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AMMUNITION DISTRIBUTION SYSTEM FOR PROUD SPIRIT/MOBEX 80, VOLUM--ETC(U)
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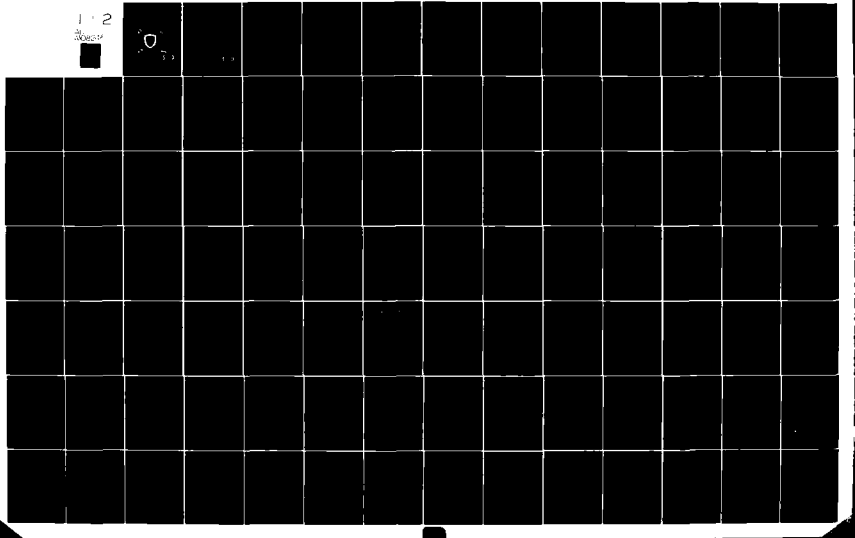

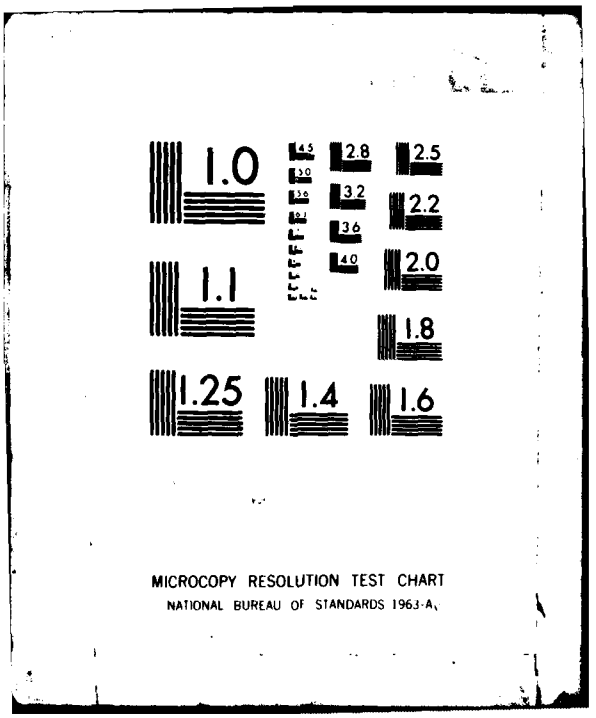
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TECHNICAL REPORT TR 10-81
OCT 81

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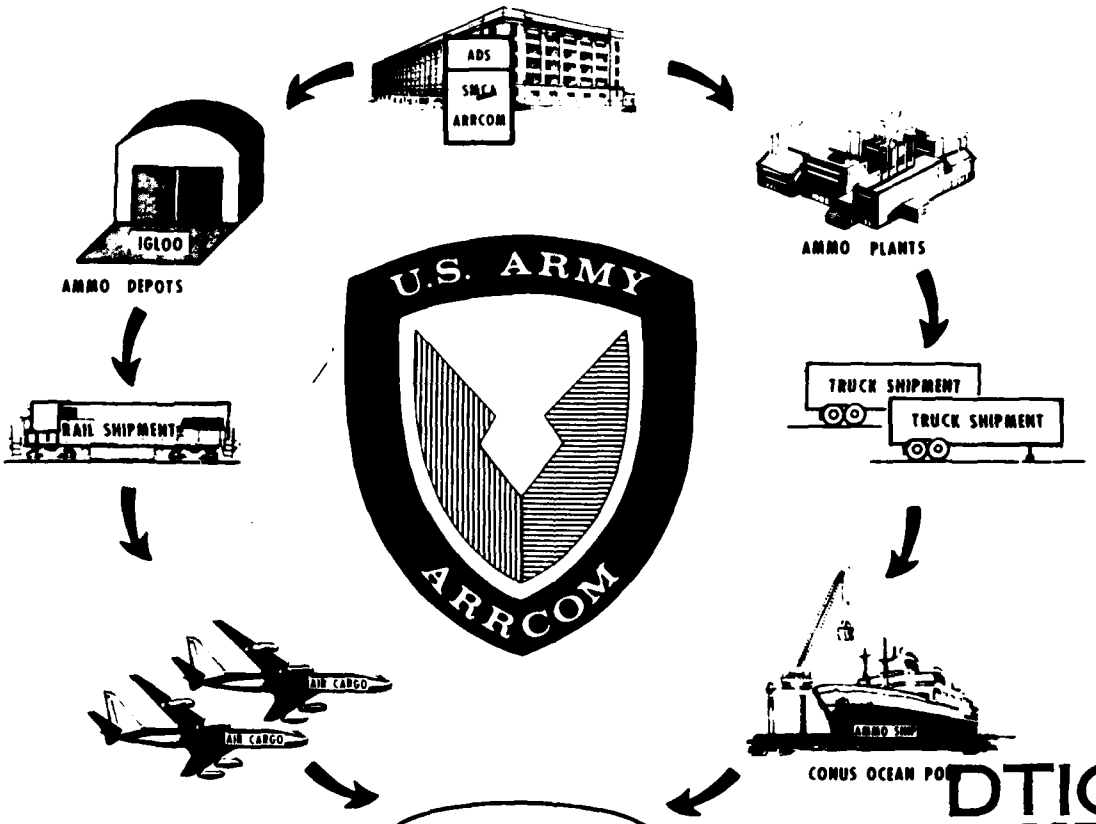
DECISION MODELS DIRECTORATE

US ARMY ARMAMENT MATERIEL READINESS COMMAND
DOD SINGLE MANAGER FOR CONVENTIONAL AMMUNITION

ROCK ISLAND, ILLINOIS 61299



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AMMUNITION DISTRIBUTION SYSTEM FOR PROUD SPIRIT/MOBEX-80 VOLUME 1

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Technical Report TR 10-81
Oct 1981

Decision Models Directorate

US Army Armament Materiel Readiness Command

DoD Single Manager for Conventional Ammunition

Rock Island, Illinois 61299

AMMUNITION DISTRIBUTION SYSTEM

PROUD SPIRIT for MOBEX-80

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20. ABSTRACT *(Continue on reverse side if necessary and identify by block number)*
This manual is one of a set of two produced to document the Ammunition Distribution System (ADS) as developed for use in exercise PROUD SPIRIT/ MOBEX-80. The ADS is a development effort of the Decision Models Directorate of Headquarters, US Army Armament Materiel Readiness Command (ARRCOM) as the Single Manager for Conventional Ammunition (SMCA). Its purpose is to provide assistance in planning for surge or mobilization, assess plans, and provide operational assistance for mobilization exercises. Therefore, ADS can assess planned requirements (push) and walk-in requirements (pull) on a daily basis.

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20. The depot and port capability can be assessed according to predetermined constraints. This report contains a discussion of model methodology, data base development, interface requirements, and the operators guide. The second volume of this report is the Programmer's Manual which consists of descriptions, logic flow diagrams, file formats, and the FORTRAN code of all source programs associated with the Ammunition Distribution System.

TABLE OF CONTENTS

LIST OF ILLUSTRATIONS

Fig.

ABSTRACT

This manual is one of a set of two produced to document the Ammunition Distribution System (ADS) as developed for use in exercise PROUD SPIRIT/ MOBEX-80. The ADS is a development effort of the Decisions Models Directorate of HQ, US Army Armament Materiel Readiness Command (ARRCOM) as the Single Manager for Conventional Ammunition (SMCA). Its purpose is to provide assistance in planning for surge or mobilization, assess plans, and provide operational assistance for mobilization exercises. Therefore, ADS can assess planned requirements (push) and walk-in requirements (pull) on a daily basis. The depot and port capability can be assessed according to predetermined constraints. This report contains a discussion of model methodology, data base development, interface requirements, and the operators guide. The second volume of this report is the Programmer's Manual which consists of descriptions, logic flow diagrams, file formats, and the FORTRAN code of all of the source programs associated with the Ammunition Distribution System.

FOREWORD

ADS was developed over a period of two years in a succession of incremental steps. At each step, additional system capability was developed to satisfy a new objective which was followed by immediate applications. The successful adoption of ADS by the ammunition distribution functional managers is due, in large part, to the employment of heuristic rules to make the decisions of how to allocate ammunition asset shipments at each discrete point in time. These heuristic rules embody the collective, culled judgment of many functional managers who have considerable experience in manual distribution planning.

On 31 August 1981, the system operation was transitioned to the Defense Ammunition Supply Directorate and the Transportation and Traffic Management Directorate by direction of the Commanding General. Decision Models Directorate will continue to provide maintenance of the system and operational assistance as required.

This report documents ADS as it was envisioned for exercise PROUD SPIRIT/MOBEX-80. However, since MOBEX-80, the incremental process of application/development continued and the system described here is considerably enhanced. At the time of the publication, plans are being made for even more enhancements to satisfy increasing applications for ADS, therefore, this document should be considered a record of what capability was transitioned as of 31 August 1981.

This volume contains an executive summary overview and an operator's guide. It is intended to provide the interested reader with an appreciation of the SMCA ammunition distribution problem. The operator's manual was included as an appendix. Volume II contains the detailed program listings and logic diagrams. It is intended for in-house use at HQ, ARRCOM.

ACKNOWLEDGEMENT

This report was prepared as the result of the concentrated effort of the entire ADS team (listed below) during the MOBEX-80 which was underaken during October-November 1980.

ADS Team for PROUD SPIRIT/MOBEX-80

Name	Role
Decision Models Directorate:	
Stuart Olson	Leader
Don Eckman	Model Nucleus and System
Norman Hoesly	Model System, Reports
Herman Tarnow	Ship Manifest, Report
Byron White	Preprocessor, Requirements
Al Patsche	Preprocessor, Reports
George Stiles	Preprocessor, Update Logic
Dan Turk	Preprocessor, Requisitions
Ken Maly	MOBMDR Extract, MIDAS Files
George Robinson	MOBMDR Extract, MIDAS Files
Leonard Ambrosini, Jr.	Ship Planning Messages

Program Analysis and Evaluation Directorate:

Lanny Wells	Requisition, Ship Manifest Editors

Management Information Systems Directorate:

Sue Sarlette	Ship Planning Messages, MILSTRIP Interface

Defense Ammunition Supply Directorate:

Greg Legare	Defense Ammunition Sponsor, P.O.C.

Transportation and Traffic Management Directorate:

LTC Lyman Walker	Transportation Sponsor, P.O.C.

Furthermore, the efforts of Mrs. Dottie Swingle for her preparation of the logic diagrams for these reports and the compilation of Volume 2 are greatly appreciated.

ARRCOM Ammunition Distribution System (ADS)

1. Executive Summary

The Ammunition Distribution System (ADS) is a joint development effort of the Directorates for Decision Models, Defense Ammunition Supply, and Transportation Management of the HQ, US Army Armament Materiel Readiness Command (ARRCOM). ARRCOM is the DOD Single Manager for Conventional Ammunition (SMCA). ADS is a powerful management tool for the SMCA as well as a significant accomplishment in the science of applied decision modeling and integrated model planning. This report describes the operational version of ADS developed for exercise PROUD SPIRIT/MOBEX-80.

ADS is also intended to assist SMCA management to understand the complex interdependencies involved in the distribution of ammunition from CONUS depots and production plants to the overseas theaters during mobilization. This is called the *wholesale supply system* because it addresses aggregate demand and supply by major areas of use. The SMCA must deal with many links in a complicated chain of responsibilities assigned to various other organizations outside the SMCA. For instance, most of the depots are under the Depot Systems Command (DESCOM), the transportation system is privately owned, the US ammunition ports are under the Military Traffic Management Command (MTMC) or the Navy, and so on. ADS simulates ammunition movement through links in the chain to highlight potential bottlenecks and the conditions of their occurence. These provide the basis for negotiations between SMCA sponsor and other agencies for solution.

The scope of the system can be inferred from the diagram in Figure 1. ADS consists of a variable-size network in which the nodes represent points of change of transportation modes and the resulting delays associated with the handling. The arcs represent the time to move between the nodes by a specified mode of transportation. The entities on the right introduce a demand function of time into the network. The entities on the left function to satisfy the demand in quantities required and in the time required. A measure of system performance or efficiency can be developed from the differences between supply, on the left, and demand, on the

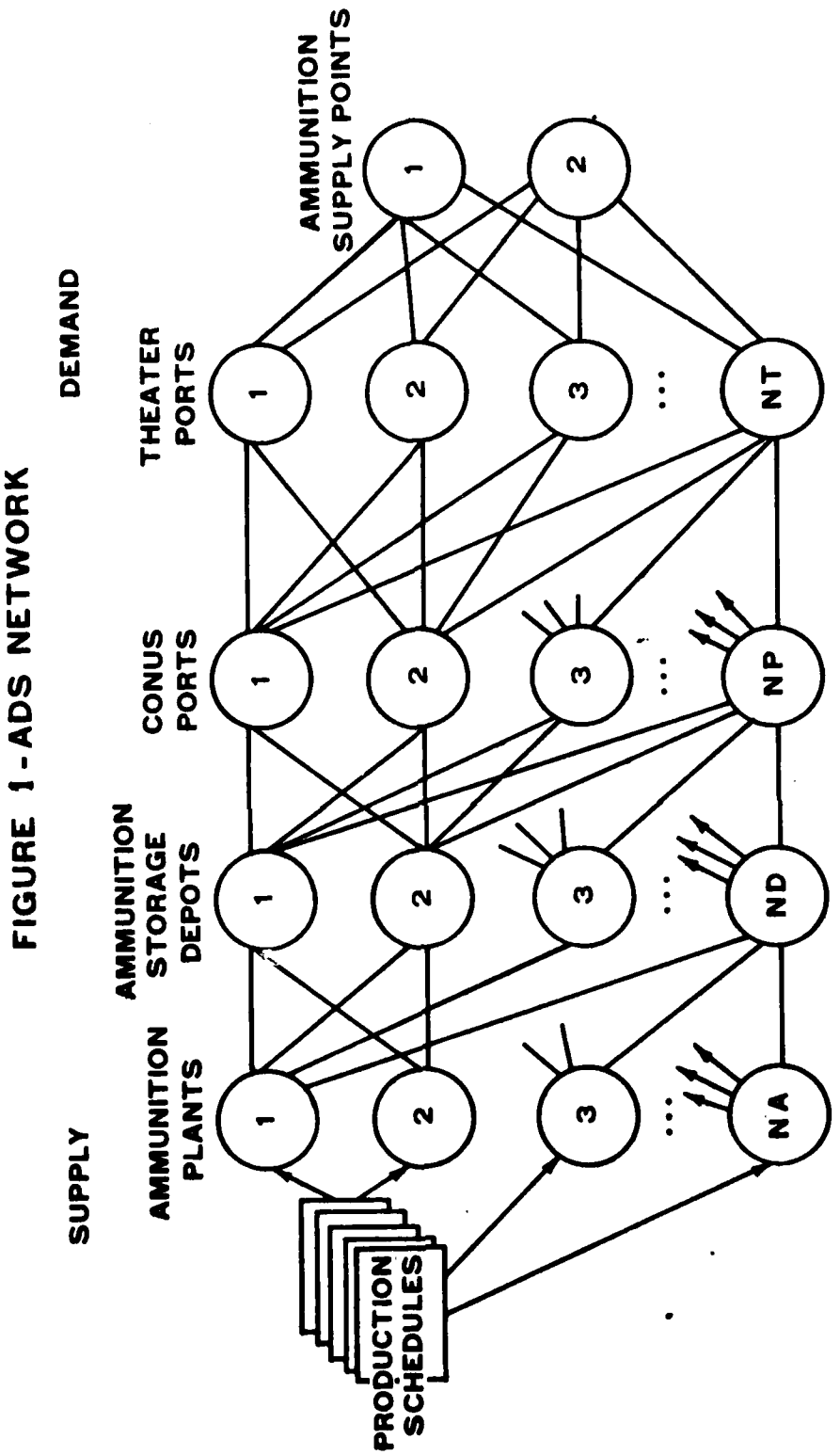


Figure 1 - ADS Network

right, for each point in time. The objective is to minimize the differences, subject to specified conditions placed upon the network.

An earlier version of the network using only depot and CONUS port nodes was addressed in a linear programming model formulation. The number of nodes, arcs and constraint equations was large. Optimal solutions were obtained using MPSX on an IBM 360/65, but the system users were not satisfied with the inflexibility of the model structure and its slow, costly solutions. This prompted the development of a model based upon heuristic rules for allocation of ammunition supply assets through the network to satisfy demand. Heuristic rules were developed from discussions with managers familiar with manual procedures used during mobilization exercises. Employment of these rules resulted in machine solutions in minutes instead of hours or days. Although no attempt was made to achieve optimum allocations, the users were satisfied because the solutions were feasible and better than those obtainable through manual procedures.

The model produces as an output a comprehensive, transaction file. From this file, other programs are run to prepare summaries and analyses for special information reports as required. The fast execution, ease of access and high availability of the ADS programs prompted the users to request more "what if" capabilities. In turn, this caused an evolution in model development to an on-line, more interactive display, edit, update and execution of the model in response to changing needs. Thus, the operational requirements of live mobilization exercises could be supported easily in real time. ADS produces 30-day allocation and movement plans several times a day. The operators iterate their changes until a satisfactory plan is achieved. Then special execution reports which serve as the basis for issue and shipment orders are requested.

Referring to the functional diagram of Figure 2, ADS operates from a master data file containing all item inventory data, requirements, port and depot capabilities and network data. The ADS model (ADM) is a stand-alone, batch-mode processor which furnishes selective reports for management review. An interactive capability is provided to display results selectively and/or to edit and change data for another run of ADM. During an operational exercise, the system is used as shown in Figure 2 to study "what if" questions and the effect of various changes. Once each day,

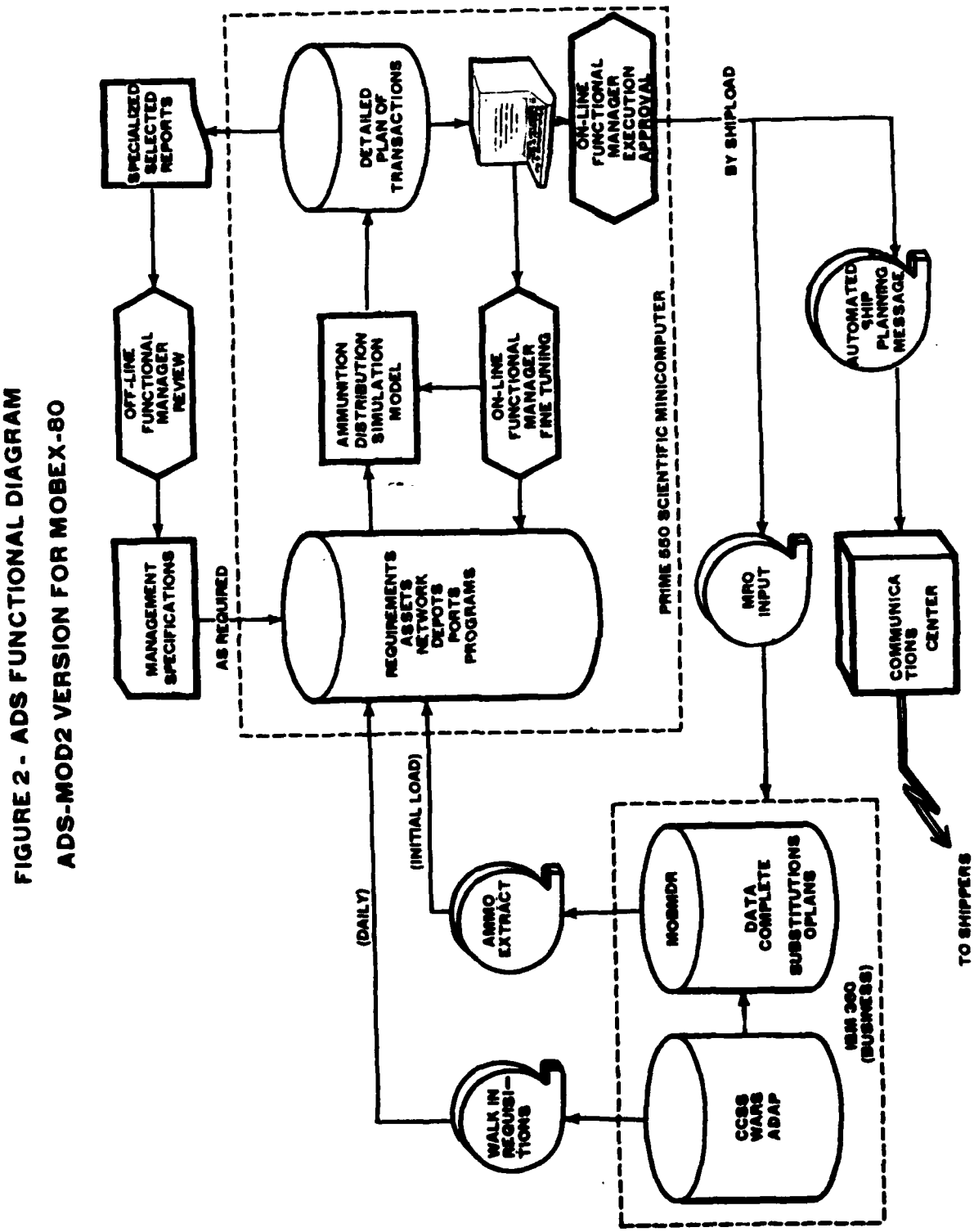


Figure 2 - ADS Functional Diagram

it is run for the "plan-of-record" and saved in an audit trail mechanism, thus adding a time dimension to the diagram.

Threat analyses performed by responsible Army organizations result in projected weapon deployment densities and firing rates for various theaters and contingencies. Projections of planned combat consumption are compared with actual assets on-hand and due-ins to estimate the amount of ammunition that must be shipped from CONUS to meet the demand. Amounts are summed up by item and by time period and then the in-theater transit times are subtracted to translate the requirement function to the ports of debarkation (POD). ADS converts the so-called planned requirements into a large set of MILSTRIP requisitions complete with address codes, user codes, and required delivery dates (RDD's). (MILSTRIP is the acronym for the standard military system for requisitioning and priorities.) Any unplanned requirements received from overseas units during the MOBEX are added to the top of the batch for priority processing as received (these are called "walk-in" requisitions.) This becomes the input demand function discussed in connection with the right side of Figure 1. It should be noted that many such demand functions can be analyzed simultaneously with ADS, including those for different theaters.

Consideration can also be given by ADS to the problems associated with the so-called "complete round." The "complete round" is defined in functional terms as the complete and necessary assemblage of separate-issue items needed to fire a given weapon to satisfy a given mission objective. In artillery, a complete round consists of the projectile, fuse, propelling charge(s), igniters, flash reducers, etc. The resultant complete round configuration is conveniently referred to by its principal component, i.e., the projectile. Combinations of these components yield configurations which can be fired from different weapons to achieve various desired effects. It is easy to see that a large number of combinations are possible. Not all combinations can be fired from every weapon, nor would they necessarily yield desirable firing effects. For given weapons and missions, certain combinations are preferred. Within the combinations, functional substitutions are possible, yielding altered performance.

The ADS model must satisfy certain objectives when allocating supplies of components to requirements. First, it is desirable to load ocean cargo ships with a balanced load

of components. Frequently, separate-issue components are stored at different geographic locations. ADS converts all pre-planned OPLANS requirements into standard requisitions in MILSTRIP format. These requisitions are combined with "walk-in" requisitions from the theater and are sorted according to priority criterion specified by the sponsors. Usually, the latter is selected by the theater required due date (RDD). The allocation for distribution is based upon this sequence and upon complete round configurations required. When the number of pallet loads of each component to be shipped is determined, ADS attempts to schedule their arrivals at receiving ports such that the ships can be loaded with components in such a proportion as required for complete round configurations. This imposes a considerable operational problem on the ports to sort incoming rail and truck loads so that they may be loaded to the ships in the proper sequence. Work on this problem is being coordinated with the Military Traffic Management Command because port operations are beyond the scope of ADS.

ADS can be used to assess plans. ADS can be described as a type of "logistic wargaming," in which the operations of the logistics system under various mobilizations plans is modeled and studied. ADS also has the capability to operate in two slightly different modes: one is the requirements planning mode and the other is the operational mode.

A given plan is specified by providing a requirement function, an asset position, a list of ports and depots with their associated capabilities and the system transportation parameters. In the requirements planning mode, the assets, locations and/or capabilities of depots or ports can be released singly from specified values and allowed to "float" or to seek values which correspond to the operation of the system. Thus, ADS can answer questions such as -- "How many assets are required to ...?", "How much depot outloading capability is needed to ...?" and "How many berths should be planned for at a given port?" ADS can also be used to estimate the number of boxcars, trucks and ships which might be required to execute a given plan.

ADS has an operational capability. Through the use of the interactive capabilities of ARRCOM's PRIME mini-computer system, a semi-interactive set of process modules, linked together by a powerful edit/operating control system, was developed which is very responsive to user needs. With the interactive capability to modify data files, to control fast batch runs and to display selected model outputs, ADS is a valuable tool to assist in mobilization exercises involving

Class V materiel (ammunition).

At various stages in its development, ADS was used to assist in distribution planning. This effort is representative of the manner in which the development process, itself, led to additional and useful applications. Some of these applications will be summarized to show how the process provided valuable "lessons learned." These lessons were, in turn, used to redirect modeling efforts so that the system would be of the greatest benefit to the SMCA.

Recently, there has been much information printed about the Rapid Deployment Joint Task Force (RDJTF). This is a Joint Chiefs of Staff (JCS) responsibility administered by the Joint Deployment Agency (JDA) at Macdill AFB. The JDA plans logistics support for various Army, Navy, Air Force and Marine deployment contingencies ranging from natural civil disasters to armed hostilities almost anywhere in the world. Some of the contingency plans require the deployment of predetermined units with their basic ammunition loads. ADS, because of its flexibility and responsiveness, is an ideal system for planning distribution shipments for the portion of the basic load in wholesale stock and for the resupply of ammunition. Within a very short time after the deployment conditions are specified, ADS can prepare a distribution plan for analysis and/or execution by the ARRCOM SMCA managers. The use of ADS in several exercises has pointed out that the automation of requirements planning should be expanded.

Another significant application of ADS was in the system assessment of ammunition depot outloading capabilities. In this study, each depot was requested to assess its current ammunition outloading capability and also its projected capabilities in the event of general mobilization. ADS proved invaluable in evaluating such assessments because it could simulate the role and highlight the shortcomings of each depot in its mobilization effort. The results were routed back to the depot managers, affording them the opportunity to re-evaluate their mobilization capabilities expansion plans.

ADS is also used by SMCA management in the determination of the best locations to store assets coming off production lines. The purpose of this effort is to determine the locations from which distribution made in response to a given statement of requirements would yield minimum shortfalls in supply. It was learned that it is sufficient to aggregate the requirement tonnage across all items and treat it as a

single, continuously-divisible commodity. When the proper tonnages are backward-allocated to the supply depots by ADS to best satisfy the requirement, refinements by item can be made. This is a very simple process in ADS and yields excellent results.

The system dynamics of ADS may be clarified by reference to Figure 3. This figure shows a graphical analysis of ADS results in which all items are aggregated by tons to display how ADS responds to a given requirements function. The requirement function is plotted cumulatively along with the responses of three variables in the system -- the depot deliveries, the CONUS port arrivals and the theater port arrivals. In this example, ADS is responding to a preplanned requirement which explains why the depot shipment function leads the requirement function. The port arrival function lags the requirement function to account for rail shipment time. In this version of the model, the availability of boxcars was not limited. In reality, such availability may be a serious consideration, given the reports of the state of the US rail system. ADS can print a report indicating the number of boxcars loaded at depots each day and the number of boxcars being utilized throughout the entire system each day. These figures peak at alarmingly high values in some of the plans studied.

The cumulative arrival of ammunition in the theater is also shown in Figure 3. The large time delay to achieve a given requirement results from cumulative delays in various parts of the distribution system and in the nonavailability of assets at the proper depot locations. The largest portion of the delay is due to insufficient port outloading capacity which, in the model, is proportional to the number of available ship berths. In this version of the model, boxcars arriving at the port must queue up to be offloaded. This is unrealistic, and in the next model enhancement, the shipment from the depot would be delayed if the boxcar cannot be offloaded to a ship within five days of arrival at the port facility. The effect of this constraint is expected to shift the depot shipment function further to the right to absorb some of the delay, but other complex interactions could occur which could reduce the slope (movement rate) of the system shipment functions as well.

ADS interfaces with the LOGNET system. An interface capability was developed in which ADS will provide, upon demand, specific, preformatted answers to a set of standard questions. These questions relate to the current status of specific ammunition items in the system.

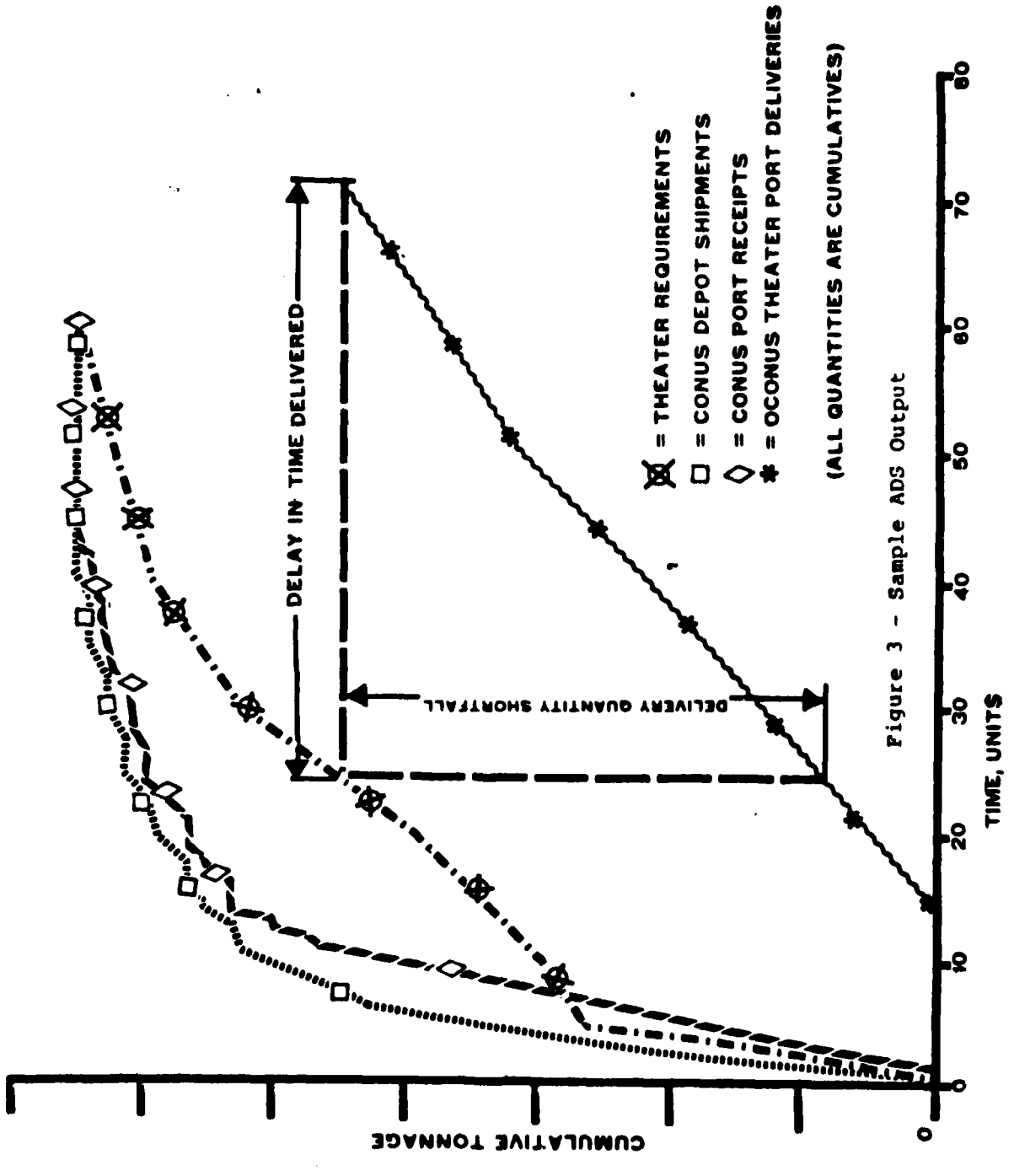


Figure 3 - Sample ADS Output

The remainder of the report is concerned with each of the ADS subsystems -- the data base extract and MIDAS files, the pre-processor, the distribution planning model, the report generator and the execution/approval edit process.

2. Overview.

a. General. As shown in Figure 4 - Detailed ADS Functional Diagram, the heart of ADS is the Distribution Simulation Model. The model processes and analyzes input information and produces reports, shipping orders, and information for source file amendment. The system is designed to permit interactive and/or manual control by functional managers for matters which require their review, interaction and/or approval. In general, the system is run daily during an operation with the input files updated by the results of previous runs and from information added from outside of the system. Depending upon the nature of a given run of the model, various assumptions, limitations, and constraints are made or imposed upon the system and its operating parameters.

b. Source Files/Preprocessor. In general, all of the source asset and parameter files are stored in the DARCOM Commodity Command Standard System (CCSS) computer which does not directly interface the PRIME computer. Such source files are written in formats which are not handled efficiently in the model. The model is written in FORTRAN and needs to treat requisitions, ports, depots, etc. as simple integer subscripts. Therefore, the operating parameters and asset source files are transferred to tape and are entered into the preprocessor which, in turn, creates intermediate work files. The latter contain pre-planned requirements, walk-in requisitions, transportation network configurations, complete round and substitution information, depot out-load capabilities, assets, etc. in FORTRAN format for efficient model processing. The reports generator converts the model output from internal FORTRAN notation to the original, "real-world" format.

The intermediate files, the preprocessor, and some of the source files are designed to be up-dated automatically or by interactive programs as the model is run through successive iterations.

c. Distribution Simulation Model. In its most general sense, the purpose of the ADS Distribution Simulation Model is twofold. First, during peace time, it may be used to simulate all aspects of the very complex wartime system of distributing conventional ammunition to various retail users throughout the world. Secondly, it is anticipated that

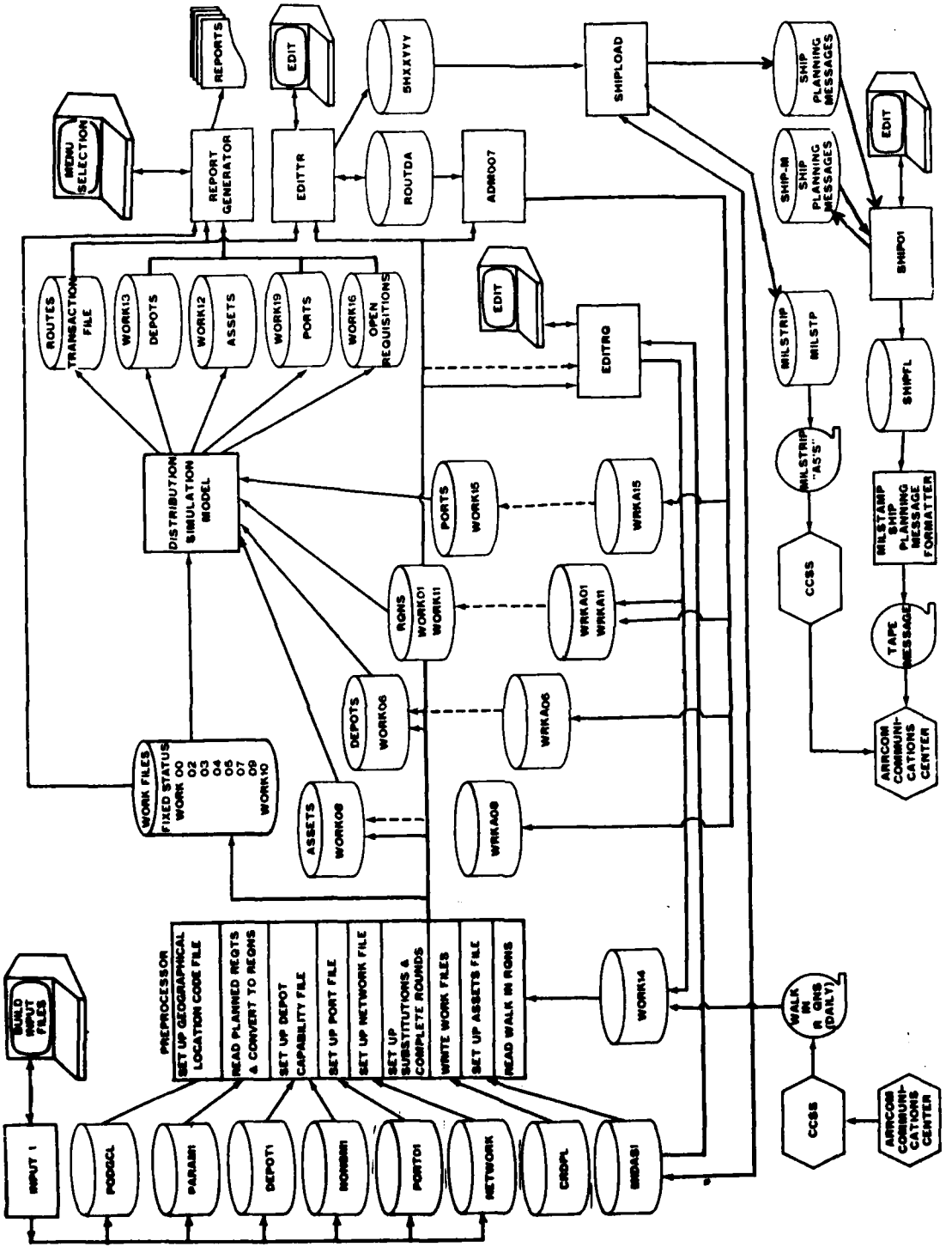


Figure 4 - Detailed ADS Functional Diagram.

during periods of actual conflict, it may be used to efficiently guide the delivery of ammunition to augment conventional, manual methods. The model is designed to be sufficiently flexible that it can reflect changing scenarios. ADS will primarily assist in the transition from peacetime to mobilization.

The intermediate files created by the preprocessor furnish all of the data needed during a model run. Theater needs are presented in the form of pre-planned requirements or in the form of walk-in requisitions which reflect the day-to-day theater requirements after hostilities begin. During a run, the model attempts to satisfy all requisitions while simultaneously complying with the parameters, constraints, and assets contained in the input files. Allowable substitutions are selected as may be required. Upon completion of a run, a number of output files are created for further processing in the system.

d. Reports Generation. Upon either a selected or routine basis, the functional managers are supplied with status and other reports concerning the progress of the system. These reports are prepared by a program which utilizes the model output files with a correlated interface to the intermediate work files. A list of the standard reports includes the depot outloading schedule, depot lift capability posture, ship manifests, item readiness analysis, item shortfalls, theater shortfalls, Service shortfalls, depot outloading by Service summary, port receipts schedule, depot asset posture, port arrival workload profile, item stratification by tons shipped, and analysis of late shipments.

e. Ship Planning/Execution. Upon the completion of a run, the model permits functional managers an interactive review, edit and approval capability. Once this capability has been exercised, the system prepares appropriate shipping documents, corrects asset and related files for items shipped, and initializes itself for handling unfilled and/or unapproved requisitions during a following iteration.

Once a functional manager approves a shipment, the system prepares all documents needed for shipping the item(s) from specified depots, the selection of the approved transportation means, proper port designation, the ship loading orders, etc.; all of which are tied to the originating requisition. The functional managers, the

original requestor, and other interested individuals are advised of the shipment via reports and structured messages.

One output file, the open requisition file, is produced which the the functional manager may use to determine why a requisition was not completely filled (open requisition). The functional manager is enabled to take appropriate steps, through an interactive control program, to correct or otherwise analyze the circumstance. It may, thus, be possible to identify errors in the input data or to identify critical items which require priority.

For day-to-day operations, the residual assets, the depot lift capability, unapproved or unfilled requisitions, modified network configurations, etc. are utilized as input for the next iteration of the model.

3. Assumptions/Heuristic Rules

a. General. In order to establish a practical operational environment within which the ADS model can be most effective in meeting the needs of an exercise, the system must be understood and defined in terms of accepted assumptions and the model must perform in accordance with stated rules. These are detailed in the following sub-paragraphs.

b. Assumptions. In order that the goal of a particular exercise may be achieved and to add proper perspective to the interpretation of the output reports which are produced, the user must be aware of which limitations have been placed upon the system for a particular run of the model. These assumptions may be refined, added to and/or amended depending upon the degree of enhancement desired. The following are the assumptions which were made during MOBEX-80:

There may be ten substitute items per item. These are selected in the order encountered from the MOBMDR extract from CCSS. There is no differentiation made as to function. Substitutions are only made for end items, not for complete rounds.

Items selected from the MOBMDR are identified by National Item Identification Number (NIIN). Groups of

related NIIN's are identified by the DoD Ammunition Code (DODAC). The model handles individual items at the DODAC level.

Allowable complete round configurations and substitutions are a function of theater and intended use. Two files are available -- one for Army planned use and the other for SMCA recommended use.

Transportation data for a DODAC is taken from an item at the subordinate NIIN level.

Although transportation data for unit items, unit packs and pallet units is available, only the pallet unit data (weight, volume, quantity) is used. All shipments are made in pallet load multiples.

Only weight constraints are considered in the ADS distribution shipment plans. No constraints are applied for volume, net explosive weight, hazard classes, or mixed item shipments.

Planned requirement quantities are given by plan code, item, service, theater, and by time period. The time periods are five (5) days each, and up to ninety-nine (99) such time increments may be selected.

Assets available for model shipment are summed over related NIINs and are presented at the DODAC level.

All NIINs within the allowable set of condition codes and related to a given DODAC are identified by storage location, the DODAC, and the applicable ownership/purpose codes.

In walk-in requisitions, only the requested item is shipped. No complete round break-out is performed.

The ordering of depots, ports and destinations for allocation logic processing in the model is dictated by their order of appearance in the network file.

The model processes requisitions in the order given. If the order as given by the pre-processor is altered before the model is run, complete round shipments may be affected adversely.

The system may be started and stopped on any day relative to a starting D-day, identified as "Day 1." Many standard reports are limited to runs over a period from 1 to 180 days.

Only one depot outloading capability for each depot can be accomodated for each day. An aggregation of both rail and truck capabilities is assumed.

No depot processing time is assumed between the source-selection/depot shipment decision and the time the shipment occurs. Also, all shipments are assumed to occur on one day.

Each CONUS port processes ship loading using common, fixed parameters for ship loading time and ship weight capacity.

Non-SM items requiring depot outloading are pre-allocated from the stated depot outloading capabilities before the model is run.

Requisitions for the same item going to the same destination at the same time period are not aggregated. This causes overshipments if small quantities are required because of rounding-up of shipment quantities to full pallets.

c. Heuristic Rules. ADS was formulated on heuristic rules for allocation of ammunition supply assets through the transportation network to satisfy demand. The heuristic rules were developed from discussions with managers familiar with manual procedures used during previous mobilization exercises. The following is a list of such rules utilized in ADS.

Requirements are processed sequentially from a pre-ordered list. The ordering of the list reflects assignment of priorities according to a given criteria. Some of the criteria are: theaters, services, required delivery dates (RDD), issue priority designator, item designation, etc. The user of the system must specify a priority ordering or the system will default to ordering based upon earliest RDD.

Requirements with required delivery dates greater than the established horizon for a given study (in most cases, 180 days) are set equal to the end of the horizon (i.e. 180 days). For planning purposes, the transition from peacetime to war is 180 days. After this time, it is assumed that depot supplies will be mostly exhausted, and consumption will be supported by production facilities and by distribution planning systems other than ADS.

Depot shipments are timed so that arrivals in the theater meet the requisition required delivery date (RDD) or sooner. If the RDD cannot be met because of distribution bottlenecks, an earlier shipment date will be sought. If no earlier date can be found, the earliest possible late shipment date will be found, and the reason for the resultant late delivery date will be noted. Late requisitions have priority over requisitions with later original RDD's.

If it is determined that assets are available within the system, all depots are searched to determine the location of these assets prior to making a depot shipment decision.

If an item specified on a requisition is not available in the system, an appropriate substitution is sought from a pre-selected, ordered set of substitutions for the requested item.

When two or more depots can meet the same delivery time at a selected port, the most distant depot will be selected. This tends to utilize the earliest lift capability and preserve the later lift capability to respond to priority requirements.

If a requisition is for a quantity which is not equal to a multiple of a pallet equivalent, the quantity required is increased to the next incremental pallet equivalent.

Shipments of separate-issue items reflect the objective of a balance of complete round usage in a given theater for planned requirements. No complete round balancing is performed for walk-in requisitions.

If the remaining assets at a given depot are less than an equivalent unit pallet, no shipments are allowed for that item.

A record of remaining outloading lift capability in short tons per day is maintained day-by-day for each depot. Shipments from a depot on a given day are limited to equivalent unit pallets weighing less than the available lift capability.

Processing of a requisition is terminated when the required quantity is shipped, when assets (primary and substitute) are depleted or when the lift capability is exhausted at applicable depots.

If the transit time from depot to port is one day or less, motor freight will be selected. For transit times greater than one day, rail freight is selected. (Other rules are available in the "Logistics Handbook for Strategic Mobility Planning," MTMC PAM 700-1, Feb 1980, a Military Traffic Management Command publication.)

Each overseas port is assigned an exclusive set of geographic areas which are designated by the geographic codes currently in use. A particular overseas port is considered to be the intermediate destination for shipments against requisitions referencing the assigned geographic codes as the location of the requisitioner.

CONUS ports serving an overseas port are selected on the basis of sailing time. In cases where port capacity is limited, the CONUS port with the next shortest sailing time to the overseas port is selected.

When CONUS port constraints are invoked, they are stated in terms of the number of berths and the loading time. Currently, the loading time is five (5) days. No holding and sorting of cargo at ports is considered, although it is required that all cargo for the shipment arrive at least one day prior to loading.

Shiploads are defined by imposing a minimum and maximum tonnage. Currently, 8,500 and 8,750 short tons, respectively, are used.

Ship destination is fixed by the required destination of the first requisition for which shipments are processed.

Ship berthing schedules are determined by the required delivery date of the first requisition for which shipments are processed.

If a ship berthing schedule is specified, it takes precedence over scheduling by the required delivery date.

If, for a given requisition, no ship is scheduled for the required destination, a ship will be scheduled at a port and time with the shortest sailing time from an available port to the required destination and delivery date.

Subsequent shipments for requisitions to destinations will be made in ships already sheduled for those destinations within the specified time required.

Incomplete shiploads (normally occurring when there is insufficient demand originating at a particular location) are flagged for action by the functional managers.

Termination of the overall processing of transactions in the model occurs when all shipping activity has ceased.

Shipment will be made on the latest possible day consistent with ship sailing schedules and the requisition RDD.

4. Data Base Development

a. General. The Data Base Development for ADS consists of obtaining data from the Mobilization Master Data Record (MOBMDR), building off-line files to initialize the system, and the running of the preprocessor to set up the files for the distribution module. The Distribution Module operates on data converted from real-world formats to formats for efficient and fast internal processing. The reports generator re-converts results back into real-world format.

b. MOBMDR Data. The MOBMDR data base, developed and maintained by ARRCOM's Directorates of Defense Ammunition Supply (DRSAR-DSP) and Management Information Systems (DRSAR-MSA), Defense Ammunition Supply is located on ARRCOM's CCSS computer. It contains information for each end item, such as its assets (quantity, location, condition code, etc.), transportation data (weight, volume, quantity per pallet, hazard class, etc.), substitution items, and requirements.

The first step in establishing a data base for processing through the ADS distribution module is the extracting of required information from the MOBMDR file. This information is loaded onto a tape, which, in turn, is loaded into a file on the PRIME 550 computer system. Then several programs are executed, and the complete round data file (CRDPL) and the item file (MIDASI) are built. These two files are used as input to the preprocessor program which is discussed below.

The procedure to extract and process data from the MOBMDR is found in APPENDIX A. The file formats are found in Volume 2.

c. Initial off-line files. In order to establish the scenario in which the ADS distribution module is to be exercised, the functional user is required to build the following files which initialize/describe the system:

PARAM1 Parameter File
DEPOT1 Depot File
NONSM1 Non-SM Lift Capability Reduction
PORT01 Port File
NETM81 Network File

The parameter file identifies such items as the period of time under consideration, minimum and maximum ship weight, plans to consider, etc. The depot file contains the lift capability by day for each depot location. The non-SM lift capability reduction file contains the depot lift capability by day for non-SM items, and which is subsequently subtracted from the depot file to yield the lift capability used by the ADS distribution module. The port file contains the maximum number of berths for each port. Finally, the network file contains the transportation mode and transit times between each and every pair of sending and receiving locations.

When these files are built and the MIDASI and CRDPL files are built (see above), the files are ready for the preprocessor as described in the next section. File formats for these files are found in Volume 2.

d. Preprocessor. The main purpose of the preprocessor is to take all available information, edit it, and reformat it into the necessary work files for the Distribution module. Input files to the preprocessor are those discussed in part (b) and (c) above, along with the file called WORK14 which contains the walk-in requisitions. These requisitions are received by tape from the Ammunition Demand Automated Processing (ADAP) CCSS system in an extended requisition format. These requisitions are converted to a format required by ADS and filed into WORK14. (ADAP is currently designed for peacetime processing of requisitions ADS is for mobilization.)

Figure 5, The Preprocessor Functional Diagram, displays the input and output files along with a short description of the computation involved. The preprocessor generates output files WORK00 thru WORK11. The files COMO, EX$RPT and EXCEPTIONS are created for double checking purposes only. COMO is used to determine the reason when a model run is terminated abnormally. EX$RPT lists any items for which insufficient or erroneous data is given and EXCEPTIONS is the same file after being sorted by DODAC. EXCEPTIONS is used by DRSAR-DSP to correct, update, or otherwise modify the input files.

The work files generated are:

WORK00 Model Parameter File
WORK01 Requirements/Requisitions File (Model format)
WORK02 Complete Round - Component File
WORK03 Complete Round - Usages File
WORK04 Item Information File
WORK05 Substitution File
WORK06 Depot Lift Capability File
WORK07 Depot Information File
WORK08 Asset File
WORK09 Port Information File
WORK10 Transportation Network File
WORK11 Requisitions (MILSTRIP-like format)

The running of the preprocessor is shown in APPENDIX A, and the file formats of all input and output files are shown in Volume 2.

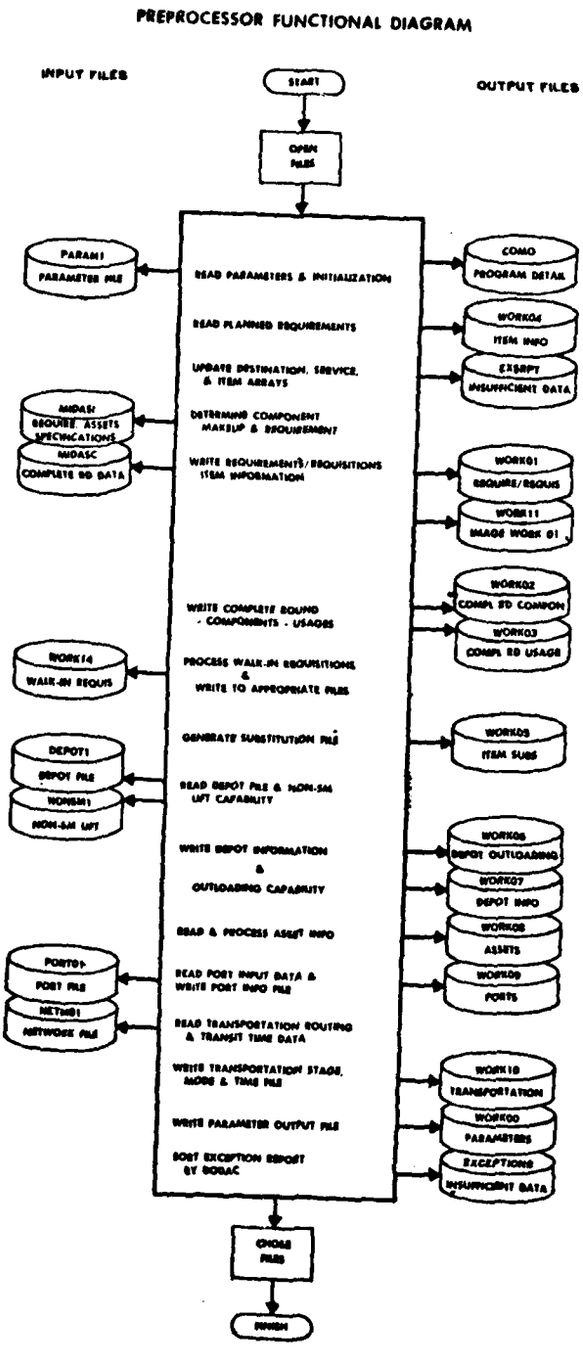


Figure 5 - Preprocessor Functional Diagram.

5. Distribution Module

a. General. The Distribution Module was formulated on a set of heuristic rules for allocation of ammunition supply assets through the transportation network to satisfy demand. The intermediate work files generated by the preprocessor are used as input to the Distribution Module. The Distribution Module produces a detailed transaction file, along with files showing the status of the system after the module completes execution. The status shows such things as remaining assets, remaining depot lift capability, ship status, port status, and a summary item analysis.

Prior to the execution of the Distribution Module, the coded requisition file (WORK01) must be sorted in the sequence of processing priority. Currently these records are sorted by increasing required delivery date (RDD) however, other priorities might occasionally be considered by the user (e.g. service, destination, plan, etc.).

An overview of the Distribution Module is shown in Figure 6. Appendix A contains discussion on how to run the model. Volume 2 contains the source programs for the constrained and unconstrained model, phantom and command files, logic diagrams, and format listings for all input and output files.

b. Output Files. The output files of the Distribution Module are briefly described below:

The ROUTES file contains all the transactions generated by the model run. Each transaction contains all data necessary to track a shipment of an item from the depot to its final destination. This information contains such elements as item identification, amount shipped, depot location, shipping and receiving port data, final destination, times for each stage, etc.

The WORK12 output file contains the remaining assets and is in the same format as the initial asset input file WORK08.

DISTRIBUTION MODULE FUNCTIONAL DIAGRAM

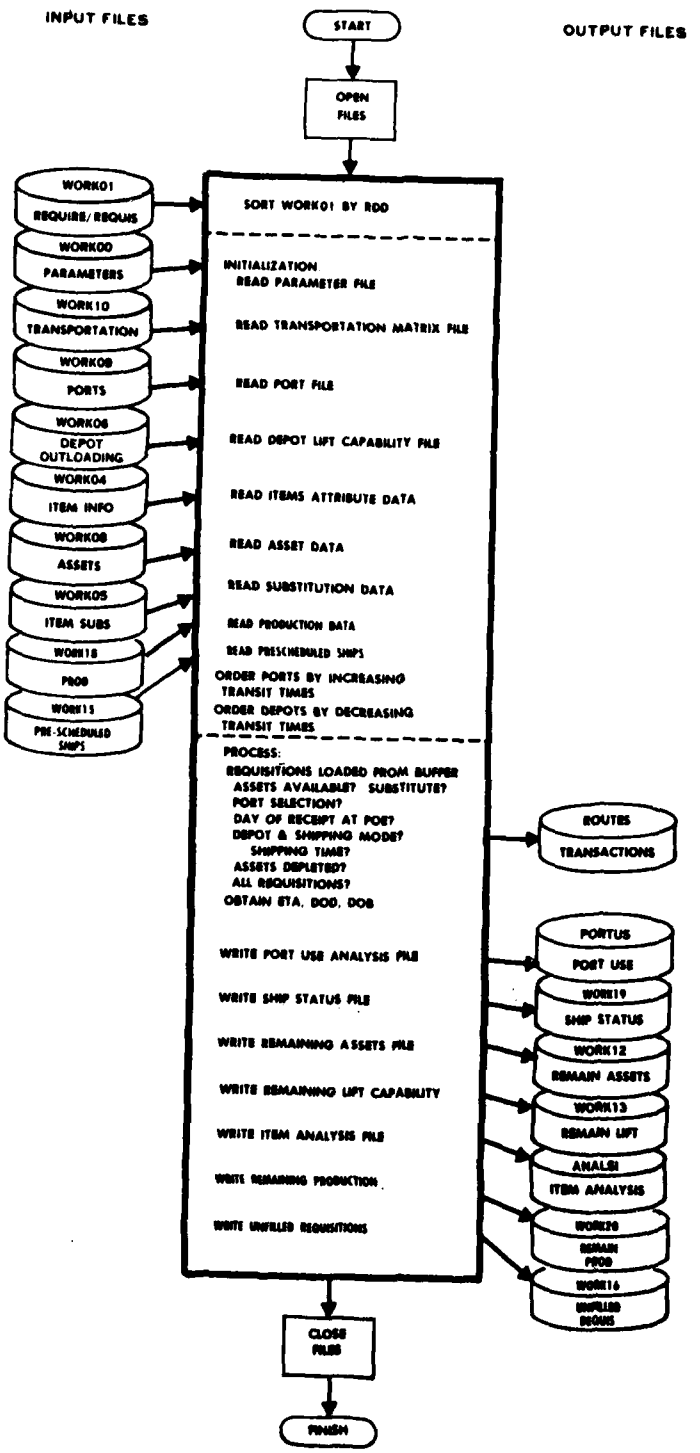


Figure 6 - Distribution Module Functional Diagram.

The WORK13 output file contains the remaining depot lift capability file and is in the same format as the initial lift capability input file WORK06.

A WORK20 output file contains the remaining production capability and is in the same format as the initial production capability input file WORK18.

A ship status output file, WORK19, specifies each ship by port, berth, and ship number. Each ship's cargo is specified by weight, volume and explosive weight, date on berth, estimated port departure time, computed destination arrival time, and the maximum and minimum RDD's of the requisitions loaded.

A summary item analysis output file, ANALS1, contains the total quantity requested, total quantity shipped, beginning assets by equivalent pallet quantities, and ending assets by equivalent pallet quantities for each owner/requestor and service combination.

c. Sequence of Operation. This section discusses the internal workings of the Distribution Module with respect to default values used and the order in which events are processed.

The following program defaults are noted:

If the item description file, WORK04, does not contain all the required shipping data, the shipping data contained in the record is displayed in the audit file on screen by item sequence number and DODAC. The missing values are then set to default values:

Unit weight	=	0.00050 stons/unit (1 lb.)
Unit volume	=	0.00025 mtons/unit (0.01 cu ft)
Pallet count	=	one (1) item/pallet

If the record containing lift capability for a given depot and day is missing from the lift capability file, WORK06, the lift capability for that depot on that day defaults to zero (0) stons/day.

If the asset record for a given time, service and location is missing from the asset file, WORK08, the assets for that item and service at that depot default to zero (0) quantity.

If a production file (WORK18) exists it is read. If it does not exist all production defaults to zero (0). Records contain identity, service, item, and quantity available at a given time. If no record exists for the above combination zero production is defined.

If a WORK15 file exists it is read. The existance of a WORK15 indicates that ships may be pre-scheduled. The records of WORK15 contain the ship parameters of the pre-scheduled ships i.e. by POE and Ship Number, the berth assignment, destination (POD), current load (in STONS, MTONS, and explosive), ETA, DOD, DOB, and a flag indicating whether that particular ship is available for further loading. Ship numbering starts at the number following the maximum ship number read for each POE. If a WORK15 fle does not exist all ship parameter arrays are set to the null state and ship numbering begins at one (1). The intermediate files generated by the preprocessor (WORK00 through WORK10 and in addition WORK15 and WORK18 if they exist) are read, and their contents are loaded into the appropriate arrays and words. In addition to loading asset and production arrays with the number of individual items for each service and location, integral pallet quantities are computed for each item, service and in the case of production by time. The combination of beginning inventory and production availability describe the potential assets for the location, service, item combination.

In order to provide the desired priority in selection of ports (POE) and depots, two ancillary arrays, PTIME and DTIME, are generated. These arrays contain the port and depot sequence numbers in the order of desired selection for the required destination. The ports (POE's) are ordered by increasing sailing time to each specified port of debarkation (POD). The depots are ordered by decreasing rail shipment time to each POE.

The requisitions are loaded into a buffer from the the WORK01 file. As each requisition is read from the buffer, the following sequence is followed:

Determine if potential assets (beginning inventory and potential production) exist in the system at any location in a quantity equal than the equivalent on one pallet or greater.

If no potential assets are found for the requested primary item, then a substitute item is selected and the above is repeated. Substitutions are keyed to the primary item and maintained in the desired order of selection.

If, after searching all depots, no potential assets are found for the primary item or any of its substitutes, the next requisition is selected.

If there are potential assets than can be applied to the requisition, a POE is selected. The selected POE is searched to determine if a ship is in the process of loading which (a) is assigned to the required destinatin (i.e. POD) and (b) whose ETA will accomodate the allowable receiving window for the requisition in question (i.e. how early or late with respect to the RDD is receipt allowed). If no ship is found in this port, then the next port in the priority sequence is examined (Note: the port file must be ordered in the desired priority). If no available ships are found in any of the POE's, then a new ship is assigned.

The POE with the shortest sailing time to the specified POD is selected when assigning a new ship. If the ports are unconstrained, the next ship number for this POE is assigned with the specified POD as its destination, and the ship parameters are initialized.

For constrained ports, the availability of a berth with a loading window that will accomodate the specified required delivery date (RDD) is determined. If a berth is available, the next ship number, etc. is selected. If a berth is not available, the next priority port, etc. is selected. If no port is available, the conditions are relaxed by incrementing the RDD by one day, and the selection process is repeated. If the day on berth (DOB) corresponding to the berth and loading window exceeds the tolerance for

late receipt for this requisition the next requisition is selected for processing.

For the selected POE, a target day of receipt (DOR) of material at the port is computed. This day is set equal to the day preceeding the DOB of the assigned ship. If DOR preceeds the first day of the planning period, it is set equal to the first day of the planning period. Considering the DOR at the POE, the depots are addressed in order of decreasing rail shipment time to each POE.

If surface transport is selected for shipment between the POE and POD, rail transportation from the depot is attempted first and if no shipments can be made in this mode then motor transportation is attempted. For air shipment betwen POE and POD only motor shipment from the depot are allowed.

If the rail transit mode is selected and the transit time exceeds a preselected limit, it is assumed that available rail transportation link between this depot and the POE does not exist, and motot transportation is examined.

If a rail transportation link exists, a shipping day (DOS) is computed based on the target receipt day at the POE and the transportation time. If this day is earlier, than the first day of the planning period, motor transportation is examined, and the same tests are applied. If either transportation link cannot be established or the shipping day is too early, the next depot in order is addressed.

When assets are available, either inventory or production for the period addressed, and a viable shipping day can be established for a depot, the current state of lift capability at the depot on the shipping day is determined. If there is insufficient lift capability at the depot on the shipping day, two possibilities can occur depending upon the transportation mode being considered. If rail transportation is currently being considered, motor transportation with a recalculation of the shipping day will be attempted. If motor transportation is currently being considered, the next depot will be addressed.

The numerical minimum of the palletized lift capability, assets, remaining ship cargo space, and remaining

requisition quantity is then determined. If this minimum is greater than zero (0), it is defined as the shipment quantity. Shipment weight, volume, and explosive weight are computed using the shipping data and the shipment quantity for the items considered. Lift capability, ship cargo space, depot assets, system assets and requisition are updated using shipment quantity and weight where applicable.

A transaction record is written to the intermediate transaction file, ROUTEP. This file contains: locations (depot, POE, POD), ship number, berth used, times (ETA, DOD, DOB, DOR, DOS), item requested, item shipped, owner/requester, plan, requisition number, amount shipped (quantity, STONS, MTONS, N.E.W.) and the transportation mode for CONUS and transocean. A running total of the amount shipped by item and service owner is maintained.

The ship being loaded is examined to determine if the minimum cargo weight has been exceeded. If it has, the depot search is terminated and two possible conditions are investigated. If the requisition has been satisfied, the next requisition is read for processing, or if the system assets have been exhausted, the next substitute is considered. After action indicated by either of these two tests or in the case where no action is required, the ports are searched for a ship which is in the loading process or a newly assigned ship.

If:

(a) All depots have been examined and

(b) The requisition has not been filled and

(c) System assets exist and

(d) Transportation linkages exist between the POE and one or more depots and

(e) The ship is not yet full,

the target receiving time (DOR) at the POE is decremented by one day. This process is repeated until the target receiving day equals the earliest day of the planning period. If the target receiving day has been reduced to its minimum limit and the requisition is still not satisfied as specified above, one day is added to the RDD for this requisition and the process is repeated.

The process of depot search continues until the requisition is satisfied, assets (primary and substitutions) are depleted or the adjusted RDD exceeds a predefined limit on the DOR. A condition may exist where no transportation linkage is available between depots with assets and the POE. When this occurs, assets are first drawn from the depots with transportation linkages. Then another POE and ship is selected for loading the remainder of the requisition.

When all requisitions have been processed, the DOB, DOD and ETA (RDD) in the transaction file, ROUTEP, is corrected to show the latest computed values for these variables corresponding to each ship. A new transaction file, ROUTES, is then written.

6. Reports Generation

a. Introduction. The Ammunition Distribution System (ADS) contains information concerning complete round, item substitutes, item assets, item parameters, transportation network, ship loading criteria, depot capabilities, port capabilities, and item requirements, and determines detailed transactions of potential shipments. The ADS Reports Generator program has captured much of this information in formatted reports. Additional reports are also made available as their need arise.

b. Reports Generator Program. The reports program is an interactive program with which the functional user can select the required reports. Figure 7 displays an overview of the reports generator program along with the required input files and the subsequent output files. In preparation for generating reports, the transaction file (ROUTES) is sorted four ways as follows: 1) by depot, shipping time and item, 2) by port, ship, and item, 3) by port, depot, and shipping time, and 4)by port, arrival time, and item. The reports generator program is then executed which asks the user which reports are required and the user then responds by typing the corresonding character(s) for the reports(s) desired.

Operational instructions for the reports generator are contained in Appendix A of this report. The source program, command files, phantom file and input/ output format listings are found in the Programmer's Manual, Volume 2.

The following is a list of the type of report and a description of the information furnished:

Type of Reports	Description
(1) Depot Loading Schedule DSCHUL	This report contains the item amount, in terms of quantity and short tons, loaded from each depot by day. Also furnished is the port arrival time and the port of embarkation (POE).
(2) Depot Lift Capability Posture Report DLIFTP	This report contains the lift capability by depot and by day for both before and after ADS allocation.

Figure 7

REPORTS GENERATOR FUNCTIONAL DIAGRAM

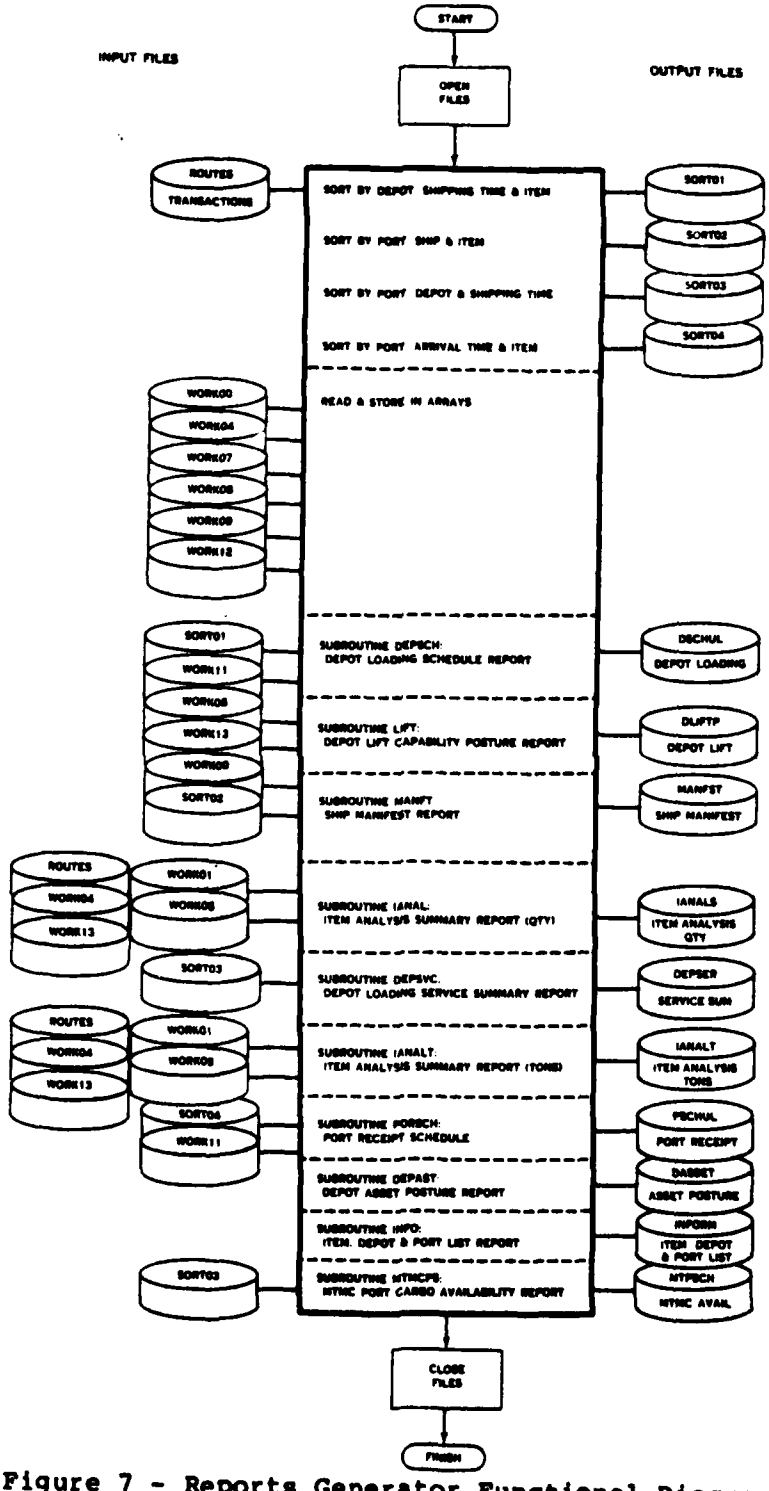


Figure 7 - Reports Generator Functional Diagram.

(3) Ship Manifest Report

MANFST

This report contains each ship's contents by item in terms of quantity, short tons, measurement tons and net explosive weight. The port of debarkation (POD), the POE, the sail date and the estimated time of arrival (ETA) at POD are furnished.

(4) Item Analysis Summary Report (Quantity)

IANALS

This report contains transportation shipping information, an asset posture, a readiness posture and prescribed substitute items. An analysis sheet is written for each item (primary item and substitutes), by DODAC, with all amounts expressed in terms of quantity. The assets are shown by service before and after ADS allocation. The readiness posture shows by service the requirement, deliveries in theater and shortfall for each time period. If any substitute item was shipped against this item requirement it is shown separately. However, the substitute item quantity is not included in the readiness posture, even though the quantity was shipped against the primary items requirements. The delivery schedule of the substitute item will be shown on its item analysis sheet.

(5) Depot Loading Service Summary Report

DEPSER

This report contains the depot shipments from the depot to the specific POE's. Short tons, measurement tons and net explosive weights are furnished by service and time of shipment.

(6) Item Analysis Summary Report (tons)

IANALT

This report is similar to the item Analysis Summary Report (Quantity) except the analysis sheets are written for each item by DODAC with all amounts expressed in terms of short tons.

(7)	Port Receipt Schedule Report PSCHUL	This report contains the item amount, in terms of quantity and short tons, received at each port of embarkation by day. The report also shows the depot from which the item was shipped from and when shipped.
(8)	Depot Asset Posture Report DASSET	This report contains the assets of the items contained in each depot. Initial assets and final assets after ADS allocation are given in terms of quantity and short tons by service.
(9)	Item List, Depot List and Port List Report INFORM	This report contains a list of study items sorted by DODAC. Each item has its corresponding index number used in the model. This number is useful to locate items in the item analysis report because this number corresponds to the item analysis page number. A list of the depots and ports with associated identifier codes (provided as input) are also given.
(10)	MTMC Port Cargo Availability Report MTPSCH	The report generator furnishes two Military Transportation Management Command (MTMC) reports, these being the Port Cargo Availability Report and the Port Cargo Availability Summary Report. The first report shows the tonnage available at each port (POE) supplied from the depots. The amounts are summed into 10 day time increments. Report elements include short tons, measurement tons, net explosive weight, the percent of cargo available at the port by time increment from a particular depot and the percent of cargo available in this time increment from this depot relative to the total cargo available from all depots. The other report summarizes by time increment the tons required, tons outloaded at all depots, tons available for ship loading theater delivery and theater shortfall.

The above reports include only those items and military services determined from the selected requirement plans and walkin requisitions. Therefore, the asset posture on the Item Analysis reports is shown only for those services that are included in the study, even though other services have assets for the studied items.

c. Additional Reports. Several reports are also available, but are not outputs of the Reports Generator Program. Operational instructions to obtain the following reports are located in Appendix A:

Type of Report	Description
(1) Requisition Shipped Report SHPREQ	A report which assists in the detailed analysis of all items shipped. The transactions are shown in the order processed by the model.
(2) Item Shipped Report SHPITM	A report which assists in the detailed analysis of all items shipped. The transactions are sorted by DODAC.
(3) Depot Shipping Report SHPDEP	A report which assists in the detailed analysis of all transactions. The transactions are first sorted by depot name, by depot departure time, and then by DODAC.
(4) Ship Summary Report SHPMT2	A report which assists in the detailed analysis of all ships. The transactions are first sorted by ship number, by service code, by depot name, and then by departure time. Intermediate sums are made after each depot name and after each ship number.
(5) Ship Summary Report SHPMT4	A report which assists in the detailed analysis of all items shipped. The transactions are first sorted by service, depot, POE, destination, and ETA. Intermediate sums are made after each of these variables.

(6)	Open Requisition Report OPENRQ	A report which shows, for each requisition, the beginning and ending assets along with the unfilled requirement quantity and a reason why the requisition could not be filled.

7. Ship Planning/Execution - Open Requisitions

a. General. Following the run of the model as described in paragraph 5 above, a number of output files are created. At this point in the system, no execution directives are generated. Based upon heuristics of the the model, the output files represent plans for existing requisitions and indicate proposed distribution for these requisitions. The system permits the functional managers interactive, selective control of shipment approval of these plans. Two edit programs are available for this purpose. The first program, EDITRQ, enables functional manager study and amendment of requisitions which remained open after processing by the model. The second of these, EDITTR, initiates the process whereby shiploads (manifests) are approved/released and appropriate shipping documents are produced, files are amended, requestors are advised, etc. These edit functions are illustrated in the system flow chart, Figure 4.

b. EDITRQ. EDITRQ is a program which permits the functional manager to edit unfilled requisitions. Prior to the execution of EDITRQ, it is desirable to have a copy of OPENRQ. OPENRQ is the report which shows each unfilled requisition, the beginning and ending assets for that item, and a reason why the requisition could not be filled. The input requisition files and the master data file, MIDASI, are edited by the functional manager using the EDITRQ program. Under this program, modification of open requisitions may be made in three fields: DODAC, ownership/purpose code and/or RDD. The edited information is processed back into the system through the WORK14 file and the preprocessor as new requisitions. The old requisitions are deleted. This edit capability is provided to allow substitutions which are beyond those permitted by the MOBMDR and by official guidance.

c. EDITTR. EDITTR allows the functional manager to edit/change and execute a shipload. It is the first step in the procedure which produces the shipping orders and modifies

all files to reflect changes brought on by items shipped. By means of this program, the transaction file, ROUTES, is analyzed by the functional manager in conjunction with ship information in WORK09 and WORK11. EDITTR selects ships by number and port and puts the WORK11 requisitions and the ROUTES transactions together for each ship. Certain changes in shipments are allowed as well as slight changes in the ship departure schedule.

Through EDITTR, the functional manager is requested to make a decision whether the shipload is to be approved for execution. EDITTR produces an intermediate file, SHXXYYY ("XX" being the port number and "YYY" being the ship number), for use in the SHIPLOAD process. SHXXYYY can be written out by EDITTR whether the transactions are approved or not. Also EDITTR flags its copy of the ROUTES transaction file, ROUTDA, to indicate that the item(s) has(have) been authorized for shipment. Such "executed transactions" are used to initialize and appropriately up-date the model for its next run.

The SHIPLOAD program is invoked to process shiploads which have been approved for execution. Two input files are utilized, SHXXYYY, created by EDITTR, and the master data file, MIDASI. Each shipload is analyzed, and three output products are created.

The first of these is the modification of MIDASI, whereby the assets are appropriately decremented at NIIN level by the the amount shipped.

Secondly, SHIPLOAD creates MILSTRIP lines in a file, MIL-AXXYYY, which is used to prepare depot shipping documents (MRO's). This file, in turn, is written on to tape and loaded to CCSS to cause depot shipments and to decrement the requisition source files.

The third output product of the SHIPLOAD program is the "plan" file which contains proposed ship planning messages. The functional manager may then edit the "plan" files through the program SHIP01 to add specific detail and/or supplements. When a message is ready to be sent, SHIP01 writes the message/supplement to the SHIP-M file and also writes the approved "body" file. The MILSTAMP program then reads the "body" file, adds addresses, dates, and standard information and writes out a ship planning message ready to be put on tape. These messages are

processed through the ARRCOM Communications Center to the ports with confirmation sent to the originating requestor organizations.

The shipload/execution process is shown in additional detail in Figure 8. In this diagram, it will be noted that although the primary files which are utilized are those discussed above, the edit process is somewhat more involved and additional files are addressed as indicated. For example, the SHIPLOAD program (using SHXXYYY - shown as SH01001 in the figure) interfaces additional files in the process of creating the three output files mentioned above.

Finally, as shown in Figure 8, the process of formulating ship messages through the MILSTAMP programs is performed. The MILSTAMP program (a) formats and addresses the output files created by SHIP01, (b) eliminates duplicates, and (c) summarizes, sorts, and prepares the messages with standard statements/instructions.

Once the ship(s) has(have) been approved, the feedback program, ADM007, is executed. This program reads the approved ship data and appropriately decrements the requisition files WORK01 and WORK11, the asset file WORK08, the depot lift capability file WORK06, and builds the ship status file WORK15. The preprocessor is then executed to process any additional requisitions which are located in WORK14.

8. Logistics Data Network for Army Crisis Management (LOGNET)

In order to respond to nine standard questions related to the status of items in transit, a program was written called LOGNET. These questions were formulated by DARCOM and require quick response. This requirement is achieved with the LOGNET program. The answers to the questions are formed from the approved transactions file (ROUTEH) and the current WORKXX files.

The nine questions, along with the desired response, are:

Question #1: What is quantity of DODIC _____ in transit in CONUS from_____ (plant or depot) to_____ (POE) for ship _____ (ship designator code).

Response: CONUS in transit from one shipper for one ship:

DODIC:_____
Ship:_____
POE:_____
Shipper:_____
Quantity:_____
Short tons:_____
Measurement tons:_____
Net explosive weight (New)(lbs):_____

Question #2: What is quantity from each shipper and total quantity of DODIC _____ in transit in CONUS for ship _____ (ship designator) to sail from_____ POE.

Response: Summary of CONUS in transit for one ship:

DODIC: _____
Ship: _____
POE: _____
Shipper:_____ Qty:_____ ea, short tons:_____, meas tons:_____, new _____
Shipper:_____ Qty:_____ ea, short tons:_____, meas tons:_____, new_____
Total: Qty:_____ ea, short tons:_____, meas tons:_____, new _____

Question #3: What is the total quantity of DODIC _____ in transit in CONUS for all ships sailing from _____ (POE) for _____ (POD).

Response: Summary of CONUS in transit for all ships:

For POE:_____
For POD:_____
DODIC:_____
Quantity:_____
Short tons:_____
Measurement tons:_____
New (lbs):_____

Question #4: What is the total quantity (by DODIC) of materiel loaded on ship _____ (ship designator)

Response: Total of materiel loaded on _____ (ship designator):

POE:_____
POD:_____
Sailing date:_____
ETA overseas:_____

	DODIC	Qty	Short tons	Meas tons	New (lbs)
	XXX	XXX	XXX	XXX	XXX
	XXX	XXX	XXX	XXX	XXX
Totals:	XXX	XXX	XXX	XXX	XXX

Question #5: What is the total quantity of DODIC _____ which is on board all ships intransit to _____ (POD).

Response: Total quantity of DODIC ____ intransit to _____ (POD):

	Vessel	Qty	Short tons	Meas tons	New(lbs)	ETA
	XXX	XXX	XXX	XXX	XXX	XXX
	XXX	XXX	XXX	XXX	XXX	XXX
Totals:	XXX	XXX	XXX	XXX	XXX	XXX

Question #6: What is the total quantity, by DODIC, of materiel on board all ships in transit to_____ (port of discharge).

Response: DODIC listing of all ships in transit to _____ (POD).

DODIC:_____ (#1)

Vessel	Qty	Short tons	Meas tons	New(lbs)	ETA
XXX	XXX	XXX	XXX	XXX	XXX
XXX	XXX	XXX	XXX	XXX	XXX
DODIC:_____ (#2)					
XXX	XXX	XXX	XXX	XXX	XXX
XXX	XXX	XXX	XXX	XXX	XXX
Etc.:					
Grand Totals:	XXX	XXX	XXX	XXX	XXX	XXX

Question #7: What quantity of DODIC _____ was shipped to___ (POD) between _____ and _____ (dates).

Response: Total quantity of DODIC _____ shipped to _____ (POD) between _____ and _____ (dates) _____ ea, _____ short tons, _____ meas tons

Question #8: What quantity of DODIC _____ was shipped to ___ (POD) between _____ and _____ (dates).

Response: Quantity of DODIC _____ shipped to _____ (POD) between _____ and _____ (dates)

Shpr	Vsl	Qty	Sh/tons	Mea/tons	New(lbs)	ETA
XXX	XXX	XXX	XXX	XXX	XXX	XXX

Question #9: What were the shippers and quantities of DODIC _____ shipped for _____ (ship).

Response: Summary of shipments of DODIC _____ shipped for _____ (ship).

	Shipper	Qty	Sh/tons	Mea/tons	New (lbs)
	XXX	XXX	XXX	XXX	XXX
	XXX	XXX	XXX	XXX	XXX
Totals:	XXX	XXX	XXX	XXX	XXX

The LOGNET program operates on the approved transaction history file ROUTEH, although, in planning situations where no execution will occur, it can read the ROUTES file for answers to the questions. This interactive program is on PRIME and is not directly connected to the ARPA network. Information must be transferred manually from the LOGNET program terminal to the Army Crisis Management Network terminals.

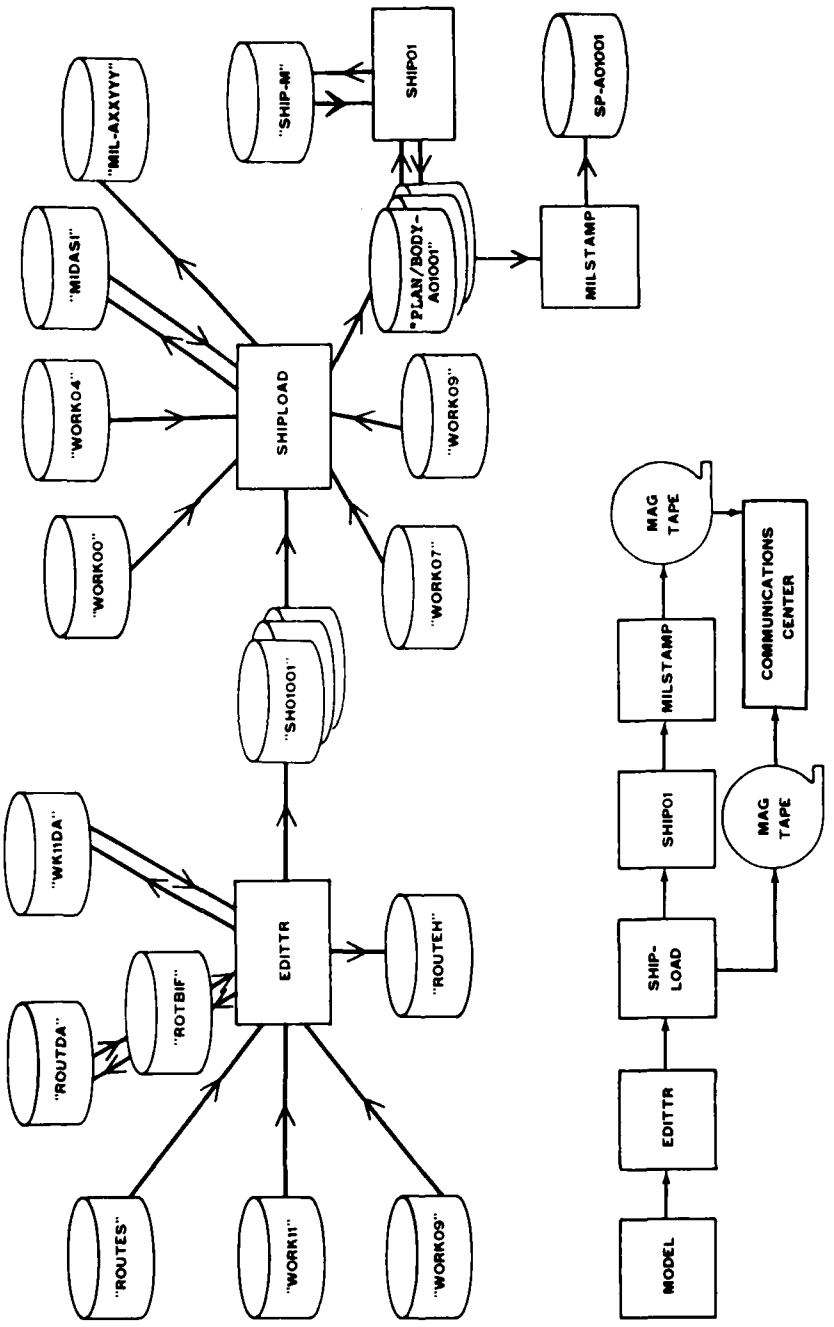


Figure 8 - Edit and Ship Message Programs.

Technical Report TR 10-81
October 1981

APPENDIX A

Operators Manual

Technical Report TR 10-81
October 1981

APPENDIX A

Operators Manual

TABLE OF CONTENTS

APPENDIX A

Operators Manual

This appendix contains a step by step procedure for operating the ADS modules. Discussion on why actions are taken is covered in the main text of this Report and, therefore, is not reported herein. File descriptions and listings of all command files, phantom files, and source programs are found in the Programmers Manual, Volume 2 of this report.

I. Data Base Development

PART 1. Extracting data from the Ammunition Mobilization Master Data Record File (MOBMDR) on the G2 computer.

There are several extract programs which can be executed as shown on Figure A-1:

MOEXC#GR - used to extract data related to complete round substitutions.

MOEXI#KM and MOTPI#KM - used to extract data related to assets, requirements and item shipment.

MOEXA#KM - used to extract data related to assets only.

To execute any of these programs, do the following:

STEP 1. Fill out the setup sheet, DRSAR Form 232, as per example shown in Figure A-2, except for the job number which is obtained from Step 3 below.

FIGURE A-1

MOBMDR EXTRACT - MIDAS LOAD PROCEDURES

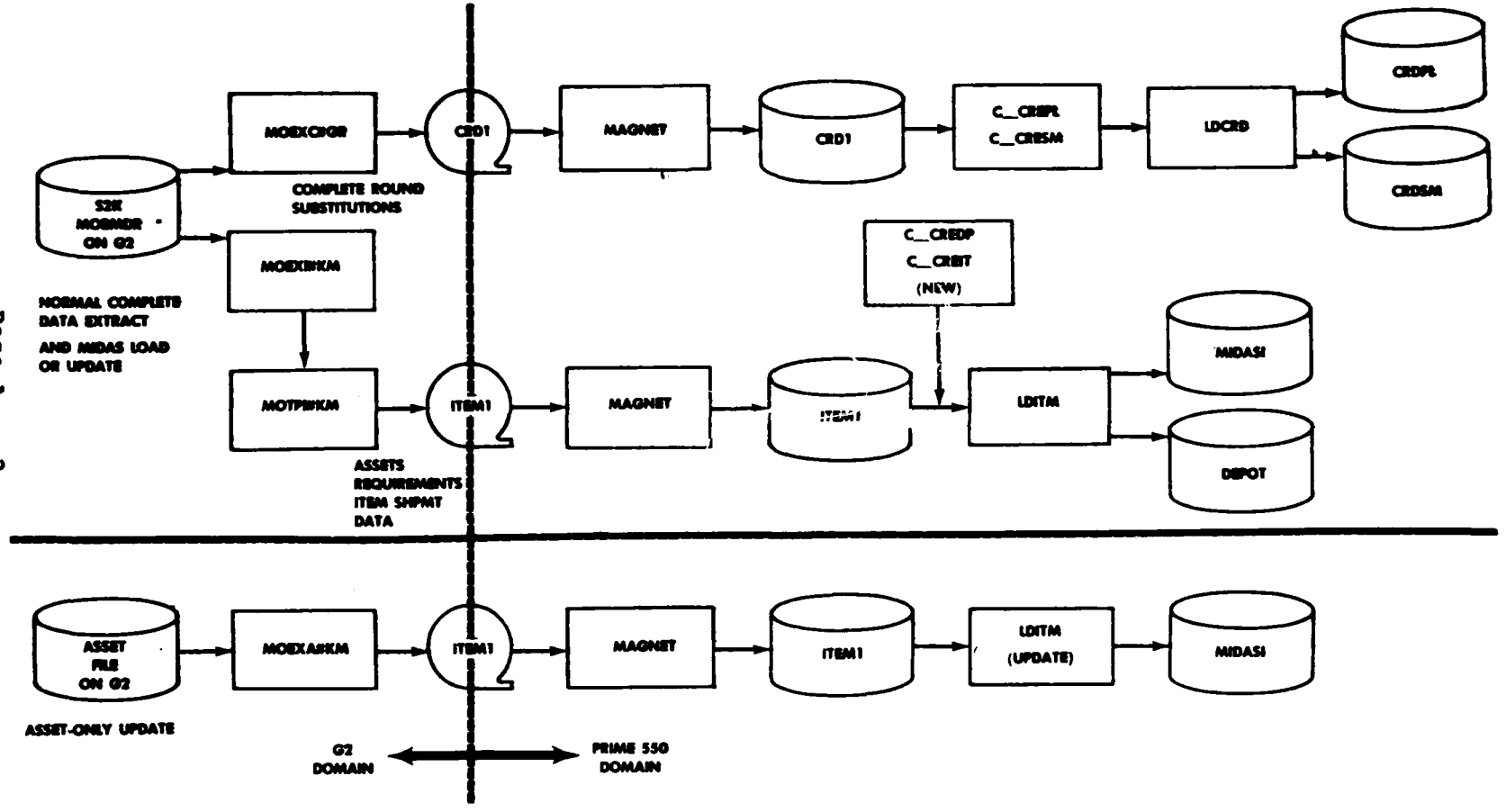


Figure A-1 - MOBMDR Extract-MIDAS Load Procedures.

360-G2

No JCL - see note at bottom

IBM 360 SET UP RECORD

1. PROJ TITLE	2. PROJ INDEX NO.	3. PROJ START DATE
Extract Complete Round	68Q14905	5-8-81

4. REQUESTING DRG	5. FREQ	6. JOB NAME	7. ABEND	8. EST RUN HR	9. DATE RQR
DRSAR-MSA	A/R	MOBEX 00 GR		0.5	5-8-81

10. PRIVATE DISK, VOL/SERIAL NO. _____, _____, _____

11. READER= remote line 2	12. CLASS= B	13. SYSOUT= A & Tape 9

MEMORY RQR (AMT) 250K	7-TRACK TAPE STATIONS (MIN NO.) 0	9-TRACK TAPE STATIONS (MIN NO.) 1
PAPER FORM	PLY PAPER 1	OUTPUT CARD FORM None

STEP NO. a	DEVICE b	INP/ OUT c	DATA SET NAME/ FILE IDENT d	CAT e	SCTY	CLAS f	FILE DESCRIPTION g	VOL/ SERIAL NO. h	HOLD i	RELEASE j
1	SYSDA	I							X	
1	Tape 9	õ			U			7218	X	
1		õ								

REMARKS
Job has been submitted by remote 2 and is job 72. Please release job and mount scratch tape as needed. Tape label is attached.

PREPARED BY _____ DATE _____

Figure A-2 - Computer Set Up Record (Form 232).

DRSAR Form 232, [illegible] MAY BE USED.

STEP 2. Attach to the UFD on the PRIME 550 in which the extract programs reside and then use RJHASP command to submit the job to the G2 computer. For example, to submit MOEXC#GR, type the following commands at the terminal:

```
A DMWORK>$ADS

RJHASP MOEXC#GR -TO G2
```

STEP 3. At the HASP terminal in the PRIME computer room, type DDJ1-999 and hit the carriage return to verify that the job has reached G2 and to get the job number. Enter the job number on the setup sheet (See STEP 1)

STEP 4. Telephone the G2 operator, X4723, and explain that the job (specify the job number) will be writing to a scratch tape, and that the set up sheet and tape label will be delivered to the window (Bldg 350 1st Floor, NW). Note that when executing the program MOEXA#KM, instead of specifying a scratch tape, one must call the tape library, X6697, to request them to take the tape you need to the G2.

STEP 5. Deliver set up sheet and tape label to window (Bldg 350, 1st floor, NW).

STEP 6. Upon successful completion of the job, the tape library will inform you that the tape is available for pick up. Printouts will be available from either the Quality Assurance branch, X5977, or the receptionist, X6880.

PART 2. Transfer of data from G2 to PRIME.

The output of PART 1 is a data tape. This section specifies the procedure to read the tape and put the data on the PRIME computer in specified file.

Mount the tape on tape drive number 1 (MTU#=1), and perform the following commands (Note: the user should be attached to a UFD where the data is to be used):

```
A DMWORK>$ADS

AS MT1

MAGNET   (see FORTRAN Manual, p. 4-3)
Option: READ
MTU# = 1
MTFILE# = 1
LOGICAL RECORD SIZE = 80
BLOCKING FACTOR = 10
ACSII, BINARY, or EBCDIC? EBCDIC
FULL OR PARTIAL RECORD TRANSLATION? FULL
OUTPUT FILE:  CRD1 (or) ITEM1
```

After the entry of the above commands, the data tape will be read and the data will be filed under the output file specified (either CRD1 or ITEM1).

PART 3. Building/updating CRDPL, CRDSM, MIDASI and DEPOT.

In order to build/update these four files, all commmand, phantom and input file (CRD1 or ITEM1) must be co-located in the same UFD or sub-UFD. For complete round data the following command and phantom files must be executed in the order specified:

```
CO C_CREPL

CO C_CRESM

PH P_LDCRD

PH P_ADDAS  (Supply condition codes and
  ownership/purpose codes as requested
  by the program prompt messages.  See
```

the Q_ADDAS listing in Appendix B for an example of its interactive operation.)

For Item Data

a) if new MIDASI and DEPOT files are to be created, the following command and phantom files must be executed in the order specified:

```
CO C_CREIT

CO C_CREDP

PH P_LDITM
```

b) if the MIDASI and DEPOT files already exist and only an update is required, then only execute the phantom file as follows:

```
PH P_LDITM
```

PART 4. Preprocessor.

The preprocessor accepts the data from nine separate files and prepares it for input to the ADS module. Two of the nine input files (i.e. MIDASI and CRDPL) were created from PART 1 through PART 3 above. The other seven files (i.e. PARAM1, DEPOT1, NONSM1, PORT01, NETM81, REQEXT and WORK14) are built separately by the functional users. To edit/change/review existing files or to build new files, type SEG DMWORK>$ADS>#INPUT1 and follow the instructions given. To execute the preprocessor, perform the following:

STEP 1. Copy P_PREPRO to the same UFD where the output files WORK00 through WORK11 will be used.

STEP 2. Edit P_PREPRO and insure that the pathname for each of the nine input files is correct.

STEP 3. Run the phantom command file as such:

PH P_PREPRO (See the Q_PREPRO listing in Appendix B for an example of its interactive operation.)

II. Distribution Module

The distribution module accepts the data from eight of the work files generated by the preprocessor and generates the transaction file called ROUTES along with several other files used for further analyses/reports. To execute the distribution module, perform the following:

STEP 1. Copy P_ADMDSP to the UFD where the input files are located.

STEP 2. Edit P_ADMDSP and review the answers to the propted questions.

STEP 3. Run the phantom command file as such:

PH P_ADMDSP (See the Q_ADMDSP listing in Appendix B for an example of its interactive operation.)

III. Reports Generation.

a. Reports Generator Program.

Ten standard output reports are available to the functional user, as described in the main body of this report. To obtain the reports, perform the following:

STEP 1. Copy C_SORTS to the UFD where the WORK files and ROUTES file are located.

STEP 2. Run the command file as such:

```
CO C_SORTS
```

STEP 3. Execute the reports generator program as such:

```
SEG DMWORK>$ADS>#REPRTS8
```

The user must then interactively supply the report code characters for the desired reports. There are ten reports available for selection which are listed below along with the report file name and selection code character.

	REPORT	CODE	REPORT NAME
a.	Depot Loading Schedule Report	1	DSCHUL
b.	Depot Lift Capability Posture Report	2	DLIFTP
c.	Ship Manifest Report	3	MANFST
d.	Item Analysis Summary Report (Quantity)	4	IANALS
e.	Depot Loading Service Summary Report	5	DEPSER
f.	Item Analysis Summary Reports (Tons)	6	IANALT
g.	Port Receipt Schedule	7	PSCHUL
h.	Depot Asset Posture Report	8	DASSET
i.	Item List, Depot List and Port List Report	9	INFORM
j.	MTMC Port Cargo Availability Report	A	MTPSCH

If a report is requested which requires a SORT file that is not available, a message will be printed advising to run the C_SORTS program.

A listing of these reports can be obtained by spooling the report name using the following command with format control:

SPOOL (Report Name) -F

Multiple copies may be obtained by the command:

SPOOL (Report Name) -F -COPIES n

Where "n" is the number of copies.

Note: See the Q_REPRTS8 listing in Appendix B for an example of its interactive operation.

b. Additional Reports.

A number of additional reports are also available (See the "Miscellaneous" section of Volume 2.) The first of these, the Open Requisition Report OPENRQ, is obtained as follows:

STEP 1. Copy P_OPEN_REQ to the UFD where the WORK files and the ROUTES file are located.

STEP 2. Run the phantom file as such (See the Q_OPEN_REQ listing in Appendix B for an example of its interactive operation):

PH P_OPEN_REQ

The reports SHPDEP, SHPITM, SHPREQ, SHPMT2, and SHPMT4 are obtained as follows:

STEP 1. Execute the phantom generator program as such

(See the Q_SHPRPT listing in Appendix B for an example of its interactive operation):

```
SEG DMWORK>$ADS>#SHPRPT
```

The user must then interactively supply the report code characters for the desired reports. The five reports available for selection are listed below, each with its selection code character.

Report	Code
SHPMT2	A
SHPMT4	C
SHPREQ	D
SHPITM	E
SHPDEP	F

After the user indicates the desired report, a phantom file P_SHMT will be written.

STEP 2. To obtain the desired reports, run the phantom file as such:

```
PH P_SHMT
```

IV. SHIPLOAD/Execution Programs

The EDITRQ program allows the user to amend unfilled requisitions. It is desirable to have a copy of OPENRQ available while operating the EDITRQ program. To operate this program, type the following:

```
SEG DMWORK>$ADS>#EDITRQ
```

The user must then interactively specify the requisition sequence number. The requisition is then displayed on the terminal, and the user is allowed to make changes to the DODAC, the ownership purpose code, and/or the RDD. An example of its interactive operation is found in the Q_EDITRQ listing in Appendix B.

The SHIPLOAD/Execution programs take the model output in the form of requisitions and transactions and creates ship planning messages and depot release orders for output to tape.

There are four main programs in the SHIPLOAD series, i.e. EDITTR, SHIPLOAD, SHIP01, and MILSTAMP.

EDITTR takes the requisitions and transactions (WORK11 and ROUTES), allows the functional manager to edit the totals and approve the transactions and writes out ship manifests (combined WORK11 and ROUTES).

SHIPLOAD reads the manifests, writes out depot release orders (MILSTRIP lines) and writes the body of the ship planning message in fast release format (lines 3, 4, 5 and 6). The body file is then available for editing by the user.

SHIP01 allows editing of the planned body file and allows the creation of supplements of the body of the message in the MIDAS file, SHIP-M. SHIP01 also writes the approved body of the message to a file called BODY-AXXYYY.

The tape program, MILSTAMP, reads the BODY file, adds addresses and information lines and writes completed ship planning messages ready for tape.

The SHIPLOAD/Execution program can be executed by either "manual" or "automatic" operations, as specified below (Note that the automatic operation is for planning purposes only):

STEP 1 (All manual operations).

To run, EDITTR must have copies of ROUTES, WORK11 and WORK09 or have a set of ROUTDA, WK11DA, ROTBIF and ROUTEH available from a previous run. To begin operation, enter the following (See the Q_EDITTR listing in Appendix B for an example of interactive operation):

SEG DMWORK>$ADS>#EDITTR

The functional manager is then asked for port and ship codes.

If "ALL" is given for the ship code, all ships for the indicated ports will be run. The manager will be asked if he wishes to keep, spool and/or execute the ship manifests.

If "ALL" is not given for the ship code, the functional manager will be allowed to edit transaction lines for the ship given. (A copy of the ship manifest is very handy to have when editing. To obtain a copy, run EDITTR without editing the first time and then go back and run it again.)

SHIPLOAD requires seven files in order to run. These are WORK07, WORK09, WORK00, WORK04, MIDASI, SHIP-M and the ship manifests. Changes will be made in MIDASI and SHIP-P. The MILSTRIP line file and the body files (BD-AXXXYYYY) will be written out. See the Q_SHIPLOAD listing in Appendix B for an example of its interactive operation.

Type the following to begin a run:

SEG DMWORK>$ADS>#SHIPLOAD

The functional manager will then be prompted for the MIDASI file location, the type of walk-in requisition, and the port and ship codes. (Note that SHIPLOAD will not process a ship manifest unless it has been approved (executed) in the EDITTR process.)

SHIP01 allows editing and creation of supplements of the body of the message as it exists in SHIP-M. To run this program, enter:

SEG DMWORK>$ADS>#SHIP01

From this point, the user queries are self-explanatory. It is desirable to have a copy of the body file available while editing. SHIP01 will allow writing out of a new body file when changes have been made. See the Q_SHIP01 listing in Appendix B for an example of its interactive operation.

Note: If no ships were previously approved by the SHIP01 program, the SHIP-M file must be initialized (i.e. any existing SHIP-M file would be deleted and an empty SHIP-M file would be generated.) To accomplish this, first copy the C_SHIP-M file to the UFD where the WORK files and the ROUTES file are located. Then enter CO C_SHIP-M.

The tape program, MILSTAMP, asks for port and ship numbers and creates ship planning messages from the body files. To begin the program, enter the following (See the Q_MILSTAMP listing in Appendix B for an example of its interactive operation):

SEG DMWORK>$ADS>#MILSTAMP

STEP 2 (Automatic operations for planning purposes only)

The EDITTR and SHIPLOAD programs can be run automatically for all ports and ships by executing the following steps. (NOTE: This action will delete all current SHIPLOAD files and start EDITTR from the beginning.):

(a) Copy P_AUTO1 to the UFD where the WORK and ROUTES files are located.

(b) Enter: PH P_AUTO1.

If EDITTR has been used to edit the transactions and the changes are saved in ROUTDA and WK11DA, execute the following steps:

(a) Copy P_AUTO2 to the UFD where the files exist.

(b) Enter: PH P_AUTO2

Once the transactions are approved, the program ADM007 is executed in order to prepare the WORK files for the next model run. To run ADM007, execute the following steps (See the Q_ADM007 listing in Appendix B for an example of its interactive operation):

(a) Copy P_ADM007 to the UFD where the files are located.

(b) Enter: PH P_ADM007

Once ADM007 is finished and all new walk-in requisitions are loaded into WORK14, the preprocessor is executed to prepare the WORK files for the next iteration of the model. To run the preprocessor, do the following (See the Q_PREPRO.IT listing in Appendix B for an example of its interactive operation):

PH P_PREPRO

V. LOGNET

The LOGNET program is used to answer the nine standard questions which are described in Paragraph 8 of the main body of this Report.

To execute this program, copy the compiled program and enter this command:

```
SEG DMWORK>$ADS>#LOGNET
```

After the functional manager supplies the output file name, he will be asked to supply the number of the question to be answered. Depending upon which question the manager has selected, he will be asked to supply some required information (one could be prepared for this process by reviewing the questions in the main text of this Report).

Each time after a question is answered, the functional manager will be given the option of selecting another question or stopping the program. If the user decides to terminate the questions, he must then indicate if the answers to the questions are to be printed. Upon completion of the program, the output file is automatically deleted.

APPENDIX B

Examples of Interactive Operations

TABLE OF CONTENTS

APPENDIX B

Examples of Interactive Operations

This appendix contains listings of interactive operation of selected programs. See Appendix A for the operation of such programs.

I. Q_ADDAS

```
OK, DATE

Friday, October 16, 1981   9:05 AM

OK, FUTIL
[FUTIL rev 17.6]
> SR Q_ADDAS 3
> QU

OK, SEG DMWORK>$ADS>#ADD-ASSETS
ENTER PATHNAME FOR ASSETS FILE:>DMWORK>$ADS>MIDASI
ENTER PATHNAME FOR DEPOT FILE:>DMWORK>$PP>DEPOT2
ENTER UP TO 9 CONDITION CODES:>ABCDEN
ENTER O/P CODES FOR SERVICE A:>ABCDMSTU
ENTER O/P CODES FOR SERVICE M:>4
ENTER O/P CODES FOR SERVICE N:>5
ENTER O/P CODES FOR SERVICE F:>6
ENTER O/P CODES FOR SERVICE X:>
THE ABOVE VALUES ARE DEFAULTS FOR THIS DEPOT LIST:
 BAD B08 B47 BKD B22 BPD BRD B3D B4D B2D BTD B21 BB2 BD2 BC2
 B51 AD1 B13 B15 B38 B19 B39 B28 B59 BE5 B18 BHZ
DO YOU WANT TO SPECIFY EXCEPTIONS (ENTER Y OR N)? N
*** FINAL VALUES ***


DEPOT= BAD; C/C=ABCDEN    ; O/P=ABCDMSTU456N
                             SS=AAAAAAAAMNFX

DEPOT= B08; C/C=ABCDEN    ; O/P=ABCDMSTU456N
                             SS=AAAAAAAAMNFX

DEPOT= B47; C/C=ABCDEN    ; O/P=ABCDMSTU456N
                             SS=AAAAAAAAMNFX

DEPOT= BKD; C/C=ABCDEN    ; O/P=ABCDMSTU456N
                             SS=AAAAAAAAMNFX

DEPOT= B22; C/C=ABCDEN    ; O/P=ABCDMSTU456N
                             SS=AAAAAAAAMNFX

DEPOT= BPD; C/C=ABCDEN    ; O/P=ABCDMSTU456N
                             SS=AAAAAAAAMNFX

DEPOT= BRD; C/C=ABCDEN    ; O/P=ABCDMSTU456N
```

```
                                        SS=AAAAAAAAMNFX

DEPOT= B3D; C/C=ABCDEN    ; O/P=ABCDMSTU456N
                              SS=AAAAAAAAMNFX
TYPE C/R TO CONTINUE:

DEPOT= B4D; C/C=ABCDEN    ; O/P=ABCDMSTU456N
                              SS=AAAAAAAAMNFX

DEPOT= B2D; C/C=ABCDEN    ; O/P=ABCDMSTU456N
                              SS=AAAAAAAAMNFX

DEPOT= BTD; C/C=ABCDEN    ; O/P=ABCDMSTU456N
                              SS=AAAAAAAAMNFX

DEPOT= B21; C/C=ABCDEN    ; O/P=ABCDMSTU456N
                              SS=AAAAAAAAMNFX

DEPOT= BB2; C/C=ABCDEN    ; O/P=ABCDMSTU456N
                              SS=AAAAAAAAMNFX

DEPOT= BD2; C/C=ABCDEN    ; O/P=ABCDMSTU456N
                              SS=AAAAAAAAMNFX

DEPOT= BC2; C/C=ABCDEN    ; O/P=ABCDMSTU456N
                              SS=AAAAAAAAMNFX

DEPOT= B51; C/C=ABCDEN    ; O/P=ABCDMSTU456N
                              SS=AAAAAAAAMNFX
TYPE C/R TO CONTINUE:

DEPOT= AD1; C/C=ABCDEN    ; O/P=ABCDMSTU456N
                              SS=AAAAAAAAMNFX

DEPOT= B13; C/C=ABCDEN    ; O/P=ABCDMSTU456N
                              SS=AAAAAAAAMNFX

DEPOT= B15; C/C=ABCDEN    ; O/P=ABCDMSTU456N
                              SS=AAAAAAAAMNFX

DEPOT= B38; C/C=ABCDEN    ; O/P=ABCDMSTU456N
                              SS=AAAAAAAAMNFX

DEPOT= B19; C/C=ABCDEN    ; O/P=ABCDMSTU456N
                              SS=AAAAAAAAMNFX

DEPOT= B39; C/C=ABCDEN    ; O/P=ABCDMSTU456N
                              SS=AAAAAAAAMNFX

DEPOT= B28; C/C=ABCDEN    ; O/P=ABCDMSTU456N
                              SS=AAAAAAAAMNFX
```

```
DEPOT= B59; C/C=ABCDEN    ; O/P=ABCDMSTU456N
                              SS=AAAAAAAAMNFX
TYPE C/R TO CONTINUE:

DEPOT= BE5; C/C=ABCDEN    ; O/P=ABCDMSTU456N
                              SS=AAAAAAAAMNFX

DEPOT= B18; C/C=ABCDEN    ; O/P=ABCDMSTU456N
                              SS=AAAAAAAAMNFX

DEPOT= BHZ; C/C=ABCDEN    ; O/P=ABCDMSTU456N
                              SS=AAAAAAAAMNFX
ARE THE VALUES SATISFACTORY (ENTER Y OR N)?Y

OK, DATE

Friday, October 16, 1981   9:12 AM

OK, COMO -E
```

II. Q_PREPRO

```
OK, FUTIL
[FUTIL rev 17.6]
> SR Q_PREPRO 3
> QU

OK, DATE

Tuesday, October 6, 1981   9:48 AM

OK, AVAIL
     VOLUME DM
     155142 TOTAL RECORDS (NORMALIZED)
      70043 RECORDS AVAILABLE (NORMALIZED)
      54.9


OK, SEG DMWORK>$ADS>#PREPRO
ENTER "PARAM1" FILE TREENAME: DMWORK>$PP>PARAM1
ENTER "CRDPL"  FILE TREENAME: DMWORK>$ADS>CRDPL
ENTER "MIDASI" FILE TREENAME: DMWORK>$ADS>MIDASI
ENTER "WORK14" FILE TREENAME: DMWORK>$PP>WORK14
ENTER "NONSM1" FILE TREENAME: DMWORK>$PP>NONSM1
ENTER "DEPOT1" FILE TREENAME: DMWORK>$PP>DEPOT2
ENTER "PORT01" FILE TREENAME: DMWORK>$PP>PORTPP
ENTER "NETM81" FILE TREENAME: DMWORK>$PP>NETWRK
ENTER "PODGLC" FILE TREENAME: DMWORK>$PP>PODGCL
**PODGLC FILE OPENED**
 NPOD=  1 POD=UDA  THR=1    GLC=T4   PODNAME=CHINHAE
 NPOD=  2 POD=TA1  THR=1    GLC=X4   PODNAME=GUAM AIR
 NPOD=  3 POD=1AT  THR=1    GLC=XA   PODNAME=GUAM SURF
***<<<PODGLC FILE READ>>>***
**EX$RPT OPENED NORMALLY**
--- PARAMETER FILE READ
**MIDASI OPENED NORMALLY**
**WORK01 OPENED NORMALLY**
**WORK04 OPENED NORMALLY**
**WORK11 OPENED NORMALLY**
**CRDPL FILE OPENED NORMALLY **
*** OFFSET OF 10 PERIODS IS APPLIED TO ALL PLANS EXCEPT 1DIT
**WORK02 OPENED NORMALLY**
**WORK03 OPENED NORMALLY**
*** COMPONENT PART FILE WRITTEN <WORK02> IC=  0
*** USAGE FILE WRITTEN <WORK03> IC=  0 ***
```

```
 **  START PROCESSING WALK-INS  **
***WORK14 CLOSED NORMALLY****
*** YOUR ORIGINAL WALKIN FILE IS NOW EMPTY.
 A COPY OF YOUR ORIGINAL IS AT FILENAME WORK14-001    ***
***FINISHED PROCESSING  525 WALK-IN REQS. CODE=    0 ***
*** REQN FILE FOR ALL DEST AND PLANS WRITTEN WORK01 IC=  0
*** WORK11 FILE WRITTEN. CODE=    0 ***
**   67 ITEMS WILL BE ANALYZED.**
**WORK05 OPENED NORMALLY**
     1302D563  THIS ITEM NOT FOUND IN <MIDAS>ITEM FILE
     1315C541  THIS ITEM NOT FOUND IN <MIDAS>ITEM FILE
     1302D506  THIS ITEM NOT FOUND IN <MIDAS>ITEM FILE
*** SUBSTITUTION PART FILE WRITTEN <WORK05> IC=  0
***   136  ITEMS WRITTEN <WORK04>.IC=  0
**WORK07 OPENED NORMALLY**
**WORK06 OPENED NORMALLY**
*** DEPOT LIFT CAPABILITY FILE WRITTEN <WORK06> IC=  0
*** DEPOT STORAGE DATA FILE WRITTEN <WORK07> IC=  0
***IDEP=  1 DEPOT ID=BAD*** WORK07 REREAD ***
***IDEP=  2 DEPOT ID=B08*** WORK07 REREAD ***
***IDEP=  3 DEPOT ID=B47*** WORK07 REREAD ***
***IDEP=  4 DEPOT ID=BKD*** WORK07 REREAD ***
***IDEP=  5 DEPOT ID=B22*** WORK07 REREAD ***
***IDEP=  6 DEPOT ID=BPD*** WORK07 REREAD ***
***IDEP=  7 DEPOT ID=BRD*** WORK07 REREAD ***
***IDEP=  8 DEPOT ID=B3D*** WORK07 REREAD ***
***IDEP=  9 DEPOT ID=B4D*** WORK07 REREAD ***
***IDEP= 10 DEPOT ID=B2D*** WORK07 REREAD ***
***IDEP= 11 DEPOT ID=BTD*** WORK07 REREAD ***
***IDEP= 12 DEPOT ID=B21*** WORK07 REREAD ***
***IDEP= 13 DEPOT ID=BB2*** WORK07 REREAD ***
***IDEP= 14 DEPOT ID=BD2*** WORK07 REREAD ***
***IDEP= 15 DEPOT ID=BC2*** WORK07 REREAD ***
***IDEP= 16 DEPOT ID=B51*** WORK07 REREAD ***
***IDEP= 17 DEPOT ID=AD1*** WORK07 REREAD ***
***IDEP= 18 DEPOT ID=B13*** WORK07 REREAD ***
***IDEP= 19 DEPOT ID=B15*** WORK07 REREAD ***
***IDEP= 20 DEPOT ID=B38*** WORK07 REREAD ***
***IDEP= 21 DEPOT ID=B19*** WORK07 REREAD ***
***IDEP= 22 DEPOT ID=B39*** WORK07 REREAD ***
***IDEP= 23 DEPOT ID=B28*** WORK07 REREAD ***
***IDEP= 24 DEPOT ID=B59*** WORK07 REREAD ***
***IDEP= 25 DEPOT ID=BE5*** WORK07 REREAD ***
***IDEP= 26 DEPOT ID=B18*** WORK07 REREAD ***
***IDEP= 27 DEPOT ID=BHZ*** WORK07 REREAD ***
**WORK07 RE-READ COMPLETED**
**WORK08 OPENED NORMALLY**
***   136 ASSETS ADDED TO <WORK08> CODE=  0
**CRDPL CLOSED NORMALLY**
**MIDASI CLOSED NORMALLY**
** PORT01 FILE OPENED NORMALLY**
**WORK09 OPENED NORMALLY**
```

```
**CLOSING CODES AT 1115 ARE:     0     0 WORK09 WRITTEN***
**NETWRK OPENED NORMALLY**
**WORK10 OPENED NORMALLY**
 DEPOT B43 IN NETWORK NOT FOUND IN DEP FILE
 POE DCC IN NETWORK NOT FOUND IN PORT FILE
**CLOSING CODES AT 6805 ARE:     0     0     0 ***
**WORK00 OPENED NORMALLY**
*** PARAMETER WORK FILE WRITTEN <WORK00> IC=  0
0******END OF PRE-PROCESSOR RUN*******

OK, SORT BRIEF
EX$RPT EXCEPTIONS 1
1 9

BEGINNING SORT



 PASSES        2           ITEMS        85

[SORT-REV18.0]

OK, DELETE EX$RPT
OK, SEG DMWORK>$ADS>#NUMW04
*** END OF PROGRAM -- ERROR CODES=  0  0 ***
YOUR ORIGINAL WORK04 FILE IS CALLED WORG04
YOUR NEW WORK04 FILE FOR UNIT SHIPMENTS IS CALLED WORK04

OK, DATE

Tuesday, October 6, 1981   10:25 AM

OK, COMO -E
```

III. Q_ADMDSP

```
OK, DATE

Wednesday, October 14, 1981   1:09 PM

OK, FUTIL
[FUTIL rev 17.6]
> SR Q_ADMDSP 2
> DELETE ROUTES
> DELETE ROUTEP
> DELETE ANALS1
> DELETE WORK19
> DELETE WORK20
> DELETE WORK13
> DELETE WORK12
> DELETE PORTUS
> DELETE WORK16
> Q

OK, DATE

Wednesday, October 14, 1981   1:09 PM


OK, SEG #ADMDSP
 LOOK FORWARD IN DAYS
5
 CONSTRAINED PORT "C" OR UNCONSTRAINED "U"
C
TO SHIP FROM CLOSEST DEPOTS FIRST, INPUT "0",
 IF FURTHEST DEPOTS FIRST, INPUT "1"
0
 INPUT TRANS-SHIPPING MODE, 1-SHIP  OR  2-AIR
1
 TO SHIP AS EARLY AS POSSIBLE FROM DEPOT-INPUT "E"
  IF WISH TO BE AS LATE AS POSSIBLE-INPUT "L"
E
INPUT HOW MANY DAYS PRIOR TO THE RDD ARE YOU WILLING
TO RECEIVE A SHIPMENT
5
INPUT HOW MANY DAYS LATE YOU ARE WILLING TO ACCEPT A SHIPMENT
15
INPUT UNFILLED REQUISITION PROCESSING OPTION
     OPTION 1  --  SKIP REQUISITION
     OPTION 2  --  FILL AS SOON AS POSSIBLE
```

```
2
>>>> <WORK00> PARAMETER FILE READ
>>>> <WORK10> NETWORK-TRANSIT-TIME FILE READ
>>>> <WORK09> PORT ATTRIBUTE FILE READ
>>>> <WORK06> DEPOT LIFT CAPACITY FILE READ
--- MISSING SHIPPING DATA, FILE <WORK04)
   ITEM    DODAC    PALLET    UNIT WT.     UNIT VOL     UNIT NEW
                     QNTY       STONS        MTONS        STONS
      69 1315C447        1    0.0000000    0.0000000    0.0000000
      81 1340T001        1    0.0000000    0.0000000    0.0000000
      88 1305T008        1    0.0000000    0.0000000    0.0000000
      91 1315C220        1    0.0000000    0.0000000    0.0000000
      96 1315C428        1    0.0000000    0.0000000    0.0000000
     104 1320T021        1    0.0000000    0.0000000    0.0000000
     125 1340H550        1    0.0000000    0.0000000    0.0000000
     129 1340H568        1    0.0000000    0.0000000    0.0000000
>>>> <WORK04> ITEM ATTRIBUTE FILE READ
>>>> <WORK08> DEPOT ASSET FILE READ
>>>> <WORK18> PRODUCTION FILE DOES NOT EXIST
>>>> <WORK05> ITEM SUBSTITUTION FILE READ
CHECK FOR EXISTANCE OF <WORK15>
>>>>> <WORK15> SHIP  PORT STATUS FILES DO NOT EXIST

<<<< <WORK01> REQUISITION FILE READ

R    1  0  1  1   1    3714          8  45      1  PASS=   1
X    1  0  1  1   1    2471    1243  8 45 34 29  4  1       1
X    1  0  1  1   1    1850     621  8 45 34 29  4  1       1
X    1  0  1  1   1       8    1842  8 45 34 29  5  1       1
X    1  0  1  1   1       0       8  8 45 34 29  5  2       1
*987*    1   7   8   8

R    2  0  1  1   2    1734          8  45      1  PASS=   1
X    2  0  1  1   2    1436     298  8 45 34 29  5  1       1
X    2  0  1  1   2    1066     370  8 45 34 29  5  2       1
X    2  0  1  1   2       0    1066  8 45 34 29  6  2       1
*987*    2   8   8   8

R  521  0  1  2  43   81792          8  44      1  PASS=   1
*987*  521   5   6   3

R  522  0  1  2  44   10830          8  44      1  PASS=   1
*987*  522   2  -1  -1

R  523  0  1  2  46    2880          8  44      1  PASS=   1
*987*  523   2  -1  -1

R  524  0  1  2  53    6588          8  44      1  PASS=   1
*987*  524   5   6   3

R  525  0  1  2  67    3500          8  44      1  PASS=   1
*987*  525   5   6   3
```

```
<<<< LIST OF UNFILLED REQUISITIONS >>>>
    3    0    1    1   -1    3   45  603
    6    0    1    1   -1    3   45  980
    7    0    2    1   -1    6   10  176
  521    0    1    2   -1   43   4481792
  522    0    1    2   -1   44   4410830
  523    0    1    2   -1   46   44 2880
  524    0    1    2   -1   53   44 6588
  525    0    1    2   -1   67   44 3500
>>>> <PORTUS> PORT/BERTH STATUS FILE WRITTEN
>>>> <WORK19> SHIP ATTRIBUTE FILE WRITTEN
>>>> <WORK12> REMAINING ASSETS IN DEPOTS FILE WRITTEN
>>>> <WORK13> REMAINING DEPOT LIFT CAPACITY FILE WRITTEN
>>>> <ANALS1> PERFORMANCE ANALYSIS BY ITEM WRITTEN
OPEN ERROR ON WORK18 FILE.  IC =  15
CLOSE ERROR ON WORK18 FILE.  IC =  15
>>>> <WORK20>  UNUSED PRODUCTION FILE WRITTEN
>>>> <WORK16> OPEN REQUISITION FILE WRITTEN

OK, DATE

Wednesday, October 14, 1981   7:29 PM

OK, COMO -E
```

IV. Q_REPRTS8

```
OK, DATE

Thursday, October 15, 1981   2:28 PM

OK, SEG DMWORK>$ADS>#REPRTS8
 SPECIFY THE CODE NUMBERS FOR THE REPORTS DESIRED
 INPUT THE NUMBERS CONSECUTIVELY

                REPORTS                CODE        FILENAME
 DEPOT OUTLOADING SCHEDULE               1          DSCHUL
 DEPOT LIFT CAPABILITY POSTURE           2          DLIFTP
 SHIP MANIFEST                           3          MANFST
 ITEM ANALYSIS SUMMARY IN QUANTITY       4          IANALS
 DEPOT OUTLOADING SERVICE SUMMARY        5          DEPSER
 ITEM ANALYSIS SUMMARY IN TONS           6          IANALT
 PORT RECEIPT SCHEDULE                   7          PSCHUL
 DEPOT ASSET REPORT                      8          DASSET
 ITEM,DEPOT AND PORT LISTS               9          INFORM
 MTMC PORT SCHEDULES                     A          MTPSCH
179
WORK00 READ
WORK04 READ
WORK07 READ
WORK08 READ
WORK09 READ
WORK12 READ
WORK11 READ
START DSCHUL
DSCHUL COMPLETED
WORK11 READ
START PSCHUL
PSCHUL COMPLETED
START INFORM
INFORM COMPLETED
END OF MAIN

OK, COMO -E
```

V. Q_OPEN_REQ

```
OK, FUTIL
[FUTIL rev 17.6]
> SR Q_OPEN_REQ 2
> Q

OK, SEG DMWORK>$PP>#OPEN_REQ
Sort/Merge begining
ENTER PATHNAME OF MIDASI-INIT FILE: DMWORK>$ADS>MIDASI
MIDASI opened
WORK07 read
WORK04 READ
ROUTES READ
In-memory sort performed
Sort complete [SORT$L Rev 3.1]

Want file spooled? NO

OK, COMO -E
```

VI. Q_SHPRPT

```
OK, DATE

Thursday, October 15, 1981   1:48 PM

OK, SEG DMWORK>$ADS>#SHPRPT

 SPECIFY THE CODES FOR THE DESIRED REPORTS...
 INPUT THE CODES CONSECUTIVELY

          REPORTS    CODE
          -------    ----

           SHPMT2      A
           SHPMT3      B
           SHPMT4      C
           SHPREQ      D
           SHPITM      E
           SHPDEP      F

ACD
DO YOU WISH THE REPORTS TO BE SPOOLED? YES


 YOUR PHANTOM FILE IS P_SHMT

 SUBMIT THAT PHANTOM TO GENERATE THE DESIRED REPORTS


OK, COMO -E
```

VII. Q_EDITRQ

```
OK, DATE

Thursday, October 15, 1981   1:54 PM

OK, SEG DMWORK>$ADS>#EDITRQ
Want to spool WORK11? NO
Want to edit? YES

Wait...(take 2 minutes)... OPENING UNIT 3
 WORK11 CLOSED


Sort/Merge beginning
In-memory sort performed
Sort complete [SORT$L Rev 3.1]

Sort/Merge beginning
In-memory sort performed
Sort complete [SORT$L Rev 3.1]


Break is over

You can change the DODAC, service ID, and/or the computed
delivery date.  Be very careful to enter the replacement
characters directly under the ones to be replaced.
Good Luck.

Enter req seq # (c/r to quit)...> 14
0         1         2         3         4         5         6
         7         8

12345678901234567890123456789012345678901234567890123456789012345678901
2345678901234567890

   14U41B14W1325OY41        EA00914FW202612594494 FK4624M  G58
35002010  FX480010

   DODAC  >                 O/P   >          COMPUTED DELIVERY
DATE >         020
```

```
Record now reads --

0         1         2         3         4         5         6
          7         8

12345678901234567890123456789012345678901234567890123456789012345678901
2345678901234567890

   14U41B14W1325OY41        EA00914FW202612594494 FK4624M  G58
35002010  FX4802000

Is this what you want? NO

   14U41B14W1325OY41        EA00914FW202612594494 FK4624M  G58
35002010  FX480200

   DODAC  >                O/P   >          COMPUTED DELIVERY
DATE >         021

Record now reads --

0         1         2         3         4         5         6
          7         8

12345678901234567890123456789012345678901234567890123456789012345678901
2345678901234567890

   14U41B14W1325OY41        EA00914FW202612594494 FK4624M  G58
35002010  FX4802100


Is this what you want? YES

Enter req seq # (c/r to quit)...>
Are you finished? YES

OK, COMO -E
```

VIII. Q_EDITTR

```
OK, SEG #EDITTR
Where do you want output spooled?...> B110
Initial EDITTR run since last model run? YES

Begin initialization

This section writes the following files --

  'ROUTDA'  - direct access copy of 'ROUTES'
  'WK11DA'  - direct access copy of 'WORK11'
  'ROTBIF'  - index/status file for 'ROUTDA'

These files are reqd for subsequent editing and/or execution.
The 'ROUTDA' file is the final updated routes file.

Wait...
ROUTDA written
WK11DA written

Sort/Merge beginning
In-memory sort performed
Sort complete [SORT$L Rev 3.1]

Sort/Merge beginning
In-memory sort performed
Sort complete [SORT$L Rev 3.1]

Sort/Merge beginning
In-memory sort performed
Sort complete [SORT$L Rev 3.1]

Sort/Merge beginning
In-memory sort performed
Sort complete [SORT$L Rev 3.1]

ROTBIF written

Initialization complete

Number of ships.....    28
Number of requisitions...  525
Number of transactions...  1507

Enter port #, RIC, or ALL...> ?
```

Ship Berthing Schedule

Port	Berth	Ship	DOB	DOD	App Flag
2	1	1	17	22	0
2	1	5	23	28	0
2	1	7	34	39	0
2	1	8	40	45	0
2	1	9	46	51	0
2	1	10	52	57	0
2	1	11	58	63	0
2	1	12	64	69	0
2	1	13	70	75	0
2	1	14	76	81	0
2	1	15	82	87	0
2	2	2	17	22	0
2	2	6	23	28	0
2	3	3	12	17	0
2	3	4	22	27	0

```
Enter the ship id # or ALL...> 12
Want to edit? N
Want a ship manifest? Y
Want to spool manifest? N
Want to execute manifest? Y
Departure date is     69
Want to change departure date? Y

Enter new departure date...> 73

Your ship manifest file is SH02012


Want to do another ship? Y
Enter port #, RIC, or ALL...> 2
```

Ship Berthing Schedule

Port	Berth	Ship	DOB	DOD	App Flag
2	1	1	17	22	0
2	1	5	23	28	0
2	1	7	34	39	0
2	1	8	40	45	0
2	1	9	46	51	0
2	1	10	52	57	0
2	1	11	58	63	0
2	1	12	64	69	1
2	1	13	70	75	0
2	1	14	76	81	0
2	1	15	82	87	0
2	2	2	17	22	0
2	2	6	23	28	0
2	3	3	12	17	0
2	3	4	22	27	0

```
Enter the ship id # or ALL...> 11
```

```
Want to edit? N
Want a ship manifest? Y
Want to spool manifest? N
Want to execute manifest? Y
Departure date is     63
Want to change departure date? YES

Enter new departure date...> 65

Your ship manifest file is SH02011


Want to do another ship? Y
Enter port #, RIC, or ALL...> 2
                Ship Berthing Schedule

    Port    Berth     Ship      DOB      DOD  App Flag
       2        1        1       17       22        0
       2        1        5       23       28        0
       2        1        7       34       39        0
       2        1        8       40       45        0
       2        1        9       46       51        0
       2        1       10       52       57        0
       2        1       11       58       63        1
       2        1       12       64       69        1
       2        1       13       70       75        0
       2        1       14       76       81        0
       2        1       15       82       87        0
       2        2        2       17       22        0
       2        2        6       23       28        0
       2        3        3       12       17        0
       2        3        4       22       27        0
Enter the ship id # or ALL...> 10
Want to edit? N
Want a ship manifest? Y
Want to spool manifest? N
Want to execute manifest? Y
*** DIAG LINE   509 SKEY =     2   10    0   82   87    0
0
Departure date is     57
Want to change departure date? Y

Enter new departure date...> 60
Your ship manifest file is SH02010


Want to do another ship? Y
Enter port #, RIC, or ALL...> 2
```

Ship Berthing Schedule

Port	Berth	Ship	DOB	DOD	App Flag
2	1	1	17	22	0
2	1	5	23	28	0
2	1	7	34	39	0
2	1	8	40	45	0
2	1	9	46	51	0
2	1	10	52	57	1
2	1	11	58	63	1
2	1	12	64	69	1
2	1	13	70	75	0
2	1	14	76	81	0
2	1	15	82	87	0
2	2	2	17	22	0
2	2	6	23	28	0
2	3	3	12	17	0
2	3	4	22	27	0

Enter the ship id # or ALL...> 32
Ship not found.

Want to do another ship? NO

OK,

OK, COMO -E

IX. Q_SHIPLOAD

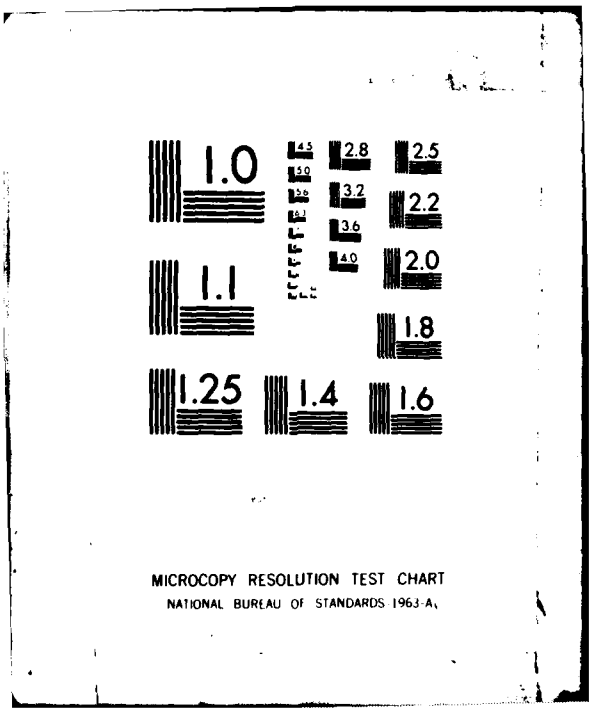
```
OK, DATE

Thursday, October 15, 1981   2:58 PM

OK, SEG DMWORK>$ADS>#SHIPLOAD
Enter pathname of MIDASI file : DMWORK>$ADS>MIDASI
MIDASI opened
Enter U for EXCAP, A for CCSS: A
Enter Port ID OR "ALL" : 1
Enter ship number : 3
SHIP-M Opened
Do you want SHIPLOAD to update MIDASI : NO
THE SHIP PLANNING MESSAGES ARE IN FILENAME BODY-A01003
Want to do another ship? NO

OK, COMO -E
```

X. Q_SHIP01

```
OK, DATE

Thursday, October 15, 1981   3:01 PM

OK, SEG DMWORK>$ADS>#SHIP01
Ship id (Axxyyy) (CR to quit) : A01003

 THERE ARE 0 SUPPLEMENTS + THE ORIGINAL (# 0) FOR SHIP A01003
 THE LAST COPY HAS NOT BEEN SENT AND CAN BE EDITTED
 WHICH SUPPLEMENT DO YOU WANT TO LOOK AT : 0

 WAIT::(TO LOAD ARRAY FROM MIDAS FILE)::::

 THERE ARE    125 ENTRIES FOR SHIP A01003  SUPPLEMENT NUMBER
 0
 SPOOL THIS SUPPLEMENT (A GOOD IDEA FOR EDITTING) ? NO

 EDIT, NEW SUPPLEMENT OR SHIP, OR QUIT (E,N,OR Q)      : E
 ANY NEW LINES WILL BE ADDED AT THE END OF THE ORIGINAL ONES

 ADD, CHANGE, DELETE, LOOK, SEND, END EDIT, OR QUIT
 (A,C,D,L,S,E, OR Q) : S
 SPECIAL SEND OPTION

 ADD, CHANGE, DELETE, LOOK, SEND, END EDIT, OR QUIT
  (A,C,D,L,S,E, OR Q) : E

 DO YOU WANT THIS SUPPLEMENT ENTERED IN THE MIDAS FILE ? YES
 SHIP A01003 0 IS BEING ENTERED
 WAIT :::
 SHIP04 RUN
 WAIT :::
 WOULD YOU LIKE THIS SHIP MANIFEST PUT OUT AS A
  BODY-AXXYYY FILE (Y OR N)
 ** REMEMBER ANY OLD FILE BY THAT NAME WILL BE DELETED ** ? Y
 OLD BODY-A01003 DELETED
THE SHIP PLANNING MESSAGES ARE IN FILENAME BODY-A01003
Ship id (Axxyyy) (CR to quit) :
 *****END OF PROGRAM*****

OK, COMO -E
```

AD-A108 245 ARMY ARMAMENT MATERIEL READINESS COMMAND ROCK ISLAND--ETC F/G 15/5
AMMUNITION DISTRIBUTION SYSTEM FOR PROUD SPIRIT/MOBEX 80, VOLUM--ETC(U)
OCT 81 S W OLSON, N H TRIER

UNCLASSIFIED DRSAR-DM-TR-10-81 SBI-AD-E700 006 NL


1.0
1.1
1.25
1.4
1.6
1.8
2.0
2.2
2.5
2.8
3.2
3.6
4.0
MICROCOPY RESOLUTION TEST CHART
NATIONAL BUREAU OF STANDARDS 1963-A

XI. Q_MILSTAMP

```
OK, DATE

Thursday, October 15, 1981   3:06 PM

OK, SEG DMWORK>$ADS>#MILSTAMP
AUTOMATIC OPERATION (WILL RUN ALL SHIPS)? NO
PORT # (C/R) TO QUIT : 1
SHIP # (C/R) TO QUIT : 3
SHIP # (C/R) TO QUIT :
PORT # (C/R) TO QUIT :
Final ship message file is SP-A01003
**** END OF MILSTAMP PROGRAM ***

OK, COMO -E
```

XII. Q_ADM007

```
OK, DATE

Thursday, October 1, 1981   3:52 PM

OK, SEG #ADM007
READING PARAMETER FILE
INITIALIZE SHIP ATTRIBUTE ARRAYS
INITIALIZE TOTAL SHIPMENTS AGAINST REQUISITIONS
INITIALIZE ASSET    LIFT CAPABILITY ARRAYS
READING LIFT DATA
  PROCESSING RECORD    100
  PROCESSING RECORD    200
  PROCESSING RECORD    300
  PROCESSING RECORD    400
  PROCESSING RECORD    500
  PROCESSING RECORD    600
  PROCESSING RECORD    700
  PROCESSING RECORD    800
WRITE UNMET BALANCES TO WRKA01
WRITE UNMET BALANCES TO WRKA11
WRITE WRKA15 STATUS FILE
WRITE REMAINING LIFT CAPACITY
WRITE REMAINING ASSETS
JOB HAS FINISHED

OK, DATE

Thursday, October 1, 1981   3:58 PM

OK, COMO -E
```

XIII. Q_PREPRO.IT

```
OK, DATE

Thursday, October 1, 1981   4:05 PM

OK, FUTIL
[FUTIL rev 17.6]
> SR Q_PREPRO.IT 3
> Q

OK, DATE

Thursday, October 1, 1981   4:05 PM

OK, FUTIL
[FUTIL rev 17.6]
> DELETE WORK01
> DELETE WORK06
> DELETE WORK08
> DELETE WORK11
> DELETE WORK15
> Q

OK, DATE

Thursday, October 1, 1981   4:05 PM

OK, CN WRKA01 WORK01
OK, CN WRKA06 WORK06
OK, CN WRKA08 WORK08
OK, CN WRKA11 WORK11
OK, CN WRKA15 WORK15
OK, DATE

Thursday, October 1, 1981   4:06 PM

OK, SEG DMAXSO>$TEST>#PREPRO
ENTER "PARAM1" FILE TREENAME: DMWORK>$PP>PARAM1
ENTER "CRDPL"  FILE TREENAME: DMWORK>$ADS>CRDPL
ENTER "MIDASI" FILE TREENAME: DMWORK>$ADS>MIDASI
ENTER "WORK14" FILE TREENAME: DMWORK>$PP>WORK14
ENTER "NONSM1" FILE TREENAME: DMWORK>$PP>NONSM1
ENTER "DEPOT1" FILE TREENAME: DMWORK>$PP>DEPOT2
ENTER "PORT01" FILE TREENAME: DMWORK>$PP>PORTPP
ENTER "NETM81" FILE TREENAME: DMWORK>$PP>NETWRK
```

```
ENTER "PODGLC" FILE TREENAME: DMWORK>$PP>PODGCL
**PODGLC FILE OPENED**
 NPOD=  1 POD=UDA  THR=1    GLC=T4   PODNAME=CHINHAE
 NPOD=  2 POD=TA1  THR=1    GLC=X4   PODNAME=GUAM AIR
 NPOD=  3 POD=1AT  THR=1    GLC=XA   PODNAME=GUAM SURF
***<<<PODGLC FILE READ>>>***
**EX$RPT OPENED NORMALLY**
--- PARAMETER FILE READ
**MIDASI OPENED NORMALLY**
**WORK01 OPENED NORMALLY**
**WORK04 OPENED NORMALLY**
**WORK11 OPENED NORMALLY**
**WORK00 READ IN FOR A RESTART**
***--WARNING-*-AN EXTANT WORK00 FILE IMPLIES THE EXISTENCE
 AND REUSE OF WORK00-WORK11 FOR THIS RUN--***
**  136 OLD ITEMS RE-ESTABLISHED FROM WORK04**
 **  START PROCESSING WALK-INS  **
***FINISHED PROCESSING    0 WALK-IN REQS. CODE=    0 ***
*** REQN FILE FOR ALL DEST AND PLANS WRITTEN WORK01 IC=  0
*** WORK11 FILE WRITTEN. CODE=    0 ***
**  136 ITEMS WILL BE ANALYZED.**
***   136  ITEMS WRITTEN <WORK04>.IC=  0
***IDEP=  1 DEPOT ID=BAD*** WORK07 REREAD ***
***IDEP=  2 DEPOT ID=B08*** WORK07 REREAD ***
***IDEP=  3 DEPOT ID=B47*** WORK07 REREAD ***
***IDEP=  4 DEPOT ID=BKD*** WORK07 REREAD ***
***IDEP=  5 DEPOT ID=B22*** WORK07 REREAD ***
***IDEP=  6 DEPOT ID=BPD*** WORK07 REREAD ***
***IDEP=  7 DEPOT ID=BRD*** WORK07 REREAD ***
***IDEP=  8 DEPOT ID=B3D*** WORK07 REREAD ***
***IDEP=  9 DEPOT ID=B4D*** WORK07 REREAD ***
***IDEP= 10 DEPOT ID=B2D*** WORK07 REREAD ***
***IDEP= 11 DEPOT ID=BTD*** WORK07 REREAD ***
***IDEP= 12 DEPOT ID=B21*** WORK07 REREAD ***
***IDEP= 13 DEPOT ID=BB2*** WORK07 REREAD ***
***IDEP= 14 DEPOT ID=BD2*** WORK07 REREAD ***
***IDEP= 15 DEPOT ID=BC2*** WORK07 REREAD ***
***IDEP= 16 DEPOT ID=B51*** WORK07 REREAD ***
***IDEP= 17 DEPOT ID=AD1*** WORK07 REREAD ***
***IDEP= 18 DEPOT ID=B13*** WORK07 REREAD ***
***IDEP= 19 DEPOT ID=B15*** WORK07 REREAD ***
***IDEP= 20 DEPOT ID=B38*** WORK07 REREAD ***
***IDEP= 21 DEPOT ID=B19*** WORK07 REREAD ***
***IDEP= 22 DEPOT ID=B39*** WORK07 REREAD ***
***IDEP= 23 DEPOT ID=B28*** WORK07 REREAD ***
***IDEP= 24 DEPOT ID=B59*** WORK07 REREAD ***
***IDEP= 25 DEPOT ID=BE5*** WORK07 REREAD ***
***IDEP= 26 DEPOT ID=B18*** WORK07 REREAD ***
***IDEP= 27 DEPOT ID=BHZ*** WORK07 REREAD ***
**WORK07 RE-READ COMPLETED**
**WORK08 OPENED NORMALLY**
***     1 ASSETS ADDED TO <WORK08> CODE=  0
```

```
**CRDPL CLOSED NORMALLY**
**MIDASI CLOSED NORMALLY**
** PORT01 FILE OPENED NORMALLY**
**WORK09 OPENED NORMALLY**
**CLOSING CODES AT 1115 ARE:     0     0 WORK09 WRITTEN***
**NETWRK OPENED NORMALLY**
**WORK10 OPENED NORMALLY**
 DEPOT B43 IN NETWORK NOT FOUND IN DEP FILE
 POE DCC IN NETWORK NOT FOUND IN PORT FILE
**CLOSING CODES AT 6805 ARE:     0     0     0 ***
**WORK00 OPENED NORMALLY**
*** PARAMETER WORK FILE WRITTEN <WORK00> IC=  0
0******END OF PRE-PROCESSOR RUN*******

OK, SORT BRIEF
EX$RPT EXCEPTIONS 1
1 9

BEGINNING SORT



 PASSES        2           ITEMS         2

[SORT-REV18.0]

OK, DELETE EX$RPT
OK, SEG DMWORK>$ADS>#NUMW04
*** END OF PROGRAM -- ERROR CODES=  2 18 ***


OK, DATE

Thursday, October 1, 1981   4:07 PM

OK, COMO -E
```

Technical Report TR 8-81
August 1981

GLOSSARY

ADAP	Ammunition Demand Automated Processing
ADM007	Feedback program which takes output files and prepares them to be used as input files for the next iteration of the model after execution/approval and/or requisition editing.
ADM184	Distribution module for the unconstrained ports of embarkation mode of operation.
ADM294	Distribution module for the constrained ports of embarkation mode of operation.
ADS	Ammunition Distribution System.
ADS network	A graph of inter-connecting arcs and nodes which show, respectively, the permissable distribution routing and changes of transportation modes between the points of demand and the source of supply.
ADS module	See Distribution module
ANALS1	Summary item analysis file.

Ammunition Demand Automated Processing

ADAP

Army Crisis Management Network

Asset file	MIDASI file.
Assumptions	A stated set of conditions imposed upon the ADS system which determines the method of operation and solutions obtained.
BASSET	Beginning asset file (See TASSET).
CCSS	DARCOM Commodity Command Standard System.
COMO	A method for tracing and recording terminal operations.
CONUS	Continental United States.
CRDPL	Complete round data file per the official army supply bulletins of permissable components.

Class V	Supply class -conventional ammunition.
Commodity Command Standard System	A DARCOM standard inventory control system.
Complete round	An assemblage of separate-issue items needed to fire a given weapon in support of a given mission objective.
Complete round - Component file	See Complete round.
Complete round - Usages file	See Complete round.
DASSET	ADS output report containing the assets at each depot.
DEPOT1	Preprocessor input file -Depot information
DEPSER	ADS output report containing depot shipments to specific POE's.
DESCOM	Depot Systems Command.
DLIFTP	ADS output report containing lift capability by depot.
DOB	Day on berth.
DODAC	DoD Ammunition Code.
DODIC	DoD Identification Code.
DOR	Day of receipt.
DOS	Day of shipping.
DRSAR-DSP	Defense Ammunition Supply Directorate, ARRCOM, Policy, Plans and Systems Division
DRSAR-MSA	Management Information Systems Directorate ARRCOM, Ammunition Management Systems Division.
DSCHUL	ADS output report containing daily item amounts loaded by depot and port arrival time and POE.

DTIME	Distribution model input file containdepot sequence numbers.
Data base	A computerized file containing data.
Default values	In a computer program, the value to which a variable will assume if an optional value has not been selected.
Department of Defense Ammunition Code	DODAC
Depot sequence number	DTIME
Depot asset posture report	DASSET
Depot file	DEPOT1
Depot information file	WORK07
Depot lift capability file	WORK06
Depot lift capability posture report	DLIFTP.
Depot loading schedule report	DSCHUL.
Depot loading service summary report	DEPSER.
Distribution model	A computer simulation of the conventional ammunition distribution system.
Distribution module	See Distribution model.
Distribution simulation model	See Distribution model.
DoD	Department of Defense.
EDITRQ	An interactive program which permits the operator to edit open requisitions.
EDITTR	An interactive program which permits the operator to edit/change/execute a shipload

EX$RPT	A program to detect missing or erroneous data.
FSC	Federal Supply Class.
Hazard class	A code associated with various levels of risk for shipping/storing items.
Heuristic rules	Rules of thumb for making distribution decisions in the Distribution Module.
IANALS	ADS output report containing transportation shipping information, asset posture, readiness posture, and prescribed substitute items.
IANALT	ADS output report containing item analysis by DODAC.
INFORM	ADS output report containing a list of study items by DODAC.
Interactive	In a computer system, a program which permits an operator to monitor and input data/instructions to an on-going program.
Intermediate transaction file	ROUTEP.
Item analysis report	IANALT
Item analysis summary report	IANALT.
Item information file	WORK04
Item list, Depot list and Port list report	ADS output report containing a list of study items sorted by DODAC.
Iterate	In a computer program, the re-cycling of an entire program or a part of a program, usually with new data and/or operating parameters.
Iteration	See Iterate.
JDA	Joint Deployment Agency of the Joint Chiefs of Staff.

Joint Deployment Agency	
	JDA.
LOGNET	Logistics Data Network for Army Crisis Management.
Logistics Data Network/Army Crisis Management	
	LOGNET.
MANFST	ADS output report containing each ship's contents by item, the POE, the POD, the sailing date, and the ETA.
MIDAS	Multiple Index Data Access System, a specialized system of programs, files and sub-routines designed for use with the PRIME computer.
MIDASI	A preprocessor input file containing item attribute data, asset levels, and planned requirements amounts. (See CRDPL)
MILSTAMP	An interactive program used in the preparation of ship planning messages.
MILSTP	A file of depot materiel release orders.
MILSTRIP	See MILSTP.
MOBEX-80	Mobilization Exercise, 1980.
MOBMDR	Mobilization Master Data Record on CCSS.
MRO	Materiel Release Order (see MILSTP and MILSTAMP.)
MTMC	Military Traffic Management Command.
MTMC Port cargo availability report	
	See MTPSCH.
MTPSCH	ADS output report containing information on port cargo availability.
Management Information Systems	
	DRSAR-MSA.

Model parameter file	PARAM1.
NETM81	Network file.
NIIN	National Item Identification Number.
NONSM1	An input file containing non-SM lift capability reduction information.
National Item Identification Number	NIIN.
Network file	NETM81.
Non-SM Lift Capability Reduction	NONSM1.
OCONUS	Outside CONUS.
OPLAN	Pre-planned operational ammunition requirements.
Open requisition	After processing through ADS, an unfilled requisition.
Output file	Any of the files created by the ADS Distribution Module.
PARAM1	An input file containing system operating parameters.
PORT01	An input file containing information concerning ports.
PRIME/PRIME computer	A mini-computer system available at ARRCOM upon which the ADS system is programmed for execution.
PROUD SPIRIT	See MOBEX-80.
PSCHUL	ADS output report containing item amount received at POE's daily.
PTIME	Distribution model input file containing port sequence numbers.
Pallet load	A load standardized for a given item.
Parameter file	PARAM1.
Port file	PORT01.

Port information file	WORK09.
Port receipt schedule report	PSCHUL.
Port sequence number	PTIME.
Pre-planned requirements	Estimated theater needs determined prior to mobilization. (See OPLAN)
Preprocessor	A sub-system within ADS which edits and re-formats input data base information as working input files for the ADS distribution module.
RDD	Required delivery day.
RDJTF	Rapid Deployment Joint Task Force.
ROUTDA	ADS output transaction file.
ROUTEH	ADS output approved transaction file.
ROUTEP	ADS intermediate transaction file.
ROUTES	ADS output transaction file.
Rapid Deployment Joint Task Force	RDJTF.
Remaining assets file	WORK12.
Remaining depot lift capability file	WORK13.
Reports generation	An ADS capability to automatically or on demand create needed status reports.
Reports generator	See Reports generation.
Required delivery date	RDD.
Requisition	A record ordering a quantity of an ammunition for a specified delivery time.

Requirements/Requisitions file	WORK01.
Requisitions file (MILSTRIP-like format)	WORK11.
SEXRPT	ADS prcgram used by DRSAR-DSP to correct, update, or otherwise modify the input files.
SH01001	"Port No.1, Ship No.1". See SHXXYYY.
SHIP-M	ADS MIDAS file created by SHIP-M containing ship planning messages.
SHIP01	ADS program used to interactively edit SHIP-M.
SHIPLOAD	ADS program to daily process shiploads approved for execution.
SHXXYYY	An ADS intermediate file used in the SHIPLOAD process "XX" being the port number and "YYY" being ship number.
SM	Single Manager for Conventional Ammunition (ARRCOM).
SMCA	See SM.
Separate issue item	Fundamental component as differing from an item which is issued as an assemblage of separate issue items or components.
Ship manifest report	MANFST.
Ship status file	WORK15.
Shortfall	The amount by which a shipment does not meet theater requirements, either in quantity or delivery date.
Substitution file	An input file delineating permissable substitute items for those requisitioned.
Summary item analysis file	ANALS1.

TASSET	Current asset array.
Transaction file	ROUTES.
Transportation network file	WORK10.
WORK00	Model parameter file.
WORK01	Requirements/requisitions file.
WORK02	Complete round -Component file.
WORK03	Complete round -Usages file.
WORK04	Item information file.
WORK05	Substitution file.
WORK06	Depot lift capability file.
WORK07	Depot information file.
WORK08	Asset file.
WORK09	Port information file.
WORK10	Transportation network file.
WORK11	Requisitions (MILSTRIP-like format) file.
WORK12	Remaining assets file.
WORK13	Remaining depot list capability file.
WORK14	Walk-in requisitions file.
WORK15	Ship status file.
WORK16	Output requisition file.
Walk-in requisition	Current theater requirement after mobilization.
WORK Files	ADS intermediate files needed to couple the scientific notation of the simulated distribution system to the notation of the real world.

Technical Report TR 10-81
October 1981

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