urgently required.

Much of our Service doctrine is based on fighting a large war in Europe. This results in force sustainment plans that bring too much to the battlefield. While this has been recognized to a great extent, the inputs provided by the Services still reflect sustainment rates using a "cold war" mentality. The attributes of modern logistics thinking have yet to be imparted to the models. The Services continue to provide sustainment input that is out of touch with the direction they say they are going. Days of Supply is the single best example, especially in the case of the Army. On one hand the Army calls for a smaller logistics footprint in the theater, but on the other hand Army doctrine has yet to reduce the days of supply in a theater or the sustainment composition,

often defined as all classes of supply in terms of pounds per man per day. No significant change in lift requirements can be achieved until sustainment input provided by the Services is updated in the Logistics Factors File to reflect the needs of the modern battlefield.

MIDAS, MASS, and SUMMITS are very complex models that require large data inputs and provide a myriad of data outputs but only after a very time consuming process. The MRS, MRS BURU, and ILA each took over a year to complete. While improvements have been made to the models to make them easier and faster to use, more investment is required to provide faster runtimes. This can be accomplished by eliminating requirements for off-line manipulation by analysts, and by customizing the outputs to meet the needs of both the analysists and the ultimate decision makers. Improvements to the models can reduce the time it takes to get the needed answers.

In developing lift requirements for the two MRC scenarios, providing transportation or sustainment support to coalition partners was assumed away. Given past experience, this could prove to be a dangerous direction, resulting in our inability to provide timely support to expectant allies. Requirements for coalition support by the U.S. need to be seriously investigated and included in future mobility studies. Classified agreements with allies exist that could provide significant but as of yet undocumented mobility workloads. Such agreements could seriously impact strategic air and sealift requirements.

The current mobility requirements study process takes too much time. Studies that take over a year to complete often produce results that no longer quite fit the current agendas of Department of Defense decision makers. While the computer based models

have been identified as in need of improvements to speed up the process, other major improvements are also needed. Part of the problem has been with defining the detailed answers being sought. Review of past efforts reveals evidence of last minute changes in direction and calls for answers to new questions, sometimes resulting in use of data for purposes not originally designed. This has necessitated having to rebuild data bases and even change models, sometimes adding months to the process.[26]

The MRS BURU report provided answers but not without stating up front that additional follow-on studies were still required. The Secretary of Defense agreed that more work was needed to be done and in the case of strategic airlift recommendations, specifically requested that the requirements for the C-17 aircraft be redefined as a point solution.[27] The study then continued after its final report, producing follow-on memorandums with the requested answers. Decision makers within the entire Department of Defense want specific answers that support their requirements. The questions to be answered and level of detail required need to be decided upon before a study begins.

TIME FOR A CHANGE

The basic mobility requirements study process needs to be changed to produce more accurate results faster. The evolutionary process that began with the MRS has many strengths, but the weaknesses must be addressed, if further progress is to be made. To succeed in overcoming existing weaknesses, the process first must have committed leadership and team members that can and will contribute to an accelerated effort. Second, the Services providing the data base inputs must commit to change for the better;

data must be complete, accurate, and timely. Third, the Services must quantify the impact of modern logistics efforts that are only now being addressed in doctrine; major changes to the Logistics Factors File reflecting new leaner logistics must be accomplished if mobility requirements for sustainment are to be reduced. Fourth, the transportation simulation models used in the process must be refined to meet accelerated timelines; OSD PA&E must commit to financing and effecting the needed improvements to the models. Fifth, coalition support requirements must be part of the functional equation defining mobility requirements; the Joint Staff must commit to identifying , validating, and including coalition requirements for the two major regional contingencies. Sixth, building on the evolutionary processes of the past, the Joint Staff and OSD PA&E must develop and maintain a modeling baseline, consisting of a standing Service data base and upgraded computer models that supports combined intertheater and intratheater studies. Finally, each study team must clearly define the results sought by the decision makers and complete each study in not more than 120 days. Given these changes, the process will provide the faster and more accurate solutions desired.

THE NEW APPROACH

While reducing the mobility requirements study process from more than a year to four months may appear overly ambitious, conducting a mobility requirements study on such a fast track is indeed doable. The first step is to gain the commitment of OSD PA&E, the Joint Staff, the Services, and the Unified Commands to make the necessary changes. While most all of the financial and personnel assets required already exist, leadership will be critical. The Director for Logistics, J-4, the Joint Staff, having served

as the chair for mobility studies in the most recent past, should rightfully fill the leadership role in effecting this new approach. The proposed process should be presented to the JROC for approval in order to help achieve a mandate for all involved.

The 120 day study objective cannot be achieved without first producing a modeling baseline for all future studies. This includes establishing a new Service data base, fixing the Logistics Factors File input to reflect new doctrine, and upgrading the transportation simulation models. Working the details required for improved database inputs by the Services, a new Logistics Factors File, and upgrading the computer models will take time; however, once the ground rules are established and the changes institutionalized, future updates will require much less time and effort. Once a production baseline is designed and built, running for output can be easily achieved quickly and on a repetitive basis. With such a modeling baseline, the time required to conduct a study will be greatly reduced, and conducting a study in 120 days or less becomes achievable.

CONCLUSION

While past studies have provided needed answers, the existing process must be revised to provide more timely and more accurate results. Each past effort at determining mobility requirements has taken over a year to complete, and in each case left questions unanswered, requiring follow-on analysis. Improvements to the process can and should be made. Implementing a new process that establishes a modeling baseline which addresses the weaknesses of the past will achieve the desired results. Commitment of all

the players and the leadership of the Director for Logistics, J-4, the Joint Staff, can provide the needed foundation for change.

Secretary Perry was on the mark in stating at the conclusion of the MRS BURU follow-on analysis, "I also want to commend the high level of OSD-Joint Staff collaboration in the entire MRS BURU process. Cooperation of that sort will be equally important to future assessments of mobility requirements."[28] The decisions to be made are important, and the process of supporting those decisions needs to be accurate and timely. It is time to make the necessary changes in the mobility requirements determination process. It is time to provide the decision makers at the top with the answers they need in a more timely manner.

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