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ARMY MATERIEL REQUIREMENTS
TO SUPPORT THE
CONTINENTAL UNITED STATES
MILITARY MOBILIZATION BASE STRUCTURE

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19. ABSTRACT (Continue on reverse if necessary and identify by block number) This report examines the systems, procedures, and data bases used or under development to measure the materiel requirements to support mobilization of units permanently stationed in the United States and its territories. It looks at the needs of the Army Materiel Command and the mobilization stations and the engineer, medical, transportation, and training components of the CONUS base. The report is one of five produced by the Engineer Studies Center for the Deputy Chief of Staff for Operations and Plans as part of its study: mobilization requirements for industrial preparedness planning. The four other reports, all published in 1989, are: Assessment of the Methodologies For Determining Materiel Requirements For the Current Force, Determining Materiel Requirements For Force Expansion, Wartime Support of U.S. Friends and Allies; An Assessment of the Planning Environment, and Army System for Mobilization Requirements Planning: Supply Classes V and VII (Ammunition and Equipment). ↙					
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**ARMY MATERIEL REQUIREMENTS
TO SUPPORT THE
CONTINENTAL UNITED STATES
MILITARY MOBILIZATION BASE STRUCTURE**

Prepared by
Engineer Studies Center
U.S. Army Corps of Engineers

October 1989

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EXECUTIVE SUMMARY

This report is one of five developed by the U.S. Army Engineer Studies Center (ESC) during its evaluation of the mobilization materiel requirements for industrial preparedness planning conducted for the Office of the Deputy Chief of Staff for Operations and Plans (ODCSOPS). This report evaluates the current systems and methods used to determine the mobilization requirements for Class V and Class VII materiel, ammunition, and major end-items of equipment necessary for the Army's CONUS base to successfully complete its mission during conventional global war.

The CONUS base has five components:

- **The Training Base** comprises the schools and facilities which provide a range of skills education from basic training to advanced individual training.

- **Mobilization Stations** serve as staging points and are where units receive unit combat training before deploying to a theater of operations.

- **The Logistics Base** includes the supply, physical plant, and facility support for all other components of the CONUS base.

- **The Medical Base** is the personnel and facilities which provide necessary medical care and support to mobilizing personnel and to casualties returning from the theater of operations.

- **The Transportation Base** includes all elements which move personnel, equipment and materiel in support of a general mobilization.

ESC found all components of the CONUS Base share common problems in defining, quantifying, and documenting their mobilization materiel requirements. The most glaring problem areas are:

- **Current force.** The CONUS base components supporting the mobilization and deployment of the current force do not validate their Mobilization Tables of Distribution and Allowances (MOB TDAs). In addition, the process through which MOB TDAs are developed are not fully automated below the major Army command (MACOM) level. Although Army regulations forbid MOB TDAs from listing tactical equipment which can be substituted with a commercial item, the commercial substitute item list is not complete, and the Army has not yet provided clear guidance on how to place commercial substitutes onto a MOB TDA.

■ **Force Expansion.** No plans exist to build an expanded force structure after the current force has deployed. The division types that would comprise the Joint Chiefs of Staff (JCS) Planning Force do not have their Combat Support (CS) and their Combat Service Support (CSS) units defined. These divisions are not defined to the Table of Organization and Equipment (TOE) and Military Occupational Specialty (MOS) levels. This study recommends:

■ **Validating unit MOB TDAs** documented in the Total Army Authorization Document System (TAADS) data base against the requirements of current Operations Plan (OPLAN). Validation should be done at the MACOM level at least once per year.

■ **Eliminating the use of tactical equipment** by TDA units within CONUS and substituting commercial materiel capable of meeting mission goals. This would place the tactical equipment where it is needed most--in the hands of troops on the battlefield.

■ **Defining the composition of the divisions** to be included in an expanded force structure to their TOE and MOS levels.

LIST OF ABBREVIATIONS AND ACRONYMS

AR	Army reserve
AIT	advanced individual training
ALO	Authorized Level of Organization
AMC	Army Materiel Command
AMOPS	Army Mobilization and Operations Planning System
AMPC	Army Military Personnel Center
AR	Army Regulation
ASD(HA)	Assistant Secretary of Defense for Health Affairs
ATRRS	Army Training Requirements and Resources System
C&GSC	Command and General Staff College
CAA	U.S. Army Concepts Analysis Agency
CE	Corps of Engineers
CINC	Commander in Chief
COMPASS	Computerized Movement and Planning Status System
CONUS	Continental United States
CRISP	Commercial Required Item Substitute Planning
CS	combat support
CSS	combat service support
CTA	Common Table of Allowances
DA	Department of the Army
DEH	Directorate of Engineering and Housing
DFE	Division Force Equivalents
DLA	Defense Logistics Agency
DNBI	Disease Non-Battle Injuries
DOD	Department of Defense
DODIC	Department of Defense Identification Code
ESC	U.S. Army Engineer Studies Center
EUCOM	U.S. European Command
FASTALS	Force Analysis Simulation of Theater Administrative and Logistical Support
FM	Field Manual
FORMDEPS	U.S. Army Forces Command Mobilization and Deployment Planning System
FORSCOM	U.S. Army Forces Command

LIST OF ABBREVIATIONS AND ACRONYMS

HMMWV	High Mobility Multipurpose Wheeled Vehicles
HQDA	Headquarters Department of the Army
HSC	U.S. Army Health Services Command
IIQ	Initial Issue Quantity
JCS	Joint Chiefs of Staff
JSPD	Joint Strategic Planning Document
LOGNET	Logistics Data Network
MAC	Military Airlift Command
MACOM	major Army command(s)
MAPS II	Mobility Analysis Planning System II
MCRP	Mobilization Command and Readiness Program
MDSS	Mobilization Decision Support System
MEPCOM	Military Entrance Processing Command
MOB ARPRINT	Mobilization Army Program for Individual Instruction
MOBERS	Mobilization Equipment Redistribution System
MOB PERSACS	Mobilization Personnel Structure and Composition System
MOB POI	Mobilization Program of Instruction
MOBSCOPE	Mobilization Shipments Configured for Operational Planning and Execution
MOB TDA	Mobilization Table(s) of Distribution and Allowance
MOS	Military Occupational Specialty
MTBOR	Mobilization Training Base Output Requirement
MTMC	Military Traffic Management Command
MTMS	Mobilization Training Management System
MTOE	Modified Table(s) of Organization and Equipment
NDMS	National Disaster Medical System
NG	National Guard
OACE	Office of the Assistant Chief of Engineers
OCE	Office of the Chief of Engineers
OCONUS	Outside Continental United States
ODCSLOG	Office of the Deputy Chief of Staff for Logistics

LIST OF ABBREVIATIONS AND ACRONYMS

ODCSOPS	Office of the Deputy Chief of Staff for Operations and Plans
OJCS	Office of the Joint Chiefs of Staff
OPLAN	Operations Plan(s)
PACOM	U.S. Pacific Command
PEPTP	Production Equipment Package Transportation Plan
POI	Program(s) of Instruction
POR	Preparation for Overseas Replacement
RMS	Request Mobilization Subsystem
SITMAN	Situation Manual
STRAC	Standards in Training Commission
TAADS	Total Army Authorization Data System
TAPA	Total Army Personnel Agency
TBEP	Training Base Expansion Plan
TDA	Table(s) of Distribution and Allowances
TOE	Table(s) of Organization and Equipment
TPFDD	Time-Phased Force Deployment Data
TPFDDL	Time-Phased Force Deployment Data List
TRADOC	U.S. Army Training and Doctrine Command
TSG	The Surgeon General
USAR	United States Army Reserve
USAISC	U.S. Army Information Systems Command
USAWC	U.S. Army War College
VA	Veterans Administration
WESTCOM	U.S. Army Western Command
WWMCCS	Worldwide Military Command and Control System

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ARMY MATERIEL REQUIREMENTS TO SUPPORT THE CONTINENTAL UNITED STATES MILITARY MOBILIZATION BASE STRUCTURE

I. INTRODUCTION

1. **PURPOSE.** This report is one of four background reports prepared by the U.S. Army Engineer Studies Center (ESC) as part of its evaluation of the Army's methods for estimating mobilization materiel requirements for industrial preparedness planning. The overall study presents a conceptual method for determining materiel requirements for two classes of supply: Class V (ammunition) and Class VII (equipment).¹ This report reviews and evaluates the systems and methods the Army now uses to estimate how much ammunition and equipment will be needed by the CONUS Base to successfully complete its mission during a conventional global war.

2. **BACKGROUND.** The problem which led the Army's Office of the Deputy Chief of Staff for Operations and Plans (ODCSOPS) to commission this study precedes World War II. Simply stated, the United States has not been able to accurately estimate the quantity of materiel needed to engage in and be successful in a major global conflict. These data are essential to the Army's planning and industrial communities because it is their responsibility to develop the defense industrial base capacity and provide for the sustainment of combat through the procurement, prepositioning, and storage of war materiel.

a. These data become even more important during times of restricted fiscal policy. The challenge that faces the military today is to define the delicate balance between four variables: amount and type of war reserves, amount of industrial production capacity, time to activate that capacity or build new defense production facilities, and associated risks. Operating in this environment, the Army seeks to:

(1) Balance the type and quantity of war reserve materiel needed to sustain the total force against the amount of reserve defense industrial base capacity, and the time needed to activate and expand that capacity to wartime production levels.

(2) Identify the risks associated with not providing adequate war reserves or not developing a sufficient defense industrial base.

¹ *Assessment of the Methodologies for Determining Materiel Requirements for the Current Force* (Engineer Studies Center [ESC], September, 1989); *Wartime Support of U.S. Friends and Allies: An Assessment of the Planning Environment* (ESC, May 1989); *Methodology to Determine Materiel Requirements for Force Expansion* (ESC, draft June 1989). *Army System for Mobilization Requirements Planning Supply Classes V and VII (Ammunition and Equipment)* (ESC, final 1989).

b. Requirements estimation is the first and key step in assessing the capability shortfall and measuring the associated risk. Therefore, ODCSOPS requested ESC to develop a method which could be used to quantify the Army's mobilization materiel requirements. ODCSOPS limited this initial effort to the development of a system that would quantify only those Class V (ammunition) and Class VII (major end-items of equipment) categories of supply for which the Army is the government's purchasing agent.

c. ESC began its work by dividing the effort into four separate analyses. These analyses evaluate current systems and methods used to quantify the materiel requirements for fielding and sustaining the current force, fielding and sustaining an expanded force, supporting U.S. friends and allies, and supporting the CONUS base. The separate reports, written as educational tools by ESC, document the current Army mobilization materiel determination processes. A fifth and final report produced by ESC incorporates all the lessons learned from the initial four reports, delineates corrective actions, and presents a method that, if implemented, could be used to quantify the Army's mobilization materiel requirements.

d. This report is one of the initial four used by ESC to evaluate the existing systems and methods. It is devoted to examining the processes used to determine the Army's materiel requirements for supporting the CONUS Base.

3. **WARTIME HISTORY OF THE CONUS BASE.** Before and during World War II, the CONUS Base was divided into two components: **command facilities** (posts, training centers, maintenance facilities, hospitals) and **industrial facilities** (weapons manufacturing and assembly plants).² Because military planners recognized the relationship between a strong CONUS Base and military superiority on the battlefield, the development and expansion of command and industrial facilities was an integral part of mobilization planning. Like today, the expansion of these facilities was based on the phasing of troop mobilization, training, and deployment under the requirements defined in the basic mobilization plan. The general staff was responsible for the development of the basic plan, while all Army agencies were responsible for determining their facility and materiel requirements to meet plan objectives.³

a. Although these plans contained many hypotheses and options, they lacked specific goals and quantitative materiel requirements. As a result, the ultimate magnitude of command and industrial facility expansion required to meet combat objectives was barely perceived in the summer of 1940. The United States was caught unprepared. Like the high-technology weapons industries of today, the semi-automatic weapons facilities of 1940 were only producing

² Smith, R. Elberton, *United States in World War II, The War Department, The Army and Economic Mobilization* (Office of the Chief of Military History, 1959), pp. 437-455.

³ Ibid, p. 438.

200 weapons per day. At this rate of production, it would have taken 50 years to fill the total combat demand of World War II.⁴ As Secretary of War Stimson said:

"We didn't have enough powder in the whole United States to last the men we now have overseas for anything like a day's fighting. And, what is worse, we didn't have powder plants or facilities to make it; they had all been destroyed after the last war."⁵

b. Because of the neglect or inability to quantify requirements and obtain funding to support a gradual expansion of the CONUS base before World War II, the War Department from July 1940 to September 1945 had spent \$7.2 billion on command installations and \$9 billion on industrial facilities. A total of \$16.2 billion was spent to rebuild the CONUS Base.⁶ In today's dollars, this is about equivalent to \$100 billion.⁷ Unwilling to repeat past mistakes, today's Army is intent on identifying methods to quantify its CONUS Base mobilization materiel requirements to support a global conflict. Thus, the focus of this study.

4. **DESCRIPTION OF THE CONUS BASE.** The CONUS base has three main missions: to prepare, deploy, and sustain the nation's fighting forces. Its components are sized and aligned according to which segment of those missions the base supports.

a. **Composition of the Army.** As Figure 1 shows, today's Army work force is 66 percent military and 34 percent civilian. Fifty-three percent of these personnel are assigned to Table of Distribution and Allowance (TDA) units; 47 percent are assigned to Table of Organization and Equipment (TOE) units.⁸ In general, TOE units deploy to the theater of conflict. The TDA units remain within CONUS and provide the support services necessary for the TOE units to complete their combat missions. The "TDA Army" is the CONUS Base.⁹ Civilian personnel comprise 70 percent of all TDA unit personnel.

b. **Composition of the CONUS base.** Figure 2 illustrates how the TDA Army is divided among the five components of the CONUS base.¹⁰ The mission of all CONUS base components is to provide the training, logistics, medical, and transportation support necessary for the TOE units to complete their missions.

⁴ Smith, R. Elberton, *United States in World War II, The War Department, The Army and Economic Mobilization* (Office of the Chief of Military History, 1959), pp. 437-438.

⁵ Ibid, p. 437.

⁶ Ibid, pp. 437-455.

⁷ *Statistical Abstract of the United States 1988* (US Department of Commerce, December 1987), p. 444.

⁸ Telephone conversation between Mr. James F. Thompson, Jr. of the Engineer Studies Center (ESC) and Mr. James Lathrop, Deputy Chief of Staff for Personnel, Personnel Structure and Force Integration Division, 16 March 1989.

⁹ Ibid.

¹⁰ *Army Command and Management: Theory and Practice, 1986-1987* (US Army War College, 19 August 1986), pp. 12-7 through 12-9.

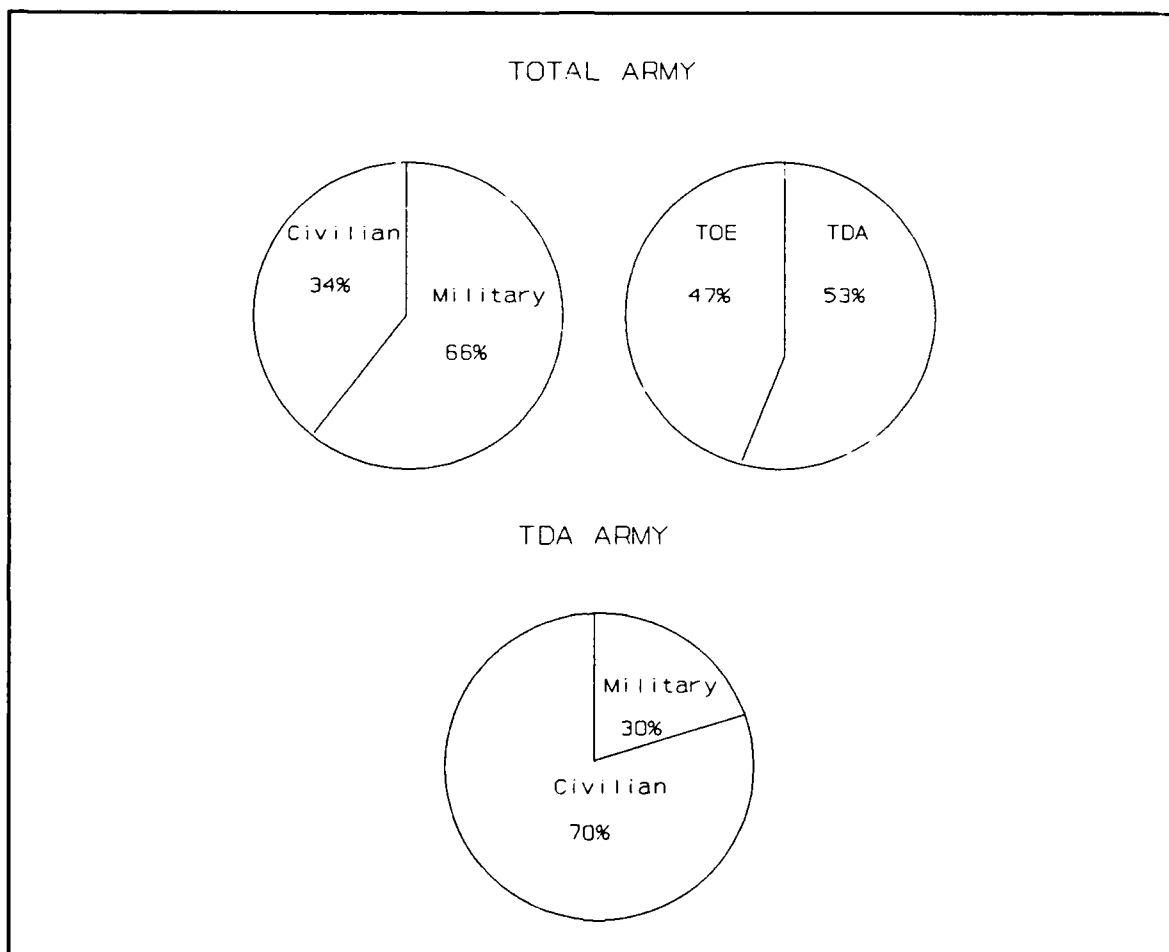


Figure 1. DISTRIBUTION OF ARMY MANPOWER

MOBILIZATION STATIONS

The 51 mobilization stations provide command and control and manpower facilities services for units preparing for deployment. The following major Army commands (MACOM) are responsible for the operation of one or more mobilization station(s):

- | | | | | | |
|---|---|----|--|---|---|
| • U.S. Forces Command (FORSCOM) | - | 30 | • Army Materiel Command (AMC) | - | 1 |
| • U.S. Western Command (WESTCOM) | - | 1 | • Health Services Command (HSC) | - | 1 |
| • U.S. Training and Doctrine Command (TRADOC) | - | 16 | • U.S. Army Information Systems Command (USAISC) | - | 1 |
| | | | • MDW | - | 1 |

TRAINING BASE

TRADOC manages the installations which comprise the training base during mobilization. The training base has seven main elements:

- | | |
|------------------------------------|-----------------------------|
| • Enlistment and induction centers | • Service Schools |
| • Reception activities | • CONUS replacement centers |
| • Training divisions | • Training facilities |
| • Civilian work force | |

TRANSPORTATION SUPPORT

Military Traffic Management Command manages transportation support during mobilization.

MEDICAL SUPPORT

The Surgeon General (TSG) and the HSC oversee medical support to the CONUS base. The six main elements of medical support are:

- | | |
|------------------|-------------------------------|
| • Rehabilitation | • Medical facilities |
| • Evacuation | • Civilian work force |
| • Treatment | • General support force units |

LOGISTICS SUPPORT

DCSLOG FORSCOM, US Army Corps of Engineers (USACE), AMC, and TSG coordinate logistics support to the CONUS base during mobilization. The five main elements of logistics support are:

- | | |
|---------------|----------------|
| • Supply | • Maintenance |
| • Production | • Construction |
| • Procurement | |

SOURCES: *Army Command and Management: Theory and Practice* (U.S. Army War College, 19 August 1987), p. 12-7; *FORSCOM Commanders Mobilization Command Readiness Program, Situation Manual* (FORSCOM, April 1987), p. 9.

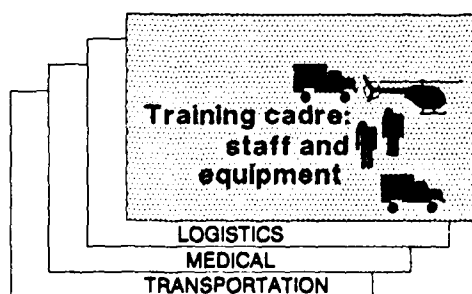
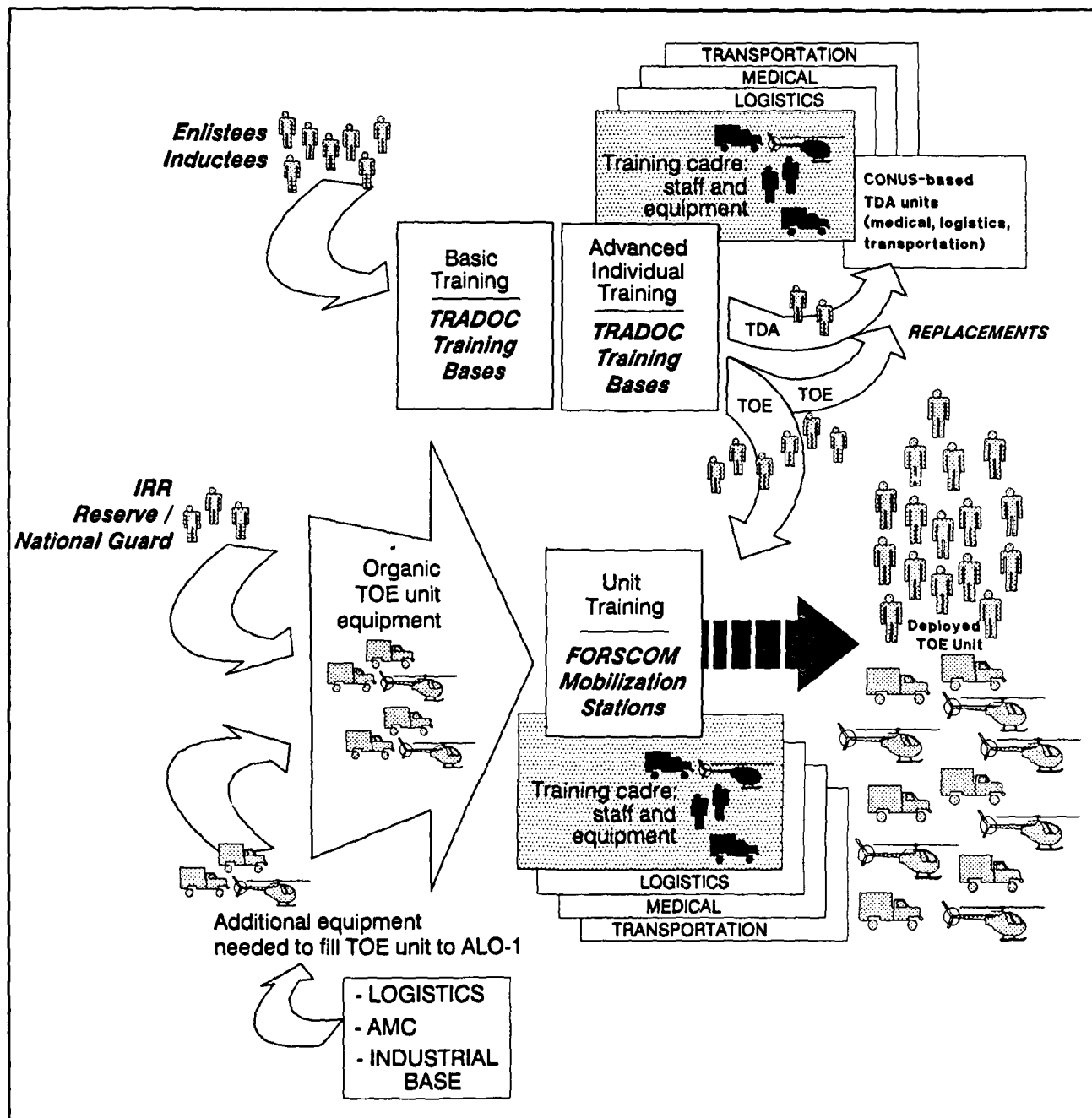
Figure 2. COMPONENTS OF THE CONUS BASE

5. HOW THE CONUS BASE TDA ARMY PREPARES THE TOE ARMY TO FIGHT. In effect, the TDA Army fields, trains, and sustains the TOE Army in combat. Figure 3 portrays how these two elements interact.

a. **Basic and advanced individual training.** When mobilized, enlistees and inductees begin their transformation from civilians to soldiers at training bases maintained by the U.S. Army Training and Doctrine Command (TRADOC). TRADOC installations teach basic soldier skills. After this basic training is complete--the famous "boot camp" introduction to military life--the new soldiers are sent to advanced individual training (AIT). AIT schools are also overseen by TRADOC and are designed especially to train (or retrain) soldiers in a specialty skill (e.g., heavy equipment operator, welder, weapons mechanic). After graduating from AIT, each soldier is assigned a formal military occupational specialty (MOS). *The training facilities and trainers needed to support basic training and AIT, and the medical, engineer, and related support personnel and equipment that make this training possible, are all part of the CONUS Base TDA Army.* After graduating MOS school, soldiers either report to TDA units and become part of the Army's support structure, report to mobilization stations to receive unit combat training and become part of the expanded TOE Army, or report to CONUS replacement centers to become combat casualty replacements for deployed TOE units.

b. **Unit training.** As shown in Figure 3, mobilization stations stage and deploy activated U.S. Army Reserve (USAR) and National Guard (NG) units. USAR and NG units arrive at the mobilization station with their organic equipment to be trained *as units*. After the units arrives at its mobilization station, it is issued any equipment it needs to fill out its authorized level of organization, level 1 (ALO-1); personnel shortages are made up from the pool of newly MOS-qualified soldiers or by individuals from the Individual Ready Reserve (IRR) Pool. **Once the USAR and NG units have deployed, all newly MOS-qualified soldiers reporting to the mobilization station are used to build new combat units.** *The facilities, trainers, medical, engineer, and related support personnel and equipment required to conduct unit training at mobilization stations, as well as those responsible for producing or providing the additional TOE equipment to the deploying and newly formed units, are all part of the CONUS Base TDA Army.*

c. **Combat sustainment and facilities support.** After the USAR and NG have deployed and TRADOC and FORSCOM have begun forming new combat units, the logistics, medical, and transportation components of the CONUS Base TDA Army continues to sustain deployed combat units: the logistics component of the Base operate the facilities and maintain the industrial production capacity to keep the TOE Army supplied with combat materiel; transportation component transports supplies to both the industrial and logistics components of the Base, as well as ensuring TOE combat units have the transportation assets they need; the medical component services TRADOC and FORSCOM during individual and unit training, and



How much ammunition and equipment will these TDA units need during mobilization?

Figure 3. HOW THE CONUS BASE SUPPORTS THE TOE ARMY

cares for returning combat casualties. *These industrial, medical, engineering, and related support personnel and equipment are part of the CONUS Base TDA Army.*

6. **MOBILIZING THE CONUS BASE TDA ARMY.** The planning needed to efficiently and quickly mobilize the CONUS Base TDA Army during a crisis or war is a *peacetime* activity.

a. **Mobilization responsibilities and guidance.** FORSCOM is the Army's executive agent and coordinating authority for mobilization planning. FORSCOM activates the Army reserve in a crisis and mobilizes and deploys the TOE Army. It mobilizes the TDA Army by increasing the major Army command (MACOM) and installation support service infrastructure (food services, laundry, medical services, and housing) to meet mobilization requirements. FORSCOM's standardized mobilization planning policy and guidance is presented in *U.S. Army Forces Command Mobilization and Deployment Planning System (FORMDEPS)*.¹¹ FORMDEPS prescribes how mobilization stations, MACOMs, installations, and non-deploying units will identify and document their mobilization equipment requirements in Mobilization Tables of Distribution and Allowances (MOB TDAs).

b. **MOB TDA development.** By following FORMDEPS guidance, unit commanders build their MOB TDAs by estimating how much materiel and how many personnel they will need to meet their mobilization missions. After the unit commanders complete their MOB TDAs, the documents are sent to the units' MACOM for approval, then entered into the Total Army Authorization Data System (TAADS). TAADS is maintained by the U.S. Army Information Systems Command (USAISC). The MOB TDA system is crucial to the mobilization materiel requirements determination process because it is the only system that comprehensively lists the materiel required to mobilize the CONUS Base TDA Army.

c. **Installation MOB TDA development.** Each CONUS Base Army installation has a MOB TDA. Like the unit MOB TDAs, the installation commander records the amount of materiel and the number of personnel required to meet the installation's mobilization mission(s). However, besides recording mission-essential materiel and personnel, the installation MOB TDA also lists the facilities, roads, and the service support infrastructure needed to support any *tenant activity* located on the installation. For example, Fort Gordon, a TRADOC installation, is the Army's communications school. Fort Gordon's MOB TDA lists not only its mission-essential materiel, personnel, facilities, and service support infrastructure, but also the materiel, personnel, facilities, and service support infrastructure needed by the Eisenhower Army Medical Center, a *tenant activity* operated by the U.S. Army Health Services Command (HSC).

¹¹US Army Forces Command Mobilization and Deployment System (FORMDEPS), "Mobilization and Deployment Planning," Volume III (ODCSOPS, 20 October 1987), pp. 1, N-1, V-2-1.

7. **OBJECTIVE.** This report evaluates the methods used by the CONUS Base components to determine their mobilization materiel requirements. Therefore, the methods reviewed here address the requirements of only the TDA Army.¹² This review includes an evaluation of the methods used by those elements of the CONUS Base components (medical, transportation) which will need little if any Class V or Class VII support during a crisis or war.

8. **SCOPE.** This report:

- a. Defines the five components of the CONUS Base.
- b. Documents the current methods and data bases used to develop the mobilization materiel requirements for each of the five components.
- c. Describes the advantages and disadvantages in the current requirements determination processes.
- d. Suggests new systems, methods, and data bases which could be used to develop or augment the requirements determination process.

9. **STUDY METHOD.** This study had three main steps (**Figure 4**). First, the CONUS base components were identified and their current requirements determination processes were documented. After analyzing these data, ESC identified advantages and disadvantages in their current requirements determination processes, and listed new systems, methods, and data bases being developed to estimate their requirements.

¹² The materiel requirements determination methods of the TOE units are addressed in *Assessment of the Methodology for Determining Materiel Requirements for the Current Force* and *Methodology for Determining Materiel Requirements for Force Expansion*. Both of these reports were prepared by the ESC and published in FY89.

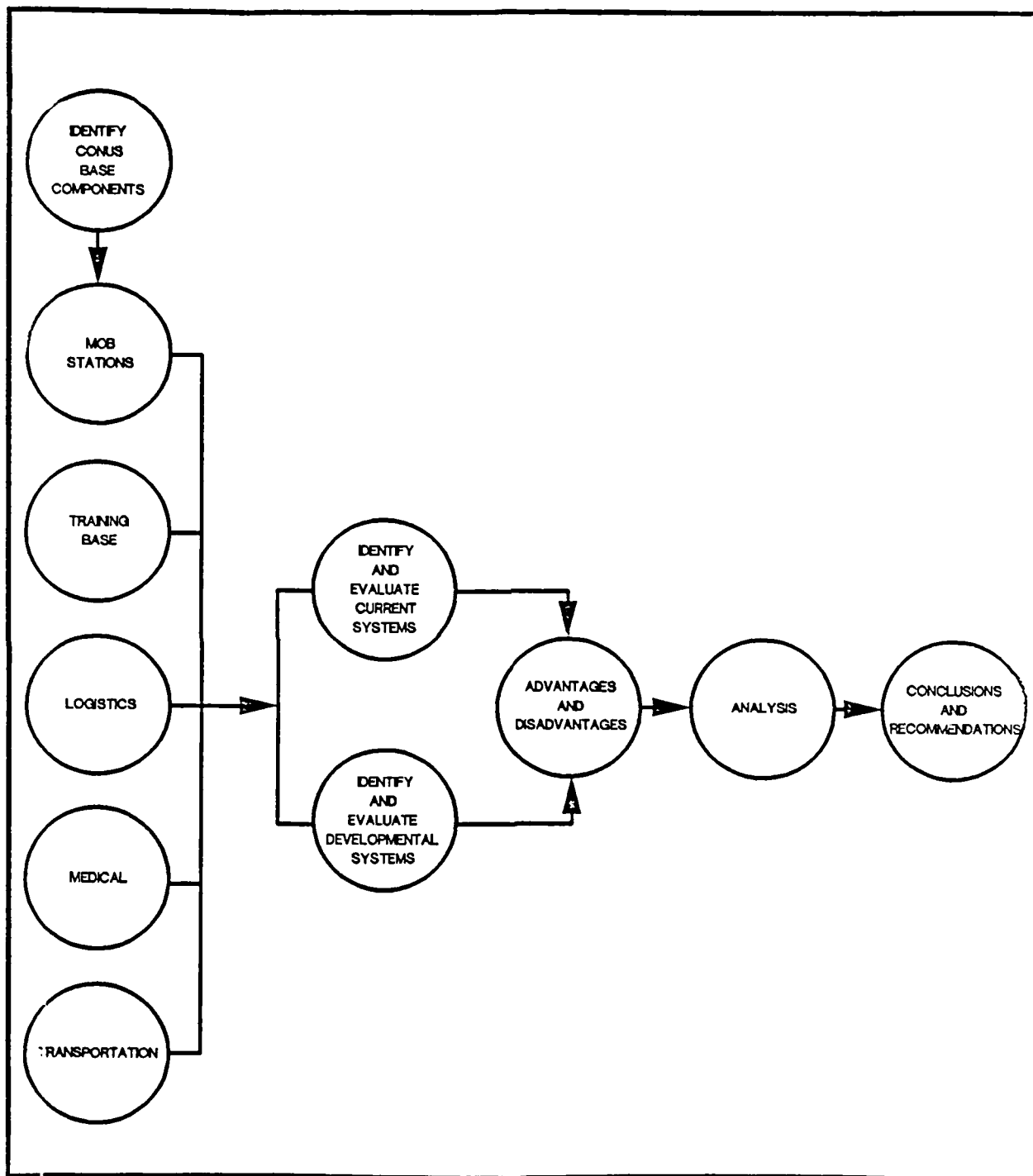


Figure 4. STUDY METHOD

II. MOBILIZATION STATIONS

10. **DEFINITION AND FUNCTION.** Figure 5 lists the names and geographic locations of the Army's 51 mobilization stations. The peacetime commanders of the installations which house these 51 stations become *mobilization station* commanders in times of crisis or war.

Mobilization station commanders are directly responsible for expanding and resourcing their installation to receive, house, supply, train, or deploy theater force units in a timely manner.¹³

a. In peacetime, commanders prepare for their wartime roles by preparing *mobilization plans*. These plans describe how each station will receive, process, and train or retrain mobilized and newly assigned units. The commanders work with two main groups to draw up a sound mobilization plan: representatives of the TOE units slated to fall in on the installation during war or crisis, and representatives of the supporting TDA units (the CONUS Base) expected to arrive and expand the installation to support the arriving troops. After the plans are complete, and all mobilization responsibilities have been distributed among the activating units and the responsible CONUS Base components, the commanders document each station's mission-essential personnel, materiel, and support service infrastructure requirements on the installation's MOB TDA.^{14,15}

11. **MOBILIZATION PHASES.** Regardless of the level of mobilization called for by the President and Congress, FORSCOM plans to execute its mobilization responsibilities incrementally. FORMDEPS, Chapter III, "Mobilization and Deployment Planning," defines five mobilization phases:

Phase I: Preparatory. The preparatory phase of mobilization occurs during peacetime. Reserve component units at home stations train to accomplish assigned mobilization missions; prepare mobilization plans and files as directed by state area commands, major US Army Reserve commands, and FORSCOM Mobilization and Development Planning System (FORMDEPS); attend mobilization coordination conferences; provide required planning data to mobilization stations; and conduct mobilization training, as directed. Each unit will take as many administrative and processing actions as possible (e.g., update personnel files) before being ordered to Federal active duty. Therefore, plans for the following phases must be completed to include movement plans in accordance with FORSCOM Regulation 55-1, *Unit Movement Plans and Reports*.

¹³ *Army Command and Management: Theory and Practice* (US Army War College, 19 August 1987), p. 12-8.

¹⁴ *Ibid.*

¹⁵ *US Army Forces Command Mobilization and Deployment System (FORMDEPS)*, "Mobilization and Deployment Planning," Volume III (Office of the Deputy Chief of Staff for Operations and Plans [ODCSOPS], 20 October 1987), pp. 1, N-1, V-2-1.

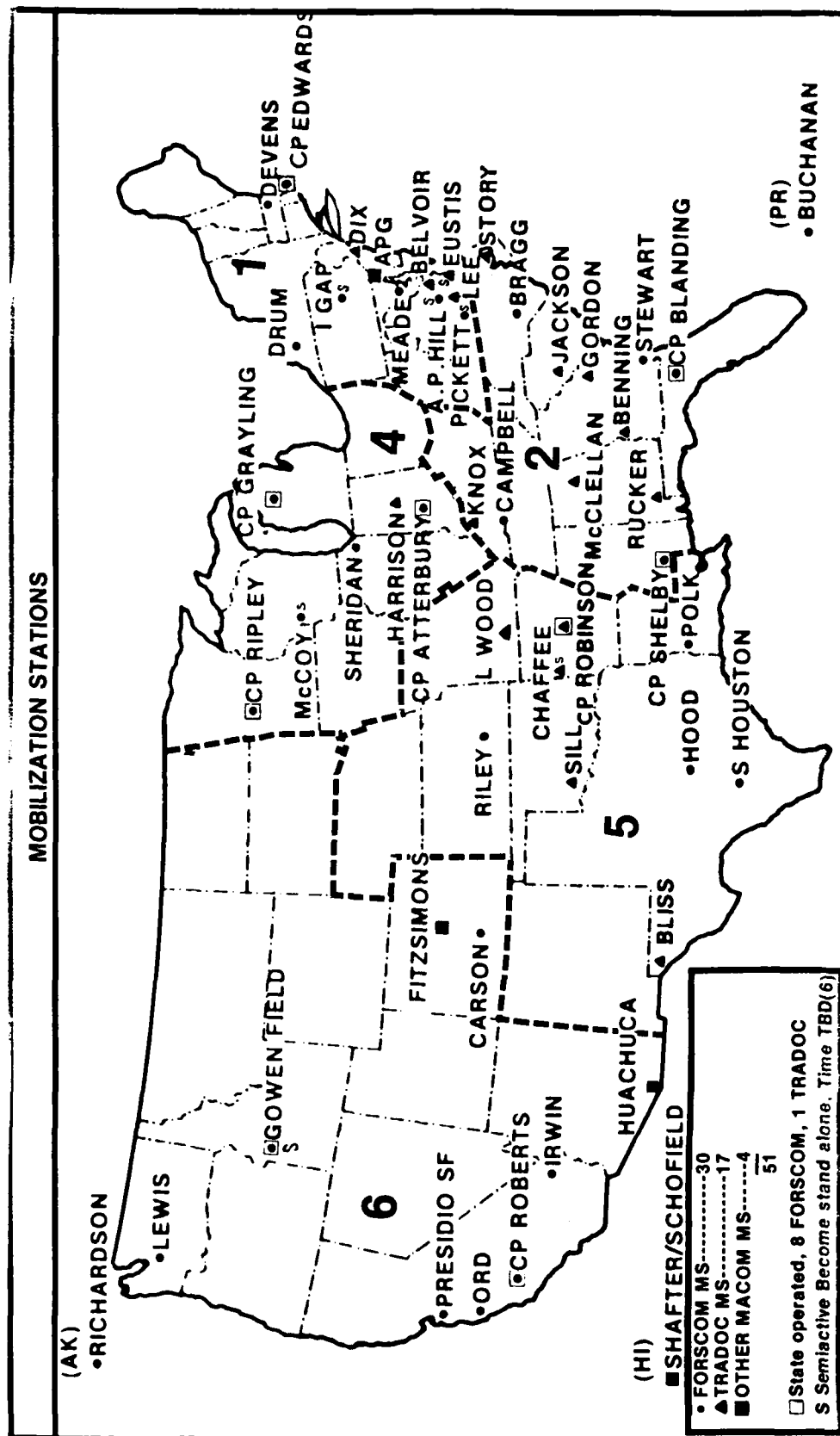


Figure 5. MOBILIZATION STATION GEOGRAPHIC LOCATIONS

Phase II: Alert. A mobilization alert begins when a unit is told of a *pending* order to active duty; it ends when the unit enters active Federal service. When in an alert status, the unit takes those actions needed to move from reserve component to active component status, e.g., establishing powers of attorney, processing wills, etc.

Phase III: Mobilization at Home Stations. Phase III begins when the unit enters active Federal duty and ends when the unit departs for its mobilization station or port of embarkation. While a unit is mobilizing at its home station, it does whatever needed to speed its transition to active component status, e.g., conducting medical exams and immunizations, inventorying equipment, etc. (ESC Note: *During this phase, mobilization stations will increase their personnel manning level above peacetime staffing.*¹⁶ *Station personnel will coordinate with medical, transportation, and support personnel to ensure that billeting, transportation assets, medical support, and training cadre are fully operational and ready to receive the first arriving reserve component unit (Phase IV of the FORSCOM mobilization schedule).*¹⁷ *Thus, the mobilization station commander will be ready to assume command of the first arriving mobilized unit.*)

Phase IV: Movement to Mobilization Stations. Phase IV begins when a unit leaves its home station and ends when the unit closes at its mobilization station. Units will travel by the fastest and practical means available: if the unit's mobilization station is within a 1-day road march, the unit will travel using its organic wheeled vehicles. Personnel and equipment in excess of organic capability, or which cannot sustain a motor march operation, will be moved by nonorganic or commercial transportation. Detailed unit movement planning will be in accordance with FORSCOM Regulation 55-1.

Phase V: Operational Readiness Improvement. Phase V begins when the mobilized unit closes at its mobilization station and ends when the unit is evaluated as operationally ready for deployment. (ESC Note: *When the first mobilized TOE unit arrives at its designated mobilization station, the unit turns over its command responsibilities to the station commander. The station commander can correct the unit's readiness deficiencies by redistributing equipment and personnel from later deploying units that have reported to that mobilization station, and by providing unit training. Once deficiencies are corrected, the mobilization station commander validates the unit's fitness for deployment, returns command to the TOE unit commander, and deploys the unit.*^{18,19})

12. MATERIEL REQUIREMENTS. When mobilization plans and MOB TDAs are established in peacetime, several methods are used to estimate how much Class V (ammunition) and Class VII (major end-items of equipment) supplies will be needed by the TDA Army as it trains, services, supports and sustains the deploying and deployed TOE Army.

a. Class V: munitions. During peacetime, all soldiers assigned to either TOE and TDA units must maintain the weapons proficiency standards prescribed in the Army Common Table

¹⁶ Telephone conversation between Mr. Jeffrey Pope, ESC, and Mr. Payne, FORSCOM, 19 August 1988.

¹⁷ *FORSCOM Commander's Mobilization Command and Readiness Program (MCRP) Situation Manual (SITMAN)*, (HQ FORSCOM, April 1987).

¹⁸ *Mobilization and Deployment Planning*, Part 1, Volume III (HQ FORSCOM, Office of the Deputy Chief of Staff for Operations, February 1987).

¹⁹ *FORSCOM Commander's Mobilization Command and Readiness Program (MCRP) Situation Manual (SITMAN)* (HQ FORSCOM, April 1987).

of Allowance (CTA) 23-100-6.²⁰ This document mandates that a set amount of ammunition will be stored for each assigned weapon. However, during mobilization, the TDA mobilization station commander's main duty is to support the TOE Army, which is preparing to go to war. Therefore, TDA soldiers will not have to maintain weapons proficiency. However, the ammunition allotted to the TDA Army by CTA 23-100-6 will be kept by the mobilization station, and may be used to support TOE personnel weapons qualification.²¹

b. **Class VII: major end-items of equipment.** Mobilization station commanders must have the equipment they need to provide complete and responsive support to the deploying TOE Army. The stations' requirements for Class VII materiel is now estimated through negotiation between the TOE units *needing* support and the TDA units *providing* support. TOE commanders examine their OPLAN missions and identify those areas requiring support from the CONUS Base components. These requirements are documented and relayed to the CONUS Base components. Representatives from the mobilization stations, CONUS Base components, and activating units then meet to hammer out support details. All CONUS Base component organizations quantify their Class VII materiel requirements in their MOB TDAs. For the mobilization station, these requirements comprise both the Class VII materiel needed to support its own mission requirements, plus the Class VII materiel needed to support installation tenant organizations. The MOB TDAs are then sent to their respective MACOMs for approval and then to USAISC, which enters the requirement into TAADS. TAADS data, accessible through the Worldwide Military Command and Control System (WWMCCS), allows planners to obtain a "snap shot" of Class VII requirements for mobilization station permanent personnel. Using the TAADS/WWMCCS, military planners have the ability to compute the Class VII requirements for all mobilization stations during full mobilization.

c. **Force Expansion.** Mobilization stations will be asked to train new units if and when the President and Congress decide to *expand* the active TOE Army. However, because the expanded force has not been defined to the component TOE unit level, no training plans have or can be developed for this new force. Consequently, Class V and Class VII items have not been identified by the mobilization stations for force expansion units.²²

13. **FINDINGS.** Mobilization planners can forecast how much Class VII materiel the CONUS Base will require during crisis or war using the information recorded in MOB TDA and kept in TAADS; TAADS data for all mobilization stations via the WWMCCS. However, MOB TDAs

²⁰ *Ammo, Rockets, and Missiles for Unit Training, Active Army and Reserve Components*, Common Table of Allowance (CTA) 23-100-6.

²¹ Personal conversation between Mr. Jeffrey Pope of ESC and Mr. Dickerson, LTC Pulliam, and MAJ Dietrich, First Army Mobilization Office, 4 August 1988.

²² Personal conversation between Mr. Jeffrey Pope of ESC and Mr. Stiegler, Fort Belvoir Mobilization Office, 3 August 1988.

have not been validated by FORSCOM against a mobilization station's actual mobilization mission since 1980. Commanders also sometimes fail to update their MOB TDA mission statements to reflect changes in their OPLAN requirements, which causes TAADS to reject requisitions for personnel, equipment, and supplies to support new mission statements.^{23,24}

a. Mobilization station commanders will do everything within their means to ensure that a reserve component unit departs the base in the highest Authorized Level of Organization (ALO) possible, even if they must strip tactical equipment from their own or later deploying units. To support this effort, FORSCOM has requested that the U.S. Army Materiel Command (AMC) develop a commercial item substitute list. This list identifies commercially available equipment which can be substituted for tactical equipment currently listed on MOB TDAs. For example, a commercial 4x4 pick-up truck could be substituted for a High Mobility Multipurpose Wheeled Vehicle (HMMWV). TDA unit commanders can purchase items from the substitute list without degrading their mission performance capability, leaving the more expensive and scarce tactical equipment for deploying units. A list has been developed, but expansion is a continual and ongoing effort within AMC.

b. During peacetime, all soldiers must maintain individual weapons proficiency. However, during wartime, Class V materiel allotted for the TDA Army will be made available to TOE units, and weapons qualification requirements for the mobilization station personnel will be deferred.

²³ Site Visit, HQ FORSCOM, Fort McPherson, GA, Mr. James F. Thompson, Jr. and Mr. Jeffrey Pope, 8-11 August 1988.

²⁴ Personal conversation between Mr. James F. Thompson, Jr. and Mr. Jeffrey Pope of ESC and LTC James Sowell of the U.S. Army Force Development Support Agency, 26 January 1989.

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III. TRAINING BASE

14. **DEFINITION AND FUNCTION.** When a crisis occurs and mobilization is declared, TRADOC will assume command of the activated USAR training divisions and brigades to expand the eight existing active component Training Centers at TRADOC mobilization stations and establish six new training centers at FORSCOM mobilization stations.²⁵ The contribution of each of the seven segments of the training base (Figure 6) is essential to the proper function of the overall training base.²⁶

- a. Enlistment and Induction Centers recruit civilians for military service.
- b. Reception Activities process enlistees and inductees prior to basic training (haircuts, physical examinations, and uniforms, etc.).
- c. Training Facilities include the classrooms and ranges necessary to teach the soldier basic and MOS skills.
- d. Service Schools teach MOS skills.
- e. Training Divisions teach basic soldiering skills.
- f. CONUS Replacement Centers process MOS-skilled soldiers as combat casualty replacements.
- g. The Civilian Work Force augments military staffing and provides continuity in the training staff and curricula.²⁷

15. **MATERIEL REQUIREMENTS.** The amount of Class V and VII needed to support the training base depends on how many soldiers must be trained, either to replace combat casualties or to fill out new units as the active force is expanded. The Army relies on warfight-based estimates of combat casualties to determine how many replacements will have to be sent to sustain the deployed TOE Army.^{28,29} However, no methods address how many soldiers (and

²⁵ *Army Command and Management: Theory and Practice* (US Army War College, 19 August 1986), p. 12-8.

²⁶ *Mobilization and Operations Planning System*, Volume III, "Training Base Expansion Plan" (HQ TRADOC, April 1987), p. C-5.

²⁷ *Army Command and Management: Theory and Practice* (US Army War College, 19 August 1986), p. 12-8.

²⁸ Casualty rates are taken from the U.S. Army Concept Analysis Agencies' (CAA's) Program-year Studies (the P-Studies). These studies address only the first 180 days of full mobilization.

²⁹ Personal conversation between Mr. James F. Thompson, Jr. of ESC and Mr. Don Skinner, TRADOC, 14-15 December 1987.

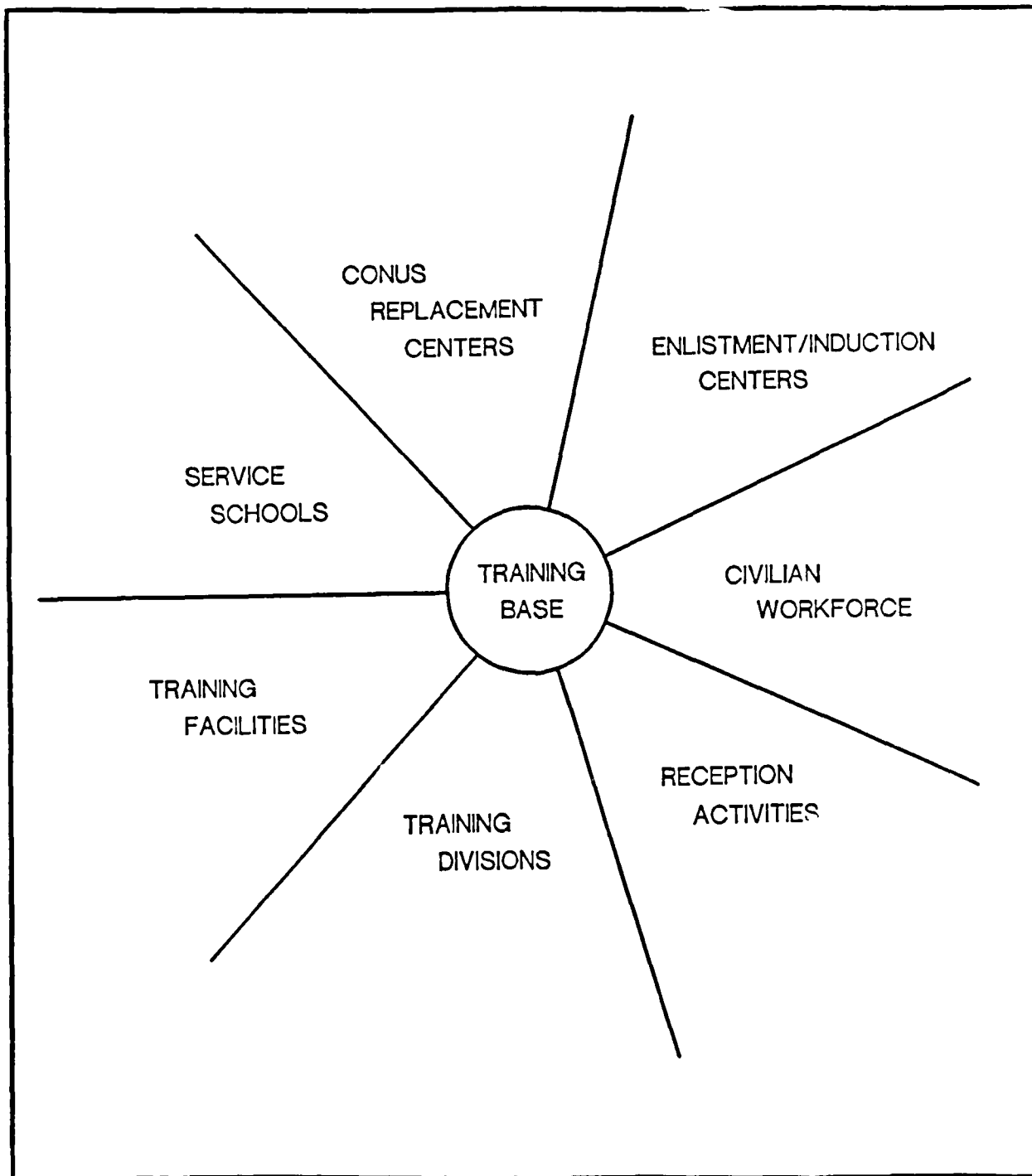


Figure 6. ARMY TRAINING BASE COMPONENTS

how many MOS skills) will have to be produced by the training base to build new units. Therefore, the training base is now sized to accommodate only the number of soldiers planners believe will be needed to fill out and sustain the current force: that is, the number of soldiers expected to be processed during the first 180 days of war. Each segment of the training bases uses different methods and automated systems to develop its **full** mobilization Class V and Class VII materiel requirements for training base permanent personnel.

a. **Enlistment and Induction Centers.** All the military services use automated warfight models to predict how many soldiers (by MOS skill) they will need to replace during the first 180 days of war. These estimates are summed and time-phased by the Department of Defense, then given to the Selective Service System. The Selective Service System, in turn, levees an inductee processing requirement on each of the nation's Military Entrance Processing Commands (MEPCOM). The size and MOS make-up of the staffs at each MEPCOM induction and enlistment centers, plus the type of Class VII support needed, is based on the number of inductees the center is expected to process. All Class VII requirements are documented in each center's MOB TDA.³⁰ Because enlistment and induction centers are office activities, no Class V requirements appear on a centers MOB TDA.

b. **Reception battalions.** After an inductee is tested and counseled by service representatives at the MEPCOM center, he is assigned to an MOS school and sent to a reception battalion.³¹ Reception battalions are collocated with basic training schools. The reception battalion gives the inductee a military haircut, a physical exam, and issues uniforms. The battalion also paces the flow of inductees, keeping it to a rate the training base can absorb. Thus, the reception battalions' materiel requirements are a function of the training bases' capability to train inductees. Once this flow rate is identified, the reception battalions document their personnel and Class VII requirements on their MOB TDAs. As with the enlistment and induction centers, reception battalions are mainly administrative efforts, and so have no Class V requirement.

c. **Training base.** The training base comprises TRADOC's training facilities, service schools, training divisions, and the civilian work force. Like MEPCOM centers and the reception battalions, the training base is staffed and equipped according to the number of soldiers it must train. The Army Military Personnel Center (AMPC) uses an automated mobilization manpower (MOB MAN) requirements data manipulator system to prepare time-phased estimates of how many soldiers will be sent to the training base during the first 180 days of war. MOB MAN compares net casualty replacement requirements (generated by automated

³⁰ Personal conversation between Mr. James F. Thompson, Jr. of ESC and COL Neinhagen of the Office of the Army Deputy Chief of Staff for Personnel, 12 April 1989.

³¹ *Ibid.*

warfight models) against the supply of MOS-trained active and reserve manpower. It then cross-levels the force by defining training needed to reclassify personnel in overstrength MOS categories into understrength MOS categories. After the pre-trained manpower pool is exhausted, MOB MAN generates the new inductee training requirements necessary to fill the remaining MOS deficiencies and combat casualty replacements.³²

(1) The training data output from MOB MAN becomes the Army's Mobilization Training Base Output Requirement (MTBOR). MTBOR lists the training load expected, by time period and MOS, for each segment of the training base.³³ TRADOC then adds any additional training load expected to be generated by other services, or to fulfill a U.S. commitment to train soldiers from allied or friendly organizations, and enters the total requirements into the Army Training and Resources System (ATRRS). ATRRS produces the Mobilization Army Program for Individual Training (MOB ARPRINT). The MOB ARPRINT shows the schedule of training required to meet all TRADOC's expected training requirements. Currently, the MOB ARPRINT and ATRRS limit training schedules to current training resources; further requirements are shown as a shortfall. For full mobilization, the *overall requirement = current assets + the shortfall*.³⁴

(2) Although ATRRS lists exactly how many classes the training base will have to teach, the Mobilization Programs of Instruction (MOB POIs) define the specific equipment and training staff needed for each class. By combining the information provided by both these data systems, planners from each segment of the training base can estimate the number of trainers, support equipment, support personnel, and facilities the base will need during full mobilization. These data are then placed into the segment's MOB TDA.³⁵ Once the MOB TDAs are approved by the MACOM, they are sent to USAISC and incorporated into the TAADS data base.³⁶

(3) As with the Mobilization Stations, during mobilization, the TDA training base commanders will defer weapons proficiency training for training base personnel.³⁷ The peacetime ammunition allowance, maintained by the training base, will be used to support

³² Personal conversation between Mr. James F. Thompson, Jr. of ESC and Dr. Rowland H. Ludden, Automation Support Office, Military Support Center, 13 April 1989.

³³ *Ibid.*

³⁴ Personal conversation between Mr. James F. Thompson, Jr. of ESC and Mr. Don Skinner, TRADOC, 14 April 1989.

³⁵ *Ibid.*

³⁶ Personal conversation between Mr. James F. Thompson, Jr. and Mr. Jeffrey Pope of ESC and LTC James Sowell, U.S. Army Force Development Support Agency, 26 January 1989.

³⁷ Interview between Mr. Jeffrey Pope, ESC, and Mr. Dickerson, LTC Pulliam, and MAJ Dietrich, First Army Mobilization Office, 4 August 1988.

weapons qualification for TOE personnel. Therefore, the training base personnel will not require any Class V materiel.

d. **CONUS Replacement Centers.** A percentage of the graduates of TRADOC's service schools will replace the combat casualties of deployed TOE units. The MOB TDAs for CONUS Replacement Centers is based upon that flow of combat casualty replacements; the casualty rate is determined, in peacetime, by the Army's automated warfight models. The MOB TDAs for CONUS Replacement Centers can be modified for total mobilization, provided that the expanded force's casualty replacement requirements are known. This additional requirement for replacement personnel drives the size of the MOB TDA for the CONUS Replacement Centers.³⁸ As with the training base personnel, CONUS Replacement Center personnel will not require Class V materiel.

16. **SYSTEMS UNDER DEVELOPMENT.** Today Army planners must manually compare MOB POIs to MOB ARPRINT data. Two systems now under development will automate this process: the Mobilization Decision Support System (MDSS) and an automated POI system. When developed, MDSS will access the ATRRS data base, and when combined with automated POI data, will allow planners to rapidly retrieve estimates for the quantities of Class V and Class VII materiel, as well as personnel, materiel, and facilities required to support the trainer and the trainee.³⁹

17. **FORCE EXPANSION.** The Army has no plans to train an expanded force because the expanded force has not been identified by MOS. MOB MAN could develop a MTBOR for an expanded force structure, provided the new force structure is identified to the MOS level and warfought to produce MOS-specific casualties.⁴⁰ The MTBOR for the expanded force could then be used to develop an expanded force MOB ARPRINT, which would define the requirements to train an expanded force structure.

18. **FINDINGS.** The MOB TDAs are the best data sources for Class VII materiel requirements to support the training base during full mobilization. These requirements can be accessed through TAADS. However, the methods used to develop the requirements documented in the MOB TDAs are not automated. TRADOC is now developing an MDSS and automating the POI system; this MDSS will access the ATRRS data base as well as the automated POIs, and accurately quantify the Class VII requirements for trainer support during peacetime or during any level of mobilization.

³⁸ Personal conversation between Mr. James F. Thompson, Jr. of ESC and Mr. Don Skinner, TRADOC, 14 April 1989.

³⁹ *Ibid.*

⁴⁰ Telephone conversation between Mr. James F. Thompson, Jr. of ESC, and Dr. Rowland H. Ludden, Automation Support Office, Military Support Center, April 1989.

a. During wartime, due to the increased tempo of training base operations, weapons qualification for the training base permanent personnel will not be scheduled.

b. MACOMs do not plan for force expansion during total mobilization. Before TRADOC can estimate the resources needed to train the soldiers needed to fill out an expanded force, the force must be defined to the MOS level.

c. If an expanded force was identified to the MOS level and war-fought to obtain the stratified casualty load, the MOB MAN system could develop an MTBOR for the expanded force structure. The MTBOR could then be used in conjunction with the MDSS and the automated POI system to develop the materiel requirement necessary to support the seven areas of the training base during force expansion.

IV. LOGISTICS SUPPORT

19. **DEFINITION AND FUNCTION.** During a mobilization crisis, the logistics community will maintain and redistribute mission-essential equipment; activate and expand both the Army-owned and civilian-controlled defense industrial bases; expand the Army's storage, handling, and procurement systems; and expand installation service support functions to accept increased troop populations. Logistic's responsibilities are split among 9 staff offices within Headquarters Department of the Army (HQDA).⁴¹ FORSCOM is the Army's chief executive and coordinating authority for mobilization planning; other major players include the Office of the Deputy Chief of Staff for Logistics (ODCSLOG), AMC, the US Army Corps of Engineers (USACE), and the Health Services Command (HSC).⁴²

a. **FORSCOM responsibilities.** As the Army's mobilization executive, FORSCOM assigns other commands and agencies mobilization planning and execution tasks and mobilizes both the TOE and TDA Armies. Also, through the policy and guidance presented in FORMDEPS, FORSCOM oversees the operational and construction support provided by USACE, the medical support provided by HSC, and helps mobilization stations, MACOMs, installations, and non-deploying units identify and document their mobilization equipment requirements in their MOB TDAs.⁴³

b. **ODCSLOG responsibilities.** ODCSLOG will play a key role in any mobilization crisis. Its main responsibilities are to properly equip and sustain deploying Army units, and to ensure that the materiel required to train new units is available. Through its Integrated Logistics Support Program and the Logistics Data Network (LOGNET) System, ODCSLOG coordinates the Army's supply and maintenance systems, and sets priorities for distributing critical equipment (TAEDP). War reserve stocks (including Class V and Class VII) are distributed according to ODCSOPS priorities.⁴⁴

(1) The nation cannot afford to equip all Army units to ALO-1 levels. Therefore, ODCSLOG must ensure that once a crisis is declared, all units are brought to their full

⁴¹ Office Assistant Secretary of the Army (OASA) for Financial Management; OASA for Installations and Logistics; OASA for Research, Acquisition, and Logistics; OASA for Civil Works; ODCSOPS; ODCSLOG; ODCSPER; Office Comptroller of the Army (OCA); Office of the Surgeon General; US Army Corps of Engineers.

⁴² *Army Mobilization and Operations and Planning System, "System Description, Responsibilities, and Procedures,"* Volume I (ODCSOPS, April 1986), pp. 8-7 through 8-18.

⁴³ Site Visit, HQ FORSCOM, Fort McPherson, GA, Mr. James F. Thompson, Jr. and Mr. Jeffrey Pope, 16 August 1988.

⁴⁴ *Army Mobilization and Operations and Planning System, "System Description, Responsibilities, and Procedures,"* Volume I (ODCSOPS, 21 April 1986), p. 8-9.

strength and equipment levels as quickly as possible. This means acting quickly to expand both the Army-owned and civilian-controlled defense industrial base.

(2) Although ODCSLOG monitors the process of industrial base expansion, AMC has the delegated task of managing the base. AMC is also in charge of procuring ammunition, equipment, and weapons systems for deploying and new units, and for activating the Mobilization Prepositioned Requisition System.⁴⁵ This system requisitions supply Classes I, II, III, IV, VI, and IX materiel essential for the Army to meet its mobilization objectives, but have not been funded and placed in war reserve stocks. These requisitions, in turn, surge industrial production and fuel the expansion of the national industrial base.

c. **USACE responsibilities.** During a mobilization, USACE supports the facility management and construction programs of the Army, Air Force, and agencies with mobilization-related missions. USACE will provide the engineering and construction expertise and resources needed to expand facilities, support the production base, manage real estate, and maintain, repair, or rehabilitate facilities.⁴⁶

d. **HSC responsibilities.** HSC will care for returning war casualties, expand Army medical support to mobilization stations and training bases, and provide medical services to the combat zones (see section V for a more detailed discussion).

20. **FORSCOM REQUIREMENTS.** Most of the Class V and Class VII materiel required by the CONUS Base logistics community are used by FORSCOM, ODCSLOG/AMC, and USACE. FORSCOM is a particularly large potential consumer. Besides its role in mobilizing, deploying and sustaining the TOE Army, FORSCOM is responsible for the land defense of CONUS. This mission requires FORSCOM to protect key industrial facilities from attack and sabotage. To meet its CONUS Base mobilization support requirements, FORSCOM must increase its command and installation support service infrastructure--including food services, laundry, medical services, and housing--and must build, train, deploy and sustain a CONUS land defense force.^{47,48}

a. In accordance with its own FORMDEPS guidance, FORSCOM's materiel requirements for supporting the CONUS Base during a mobilization are documented in its MOB TDAs.

⁴⁵ Site Visit, HQ FORSCOM, Fort McPherson, GA, Mr. James F. Thompson, Jr. and Mr. Jeffrey Pope, 16 August 1988.

⁴⁶ *Corps of Engineers Mobilization Plan* (US Army Corps of Engineers [USACE], October 1983), pp. G-1 through J-2.

⁴⁷ Site Visit, HQ FORSCOM, Fort McPherson, GA, Mr. James F. Thompson, Jr., and Mr. Jeffrey Pope, 16 August 1988.

⁴⁸ Class V and VII mobilization materiel requirements determination processes are discussed in an ongoing ESC Study, *Methodology for Determining Materiel Requirements for Force Expansion* (draft June 1989).

Class I, II, III, IV, VI, and Class IX requirements which appear on MOB TDAs, but which the Army cannot afford to buy in peacetime, are input to the Mobilization Prepositioned Requisition System maintained by AMC. When a mobilization occurs, the Prepositioned Requisition System is activated and the materiel from these four classes of supply is either distributed from AMC's depots to the units or procured from industry.⁴⁹ Class V and Class VII materiel requirements are handled in a different manner. Although the Class V and VII materiel requirements may appear on MOB TDAs, their supply and distribution are controlled by ODCSLOG through the Mobilization Equipment Redistribution System (MOBERS), a subsystem of LOGNET.⁵⁰

b. The current system has four problems: lack of consistent guidance; conflicts between peacetime vs. wartime operations for installation support; inaccurate or outdated MOB TDA data; and lack of detailed expanded force policy and data.

(1) **Lack of guidance.** The Army's official mobilization policy document, *the Army Mobilization and Operations Planning System (AMOPS)*, states that TDA units must use commercial substitute items.⁵¹ AR 310-34, *The Department of the Army Equipment Authorization and Usage Program*, goes one step farther and instructs that no tactical net radio requirements shall be documented in the MOB TDAs for any missions where commercial radios will suffice.⁵² Therefore, AMC developed a list of commercial substitute items under the Commercial Replacement Item Substitution Program (CRISP). However, these very logical planning steps, taken to ensure the optimum use of tactical equipment, cannot be taken because the CRISP document is incomplete. Furthermore, the Army has yet to advise planners on how to list commercial substitute items on MOB TDAs. Current MOB TDAs either contain the tactical materiel requirements--in violation of AMOPS guidance--or contain no requirements at all.

(2) **Operational conflicts.** In recent years, the Army has increased its combat power at the expense of its logistics tail. More and more TOE units now perform installation support operations. Today, TDA units assigned installation operations are staffed and resourced *only* to support the installation's resident TOE units at their peacetime ALO. For example, if resident TOE units on an installation are ALO-3, base operations are sized to provide only that support necessary for that level. If any more additional support is needed, it is provided by TOE units

⁴⁹ Site Visit, HQ FORSCOM, Fort McPherson, GA, Mr. James F. Thompson, Jr., and Mr. Jeffrey Pope, 16 August 1988.

⁵⁰ Ibid.

⁵¹ *Army Mobilization and Operations and Planning System*, "Army Mobilization and Deployment Planning Guidance," Volume III (ODCSOPS, 15 October 1985), p. F-5.

⁵² *The Department of the Army Equipment Authorization and Usage Program*, AR 310-34, Appendix F (HQDA, 12 November 1986), p. 284.

with peacetime logistics missions. However, when the nation's TOE Army is mobilized, TOE units with peacetime logistics missions will begin preparing to deploy to a theater of operations. They will no longer be able to take up the TDA support shortfalls in the CONUS base.⁵³ At the same time that TOE units withdraw from their installation support roles, the installation will be required to expand to absorb the influx of mobilizing USAR, NG, and newly formed units. To make up for this anticipated loss of TOE-based logistics support, some installations have negotiated support agreements with civilian service industries which would be activated early in a mobilization crisis. These civilian contracts can cover food and laundry services, housing, and medical support. Planners hope that the civilian sector can help installations accommodate the surge in its support obligations, and give the TDA work force time to expand. However, even with such pre-negotiated contracts in place, it is unlikely that installation operations can expand fast enough to meet demand. The end result will be a reduction in the quality and quantity of service support installations can provide staging TOE units.

(3) **Inaccurate MOB TDAs.** Perhaps the greatest potential for generating materiel shortages early in a mobilization crisis is the *accuracy* of the MOB TDAs themselves. Although the MOB TDAs are updated annually, FORSCOM has not validated them against the mobilization require of individual units since 1980. The possibility of units having not enough equipment--or the wrong kind of equipment--is high. Recently, a compound problem came to light at HQ FORSCOM. As discussed in paragraph (2) above, TOE units are absorbing more and more installation service functions. To their surprise, FORSCOM personnel found a TOE unit trying to trade in tactical equipment for equipment to support facility operations: the item sought was a *lawn mower*.⁵⁴ Indeed, this is just one isolated case. However, without conducting timely TOE and MOB TDA validations along with annual system updates, the mobilization materiel requirements data base will be *inaccurate, out of date, and out of control*.

(4) **Lack of force expansion data.** The amount of Class V and VII materiel FORSCOM will need for the TDA units that will train, sustain, support, and deploy and *expanded* TOE Army depends on the types and numbers of divisions to be built. Today, the division force equivalents (DFE) listed in the Joint Strategic Planning Document (JSPD) do not define the numbers and types of Combat Support/Combat Service Support (CS/CSS) units needed to support those divisions in combat. Only after these new divisions *and* their CS/CSS units are identified to the MOS level can FORSCOM begin estimating CONUS Base support requirements, and preparing MOB TDAs that consider the additional load imposed by forming, equipping, and training new units.

⁵³ Site Visit, HQ FORSCOM, Fort McPherson, GA, Mr. James F. Thompson, Jr., and Mr. Jeffrey Pope, 16 August 1988.

⁵⁴ Ibid.

21. **ODCSLOG REQUIREMENTS.** ODCSLOG plans to meet its mobilization goals by increasing its staff with personnel drawn from the 149th Mobilization Detachment and Individual Mobilization Augmentees. No plans now exist to expand ODCSLOG's staff beyond full mobilization levels, even if a decision is taken to expand the active force. Because the ODCSLOG is an administrative office based in the Pentagon, it will not have a Class V requirement (ammunition). Most of ODCSLOG's Class VII requirements will be command and communications equipment and computers.^{55,56} The task of completing ODCSLOG's MOB TDA, however, is complicated by the current restrictions on issuing tactical equipment to non-deploying units. Although ODCSLOG may have a legitimate need to be excused from that restriction, as the policy now stands, it cannot list any requirements for military specification equipment (such as tactical net radios) on its MOB TDA, but must document such requirements separately in the TAADS.^{57,58,59}

22. **AMC REQUIREMENTS.** AMC's mobilization requirements, like ODCSLOG's, are mainly for personnel. AMC is a heavily industrialized command. Much of its production equipment is utilized at low peacetime production rates, or is in storage awaiting activation in the event of a national emergency or mobilization. During a crisis, AMC must have expert production and maintenance personnel on its staff. It also must have the production line repair parts, Class VII equipment, Class IX supplies, and non-tactical vehicles it needs to gear up, surge, and expand its defense industrial base.⁶⁰ No Class V would be required.

a. Because much of the Army-owned or -managed defense base is laid-away or operating at reduced production levels in peacetime, AMC's crisis or wartime need for trained production-line personnel, production line repair parts, and for non-tactical vehicles like forklifts, will rise dramatically once a mobilization is declared. However, in peacetime, the maintenance, repair, and modernization of production equipment has low priority compared to the acquisition of new weapons systems. Thus, AMC has a large, essentially unfunded backlog of maintenance and repair requirements. In addition, low-level peacetime rates of production mean plants can operate with far smaller staffs than would be demanded by wartime operational rates. If AMC

⁵⁵ Personal conversation between Mr. James F. Thompson, Jr. of ESC and Mr. James Wohlfart of ODCSLOG, 1 September 1988.

⁵⁶ Personal conversation between Mr. James F. Thompson and Mr. Jeffrey Pope of ESC and LTC John Kalokerinos of ODCSLOG, 14 September 1988.

⁵⁷ *The Department of the Army Equipment Authorization and Usage Program*, AR 310-34, Appendix F (HQDA, 12 November 1986), p. 284.

⁵⁸ Site Visit, HQ FORSCOM, Fort McPherson, GA, Mr. James F. Thompson, Jr. and Mr. Jeffrey Pope, 16 August 1988.

⁵⁹ Personal conversation between Mr. James F. Thompson and Mr. Jeffrey Pope of ESC and LTC John Kalokerinos of ODCSLOG, 14 September 1988.

⁶⁰ Personal conversation between Mr. James F. Thompson, Jr., ESC, and Mr. Truslow, AMC, 31 August 1988.

is asked to surge production or to reactivate a production line, it will have to recall retired production line personnel to open and operate the lines until new personnel are trained.

b. AMC documents its personnel, repair parts, and non-tactical equipment requirements on its MOB TDAs. It also has tried to guarantee that its facilities get the repair parts they need early in a mobilization by front-loading those requirements into the Mobilization Prepositioned Requisition System. This ensures that the parts needed to either surge or reactivate facilities will be available, thus reducing production downtime.⁶¹

c. In a crisis, AMC will be asked to build enough domestic production to sustain the equipment needed by the U.S. military until the United States' military objectives are met. No one knows for certain how much Class V and VII materiel AMC will be asked to produce in wartime. Currently, AMC predicts the levels of materiel production it will be asked to provide during wartime based on the military operations plans (OPLANs) played out in simulated battles by the Army's automated combat models. To date, the services have not yet agreed that this process delivers accurate production requirements. However, AMC cannot accurately size its production base until it knows the quantity and type of Army-managed items the Army and other services will need during wartime. AMC cannot quantify its production base needs until the Army and the other services agree on a method to accurately quantify their individual materiel requirements.

23. CORPS OF ENGINEERS (USACE) REQUIREMENTS. During a mobilization, USACE will expand mobilization stations and production facilities. The Corps will also secure civil works projects such as locks and dams, and manage water resource projects that support military mobilization goals.

a. **Facility expansion.** Planning for the physical expansion of mobilization stations is done by the responsible Corps District Office. Stations can expand by buying more real estate and or by building temporary buildings. All expansion plans are documented in the mobilization installation Mobilization Master Plan and Installation Support Books. Temporary building designs or Mobilization Drawings are maintained by the USACE Huntsville Division. Mobilization Master Plans and Installation Support Books are maintained and updated annually by USACE District Offices.⁶² USACE will help AMC expand its production facilities. Unfortunately, AMC was not able to identify its expansion needs until funds for the \$13 million USACE Mobilization Standard Design Program ran out. So far, no more money has been set

⁶¹ Site Visit, HQ AMC, Alexandria, VA, Mr. James F. Thompson, Jr., and Mr. Jeffrey Pope, 20 September 1988.

⁶² *Mobilization and Operations Planning System (CEMOPS)* (US Army Corps of Engineers, Office of the Chief of Engineers, 4 February 1982), pp.G-3 through G-20.

aside to incorporate AMC production base expansion requirements, or update designs and specifications to incorporate new construction procedures.⁶³

b. **Other emergency missions.** During a mobilization, those Corps districts and divisions dealing mainly with civil works projects will expand their responsibilities to assist the Department of Defense and other departments in emergency, disaster, and civil defense projects. They will also begin the military construction needed to support the mobilization effort. The Corps will only continue those *civil works* projects that support military mobilization objectives. The remaining projects will be placed on standby. Dredging, navigation, and water resource projects will also be redirected to support military goals.⁶⁴ The Corps is also responsible for protecting some of its civil works and other key Corps assets. Neither the Federal Emergency Management Agency nor the Joint Key Assets Program, which produces the DOD Key Facilities List, addresses all Corps assets that must be protected. Thus, protection of these facilities must be dealt with internally within the Corps either by contracting guard services or by training and arming Corps employees.^{65,66,67}

c. **Requirements determination.** Given the Corps' diverse responsibilities, do systems exist which document the mobilization materiel requirements of the Corps? The answer is a simple "no," and the solution will be incredibly complex.

(1) *Military-construction only.* Those districts which deal strictly with military construction projects document their equipment and personnel requirements on their MOB TDAs.

(2) *Civil works projects only.* The divisions which handle civil works projects document civil works-funded civilian positions in their MOB TDAs, but not equipment bought with civil works funds. In peacetime, civil works divisions list only their military personnel on their TDA; this information is input to TAADS. Peacetime TDAs for civil works divisions document neither civil works civilian positions nor the equipment purchased with civil works funds.

⁶³ Site Visit, meeting between Mr. James F. Thompson, Jr., ESC, and Mr. Sam Bolin and Mr. Doug Wilson, Huntsville Division, 23 June 1988.

⁶⁴ *Mobilization and Operations Planning System (CEMOPS)* (US Army Corps of Engineers, Office of the Chief of Engineers, 4 February 1982), pp.G-3 through G-20.

⁶⁵ The DOD Key Facilities List comprises facilities of such importance that loss through sabotage, subversion, terrorism, or other hostile acts would seriously impair the national defense posture of the United States and for which adequate or duplicate industrial facilities do not exist. FORSCOM uses the source documents in fulfilling its responsibility for CONUS land defense planning. (Taken from *Army Command and Management: Theory and Practice*, 1986-1987).

⁶⁶ *Mobilization and Operations Planning System (CEMOPS)* (USACE, Office of the Chief of Engineers, 4 February 1982), p. B-1.

⁶⁷ Personal conversation between Mr. James F. Thompson, Jr. of ESC and LTC Dillard, Office of the Chief of Engineers, Office of Security and Law Enforcement, 6 October 1988.

(3) *Military-construction and civil works projects.* Those districts which deal with both military and civil works projects document the military and civilian personnel and equipment associated with the military projects, and only the military personnel associated with the civil works projects, on their peacetime TDAs. However, all military and civilian personnel for *both* military and civil works projects are documented on the MOB TDAs, but only the military construction project equipment is documented. Civil works equipment is not recorded.⁶⁸

d. **Equipment inventory.** USACE does not know how much equipment it owns. An inventory by the Office of the Chief of Engineers, Directorate of Logistics Management is now being done to count and catalog Corps civil works equipment. It is the goal of the USACE Logistics Directorate to set tables of allowances for civil-owned property. No controls now exist on the amount of civil-owned property districts or divisions can own. If the Corps division or district can justify a need for equipment, and if the funds are available, it can purchase the equipment directly.⁶⁹ Once a table of allowances for civil-owned property is developed, the Corps will be in a better position to develop its CONUS Base mobilization materiel requirements.

24. **FINDINGS.** The Army has systems and methods that can measure the Class V and VII needs of the logistic community under a full mobilization crisis (that is, for the deployment of the current force). However, the data which drive those systems and methods must be taken from MOB TDAs, which have not been validated, are incomplete, or both. The Army also must tell mobilization planners in TDA units how to incorporate commercial substitute equipment into their MOB TDAs. In addition, the approved CRISP list should be expanded to include more kinds of MOB TDA-required materiel. Almost none of the logistics community will need Class V materiel during a mobilization crisis; the exception is USACE, which has a facilities physical security role.

a. **Tactical communications equipment vs CRISP.** The Army has inadvertently created a requirements documentation problem by restricting the use of tactical communications equipment to deploying units. These regulations prohibit CONUS-based TDA units from using tactical radios if a commercial substitute is available. Thus, CONUS TDA units with a legitimate need for tactical radio support must insert that requirement separately in the TAADS. Thus, the only place communication equipment requirements can be found is in the TAADS documented in the **generic unit** TDA and MOB TDAs. If a mobilization occurs, it is

⁶⁸ Personal conversation between Mr. James F. Thompson, Jr. of ESC and LTC Gary Michaliga, Office of the Chief of Engineers, Directorate of Resource Management, 13 October 1988.

⁶⁹ Personal conversation between Mr. James F. Thompson, Jr. of ESC and Mr. Johnny Taylor, Office of the Chief of Engineers, Directorate of Logistics Management, 11 October 1988.

certain that no one will have the time or inclination to search for a unit's materiel requirements if they are not readily available on one document (e.g., MOB TDA). Therefore, all equipment requirements should be specified on the MOB TDAs along with their approved commercial substitute.

b. **USACE civil table of allowances.** USACE will not be able to quantify the Class V and VII mobilization requirements until it completes its table of allowances for civil-owned property. This table will list all military and civil-funded equipment and personnel requirements on USACE MOB TDAs.

c. **AMC production expansion.** Until AMC can document its production expansion requirements and include those expansion designs in the USACE Mobilization Standard Design Program, it will be difficult to accurately predict just what resources will be needed to effectively and quickly expand the Army-owned and -managed production base.

d. **Requirements to support an expanded force.** Before the logistics community can begin estimating its materiel requirements to support an expanded force, it must know exactly what type and number of units will be built. Once the unit types have been identified, the CONUS Base support requirements can be developed for the logistics community using the existing requirements determination processes.

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V. MEDICAL SUPPORT REQUIREMENTS

25. **HISTORICAL PERSPECTIVE.** The 1983 bombing of the U.S. Marine barracks in Beirut, Lebanon, irrevocably changed the Army medical community's method of planning for war, contingency, and emergency situations. Because the emergency medical care for the wounded Marines greatly stressed the U.S. health care system in Europe, the Assistant Secretary of Defense for Health Affairs [ASD(HA)] directed a review of the tri-services' medical readiness.⁷⁰ This investigation revealed serious deficits in resources and planning throughout the services' medical readiness arena. After reporting the results of the review to House Armed Services Committee, Congress directed the Department of Defense to develop an integrated plan to solve the department's wartime medical readiness problem by 1992.⁷¹

a. In response to this Congressional directive, the services developed the Department of Defense Medical Readiness Strategic Plan, which consolidates program management of all health activities and resources in DOD medical readiness under the auspices of the ASD(HA).

Among the critical components of medical readiness addressed in the strategic plan are the requirements for supporting the CONUS military medical activities during and after a mobilization of U.S. forces. To ensure the CONUS medical infrastructure is in place, ASD(HA) asked for three ancillary plans: an integrated CONUS medical Mobilization Plan (ICMMP), the Medical Planning Module 2.0, and the Casualty Movement Plan. The ICMMP and the Medical Planning Module 2.0 will address the medical requirements for supporting the mobilization stations, the training base, and the CONUS hospitals that will receive the returning combat casualties. The Casualty Movement Plan will use data from the Medical Planning Module and the ICMMP to quantify the requirements for transporting casualties from OCONUS to CONUS as well as the transportation requirements within CONUS.

b. The medical community will not activate its new planning systems until 1992. Therefore, ESC only reviewed how the Health Services Command (HSC) now estimates its Class V and Class VII materiel requirements. However, to provide a complete picture of the medical materiel requirements determination methods that will be available in the future, ESC also examined the three DOD developmental systems. The results of this analysis are contained in Annex A.

⁷⁰ *The Department of Defense Medical Readiness Plan* (ASD[HA], February 1988), pp. 1 through 3.

⁷¹ *Medical Readiness Strategic Plan - Action Memorandum*, Memorandum from ASD(HA) to Secretaries of the Military Departments et al., 9 March 1988.

26. **DEFINITION AND FUNCTION.** AMOPS defines the CONUS Base medical community as the Office of The Surgeon General (TSG) and the US Army Health Services Command (HSC). However, the major responsibility for providing Army medical care lies with the HSC. HSC's mobilization responsibilities are documented in the *U.S. Army Health Services Command Mobilization Plan*. This plan, plus individual medical treatment facilities execution plans and FORMDEPS guidance, tell HSC installations and activities how to estimate their Class V and Class VII materiel requirements and how to document them on their MOB TDAs. All medical-related guidance is written to support HSC's four main mobilization missions:

- a. Expand the CONUS Base medical services to provide total health care for mobilizing and deploying forces, and for returning combat casualties.
- b. Provide Army Medical Department physicians and other clinicians trained in the employment of combat medicine as fillers for the deployed and deploying units.
- c. Expand the Army Medical Department training base to train new accessions in combat medical skills and to update the skills of prior-service personnel.
- d. Support the Military Entrance Commands, the mobilizing and deploying units, and CONUS installations by providing medical and dental examinations, immunizations, optometry services, and operating installation hospitals and clinics.⁷²

27. **MATERIEL DETERMINATION METHODS.** The methods HSC uses to estimate Class V and VII requirements varies with the type of unit it must support during mobilization.

a. **Mobilization stations.** Two types of medical units report to the mobilization stations: TOE and TDA units. The TOE medical units assigned to FORSCOM provide medical support to the incoming troops, and then deploy with the mobilized forces to the combat zone. Non-deploying MOB TDA medical units provide medical support to the mobilized forces, then remain in CONUS to fill the vacancies created by the deploying TOE medical units and to care for the resident staff at the station. HSC has signed medical support agreements with area civilian hospitals to provide the needed major medical services at mobilization stations that do not have a base hospital. Minor medical support services will be provided by medical units which will operate out of either mobilization hospitals constructed by USACE or deployable medical field hospitals.⁷³

⁷² *Army Mobilization Plan*, "US Army Health Services Command Mobilization Plan," Volume IX (HQ HSC, October 1982), pp. 2 and 3.

⁷³ Personal conversation between Mr. James F. Thompson of ESC and LTC John Beckenhawer, HQ HSC, Mobilization Branch, 8 July 1988.

(1) *Determining requirements for deploying (TOE) units.* The deploying medical units report their Class V and Class VII requirements to the mobilization station commander. This requirement is based on each unit's Initial Issue Quantity (IIQ) of equipment, as listed in its Modified Table of Organization and Equipment (MTOE). These items, which include weapons, transportation and communications equipment, generators, and field kitchens, are reported as required mobilization support equipment during peacetime. These items are procured by the mobilization station through AMC and are stored at the mobilization station as prepositioned war reserves. Upon mobilization, medical units report to their mobilization stations and draw their required Class V and Class VII supply items from the war reserve stocks. If their deployment schedule allows, the units then provide medical support to the mobilizing units at the mobilization stations, and then deploy with the other mobilized forces to the combat zone.^{74,75}

(2) *Determining requirements for non-deploying (MOB TDA) units.* The materiel requirements for medical units that do not deploy are handled in a different way. Like the deploying medical units, the non-deploying units report their Class V and VII materiel requirements, as listed on their MOB TDAs, to the mobilization stations. The mobilization stations procure some of these items; however, the non-deploying units depend upon materiel requirements developed through hospital support agreements with the mobilization stations. Under the terms of the agreements, the mobilization stations will be responsible for supplying the non-deploying medical units with power, laundry, food, and physical security services; transportation support; communications; hospital facility space; and facility engineering support.⁷⁶ These agreements eliminate Class V materiel requirements and reduce the Class VII materiel requirements.

b. **Training Stations.** HSC relies upon information furnished by the TRADOC and FORSCOM to determine the medical support needed for individual and unit training. TRADOC and FORSCOM tell HSC how many training centers must be supported, and the number of troops to be processed through each location. Using the method and planning factors contained in FM 101-10-1/2, HSC computes the number of hospital beds required to support this effort.⁷⁷ This method assumes no combat-related injuries will occur during training (i.e., gun shot wounds). Therefore, the number of patients to be serviced by the training base hospitals are computed as disease non-battle injuries (DNBI). DNBI incidents requiring

⁷⁴ Personal conversation between Mr. James F. Thompson of ESC and Captain Kunk, HQ HSC, Logistics Branch, 11 July 1988.

⁷⁵ *Army Mobilization Plan*, "US Army Health Services Command Mobilization Plan," Volume IX (HQ HSC, October 1982), pp. 5, B-9-1, D-10-1, L-5.

⁷⁶ *Ibid.*

⁷⁷ *Staff Officers' Field Manual: Organizational, Technical, and Logistical Data Planning Factors*, FM 101-10-1/2, Volume II (DA, 7 October 1987), pp. 5-1 through 5-26.

hospitalization occur on the average of 1.02 casualties per 1000 troops in training. Based on this bed requirement, the number of medical personnel required to support each facility is computed as prescribed by the Joint Operations Planning Systems's Medical Planning Module. The final estimate is listed in the individual hospital's MOB TDA. Once the number of beds required have been quantified by HSC, the level of Class VII supply is estimated based on each unit's IIQ. (Medical units have no Class V requirements.) As in the case of the non-deploying medical units which support the mobilization stations, the medical units supporting the training base are required to develop mobilization service support agreements with the training activities.⁷⁸

c. Casualty return support requirements. The amount of Class VII materiel a medical unit will need to properly care for returning war casualties depends on number of casualties, and on how long it takes to evacuate the casualties from the theater of operations.

(1) The Total Army Analysis (TAA) estimates the number and rate-of-return of casualties to CONUS during an expected mobilization. The TAA, which is conducted by the ODCSOPS in conjunction with the US Army Concepts Analysis Agency (CAA), uses three automated combat simulations which pit the Army Program Force structure and its allies against adversary forces in Europe, Southwest Asia, and Korea. The combat models compute the consumption of ammunition, materiel, and fuel; personnel casualties as a function of the unit types engaged in battle; and the duration and intensity of the engagements..⁷⁹

(2) The number of combat casualties and DNBIs computed in TAA by the combat simulation models and the Force Analysis Simulation of Theater Administrative and Logistical Support (FASTALS) model are fed into yet another automated model--the Patient Flow Model.⁸⁰ The Patient Flow Model computes the disposition of casualties through each echelon of the medical system. It also determines the number of soldiers that can be expected to be evacuated to CONUS. From the number and rate-of-return of patients to CONUS, the Armed Services Medical Regulating Office decides how to distribute patients among Army, Veteran Administration, and the civilian hospitals participating in the National Disaster Medical System. The patient load or bed requirement which exceeds the current hospital availability equals the additional hospitals that must be constructed.

⁷⁸ *Army Mobilization Plan*, "US Army Health Services Command Mobilization Plan," Volume IX (HQ HSC, October 1982), pp. 5, 6, B-8-1, B-9-1, D-10-1, L-5.

⁷⁹ A complete discussion of the TAA simulation is contained in Annex C of *Assessment of the Methodology for Determining Materiel Requirements for the Current Force*, CEESC-R-89-7 (ESC, June 1989).

⁸⁰ *Total Army Analysis - FY 86-90*, "Main Report," Volume I (CAA, October 1983), pp.8-1 through 8-11.

(3) After HSC determines how many medical personnel will be needed to operate the hospitals activated or built during a mobilization, it can estimate the level of Class VII supply require based on IIQ data. Again, non-deploying medical units do not require Class V materiel.

(4) The USACE Division at Huntsville, AL, keeps architectural designs for the hospitals that will have to be built after a mobilization is declared. The staff required to operate the mobilization design hospitals is documented in the hospitals' MOB TDAs. However, as of the publication date of this report, no doctrine or formal staffing guide exists for the mobilization design hospitals. HSC is now developing doctrine for how these hospitals should be used, and staffing guides to conform to the uses prescribed in the new doctrine. This effort is expected to be completed sometime in 1990.⁸¹

28. CASUALTY EVACUATION DETERMINATION METHODS. Besides estimating how many new hospital facilities or services it will have to provide during wartime, HSC must also supply the Military Airlift Command (MAC) with estimates of the number of wounded soldiers requiring transport from the theater of operations to CONUS, and from installations within CONUS to other hospitals throughout the United States. It also must decide how many more ambulances or other transportation assets will be needed to transport medical evacuees *within* CONUS.

a. **Aeromedical evacuation.** The Patient Flow Model computes the flow of patients from the theater of operations to CONUS. FM 101-10-1/2 prescribes how to calculate requirements for moving patients from the receiving facilities to their CONUS aeromedical staging facility.^{82,83} This method estimates the number and type of casualty evacuation aircraft needed, evacuation time, and number of trips required per aircraft to evacuate or redistribute a given number of patients. After MAC determines the required number and type of evacuation craft, the data are given to the Patient Airlift Center who schedules the available airlift assets necessary to remove casualties from OCONUS to CONUS aeromedical evacuation facilities, and then to the CONUS hospitals.⁸⁴ Therefore, because it is the responsibility of the MAC to provide OCONUS to CONUS aeromedical evacuation assets for the Army, the Army does not have any Class V or Class VII requirements related to this effort.

⁸¹ Personal conversation between Mr. James F. Thompson, Jr. of ESC and LTC John Beckenhawer, HQ HSC, Mobilization Branch, 11 July 1988.

⁸² Aeromedical Staging Facilities are hospital facilities located at CONUS U.S. Air Force bases. They are equipped to receive casualties and redistribute them to CONUS military or civilian hospitals.

⁸³ *Staff Officers' Field Manual: Organizational, Technical, and Logistical Data Planning Factors*, FM 101-10-1/2, Volume II (DA, 7 October 1987), pp. 5-4 through 5-7.

⁸⁴ *Army Mobilization Plan, "US Army Health Services Command Mobilization Plan,"* Volume IX (HQ HSC, October 1982), p. B-9-1.

b. **CONUS installation patient evacuation requirements.** The CONUS installation patient evacuation requirements cover *both* mobilization stations and the CONUS training base. During a mobilization, TOE units which have ground and air ambulance assets will augment the host installations' ambulance assets. The TDA units which are to be mobilized to replace the deploying medical units at the mobilization stations and training centers document their ambulance requirements on their MOB TDAs and submit them to the host installation for procurement and storage in war reserve stocks. The mobilization ambulance requirements, per installation, are listed the HSC's mobilization plan.⁸⁵

29. **FORCE EXPANSION REQUIREMENTS.** The methods the medical community uses to determine its requirements for mobilization are based on varying installation populations. Therefore, Class VII materiel requirements to support the expanded force structure requirements of the mobilization stations and training base may be estimated using current procedures so long as the force, size and installation populations are known. However, before an expanded force structure's combat casualty estimates can be determined, the number and type of units in that force structure must be more clearly defined. The force must also be fought in a combat simulation model to obtain the casualty flow rate. This rate can, in turn, be applied using the Patient Flow Model to determine the expanded force structure's combat casualty medical support requirements, and the associated aeromedical and ground ambulance support requirements.

30. **FINDINGS.** The medical community fully documents its expected Class V and VII support requirements in MTOEs (for deploying medical units) and MOB TDAs (for non-deploying units). As now configured, deploying medical units are the only medical units that require Class V materiel. The security requirements of non-deploying medical units-- along with their requirements for power, laundry and food services, transportation support, communications, hospital facility space, and facility engineering support--will be provided by the medical units' host installations. This arrangement reduces the units' need for Class VII materiel.

a. **Staffing guidance.** New staffing guides for the Mobilization Design Hospitals have not been developed, and the Class VII materiel requirements for supporting the medical staff have not been quantified. The staffing guide is due to be completed sometime in 1990. Until then, the existing MOB TDAs for these hospitals will be used to determine the Class VII materiel requirements.

⁸⁵ *Army Mobilization Plan, "US Army Health Services Command Mobilization Plan,"* Volume IX (HQ HSC, October 1982), pp. B-9-1 through B-9-4.

b. **Expanded force.** The Class VII materiel requirements for the CONUS Base medical units to support the expanded force structure requirements of the mobilization stations and training base may be estimated using current procedures, so long as the force size and installation populations are known. However, no mobilization plans now address the medical requirements to support the combat casualties of an expanded force structure. Before an expanded force structure's combat casualty estimates can be determined the composition of that force must be identified and fought in a combat simulation model to obtain the casualty flow rates. Once the combat casualty flow rates are established, current methods can be used to determine the CONUS Base medical support requirements, and the associated aeromedical and ground ambulance support requirements necessary to support an expanded force structure's combat casualties.

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VI. TRANSPORTATION SUPPORT REQUIREMENTS

31. **DEFINITION AND FUNCTION.** The military's transportation community moves the total force within CONUS to and from overseas theaters of operation. The MAC and the Military Sealift Command (MSC) are responsible for all strategic OCONUS airlift and sealift operations, respectively. The Military Traffic Management Command (MTMC), MSC, and the theater commanders share responsibility for movement along the surface lines of communication.⁸⁶

a. MTMC coordinates the movement of troops and materiel within CONUS, working with installation transport officers and local and state transportation departments. MTMC manages commercial air, bus, truck, and rail transportation systems, as well as ocean terminals. MSC contracts for the use of cargo and passenger ships to transport troops and materiel to the theater of operations; it coordinates with MTMC when scheduling cargo and passenger vessels. Once the troops and their associated materiel have reached the theater of operations, the management of all surface transportation assets within the theater of operations becomes the responsibility of the theater commander.⁸⁷

b. The Joint Deployment Agency coordinates all time-sensitive deployment or resupply of US combat forces (Army, Navy, Air Force, and Marines). The agency works with the Joint Chiefs of Staff (JCS) to resolve any transportation shortfalls that may arise during a crisis. The agency also refines the Time-Phased Force Deployment Data (TPFDD) for the major OPLANs prepared by the unified commands.⁸⁸

32. **BACKGROUND.** Executive Order 11490 appoints MTMC the DOD executive agent for collecting intra-CONUS transportation requirements, and transmitting them to the Department of Transportation.

a. **Military responsibilities.** Sixty to 65 percent of DOD's transportation requirements are generated by deployment requirements as documented in the Time-Phased Force Deployment List (TPFDL) associated with the JCS Illustrative Planning Scenario. The remaining 30 to 35 percent of DOD's transportation requirements are generated by five mobilization tasks:

(1) Moving US Army Reserve (USAR), National Guard (NG), Navy, Marines, Air Force, and Coast Guard personnel from their home stations to their mobilization stations.

⁸⁶ *Army Command and Management: Theory and Practice* (US Army War College, 19 August 1986), pp. 12-9 and 12-10.

⁸⁷ *Ibid.*

⁸⁸ *Ibid.*

(2) Transporting defense industrial base production equipment from storage areas and depots to their production facilities.

(3) Redistributing equipment to fill understrength units.

(4) Moving personnel and equipment to the training base.

(5) Meeting Defense Logistics Agency (DLA) requirements for resupplying and sustaining the CONUS Base and the deployed forces.

b. Civil responsibilities. MTMC is also DOD's executive agent for the Highways for National Defense Program.⁸⁹ As such, MTMC:

(1) Works with federal, state, and local authorities to influence local highway and rail construction programs to consider defense needs.

(2) Identifies areas where highway and rail redundancy exist to provide alternate transit routes in case of primary route interdiction during war.

(3) Identifies and documents the strategic highway and rail corridors through the Strategic Highway Corridor Network and Strategic Rail Corridor Network Programs.

(4) Evaluates the condition of the highway and rail infrastructures to ensure that they are capable of supporting the passenger traffic and cargo loads required during mobilization.^{90,91}

c. Military-civil responsibilities. MTMC has not yet decided how to plan for demands on the nation's transportation assets and infrastructure generated by industrial surge and expansion.⁹² In other words, what assets are required to transport the raw materials from mine-to-mill, subcomponents-to-component manufacturer, and components-to-weapon system assembler? AMC is now working to determine the resource needs of fourth-tier component suppliers to major Army weapon systems. As these data become available, MTMC will be able to evaluate the effect of surging and expanding industrial activity on the nation's transportation systems. This will provide a more definitive picture of the transportation assets necessary to

⁸⁹ *Highways for National Defense*, DOD Directive 5160.60 (Office of the Deputy Secretary of Defense, April 26, 1973).

⁹⁰ *Ibid.*

⁹¹ *Transportation and Travel Highways for National Defense*, Army Regulation 55-80 (DA, 15 December 1982).

⁹² Meeting between Mr. James F. Thompson, Jr., ESC; and Commander Boyd and Ms. Carolyn Brumbaugh, MTMC, 21 October 1988.

support OPLAN requirements, production surge, industrial mobilization, and wartime production levels.

33. MOBILIZATION REQUIREMENTS DATA BASES. The military's transportation demands during a mobilization will place an almost immeasurably heavy burden on the nation's transportation infrastructure.

a. **Mobilization of the services.** The transportation assets required to move units from their home stations to their mobilization stations are computed using MTMC's automated system Mobilization Shipments Configured for Operational Planning and Execution (MOBSCOPE). However, the MOBSCOPE analyses rely upon troop movement requirements data furnished by the services.⁹³

(1) *Army requirements.* The data base used to quantify the transportation requirements for moving the USAR and NG units to their mobilization stations is developed using the FORSCOM Computerized Movement and Planning Status System (COMPASS). The numbers of USAR and NG personnel and quantities of equipment which need help moving from home stations to mobilization stations are recorded in the COMPASS data base. These data are extracted from COMPASS and are fed into MOBSCOPE, which then quantifies the required transportation assets.⁹⁴

(2) *Other-service requirements.* The Navy and the Coast Guard have little if any transportation requirements to move equipment. These two services are considered pre-deployed because all of their supplies, equipment, and personnel are contained at their home ports. The Navy does use a version of MTMC's MOBSCOPE to quantify the movement requirements for transporting Navy reserve personnel to their mobilization stations. A copy of the data are provided to MTMC for inclusion into the MOBSCOPE data base. The transportation requirements for both the Air Force and Marines are documented in their respective TPFDLs. MTMC extracts these requirements from the TPFDLs and places them into MOBSCOPE.⁹⁵

⁹³ Meeting between Mr. James F. Thompson, JR., ESC; and Commander Boyd and Ms. Carolyn Brumbaugh, MTMC, 21 October 1988.

⁹⁴ Personal conversation between Mr. James F. Thompson, Jr., ESC, and Mr. Bill Bailey, FORSCOM, 24 October 1988.

⁹⁵ Meeting between Mr. James F. Thompson, ESC; and Commander Boyd and Ms. Carolyn Brumbaugh, MTMC, 21 October 1988.

b. **Industrial base requirements.** The transportation requirements for moving defense industrial base production equipment from storage areas and depots to their production facilities are listed in AMC's Production Equipment Package Transportation Plan (PEPTP).⁹⁶

c. **Equipment redistribution and training requirements.** The commercial transportation requirements for redistributing equipment from depots and war reserves to understrength units are listed MOBERS, a subsystem of LOGNET. The training base transportation requirements are contained in the TRADOC's Training Base Expansion Plan (TBEP).⁹⁷

d. **Resupply and sustainment requirements.** DLA has not as yet supplied MTMC with any of its mobilization, resupply, or sustainment transportation requirements. However, MTMC does estimate its wartime requirements projected from peacetime rates, and uses this estimate in the transportation analysis.

34. **TRANSPORTATION FEASIBILITY ANALYSIS.** The TPFDL associated with the JCS Illustrative Planning Scenario documents the services' transportation requirements for deployment. Using data compiled from the TPFDL, MOBSCOPE, PEPTP, MOBERS, TBEP, and DLA estimates, MTMC builds the mobilization and deployment transportation movement tables using the Mobility Analysis Planning System II (MAPS II). The transportation movement table is a time line which shows the time to load, move, transport, and offload personnel and equipment. MAPS II also measures the ability of receiving stations (mobilization stations, ports) to accept the incoming personnel and equipment.

a. MAPS II analyzes the data sequentially. This allows MTMC to assign priorities to transportation assets, and to see which base or part of the total force cannot meet its transportation requirements. The time lines developed by MAPS II are then compared to the TPFDL schedule to determine if the current Commander-in-Chief (CINC) OPLAN are feasible, and if CINC objectives can be met using available transportation assets.

b. A companion analysis, *The Mobilization Movements Requirements Study*, just recently completed, compares the existing commercial transportation assets against the required number.⁹⁸ The comparison is done for each individual OPLAN, as well as for the Illustrative Planning Scenario. The results of this study will be published in the March-April 1989 time frame.

⁹⁶ Meeting between Mr. James F. Thompson, Jr., ESC; and Commander Boyd and Ms. Carolyn Brumbaugh, MTMC, 21 October 1988.

⁹⁷ Ibid.

⁹⁸ *The Mobilization Movements Requirements Study* (MTMC, November 1988).

35. **MTMC'S MOBILIZATION MATERIEL REQUIREMENTS.** After the services' deployment movement requirements have been determined, MTMC determines the number of transportation contracts it must administer to meet the requirements. The additional staff needed to administer these contracts is then determined by the number and cost of the contracts.⁹⁹ MTMC now plans to meet its mobilization staffing requirements with mobilization augmentees, and by reassigning personnel who normally manage personal property shipments to mobilization transportation contracting functions. (MTMC assumes no personal property shipments will be required during wartime, because all combat troops will be either deployed or in training. In wartime, military families are not required to relocate or change station.)¹⁰⁰ The number of additional personnel needed to staff MTMC during a mobilization, plus the personnel, are documented in MTMC's MOB TDA.

a. MTMC has no transportation assets other than the Defense Interchange Fleet, which is composed of specialized heavy lift rail cars that are not provided by standard commercial carriers. During wartime, the only additional Class VII materiel MTMC will need is that required to support the increase in staff. These additional materiel requirements are listed on MTMC's MOB TDA.^{101,102}

b. MTMC does no mobilization planning beyond the first 90 days of the TPFDL associated with the Illustrative Planning Scenario. MTMC considers the transportation requirements during this time frame to be the most extreme burden that will be placed upon the United States transportation infrastructure during the entire conflict. Therefore, MTMC does not address the transportation requirements associated with force expansion.

36. **FINDINGS.** Because MTMC is strictly a transportation contracting agency, it has no requirements for Class V materiel. The only Class VII materiel required is the additional amount necessary to support the increase in MTMC's staff. These materiel requirements are contained within MTMC's MOB TDAs.^{103,104}

⁹⁹ Personal conversation between Mr. James F. Thompson, Jr., ESC, and Mr. Gordon Sakamoto, MTMC, 2 November 1988.

¹⁰⁰ Personal conversation between Mr. James F. Thompson, Jr. of ESC and Commander Boyd and Ms. Carolyn Brumbaugh, MTMC, 21 October 1988.

¹⁰¹ Ibid.

¹⁰² Personal conversation between Mr. James F. Thompson, Jr. of ESC and Mr. Gordon Sakamoto, MTMC, 2 November 1988.

¹⁰³ Personal conversation between Mr. James F. Thompson, Jr. of ESC and CDR Boyd and Ms. Carolyn Brumbaugh, MTMC, 21 October 1988.

¹⁰⁴ Personal conversation between Mr. James F. Thompson, Jr. of ESC and Mr. Gordon Sakamoto, MTMC, 2 November 1988.

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VII. MATERIEL SUSTAINMENT AND TOTAL REQUIREMENT COMPUTATIONS

37. **CLASS VII SUSTAINMENT AND TOTAL REQUIREMENTS.** Since the Class VII items used by the CONUS Base are not exposed to combat, their repair and replacement rates are functions of the individual items' repair or maintenance cycle and serviceable life. Equipment repair cycles also affect the operational readiness of units containing that equipment. To maintain acceptable levels of unit readiness, spare equipment is issued to the effected unit while its equipment is being repaired.

a. To compute equipment sustainment requirements, repair cycle factors (RCF), operational readiness factors (ORF), and unserviceable generation factors (UGF) were developed by the engineering activities responsible for each equipment item. These factors are documented in SB 710-1-1, *Standard Study Number System and Replacement Factors*.^{105,106} When multiplied by the number of items required, these factors provide the additional equipment to be purchased that will allow for proper equipment maintenance, unit operational readiness, and the replacement of worn out equipment.

b. The total requirement for an individual piece of equipment necessary to support the CONUS Base is computed by adding the sum of the equipment item requirements (as listed in the MOB TDAs) to the items sustainment requirements. The equation is:

[Equation 1]

$$\text{Total Requirement} = \text{IR} + \text{IR} [\text{ORF} + \text{RCF} + \text{UGF}]$$

Where: IR = Item Requirements from MOB TDAs

ORF = Operational Readiness Factor

UGF = Unserviceable Generation Factor

RCF = Repair Cycle Factor

38. **CLASS V SUSTAINMENT AND TOTAL REQUIREMENTS.** Unlike Class VII equipment items, Class V ammunition items do not have repair or maintenance cycle times. By nature of their design, munitions have finite storage lives--they are usually expended before exceeding their service life expectancy. However, if storage life is exceeded, munitions are disposed of by either demilitarization (taking the ammunition apart and discarding the short life components) or by physical destruction. Since munitions do not require sustainment materiel to function, the CONUS Base requirement is equal to the sum of the initial issue quantity of ammunition issued for each weapon. These requirements are listed in the MOB TDAs.

¹⁰⁵ Personal conversation between Mr. James F. Thompson of ESC and Mr. Doyal Waybright, HQ AMC, War Reserves Branch, 10 June 1988.

¹⁰⁶ *Standard Study Number System and Replacement Factors*, SB 710-1-1 (HQDA, 1 October 1986), pp. 1-1 through 7-90.

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VIII. CONCLUSIONS AND RECOMMENDATIONS

39. **COMMON DEFICIENCIES AND RECOMMENDATIONS.** All components of the CONUS Base share common problems in defining, quantifying, and documenting their mobilization materiel requirements. Those problem areas which are shared by all CONUS Base components are:

a. *No methods exists for validating MOB TDAs; the methods for developing MOB TDAs are not fully automated below the MACOM level.* MACOMs should validate unit MOB TDAs documented in the TAADS against the requirements of the current OPLANs at least annually. Although the MOB TDA process is not fully automated below the MACOM level, installations can provide their MOD TDAs to their MACOM who insert the MOB TDA data into TAADS. Installations should be especially careful to update their MOB TDA mission statements in TAADS to reflect changes in their OPLAN requirements. Otherwise, requested changes in either equipment or personnel strengths based upon changes in OPLAN requirements could be denied.

b. *Although the Army prohibits a non-deploying unit from listing tactical equipment on its MOB TDAs if a commercial substitute will suffice, it has yet to tell mobilization planners how to place commercial substitutes on MOB TDAs.* ESC recommends that the Army prohibit all TDA and MOB TDA units within CONUS from using tactical equipment by requiring they substitute commercial materiel. This would place the tactical equipment where it is needed most--in the hands of troops on the battlefield. Before this can be done, however, the Army must expand the commercial substitute items (CRISP) and issue guidance telling installation commanders exactly how to list commercial substitute items on MOB TDAs.

c. *Since the Army has no firm plans to build an expanded force structure after the current force is deployed, planners do not know how many or what kind of units the CONUS Base will have to support under conditions of a total mobilization.* ESC recommends that the Army define the additional divisions and supporting theater forces of the expanded force to TOE and MOS levels. This will allow CONUS Base planners to adapt existing current planning methods and systems to determining the requirements for training, supporting, deploying, and sustaining an expanded force structure.

40. **INDIVIDUAL DEFICIENCIES AND RECOMMENDATIONS.** Each of the components of the CONUS Base has problems which will take individual efforts by experts in that component to effectively resolve.

a. **Logistics.** AMC cannot accurately determine how many resources will be needed to expand the Army-owned and -managed production base until it completely documents the need for and designs of the facilities it will need when it surges or expands under the conditions of a full or total mobilization. The Army should fund the documentation and development of AMC expanded-production designs under the Mobilization Standard Design Program. If AMC has approved mobilization designs and specifications in place when a crisis is declared, it can quickly expand its production capacity. AMC's response time will profoundly affect this nation's ability to deploy and sustain its military in an extended conventional conflict. The logistics community should also support USACE efforts to quickly complete its table of allowances for its civil-owned property. USACE should also include all military and civil-funded equipment and personnel requirements on its MOB TDAs. Until this is done, the Corps will not be able to quantify its mobilization materiel and personnel requirements.

b. **Medical.** The staffing guides for the Mobilization Design Hospitals have not been developed, and the Class VII materiel requirements for supporting the medical staff have not been quantified. The staffing guide is due to be completed sometime in 1990. Until then, the existing MOB TDAs for these hospitals will be used to determine the Class VII materiel requirements.

c. **Transportation.** The Military Traffic Management Command (MTMC) has not been able to include in their transportation analyses the transportation requirements for supporting industrial surge and expansion; the assets required to transport the raw materials, milled parts, and subcomponents through the production cycle. Currently, efforts are underway by the AMC to identify the needs of the major weapon systems' fourth tier component suppliers. A copy of these data should be provided to MTMC so it can develop a better picture of the transportation assets necessary to support OPLAN requirements, production surge, industrial mobilization, and wartime production levels.

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ANNEX A

**CONSOLIDATION OF MEDICAL SUPPORT REQUIREMENTS
DETERMINATION METHODS**

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ANNEX A

CONSOLIDATION OF MEDICAL SUPPORT REQUIREMENTS DETERMINATION METHODS

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1. **PURPOSE.** This annex documents the ongoing efforts of the Office of the Assistant Secretary of Defense for Health Affairs (ASD[HA]) to consolidate and standardize mobilization readiness planning and materials determination processes for the armed forces.

2. **SCOPE.** This annex:

a. Discusses the events which precipitated the decision by the ASD(HA) to consolidate the services' medical mobilization readiness planning at the DOD level.

b. Analyzes the ability of the Integrated CONUS Medical Mobilization Plan, the Medical Planning Module 2.0, and the DOD Casualty Movement Plan to identify the materiel required to support the Army's medical community during mobilization.

3. **CONSOLIDATION OF DOD MEDICAL PLANNING, HISTORICAL PERSPECTIVE.** On 23 October 1983, terrorists bombed the U.S. Marine barracks in Beirut, Lebanon, killing 241 Marines and wounding 112 others. The emergency medical care required for the wounded greatly stressed the U.S. peacetime health care system in Europe. This brought about questions of the U.S. Forces' ability to provide adequate medical care to its personnel in contingency situations.¹

a. During January 1984, the Secretary of Defense directed the ASD(HA), to review the medical readiness of the U.S. European Command (EUCOM). The following April, the Medical Review Group formed by ASD(HA) reported lack of resources and planning had caused serious deficiencies in EUCOM's medical readiness. Similar deficiencies were also discovered during a later review of the U.S. Pacific Command's (PACOM's) medical readiness. These reports produced initiatives in both commands which greatly improved their medical readiness postures.² However, in spite of tri-service cooperation and increased spending, serious deficits remained in the medical readiness arena. Consequently, on 25 July 1986, the House Armed Services Committee, in its *Report on the Defense Authorization Act for Fiscal Year 1987*, directed DOD to develop an integrated master plan that would solve the department's wartime medical readiness problems by the end of Fiscal Year 1992.³

b. As a result of this direction, *The Department of Defense Medical Readiness Strategic Plan* was developed in 1987 by joint service panels under the direction of ASD(HA). The panels prepared strategic action plans covering 26 functional areas. These action plans, developed using the Illustrative Planning Scenario contained in the *Defense Guidance*, form the essence of the department's medical readiness plan. The resulting effect of the medical readiness plan consolidates the program management of all health activities and resources in DOD medical readiness under the auspices of the ASD(HA). The assembly of the resources into a comprehensive plan to medically support the services in battle remains the responsibility of the theater commanders. In other words, it is the theater commanders' responsibility to identify the medical resources necessary to support their OPLANs, while it is the responsibility of ASD(HA) to manage the medical resources to ensure that the theater commanders' needs are met.

c. Among the critical components of medical readiness are the requirements for supporting CONUS military medical activities during and after a mobilization of U.S. forces. To ensure this medical infrastructure is in place, ASD(HA) required the development of three plans to be included in *The Department of Defense Medical Readiness Strategic Plan*. The first two plans--the Integrated CONUS Medical Mobilization Plan (ICMMP) and the Medical Planning Module 2.0-

¹ *The Department of Defense Medical Readiness Plan* (ASD[HA], February 1988), pp. 1 through 3.

² *Ibid.*

³ *Medical Readiness Strategic Plan-Action Memorandum*, Memorandum from ASD(HA) to Secretaries of the Military Departments et al., 9 March 1988.

-address the medical requirements for supporting the mobilization stations, the training base, and the CONUS hospitals that will receive the returning combat casualties. The third plan--Casualty Movement Plan--will use data from the Medical Planning Model and the CONUS Mobilization Plan to quantify the requirements for transporting casualties from OCONUS to CONUS as well as the transportation requirements within CONUS.

4. INTEGRATED CONUS MEDICAL MOBILIZATION PLAN. The objectives of the ICMMP are to:

Establish a joint Service organization, responsible to the Office of the Joint Chiefs of Staff (OJCS), to develop joint policies and procedures for the effective and efficient utilization of the health care resources of the military medical departments in CONUS; and, to facilitate coordination and utilization of the health care resources of the Veterans Administration (VA) and the National Disaster Medical System (NDMS) in the event of a national emergency.⁴

a. The JCS CONUS Medical Mobilization Office objective is to address only medical or Class VIII supply items in the plan. The intent is to leave the existing materiel requirements determination process for Class V and Class VII supply items in place.⁵ Currently, the Class V and Class VII items necessary to provide medical support within CONUS are determined by HSC, in conjunction with AMC.⁶ This methodology is discussed in Section V of the main report. Therefore, the ICMMP, as designed, will not have the capability to quantify Class V and Class VII requirements.

b. The JCS CONUS Medical Mobilization Office, must develop the plan by June 1989. As of the publication date of this report, the JCS is still in the process of developing a plan to meet the objectives.

5. MEDICAL PLANNING MODULE 2.0. Because the methods of determining the wartime medical manpower requirements varied among the services, ASD(HA) began taking steps to standardize the requirements determination processes. First, during March 1985, the Deputy Secretary of Defense directed the services to use the Joint Operations Planning Systems'

⁴ *The Department of Defense Medical Readiness Plan* (ASD[HA], February 1988), pp. 44.

⁵ Personal conversation between MAJ George Tolson, of the Joint Medical Mobilization Office and Mr. James F. Thompson, Jr. of ESC, 7 June 1988.

⁶ Personal conversation between Mr. Doyal Waybright, HQ AMC, War Reserves Branch, and Mr. James F. Thompson, Jr. of ESC, 10 June 1988.

Medical Planning Module to estimate their wartime, hospital-based medical personnel support requirements. The module was further enhanced in April 1985 to estimate theater and CONUS hospital-based medical support personnel requirements by medical specialty (e.g., general surgeon, anesthesiologist). However, the need existed to have a scenario-based medical planning tool that could estimate not only personnel requirements, but materiel, patient evacuation, and CONUS base medical and returning casualty support requirements. Therefore, the development of the Medical Planning Module 2.0 was initiated under the *Department of Defense Medical Readiness Strategic Plan*.⁷

a. Using combat scenarios, the Medical Planning Module 2.0 will estimate the number of casualties, health service requirements throughout each echelon, medical materiel resupply requirements, hospital facility locations, patient evacuation requirements, and CONUS base medical and returning casualty support requirements. The development contract for the module was awarded during August 1987. The contract was completed in October 1988 and is now being reviewed by the DOD medical community.⁸ The actual date of activation of the module is pending the outcome of this review.

b. When fully developed, the Medical Planning Module 2.0 will determine only Class VIII medical resupply, medical personnel, and returning casualty support requirements. Therefore, the quantities of Class V and Class VII supply items required to support the CONUS base will be determined by using the module's medical personnel and returning casualty support requirements as input data to the current methods (see Section V of the main report.)⁹ The Medical Planning Module 2.0 will not have the capability to independently quantify Class V or Class VII requirements.

6. **DOD CASUALTY MOVEMENT PLAN.** It is the policy of DOD to use aeromedical evacuation as the primary means of moving patients not only within the theater of conflict, but within CONUS. The objectives of the DOD Casualty Movement Plans are to evacuate battle and disease non-battle injured (DNBI) patients from the combat zone to the communications zone, zone of the interior, or CONUS, while maximizing the utilization of available air evacuation assets. Under these initiatives, the reception and redistribution of patients within CONUS will be regulated by the Armed Services Medical Regulating Office located at Scott Air Force Base.¹⁰

⁷ *The Department of Defense Medical Readiness Plan* (ASD[HA], February 1988), pp. 16-18 and 59-60.

⁸ *The Department of Defense Medical Readiness Plan* (ASD[HA], February 1988), pp. 16-18 and 59-60.

⁹ Personal conversation between LT Alan Mercer, of ASD(HA), Medical Planning Directorate, and Mr. James F. Thompson, Jr. of ESC, 13 July 1988.

¹⁰ *The Department of Defense Medical Readiness* (ASD[HA], February 1988), pp. 36, 110-115.

a. The Casualty Movement Plan requires that medical patients who can be treated at hospitals within 100 miles of their CONUS port of entry will be transferred to those hospitals by local military air, ground ambulances, or emergency medical service vehicles. (The Army's method of computing local patient evacuation requirements is detailed in Section V of the main report.) Those patients requiring medical assistance from hospitals outside the 100-mile radius will be transported by a domestic aeromedical evacuation system that is currently under development as a component of the overall Casualty Movement Plan.¹¹

b. The domestic aeromedical evacuation system comprises three major initiatives.

(1) The first initiative was completed in December of 1987 when a memorandum of understanding between DOD and the Department of Transportation was negotiated to establish a dedicated aeromedical evacuation segment within the Civil Reserve Air Fleet. This segment is composed of B-767 aircraft which will be used to evacuate casualties on the strategic level, and MD-80 aircraft for casualty transportation within CONUS.¹²

(2) The next initiative was the development of field conversion kits which would allow the B-767 and MD-80 aircraft to be converted to medical evacuation use. The request for proposal was completed during June 1987, and initial capability is scheduled for June 1990, with full capability to follow during January 1993.

(3) The third initiative is the development of evacuation routes for the Aeromedical Evacuation Civil Reserve Air Fleet. This initiative is due to be completed during December 1990.¹³

c. Because most of the completion dates for the initiatives contained in the Department of Defense *Medical Readiness Strategic Plan* extend into 1992, HSC plans to continue using its current methods to estimate CONUS patient transportation requirements.

7. FORCE EXPANSION. The Army has no mobilization plans that address the medical requirements of an expanded force structure. All medical mobilization plans, including the *Department of Defense Medical Readiness Strategic Plan*, address only the needs of the current force. This initially seems a bit short-sighted; however, the medical support requirements are a function of the type of force and the percentage of the force at risk. Because this is the case, the medical support requirement determination methods contained in FM-101-10-1/2 are

¹¹ *The Department of Defense Medical Readiness Plan* (ASD[HIA], February 1988).

¹² *Ibid.*

¹³ *Ibid.*

structured to estimate requirements based upon varying force structure sizes, different type combat units, and varying lengths of combat times and intensities for a variety of geographical locations.¹⁴ Therefore, the Class V and Class VII materiel requirements for the CONUS Base medical units to support expanded force structures engaged in combat over any length of time may be estimated using the procedures contained in the field manual and the strategic plan, so long as the force size and composition, length and expected intensity of engagements, and the geographic locations are known.

8. **FINDINGS.** The ASD(HA) has taken positive steps to identify and correct problems within the armed services' medical establishment. Because of these efforts, the DOD medical arena is well on its way to developing a consolidated department that determines its Class VIII medical requirements using a common method. This serves not only to reduce the irregularities in the estimation of Class VIII materiel requirements, but also Class V and VII items.

a. When completed, the ICMMP, the Medical Planning Module 2.0, and the Casualty Movement Plan will define methods to quantify the Class VIII medical materiel requirements, number of hospitals and associated medical support personnel, patient flow from OCONUS to CONUS, and patient aeromedical and ground ambulance requirements to support the CONUS Base during full mobilization. Although these systems will **not** independently quantify the CONUS Base medical community's Class VII materiel requirements, their data can be used as inputs to the current methods, to provide a more accurate estimation of the the Class VII materiel requirements.

b. Force expansion is not addressed in the new planning initiatives. Existing estimation methods, which are constructed to quantify requirements based upon variable force sizes and compositions, combat intensities and durations, and geographical locations, can be used to estimate these requirements. However, a tri-service method should be developed to estimate these requirements. Such a method would provide the medical materiel requirements necessary to support the total force within CONUS and within the theater of operations.

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¹⁴ *Staff Officers' Field Manual: Organizational, Technical, and Logistical Data Planning Factors*, FM 101-10-1/2, Volume II (DA, 7 October 1987), pp. 5-1 through 5-26.

ANNEX B
STUDY REVIEW COMMENTS

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ANNEX B

STUDY REVIEW COMMENTS

1. **PURPOSE.** At the completion of this study, ESC published a draft report that was distributed for review and comment to the Study Advisory Group (SAG). The purpose of this annex is to present the results of that review process.

2. **SCOPE.** This annex presents only the significant and substantive comments ESC received on the draft report. No editorial comments are included since they were automatically included in the final report, either in response to the review comments, or as part of the routine ESC editorial process. All comments are listed by review agency. Following each comment is a description of the action ESC took as a result of the comment.

**STUDY ADVISORY GROUP COMMENTS
AND ESC RESPONSE**

Page

or

Paragraph

Number

**OFFICE OF THE DEPUTY CHIEF OF STAFF FOR OPERATIONS AND
PLANS, OPERATIONS AND CONTINGENCY PLANS DIVISION**

p. 6, para. 5b.

p. 7, graphic

COMMENTS: Because units may be deployed at levels less than ALO 1, it is not required, or expected, that all units will be issued equipment to bring them to ALO 1.

Graphic, lower left corner. Same comment as above.

RESPONSE: ESC understands that during a full mobilization, the TOE Army commanders (i.e. VII CORPS) may direct that units belonging to their command depart CONUS at a lower ALO. However, the purpose of this monograph is to identify systems that are capable of accounting for **total** ammunition and equipment requirements. Since a unit at ALO-1 has 100% of its Modification Table of Organization and Equipment (MTOE), ESC chose this readiness level to evaluate equipment and ammunition quantification systems.

p. 8, para. 6b.

p. 14, para. 12b.

COMMENTS: Delete sentence "TAADS is maintained ...". (Sentence implies USAISC has a significant management role in TAADS. In fact, USAISC assets are used to electronically transmit TAADS documents, but that MACOM has no Army-wide management of policy role in TAADS.)

Delete "and then to USAISC ... into TAADS." Same reason as above.

RESPONSE: The TAADS data base is maintained and / or operated by USAISC. ESC's concern was to identify a central repository for TDA and TOE data that military planners could easily access and avoid communicating with each individual

MACOM. USAISC is the central repository for the TAADS data base.

p. 23, para. 19b,
line 5.

COMMENT: Because ODCSOPS normally has the responsibility to establish priorities, this sentence should be changed or the ODCSLOG responsibility to "set priorities" should be more fully explained/justified.

RESPONSE: In accordance with AMOPS Vol. I, ODCSLOG does develop policy for the distribution of critical equipment. This policy is contained in the Total Army Equipment Distribution Plan (TAEDP). However, ODCSLOG does distribute war reserves in accordance with ODCSOPS policy. Therefore, the text has been modified to reflect this comment.

p. 36, para. 27c(1),
lines 2-3.

COMMENT: Change to "The TAA uses three U.S. Army Concept Analysis Agency (CAA) automated combat simulations...". HQDA ODCSOPS (DAMO-FDF) has the lead to conduct TAA. CAA provides the simulation support for that effort.

RESPONSE: Text has been modified as requested.

U. S. ARMY TRAINING AND DOCTRINE COMMAND

p. 9, para. 7

COMMENT: Last sentence - disagree with assumption that CONUS base components will need "little if any" Class V or Class VII support. Training (even in medical and transportation) will require some Class V and Class VII support.

RESPONSE: Trainers (i.e. a drill instructor, platform instructor, administrative support, etc.) and other permanent personnel will not be firing their personal weapons, nor will they need personal tactical transportation equipment, a HMMWV for example, in order to fulfill their full or total mobilization mission. Tactical equipment and Class V will be used to train the trainee not support the trainer. Equipment and ammunition requirements to support the trainee are contained in ESC reports entitled, *Materiel Requirements to Support Force Expansion and Assessment of the*

Methodologies for Determining Materiel Requirements for the Current Force.

p. 14, para. 12a
p. 15, para. 13b
p. 20, para 15c(3)

COMMENT: Who has determined that TDA soldiers will not have to maintain weapons proficiency? Where is policy? Where is policy that weapons qualification is deferred? Also, what about Land Defence of CONUS (LDC)?

RESPONSE: TRADOC is correct in asserting that there is no formal policy that TDA soldiers will not maintain weapons proficiency during mobilization. ESC, after interviews with First Army personnel, came to the conclusion that since the TDA personnel were so involved with completing their mobilization mission (i.e. drill instructors training recruits, or mobilization station personnel preparing USAR or N.G. personnel for deployment), that the time needed to weapons qualify could lead to the failure of a TDA unit in accomplishing its primary mission during mobilization. Indeed, FORSCOM's *Total Mobilization 88 Study*, March 1989, page IV-D-3, states: *The production base cannot now produce more than peacetime training levels of ammunition*, and concludes that it is *highly likely that soldiers would graduate without having the opportunity to fire a live round from their weapon system*. ESC does not envision an Army wasting precious ammunition resources on soldiers who will not be going "in harms way". Therefore, ESC will recommend that the Army develop a policy regarding weapons proficiency in the face of a mobilization emergency, if for nothing more than ammunition conservation.

Land Defense of CONUS is an evolving requirement that has been levied against FORSCOM. As of August 1989, FORSCOM has not yet determined whether LDC will be composed of TDA personnel or TOE (perhaps USAR or N.G.) battalions. Regardless of the composition of the LDC, since these soldiers will be on an assignment that potentially will bring them into a combat environment, they must be weapons qualified.

p. 21, para. 15d

COMMENT: CRC "personnel" may not need Class V, but a fair amount of Class V will be required to support that mission

(personnel processing through the CRC must zero a weapon and need Class V to do so).

RESPONSE: ESC agrees with this comment. The purpose of this monograph was to capture the Class V and VII requirements for the CONUS base permanent personnel only. The Class V requirements for the soldiers processing thru the CRC are captured in the ESC monograph entitled *Assessment of the Methodologies for Determining Materiel Requirements for the Current Force*.

p. 24, para. 19b(2)
p. 24, para. 20a

COMMENT: Mobilization Prepositioned Requisition System includes Class I and IV in addition to these mentioned.

RESPONSE: Text has been modified to reflect this comment.

U.S. ARMY FORCE INTEGRATION SYSTEMS AGENCY

General

COMMENT: MTOEs, TDAs, and MOBTDA's are the primary authorization documents, however, there are others. CTAS, JRAS, and some Army regulations provide authorizations for equipment and supplies.

RESPONSE: Noted.

COMMENT: Repair parts are not documented on the authorization document. The essential repair parts stockage list (ERPSL) technical manual provides authorizations for items that don't require type classification separately.

RESPONSE: ESC only considered Class V and Class VII in this analysis. Repair parts are Class IX.

COMMENT: Class III (POL) and Class V (Ammo) requirements are not documented on the MOBTDA.

RESPONSE: Class V is contained in the MOB TDA by reference to the Common Table of Allowances (CTA) 23-100-6 document.

pp. 14-15, para. 13

COMMENT: The last sentence is unclear. I don't understand ..."which causes TAADS to reject new MOBTDA's information." TAADS will accept an approved document even though the mission statement is not updated. Requisitions for personnel, equipment, and supplies for new missions not reflected in TAADS will be rejected as not authorized. If it is reflected in TAADS, it is authorized. TAADS feeds into the personnel and logistics systems.

RESPONSE: The sentence was changed to read " which causes TAADS to reject requisitions for personnel, equipment, and supplies to support new mission statements".

p. 17, para. 14

COMMENT: TRADOC would not activate training divisions and brigades. They assume command upon mobilization. ODCSOPS activates.

RESPONSE: Text modified to reflect this comment.

ppg. 24-25, para. 20a

COMMENT: Class III and Class V requirements will not appear on the MOBTDA. The amount a unit is authorized is shown in other documents.

RESPONSE: Class V is contained in the MOB TDA by reference to the Common Table of Allowances (CTA) 23-100-6 document.

p. 49, para. 39a

COMMENT: Installations don't have direct access to TAADS. They provide their documents to the MACOMs. MACOMs validate and approve and transmit to TAADS. Installations will be able to view the TAADS data base when TAADS-R comes on line.

RESPONSE: Text modified to provide more clarity.

**OFFICE OF THE DEPUTY CHIEF OF STAFF
FOR OPERATIONS AND PLANS**

p. 49, para. 39b

COMMENT: Nonconcur with recommendation. TDA and MOBTDA organizations within CONUS should use commercial equipment when it meets mission requirements. However, in some instances (e.g., training and communications) military equipment is required. Additionally, military equipment in TDA units can serve as a source for equipment during mobilization, especially for items that have long lead times to production/procurement.

RESPONSE: AMOPS Volume III states that TDA units must use commercial substitute items. AR 310-34, *The Department of the Army Authorization and Usage Program*, goes one step farther and instructs that no tactical net radio requirements will be documented in the MOB TDAs for any missions where commercial radios will suffice. If DCSOPS wishes to use the TDA units as a mobilization materiel source, or a *hidden army*, it should revise the guidance contained within AMOPS and AR 310-34 to reflect this objective. ESC agrees that if the TDA units were fully outfitted with tactical equipment, a portion of wartime losses could be made up from this source. Thus buying precious production expansion time.

**ARMY MATERIEL COMMAND,
INDUSTRIAL MOBILIZATION PLANNING DIVISION**

p. 15, para. a
p. 49, para. b
p. 30, para. 24a

COMMENT: The CRISP program is not intended to be complete. It is strictly a planning process to identify commercial substitutes as an Industrial Preparedness Measure for critical materiel shortfalls. The program is always expanding and updating the existing CRISP items and associated information. CRISP should not be confused with the Non-developmental Items Program. CRISP items are strictly emergency acquisition expedients for critical equipment items where planned production and the War Reserve Stocks can not meet mobilization requirements. CRISP items are meant to be used only as an interim measure until the production of the standard item is on the line.

What regulation prohibits the inclusion of tactical net radios on MOB TDAs?

RESPONSE: The original intent of the CRISP program and its actual use by HQDA are quite different. AMOPS Volume III states that TDA units must use commercial substitute items. AR 310-34, *The Department of the Army Authorization and Usage Program*, goes one step farther and instructs that no tactical net radio requirements will be documented in the MOB TDAs for any missions where commercial radios will suffice. The only reference document which contains Army approved commercial substitute items is the CRISP list.

p. 1, para. 1

COMMENT: The purpose of this study stated that it has evaluated the Army's methods for estimating mobilization materiel requirements for industrial preparedness planning. Currently, AMC is using the Department of the Army Critical Items List (DA CIL) as the basic materiel planning list for industrial preparedness planning and it is the driver for all of our mobilization materiel planning. This study did not do what its purpose stated, it did not evaluate the DA CIL's method for estimating mobilization requirements.

RESPONSE: Quoting from page one paragraph one of the CONUS Base report:

"This report is one of four reports developed by the US Army Engineer Studies Center (ESC) as a part of its evaluation of the Army's methods for estimating mobilization materiel requirements for industrial preparedness planning. The overall study presents a conceptual method for determining materiel requirements for two classes of supply: Class V (ammunition) and Class VII (equipment). This report reviews and evaluates the systems and methods the Army now uses to estimate how much ammunition and equipment will be needed by the CONUS Base to successfully complete its mission during conventional global war."

The DA CIL is a **Current Force** industrial preparedness planning tool. Therefore, the DA CIL was evaluated in the first report

entitled; *Assessment of the Methodologies for Determining Materiel Requirements for the Current Force*. AMC's comments on ESC's analysis of the DA CIL are contained and addressed in Annex D, page D-9 of this report. The objective of the CONUS Base report was to evaluate the systems which quantified the materiel requirements of the TDA Army. As shown on Figure 1 of this report, the TDA Army is composed of 70 percent civilians and 30 percent military personnel. The DA CIL **does not** address this part of the Army. Thus it was not considered in this analysis.

p. 27, para. 22

COMMENT: AMC's mobilization requirements must include Class V ammunition, AMCCOM is the proponent for all Class V requirements.

RESPONSE: AMC must consider the ammunition requirements of the TOE Army. The TOE Army is the **consumer** of Class V while AMC is the **producer** of Class V. However, AMC is a part of the TDA Army. AMC produces Class V it **does not consume** Class V. Therefore, AMC does not require Class V to carry out its mobilization mission, and does not document Class V on its MOB TDAs.

OFFICE OF THE DEPUTY CHIEF OF STAFF FOR LOGISTICS OPERATIONS AND PLANS DIVISION

p. 23, para. 19b

COMMENT: Paragraph 19b should read:
ODCSLOG will play a key role in any mobilization crisis. As the ARSTAF proponent agency in support of the CONUS Base and the mobilized force, ODCSLOG is responsible for materiel distribution and maintenance of equipment. Through its Integrated Logistics Support Program, ODCSLOG monitors the Army's supply and maintenance systems and executes priorities for distributing equipment and war reserve stocks.

RESPONSE: Incorporated.

p. 23, para. 19b(1)

COMMENT: Paragraph 19b(1) should read:

The Nation cannot afford to equip all Army units to ALO-1 levels during peacetime. In the event of partial, full, or total mobilization, ODCSLOG must ensure that deploying and follow-on units are brought to their objective equipment levels as quickly as possible. This means acting quickly to redistribute Army materiel to deploying units as required, and promoting the rapid expansion of Army-owned and civilian-controlled industrial base facilities to support the materiel requirements of the mobilized force.

RESPONSE: Incorporated.

p. 49, para. b

COMMENT: Agree that the Army needs to establish guidance for mobilization planners on how to place commercial substitute items on their MOB TDAs. However, ESC's recommendation that Army prohibit all TDA and MOB TDA units within CONUS from using tactical equipment needs to be reconsidered for the following reasons.

- Military personnel assigned to TDA units need to be familiar and train with the same type of military equipment they will use when they deploy to the field.

- Because dollars would be short regardless of whether Army was attempting to procure military spec or commercial substitute equipment for its TDA units, it is a sounder policy to procure the military equipment for TDA units with available dollars.

- Maintenance and repair of commercial substitute equipment would place a burden on the repair parts system by requiring Army to procure parts for both military and commercial items. This would indirectly impact the production capacity of repair parts for the military item the commercial item replaced. It could also impact our capacity to produce the military item itself by decreasing its demand.

- The military item is the preferred item. In the event of mobilization, the CRISP program will help reduce the shortfall in Army equipment. The CRISP program is a temporary measure that will be required until the industrial base can be expanded to meet demand.

RESPONSE: AMOPS Volume III states that TDA units must use commercial substitute items. AR 310-34, *The Department of the Army Authorization and Usage Program*, goes one step farther and instructs that no tactical net radio requirements will be documented in the MOB TDAs for any missions where commercial radios will suffice. Granted, tactical equipment should be purchased during peacetime to keep the National Defense Industrial Base responsive to crisis situations. However, ESC feels that TDA units should not be required to use tactical equipment upon mobilization when its use is required on the battlefield. If the Army wishes to use the TDA units as a mobilization materials source, or a *hidden army*, it should revise the guidance contained within AMOPS and AR 310-34 to reflect this objective. ESC agrees that if the TDA units were fully outfitted with tactical equipment, a portion of wartime losses could be made up from this source. Thus buying precious production expansion time.

**OFFICE OF THE SURGEON GENERAL
DIRECTOR, HEALTH CARE OPERATIONS**

p. 33, para. 25a

COMMENT: Conus Mobilization Plan should be changed to Integrated Conus Medical Mobilization Plan (ICMMP). The Medical Planning Model 2.0 should be Medical Planning Module 2.0.

RESPONSE: Incorporated.

p. 34, para. 26

COMMENT: Fourth sentence should read: This plan, plus individual medical treatment facilities

RESPONSE: Incorporated.

p. 34, para. 27a

COMMENT: If their deployment schedule permits, TOE medical units will provide medical support as a quick fix measure prior to deployment. Also the non-deploying TDA medical units will augment HSC facilities in their expansion mission.

RESPONSE: This information was incorporated into the text.

p. 36, para. 27c(2)

COMMENT: In fourth sentence HSC should be Armed Services Medical Regulating Office.

RESPONSE: Incorporated.

p. 37, para. 27c(4)

COMMENT: Staffing guidance for mobilization designed hospitals will not be available until 1990 rather than 1989.

RESPONSE: This new data was incorporated throughout the text.

LAST PAGE OF ANNEX B.

ANNEX C

BIBLIOGRAPHY

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ANNEX C

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