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A Simulation Model to Evaluate the Impact of Provisioning on the Operational Availibility of Navy Training Devices

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A SIMULATION MODEL TO EVALUATE THE IMPACT OF PROVISIONING ON THE OPERATIONAL AVAILABILITY OF NAVY TRAINING DEVICES

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ABSTRACT

This paper presents the considerations that must be taken into account when formalizing a simulation model to determine the operational availability of a Navy training device.

Consideration is given to those design and logistic support parameters that impact the general simulation model before it is formulated. These parameters, are then used as guidelines to collect and screen the data available for use in the general model.

The general model is then translated into a computer simulation model. A specific training site is then chosen and data gathered to be used in the computer model. Design and logistic support parameters given consideration in this specific case were; component Mean-time-between-failures, repair capabilities (manual or automatic test equipment, and depot), spares provisioning, and repair or replacement times.

The simulation model was then exercised by changing the provisioning on-site to determine its effect on the trainers operational availability. Of significant notice was the effects that provisioning had on manpower requirements in the area of maintenance.

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I. INTRODUCTION

Background

Maintenance of operating systems and the effect that certain "logistic support" variables has on "system availability" have always been of paramount interest to decision makers. In the realm of Navy systems "system availability" plays a key role in the allocation of national funds. The system may be defined as the Navy's operationg forces, a subsystem of it, or just a particular piece of equipment within it. Consequently, since the availability of each component part plays an important part in establishing the availability of the whole systems, it becomes extremely important to ensure this availability at the lowest level of the system.

The Navy, in one of its current directives,[1] has established its criteria for measuring the "Operational Availability (A_o)" of its systems. Simply, the Navy's description of A_o is "the expected percentage of time that a weapon system or individual equipment will be ready

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[1]U. S. Department of the Navy, Office of the Naval Material Command. Naval Material Instruction 3000.2. Washington, D. C.: Government Printing Office, 21 January,1981)

to perform satisfactorily in an operating enviroment" or more generally "System Uptime/(System Uptime plus Downtime)."

Within the past several years, concurrent with the decrease in hostile military actions, the Navy has found an increasing need to find ways to effectively train its personnel without the loss of life or equipment. This need, to a large degree, has been met by the employment of training devices that range in complexity from relatively simple devices to large sophisticated weapon system trainers. Along with this increase in demand for trainers has come the need to make them operationally available to the personnel using them, thereby reducing the time necessary to complete training objectives and consequently increasing the availability of the trainer to more personnel.

To increase the "expected percentage of time" that these training devices are ready to perform requires a decision on what the proper mix of logistic support and design criteria will bring about this increase. In the area of design such factors as maintainability and reliability engineering take on an important role in increasing equipment availability. Any weaknesses in adapting proper design criteria will carry over into the area of operational support. Therefore, it is extremely important that close

coordination exist between those responsible for design and those ensuring proper logistic support. With the existence of this close coordination the logistician ran make the appropriate decisions on such logistic variables as; provisioning of spares and repair equipment, maintenance documentation, personnel support and training of support personnel.

Objectives of Research Project

It is the objective of this research to derive a computer simulation program to determine the Operational Availabilty (A_o) of Navy training devices based on the initial provisioning philosophy (spare components) at the training site. To accomplish this requires the collection of information about the major program parameters that define A_o. These parameters, are inherent in the design criteria and logistic support variables discussed above. Specifically, they are dictated by the maintainability concept (repair philosophy) of the trainer which establishes the level of repair (sub-assembly, circuit card, or IC chip) necessary to minimize training equipment downtime. Information collected on these parameters was obtained from local sources at the Naval Training Equipment

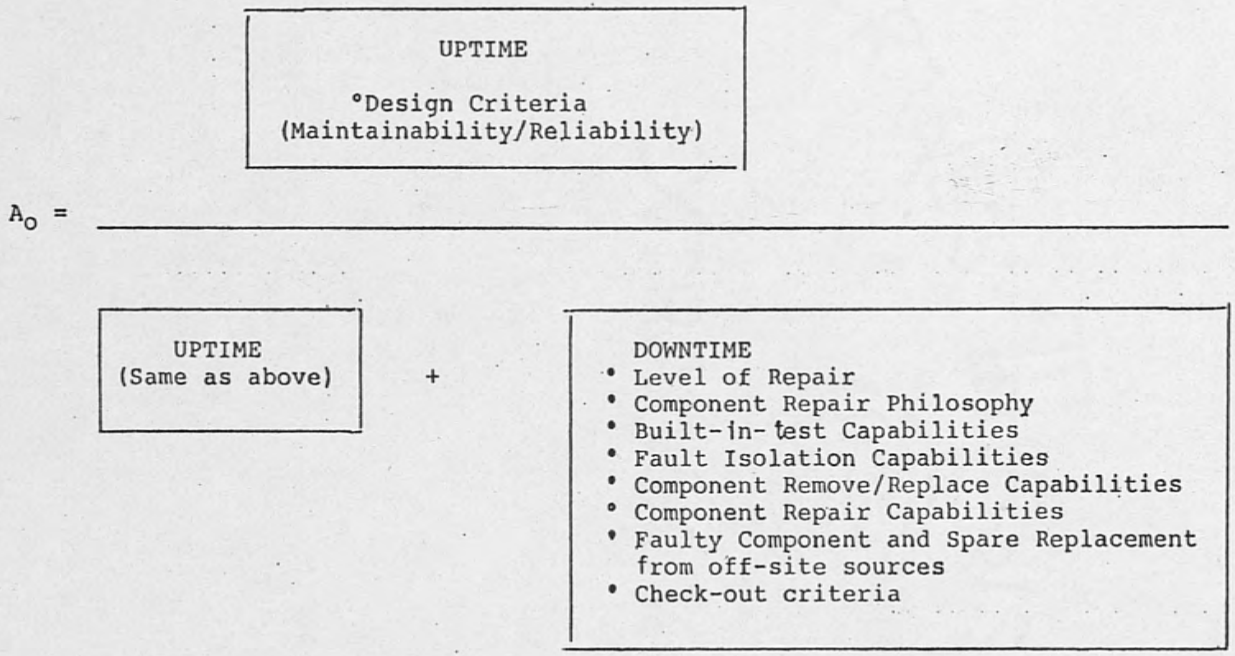

Fig. 1 Parameters of operational availability

(NTEC), Orlando, Florida or by researching several studies conducted by the NTEV.[2, 3]

Once these parameters were determined a general model could be constructed which best represents most training device repair capabilities. This general model could then be molded to represent any particular training site situation by choosing the particular set of parameters which best describe it. With these parameters fixed, it becomes a simply matter of choosing which one becomes the variable in driving A_o. In this case the choice was "faulty components and spare replacement from off-site sources;" which is circumvented by provisioning of spare components.

A general description of the parameters which influence the model are given in the following section.

General Description of the Model

Using the paramters given above a general simulation model was developed that represented most training sites.

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[2]James T. Newell, Simulation Model to Evaluate Performance of Operational Systems and Their Impact on Repair Shop Activity at a Navy Field Site (Orlando, Fla.: Naval Training Equipment Center, 1980)

[3]George W. Campbell, ATE Economic Feasibility Study on the A6E Weapons System Trainer, Preliminary Study, (Orlando, Fla.: Naval Training Equipment Center, 1980)

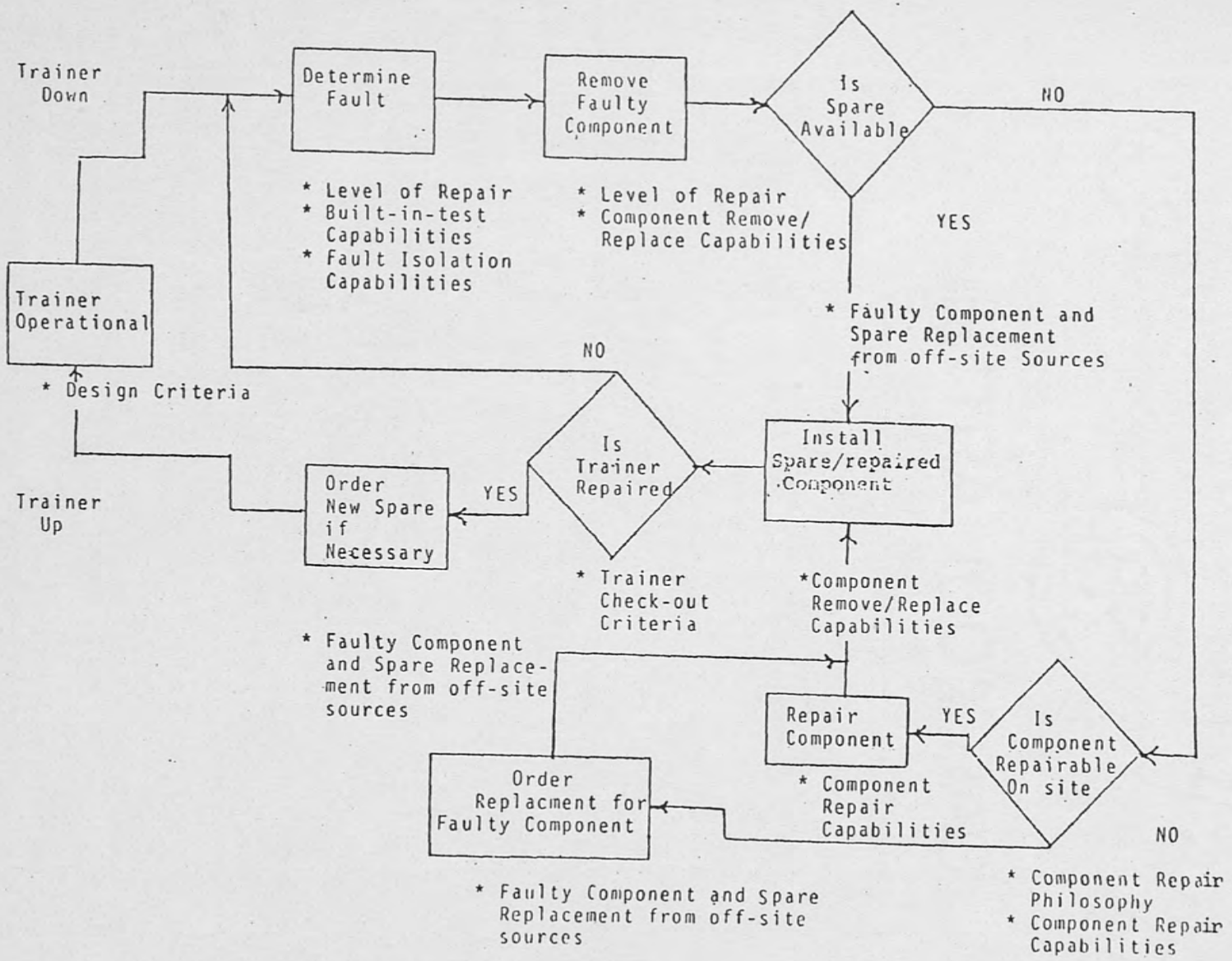

Fig. 2 General simulation model

This model is depicted in Figure 2 along with the parameters that influence each action or decision. A description of each of these parameters follows:

(1) Design criteria - Decisions on equipment design during the development phase of procurement in those disciplines that influence trainer reliability and maintainability; i.e., human factors, safety, redundancy, etc.

(2) Level of repair - Level of the trainer to which a fault can be isolated using built-in-test equipment, trainer software diagonostics and special types of equipment. At this level it normally only takes the removal and repair or replacement of the faulty component in order to place the trainer back in operation. The term component, unless otherwise stipulated, will be used throughout this paper to mean faulty components removed at this level.

(3) Component repair philosophy - A determination about which trainer faulty components should be repaired on-site and the means (types of repair facilities) to be used to repair them.

(4) Built-in-test capabilities - Special types of built in trainer hardware and software capabilities and special types of equipment to diagnose trainer faults.

(5) Fault isolation capabilities - The capability to fault isolate to the trainers "level of repair" using the trainer's built-in-test capabilites."

(6) Component remove/replace capabilities - The capability to remove/replace a faulty component. This capability is a function of the "design criteria" employed during development of the trainer which greatly influences the human physical effort to perform it.

(7) Component repair capabilities - The types of repair facilities maintained at the training site to accomplish repair of faulty components that are judged to be site repairable according to the trainer "component repair philosophy."

(8) Faulty component and spare replacement from off-site sources - A determination about which trainer components should not be repaired on-site making it necessary to either maintain spares on-site or procure replacements off-site. Also, includes a determination about which on-site repairable components should be spared and the rationale for doing so.

(9) Check-out criteria - A means to determine if the suspected faulty component is indeed the fault that placed the trainer in an inoperatable status.

With the completion of the general model it became necessary to select a training site and trainer from which to collect data on the parameters in order to develop a specific real life model to be simulated.

This data had recently been collected on the A6E Weapons System Trainer (WST) located at Naval Air Station Oreana, Virginia, (Figure 3) for analysis[3] to determine the most economically feasible mixture of "component repair" and "faulty component and spare replacement from off-site sources" philosophies. Therefore, this trainer was chosen to be simulated.

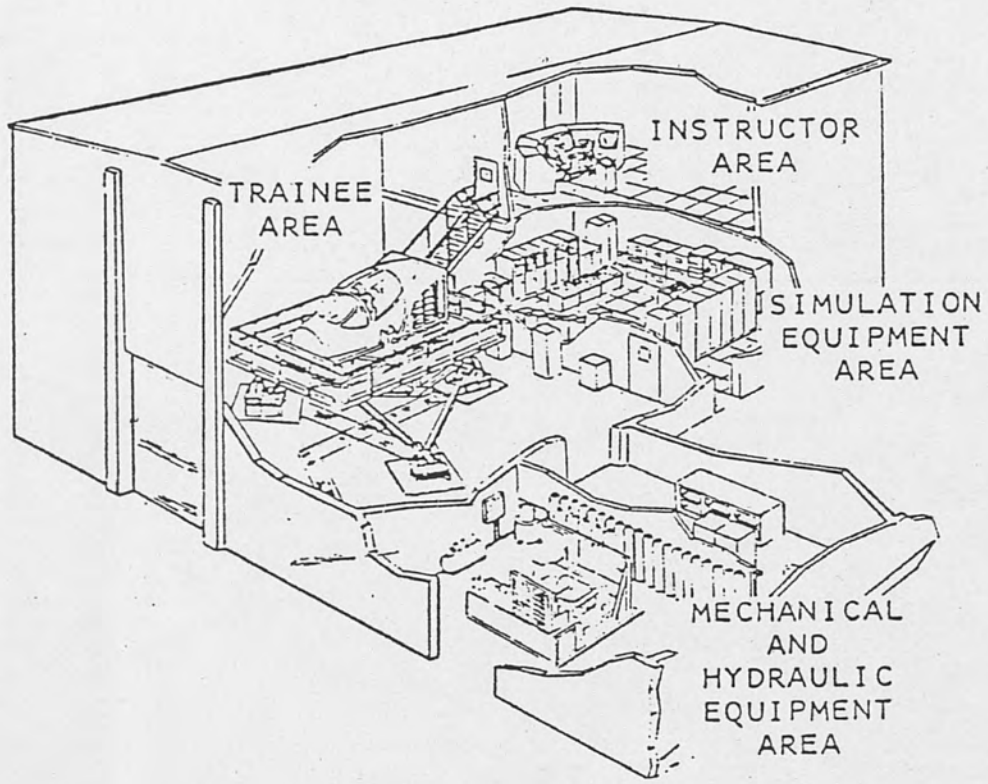

Fig. 3 A6E Weapon Systems Trainer
Oceana Naval Air Station

Source: U.S. Department of the Navy, Office of the Naval Material Command. Naval Material Instruction 3000.2. Washington, D.C. 21 January, 1981

II. DEVELOPMENT OF THE MODEL

Specific Parameters of the Model

Using the data collected on the specific parameters that influence the operational availability of the A6E Weapons System Trainer a model was constructed to simulate its operational availability. A facsimile of the data collection form is contained in Appendix G. This model was then programed using the Simulation Language an Alternate Method (SLAM)[4] software package on file at the Naval Data Automation Facility (NAVDAF), Naval Training Center, Orlando, Florida.

SLAM was chosen as the appropriate discrete simulation language because it offers the advantage to the user of programing his own special discrete events that may not be in the software package. This feature was needed in this model for the purpose of writing discrete events to maintain special files on spares inventory, generate and track trainer faults, and perform bookkeeping on trainer downtime and repair times.

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[4] A. Alan B. Pritsker, and Claude Dennis Pegden, Introduction to Simulation and Slam (West Lafayette, IN.: Systems Publishing Corporation, 1979).

The specific paramters that control A_o for the A6E WST were determined to be the following:

(1) Design criteria - The trainer was designed for a reliability Mean-Time-Between-Failures (MTBF) goal as determined in a serial model using both empirical and analytically generated MTBF data of its component parts which were derated by a factor of 5. It is a common practice at the NTEC to derate almost all reliability data by a factor of 5 to 7 to approximate real life situations. Its maintainability Mean-Time-To-Repair (MTTR) was determined in the same fashion. These values are 40 hours (MTBF) and 30 minutes (MTTR) respectively.

(2) Level of repair - The level of repair was restricted to electronic components. The majority of these electronic components were circuit cards with the exception of cables, relays, power supplies, and a few miscellaneous components.

(3) Component repair philosophy - The component repair philosophy used in this study was the same as that used in an automatic test equipment (ATE) feasibility study[3] conducted by the NTEC on this trainer. The study was conducted to determine if it were more economical to repair circuit cards on site using special ATE or procure them off-site through vendors. The modes of repair are

described in the "component repair capabilities" parameter description.

(4) Built-In-Test Capabilities - The trainer had built-in-test capabilities which could be used to isolate trainer faults down to the "level of repair." These capabilities were available through the use of both software diagnostics (daily readiness test (DRED) and special sub-system component isolation software techniques) and special built-in-hardware test circuitry.

(5) Fault isolation capabilities - The trainer faults could be isolated to the circuit card, relay, or power supply level.[5]

(6) Component remove/replace capability - Most components could be removed and replaced with minimal ease. The trainer was designed to permit quick access to circuit cards, power supplies and relays to reduce the human effort required to remove or replace them.

(7) Component repair capabilities - All components chosen to be repaired on-site were to be repaired using one of two methods; (1) manual test equipment such as ocilloscopes, voltmeters, and the like, (2) ATE - specifically, the AFIT and L135 circuit card testers for digital and analog cards respecitively.

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[5]U. S. Department of Navy, Commanding Officer, Naval Training Center, Preliminary Techinical Manual Maintenance Instructions A6E Weapon System Trainer (NAVTRADEV P-4177-1), Orlando, Florida, October 1979).

(8) Faulty component and spare replacement from off-site sources - The provisioning status of the trainer at the time of the ATE feasibility study[3] is shown in the "Initial Inventory File" of the simulation results (Chapter III).

It should be noted that even though a component could be repaired on-site, it was sometimes determined that it was wise to maintain a spare component on-site because of an anticipated excessively long repair time or high failure rate for the component. In addition, if a component were duplicated many times in the trainer or determined to be mission critical it, also was spared.

(9) Check-out criteria - To determine if the trainer had been repaired the built-in-test capabilities were exercised and the results noted before placing the trainer into an operational state.

Detailed Operating Requirements of the Model

The model which is representative of these parameters is shown in Figure 4 through 7. Basically the model can be divided into four main phases which are; (1) Phase I - Failure Analysis, (2) Phase II - Repair Trainer, (3) Phase III - Repair Bad Component or Order Replacement Spare, and (4) Phase IV - Records. This method of structuring the model made it simple to follow the flow of an entity

as it progresses through it. The SLAM Network (Appendix A) has also been subdivided into these phases for ease of interpretation.

Phase I - Failure Analysis (Figure 4)

Block A1: An inventory file (SLAM File No.1) of all of the electronic components that make up the trainer. Each entry in the file represents one electronic component and has seven attibutes assigned to it. These attributes are used to control the flow of a trainer failure (entity) through the model. A description of these attributes is given in the "Initial Inventory File" on page 35.

Block A2: An entity is created which takes on different attribute values (failure times, failed component number, repair times, etc.) as it flows through the model.

Block A3: The trainer failure interarrival time is taken as the future failure time of the first component linked up in a special SLAM file (SLAM File No.4). This file is used to store future failure times of components with a mission criticality of greater than or equal to .7. These future failure times were generated using SLAM's exponential pseudorandom number generator and the failure rate (derived by multiplying component's failure rate by number of like components in device) of each component. They were then linked in the file lowest future failure time first. After the entity failure flowing through this block took on the component number of the first entry in this file all other entries were then updated to make

them relative. This was done simply by subtracting all trainer operational time (training, fault isolate, and check-out times) from each components future failure time. To reduce computer execution time only those critical components with the lowest initially generated future failure times that did not exceed total simulation time were retained in the file for future processing. After an entity had taken on a failed component number a new failure time was generated for the removed component and placed, lowest failure time first, back in the file. These functions are all accomplished in the SLAM Event Module (Event 1), Appendix B. In addition, to determine the MTBF of the trainer a special computer program routine was included in the SLAM Event Module (Event 1), Appendix B, of the model. This routine used the failure rate of all trainer critical components to derive the trainer MTBF.

Block A4: The failed component is taken as the first component of SLAM File No. 4.

Block A5: The time necessary to fault isolate a trainer failure to a suspected failed component is assigned to the entity as it flows through this block. It is assumed that another failure will not occur during this time. This time is generated using a pseudorandom number generator. Its probability distribution function (pdf) and numeral values as they were supplied by the training site are contained in Table 1.

Block A6: Within the SLAM Event Module Event 2 was written to update the initial inventory file created in block A1 whenever a component on order had arrived since the last trainer failure had occured. This is accomplished by comparing the arrival time of components on order which are stored in SLAM File No. 2 with the current time of the entity flowing through this block. If a spare(s) had arrived at the site the pending order was deleted from SLAM File No. 2, recorded in SLAM File No. 5 for future reporting, and the initial inventory file updated.

Decision D1: A search is made of the inventory file to determine if a spare is on hand. This action is accomplished in Event 2 of the SLAM Event Module. If a spare is on hand it is assigned to the entity flowing through the block and routed to Phase II - Repair Trainer of the model. If not the entity is routed to Phase III - Repair Bad Component or Order Replacement Spare of the model for repair of suspected faulty component.

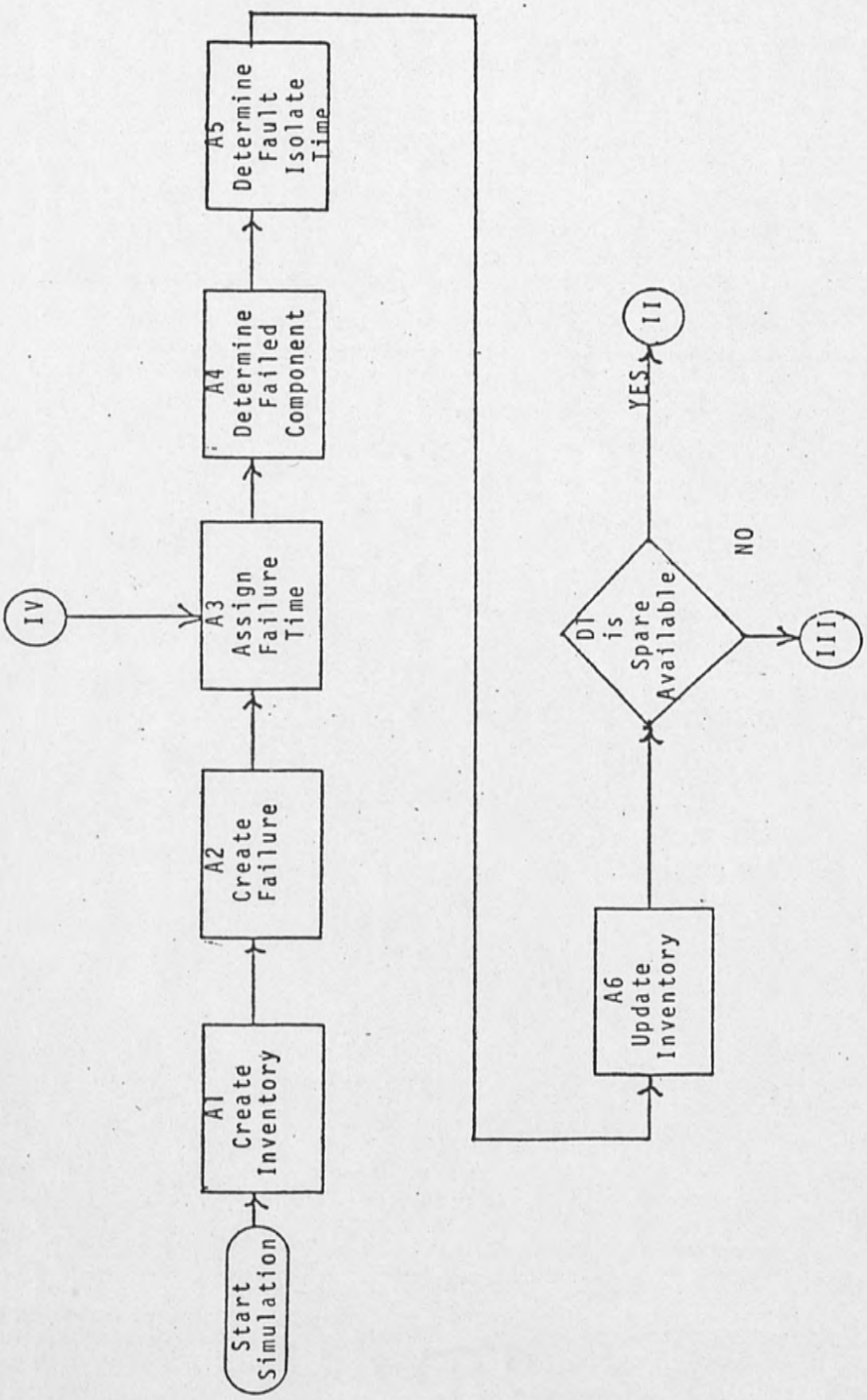

Fig. 4 Phase I - Failure Analysis

Phase II - Repair Trainer

Block B1: The time necessary to remove the suspected faulty component and replace it if a spare is on-site or after repair of faulty component. An entity may enter this block from either Phase I - Failure Analysis or Phase III - Repair Bad Component or Order Replacement Spare. This time is then assigned to the entity as it flows through the block. It is assumed that the meantime is not significantly different from the meantime to remove/replace a component from the trainer. Therefore, both actions are taken to be one. Refer to Table 1 for pqf and numerical values used in this block.

Block B2: The time necessary to validate the suspected fault is assinged to the entity as it flows through the block. The Decision D2 block is used as the means to determine which suspected faults become valid ones. Refer to Table 1 for pdf and numerical values used in this block.

Decision D2: A decision is made at this point in the model on the validity of the suspected fault. Based on information received from the training site 10% of all suspected faults are erronous ones, therefore, that percentage are randomly chosen to be invalid diagnoses and the entity is routed to Phase IV - Records to record the incorrect diagnosis. The other 90% are routed to Decision 3 block.

Decision D3: At this point if a spare has been used to make the repair (indicated in Attribute 5 of the entity) the entity is passed on to Phase III - Repair Bad Component or Order Replacement Spare for procurement of a replacement spare. If no spare was available then the entity has already been processed through Phase II (repair of component completed) and the entity is routed to Phase IV - Records for recording of failure data.

Phase III - Repair Bad Component or Order Replacement Spare

Decision D4: Entities arrive at this decision point from Phase I - Failure Analysis (no spare on-site-repair action required) or from Phase II - Repair Trainer for procurement of a replacement spare. At this point a decision is made as to whether this is a local repair/ replacement action. If it is a local action then (indicated in Attribute 1 of the entity) is passed on to Decision D5 block. If it is a depot action it is passed on to the Decision D7 block.

Decision D5: A determination as to whether this is a manual or ATE repair (indicated in Attribute 2 of the entity) is made at this point. A manual repair decision routes the entity to its respective Replacement/Repair

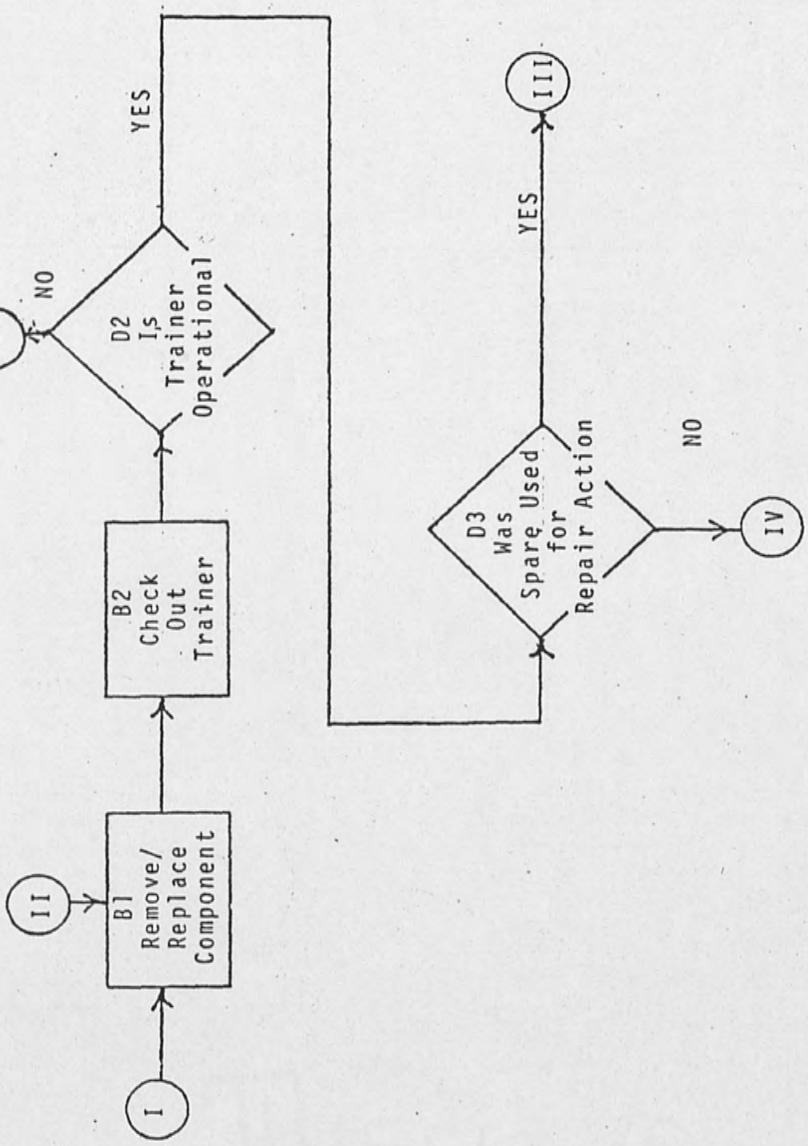

Fig. 5 Phase II - Repair Trainer

(R/R) Mode block, whereas an ATE repair decision routes the entity to the Decision D6 block.

Decision D6: An entity entering this block is either routed to the L135 R/R Mode block or the AFTT R/R Mode block as determined by special coding in Attribute 3 of the entity.

Decision D7: Each R/R Mode has this decision block in it. Here a decision is made to either repair a faulty component or order a replacement for a spare that was just used in repairing the trainer. If a component requires repairing then the entity is routed to Block C1. If a spare needs replacing the entity is routed to Block C2 of the model.

Block C1: A time required to repair the faulty component is randomly generated according to the pdf and numerical values given in Table 1. This time is assigned to the entity as it flows through this block. The entity is then sent to Phase II - Repair Trainer for repair of the trainer. Each R/R Mode has this block in it.

Block C2: A time of receipt for a spare replacement is generated in this block and assigned to the entity as it passes through the block. This time is randomly generated according to the pdf and numerical values given in Table 1. The entity is then routed to Phase IV - Records where an outstanding replacement ordered is recorded. Each R/R Mode

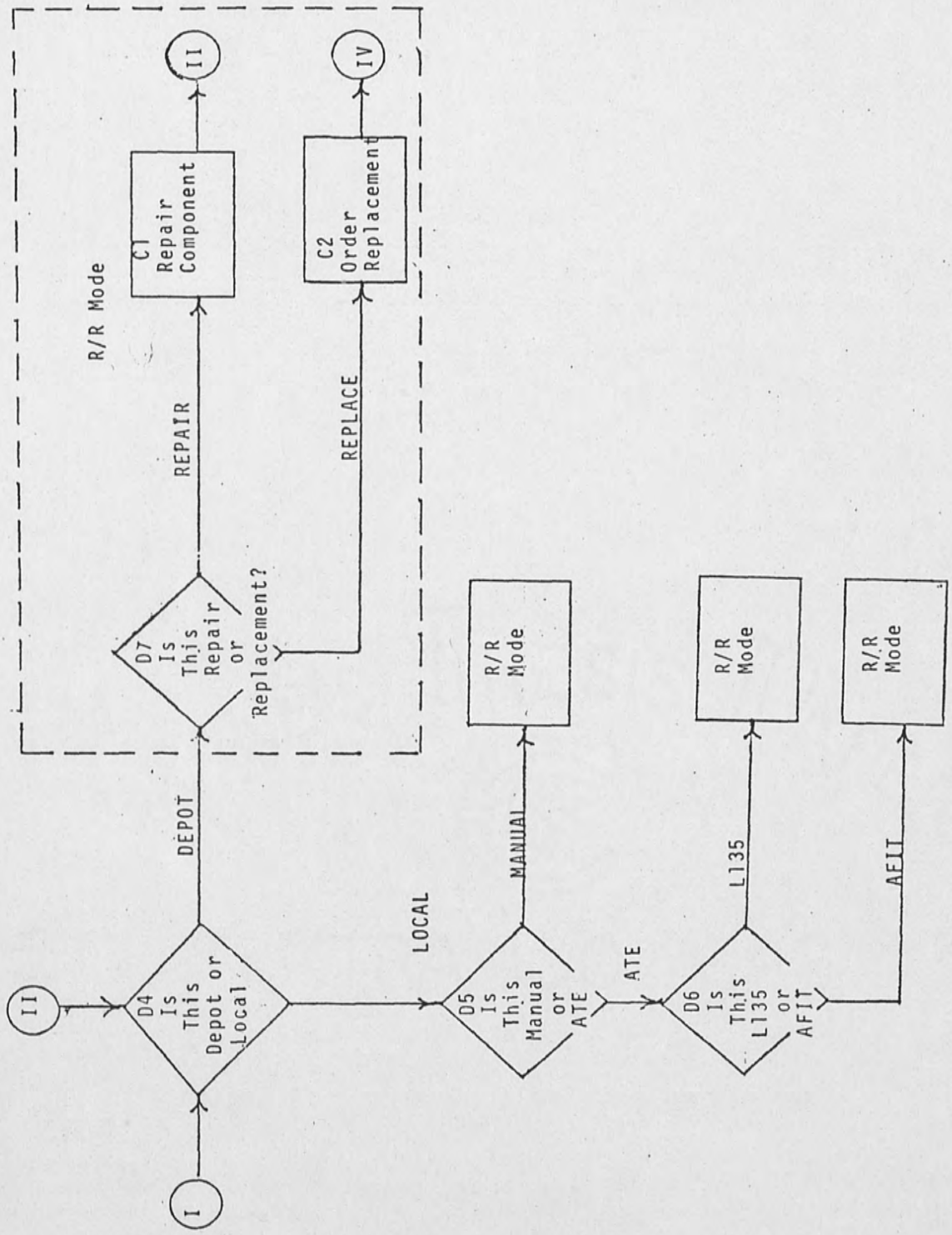

Fig. 6 Phase III - Repair Bad Component or Order Replacement Spare

Table 1

Pseudorandom Number Generator Data for Repair/Replacement Actions

Maintenance Mode	Probabilty Distribution FCN	MTTR	S. DEV.
* AFIT	Random Normal	120 Min	30 Min
* L135	Random Normal	45 Min	15 Min
* Manual Repair	Random Normal	360 Min	180 Min
	Case (1) Order Replacement		
DEPOT REPAIR	Random Normal	86,400 Min (60 days)	43,200 Min (30 days)
	Case (2) Immediate Repair Action		
	Random Normal	28,800 Min (20 days)	14,400 Min (10 days)

* Repair and replacement times for these maintenance modes are not considered to be significantly different. Therefore, identical repair/replacement times are used for each case.

has this block in it.

Phase IV - Records

Block E1: An entity arriving at this block is coming from Phase III - Repair Bad Component or Order Replacement Spare where a time for receipt of a replacement spare has just been assigned to it. At this point in the model the inventory file (SLAM File 2) is entered through Event 3 of the SLAM Event Module to reduce inventory of spares on-site for that particular component by one. The entity then continues to Block E2 of the model.

Block E2: In this block an entity enters SLAM File 2 through Event 3 of the SLAM Event Module to record the pending arrival time of a replacement spare that was used to repair the trainer during this downtime. The entity then continues on to Block E3.

Block E3: Only one entity is ever generated in this model and when it is destroyed simulation time ceases. It takes on the attributes of a new trainer failure each time it returns to Phase I - Failure Analysis from Decision D8. Consequently, a special time scheme was necessary to determine and record trainer total repair time, chargeable repair time, and current operational availability. This time scheme is provided in Event 4 of the SLAM Event Module.

Chargeable repair time is based on a 16 hour a day, 5 day a week, 52 weeks per year trainer operational requirement. All other time is non-chargeable repair time. Special provisions are incorporated to ensure that any repair time that occurs during non-chargeable repair time periods is not charged to operational availability. If a trainer repair action is completed during scheduled training time training immediately commences. However, if a normal repair action is completed during a non-chargeable repair time period, normal trainer operation commences at 8 AM on the next operational day. Figure 8 depicts this requirement. After trainer operational time, total repair time, chargeable repair time and current operational availability are determined for entities entering this block from Block E2 and Phase II - Repair Trainer these values are recorded in SLAM File 3. All entities are then routed to Decision D8 of the model.

Decision D8: Based on a predetermined simulation time simulation is either routed through Block 3 and subsequent termination or the entity is returned to Phase I - Failure Analysis for generation of a new failure.

Block E4: Just prior to termination of simulation a special set of files is generated in Event 5 of the SLAM Event Module. A summary of these files is presented in Chapter III of this paper.

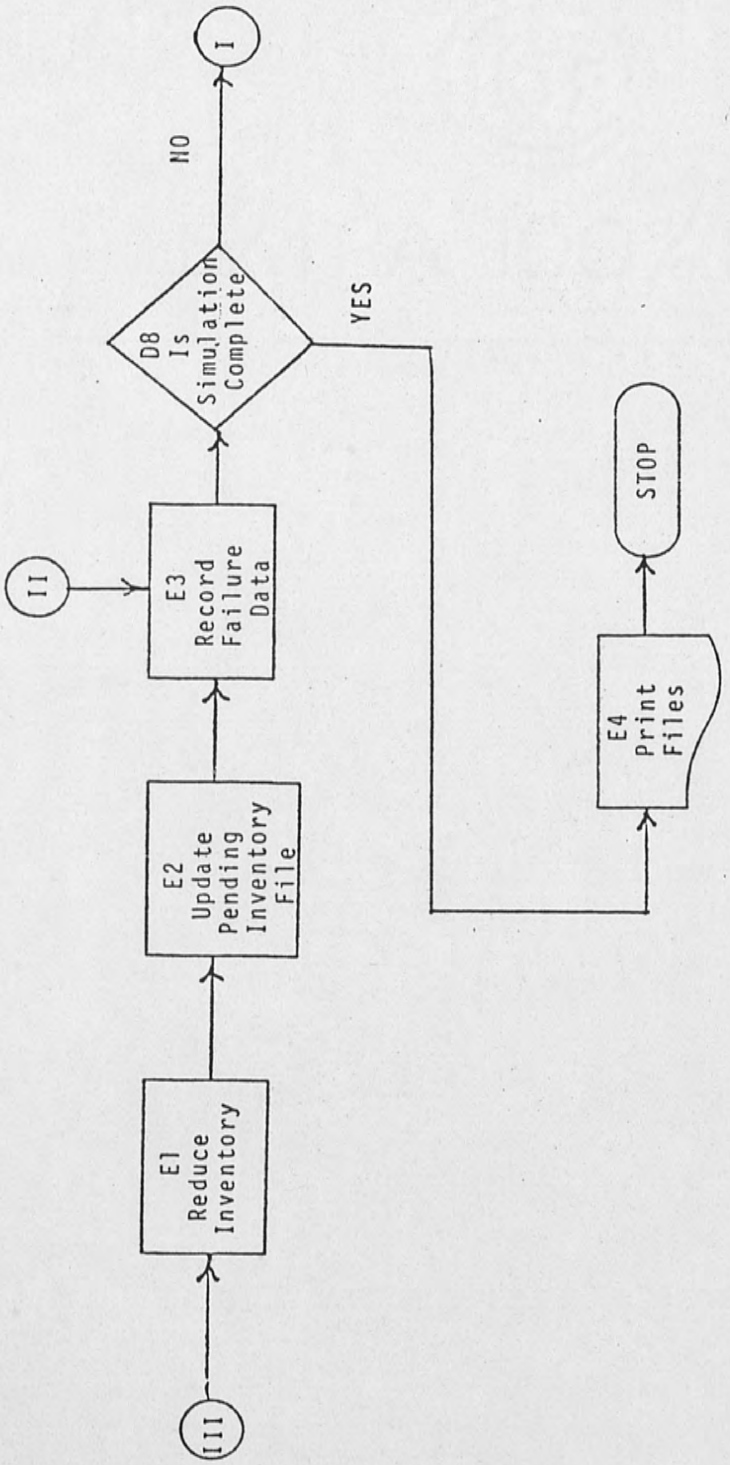

Fig. 7 Phase IV - Records

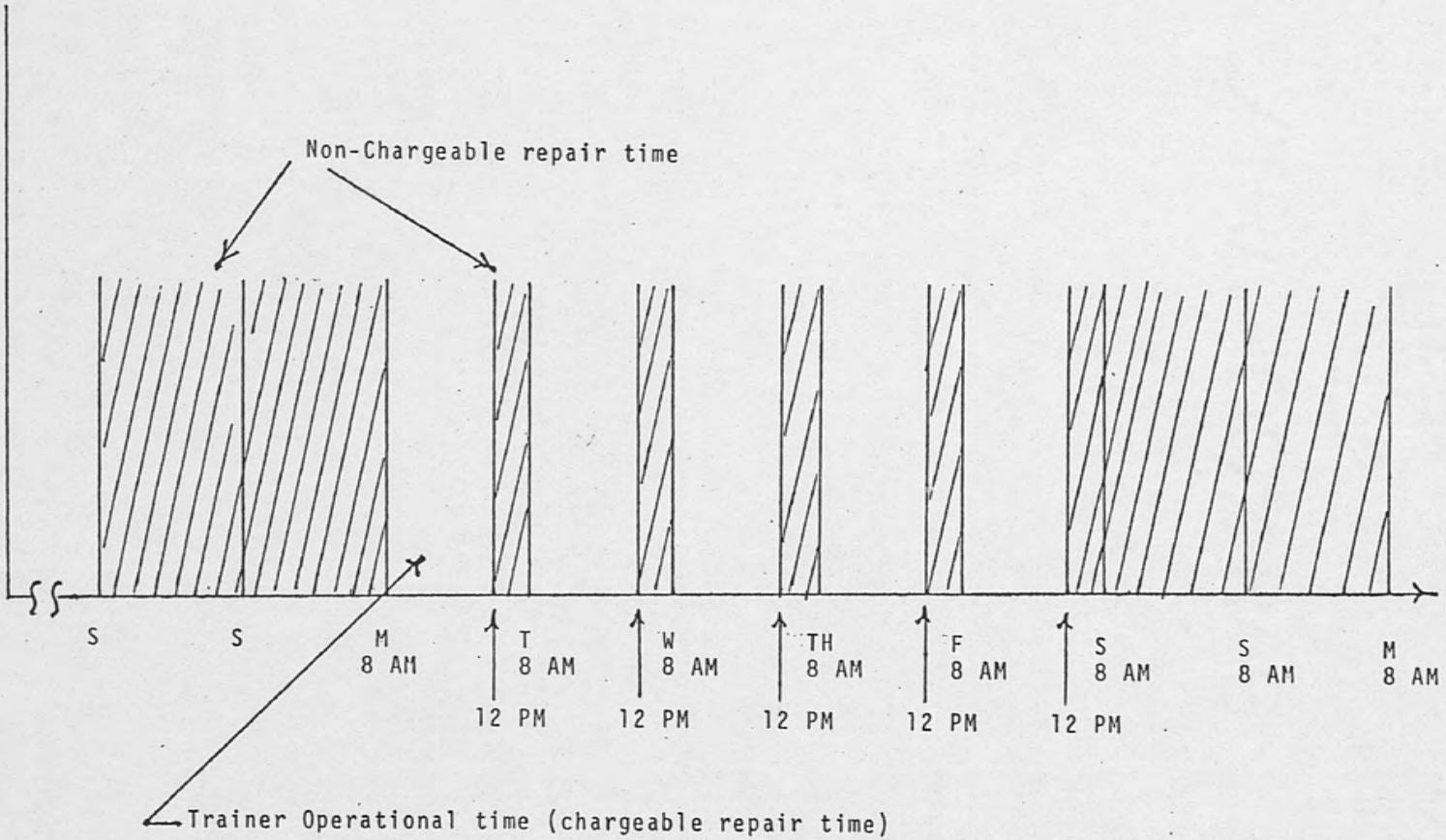

Fig. 8 Trainer operational requirements

III - MODEL RESULTS

The simulation model was exercised for varying lengths of simulation time to determine when the change in A_o was less than or equal to .005 (1/2%) for any repair action. This occured at between 4 and 5 years of simulation time (refer to File 3 - Failure Summary). Therefore, a simulation time of 5 years was chosen for determining the initial provisioning desired on-site. This 5 year simulation time falls well within the normal 10 year minimum desired design life span for most trainers.

Using the initial provisioning obtained from the training site a simulation run was conducted for a 5 year period. The "Failure Summary" (File 3) results were analyzied to determine if the frequency of simulated failures closely approximated the theorectical apportionment of failures. The results of this analysis are shown in Table 2 - Failure Rate Analysis and do indicate that this is true. By using the SLAM data collection function provided within the software package a Histogram of the failure interarrival times was generated. The results from this initial provisioning run are shown in "Histogram Number 1" of Appendix F. The meantime for this exponentially distributed histogram is given in the SLAM Summary Report (Appendix E) as 2351 minutes which closely approximates the theorectical Trainer MTBF of 2297.5 shown in Appendix E. Further,

TABLE 2

FAILURE RATE ANALYSIS

Component Number	[1] Theoretical Relative Frequency %	[2] Simulated Relative Frequency %
286	11.8	11.9
271	10.6	11.9
77	9.1	7.8
189	3.3	5.8
193	2.5	2.4
194	1.8	2.4
21	1.2	.3
103	1.2	1.7
104	1.2	1.0
326	1.2	.3

(1) Theoretical Relative Frequency = $\frac{\text{Component Failure Rate}}{\text{Trainer Failure Rate}}$

(2) Simulated Relative Frequency = $\frac{\text{Number of Simulated Failures Per Component}}{\text{Total Number of Simulated Failures}}$

applying the Central Limit Theorem[6] to the mean interarrival time of the final simulation run (largest n) should result in 95% of all $\bar{x}$ occuring within:

$\bar{x} = \mu \pm 2\sigma_{\bar{x}}$, where $\sigma_{\bar{x}} = \frac{\sigma_x}{\sqrt{n}}$

$\bar{x}$ = Simulated mean of x_i

μ = True mean of x_i

$\sigma_{\bar{x}}$ = Simulated Standard deviation of x_i

σ_x = True Standard deviation of x_i = μ_x for exponential distribution

n = Number simulated faults

therefore,

$\bar{x} = 2297.5 \pm 2\ (87.4)$, where $\sigma_{\bar{x}} = \frac{2297.5}{\sqrt{692}} = 87.4$

or

$\bar{x}$ should fall within $2122.7 \leq \bar{x} \leq 2472.3$

Referring to Table 3 we find this is true.

Those components that contributed greatest to any significant (greater than 960 minutes) change in trainer downtime are of the depot repair or replace category. Within this category those components that fail more frequently are the ones which either have a large quantity in the trainer or a high failure rate. Consequently, after the initial provisioning simulation run three more runs were conducted using the provisioning rationale given in Table 3. The results of this provisioning philosophy are shown in this table.

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[6]Neter, John, and William Wasserman, Fundamental Statistics for Business and Economics (Boston, MA.: Allyn and Bacon, Inc., 1966).

TABLE 3

SIMULATION RESULTS

Simulation Run	Provisioning Changes				Resultant A_o	Number Repair Actions	Resultant Mean Inter-arrival Time (mins)
	Spares On-Site	Component Number	Spares On-Site	Component Number			
1	Initial Provisioning				.429	295	2344
a_2	1	181	1	232	.573	400	2400
	1	189	1	243			
	1	190	1	244			
	1	191	1	245			
	1	193	1	260			
	1	212					
b_3	1	47	2	191	.738	561	2377
	1	48	2	193			
	1	61	1	219			
	1	72	1	227			
	1	79	1	231			
	1	87	1	233			
	1	144	1	242			
	1	171	2	243			
	2	189	1	258			
	1	222	2	260			
	1	244	1	333			
c_4	1	15	2	194	.889	692	2444
	1	61	1	232			
	1	64	2	233			
	1	82	1	238			
	1	101	1	245			
	2	103	2	318			
	2	147	2	333			
	3	189	2	181			
	1	190	2	242			
	2	191					
	3	193					

Notes:

a. If conditions 1, 2, and 3 are met for a component place one spare in inventory.

b. If conditions 1 and 2 are met for a component add one more spare to provisioning of run 2 in inventory.

c. If condition 1 is met for a component add one more spare to provisioning of run 3 in inventory

Conditions

1. Chargeable repair time appearing in Failure Summary (File 3) equal to or greater than 960 minutes (1 day).
2. No spares in initial provisioning simulation run.
3. Component failed at least twice during simulation run as shown in Failure Summary (File 3).

Reports

Five special files are generated within the Event Module at the end of each simulation. They are; (1) File 1 - Initial Inventory, (2) File 1 - Final Inventory, (3) File 2 - Final Pending Inventory, (4) File 3 - Failure Summary and (5) File 5 - Inventory Received. The files presented in this section are taken from the initial provisioning simulation run. All of them are self-explanatory except for the column heading "Remaining Stockage" in Files 2 and 5. This column refers to those spares remaining on-site after the repair action has been completed and a replacement spare has been ordered but not yet received.

Appendices A through F contain the SLAM Network, Event Module, SLAM Files (1st page only), SLAM Echo Report, SLAM Summary Report, and SLAM Histograms respectively, which were taken from the initial provisioning simulation run. Included in Appendix E is the computer calculated Trainer MTFB as described in Chapter II - Phase I.

FILE 1

INITIAL INVENTORY

LEGEND: REPAIR LEVEL 1-INTERMEDIATE LEVEL
2-DEPOT LEVEL

TYPE OF REPAIR 1-MANUAL REPAIR
2-ATE REPAIR

TYPE OF ATE 1-AFIT
2-L135

REPAIR LEVEL	TYPE OF REPAIR	TYPE OF ATE	MTBF-HRS	SPARES AVAILABLE	COMPONENT NUMBER	NUMBER IN DEVICE
1.	1.	0.	200000.	1.	1.	2.
2.	0.	0.	258058.	1.	2.	4.
2.	0.	0.	400000.	1.	3.	7.
2.	0.	0.	416080.	0.	4.	20.
1.	2.	2.	220060.	1.	5.	8.
2.	0.	0.	599988.	2.	6.	3.
1.	2.	2.	25000.	0.	7.	2.
1.	1.	0.	100000.	1.	8.	2.
1.	2.	2.	100000.	0.	9.	3.
2.	0.	0.	100000.	0.	10.	2.
1.	2.	2.	100000.	1.	11.	1.
1.	1.	0.	100000.	0.	12.	1.
1.	2.	2.	100000.	1.	13.	1.
1.	2.	1.	75000.	0.	14.	13.
2.	0.	0.	70176.	0.	15.	6.
1.	2.	2.	70217.	1.	16.	4.
1.	2.	2.	30807.	0.	17.	3.
1.	2.	2.	100000.	1.	18.	1.
1.	2.	1.	50000.	0.	19.	12.
1.	1.	0.	50000.	1.	20.	1.
1.	2.	2.	9742.	0.	21.	3.
1.	1.	0.	100000.	1.	22.	1.
1.	1.	0.	100000.	1.	23.	3.
1.	1.	0.	100000.	1.	24.	1.
1.	1.	0.	100000.	1.	25.	1.
1.	2.	2.	25000.	1.	26.	4.
1.	2.	1.	25000.	1.	27.	4.
1.	2.	2.	100000.	1.	28.	1.
1.	2.	2.	151523.	1.	29.	5.
1.	2.	1.	644662.	1.	30.	2.
1.	2.	1.	369781.	1.	31.	1.
1.	2.	1.	465593.	1.	32.	2.
1.	2.	1.	392034.	0.	33.	1.
1.	2.	1.	592838.	1.	34.	4.
2.	0.	0.	327675.	1.	35.	2.
1.	2.	1.	370672.	1.	36.	1.
1.	2.	1.	339351.	1.	37.	1.
1.	2.	1.	337746.	1.	38.	1.
1.	2.	1.	499550.	1.	39.	1.
1.	2.	1.	300000.	1.	40.	1.
2.	0.	0.	268759.	1.	41.	1.
1.	2.	1.	346765.	1.	42.	1.
2.	0.	0.	300000.	1.	43.	1.
1.	2.	1.	300000.	1.	44.	2.
1.	2.	1.	300000.	1.	45.	1.
1.	2.	1.	100000.	0.	46.	6.

1.	2.	1.	300000.	1.	45.	1.
1.	2.	1.	100000.	0.	46.	6.
2.	0.	0.	100000.	0.	47.	6.
2.	0.	0.	100000.	0.	48.	6.
1.	1.	0.	100000.	0.	49.	5.
1.	1.	0.	100000.	0.	50.	1.
2.	0.	0.	82900.	1.	51.	2.
1.	2.	2.	100000.	1.	52.	1.
2.	0.	0.	200000.	1.	53.	2.
2.	0.	0.	309550.	1.	54.	2.
2.	0.	0.	200000.	1.	55.	2.
2.	0.	0.	102399.	1.	56.	2.
1.	2.	2.	255512.	1.	57.	24.
2.	0.	0.	588235.	1.	58.	6.
1.	1.	0.	400000.	0.	59.	7.
1.	2.	2.	400000.	1.	60.	5.
2.	0.	0.	400000.	1.	61.	2.
2.	0.	0.	400000.	1.	62.	8.
1.	1.	0.	400000.	0.	63.	2.
2.	0.	0.	20000.	0.	64.	2.
1.	2.	2.	100000.	0.	65.	2.
1.	2.	2.	100000.	1.	66.	1.
1.	2.	2.	100000.	0.	67.	1.
1.	2.	2.	100000.	0.	68.	1.
1.	1.	0.	100000.	0.	69.	1.
1.	1.	0.	180000.	0.	70.	1.
1.	1.	0.	177305.	1.	71.	4.
2.	0.	0.	100000.	0.	72.	4.
1.	1.	0.	100000.	1.	73.	1.
1.	1.	0.	100000.	1.	74.	1.
2.	0.	0.	100000.	0.	75.	1.
1.	1.	0.	50000.	0.	76.	1.
2.	0.	0.	23636.	14.	77.	56.
1.	2.	1.	75000.	0.	78.	13.
2.	0.	0.	75000.	0.	79.	4.
1.	2.	2.	48621.	2.	80.	8.
1.	2.	2.	49674.	1.	81.	4.
2.	0.	0.	39145.	0.	82.	2.
2.	0.	0.	100000.	0.	83.	1.
2.	0.	0.	50000.	1.	84.	2.
1.	1.	0.	25000.	1.	85.	2.
1.	1.	0.	36000.	0.	86.	1.
2.	0.	0.	80230.	0.	87.	7.
1.	2.	2.	50000.	0.	88.	1.
1.	1.	0.	50000.	0.	89.	1.
1.	1.	0.	94650.	1.	90.	1.
1.	2.	2.	103842.	0.	91.	3.
1.	1.	0.	117302.	0.	92.	1.
1.	2.	1.	50000.	1.	93.	1.
1.	1.	0.	100000.	1.	94.	1.
1.	1.	0.	100000.	1.	95.	1.
1.	1.	0.	100000.	1.	96.	3.
1.	1.	0.	100000.	1.	97.	3.
1.	1.	0.	100000.	1.	98.	1.
1.	1.	0.	100000.	1.	99.	1.
1.	1.	0.	100000.	0.	100.	1.
2.	0.	0.	25000.	1.	101.	4.
1.	2.	1.	25000.	1.	102.	4.
2.	0.	0.	25000.	1.	103.	8.
1.	2.	1.	25000.	1.	104.	8.
1.	2.	2.	25000.	1.	105.	4.
2.	0.	0.	38000.	1.	106.	3.
1.	2.	2.	118635.	1.	107.	12.
1.	2.	1.	457310.	1.	108.	1.
1.	2.	1.	121767.	1.	109.	1.
1.	2.	2.	222286.	1.	110.	2.

1.	2.	1.	387287.	1.	111.	2.
1.	2.	1.	515995.	1.	112.	4.
1.	2.	1.	497550.	1.	113.	2.
1.	2.	1.	409534.	1.	114.	2.
1.	2.	2.	592838.	1.	115.	5.
1.	2.	1.	371085.	0.	116.	3.
1.	2.	1.	429037.	1.	117.	1.
1.	2.	1.	354509.	1.	118.	2.
1.	2.	1.	463972.	1.	119.	2.
1.	2.	2.	339742.	1.	120.	1.
1.	2.	1.	498058.	1.	121.	1.
1.	2.	1.	371085.	1.	122.	2.
1.	2.	1.	431630.	1.	123.	1.
1.	2.	2.	194295.	1.	124.	4.
1.	2.	1.	346765.	1.	125.	1.
1.	2.	1.	499550.	1.	126.	1.
1.	2.	1.	348214.	1.	127.	1.
1.	2.	1.	327675.	1.	128.	2.
1.	2.	1.	667645.	0.	129.	1.
2.	2.	0.	300000.	1.	130.	1.
1.	2.	2.	300000.	0.	131.	1.
1.	2.	2.	328084.	1.	132.	1.
1.	2.	1.	300000.	0.	133.	19.
1.	2.	2.	101186.	1.	134.	10.
1.	2.	1.	407631.	1.	135.	7.
1.	2.	2.	300000.	0.	136.	1.
1.	2.	1.	300000.	0.	137.	1.
1.	2.	1.	300000.	1.	138.	1.
1.	2.	1.	300000.	1.	139.	1.
2.	0.	0.	300000.	1.	140.	1.
1.	2.	1.	100000.	0.	141.	6.
1.	2.	1.	100000.	0.	142.	6.
1.	2.	1.	100000.	0.	143.	12.
2.	0.	0.	100000.	0.	144.	6.
1.	1.	0.	100000.	0.	145.	6.
1.	2.	1.	100000.	0.	146.	6.
2.	0.	0.	38000.	1.	147.	7.
1.	1.	0.	46000.	1.	148.	2.
1.	1.	0.	50000.	0.	149.	1.
1.	1.	0.	46000.	1.	150.	1.
2.	0.	0.	60000.	1.	151.	1.
1.	1.	0.	153856.	1.	152.	12.
1.	1.	0.	127000.	0.	153.	1.
2.	0.	0.	200000.	1.	154.	2.
2.	0.	0.	234984.	1.	155.	2.
2.	0.	0.	186905.	1.	156.	2.
1.	2.	1.	200000.	1.	157.	2.
2.	0.	0.	349870.	1.	158.	2.
1.	2.	2.	200000.	1.	159.	8.
2.	0.	0.	370466.	1.	160.	4.
2.	0.	0.	200000.	1.	161.	4.
2.	0.	0.	136108.	1.	162.	2.
2.	0.	0.	133576.	1.	163.	2.
2.	0.	0.	75086.	1.	164.	2.
2.	0.	0.	100000.	0.	165.	2.
1.	2.	2.	469639.	2.	166.	30.
2.	0.	0.	333333.	1.	167.	6.
1.	2.	2.	588235.	2.	168.	82.
2.	0.	0.	588235.	1.	169.	2.
1.	2.	2.	502512.	2.	170.	66.
2.	0.	0.	502512.	0.	171.	13.
2.	0.	0.	515464.	1.	172.	2.
2.	0.	0.	515464.	0.	173.	3.
2.	0.	0.	400000.	0.	174.	1.
1.	2.	2.	400000.	0.	175.	15.
1.	2.	2.	400000.	0.	176.	42.

1,	2,	2,	400000,	0,	176,	2,
2,	0,	0,	389105,	0,	177,	3,
2,	0,	0,	235294,	0,	178,	5,
2,	0,	0,	040336,	0,	179,	3,
2,	0,	0,	400000,	0,	180,	6,
2,	0,	0,	400000,	0,	181,	21,
2,	0,	0,	400000,	1,	182,	10,
2,	0,	0,	400000,	0,	183,	1,
1,	2,	2,	78140,	1,	184,	4,
2,	0,	0,	292680,	1,	185,	3,
2,	0,	0,	567924,	1,	186,	3,
2,	0,	0,	564908,	0,	187,	2,
2,	0,	0,	400000,	0,	188,	6,
2,	0,	0,	20000,	0,	189,	17,
2,	0,	0,	20000,	0,	190,	3,
2,	0,	0,	20000,	0,	191,	4,
1,	2,	2,	25000,	0,	192,	1,
2,	0,	0,	25000,	0,	193,	16,
2,	0,	0,	25000,	1,	194,	12,
1,	2,	2,	100000,	1,	195,	7,
1,	1,	0,	100000,	1,	196,	1,
1,	2,	2,	100000,	1,	197,	3,
1,	1,	0,	100000,	1,	198,	1,
1,	1,	0,	100000,	1,	199,	1,
1,	1,	0,	100000,	1,	200,	1,
1,	2,	2,	100000,	0,	201,	1,
2,	0,	0,	100000,	0,	202,	1,
1,	1,	2,	100000,	0,	203,	1,
1,	1,	2,	100000,	0,	204,	1,
1,	1,	2,	100000,	0,	205,	1,
1,	1,	2,	100000,	0,	206,	1,
2,	0,	0,	100000,	0,	207,	3,
1,	1,	0,	100000,	0,	208,	1,
2,	0,	0,	300000,	1,	209,	1,
1,	1,	0,	100000,	0,	210,	6,
1,	2,	2,	100000,	0,	211,	6,
2,	0,	0,	100000,	0,	212,	6,
2,	0,	0,	100000,	0,	213,	6,
1,	2,	2,	100000,	0,	214,	6,
1,	2,	2,	100000,	0,	215,	6,
2,	0,	0,	100000,	0,	216,	6,
1,	1,	0,	100000,	0,	217,	2,
2,	0,	0,	100000,	1,	218,	8,
2,	0,	0,	100000,	0,	219,	2,
1,	1,	0,	100000,	0,	220,	1,
1,	2,	2,	100000,	1,	221,	7,
1,	1,	0,	100000,	1,	222,	3,
1,	1,	0,	100000,	1,	223,	1,
1,	2,	1,	100000,	1,	224,	2,
1,	2,	1,	100000,	1,	225,	2,
1,	1,	0,	100000,	1,	226,	1,
2,	0,	0,	100000,	0,	227,	1,
2,	0,	0,	100000,	0,	228,	1,
2,	0,	0,	100000,	0,	229,	1,
2,	0,	0,	115000,	0,	230,	1,
2,	0,	0,	100000,	0,	231,	6,
2,	0,	0,	100000,	0,	232,	6,
2,	0,	0,	100000,	0,	233,	6,
1,	2,	2,	100000,	0,	234,	6,
2,	0,	0,	100000,	0,	235,	1,
2,	0,	0,	191500,	1,	236,	1,
2,	0,	0,	121143,	1,	237,	4,
2,	0,	0,	123899,	0,	238,	3,
2,	0,	0,	75000,	0,	239,	2,
2,	0,	0,	75000,	0,	240,	2,
2,	0,	0,	75000,	0,	241,	13,
[illegible]	[illegible]	[illegible]	75000,	[illegible]	242,	13,

2.	0.	0.	75000.	0.	243.	13.
2.	0.	0.	75000.	0.	244.	13.
2.	0.	0.	110765.	0.	245.	4.
1.	2.	2.	71136.	0.	246.	12.
1.	2.	2.	54222.	1.	247.	4.
1.	2.	2.	62809.	1.	248.	4.
1.	2.	2.	49786.	1.	249.	4.
1.	2.	2.	48943.	1.	250.	4.
1.	2.	2.	125114.	1.	251.	4.
1.	2.	2.	61924.	1.	252.	4.
1.	2.	2.	37145.	0.	253.	3.
1.	2.	2.	39741.	1.	254.	4.
2.	0.	0.	100000.	0.	255.	1.
2.	0.	0.	60000.	0.	256.	1.
1.	2.	2.	105510.	0.	257.	10.
2.	0.	0.	30000.	0.	258.	2.
1.	2.	2.	100000.	0.	259.	6.
2.	0.	0.	100000.	0.	260.	12.
1.	2.	2.	100000.	0.	261.	6.
1.	2.	2.	100000.	0.	262.	6.
1.	2.	2.	100000.	0.	263.	6.
1.	2.	2.	100000.	0.	264.	6.
1.	2.	1.	100000.	0.	265.	6.
1.	2.	1.	100000.	0.	266.	6.
1.	2.	1.	100000.	0.	267.	6.
1.	2.	1.	100000.	0.	268.	6.
1.	1.	0.	100000.	0.	269.	12.
1.	1.	0.	100000.	0.	270.	6.
1.	1.	0.	720.	0.	271.	2.
1.	1.	0.	50000.	0.	272.	1.
1.	1.	0.	116822.	1.	273.	3.
1.	2.	1.	389105.	0.	274.	1.
1.	2.	1.	301205.	0.	275.	1.
1.	1.	0.	141243.	0.	276.	1.
1.	1.	0.	50000.	0.	277.	1.
1.	2.	2.	50000.	0.	278.	1.
1.	2.	1.	192234.	0.	279.	1.
1.	1.	0.	848956.	1.	280.	1.
1.	1.	0.	50000.	0.	281.	1.
1.	1.	0.	50000.	0.	282.	1.
1.	2.	2.	93450.	1.	283.	3.
1.	2.	1.	93458.	1.	284.	3.
1.	1.	0.	50000.	0.	285.	3.
1.	2.	2.	7793.	1.	286.	24.
1.	2.	2.	50000.	1.	287.	7.
1.	1.	0.	50000.	0.	288.	1.
1.	1.	0.	42653.	1.	289.	1.
1.	2.	1.	46918.	1.	290.	3.
1.	1.	0.	50000.	0.	291.	3.
1.	2.	2.	100000.	0.	292.	4.
1.	2.	2.	100000.	0.	293.	12.
1.	1.	0.	100000.	1.	294.	3.
1.	1.	0.	100000.	0.	295.	1.
1.	1.	0.	100000.	1.	296.	3.
1.	1.	0.	100000.	1.	297.	3.
1.	1.	0.	100000.	1.	298.	1.
1.	1.	0.	100000.	1.	299.	1.
1.	1.	0.	100000.	1.	300.	1.
1.	1.	0.	100000.	1.	301.	3.
1.	1.	0.	100000.	1.	302.	3.
1.	1.	0.	100000.	1.	303.	3.
1.	1.	0.	100000.	0.	304.	3.
1.	1.	0.	100000.	0.	305.	3.
1.	1.	0.	100000.	1.	306.	3.
1.	1.	0.	100000.	1.	307.	3.
1.	1.	0.	100000.	2.	308.	1.
1.	1.	0.	100000.	1.	309.	1.

1.	1.	0.	100000.	2.	308.	1.
1.	1.	0.	100000.	1.	309.	1.
1.	1.	0.	100000.	1.	310.	1.
1.	1.	0.	100000.	1.	311.	1.
1.	1.	0.	100000.	1.	312.	1.
1.	1.	0.	100000.	1.	313.	1.
1.	1.	0.	100000.	1.	314.	1.
1.	1.	0.	100000.	0.	315.	1.
1.	1.	0.	100000.	1.	316.	1.
2.	0.	0.	25000.	2.	317.	4.
2.	0.	0.	25000.	1.	318.	4.
2.	0.	0.	25000.	1.	319.	4.
1.	2.	1.	25000.	1.	320.	4.
1.	2.	2.	25000.	1.	321.	4.
1.	2.	2.	25000.	1.	322.	4.
1.	2.	2.	25000.	0.	323.	4.
1.	2.	1.	25000.	0.	324.	4.
1.	2.	2.	25000.	1.	325.	4.
1.	2.	2.	25000.	2.	326.	8.
1.	2.	2.	25000.	1.	327.	4.
1.	2.	1.	25000.	1.	328.	4.
1.	2.	2.	25000.	0.	329.	4.
1.	2.	2.	25000.	1.	330.	4.
1.	2.	2.	25000.	1.	331.	4.
1.	2.	2.	25000.	1.	332.	4.
2.	0.	0.	25000.	0.	333.	4.
1.	2.	1.	300000.	1.	334.	1.
1.	2.	1.	300000.	1.	335.	1.
1.	2.	2.	300000.	1.	336.	1.
2.	0.	0.	300000.	1.	337.	1.
1.	2.	1.	961353.	1.	338.	10.
1.	2.	1.	483746.	1.	339.	13.
1.	2.	2.	118655.	1.	340.	1.
1.	2.	1.	110000.	1.	341.	1.
2.	0.	0.	181186.	1.	342.	2.
1.	2.	1.	429037.	1.	343.	1.
1.	2.	1.	362424.	1.	344.	1.
1.	2.	1.	380518.	1.	345.	1.
1.	2.	1.	420221.	1.	346.	1.
2.	0.	0.	121760.	1.	347.	1.
1.	2.	1.	109710.	1.	348.	3.
1.	2.	1.	497320.	1.	349.	2.
1.	2.	1.	110000.	1.	350.	2.
1.	2.	1.	389681.	1.	351.	1.
1.	2.	1.	851281.	1.	352.	21.
1.	2.	2.	139772.	0.	353.	1.
2.	0.	0.	307995.	1.	354.	2.
1.	2.	1.	398597.	0.	355.	1.
1.	2.	1.	279033.	1.	356.	1.
1.	2.	1.	387928.	1.	357.	2.
1.	2.	1.	371085.	1.	358.	1.
1.	2.	1.	362608.	1.	359.	1.
1.	2.	1.	344376.	1.	360.	2.
1.	2.	1.	359509.	1.	361.	1.
1.	2.	1.	339351.	1.	362.	2.
2.	0.	0.	313107.	1.	363.	1.
1.	2.	1.	839067.	1.	364.	4.
1.	2.	1.	337746.	1.	365.	2.
1.	2.	1.	330710.	1.	366.	2.
1.	2.	2.	571494.	1.	367.	5.
1.	2.	1.	362608.	1.	368.	3.
1.	2.	2.	257480.	1.	369.	1.
1.	2.	1.	633650.	1.	370.	1.
1.	2.	1.	354509.	1.	371.	5.
1.	2.	1.	399074.	1.	372.	3.
1.	2.	1.	354509.	1.	373.	3.
1.	2.	1.	354509.	1.	374.	3

1.	2.	1.	387177.	1.	375.	2.
1.	2.	1.	420208.	1.	376.	1.
1.	2.	1.	300000.	1.	377.	16.
1.	2.	2.	429037.	1.	378.	4.
1.	2.	2.	361164.	1.	379.	4.
1.	2.	1.	387177.	1.	380.	2.
1.	2.	1.	300000.	1.	381.	2.
2.	0.	0.	417746.	1.	382.	2.
1.	2.	1.	515783.	1.	383.	2.
1.	2.	1.	300000.	1.	384.	1.
2.	0.	0.	460209.	1.	385.	2.
1.	2.	1.	300000.	1.	386.	1.
1.	2.	1.	307238.	1.	387.	1.
1.	2.	1.	443645.	1.	388.	1.
1.	2.	1.	354509.	1.	389.	1.
1.	2.	1.	339351.	1.	390.	1.
1.	2.	1.	362608.	1.	391.	1.
1.	2.	1.	300000.	1.	392.	1.
1.	2.	1.	300000.	1.	393.	1.
1.	2.	1.	369440.	1.	394.	2.
2.	0.	0.	353507.	1.	395.	1.
1.	2.	1.	300000.	1.	396.	1.
1.	2.	1.	387287.	1.	397.	1.
1.	2.	1.	342489.	1.	398.	1.
2.	0.	0.	354509.	1.	399.	1.
1.	2.	1.	667646.	1.	400.	1.
1.	2.	1.	362608.	1.	401.	1.
1.	2.	1.	379968.	1.	402.	1.
1.	2.	1.	420203.	0.	403.	1.
1.	2.	1.	300000.	1.	404.	1.
1.	2.	1.	456454.	1.	405.	1.
1.	2.	1.	346765.	1.	406.	1.
2.	0.	0.	300000.	1.	407.	1.
1.	2.	1.	574494.	1.	408.	2.
1.	2.	1.	574400.	1.	409.	2.
2.	0.	0.	331367.	1.	410.	1.
1.	2.	1.	379968.	1.	411.	1.
1.	2.	1.	499550.	1.	412.	1.
1.	2.	1.	337747.	1.	413.	1.
1.	2.	1.	407033.	1.	414.	1.
1.	2.	1.	300000.	1.	415.	1.
1.	2.	1.	300000.	1.	416.	1.
1.	2.	1.	300000.	1.	417.	1.
1.	2.	1.	300000.	1.	418.	2.
1.	2.	1.	300000.	1.	419.	1.
2.	0.	0.	300000.	1.	420.	1.
1.	2.	2.	300000.	1.	421.	2.
1.	2.	1.	300000.	1.	422.	1.
1.	2.	2.	276411.	1.	423.	1.
1.	2.	2.	300000.	1.	424.	1.
1.	2.	2.	300000.	1.	425.	1.
1.	2.	2.	300000.	1.	426.	1.
1.	2.	2.	268759.	1.	427.	1.
1.	2.	2.	551633.	1.	428.	1.
1.	2.	1.	376393.	1.	429.	2.
1.	2.	1.	484308.	1.	430.	1.
1.	2.	1.	300000.	1.	431.	1.
1.	2.	1.	300000.	1.	432.	1.
2.	0.	0.	392665.	1.	433.	2.
1.	2.	2.	178597.	0.	434.	25.
1.	2.	2.	300000.	1.	435.	3.
1.	2.	1.	572344.	1.	436.	2.
1.	2.	1.	300000.	1.	437.	1.
1.	2.	2.	288035.	1.	438.	3.
1.	2.	1.	300000.	1.	439.	2.
1.	2.	2.	300000.	0.	440.	4.
2.	0.	0.	300000.	1.	441.	1.

1,	2.	2.	300000,	0.	440.	4,
2,	0.	0.	300000,	1.	441.	1,
1,	2.	1.	300000,	1.	442.	1,
2,	0.	0.	300000,	1.	443.	1,
1,	2.	1.	300000,	1.	444.	1,
2,	0.	0.	300000,	1.	445.	1,
2,	0.	0.	300000,	1.	446.	1,
2,	0.	0.	300000,	1.	447.	1,
2,	0.	0.	300000,	1.	448.	1,
2,	0.	0.	300000,	1.	449.	1,
2,	0.	0.	300000,	1.	450.	2,
1,	2.	2.	100000,	0.	451.	10,
1,	2.	2.	34109,	0.	452.	1,
1,	1.	0.	68542,	0.	453.	1,
1,	1.	0.	50000,	0.	454.	2,
1,	1.	0.	50000,	0.	455.	2,
2,	0.	0.	100000,	0.	456.	1,
2,	0.	0.	100000,	0.	457.	1,
2,	0.	0.	100000,	1.	458.	1,
2,	0.	0.	100000,	1.	459.	1,
2,	0.	0.	100000,	0.	460.	1,
2,	0.	0.	100000,	1.	461.	1,
2,	0.	0.	100000,	1.	462.	1,
2,	0.	0.	100000,	0.	463.	1,
2,	0.	0.	100000,	0.	464.	1,
2,	0.	0.	100000,	0.	465.	1,
2,	0.	0.	100000,	0.	466.	1,
2,	0.	0.	100000,	1.	467.	1,
1,	1.	0.	100000,	0.	468.	12,
1,	1.	0.	100000,	0.	469.	1,
1,	1.	0.	100000,	0.	470.	1,
1,	2.	1.	100000,	0.	471.	4,
1,	2.	2.	100000,	0.	472.	2,
1,	2.	2.	100000,	0.	473.	2,
2,	0.	0.	100000,	0.	474.	2,
2,	0.	0.	100000,	0.	475.	1,
2,	0.	0.	100000,	0.	476.	1,
1,	2.	1.	100000,	0.	477.	2,
2,	0.	0.	100000,	0.	478.	1,
2,	0.	0.	100000,	0.	479.	1,
2,	0.	0.	100000,	0.	480.	1,
2,	0.	0.	100000,	0.	481.	2,
2,	0.	0.	100000,	0.	482.	1,
2,	0.	0.	100000,	0.	483.	1,
2,	0.	0.	100000,	0.	484.	1,
2,	0.	0.	100000,	0.	485.	1,
2,	0.	0.	100000,	0.	486.	1,
2,	0.	0.	100000,	0.	487.	1,
1,	1.	0.	100000,	0.	488.	1,
2,	0.	0.	100000,	0.	489.	1,
2,	0.	0.	100000,	0.	490.	1,
2,	0.	0.	100000,	0.	491.	1,
1,	1.	0.	72121,	0.	492.	1,
2,	0.	0.	100000,	0.	493.	1,
2,	0.	0.	100000,	0.	494.	1,
2,	0.	0.	100000,	1.	495.	1,
2,	0.	0.	100000,	0.	496.	1,
1,	1.	0.	100000,	0.	497.	1,
1,	2.	1.	100000,	0.	498.	1,
1,	1.	0.	100000,	0.	499.	1,
2,	0.	0.	100000,	0.	500.	1,
1,	1.	0.	78376,	0.	501.	1,
2,	0.	0.	100000,	0.	502.	1,
1,	1.	0.	100000,	0.	503.	1,
2,	0.	0.	100000,	0.	504.	16,

FILE 1

FINAL INVENTORY

LEGEND: REPAIR LEVEL 1-INTERMEDIATE LEVEL
2-DEPOT LEVEL

TYPE OF REPAIR 1-MANUAL REPAIR
2-ATE REPAIR

TYPE OF ATE 1-AFIT
2-L135

REPAIR LEVEL	TYPE OF REPAIR	TYPE OF ATE	MTBF-HRS	SPARES AVAILABLE	COMPONENT NUMBER	NUMBER IN DEVICE
1.	1.	0.	200000.	1.	1.	2.
2.	0.	0.	258058.	1.	2.	4.
2.	0.	0.	400000.	1.	3.	7.
2.	0.	0.	416080.	0.	4.	20.
1.	2.	2.	220060.	1.	5.	8.
2.	0.	0.	599988.	2.	6.	3.
1.	2.	2.	25000.	0.	7.	2.
1.	1.	0.	100000.	1.	8.	2.
1.	2.	2.	100000.	0.	9.	3.
2.	0.	0.	100000.	0.	10.	2.
1.	2.	2.	100000.	1.	11.	1.
1.	1.	0.	100000.	0.	12.	1.
1.	2.	2.	100000.	1.	13.	1.
1.	2.	1.	75000.	0.	14.	13.
2.	0.	0.	70176.	0.	15.	6.
1.	2.	2.	70217.	1.	16.	4.
1.	2.	2.	30807.	0.	17.	3.
1.	2.	2.	100000.	1.	18.	1.
1.	2.	1.	50000.	0.	19.	12.
1.	1.	0.	50000.	1.	20.	1.
1.	2.	2.	9742.	0.	21.	3.
1.	1.	0.	100000.	1.	22.	1.
1.	1.	0.	100000.	1.	23.	3.
1.	1.	0.	100000.	1.	24.	1.
1.	1.	0.	100000.	1.	25.	1.
1.	2.	2.	25000.	1.	26.	4.
1.	2.	1.	25000.	1.	27.	4.
1.	2.	2.	100000.	1.	28.	1.
1.	2.	2.	151523.	1.	29.	5.
1.	2.	1.	644662.	1.	30.	2.
1.	2.	1.	369781.	1.	31.	1.
1.	2.	1.	465593.	1.	32.	2.
1.	2.	1.	392034.	0.	33.	1.
1.	2.	1.	592838.	1.	34.	4.
2.	0.	0.	327675.	1.	35.	2.
1.	2.	1.	370672.	1.	36.	1.
1.	2.	1.	339351.	1.	37.	1.
1.	2.	1.	337746.	1.	38.	1.
1.	2.	1.	499550.	1.	39.	1.
1.	2.	1.	300000.	1.	40.	1.
2.	0.	0.	268759.	1.	41.	1.
1.	2.	1.	346765.	1.	42.	1.
2.	0.	0.	300000.	1.	43.	1.
1.	2.	1.	300000.	1.	44.	2.

1.	2.	1.	300000.	1.	45.	1.
1.	2.	1.	100000.	0.	46.	6.
2.	0.	0.	100000.	0.	47.	6.
2.	0.	0.	100000.	0.	48.	6.
1.	1.	0.	100000.	0.	49.	5.
1.	1.	0.	100000.	0.	50.	1.
2.	0.	0.	82900.	1.	51.	2.
1.	2.	2.	100000.	1.	52.	1.
2.	0.	0.	200000.	1.	53.	2.
2.	0.	0.	309550.	1.	54.	2.
2.	0.	0.	200000.	1.	55.	2.
2.	0.	0.	102399.	1.	56.	2.
1.	2.	2.	255512.	1.	57.	24.
2.	0.	0.	588235.	1.	58.	6.
1.	1.	0.	400000.	0.	59.	7.
1.	2.	2.	400000.	1.	60.	5.
2.	0.	0.	400000.	1.	61.	2.
2.	0.	0.	400000.	1.	62.	8.
1.	1.	0.	400000.	0.	63.	2.
2.	0.	0.	20000.	0.	64.	2.
1.	2.	2.	100000.	0.	65.	2.
1.	2.	2.	100000.	1.	66.	1.
1.	2.	2.	100000.	0.	67.	1.
1.	2.	2.	100000.	0.	68.	1.
1.	1.	0.	100000.	0.	69.	1.
1.	1.	0.	180000.	0.	70.	1.
1.	1.	0.	177305.	1.	71.	4.
2.	0.	0.	100000.	0.	72.	4.
1.	1.	0.	100000.	1.	73.	1.
1.	1.	0.	100000.	1.	74.	1.
2.	0.	0.	100000.	0.	75.	1.
1.	1.	0.	50000.	0.	76.	1.
2.	0.	0.	23636.	13.	77.	56.
1.	2.	1.	75000.	0.	78.	13.
2.	0.	0.	75000.	0.	79.	4.
1.	2.	2.	48621.	2.	80.	8.
1.	2.	2.	49674.	1.	81.	4.
2.	0.	0.	39145.	0.	82.	2.
2.	0.	0.	100000.	0.	83.	1.
2.	0.	0.	50000.	1.	84.	2.
1.	1.	0.	25000.	1.	85.	2.
1.	1.	0.	36000.	0.	86.	1.
2.	0.	0.	80230.	0.	87.	7.
1.	2.	2.	50000.	0.	88.	1.
1.	1.	0.	50000.	0.	89.	1.
1.	1.	0.	94650.	1.	90.	1.
1.	2.	2.	103842.	0.	91.	3.
1.	1.	0.	117302.	0.	92.	1.
1.	2.	1.	50000.	1.	93.	1.
1.	1.	0.	100000.	1.	94.	1.
1.	1.	0.	100000.	1.	95.	1.
1.	1.	0.	100000.	1.	96.	3.
1.	1.	0.	100000.	1.	97.	3.
1.	1.	0.	100000.	1.	98.	1.
1.	1.	0.	100000.	1.	99.	1.
1.	1.	0.	100000.	0.	100.	1.
2.	0.	0.	25000.	1.	101.	4.
1.	2.	1.	25000.	1.	102.	4.
2.	0.	0.	25000.	1.	103.	8.
1.	2.	1.	25000.	1.	104.	8.
1.	2.	2.	25000.	1.	105.	4.
2.	0.	0.	38000.	1.	106.	3.
1.	2.	2.	118655.	1.	107.	12.
1.	2.	1.	457310.	1.	108.	1.
1.	2.	1.	121767.	1.	109.	1.
1.	2.	2.	222286.	1.	110.	2.

1.	2.	1.	389287.	1.	111.	2.
1.	2.	1.	518995.	1.	112.	4.
1.	2.	1.	499550.	1.	113.	2.
1.	2.	1.	409534.	1.	114.	2.
1.	2.	2.	592838.	1.	115.	5.
1.	2.	1.	371085.	0.	116.	3.
1.	2.	1.	429037.	1.	117.	1.
1.	2.	1.	354509.	1.	118.	2.
1.	2.	1.	463972.	1.	119.	2.
1.	2.	2.	339742.	1.	120.	1.
1.	2.	1.	498058.	1.	121.	1.
1.	2.	1.	371085.	1.	122.	2.
1.	2.	1.	431630.	1.	123.	1.
1.	2.	2.	194295.	1.	124.	4.
1.	2.	1.	346765.	1.	125.	1.
1.	2.	1.	499550.	1.	126.	1.
1.	2.	1.	348214.	1.	127.	1.
1.	2.	1.	327675.	1.	128.	2.
1.	2.	1.	667645.	0.	129.	1.
2.	2.	0.	300000.	1.	130.	1.
1.	2.	2.	300000.	0.	131.	1.
1.	2.	2.	328084.	1.	132.	1.
1.	2.	1.	300000.	0.	133.	19.
1.	2.	2.	181186.	1.	134.	10.
1.	2.	1.	407631.	1.	135.	7.
1.	2.	2.	300000.	0.	136.	1.
1.	2.	1.	300000.	0.	137.	1.
1.	2.	1.	300000.	1.	138.	1.
1.	2.	1.	300000.	1.	139.	1.
2.	0.	0.	300000.	1.	140.	1.
1.	2.	1.	100000.	0.	141.	6.
1.	2.	1.	100000.	0.	142.	6.
1.	2.	1.	100000.	0.	143.	12.
2.	0.	0.	100000.	0.	144.	6.
1.	1.	0.	100000.	0.	145.	6.
1.	2.	1.	100000.	0.	146.	6.
2.	0.	0.	38000.	1.	147.	7.
1.	1.	0.	46000.	1.	148.	2.
1.	1.	0.	50000.	0.	149.	1.
1.	1.	0.	46000.	1.	150.	1.
2.	0.	0.	60000.	1.	151.	1.
1.	1.	0.	153856.	1.	152.	12.
1.	1.	0.	127000.	0.	153.	1.
2.	0.	0.	200000.	1.	154.	2.
2.	0.	0.	234984.	1.	155.	2.
2.	0.	0.	186905.	1.	156.	2.
1.	2.	1.	200000.	1.	157.	2.
2.	0.	0.	349870.	1.	158.	2.
1.	2.	2.	200000.	1.	159.	8.
2.	0.	0.	370466.	1.	160.	4.
2.	0.	0.	200000.	1.	161.	4.
2.	0.	0.	136108.	1.	162.	2.
2.	0.	0.	133576.	1.	163.	2.
2.	0.	0.	75086.	1.	164.	2.
2.	0.	0.	100000.	0.	165.	2.
1.	2.	2.	469639.	2.	166.	30.
2.	0.	0.	333333.	1.	167.	6.
1.	2.	2.	588235.	2.	168.	02.
2.	0.	0.	588235.	1.	169.	2.
1.	2.	2.	502512.	2.	170.	66.
2.	0.	0.	502512.	0.	171.	13.
2.	0.	0.	515464.	1.	172.	2.
2.	0.	0.	515464.	0.	173.	3.
2.	0.	0.	400000.	0.	174.	1.
1.	2.	2.	400000.	0.	175.	15.
1.	2.	2.	400000.	0.	176.	42.

2.	0.	0.	307105.	0.	177.	3.
2.	0.	0.	235294.	0.	178.	5.
2.	0.	0.	840336.	0.	179.	3.
2.	0.	0.	400000.	0.	180.	6.
2.	0.	0.	400000.	0.	181.	21.
2.	0.	0.	400000.	1.	182.	10.
2.	0.	0.	400000.	0.	183.	1.
1.	2.	2.	78140.	1.	184.	4.
2.	0.	0.	292680.	1.	185.	3.
2.	0.	0.	567924.	1.	186.	3.
2.	0.	0.	564900.	0.	187.	2.
2.	0.	0.	400000.	0.	188.	6.
2.	0.	0.	20000.	0.	189.	17.
2.	0.	0.	20000.	0.	190.	3.
2.	0.	0.	20000.	0.	191.	4.
1.	2.	2.	25000.	0.	192.	1.
2.	0.	0.	25000.	0.	193.	16.
2.	0.	0.	25000.	1.	194.	12.
1.	2.	2.	100000.	1.	195.	7.
1.	1.	0.	100000.	1.	196.	1.
1.	2.	2.	100000.	1.	197.	3.
1.	1.	0.	100000.	1.	198.	1.
1.	1.	0.	100000.	1.	199.	1.
1.	1.	0.	100000.	1.	200.	1.
1.	2.	2.	100000.	0.	201.	1.
2.	0.	0.	100000.	0.	202.	1.
1.	1.	2.	100000.	0.	203.	1.
1.	1.	2.	100000.	0.	204.	1.
1.	1.	2.	100000.	0.	205.	1.
1.	1.	2.	100000.	0.	206.	1.
2.	0.	0.	100000.	0.	207.	3.
1.	1.	0.	100000.	0.	208.	1.
2.	0.	0.	300000.	1.	209.	1.
1.	1.	0.	100000.	0.	210.	6.
1.	2.	2.	100000.	0.	211.	6.
2.	0.	0.	100000.	0.	212.	6.
2.	0.	0.	100000.	0.	213.	6.
1.	2.	2.	100000.	0.	214.	6.
1.	2.	2.	100000.	0.	215.	6.
2.	0.	0.	100000.	0.	216.	6.
1.	1.	0.	100000.	0.	217.	2.
2.	0.	0.	100000.	1.	218.	8.
2.	0.	0.	100000.	0.	219.	2.
1.	1.	0.	100000.	0.	220.	1.
1.	2.	2.	100000.	1.	221.	7.
1.	1.	0.	100000.	1.	222.	3.
1.	1.	0.	100000.	1.	223.	1.
1.	2.	1.	100000.	1.	224.	2.
1.	2.	1.	100000.	1.	225.	2.
1.	1.	0.	100000.	1.	226.	1.
2.	0.	0.	100000.	0.	227.	1.
2.	0.	0.	100000.	0.	228.	1.
2.	0.	0.	100000.	0.	229.	1.
2.	0.	0.	115000.	0.	230.	1.
2.	0.	0.	100000.	0.	231.	6.
2.	0.	0.	100000.	0.	232.	6.
2.	0.	0.	100000.	0.	233.	6.
1.	2.	2.	100000.	0.	234.	6.
2.	0.	0.	100000.	0.	235.	1.
2.	0.	0.	191508.	1.	236.	1.
2.	0.	0.	121143.	1.	237.	4.
2.	0.	0.	123899.	0.	238.	3.
2.	0.	0.	75000.	0.	239.	2.
2.	0.	0.	75000.	0.	240.	2.
2.	0.	0.	75000.	0.	241.	13.
2.	0.	0.	75000.	0.	242.	13.

2.	0.	0.	75000.	0.	243.	13.
2.	0.	0.	75000.	0.	244.	13.
2.	0.	0.	110765.	0.	245.	4.
1.	2.	2.	71136.	0.	246.	12.
1.	2.	2.	54222.	1.	247.	4.
1.	2.	2.	62809.	1.	248.	4.
1.	2.	2.	49786.	1.	249.	4.
1.	2.	2.	48943.	1.	250.	4.
1.	2.	2.	125114.	1.	251.	4.
1.	2.	2.	61924.	1.	252.	4.
1.	2.	2.	37145.	0.	253.	3.
1.	2.	2.	39741.	1.	254.	4.
2.	0.	0.	100000.	0.	255.	1.
2.	0.	0.	60000.	0.	256.	1.
1.	2.	2.	105510.	0.	257.	10.
2.	0.	0.	30000.	0.	258.	2.
1.	2.	2.	100000.	0.	259.	6.
2.	0.	0.	100000.	0.	260.	12.
1.	2.	2.	100000.	0.	261.	6.
1.	2.	2.	100000.	0.	262.	6.
1.	2.	2.	100000.	0.	263.	6.
1.	2.	2.	100000.	0.	264.	6.
1.	2.	1.	100000.	0.	265.	6.
1.	2.	1.	100000.	0.	266.	6.
1.	2.	1.	100000.	0.	267.	6.
1.	2.	1.	100000.	0.	268.	6.
1.	1.	0.	100000.	0.	269.	12.
1.	1.	0.	100000.	0.	270.	6.
1.	1.	0.	720.	0.	271.	2.
1.	1.	0.	50000.	0.	272.	1.
1.	1.	0.	116822.	1.	273.	3.
1.	2.	1.	387105.	0.	274.	1.
1.	2.	1.	301205.	0.	275.	1.
1.	1.	0.	141243.	0.	276.	1.
1.	1.	0.	50000.	0.	277.	1.
1.	2.	2.	50000.	0.	278.	1.
1.	2.	1.	192234.	0.	279.	1.
1.	1.	0.	848956.	1.	280.	1.
1.	1.	0.	50000.	0.	281.	1.
1.	1.	0.	50000.	0.	282.	1.
1.	2.	2.	93450.	1.	283.	3.
1.	2.	1.	93458.	1.	284.	3.
1.	1.	0.	50000.	0.	285.	3.
1.	2.	2.	7793.	1.	286.	24.
1.	2.	2.	50000.	1.	287.	7.
1.	1.	0.	50000.	0.	288.	1.
1.	1.	0.	42653.	1.	289.	1.
1.	2.	1.	46918.	1.	290.	3.
1.	1.	0.	50000.	0.	291.	3.
1.	2.	2.	100000.	0.	292.	4.
1.	2.	2.	100000.	0.	293.	12.
1.	1.	0.	100000.	1.	294.	3.
1.	1.	0.	100000.	0.	295.	1.
1.	1.	0.	100000.	1.	296.	3.
1.	1.	0.	100000.	1.	297.	3.
1.	1.	0.	100000.	1.	298.	1.
1.	1.	0.	100000.	1.	299.	1.
1.	1.	0.	100000.	1.	300.	1.
1.	1.	0.	100000.	1.	301.	3.
1.	1.	0.	100000.	1.	302.	3.
1.	1.	0.	100000.	1.	303.	3.
1.	1.	0.	100000.	0.	304.	3.
1.	1.	0.	100000.	0.	305.	3.
1.	1.	0.	100000.	1.	306.	3.
1.	1.	0.	100000.	1.	307.	3.
1.	1.	0.	100000.	2.	308	1.

1.	1.	0.	100000.	1.	309.	1.
1.	1.	0.	100000.	1.	310.	1.
1.	1.	0.	100000.	1.	311.	1.
1.	1.	0.	100000.	1.	312.	1.
1.	1.	0.	100000.	1.	313.	1.
1.	1.	0.	100000.	1.	314.	1.
1.	1.	0.	100000.	0.	315.	1.
1.	1.	0.	100000.	1.	316.	1.
2.	0.	0.	25000.	2.	317.	4.
2.	0.	0.	25000.	1.	318.	4.
2.	0.	0.	25000.	1.	319.	4.
1.	2.	1.	25000.	1.	320.	4.
1.	2.	2.	25000.	1.	321.	4.
1.	2.	2.	25000.	1.	322.	4.
1.	2.	2.	25000.	0.	323.	4.
1.	2.	1.	25000.	0.	324.	4.
1.	2.	2.	25000.	1.	325.	4.
1.	2.	2.	25000.	2.	326.	8.
1.	2.	2.	25000.	1.	327.	4.
1.	2.	1.	25000.	1.	328.	4.
1.	2.	2.	25000.	0.	329.	4.
1.	2.	2.	25000.	1.	330.	4.
1.	2.	2.	25000.	1.	331.	4.
1.	2.	2.	25000.	1.	332.	4.
2.	0.	0.	25000.	0.	333.	4.
1.	2.	1.	300000.	1.	334.	1.
1.	2.	1.	300000.	1.	335.	1.
1.	2.	2.	300000.	1.	336.	1.
2.	0.	0.	300000.	1.	337.	1.
1.	2.	1.	961353.	1.	338.	10.
1.	2.	1.	483746.	1.	339.	13.
1.	2.	2.	118655.	1.	340.	1.
1.	2.	1.	110000.	1.	341.	1.
2.	0.	0.	181186.	1.	342.	2.
1.	2.	1.	429037.	1.	343.	1.
1.	2.	1.	362424.	1.	344.	1.
1.	2.	1.	380518.	1.	345.	1.
1.	2.	1.	420221.	1.	346.	1.
2.	0.	0.	121760.	1.	347.	1.
1.	2.	1.	189710.	1.	348.	3.
1.	2.	1.	497320.	1.	349.	2.
1.	2.	1.	110000.	1.	350.	2.
1.	2.	1.	389681.	1.	351.	1.
1.	2.	1.	851281.	1.	352.	21.
1.	2.	2.	139772.	0.	353.	1.
2.	0.	0.	307995.	1.	354.	2.
1.	2.	1.	398597.	0.	355.	1.
1.	2.	1.	279033.	1.	356.	1.
1.	2.	1.	387928.	1.	357.	2.
1.	2.	1.	371085.	1.	358.	1.
1.	2.	1.	362608.	1.	359.	1.
1.	2.	1.	344376.	1.	360.	2.
1.	2.	1.	359509.	1.	361.	1.
1.	2.	1.	339351.	1.	362.	2.
2.	0.	0.	313107.	1.	363.	1.
1.	2.	1.	839067.	1.	364.	4.
1.	2.	1.	337746.	1.	365.	2.
1.	2.	1.	330710.	1.	366.	2.
1.	2.	2.	571494.	1.	367.	5.
1.	2.	1.	362608.	1.	368.	3.
1.	2.	2.	257480.	1.	369.	1.
1.	2.	1.	633658.	1.	370.	1.
1.	2.	1.	354509.	1.	371.	5.
1.	2.	1.	399074.	1.	372.	3.
1.	2.	1.	354509.	1.	373.	3.
1.	2.	1.	354509.	1.	374.	3.

1,	2.	1,	387177,	1,	375,	2,
1,	2.	1,	420208,	1,	376,	1,
1,	2.	1,	300000,	1,	377,	16,
1,	2.	2,	429037,	1,	378,	4,
1,	2.	2,	361164,	1,	379,	4,
1,	2.	1,	387177,	1,	380,	2,
1,	2.	1,	300000,	1,	381,	2,
2,	0.	0,	417746,	1,	382,	2,
1,	2.	1,	515783,	1,	383,	2,
1,	2.	1,	300000,	1,	384,	1,
2,	0.	0,	468209,	1,	385,	2,
1,	2.	1,	300000,	1,	386,	1,
1,	2.	1,	307238,	1,	387,	1,
1,	2.	1,	443645,	1,	388,	1,
1,	2.	1,	354509,	1,	389,	1,
1,	2.	1,	339351,	1,	390,	1,
1,	2.	1,	362608,	1,	391,	1,
1,	2.	1,	300000,	1,	392,	1,
1,	2.	1,	300000,	1,	393,	1,
1,	2.	1,	369440,	1,	394,	2,
2,	0.	0,	353507,	1,	395,	1,
1,	2.	1,	300000,	1,	396,	1,
1,	2.	1,	389287,	1,	397,	1,
1,	2.	1,	342489,	1,	398,	1,
2,	0.	0,	354509,	1,	399,	1,
1,	2.	1,	667646,	1,	400,	1,
1,	2.	1,	362608,	1,	401,	1,
1,	2.	1,	379968,	1,	402,	1,
1,	2.	1,	420205,	0,	403,	1,
1,	2.	1,	300000,	1,	404,	1,
1,	2.	1,	456454,	1,	405,	1,
1,	2.	1,	346765,	1,	406,	1,
2,	0.	0,	300000,	0,	407,	1,
1,	2.	1,	574494,	1,	408,	2,
1,	2.	1,	574400,	1,	409,	2,
2,	0.	0,	331367,	1,	410,	1,
1,	2.	1,	379968,	1,	411,	1,
1,	2.	1,	499550,	1,	412,	1,
1,	2.	1,	337747,	1,	413,	1,
1,	2.	1,	407033,	1,	414,	1,
1,	2.	1,	300000,	1,	415,	1,
1,	2.	1,	300000,	1,	416,	1,
1,	2.	1,	300000,	1,	417,	1,
1,	2.	1,	300000,	1,	418,	2,
1,	2.	1,	300000,	1,	419,	1,
2,	0.	0,	300000,	1,	420,	1,
1,	2.	2,	300000,	1,	421,	2,
1,	2.	1,	300000,	1,	422,	1,
1,	2.	2,	276411,	1,	423,	1,
1,	2.	2,	300000,	1,	424,	1,
1,	2.	2,	300000,	1,	425,	1,
1,	2.	2,	300000,	1,	426,	1,
1,	2.	2,	268759,	1,	427,	1,
1,	2.	2,	551633,	1,	428,	1,
1,	2.	1,	376393,	1,	429,	2,
1,	2.	1,	484308,	1,	430,	1,
1,	2.	1,	300000,	1,	431,	1,
1,	2.	1,	300000,	1,	432,	1,
2,	0.	0,	392665,	1,	433,	2,
1,	2.	2,	178597,	0,	434,	25,
1,	2.	2,	300000,	1,	435,	3,
1,	2.	1,	572344,	1,	436,	2,
1,	2.	1,	300000,	1,	437,	1,
1,	2.	2,	280035,	1,	438,	3,
1,	2.	1,	300000,	1,	439,	2,
1,	2.	2,	300000,	0,	440,	4,

2.	0.	0.	300000.	1.	441.	1.
1.	2.	1.	300000.	1.	442.	1.
2.	0.	0.	300000.	1.	443.	1.
1.	2.	1.	300000.	1.	444.	1.
2.	0.	0.	300000.	1.	445.	1.
2.	0.	0.	300000.	1.	446.	1.
2.	0.	0.	300000.	1.	447.	1.
2.	0.	0.	300000.	1.	448.	1.
2.	0.	0.	300000.	1.	449.	1.
2.	0.	0.	300000.	1.	450.	2.
1.	2.	2.	100000.	0.	451.	10.
1.	2.	2.	34109.	0.	452.	1.
1.	1.	0.	68542.	0.	453.	1.
1.	1.	0.	50000.	0.	454.	2.
1.	1.	0.	50000.	0.	455.	2.
2.	0.	0.	100000.	0.	456.	1.
2.	0.	0.	100000.	0.	457.	1.
2.	0.	0.	100000.	1.	458.	1.
2.	0.	0.	100000.	1.	459.	1.
2.	0.	0.	100000.	0.	460.	1.
2.	0.	0.	100000.	1.	461.	1.
2.	0.	0.	100000.	1.	462.	1.
2.	0.	0.	100000.	0.	463.	1.
2.	0.	0.	100000.	0.	464.	1.
2.	0.	0.	100000.	0.	465.	1.
2.	0.	0.	100000.	0.	466.	1.
2.	0.	0.	100000.	1.	467.	1.
1.	1.	0.	100000.	0.	468.	12.
1.	1.	0.	100000.	0.	469.	1.
1.	1.	0.	100000.	0.	470.	1.
1.	2.	1.	100000.	0.	471.	4.
1.	2.	2.	100000.	0.	472.	2.
1.	2.	2.	100000.	0.	473.	2.
2.	0.	0.	100000.	0.	474.	2.
2.	0.	0.	100000.	0.	475.	1.
2.	0.	0.	100000.	0.	476.	1.
1.	2.	1.	100000.	0.	477.	2.
2.	0.	0.	100000.	0.	478.	1.
2.	0.	0.	100000.	0.	479.	1.
2.	0.	0.	100000.	0.	480.	1.
2.	0.	0.	100000.	0.	481.	2.
2.	0.	0.	100000.	0.	482.	1.
2.	0.	0.	100000.	0.	483.	1.
2.	0.	0.	100000.	0.	484.	1.
2.	0.	0.	100000.	0.	485.	1.
2.	0.	0.	100000.	0.	486.	1.
2.	0.	0.	100000.	0.	487.	1.
1.	1.	0.	100000.	0.	488.	1.
2.	0.	0.	100000.	0.	489.	1.
2.	0.	0.	100000.	0.	490.	1.
2.	0.	0.	100000.	0.	491.	1.
1.	1.	0.	72121.	0.	492.	1.
2.	0.	0.	100000.	0.	493.	1.
2.	0.	0.	100000.	0.	494.	1.
2.	0.	0.	100000.	1.	495.	1.
2.	0.	0.	100000.	0.	496.	1.
1.	1.	0.	100000.	0.	497.	1.
1.	2.	1.	100000.	0.	498.	1.
1.	1.	0.	100000.	0.	499.	1.
2.	0.	0.	100000.	0.	500.	1.
1.	1.	0.	78376.	0.	501.	1.
2.	0.	0.	100000.	0.	502.	1.
1.	1.	0.	100000.	0.	503.	1.
2.	0.	0.	100000.	0.	504.	16.

FILE 2

FINAL PENDING INVENTORY

ALL TIMES EXPRESSED IN MINUTES

COMPONENT NUMBER	TIME PENDING RECEIPT	REMAINING STOCKAGE	TIME ORDERED
407.	2613130.	0.	2473069.
77.	2697513.	13.	2522079.

FILE 3

FAILURE SUMMARY,

ALL TIMES EXPRESSED IN MINUTES

COMPONENT NUMBER	TIME FAILED	TIME REPAIRED	TOTAL REPAIR TIME	CHARGEABLE REPAIR TIME	CURRENT AVAIL.
286.	1690.	1717.	27.	27.	0.978
151.	1717.	1749.	32.	32.	0.953
77.	1749.	1775.	26.	26.	0.934
290.	6184.	6208.	24.	24.	0.974
271.	6516.	6756.	240.	204.	0.935
56.	6756.	6784.	28.	0.	0.935
190.	7220.	29800.	22580.	11083.	0.302
71.	29878.	29908.	31.	31.	0.304
215.	35648.	35734.	86.	86.	0.434
77.	39044.	39071.	28.	28.	0.492
146.	40409.	40556.	147.	147.	0.507
16.	40669.	40702.	33.	33.	0.509
286.	43099.	43129.	30.	30.	0.536
195.	44665.	44702.	37.	37.	0.554
194.	57760.	57788.	27.	27.	0.664
326.	57788.	57833.	45.	45.	0.663
215.	64959.	65074.	115.	115.	0.701
318.	68822.	68845.	23.	23.	0.717
105.	72099.	72122.	23.	23.	0.731
286.	72122.	72161.	39.	39.	0.731
317.	79341.	79368.	27.	27.	0.756
286.	79368.	79405.	37.	37.	0.756
79.	84703.	110733.	26030.	13550.	0.614
103.	110921.	110950.	29.	29.	0.615
66.	113882.	113920.	38.	38.	0.626
286.	116895.	116919.	24.	24.	0.636
271.	118507.	119010.	503.	93.	0.641
103.	119411.	147805.	28394.	13999.	0.539
77.	151187.	151200.	13.	13.	0.551
77.	151258.	151286.	28.	28.	0.551
320.	155481.	155511.	30.	30.	0.565
271.	159397.	159910.	512.	512.	0.573
26.	162863.	162904.	41.	41.	0.581
141.	164397.	164521.	123.	123.	0.585
286.	165898.	165922.	24.	24.	0.589
434.	170060.	170138.	79.	79.	0.599
271.	175696.	176187.	492.	429.	0.610
219.	176415.	210966.	34551.	17271.	0.526
17.	221213.	221307.	94.	94.	0.550
233.	221605.	261444.	39839.	20639.	0.476
269.	262027.	262402.	375.	80.	0.478
27.	265771.	265806.	35.	35.	0.486
191.	268955.	292328.	23373.	11687.	0.459
87.	292328.	319156.	26828.	14034.	0.423
1.	320913.	320947.	34.	34.	0.427
286.	328824.	328864.	40.	40.	0.442
170.	333779.	333801.	22.	22.	0.452
286.	334914.	334943.	29.	29.	0.454
16.	336347.	336385.	37.	37.	0.457
77.	337429.	337461.	31.	31.	0.458

144.	338002.	386581.	48579.	22659.	0.412
71.	387755.	387780.	25.	25.	0.414
77.	390592.	390625.	33.	33.	0.418
193.	398375.	437949.	39574.	18587.	0.399
232.	438127.	445587.	7460.	4622.	0.392
271.	448763.	449392.	629.	629.	0.397
147.	456428.	456457.	29.	29.	0.408
194.	458040.	458064.	24.	24.	0.410
257.	458064.	458138.	74.	3.	0.410
134.	459053.	459080.	27.	27.	0.412
286.	464592.	464627.	35.	35.	0.420
286.	466984.	467020.	37.	37.	0.423
170.	477221.	477241.	20.	20.	0.438
330.	489841.	489875.	34.	34.	0.454
339.	490244.	490266.	22.	22.	0.455
271.	490501.	491051.	550.	276.	0.455
271.	494395.	494717.	322.	322.	0.459
193.	504030.	527628.	23598.	12078.	0.451
245.	528571.	545279.	16708.	7588.	0.441
189.	545279.	572847.	27568.	12492.	0.424
271.	573546.	573790.	244.	244.	0.425
77.	580309.	580348.	39.	39.	0.432
322.	583701.	583738.	37.	37.	0.436
286.	587948.	587980.	32.	32.	0.441
286.	588851.	588878.	27.	27.	0.441
250.	590708.	590739.	31.	31.	0.444
286.	591983.	592007.	24.	24.	0.445
77.	592007.	592034.	28.	28.	0.445
189.	592060.	627276.	35216.	15827.	0.425
69.	633107.	633577.	470.	470.	0.431
290.	639674.	639696.	22.	22.	0.437
77.	640438.	640463.	25.	25.	0.438
80.	640828.	640853.	25.	25.	0.438
191.	640853.	663977.	23124.	9943.	0.426
61.	665835.	665871.	36.	36.	0.428
103.	667543.	667575.	32.	32.	0.430
77.	676449.	676481.	32.	8.	0.439
77.	678237.	678263.	26.	26.	0.441
80.	678851.	678877.	26.	26.	0.442
286.	679892.	679926.	35.	35.	0.443
271.	681200.	681634.	434.	434.	0.443
189.	692571.	696725.	4154.	2714.	0.450
333.	699775.	734156.	34381.	17101.	0.434
377.	735961.	735997.	36.	36.	0.436
271.	737658.	737833.	175.	175.	0.438
19.	738906.	739101.	195.	195.	0.438
189.	740521.	759077.	18556.	8476.	0.431
293.	770700.	770752.	52.	52.	0.441
271.	773350.	773803.	453.	453.	0.443
318.	774715.	774751.	36.	36.	0.443
175.	777676.	777738.	62.	62.	0.446
77.	791988.	792017.	29.	29.	0.457
77.	792017.	792059.	42.	42.	0.457
321.	793944.	793969.	25.	25.	0.459
271.	805280.	805816.	536.	321.	0.467
77.	811688.	811710.	22.	22.	0.472
80.	811710.	811734.	23.	23.	0.472
286.	814698.	814737.	38.	38.	0.474
263.	816647.	816691.	44.	44.	0.476
77.	817774.	817794.	20.	20.	0.477
271.	818921.	819396.	475.	475.	0.477
72.	825985.	852070.	26085.	13605.	0.468
189.	854197.	890274.	36078.	17379.	0.453
319.	906786.	906799.	13.	13.	0.465
189.	907789.	921564.	13776.	7446.	0.459

212.	923642.	952284.	28642.	15202.	0.448
194.	952284.	952314.	30.	30.	0.448
246.	952314.	952389.	75.	75.	0.448
271.	955472.	955923.	452.	173.	0.450
175.	960379.	960432.	54.	54.	0.453
77.	967793.	967823.	31.	31.	0.458
184.	972607.	972634.	27.	27.	0.461
271.	977798.	978303.	505.	505.	0.464
97.	991314.	991349.	35.	35.	0.472
143.	992663.	992799.	135.	135.	0.473
26.	996824.	996861.	37.	37.	0.475
260.	1001183.	1041685.	40502.	19382.	0.462
260.	1044384.	1070305.	25921.	12818.	0.454
181.	1074672.	1091374.	16702.	9502.	0.449
375.	1096413.	1096441.	28.	28.	0.452
19.	1099763.	1099859.	95.	95.	0.454
271.	1100967.	1101175.	208.	208.	0.454
325.	1101332.	1101363.	31.	31.	0.455
286.	1102183.	1102206.	23.	23.	0.455
193.	1102255.	1141485.	39230.	18590.	0.442
62.	1141698.	1141739.	41.	41.	0.442
189.	1142418.	1164175.	21756.	10716.	0.435
261.	1164572.	1164626.	53.	53.	0.435
77.	1166065.	1166097.	32.	32.	0.436
103.	1167409.	1167431.	22.	22.	0.437
194.	1170105.	1170140.	35.	35.	0.438
189.	1181496.	1224455.	42958.	20878.	0.431
302.	1228144.	1228169.	25.	25.	0.433
271.	1228982.	1229563.	581.	581.	0.433
268.	1233226.	1233385.	159.	159.	0.435
193.	1237940.	1276962.	39022.	18382.	0.426
17.	1281293.	1281392.	99.	99.	0.428
294.	1285574.	1285608.	34.	34.	0.430
231.	1288038.	1323390.	35352.	17937.	0.421
286.	1323390.	1323422.	32.	0.	0.421
194.	1329991.	1330015.	24.	24.	0.425
48.	1332071.	1365319.	33248.	16448.	0.416
170.	1370045.	1370065.	20.	20.	0.419
271.	1370281.	1370934.	653.	180.	0.419
21.	1371044.	1371107.	63.	63.	0.419
317.	1373879.	1373911.	32.	32.	0.420
101.	1380415.	1380454.	39.	39.	0.424
190.	1382560.	1412383.	29823.	16212.	0.416
247.	1417592.	1417608.	16.	16.	0.419
261.	1420140.	1420197.	57.	57.	0.420
143.	1424294.	1424381.	87.	87.	0.422
266.	1425994.	1426123.	129.	129.	0.422
318.	1432660.	1432693.	33.	33.	0.425
193.	1432796.	1460856.	28060.	14143.	0.418
189.	1461295.	1496784.	35489.	17800.	0.409
27.	1498954.	1498980.	26.	26.	0.411
321.	1499684.	1499711.	27.	27.	0.411
269.	1501752.	1501899.	147.	147.	0.412
49.	1502636.	1502970.	334.	334.	0.412
243.	1504674.	1527951.	23277.	9868.	0.408
286.	1529928.	1529971.	43.	43.	0.409
322.	1529971.	1529999.	28.	28.	0.409
103.	1531469.	1531508.	39.	39.	0.410
19.	1532512.	1532638.	126.	126.	0.410
244.	1535585.	1585410.	49825.	23565.	0.400
271.	1586927.	1587580.	653.	653.	0.401
104.	1587707.	1587730.	23.	23.	0.401
212.	1588406.	1619648.	31242.	15243.	0.394
286.	1620239.	1620252.	13.	13.	0.394
77.	1631231.	1631264.	33.	33.	0.399
286.	1633201.	1633223.	22.	22.	0.400
243.	1638642.	1670747.	32105.	15785.	0.396

321.	1672072.	1672108.	36.	36.	0.396
271.	1674834.	1675080.	246.	246.	0.397
319.	1675187.	1675213.	26.	26.	0.397
181.	1680151.	1695045.	14894.	8174.	0.396
271.	1705242.	1705777.	535.	323.	0.400
302.	1706468.	1706497.	29.	29.	0.400
77.	1707674.	1707705.	31.	31.	0.401
101.	1711685.	1711717.	32.	32.	0.402
141.	1721768.	1721938.	170.	170.	0.406
77.	1727605.	1727636.	31.	31.	0.409
88.	1735314.	1735390.	76.	76.	0.412
371.	1736275.	1736292.	17.	17.	0.412
382.	1737872.	1737903.	31.	31.	0.413
224.	1741273.	1741291.	18.	18.	0.414
290.	1743878.	1743908.	30.	30.	0.415
271.	1751107.	1751611.	504.	264.	0.418
27.	1753279.	1753311.	32.	32.	0.419
289.	1759239.	1759275.	36.	36.	0.421
189.	1760429.	1778783.	18354.	8461.	0.418
287.	1782123.	1782162.	39.	39.	0.419
201.	1785368.	1785429.	61.	61.	0.421
286.	1786493.	1786513.	20.	20.	0.421
104.	1787916.	1787950.	34.	34.	0.421
271.	1788980.	1789308.	328.	328.	0.422
318.	1794922.	1794942.	20.	20.	0.424
321.	1795569.	1795598.	29.	10.	0.424
318.	1795598.	1837390.	41792.	20160.	0.416
194.	1838260.	1838294.	34.	34.	0.416
232.	1838901.	1877751.	38850.	18210.	0.409
247.	1877751.	1877769.	18.	18.	0.409
302.	1878046.	1878077.	31.	31.	0.409
271.	1883771.	1884079.	308.	308.	0.411
271.	1884211.	1884807.	596.	216.	0.411
286.	1897151.	1897171.	20.	20.	0.416
101.	1911029.	1911063.	34.	34.	0.421
189.	1911489.	1931131.	19642.	9082.	0.417
271.	1932776.	1933374.	598.	509.	0.418
189.	1933459.	1969259.	35800.	16235.	0.412
189.	1969518.	1994885.	25367.	13181.	0.407
286.	1996849.	1996873.	24.	24.	0.408
271.	2001132.	2001689.	557.	472.	0.409
251.	2014156.	2014184.	28.	13.	0.414
339.	2014495.	2014519.	24.	24.	0.414
271.	2014720.	2015159.	439.	423.	0.414
193.	2015915.	2047178.	31263.	14603.	0.409
286.	2057901.	2057926.	25.	25.	0.413
17.	2059473.	2059555.	82.	82.	0.413
189.	2060530.	2102936.	42406.	19767.	0.406
244.	2105171.	2143714.	38543.	19823.	0.400
147.	2146451.	2146475.	24.	24.	0.401
189.	2148105.	2173858.	25753.	13273.	0.397
147.	2181368.	2194999.	13631.	7006.	0.398
215.	2195489.	2195560.	71.	71.	0.398
286.	2197052.	2197084.	32.	32.	0.398
247.	2198127.	2198160.	33.	33.	0.399
286.	2198191.	2198219.	28.	28.	0.399
143.	2199632.	2199836.	204.	204.	0.399
53.	2202601.	2202633.	32.	32.	0.400
104.	2205118.	2205134.	16.	16.	0.401
149.	2214211.	2214703.	492.	463.	0.404
444.	2232918.	2232949.	31.	25.	0.410
331.	2258134.	2258165.	31.	31.	0.418
77.	2258352.	2258383.	31.	31.	0.418

105.	2263643.	2263676.	33.	33.	0.419
155.	2267796.	2267814.	18.	18.	0.420
271.	2269264.	2269721.	457.	457.	0.421
271.	2270635.	2270839.	204.	204.	0.421
193.	2270918.	2305563.	34645.	17365.	0.415
147.	2306533.	2306562.	29.	29.	0.415
77.	2306901.	2306927.	26.	26.	0.416
248.	2315728.	2315764.	36.	36.	0.418
329.	2321266.	2321325.	59.	59.	0.420
270.	2324045.	2324247.	202.	202.	0.421
212.	2325622.	2364569.	38947.	18307.	0.415
271.	2367729.	2367941.	212.	92.	0.416
192.	2369562.	2369650.	88.	88.	0.416
250.	2370100.	2370139.	39.	39.	0.417
271.	2370139.	2370430.	291.	201.	0.417
286.	2370430.	2370460.	30.	0.	0.417
271.	2373484.	2373877.	393.	393.	0.417
286.	2379790.	2379815.	25.	25.	0.419
286.	2382150.	2382177.	27.	27.	0.420
227.	2382618.	2418166.	35548.	17788.	0.414
320.	2418640.	2418666.	26.	26.	0.415
249.	2419897.	2419921.	24.	24.	0.415
189.	2430087.	2443987.	13900.	7089.	0.416
181.	2449788.	2460002.	10214.	4934.	0.416
105.	2465870.	2465897.	27.	27.	0.417
194.	2468850.	2468886.	36.	36.	0.418
407.	2473040.	2473069.	29.	29.	0.419
244.	2476056.	2492447.	16391.	9191.	0.418
286.	2493251.	2493290.	39.	39.	0.418
271.	2494603.	2495131.	528.	528.	0.418
170.	2495131.	2495169.	38.	38.	0.418
271.	2497275.	2497519.	244.	244.	0.418
245.	2502489.	2520506.	18017.	9857.	0.417
77.	2522049.	2522079.	30.	30.	0.417
271.	2532437.	2532765.	328.	328.	0.420
434.	2532765.	2532850.	85.	16.	0.420
270.	2539549.	2539962.	413.	21.	0.422
197.	2546326.	2546366.	40.	40.	0.424
286.	2553602.	2553628.	26.	26.	0.426
286.	2566068.	2566099.	31.	31.	0.429
286.	2571921.	2571953.	32.	32.	0.430
286.	2572376.	2572406.	30.	30.	0.431
46.	2572406.	2572514.	108.	108.	0.431
330.	2574036.	2574074.	38.	3.	0.431
320.	2580318.	2580353.	35.	35.	0.433
221.	2580361.	2580386.	25.	25.	0.433
17.	2585735.	2585803.	68.	68.	0.434
286.	2585803.	2585833.	30.	30.	0.434
189.	2591679.	2600718.	9039.	4473.	0.434
181.	2601203.	2637667.	36464.	18704.	0.429

FILE 5

INVENTORY RECEIVED

ALL TIMES EXPRESSED IN MINUTES

COMPONENT NUMBER	TIME OF RECEIPT	REMAINING STOCKAGE	TIME ORDERED
290.	6296.	0.	6208.
71.	30327.	0.	29908.
16.	40739.	0.	40702.
286.	43196.	0.	43129.
195.	44740.	0.	44702.
326.	57894.	1.	57833.
77.	58105.	13.	1775.
286.	72229.	0.	72161.
286.	79466.	0.	79405.
56.	93091.	0.	6784.
66.	113982.	0.	113920.
286.	116944.	0.	116919.
77.	136420.	12.	39071.
103.	141601.	0.	110950.
318.	155350.	0.	68845.
320.	155615.	0.	155511.
26.	162954.	0.	162904.
286.	165992.	0.	165922.
77.	177530.	12.	151200.
27.	265962.	0.	265806.
77.	314636.	11.	151286.
1.	321165.	0.	320947.
286.	328910.	0.	328864.
170.	333892.	1.	333801.
286.	334980.	0.	334943.
16.	336417.	0.	336385.
71.	388110.	0.	387780.
77.	421828.	13.	337461.
134.	459110.	0.	459080.
286.	464695.	0.	464627.
286.	467077.	0.	467020.
170.	477272.	1.	477241.
330.	489943.	0.	489875.
339.	490396.	0.	490266.
77.	498457.	12.	390625.
147.	500988.	0.	456457.
322.	583774.	0.	583738.
286.	588053.	0.	587980.
286.	588910.	0.	588878.
250.	590781.	0.	590739.
290.	639833.	0.	639696.
77.	666940.	12.	592034.
80.	678905.	1.	678877.
286.	679952.	0.	679926.
77.	688561.	13.	580348.
61.	731419.	0.	665871.
377.	736135.	0.	735997.
103.	763052.	0.	667575.
77.	764383.	11.	676481.

321.	793999.	0.	793969.
77.	809266.	10.	678263.
77.	810858.	11.	640463.
80.	811784.	1.	811734.
286.	814776.	0.	814737.
77.	832040.	11.	792059.
77.	880464.	10.	817794.
318.	926254.	0.	774751.
184.	972699.	0.	972634.
97.	991924.	0.	991349.
26.	996911.	0.	996861.
319.	1004662.	0.	906799.
375.	1096495.	0.	1096441.
325.	1101419.	0.	1101363.
286.	1102259.	0.	1102206.
77.	1126285.	13.	967823.
77.	1214516.	13.	1166097.
62.	1225772.	0.	1141739.
302.	1228601.	0.	1228169.
103.	1275555.	0.	1167431.
194.	1279617.	0.	1170140.
294.	1285820.	0.	1285608.
286.	1323460.	0.	1323422.
170.	1370095.	1.	1370065.
247.	1417671.	0.	1417608.
317.	1440766.	1.	1373911.
101.	1475871.	0.	1380454.
27.	1499141.	0.	1498980.
321.	1499768.	0.	1499711.
194.	1503076.	0.	1330015.
322.	1530013.	0.	1529999.
318.	1569129.	0.	1432693.
103.	1581014.	0.	1531508.
104.	1587828.	0.	1587730.
286.	1620326.	0.	1620252.
286.	1633251.	0.	1633223.
321.	1672174.	0.	1672108.
77.	1700927.	13.	1631264.
302.	1706968.	0.	1706497.
371.	1736397.	0.	1736292.
224.	1741372.	0.	1741291.
290.	1744071.	0.	1743908.
77.	1747382.	12.	1707705.
27.	1753403.	0.	1753311.
289.	1759913.	0.	1759275.
319.	1777200.	0.	1675213.
287.	1782207.	0.	1782162.
286.	1786557.	0.	1786513.
104.	1788103.	0.	1787950.
101.	1809021.	0.	1711717.
77.	1813290.	12.	1727636.
382.	1818158.	0.	1737903.
318.	1874074.	0.	1794942.
247.	1877827.	0.	1877769.
302.	1878451.	0.	1878077.
286.	1897209.	0.	1897171.
194.	1965412.	0.	1838294.
286.	1996903.	0.	1996873.
101.	2012209.	0.	1911063.
251.	2014243.	0.	2014184.
339.	2014650.	0.	2014519.
286.	2057963.	0.	2057926.
147.	2187325.	0.	2146475.
286.	2197124.	0.	2197084.
247.	2198193.	0.	2193160.
286.	2198248.	0.	2198219.
104.	2205257.	0.	2205134.

53.	2229293.	0.	2202633.
444.	2233049.	0.	2232949.
331.	2258195.	0.	2258165.
105.	2263714.	0.	2263676.
155.	2313913.	0.	2267814.
248.	2315822.	0.	2315764.
77.	2363610.	13.	2258383.
286.	2370484.	0.	2370460.
286.	2379851.	0.	2379815.
286.	2382225.	0.	2382177.
147.	2387183.	0.	2306562.
77.	2394330.	12.	2306927.
320.	2418816.	0.	2418666.
249.	2419965.	0.	2419921.
105.	2465934.	0.	2465897.
286.	2493345.	0.	2493290.
170.	2495221.	1.	2495169.
197.	2546416.	0.	2546366.
286.	2553705.	0.	2553628.
194.	2566035.	0.	2468886.
286.	2566163.	0.	2566099.
286.	2572003.	0.	2571953.
330.	2574134.	0.	2574074.
221.	2580421.	0.	2580386.
320.	2580492.	0.	2580353.
286.	2585882.	0.	2585833.

IV - CONCLUSIONS

The results shown in Table 3 indicate that A_o can be significantly increased (46.0% total) by the selectfull replacement of addition spares on-site. The relative increase between runs 1-2, 2-3, 3-4, was 14.1%, 16.5%, and 15.1% respectively. The corresponding relative increase in provisioning requirements was 11, 22, and 20 spares respectively. The apparent reason that the better than doubled increase in provisions requirement (11 to 22) that occured from run 2 to 3 for approximately the same relative increase in A_o is because 5 of those components that were provisioned in run 2 were provisioned again in run 3. Two of these components (189 and 193) were of the high failure rate category (refer to Table 2).

An increase in operational availability is accompanied by two significant actions. The first, an increase in the total number of trainer failures that occurs (refer to Table 3) results in the second, an increase in inventory (administrative time) processing. These factors contribute to an increase of on-site repair or replace actions.

This simulation model offers a means by which initial provisioning can be established to maintain a predetermined level of A_o. Due consideration can then be given to the effects provisioning has on the other logistic support variables (manpower, repair facilities, etc.). Trade-offs can then be made with an eye to its effects on A_o.

Recommendations

This model does not take into account any economic considerations. A suggested change to the model would be to incorporate a means by which any change in provisioning could be economically evaluated against a corresponding change in A_o.

Data input into the model currently is accomplished via punched cards. An improvement to this that should be considered is to make data input through an interactive mode.

Operational time requirements for the trainer is currently fixed. Future changes to the model will be to change this to a variable.

APPENDIX A

SLAM NETWORK

```
GEN,D.H.PIERCE,RESEARCH,08/15/81,1,,,,NO;
LIMITS,5,7,2750;
PRIORITY/1,LVF(6)/2,LVF(2)/4,LVF(1)/3,LVF(4);
STAT,1,FAIL INTARL TIME,12/0/1200;
INTLC,XX(1)=0.,XX(2)=0.,XX(3)=0.,XX(4)=0.,XX(5)=0.,XX(6)=0.,
      XX(7)=0.,XX(8)=0.,XX(9)=0.,XX(10)=0.,XX(11)=0.,XX(12)=0.;
INTLC,XX(13)=450.,XX(14)=2620800.,XX(15)=0.,XX(16)=0.;
NETWORK;
;
;
;
;
;
;        FAILURE ANALYSIS
;
       CREATE,,,,1,1;                  CREATE FAILURE
FAN    EVENT,1,1;                      CREATE TRAINER FAILURE INTERARRIVAL
;                                      TIME (FILE 4) AND DETERMINE FAILED
;                                      COMPONENT'S PART NUMBER
       ACT/1,ATRIB(7),,DAL;            TRAINER INCREMENTAL OPERATION TIME
DAL    ASSIGN,ATRIB(7)=TNOW;
RTA    ASSIGN,XX(3)=RNORM(20.,5.,3);
       ACT,,XX(3).LE.0.,RTA;
       ACT,,XX(3).GT.0.,RTC;
RTC    COLCT,XX(3),FAULT ISOLATE,
        10/3/3,1;                      COLLECT STATISTICS
       ACT/2,XX(3),,VNT;               DURATION OF FAULT ISOLATION
VNT    EVENT,2,1;                      UPDATE AND SEARCH INVENTORY FILE
;                                      FOR SPARE
       ACT,,ATRIB(5).LT.1.,NSPR;       IF SPARE IS NOT AVAILABLE TRANSFER
;                                      TO TAG "NSPR"
       ACT,,ATRIB(5).GE.1.,ASPR;       IF SPARE IS AVAILABLE TRANSFER
;                                      TO TAG "ASPR"
;
;
;
;
;
;        REPAIR TRAINER
;
PAR    COLCT,ALL,
        REPAIRED COMPONENT,
        5/0/524160,1;                  COLLECT STATISTICS
ASPR   ASSIGN,ATRIB(4)=RNORM(
        5.,3.,4),1;                    A SPARE OR REPAIRED COMPONENT IS
;                                      AVAILABLE/CREATE REMOVE/REPLACE TIME
       ACT,,ATRIB(4).LE.0.,ASPR;
       ACT,,ATRIB(4).GT.0.,RTD;
RTD    ASSIGN,XX(4)=ATRIB(4);
       ACT/3,ATRIB(4),,CRT;            REMOVE/REPLACE COMPONENT
CRT    GOON,1;
RTB    ASSIGN,XX(5)=RNORM(5.,2.,5);
       ACT,,XX(5).LE.0.,RTB;
       ACT,,XX(5).GT.0.,RTE;
RTE    GOON,1;
       ACT/4,XX(5),,CKT;               CHECK-OUT TRAINER
CKT    COLCT,XX(4),
        REMOVE REPLACE,
        12/0/1,1;                      COLLECT STATISTICS
       COLCT,XX(5),
        CHECK OUT,
        10/0/1,1;                      COLLECT STATISTICS
```

```
60          COLCT,XX(5),
61           CHECK OUT,
62           10/0/1,1;                    COLLECT STATISTICS
63          COLCT,ALL,
64           COMP RPR RPL ACTS,
65           5/0/524160,1;                COLLECT STATISTICS
66          ACT,,,9,AVL;                 IF TRAINER IS REPAIRED TRANSFER
67    ;                                  TO TAG "AVL"
68          ACT,,,1,NAVL;                IF TRAINER IS NOT REPAIRED-CONTINUE
69    NAVL  COLCT,ALL,WRONG FAILURE,
70           5/0/524160,1;                TRAINER NOT REPAIRED-INVALID DIAGNOSIS
71    ;                                  -COLLECT STATISTICS ON NUMBER OF
72    ;                                  INVALID DIAGNOSES
73    ;
74    ;
75    ;
76    ;
77    ;              INVALID REPAIR ACTION
78    ;
79          EVENT,4,1;                   RECORD FACT THAT INVALID DIAGNOSIS
80    ;                                  OCCURRED IN FILE 3
81          ASSIGN,ATRIB(1)=5.;          TAG REPAIR ACTION AS INVALID
82          ACT,,,FAN;                   RETURN TO TAG "FAN" AND CREATE
83    ;                                  NEW FAILURE
84    ;
85    ;
86    ;
87    ;
88    ;              VALID REPAIR ACTION
89    ;
90    AVL   GOON,1;
91          ACT,,ATRIB(5).LT.1.,TLMT;    WAS SPARE OR REPAIRED COMPONENT USED
92    ;                                  FOR REPAIR? IF REPAIRED COMPONENT USED
93    ;                                  TRANSFER TO TAG "TLMT"
94          ACT,,ATRIB(5).GE.1.,BAD;     IF SPARE USED-CONTINUE
95    ;
96    ;
97    ;
98    ;
99    ;
100   ;        REPAIR BAD COMPONENT OR ORDER REPLACEMENT SPARE
101   ;
102   BAD   COLCT,INT(7),
103          BAD COMPONENT,
104          20/6/2,1;                    SPARE WAS USED FOR REPAIR/COLLECT
105   ;                                  STATISTICS ON NUMBER OF SPARES
106   ;                                  USED FOR REPAIR
107         ACT,,,SKP;                   TRANSFER TO TAG "SKP" AND ORDER
108   ;                                  REPLACEMENT
109   NSPR  COLCT,ALL,NO SPARE,
110          5/0/524160,1;                NO SPARE AVAILABLE/COLLECT STATISTICS
111   ;                                  ON NUMBER OF MISSING SPARES-CONTINUE
112   ;                                  AND REPAIR BAD COMPONENT
113   SKP   GOON,1;                      IS THIS A DEPOT OR LOCAL REPAIR/
114   ;                                  REPLACEMENT ACTION?
115         ACT,,ATRIB(1).EQ.2.,SPBY;    DEPOT-TRANSFER TO TAG "SPBY"
116         ACT,,ATRIB(1).EQ.1.,REPR;    LOCAL-CONTINUE
117   ;
118   ;
119   ;
120   ;
121   ;              LOCAL REPAIR/REPLACEMENT ACTIONS
122   ;
123   REPR  GOON,1;                      IS THIS MANUAL OR ATE REPAIR/
124   ;                                  REPLACEMENT ACTION?
125         ACT,,ATRIB(2).EQ.2.,RPRT;    ATE-TRANSFER TO TAG "RPRT"
126         ACT,,ATRIB(2).EQ.1.,REQN;    MANUAL-CONTINUE
```

```
;
;
;                    MANUAL
;
REQN   GOON,1;                          IS THIS A REPAIR OR REPLACEMENT ACTION
       ACT,,ATRIB(5).GE.1.,SUB;         REPLACEMENT-TRANSFER TO TAG "SUB"
       ACT,,ATRIB(5).LT.1.,SUA;         REPAIR-CONTINUE
SUA    ASSIGN,ATRIB(3)=RNORM(
        360.,180.,7),1;                 REPAIR ACTION-CREATE REPAIR TIME
       ACT,,ATRIB(3).LE.0.,SUA;
       ACT,,ATRIB(3).GT.0.,RTF;
RTF    ASSIGN,XX(8)=ATRIB(3);
       COLCT,XX(8),MAN REPAIR,
        5/0/140,1;                      COLLECT STATISTICS
       ACT/7,AIRIB(3),,PAR;             MANUALLY REPAIR COMPONENT-TRANSFER TO
;                                       TAG "PAR"-REPAIR TRAINER
SUB    ASSIGN,XX(8)=RNORM(
        360.,180.,7);
       ACT,,XX(8).LE.0.,SUB;
       ACT,,XX(8).GT.0.,RTG;
RTG    COLCT,XX(8),MAN REPLACE,
        5/0/140,1;                      COLLECT STATISTICS
       ASSIGN,ATRIB(2)=XX(8)+TNOW,
        1;                              REPLACEMENT ACTION-CREATE REPLACEMENT
       ACT,,,FLE;                       TRANSFER TO TAG "FLE"
;
;
;
;                  ATE(L135/AFIT)
;
RPRT   GOON,1;                          IS THIS A AFIT OR L135 REPAIR/
;                                       REPLACEMENT ACTION?
       ACT,,ATRIB(3).EQ.1.,SUG;         AFIT-TRANSFER TO TAG "SUG"
       ACT,,ATRIB(3).EQ.2.,SUH;         L135-CONTINUE
;
;
;                       L135
;
SUH    GOON,1;                          IS THIS A REPAIR OR REPLACEMENT ACTION
       ACT,,ATRIB(5).GE.1.,SUJ;         REPLACEMENT-TRANSFER TO TAG "SUJ"
       ACT,,ATRIB(5).LT.1.,SUI;         REPAIR-CONTINUE
SUI    ASSIGN,ATRIB(3)=RNORM(
        45.,15.,8),1;                   REPAIR ACTION-CREATE REPAIR TIME
       ACT,,ATRIB(3).LE.0.,SUI;
       ACT,,ATRIB(3).GT.0.,RTH;
RTH    ASSIGN,XX(7)=ATRIB(3);
       COLCT,XX(7),L135 REPAIR,
        10/0/8,1;                       COLLECT STATISTICS
       ACT/9,AIRIB(3),,PAR;             REPAIR COMPONENT-TRANSFER TO TAG "PAR"
;                                       -REPAIR TRAINER
SUJ    ASSIGN,XX(7)=RNORM(
        45.,15.,8);
       ACT,,XX(7).LE.0.,SUJ;
       ACT,,XX(7).GT.0.,RTI;
RTI    COLCT,XX(7),L135 REPLACE,
        10/0/8,1;                       COLLECT STATISTICS
       ASSIGN,ATRIB(2)=XX(7)+TNOW,
        1;                              REPLACEMENT ACTION-CREATE REPLACEMENT
       ACT,,,FLE;                       TRANSFER TO TAG "FLE"
;
;
;                       AFIT
;
SUG    GOON,1;                          IS THIS A REPAIR OR REPLACE ACTION?
       ACT,,ATRIB(5).GE.1.,SUD;         REPLACEMENT-TRANSFER TO TAG "SUD"
```

```
193          ACT,,ATRIB(5).LT.1.,SUC;     REPAIR-CONTINUE
194   SUC    ASSIGN,ATRIB(3)=RNORM(
195           120.,30.,8),1;              REPAIR ACTION-CREATE REPAIR TIME
196          ACT,,ATRIB(3).LE.0.,SUC;
197          ACT,,ATRIB(3).GT.0.,RTJ;
198   RTJ    ASSIGN,XX(6)=ATRIB(3);
199          COLCT,XX(6),AFIT REPAIR,
200           7/40/30,1;                  COLLECT STATISTICS
201          ACT/6,ATRIB(3),,PAR;         REPAIR COMPONENT-TRANSFER TO TAG
202   ;                                   "PAR"-REPAIR TRAINER
203   SUD    ASSIGN,XX(6)=RNORM(
204           120.,30.,8);
205          ACT,,XX(6).LE.0.,SUD;
206          ACT,,XX(6).GT.0.,RTK;
207   RTK    COLCT,XX(6),AFIT REPLACE,
208           7/40/30,1;                  COLLECT STATISTICS
209          ASSIGN,ATRIB(2)=XX(6)+TNOW,
210           1;                          REPLACEMENT ACTION-CREATE REPLACEMENT
211          ACT,,,FLE;                   TRANSFER TO TAG "FLE"
212   ;
213   ;
214   ;
215   ;
216   ;              DEPOT REPAIR/REPLACEMENT ACTIONS
217   ;
218   SPBY   GOON,1;                      IS THIS A REPAIR OR REPLACEMENT ACTION
219          ACT,,ATRIB(5).GE.1.,SUF;     REPLACEMENT-TRANSFER TO TAG "SUF"
220          ACT,,ATRIB(5).LT.1.,SUE;     REPAIR-CONTINUE
221   SUE    ASSIGN,ATRIB(3)=RNORM(
222           28800.,14400.,9),1;         REPAIR ACTION-CREATE REPAIR TIME
223          ACT,,ATRIB(3).LE.0.,SUE;
224          ACT,,ATRIB(3).GT.0.,RTL;
225   RTL    ASSIGN,XX(9)=ATRIB(3);
226          COLCT,XX(9),DEP REPAIR,
227           10/0/5760,1;                COLLECT STATISTICS
228          ACT/8,ATRIB(3),,PAR;         REPAIR COMPONENT-TRANSFER TO TAG "PAR"
229   ;                                   -REPAIR TRAINER
230   SUF    ASSIGN,XX(10)=RNORM(
231           86400.,43200.,9);
232          ACT,,XX(10).LE.0.,SUF;
233          ACT,,XX(10).GT.0.,RTM;
234   RTM    COLCT,XX(10),DEP REPLACE,
235           10/0/16300,1;               COLLECT STATISTICS
236          ASSIGN,ATRIB(2)=XX(10)+TNOW,
237           1;                          REPLACEMENT ACTION-CREATE REPLACEMENT
238   ;
239   ;
240   ;
241   ;
242   ;
243   ;        RECORD REPLACEMENT ACTIONS
244   ;
245   FLE    COLCT,ALL,
246           COMPONENT ORDERED,
247           5/0/524160,1;               COLLECT STATISTICS ON COMPONENTS
248   ;                                   ORDERED
249          EVENT,3,1;                   REDUCE SPARES INVENTORY/RECORD
250   ;                                   STATISTICS ON COMPONENTS ORDERED
251   ;                                   IN FILE 2
252          ACT,,,RCD;                   TRANSFER TO TAG "RCD"
253   ;
254   ;
255   ;
256   ;
257   ;
258   ;        RECORD REPAIR ACTIONS ACCOMPLISHED
```

```
;
TLMT  COLCT,ALL,
       TRAINER REPAIRED,
       5/0/524160,1;                  COLLECT STATISTICS
RCD   EVENT,4,1;                     DETERMINE REPAIR ACTION STATISTICS
;                                    AND RECORD IN FILE 3
;
;
;
;
;
;        CHECK FOR EXPIRATION OF SIMULATION TIME
;
      ACT,,XX(16).LT.XX(14),FAN;     IF SIMULATION TIME HAS NOT EXPIRED
;                                    TRANSFER TO TAG "FAN"-CREATE NEW
;                                    FAILURE
      ACT,,XX(16).GE.XX(14),STP;     IF SIMULATION TIME HAS EXPIRED
;                                    CONTINUE
;
;
STP   EVENT,5,1;                     PRINT FILES
      TERMINATE,1;                   STOP SIMULATION
;
;
      ENDNETWORK;
;
;
INIT,0,3500000;
INTLC,XX(13)=450.,XX(14)=2620800;
MONTR,FILES,10;
;
;        CREATE FILE 1
;
ENTRY/1,1.,1.,0.,200000.,1.,1.,2.0/1,2.,0.,0.,258058.,1.,2.,4.0;
ENTRY/1,2.,0.,0.,400000.,1.,3.,7./1,2.,0.,0.,416080.,0.,4.,20.;
ENTRY/1,1.,2.,2.,220060.,1.,5.,8./1,2.,0.,0.,599988.,2.,6.,3.;
ENTRY/1,1.,2.,2.,25000.,0.,7.,2./1,1.,1.,0.,100000.,1.,8.,2.;
ENTRY/1,1.,2.,2.,100000.,0.,9.,3./1,2.,0.,0.,100000.,0.,10.,2.;
ENTRY/1,1.,2.,2.,100000.,1.,11.,1./1,1.,1.,0.,100000.,0.,12.,1.;
ENTRY/1,1.,2.,2.,100000.,1.,13.,1./1,1.,2.,1.,75000.,0.,14.,13.;
ENTRY/1,2.,0.,0.,70176.,0.,15.,6./1,1.,2.,2.,70217.,1.,16.,4.;
ENTRY/1,1.,2.,2.,30807.,0.,17.,3./1,1.,2.,2.,100000.,1.,18.,1.;
ENTRY/1,1.,2.,1.,50000.,0.,19.,12./1,1.,1.,0.,50000.,1.,20.,1.;
ENTRY/1,1.,2.,2.,9742.,0.,21.,3./1,1.,1.,0.,100000.,1.,22.,1.;
ENTRY/1,1.,1.,0.,100000.,1.,23.,3./1,1.,1.,0.,100000.,1.,24.,1.;
ENTRY/1,1.,1.,0.,100000.,1.,25.,1./1,1.,2.,2.,25000.,1.,26.,4.;
ENTRY/1,1.,2.,1.,25000.,1.,27.,4./1,1.,2.,2.,100000.,1.,28.,1.;
ENTRY/1,1.,2.,2.,151523.,1.,29.,5./1,1.,2.,1.,644662.,1.,30.,2.;
ENTRY/1,1.,2.,1.,369781.,1.,31.,1./1,1.,2.,1.,465593.,1.,32.,2.;
ENTRY/1,1.,2.,1.,392034.,0.,33.,1./1,1.,2.,1.,592838.,1.,34.,4.;
ENTRY/1,2.,0.,0.,327675.,1.,35.,2./1,1.,2.,1.,370672.,1.,36.,1.;
ENTRY/1,1.,2.,1.,339351.,1.,37.,1./1,1.,2.,1.,337746.,1.,38.,1.;
ENTRY/1,1.,2.,1.,499550.,1.,39.,1./1,1.,2.,1.,300000.,1.,40.,1.;
ENTRY/1,2.,0.,0.,268759.,1.,41.,1./1,1.,2.,1.,346765.,1.,42.,1.;
ENTRY/1,2.,0.,0.,300000.,1.,43.,1./1,1.,2.,1.,300000.,1.,44.,2.;
ENTRY/1,1.,2.,1.,300000.,1.,45.,1./1,1.,2.,1.,100000.,0.,46.,6.;
ENTRY/1,2.,0.,0.,100000.,0.,47.,6./1,2.,0.,0.,100000.,0.,48.,6.;
ENTRY/1,1.,1.,0.,100000.,0.,49.,5./1,1.,1.,0.,100000.,0.,50.,1.;
ENTRY/1,2.,0.,0.,82900.,1.,51.,2./1,1.,2.,2.,100000.,1.,52.,1.;
ENTRY/1,2.,0.,0.,200000.,1.,53.,2./1,2.,0.,0.,309550.,1.,54.,2.;
ENTRY/1,2.,0.,0.,200000.,1.,55.,2./1,2.,0.,0.,102399.,1.,56.,2.;
ENTRY/1,1.,2.,2.,255512.,1.,57.,24./1,2.,0.,0.,588235.,1.,58.,6.;
ENTRY/1,1.,1.,0.,400000.,0.,59.,7./1,1.,2.,2.,400000.,1.,60.,5.;
ENTRY/1,2.,0.,0.,400000.,1.,61.,2./1,2.,0.,0.,400000.,1.,62.,8.;
ENTRY/1,1.,1.,0.,400000.,0.,63.,2./1,2.,0.,0.,20000.,0.,64.,2.;
ENTRY/1,1.,2.,2.,100000.,0.,65.,2./1,1.,2.,2.,100000.,1.,66.,1.;
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325  ENTRY/1,1.,2.,2.,100000.,0.,67.,1./1,1.,2.,2.,100000.,0.,68.,1.;
326  ENTRY/1,1.,1.,0.,100000.,0.,69.,1./1,1.,1.,0.,180000.,0.,70.,1.;
327  ENTRY/1,1.,1.,0.,177305.,1.,71.,4./1,2.,0.,0.,100000.,0.,72.,4.;
328  ENTRY/1,1.,1.,0.,100000.,1.,73.,1./1,1.,1.,0.,100000.,1.,74.,1.;
329  ENTRY/1,2.,0.,0.,100000.,0.,75.,1./1,1.,1.,0.,50000.,0.,76.,1.;
330  ENTRY/1,2.,0.,0.,23636.,14.,77.,56./1,1.,2.,1.,75000.,0.,78.,13.;
331  ENTRY/1,2.,0.,0.,75000.,0.,79.,4./1,1.,2.,2.,48621.,2.,80.,8.;
332  ENTRY/1,1.,2.,2.,49674.,1.,81.,4./1,2.,0.,0.,39145.,0.,82.,2.;
333  ENTRY/1,2.,0.,0.,100000.,0.,83.,1./1,2.,0.,0.,50000.,1.,84.,2.;
334  ENTRY/1,1.,1.,0.,25000.,1.,85.,2./1,1.,1.,0.,36000.,0.,86.,1.;
335  ENTRY/1,2.,0.,0.,80230.,0.,87.,7./1,1.,2.,2.,50000.,0.,88.,1.;
336  ENTRY/1,1.,1.,0.,50000.,0.,89.,1./1,1.,1.,0.,94650.,1.,90.,1.;
337  ENTRY/1,1.,2.,2.,103842.,0.,91.,3./1,1.,1.,0.,117302.,0.,92.,1.;
338  ENTRY/1,1.,2.,1.,50000.,1.,93.,1./1,1.,1.,0.,100000.,1.,94.,1.;
339  ENTRY/1,1.,1.,0.,100000.,1.,95.,1./1,1.,1.,0.,100000.,1.,96.,3.;
340  ENTRY/1,1.,1.,0.,100000.,1.,97.,3./1,1.,1.,0.,100000.,1.,98.,1.;
341  ENTRY/1,1.,1.,0.,100000.,1.,99.,1./1,1.,1.,0.,100000.,0.,100.,1.;
342  ENTRY/1,2.,0.,0.,25000.,1.,101.,4./1,1.,2.,1.,25000.,1.,102.,4.;
343  ENTRY/1,2.,0.,0.,25000.,1.,103.,8./1,1.,2.,1.,25000.,1.,104.,8.;
344  ENTRY/1,1.,2.,2.,25000.,1.,105.,4./1,2.,0.,0.,38000.,1.,106.,3.;
345  ENTRY/1,1.,2.,2.,118655.,1.,107.,12./1,1.,2.,1.,457310.,1.,108.,1.;
346  ENTRY/1,1.,2.,1.,121767.,1.,109.,1./1,1.,2.,2.,222286.,1.,110.,2.;
347  ENTRY/1,1.,2.,1.,389287.,1.,111.,2./1,1.,2.,1.,518995.,1.,112.,4.;
348  ENTRY/1,1.,2.,1.,499550.,1.,113.,2./1,1.,2.,1.,409534.,1.,114.,2.;
349  ENTRY/1,1.,2.,2.,592838.,1.,115.,5./1,1.,2.,1.,371085.,0.,116.,3.;
350  ENTRY/1,1.,2.,1.,429037.,1.,117.,1./1,1.,2.,1.,354509.,1.,118.,2.;
351  ENTRY/1,1.,2.,1.,463972.,1.,119.,2./1,1.,2.,2.,339742.,1.,120.,1.;
352  ENTRY/1,1.,2.,1.,498058.,1.,121.,1./1,1.,2.,1.,371085.,1.,122.,2.;
353  ENTRY/1,1.,2.,1.,431630.,1.,123.,1./1,1.,2.,2.,194295.,1.,124.,4.;
354  ENTRY/1,1.,2.,1.,346765.,1.,125.,1./1,1.,2.,1.,499550.,1.,126.,1.;
355  ENTRY/1,1.,2.,1.,348214.,1.,127.,1./1,1.,2.,1.,327675.,1.,128.,2.;
356  ENTRY/1,1.,2.,1.,667645.,0.,129.,1./1,2.,2.,0.,300000.,1.,130.,1.;
357  ENTRY/1,1.,2.,2.,300000.,0.,131.,1./1,1.,2.,2.,328084.,1.,132.,1.;
358  ENTRY/1,1.,2.,1.,300000.,0.,133.,19./1,1.,2.,2.,181186.,1.,134.,10.;
359  ENTRY/1,1.,2.,1.,407631.,1.,135.,7./1,1.,2.,2.,300000.,0.,136.,1.;
360  ENTRY/1,1.,2.,1.,300000.,0.,137.,1./1,1.,2.,1.,300000.,1.,138.,1.;
361  ENTRY/1,1.,2.,1.,300000.,1.,139.,1./1,2.,0.,0.,300000.,1.,140.,1.;
362  ENTRY/1,1.,2.,1.,100000.,0.,141.,6./1,1.,2.,1.,100000.,0.,142.,6.;
363  ENTRY/1,1.,2.,1.,100000.,0.,143.,12./1,2.,0.,0.,100000.,0.,144.,6.;
364  ENTRY/1,1.,1.,0.,100000.,0.,145.,6./1,1.,2.,1.,100000.,0.,146.,6.;
365  ENTRY/1,2.,0.,0.,38000.,1.,147.,7./1,1.,1.,0.,46000.,1.,148.,2.;
366  ENTRY/1,1.,1.,0.,50000.,0.,149.,1./1,1.,1.,0.,46000.,1.,150.,1.;
367  ENTRY/1,2.,0.,0.,60000.,1.,151.,1./1,1.,1.,0.,153856.,1.,152.,12.;
368  ENTRY/1,1.,1.,0.,127000.,0.,153.,1./1,2.,0.,0.,200000.,1.,154.,2.;
369  ENTRY/1,2.,0.,0.,234984.,1.,155.,2./1,2.,0.,0.,186905.,1.,156.,2.;
370  ENTRY/1,1.,2.,1.,200000.,1.,157.,2./1,2.,0.,0.,349870.,1.,158.,2.;
371  ENTRY/1,1.,2.,2.,200000.,1.,159.,8./1,2.,0.,0.,370466.,1.,160.,4.;
372  ENTRY/1,2.,0.,0.,200000.,1.,161.,4./1,2.,0.,0.,136108.,1.,162.,2.;
373  ENTRY/1,2.,0.,0.,133576.,1.,163.,2./1,2.,0.,0.,75086.,1.,164.,2.;
374  ENTRY/1,2.,0.,0.,100000.,0.,165.,2./1,1.,2.,2.,469639.,2.,166.,30.;
375  ENTRY/1,2.,0.,0.,333333.,1.,167.,6./1,1.,2.,2.,588235.,2.,168.,82.;
376  ENTRY/1,2.,0.,0.,588235.,1.,169.,2./1,1.,2.,2.,502512.,2.,170.,66.;
377  ENTRY/1,2.,0.,0.,502512.,0.,171.,13./1,2.,0.,0.,515464.,1.,172.,2.;
378  ENTRY/1,2.,0.,0.,515464.,0.,173.,3./1,2.,0.,0.,400000.,0.,174.,1.;
379  ENTRY/1,1.,2.,2.,400000.,0.,175.,15./1,1.,2.,2.,400000.,0.,176.,42.;
380  ENTRY/1,2.,0.,0.,389105.,0.,177.,3./1,2.,0.,0.,235294.,0.,178.,5.;
381  ENTRY/1,2.,0.,0.,840336.,0.,179.,3./1,2.,0.,0.,400000.,0.,180.,6.;
382  ENTRY/1,2.,0.,0.,400000.,0.,181.,21./1,2.,0.,0.,400000.,1.,182.,10.;
383  ENTRY/1,2.,0.,0.,400000.,0.,183.,1./1,1.,2.,2.,78140.,1.,184.,4.;
384  ENTRY/1,2.,0.,0.,292680.,1.,185.,3./1,2.,0.,0.,567924.,1.,186.,3.;
385  ENTRY/1,2.,0.,0.,564908.,0.,187.,2./1,2.,0.,0.,400000.,0.,188.,6.;
386  ENTRY/1,2.,0.,0.,20000.,0.,189.,17./1,2.,0.,0.,20000.,0.,190.,3.;
387  ENTRY/1,2.,0.,0.,20000.,0.,191.,4./1,1.,2.,2.,25000.,0.,192.,1.;
388  ENTRY/1,2.,0.,0.,25000.,0.,193.,16./1,2.,0.,0.,25000.,1.,194.,12.;
389  ENTRY/1,1.,2.,2.,100000.,1.,195.,7./1,1.,1.,0.,100000.,1.,196.,1.;
390  ENTRY/1,1.,2.,2.,100000.,1.,197.,3./1,1.,1.,0.,100000.,1.,198.,1.;
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391  ENTRY/1,1,1,0,100000,1,199,1,/1,1,1,0,100000,1,200,1,;
392  ENTRY/1,1,2,2,100000,0,201,1,/1,2,0,0,100000,0,202,1,;
393  ENTRY/1,1,1,2,100000,0,203,1,/1,1,1,2,100000,0,204,1,;
394  ENTRY/1,1,1,2,100000,0,205,1,/1,1,1,2,100000,0,206,1,;
395  ENTRY/1,2,0,0,100000,0,207,3,/1,1,1,0,100000,0,208,1,;
396  ENTRY/1,2,0,0,300000,1,209,1,/1,1,1,0,100000,0,210,6,;
397  ENTRY/1,1,2,2,100000,0,211,6,/1,2,0,0,100000,0,212,6,;
398  ENTRY/1,2,0,0,100000,0,213,6,/1,1,2,2,100000,0,214,6,;
399  ENTRY/1,1,2,2,100000,0,215,6,/1,2,0,0,100000,0,216,6,;
400  ENTRY/1,1,1,0,100000,0,217,2,/1,2,0,0,100000,1,218,8,;
401  ENTRY/1,2,0,0,100000,0,219,2,/1,1,1,0,100000,0,220,1,;
402  ENTRY/1,1,2,2,100000,1,221,7,/1,1,1,0,100000,1,222,3,;
403  ENTRY/1,1,1,0,100000,1,223,1,/1,1,2,1,100000,1,224,2,;
404  ENTRY/1,1,2,1,100000,1,225,2,/1,1,1,0,100000,1,226,1,;
405  ENTRY/1,2,0,0,100000,0,227,1,/1,2,0,0,100000,0,228,1,;
406  ENTRY/1,2,0,0,100000,0,229,1,/1,2,0,0,115000,0,230,1,;
407  ENTRY/1,2,0,0,100000,0,231,6,/1,2,0,0,100000,0,232,6,;
408  ENTRY/1,2,0,0,100000,0,233,6,/1,1,2,2,100000,0,234,6,;
409  ENTRY/1,2,0,0,100000,0,235,1,/1,2,0,0,191508,1,236,1,;
410  ENTRY/1,2,0,0,121143,1,237,4,/1,2,0,0,123899,0,238,3,;
411  ENTRY/1,2,0,0,75000,0,239,2,/1,2,0,0,75000,0,240,2,;
412  ENTRY/1,2,0,0,75000,0,241,13,/1,2,0,0,75000,0,242,13,;
413  ENTRY/1,2,0,0,75000,0,243,13,/1,2,0,0,75000,0,244,13,;
414  ENTRY/1,2,0,0,110765,0,245,4,/1,1,2,2,71136,0,246,12,;
415  ENTRY/1,1,2,2,54222,1,247,4,/1,1,2,2,62809,1,248,4,;
416  ENTRY/1,1,2,2,49786,1,249,4,/1,1,2,2,48943,1,250,4,;
417  ENTRY/1,1,2,2,125114,1,251,4,/1,1,2,2,61924,1,252,4,;
418  ENTRY/1,1,2,2,39145,0,253,3,/1,1,2,2,39741,1,254,4,;
419  ENTRY/1,2,0,0,100000,0,255,1,/1,2,0,0,60000,0,256,1,;
420  ENTRY/1,1,2,2,105510,0,257,10,/1,2,0,0,30000,0,258,2,;
421  ENTRY/1,1,2,2,100000,0,259,6,/1,2,0,0,100000,0,260,12,;
422  ENTRY/1,1,2,2,100000,0,261,6,/1,1,2,2,100000,0,262,6,;
423  ENTRY/1,1,2,2,100000,0,263,6,/1,1,2,2,100000,0,264,6,;
424  ENTRY/1,1,2,1,100000,0,265,6,/1,1,2,1,100000,0,266,6,;
425  ENTRY/1,1,2,1,100000,0,267,6,/1,1,2,1,100000,0,268,6,;
426  ENTRY/1,1,1,0,100000,0,269,12,/1,1,1,0,100000,0,270,6,;
427  ENTRY/1,1,1,0,720,0,271,2,/1,1,1,0,50000,0,272,1,;
428  ENTRY/1,1,1,0,116822,1,273,3,/1,1,2,1,389105,0,274,1,;
429  ENTRY/1,1,2,1,301205,0,275,1,/1,1,1,0,141243,0,276,1,;
430  ENTRY/1,1,1,0,50000,0,277,1,/1,1,2,2,50000,0,278,1,;
431  ENTRY/1,1,2,1,192234,0,279,1,/1,1,1,0,848956,1,280,1,;
432  ENTRY/1,1,1,0,50000,0,281,1,/1,1,1,0,50000,0,282,1,;
433  ENTRY/1,1,2,2,93450,1,283,3,/1,1,2,1,93458,1,284,3,;
434  ENTRY/1,1,1,0,50000,0,285,3,/1,1,2,2,7793,1,286,24,;
435  ENTRY/1,1,2,2,50000,1,287,7,/1,1,1,0,50000,0,288,1,;
436  ENTRY/1,1,1,0,42653,1,289,1,/1,1,2,1,46918,1,290,3,;
437  ENTRY/1,1,1,0,50000,0,291,3,/1,1,2,2,100000,0,292,4,;
438  ENTRY/1,1,2,2,100000,0,293,12,/1,1,1,0,100000,1,294,3,;
439  ENTRY/1,1,1,0,100000,0,295,1,/1,1,1,0,100000,1,296,3,;
440  ENTRY/1,1,1,0,100000,1,297,3,/1,1,1,0,100000,1,298,1,;
441  ENTRY/1,1,1,0,100000,1,299,1,/1,1,1,0,100000,1,300,1,;
442  ENTRY/1,1,1,0,100000,1,301,3,/1,1,1,0,100000,1,302,3,;
443  ENTRY/1,1,1,0,100000,1,303,3,/1,1,1,0,100000,0,304,3,;
444  ENTRY/1,1,1,0,100000,0,305,3,/1,1,1,0,100000,1,306,3,;
445  ENTRY/1,1,1,0,100000,1,307,3,/1,1,1,0,100000,2,308,1,;
446  ENTRY/1,1,1,0,100000,1,309,1,/1,1,1,0,100000,1,310,1,;
447  ENTRY/1,1,1,0,100000,1,311,1,/1,1,1,0,100000,1,312,1,;
448  ENTRY/1,1,1,0,100000,1,313,1,/1,1,1,0,100000,1,314,1,;
449  ENTRY/1,1,1,0,100000,0,315,1,/1,1,1,0,100000,1,316,1,;
450  ENTRY/1,2,0,0,25000,2,317,4,/1,2,0,0,25000,1,318,4,;
451  ENTRY/1,2,0,0,25000,1,319,4,/1,1,2,1,25000,1,320,4,;
452  ENTRY/1,1,2,2,25000,1,321,4,/1,1,2,2,25000,1,322,4,;
453  ENTRY/1,1,2,2,25000,0,323,4,/1,1,2,1,25000,0,324,4,;
454  ENTRY/1,1,2,2,25000,1,325,4,/1,1,2,2,25000,2,326,8,;
455  ENTRY/1,1,2,2,25000,1,327,4,/1,1,2,1,25000,1,328,4,;
456  ENTRY/1,1,2,2,25000,0,329,4,/1,1,2,2,25000,1,330,4,;
457  ENTRY/1,1,2,2,25000,1,331,4,/1,1,2,2,25000,1,332,4,;
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456  ENTRY/1,1.,2.,2.,25000.,0.,329.,4./1,1.,2.,2.,25000.,1.,330.,4.;
457  ENTRY/1,1.,2.,2.,25000.,1.,331.,4./1,1.,2.,2.,25000.,1.,332.,4.;
458  ENTRY/1,2.,0.,0.,25000.,0.,333.,4./1,1.,2.,1.,300000.,1.,334.,1.;
459  ENTRY/1,1.,2.,1.,300000.,1.,335.,1./1,1.,2.,2.,300000.,1.,336.,1.;
460  ENTRY/1,2.,0.,0.,300000.,1.,337.,1./1,1.,2.,1.,961353.,1.,338.,10.;
461  ENTRY/1,1.,2.,1.,483746.,1.,339.,13./1,1.,2.,2.,118655.,1.,340.,1.;
462  ENTRY/1,1.,2.,1.,110000.,1.,341.,1./1,2.,0.,0.,181186.,1.,342.,2.;
463  ENTRY/1,1.,2.,1.,429037.,1.,343.,1./1,1.,2.,1.,362424.,1.,344.,1.;
464  ENTRY/1,1.,2.,1.,380518.,1.,345.,1./1,1.,2.,1.,420221.,1.,346.,1.;
465  ENTRY/1,2.,0.,0.,121760.,1.,347.,1./1,1.,2.,1.,189710.,1.,348.,3.;
466  ENTRY/1,1.,2.,1.,497320.,1.,349.,2./1,1.,2.,1.,110000.,1.,350.,2.;
467  ENTRY/1,1.,2.,1.,389681.,1.,351.,1./1,1.,2.,1.,851281.,1.,352.,21.;
468  ENTRY/1,1.,2.,2.,139772.,0.,353.,1./1,2.,0.,0.,307995.,1.,354.,2.;
469  ENTRY/1,1.,2.,1.,398597.,0.,355.,1./1,1.,2.,1.,279033.,1.,356.,1.;
470  ENTRY/1,1.,2.,1.,387928.,1.,357.,2./1,1.,2.,1.,371085.,1.,358.,1.;
471  ENTRY/1,1.,2.,1.,362608.,1.,359.,1./1,1.,2.,1.,344376.,1.,360.,2.;
472  ENTRY/1,1.,2.,1.,359509.,1.,361.,1./1,1.,2.,1.,339351.,1.,362.,2.;
473  ENTRY/1,2.,0.,0.,313107.,1.,363.,1./1,1.,2.,1.,839067.,1.,364.,4.;
474  ENTRY/1,1.,2.,1.,337746.,1.,365.,2./1,1.,2.,1.,330710.,1.,366.,2.;
475  ENTRY/1,1.,2.,2.,571494.,1.,367.,5./1,1.,2.,1.,362608.,1.,368.,3.;
476  ENTRY/1,1.,2.,2.,257480.,1.,369.,1./1,1.,2.,1.,633658.,1.,370.,1.;
477  ENTRY/1,1.,2.,1.,354509.,1.,371.,5./1,1.,2.,1.,399074.,1.,372.,3.;
478  ENTRY/1,1.,2.,1.,354509.,1.,373.,3./1,1.,2.,1.,354509.,1.,374.,3.;
479  ENTRY/1,1.,2.,1.,387177.,1.,375.,2./1,1.,2.,1.,420208.,1.,376.,1.;
480  ENTRY/1,1.,2.,1.,300000.,1.,377.,16./1,1.,2.,2.,429037.,1.,378.,4.;
481  ENTRY/1,1.,2.,2.,361164.,1.,379.,4./1,1.,2.,1.,387177.,1.,380.,2.;
482  ENTRY/1,1.,2.,1.,300000.,1.,381.,2./1,2.,0.,0.,417746.,1.,382.,2.;
483  ENTRY/1,1.,2.,1.,515783.,1.,383.,2./1,1.,2.,1.,300000.,1.,384.,1.;
484  ENTRY/1,2.,0.,0.,468209.,1.,385.,2./1,1.,2.,1.,300000.,1.,386.,1.;
485  ENTRY/1,1.,2.,1.,307238.,1.,387.,1./1,1.,2.,1.,443645.,1.,388.,1.;
486  ENTRY/1,1.,2.,1.,354509.,1.,389.,1./1,1.,2.,1.,339351.,1.,390.,1.;
487  ENTRY/1,1.,2.,1.,362608.,1.,391.,1./1,1.,2.,1.,300000.,1.,392.,1.;
488  ENTRY/1,1.,2.,1.,300000.,1.,393.,1./1,1.,2.,1.,369440.,1.,394.,2.;
489  ENTRY/1,2.,0.,0.,353507.,1.,395.,1./1,1.,2.,1.,300000.,1.,396.,1.;
490  ENTRY/1,1.,2.,1.,389287.,1.,397.,1./1,1.,2.,1.,342489.,1.,398.,1.;
491  ENTRY/1,2.,0.,0.,354509.,1.,399.,1./1,1.,2.,1.,667646.,1.,400.,1.;
492  ENTRY/1,1.,2.,1.,362608.,1.,401.,1./1,1.,2.,1.,379968.,1.,402.,1.;
493  ENTRY/1,1.,2.,1.,420205.,0.,403.,1./1,1.,2.,1.,300000.,1.,404.,1.;
494  ENTRY/1,1.,2.,1.,456454.,1.,405.,1./1,1.,2.,1.,346765.,1.,406.,1.;
495  ENTRY/1,2.,0.,0.,300000.,1.,407.,1./1,1.,2.,1.,574494.,1.,408.,2.;
496  ENTRY/1,1.,2.,1.,574400.,1.,409.,2./1,2.,0.,0.,331367.,1.,410.,1.;
497  ENTRY/1,1.,2.,1.,379968.,1.,411.,1./1,1.,2.,1.,499550.,1.,412.,1.;
498  ENTRY/1,1.,2.,1.,337747.,1.,413.,1./1,1.,2.,1.,407033.,1.,414.,1.;
499  ENTRY/1,1.,2.,1.,300000.,1.,415.,1./1,1.,2.,1.,300000.,1.,416.,1.;
500  ENTRY/1,1.,2.,1.,300000.,1.,417.,1./1,1.,2.,1.,300000.,1.,418.,2.;
501  ENTRY/1,1.,2.,1.,300000.,1.,419.,1./1,2.,0.,0.,300000.,1.,420.,1.;
502  ENTRY/1,1.,2.,2.,300000.,1.,421.,2./1,1.,2.,1.,300000.,1.,422.,1.;
503  ENTRY/1,1.,2.,2.,276411.,1.,423.,1./1,1.,2.,2.,300000.,1.,424.,1.;
504  ENTRY/1,1.,2.,2.,300000.,1.,425.,1./1,1.,2.,2.,300000.,1.,426.,1.;
505  ENTRY/1,1.,2.,2.,268759.,1.,427.,1./1,1.,2.,2.,551633.,1.,428.,1.;
506  ENTRY/1,1.,2.,1.,376393.,1.,429.,2./1,1.,2.,1.,484308.,1.,430.,1.;
507  ENTRY/1,1.,2.,1.,300000.,1.,431.,1./1,1.,2.,1.,300000.,1.,432.,1.;
508  ENTRY/1,2.,0.,0.,392665.,1.,433.,2./1,1.,2.,2.,178597.,0.,434.,25.;
509  ENTRY/1,1.,2.,2.,300000.,1.,435.,3./1,1.,2.,1.,572344.,1.,436.,2.;
510  ENTRY/1,1.,2.,1.,300000.,1.,437.,1./1,1.,2.,2.,288035.,1.,438.,3.;
511  ENTRY/1,1.,2.,1.,300000.,1.,439.,2./1,1.,2.,2.,300000.,0.,440.,4.;
512  ENTRY/1,2.,0.,0.,300000.,1.,441.,1./1,1.,2.,1.,300000.,1.,442.,1.;
513  ENTRY/1,2.,0.,0.,300000.,1.,443.,1./1,1.,2.,1.,300000.,1.,444.,1.;
514  ENTRY/1,2.,0.,0.,300000.,1.,445.,1./1,2.,0.,0.,300000.,1.,446.,1.;
515  ENTRY/1,2.,0.,0.,300000.,1.,447.,1./1,2.,0.,0.,300000.,1.,448.,1.;
516  ENTRY/1,2.,0.,0.,300000.,1.,449.,1./1,2.,0.,0.,300000.,1.,450.,2.;
517  ENTRY/1,1.,2.,2.,100000.,0.,451.,10./1,1.,2.,2.,34109.,0.,452.,1.;
518  ENTRY/1,1.,1.,0.,68542.,0.,453.,1./1,1.,1.,0.,50000.,0.,454.,2.;
519  ENTRY/1,1.,1.,0.,50000.,0.,455.,2./1,2.,0.,0.,100000.,0.,456.,1.;
520  ENTRY/1,2.,0.,0.,100000.,0.,457.,1./1,2.,0.,0.,100000.,1.,458.,1.;
521  ENTRY/1,2.,0.,0.,100000.,1.,459.,1./1,2.,0.,0.,100000.,0.,460.,1.;
522  ENTRY/1,2.,0.,0.,100000.,1.,461.,1./1,2.,0.,0.,100000.,1.,462.,1.;
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523  ENTRY/1,2.,0.,0.,100000.,0.,463.,1./1,2.,0.,0.,100000.,0.,464.,1.;
524  ENTRY/1,2.,0.,0.,100000.,0.,465.,1./1,2.,0.,0.,100000.,0.,466.,1.;
525  ENTRY/1,2.,0.,0.,100000.,1.,467.,1./1,1.,1.,0.,100000.,0.,468.,12.;
526  ENTRY/1,1.,1.,0.,100000.,0.,469.,1./1,1.,1.,0.,100000.,0.,470.,1.;
527  ENTRY/1,1.,2.,1.,100000.,0.,471.,4./1,1.,2.,2.,100000.,0.,472.,2.;
528  ENTRY/1,1.,2.,2.,100000.,0.,473.,2./1,2.,0.,0.,100000.,0.,474.,2.;
529  ENTRY/1,2.,0.,0.,100000.,0.,475.,1./1,2.,0.,0.,100000.,0.,476.,1.;
530  ENTRY/1,1.,2.,1.,100000.,0.,477.,2./1,2.,0.,0.,100000.,0.,478.,1.;
531  ENTRY/1,2.,0.,0.,100000.,0.,479.,1./1,2.,0.,0.,100000.,0.,480.,1.;
532  ENTRY/1,2.,0.,0.,100000.,0.,481.,2./1,2.,0.,0.,100000.,0.,482.,1.;
533  ENTRY/1,2.,0.,0.,100000.,0.,483.,1./1,2.,0.,0.,100000.,0.,484.,1.;
534  ENTRY/1,2.,0.,0.,100000.,0.,485.,1./1,2.,0.,0.,100000.,0.,486.,1.;
535  ENTRY/1,2.,0.,0.,100000.,0.,487.,1./1,1.,1.,0.,100000.,0.,488.,1.;
536  ENTRY/1,2.,0.,0.,100000.,0.,489.,1./1,2.,0.,0.,100000.,0.,490.,1.;
537  ENTRY/1,2.,0.,0.,100000.,0.,491.,1./1,1.,1.,0.,72121.,0.,492.,1.;
538  ENTRY/1,2.,0.,0.,100000.,0.,493.,1./1,2.,0.,0.,100000.,0.,494.,1.;
539  ENTRY/1,2.,0.,0.,100000.,1.,495.,1./1,2.,0.,0.,100000.,0.,496.,1.;
540  ENTRY/1,1.,1.,0.,100000.,0.,497.,1./1,1.,2.,1.,100000.,0.,498.,1.;
541  ENTRY/1,1.,1.,0.,100000.,0.,499.,1./1,2.,0.,0.,100000.,0.,500.,1.;
542  ENTRY/1,1.,1.,0.,78376.,0.,501.,1./1,2.,0.,0.,100000.,0.,502.,1.;
543  ENTRY/1,1.,1.,0.,100000.,0.,503.,1./1,2.,0.,0.,100000.,0.,504.,16.;
544  ;
545  FIN;
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APPENDIX B

SLAM EVENT MODULE

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    1 C                                                                     000100
    2 C                                                                     000200
    3 C                                                                     000300
    4 C                                                                     000400
    5 C                                                                     000500
    6 C                                                                     000600
    7 C                          EVENT MODULES                              000700
    8 C                                                                     000800
    9       SUBROUTINE EVENT(IX)                                            000900
   10       COMMON/SCOM1/ ATRIB(100),DD(600),DDL(600),DTNOW,II,MFA,MSTOP,NCLNR001000
   11      1,NCRDR,NPRNT,NNRUN,NNSET,NTAPE,SS(600),SSL(600),TNEXT,TNOW,XX(600)001100
   12       DIMENSION A(10),B(10),COMP(10),D(10),E(10)                     001200
   13       DIMENSION NATRIB(1),MPART(1),NINFIL(1),NPLOC(1)                001300
   14       GO TO (1,2,3,4,500) ,IX                                        001400
   15 C                                                                    001500
   16 C                                                                    001600
   17 C                                                                    001700
   18 C                                                                    001800
   19 C                                                                    001900
   20 C                                                                    002000
   21 C                          EVENT 1                                   002100
   22 C                                                                    002200
   23 C                                                                    002300
   24 C                                                                    002400
   25 C        CREATE FILE 4 - COMPONENT'S INITIAL FAILURE INTERARRIVAL    002500
   26 C        TIMES AND RANK FILE LOWEST VALUE FIRST (NOTE 1)             002600
   27 C                                                                    002700
   28 1     IF(XX(12).EQ.1.) GO TO 12                                      002800
   29       X2=0.                                                          002900
   30       X4=0.                                                          003000
   31       X6=0.                                                          003100
   32       X7=960.                                                        003200
   33       X8=0.                                                          003300
   34       X9=0.                                                          003400
   35       X10=0.                                                         003500
   36       M1=0                                                           003600
   37       N=0                                                            003700
   38       NN1=0                                                          003800
   39       ANDA=0.                                                        003900
   40       NR=0                                                           004000
   41       ADJ1=0.                                                        004100
   42       DUM=0.                                                         004200
   43       DT=0.                                                          004300
   44       DTT=0.                                                         004400
   45       TOT=0.                                                         004500
   46       DTT=0.                                                         004600
   47       AVAIL=0.                                                       004700
   48       XX(12)=1.                                                      004800
   49 12    IF(XX(11).EQ.1.) GO TO 65                                      004900
   50       J2=NNQ(1)                                                      005000
```

```
      NATRIB(1) = 7                                                     005100
      NNEXT=MMFE(1)                                                     005200
      LOC=1                                                             005300
    8 IF(NNEXT.EQ.0.) GO TO 60                                          005400
      CALL COPY(LOC,1,A)                                                005500
      ATRIB(4)=A(4)*60.                                                 005600
      FR=(1./ATRIB(4))*A(7)                                             005700
      A(4)=1./FR                                                        005800
   20 B(1)=EXPON(A(4),1)                                                005900
      IF(B(1).LE.0.) GO TO 20                                           006000
      B(2)=A(6)                                                         006100
      IF(B(2).GT.XX(13)) GO TO 15                                       006200
      ANDA=ANDA+FR                                                      006300
      IF(B(1).GT.XX(14)) GO TO 15                                       006400
      CALL FILEM(4,B)                                                   006500
   15 LOC=LOC+1                                                         006600
      NTEX=NNEXT                                                        006700
      NNEXT=NSUCR(NTEX)                                                 006800
      GO TO 8                                                           006900
C                                                                       007000
C                                                                       007100
C                                                                       007200
C        DETERMINE TRAINER MTBF (NOTE 1)                                007300
C                                                                       007400
   60 SYSF=1./ANDA                                                      007500
  888 FORMAT('1TRAINER MTBF-MINS ',F10.1)                               007600
      PRINT 888,SYSF                                                    007700
      GO TO 500                                                         007800
  601 XX(11)=1.                                                         007900
C                                                                       008000
C                                                                       008100
C                                                                       008200
C        MAKE FILE 4 COMPONENT FAILURE INTERARRIVAL TIMES RELATIVE       008300
C        BY SUBTRACTING ALL INCREMENTAL TRAINER OPERATING TIME FROM      008400
C        CURRENT FILE VALUES - CREATE NEW FAILURE INTERARRIVAL TIME TO   008500
C        REPLACE FILE VALUE OF CURRENT FAILED COMPONENT                 008600
C                                                                       008700
   65 IF(NR.EQ.0) GO TO 35                                              008800
      J=NNQ(4)                                                          008900
      DO 72 I=1,J                                                       009000
      CALL RMOVE(I,4,B)                                                 009100
      B(1)=B(1)-E(4)                                                    009200
      CALL FILEM(4,B)                                                   009300
   72 CONTINUE                                                          009400
   68 FR=(1./(E(1)*60.))*E(3)                                           009500
      E(1)=1./FR                                                        009600
   25 B(1)=EXPON(E(1),1)                                                009700
      IF(B(1).LE.0.) GO TO 25                                           009800
      B(2)=E(2)                                                         009900
      CALL FILEM(4,B)                                                   010000
```

```
      C                                                                 010100
      C                                                                 010200
      C                                                                 010300
      C        DETERMINE FAILED COMPONENT PART NUMBER (FIRST ENTRY IN FILE 010400
      C        4) AND TRANSCRIBE ITS ATTRIBUTES TO CURRENT ENTITY       010500
      C        ASSIGN COMPONENT'S FAILURE INTERARRIVAL TIME(FIT) AS TRAINER'S 010600
      C        FIT                                                      010700
      C                                                                 010800
   35 NR=1                                                              010900
      IF(ATRIB(1).NE.5.) GO TO 6                                        011000
      LOC=1                                                             011100
      CALL RMOVE(LOC,4,B)                                               011200
      DWNT=0.                                                           011300
      E(5)=E(5)+ADJ1                                                    011400
      ADJ1=E(5)                                                         011500
      GO TO 7                                                           011600
    6 LOC=1                                                             011700
      CALL RMOVE(LOC,4,B)                                               011800
      DWNT=B(1)                                                         011900
      CALL COLCT(DWNT,1)                                                012000
      E(5)=0.                                                           012100
    7 LOC=B(2)                                                          012200
      CALL COPY(LOC,1,A)                                                012300
      ATRIB(7)=DWNT-ADJ1                                                012400
      IF(ATRIB(7).LT.0.) ATRIB(7)=0.                                    012500
      DO 70 I=1,6                                                       012600
      ATRIB(I)=A(I)                                                     012700
   70 CONTINUE                                                          012800
      E(1)=A(4)                                                         012900
      E(2)=A(6)                                                         013000
      E(3)=A(7)                                                         013100
      E(4)=B(1)                                                         013200
      RETURN                                                            013300
      C                                                                 013400
      C                                                                 013500
      C                                                                 013600
      C                                                                 013700
      C                                                                 013800
      C                                                                 013900
      C                        EVENT 2                                  014000
      C                                                                 014100
      C                                                                 014200
      C                                                                 014300
      C        CHECK FILE 2 FOR RECEIPT OF ORDERED COMPONENTS SINCE LAST 014400
      C        FAILURE AND UPDATE INVENTORY (FILE 1) IF NECESSARY       014500
      C                                                                 014600
    2 NEXT=MMFE(2)                                                      014700
      LOC=1                                                             014800
    5 IF(NEXT.EQ.0.) GO TO 10                                           014900
      CALL COPY(LOC,2,A)                                                015000
```

```
      IF(A(2).GT.TNOW) GO TO 10                                          015100
      NPL=A(6)                                                           015200
      CALL RMOVE(NPL,1,COMP)                                             015300
      COMP(5)=COMP(5)+1.                                                 015400
      CALL FILEM(1,COMP)                                                 015500
      CALL RMOVE(LOC,2,A)                                                015600
      CALL FILEM(5,A)                                                    015700
      NEXT=HMFE(2)                                                       015800
      GO TO 5                                                            015900
C                                                                        016000
C                                                                        016100
C                                                                        016200
C        CHECK INVENTORY (FILE 1) FOR SPARE AND RECORD ITS AVAILABILITY  016300
C        IN ATTRIBUTE 5 OF CURRENT ENTITY                                016400
C                                                                        016500
10    NPL=ATRIB(6)                                                       016600
      CALL COPY(NPL,1,COMP)                                              016700
      ATRIB(5)=COMP(5)                                                   016800
      RETURN                                                             016900
C                                                                        017000
C                                                                        017100
C                                                                        017200
C                                                                        017300
C                                                                        017400
C                                                                        017500
C                        EVENT 3                                         017600
C                                                                        017700
C                                                                        017800
C                                                                        017900
C        REDUCE INVENTORY (FILE 1) OF AVAILABLE SPARES FOR FAILED        018000
C        COMPONENT BY ONE                                                018100
C                                                                        018200
3     NPL=ATRIB(6)                                                       018300
      CALL RMOVE(NPL,1,COMP)                                             018400
      IF(COMP(5).EQ.0.) GO TO 55                                         018500
      COMP(5)=COMP(5)-1.                                                 018600
      ATRIB(5)=COMP(5)                                                   018700
55    CALL FILEM(1,COMP)                                                 018800
      DUM=1.                                                             018900
      RETURN                                                             019000
C                                                                        019100
C                                                                        019200
C                                                                        019300
C                                                                        019400
C                                                                        019500
C                                                                        019600
C                        EVENT 4                                         019700
C                                                                        019800
C                                                                        019900
C                                                                        020000
```

```
C        DETERMINE REPAIR ACTION STATISTICS                                  020100
C                                                                            020200
C                                                                            020300
C                                                                            020400
C                  DETERMINE DAY OF WEEK AND TIME OF DAY THAT                020500
C                  TRAINER FAILED                                            020600
C                                                                            020700
4     TOT=TOT+DWNT                                                           020800
      N1=(DWNT+X6)/960                                                       020900
      X1=N1                                                                  021000
      X2=(DWNT+X6)-(X1*960.)                                                 021100
      XX(15)=X1*1440.-X6+X2+TNOW-ATRIB(7)                                    021200
      XX(16)=XX(16)+XX(15)                                                   021300
      X1=X1+M1                                                               021400
      X3=0.                                                                  021500
      K=2                                                                    021600
      IF(X1.GE.5.) GO TO 52                                                  021700
      M1=X1                                                                  021800
      GO TO 53                                                               021900
52    L=K*5                                                                  022000
      IF(L.GT.X1) GO TO 51                                                   022100
      K=K+1                                                                  022200
      GO TO 52                                                               022300
51    M1=X1-(K-1)*5                                                          022400
C                                                                            022500
C                                                                            022600
C                                                                            022700
C                  DETERMINE DAY OF WEEK AND TIME OF DAY THAT TRAINER        022800
C                  BECOMES AVAILABLE FOR TRAINING = REPAIR ACTION            022900
C                  COMPLETE                                                  023000
C                                                                            023100
53    R1=TNOW-ATRIB(7)                                                       023200
      IF(DWNT.GT.0.) GO TO 84                                                023300
      IF(X9.LE.960.) GO TO 84                                                023400
      IF(NN1.EQ.1) GO TO 80                                                  023500
      X10=1440.-X9                                                           023600
      GO TO 81                                                               023700
80    X10=4320.-X9                                                           023800
81    IF(R1.GT.X10) GO TO 82                                                 023900
      X9=X9+R1                                                               024000
      DT=0.                                                                  024100
      GO TO 76                                                               024200
82    X10=-X10                                                               024300
84    NN1=0                                                                  024400
      X9=0.                                                                  024500
      R2=R1+X2+X10                                                           024600
      IF(R2.LE.960.) GO TO 43                                                024700
      IF(R2.GT.1440.) GO TO 44                                               024800
      X9=R2                                                                  024900
      X6=0.                                                                  025000
```

```
      X3=1.                                                              025100
      N=0                                                                025200
      M1=M1+1                                                            025300
      IF(M1.EQ.5) GO TO 62                                               025400
      GO TO 64                                                           025500
43    X6=R2                                                              025600
      N=0                                                                025700
      X3=0.                                                              025800
      GO TO 64                                                           025900
44    N2=R2/1440                                                         026000
      X3=N2                                                              026100
      M1=X3+M1                                                           026200
      K=1                                                                026300
58    L=K*7                                                              026400
      IF(M1.LE.L) GO TO 57                                               026500
      K=K+1                                                              026600
      GO TO 58                                                           026700
57    N=K-1                                                              026800
      X4=M1-N*7                                                          026900
      M1=X4                                                              027000
      IF(M1.GE.5) GO TO 61                                               027100
75    X8=R2-(X3*1440.)                                                   027200
      IF(X8.GT.960.) GO TO 63                                            027300
      X7=960.-X8                                                         027400
      GO TO 48                                                           027500
63    X3=X3+1.                                                           027600
      X7=960.                                                            027700
      M1=M1+1                                                            027800
      X9=X8                                                              027900
      IF(M1.EQ.5) GO TO 62                                               028000
      GO TO 48                                                           028100
61    X3=X3-(M1-5)                                                       028200
      IF(M1.EQ.7) GO TO 85                                               028300
      X9=R2-(X3-1.)*1440.                                                028400
62    M1=0                                                               028500
      NN1=1                                                              028600
      X6=0.                                                              028700
      GO TO 64                                                           028800
48    X6=960.-X7                                                         028900
      GO TO 64                                                           029000
85    X3=N2                                                              029100
      M1=0                                                               029200
      GO TO 75                                                           029300
C                                                                        029400
C                                                                        029500
C                                                                        029600
C                 DETERMINE REPAIR TIME THAT IS CHARGEABLE AGAINST       029700
C                 OPERATIONAL AVAILABILITY - DETERMINE ACCUMULATIVE      029800
C                 OPERATIONAL AVAILABILITY                               029900
C                                                                        030000
```

```
      DT=-X2+(X3-(2*N))*960. +X6                                        030100
      DTT=DT+DTI                                                        030200
      DTT=TOT+DTT                                                       030300
      AVAIL=TOT/DTT                                                     030400
      ADJ1=R1-ATRIB(3)-ATRIB(4)                                         030500
C                                                                       030600
C                                                                       030700
C                                                                       030800
C        RECORD REPAIR ACTION STATISTICS IN FILE 3-ORDER A REPLACEMENT   030900
C        SPARE                                                          031000
C                                                                       031100
      X10=0.                                                            031200
      IF(DUM.EQ.0.) GO TO 40                                            031300
      ATRIB(1)=XX(16)                                                   031400
      ATRIB(4)=ATRIB(2)+XX(16)-TNOW                                     031500
      NTB=NATRIB(1)                                                     031600
      DO 50 I=1,NTB                                                     031700
      A(I)=ATRIB(I)                                                     031800
50    CONTINUE                                                          031900
      DUM=0.                                                            032000
      CALL FILEM(2,A)                                                   032100
40    CONTINUE                                                          032200
      ATRIB(1)=AVAIL                                                    032300
      ATRIB(2)=R1                                                       032400
      ATRIB(4)=XX(16)                                                   032500
      ATRIB(5)=DT                                                       032600
      ATRIB(7)=XX(16)-R1                                                032700
      NTB=NATRIB(1)                                                     032800
      DO 600 I=1,NTB                                                    032900
      A(I)=ATRIB(I)                                                     033000
600   CONTINUE                                                          033100
      CALL FILEM(3,A)                                                   033200
      RETURN                                                            033300
C                                                                       033400
C                                                                       033500
C                                                                       033600
C                                                                       033700
C                                                                       033800
C                                                                       033900
C                        EVENT 5                                        034000
C                                                                       034100
C                                                                       034200
C                                                                       034300
C        PRINT FILES                                                    034400
C                                                                       034500
C                                                                       034600
C                                                                       034700
500   PRINT 889                                                         034800
889   FORMAT(1H1 ,59X,6HFILE 1,//)                                      034900
      IF(XX(11).EQ.1.) GO TO 603                                        035000
```

```
      PRINT 890                                                          035100
890   FORMAT(54X,18HINITIAL  INVENTORY,//)                               035200
      GO TO 604                                                          035300
603   PRINT 891                                                          035400
891   FORMAT(55X,16HFINAL  INVENTORY,//)                                 035500
604   PRINT 892                                                          035600
892   FORMAT(1X,7HLEGEND:,3X,34HREPAIR LEVEL  1-INTERMEDIATE LEVEL,/,    035700
     125X,13H2-DEPOT LEVEL,//,11X,31HTYPE OF REPAIR  1-MANUAL REPAIR,/,  035800
     227X,12H2-ATE REPAIR,//,11X,19HTYPE OF ATE  1-AFIT,/,24X,6H2-L135,  035900
     3//)                                                                036000
      PRINT 501                                                          036100
501   FORMAT(' REPAIR LEVEL        TYPE OF REPAIR      TYPE OF ATE      036200
     1MTBF-HRS     SPARES AVAILABLE    COMPONENT NUMBER    NUMBER IN DEV036300
     2ICE')                                                             036400
502   FORMAT(1X,F7.0,2(10X,F10.0),8X,F10.0,2X,F10.0,2(10X,F10.0))        036500
      DO 505 J=1,J2                                                      036600
      CALL COPY(J,1,COMP)                                                036700
      PRINT 502,(COMP(I),I=1,7)                                          036800
505   CONTINUE                                                           036900
      IF(XX(11).EQ.0.) GO TO 601                                         037000
      PRINT 893                                                          037100
893   FORMAT(1H1 ,20X,6HFILE 2,///,10X,23HFINAL PENDING INVENTORY,///,   037200
     12X,30HALL TIMES EXPRESSED IN MINUTES,///,                          037300
     14X,9HCOMPONENT,4X,12HTIME PENDING,4X,9HREMAINING,3X,4HTIME,/,      037400
     235X,6HNUMBER,8X,7HRECEIPT,7X,8HSTOCKAGE,4X,7HORDERED)              037500
894   FORMAT(F9.0,6X,F9.0,5X,F9.0,3X,F9.0)                               037600
      NTC=NNQ(2)                                                         037700
      DO 506 I=1,NTC                                                     037800
      CALL COPY(I,2,COMP)                                                037900
      PRINT 894,COMP(6),COMP(4),COMP(5),COMP(1)                          038000
506   CONTINUE                                                           038100
      PRINT 895                                                          038200
895   FORMAT(1H1 ,20X,6HFILE 5,///,15X,18HINVENTORY RECEIVED,///,        038300
     12X,30HALL TIMES EXPRESSED IN MINUTES,///,                          038400
     122X,9HCOMPONENT,7X,7HTIME OF,6X,9HREMAINING,5X,4HTIME,/,           038500
     234X,6HNUMBER,8X,7HRECEIPT,6X,8HSTOCKAGE,                          038600
     344X,7HORDERED)                                                    038700
      NTD=NNQ(5)                                                         038800
      DO 507 I=1,NTD                                                     038900
      CALL COPY(I,5,COMP)                                                039000
      PRINT 894,COMP(6),COMP(4),COMP(5),COMP(1)                          039100
507   CONTINUE                                                           039200
      PRINT 896                                                          039300
896   FORMAT(1H1 ,30X,6HFILE 3,///,26X,16HFAILURE SUMMARY,///,           039400
     12X,30HALL TIMES EXPRESSED IN MINUTES,///,                          039500
     225X,9HCOMPONENT,8X,4HTIME,10X,4HTIME,7X,12HTOTAL REPAIR,4X,        039600
     310HCHARGEABLE,4X,7HCURRENT,/,7X,6HNUMBER,8X,6HFAILED,7X,          039700
     48HREPAIRED,9X,4HTIME,7X,11HREPAIR TIME,5X,6HAVAIL,)               039800
897   FORMAT (3X,5(F9.0,6X),F5.3)                                        039900
      NTE=NNQ(3)                                                         040000
```

```
  401          DO 508 I=1,NTE                                                    040100
  402          CALL COPY(I,3,COMP)                                               040200
  403          PRINT 897,COMP(6),COMP(7),COMP(4),COMP(2),COMP(5),COMP(1)         040300
  404 508      CONTINUE                                                          040400
  405 C                                                                          040500
  406 C                                                                          040600
  407 C                                                                          040700
  408 C                                                                          040800
  409 C                                                                          040900
  410 C                                                                          041000
  411 C          NOTE 1:  THIS ACTION OCCURS ONLY ONCE                           041100
  412 C                                                                          041200
  413 C                                                                          041300
  414 C                                                                          041400
  415 C                                                                          041500
  416 C                                                                          041600
  417 C                                                                          041700
  418          RETURN                                                            041800
  419          END                                                               041900
```

APPENDIX C

SLAM FILES

SLAM FILE STORAGE AREA DUMP AT TIME 0.1000E 02

MAXIMUM NUMBER OF ENTRIES IN FILE STORAGE AREA =719

PRINTOUT OF FILE NUMBER 1
TNOW = 0.1000E 02
QQTIM= 0.0000E 00

TIME PERIOD FOR STATISTICS 0.1000E 02
AVERAGE NUMBER IN FILE 504.0000
STANDARD DEVIATION 0.0000
MAXIMUM NUMBER IN FILE 504

FILE CONTENTS

ENTRY 1 =	0.1000E 01	0.1000E 01	0.0000E 00	0.2000E 06	0.1000E 01	0.1000E 01	0.2000E 01
	0.0000E 00	0.0000E 00					
ENTRY 2 =	0.2000E 01	0.0000E 00	0.0000E 00	0.3581E 06	0.1000E 01	0.2000E 01	0.4000E 01
	0.0000E 00	0.0000E 00					
ENTRY 3 =	0.2000E 01	0.0000E 00	0.0000E 00	0.4000E 06	0.1000E 01	0.3000E 01	0.7000E 01
	0.0000E 00	0.0000E 00					
ENTRY 4 =	0.2000E 01	0.0000E 00	0.0000E 00	0.4161E 06	0.0000E 00	0.4000E 01	0.2000E 02
	0.0000E 00	0.0000E 00					
ENTRY 5 =	0.1000E 01	0.2000E 01	0.2000E 01	0.2201E 06	0.1000E 01	0.5000E 01	0.8000E 01
	0.0000E 00	0.0000E 00					
ENTRY 6 =	0.2000E 01	0.0000E 00	0.0000E 00	0.6000E 06	0.2000E 01	0.6000E 01	0.3000E 01
	0.0000E 00	0.0000E 00					
ENTRY 7 =	0.1000E 01	0.2000E 01	0.2000E 01	0.2500E 05	0.0000E 00	0.7000E 01	0.2000E 01
	0.0000E 00	0.0000E 00					
ENTRY 8 =	0.1000E 01	0.1000E 01	0.0000E 00	0.1000E 06	0.1000E 01	0.8000E 01	0.2000E 01
	0.0000E 00	0.0000E 00					
ENTRY 9 =	0.1000E 01	0.2000E 01	0.2000E 01	0.1000E 06	0.0000E 00	0.9000E 01	0.3000E 01
	0.0000E 00	0.0000E 00					
ENTRY 10 =	0.2000E 01	0.0000E 00	0.0000E 00	0.1000E 06	0.0000E 00	0.1000E 02	0.2000E 01
	0.0000E 00	0.0000E 00					
ENTRY 11 =	0.1000E 01	0.2000E 01	0.2000E 01	0.1000E 06	0.1000E 01	0.1100E 02	0.1000E 01
	0.0000E 00	0.0000E 00					
ENTRY 12 =	0.1000E 01	0.1000E 01	0.0000E 00	0.1000E 06	0.0000E 00	0.1200E 02	0.1000E 01
	0.0000E 00	0.0000E 00					
ENTRY 13 =	0.1000E 01	0.2000E 01	0.2000E 01	0.1000E 06	0.1000E 01	0.1300E 02	0.1000E 01
	0.0000E 00	0.0000E 00					
ENTRY 14 =	0.1000E 01	0.2000E 01	0.1000E 01	0.7500E 05	0.0000E 00	0.1400E 02	0.1300E 02
	0.0000E 00	0.0000E 00					
ENTRY 15 =	0.2000E 01	0.0000E 00	0.0000E 00	0.7018E 05	0.0000E 00	0.1500E 02	0.6000E 01
	0.0000E 00	0.0000E 00					
ENTRY 16 =	0.1000E 01	0.2000E 01	0.2000E 01	0.7022E 05	0.1000E 01	0.1600E 02	0.4000E 01
	0.0000E 00	0.0000E 00					
ENTRY 17 =	0.1000E 01	0.2000E 01	0.2000E 01	0.3081E 05	0.0000E 00	0.1700E 02	0.3000E 01
	0.0000E 00	0.0000E 00					
ENTRY 1 =	0.1000E 01	0.2000E 01	0.2000E 01	0.1000E 06	0.1000E 01	0.1800E 02	0.1000E 01
	0.0000E 00	0.0000E 00					
ENTRY 19 =	0.1000E 01	0.2000E 01	0.1000E 01	0.5000E 05	0.0000E 00	0.1900E 02	0.1200E 02
	0.0000E 00	0.0000E 00					
ENTRY 20 =	0.1000E 01	0.1000E 01	0.0000E 00	0.5000E 05	0.1000E 01	0.2000E 02	0.1000E 01
	0.0000E 00	0.0000E 00					
ENTRY 21 =	0.1000E 01	0.2000E 01	0.2000E 01	0.9742E 04	0.0000E 00	0.2100E 02	0.3000E 01
	0.0000E 00	0.0000E 00					
ENTRY 22 =	0.1000E 01	0.1000E 01	0.0000E 00	0.1000E 06	0.1000E 01	0.2200E 02	0.1000E 01
	0.0000E 00	0.0000E 00					
ENTRY 23 =	0.1000E 01	0.1000E 01	0.0000E 00	0.1000E 06	0.1000E 01	0.2300E 02	0.3000E 01
	0.0000E 00	0.0000E 00					
ENTRY 24 =	0.1000E 01	0.1000E 01	0.0000E 00	0.1000E 06	0.1000E 01	0.2400E 02	

```
      PRINTOUT OF FILE NUMBER   2
          TNOW =  0,1000E 02
          OQTIM=  0,0000E 00

TIME PERIOD FOR STATISTICS 0,1000E 02
AVERAGE NUMBER IN FILE          0,0000
STANDARD DEVIATION              0,0000
MAXIMUM NUMBER IN FILE          0

          THE FILE IS EMPTY


      PRINTOUT OF FILE NUMBER   3
          TNOW =  0,1000E 02
          OQTIM=  0,0000E 00

TIME PERIOD FOR STATISTICS 0,1000E 02
AVERAGE NUMBER IN FILE          0,0000
STANDARD DEVIATION              0,0000
MAXIMUM NUMBER IN FILE          0

          THE FILE IS EMPTY
```

PRINTOUT OF FILE NUMBER 4
TNOW = 0.1000E 02
DQTIM= 0.0000E 00

TIME PERIOD FOR STATISTICS 0.1000E 02
AVERAGE NUMBER IN FILE 213.0000
STANDARD DEVIATION 0.0000
MAXIMUM NUMBER IN FILE 214

FILE CONTENTS

ENTRY 1 =	0.3013E 04	0.1510E 03	0.0000E 00	0.0000E 00	0.0000E 00	0.0000E 00	0.0000E 00
	0.0000E 00	0.0000E 00	0.0000E 00				
ENTRY 2 =	0.3678E 04	0.7700E 02	0.0000E 00	0.0000E 00	0.0000E 00	0.0000E 00	0.0000E 00
	0.0000E 00	0.0000E 00	0.0000E 00				
ENTRY 3 =	0.6647E 04	0.2900E 03	0.0000E 00	0.0000E 00	0.0000E 00	0.0000E 00	0.0000E 00
	0.0000E 00	0.0000E 00	0.0000E 00				
ENTRY 4 =	0.6955E 04	0.2710E 03	0.0000E 00	0.0000E 00	0.0000E 00	0.0000E 00	0.0000E 00
	0.0000E 00	0.0000E 00	0.0000E 00				
ENTRY 5 =	0.7498E 04	0.5800E 02	0.0000E 00	0.0000E 00	0.0000E 00	0.0000E 00	0.0000E 00
	0.0000E 00	0.0000E 00	0.0000E 00				
ENTRY 6 =	0.7935E 04	0.1900E 03	0.0000E 00	0.0000E 00	0.0000E 00	0.0000E 00	0.0000E 00
	0.0000E 00	0.0000E 00	0.0000E 00				
ENTRY 7 =	0.8012E 04	0.7100E 02	0.0000E 00	0.0000E 00	0.0000E 00	0.0000E 00	0.0000E 00
	0.0000E 00	0.0000E 00	0.0000E 00				
ENTRY 8 =	0.1183E 05	0.2150E 03	0.0000E 00	0.0000E 00	0.0000E 00	0.0000E 00	0.0000E 00
	0.0000E 00	0.0000E 00	0.0000E 00				
ENTRY 9 =	0.1504E 05	0.1460E 03	0.0000E 00	0.0000E 00	0.0000E 00	0.0000E 00	0.0000E 00
	0.0000E 00	0.0000E 00	0.0000E 00				
ENTRY 10 =	0.1515E 05	0.1600E 02	0.0000E 00	0.0000E 00	0.0000E 00	0.0000E 00	0.0000E 00
	0.0000E 00	0.0000E 00	0.0000E 00				
ENTRY 11 =	0.1765E 05	0.1950E 03	0.0000E 00	0.0000E 00	0.0000E 00	0.0000E 00	0.0000E 00
	0.0000E 00	0.0000E 00	0.0000E 00				
ENTRY 12 =	0.2638E 05	0.1940E 03	0.0000E 00	0.0000E 00	0.0000E 00	0.0000E 00	0.0000E 00
	0.0000E 00	0.0000E 00	0.0000E 00				
ENTRY 13 =	0.2870E 05	0.3260E 03	0.0000E 00	0.0000E 00	0.0000E 00	0.0000E 00	0.0000E 00
	0.0000E 00	0.0000E 00	0.0000E 00				
ENTRY 14 =	0.3573E 05	0.3180E 03	0.0000E 00	0.0000E 00	0.0000E 00	0.0000E 00	0.0000E 00
	0.0000E 00	0.0000E 00	0.0000E 00				
ENTRY 15 =	0.3802E 05	0.1050E 03	0.0000E 00	0.0000E 00	0.0000E 00	0.0000E 00	0.0000E 00
	0.0000E 00	0.0000E 00	0.0000E 00				
ENTRY 16 =	0.4655E 05	0.3170E 03	0.0000E 00	0.0000E 00	0.0000E 00	0.0000E 00	0.0000E 00
	0.0000E 00	0.0000E 00	0.0000E 00				
ENTRY 17 =	0.4997E 05	0.7900E 02	0.0000E 00	0.0000E 00	0.0000E 00	0.0000E 00	0.0000E 00
	0.0000E 00	0.0000E 00	0.0000E 00				
ENTRY 18 =	0.5016E 05	0.1030E 03	0.0000E 00	0.0000E 00	0.0000E 00	0.0000E 00	0.0000E 00
	0.0000E 00	0.0000E 00	0.0000E 00				
ENTRY 19 =	0.5213E 05	0.6600E 02	0.0000E 00	0.0000E 00	0.0000E 00	0.0000E 00	0.0000E 00
	0.0000E 00	0.0000E 00	0.0000E 00				
ENTRY 20 =	0.6089E 05	0.3200E 03	0.0000E 00	0.0000E 00	0.0000E 00	0.0000E 00	0.0000E 00
	0.0000E 00	0.0000E 00	0.0000E 00				
ENTRY 21 =	0.6533E 05	0.2600E 02	0.0000E 00	0.0000E 00	0.0000E 00	0.0000E 00	0.0000E 00
	0.0000E 00	0.0000E 00	0.0000E 00				
ENTRY 22 =	0.6634E 05	0.1410E 03	0.0000E 00	0.0000E 00	0.0000E 00	0.0000E 00	0.0000E 00
	0.0000E 00	0.0000E 00	0.0000E 00				
ENTRY 23 =	0.6994E 05	0.4340E 03	0.0000E 00	0.0000E 00	0.0000E 00	0.0000E 00	0.0000E 00
	0.0000E 00	0.0000E 00	0.0000E 00				
ENTRY 24 =	0.7380E 05	0.2190E 03	0.0000E 00	0.0000E 00	0.0000E 00	0.0000E 00	0.0000E 00
	0.0000E 00	0.0000E 00	0.0000E 00				
ENTRY 25 =	0.8069E 05	0.1700E 02	0.0000E 00	0.0000E 00	0.0000E 00	0.0000E 00	0.0000E 00
	0.0000E 00	0.0000E 00	0.0000E 00				
ENTRY 26 =	0.8099E 05	0.2330E 03	0.0000E 00	0.0000E 00	0.0000E 00	0.0000E 00	0.0000E 00
	0.0000E 00	0.0000E 00	0.0000E 00				
ENTRY 27 =	0.8157E 05	0.2690E 03	0.0000E 00	0.0000E 00	0.0000E 00	0.0000E 00	0.0000E 00
	0.0000E 00	0.0000E 00	0.0000E 00				

PRINTOUT OF FILE NUMBER 5
TNOW = 0.1000E 02
OQTIM= 0.0000E 00

TIME PERIOD FOR STATISTICS 0.1000E 02
AVERAGE NUMBER IN FILE 0.0000
STANDARD DEVIATION 0.0000
MAXIMUM NUMBER IN FILE 0

THE FILE IS EMPTY

PRINTOUT OF FILE NUMBER 6
TNOW = 0.1000E 02
OQTIM= 0.1000E 02

TIME PERIOD FOR STATISTICS 0.1000E 02
AVERAGE NUMBER IN FILE 2.0000
STANDARD DEVIATION 0.0000
MAXIMUM NUMBER IN FILE 2

FILE CONTENTS

ATRY 1 =	0.1000E 01	0.2000E 01	0.2000E 01	0.7793E 04	0.1000E 01	0.2860E 03
	0.1210E 04	-0.3027E 05	0.1210E 04			

APPENDIX D

SLAM ECHO REPORT

S L A M E C H O R E P O R T

SIMULATION PROJECT RESEARCH BY D.H.PIERCE

DATE 8/15/1981 RUN NUMBER 1

SLAM VERSION JAN 79

GENERAL OPTIONS

PRINT INPUT STATEMENTS (ILIST):	YES
PRINT ECHO REPORT (IECHO):	YES
EXECUTE SIMULATIONS (IXQT):	YES
PRINT INTERMEDIATE RESULTS HEADING (IPIRH):	NO
PRINT SUMMARY REPORT (ISMRY):	YES

LIMITS ON FILES

MAXIMUM NUMBER OF USER FILES (MFILS):	5
MAXIMUM NUMBER OF USER ATTRIBUTES (MATR):	7
MAXIMUM NUMBER OF CONCURRENT ENTRIES (MNTRY):	2750

FILE SUMMARY

FILE NUMBER	INITIAL ENTRIES	RANKING CRITERION
1	504	LVF (6)
2	0	LVF (2)
3	0	FIFO
4	0	LVF (1)
5	0	LVF (4)

STATISTICS BASED ON OBSERVATIONS

COLCT NUMBER	COLLECTION MODE	IDENTIFIER	HISTOGRAM SPECIFICATIONS NCEL	HLOW	HWID
1	EVENT	FAIL INTARL TIME	12	0.000E 00	0.120E 04
2	NETWORK	FAULT ISOLATE	10	0.300E 01	0.300E 01
3	NETWORK	REPAIRED COMPONE	5	0.000E 00	0.524E 06
4	NETWORK	REMOVE REPLACE	12	0.000E 00	0.100E 01
5	NETWORK	CHECK OUT	10	0.000E 00	0.100E 01
6	NETWORK	COMP RPR RPL ACT	5	0.000E 00	0.524E 06
7	NETWORK	WRONG FAILURE	5	0.000E 00	0.524E 06
8	NETWORK	BAD COMPONENT	20	0.600E 01	0.200E 01
9	NETWORK	NO SPARE	5	0.000E 00	0.524E 06
10	NETWORK	MAN REPAIR	5	0.000E 00	0.140E 03
11	NETWORK	MAN REPLACE	5	0.000E 00	0.140E 03
12	NETWORK	L135 REPAIR	10	0.000E 00	0.800E 01
13	NETWORK	L135 REPLACE	10	0.000E 00	0.800E 01
14	NETWORK	AFIT REPAIR	7	0.400E 02	0.300E 02
15	NETWORK	AFIT REPLACE	7	0.400E 02	0.300E 02
16	NETWORK	DEP REPAIR	10	0.000E 00	0.576E 04

17	NETWORK	DEP REPLACE	10	0.000E 00	0.163E 05
18	NETWORK	COMPONENT ORDERE	5	0.000E 00	0.524E 06
19	NETWORK	TRAINER REPAIRED	5	0.000E 00	0.524E 06

RANDOM NUMBER STREAMS

STREAM NUMBER	SEED VALUE	REINITIALIZATION OF STREAM
1	1274321477	NO
2	2135124613	NO
3	1743251541	NO
4	1624217675	NO
5	2014632579	NO
6	2036774231	NO
7	1452313571	NO
8	1254240657	NO
9	1410143363	NO
10	2135621895	NO

INITIALIZATION OPTIONS

BEGINNING TIME OF SIMULATION (TTBEG):	0.0000E 00
ENDING TIME OF SIMULATION (TTFIN):	0.3500E 07
STATISTICAL ARRAYS CLEARED (JJCLR):	YES
VARIABLES INITIALIZED (JJVAR):	YES
FILES INITIALIZED (JJFIL):	YES

NSET/QSET STORAGE ALLOCATION

DIMENSION OF NSET/QSET (NNSET):	32100
WORDS ALLOCATED TO FILING SYSTEM:	30250
WORDS ALLOCATED TO NETWORK:	1229
WORDS AVAILABLE FOR PLOTS/TABLES:	621

INPUT ERRORS DETECTED: 0

EXECUTION WILL BE ATTEMPTED

APPENDIX E

SLAM SUMMARY REPORT

S L A M S U M M A R Y R E P O R T

SIMULATION PROJECT RESEARCH BY D.H.PIERCE

DATE 8/15/1981 RUN NUMBER 1 OF 1

CURRENT TIME 0.2321E 07
STATISTICAL ARRAYS CLEARED AT TIME 0.0000E 00

STATISTICS FOR VARIABLES BASED ON OBSERVATION

	MEAN VALUE	STANDARD DEVIATION	COEFF. OF VARIATION	MINIMUM VALUE	MAXIMUM VALUE	NUMBER OF OBSERVATIONS
FAIL INTARL TIME	0.2344E 04	0.2454E 04	0.1047E 01	0.8688E 01	0.1703E 05	270
FAULT ISOLATE	0.1999E 02	0.5622E 01	0.2813E 00	0.3487E 01	0.3274E 02	295
REPAIRED COMPONE	0.1182E 07	0.6907E 06	0.5842E 00	0.4791E 04	0.2321E 07	136
REMOVE REPLACE	0.5445E 01	0.2655E 01	0.4876E 00	0.1952E 00	0.1465E 02	295
CHECK OUT	0.5099E 01	0.2012E 01	0.3945E 00	0.4614E 00	0.9422E 01	295
COMP RPR RPL ACT	0.1132E 07	0.7206E 06	0.6363E 00	0.1237E 04	0.2321E 07	295
WRONG FAILURE	0.9749E 06	0.8419E 06	0.8636E 00	0.1237E 04	0.2271E 07	25
BAD COMPONENT	0.2953E 02	0.6557E 01	0.2220E 00	0.1281E 02	0.4525E 02	144
NO SPARE	0.1170E 07	0.6911E 06	0.5908E 00	0.4586E 04	0.2285E 07	136
MAN REPAIR	0.3832E 03	0.1455E 03	0.3796E 00	0.1108E 03	0.6350E 03	43
MAN REPLACE	0.4082E 03	0.1447E 03	0.3545E 00	0.2127E 03	0.6387E 03	9
L135 REPAIR	0.4457E 02	0.1604E 02	0.3599E 00	0.6376E 01	0.7791E 02	22
L135 REPLACE	0.4774E 02	0.1570E 02	0.3289E 00	0.1452E 02	0.9047E 02	67
AFIT REPAIR	0.1122E 03	0.3431E 02	0.3058E 00	0.7209E 02	0.1769E 03	12
AFIT REPLACE	0.1216E 03	0.3071E 02	0.2525E 00	0.5481E 02	0.1633E 03	19
DEP REPAIR	0.2826E 05	0.1061E 05	0.3753E 00	0.4123E 04	0.4980E 05	59
DEP REPLACE	0.9143E 05	0.3946E 05	0.4316E 00	0.2633E 05	0.1754E 06	49
COMPONENT ORDERE	0.1126E 07	0.7371E 06	0.6547E 00	0.1295E 04	0.2271E 07	144
TRAINER REPAIRED	0.1171E 07	0.6760E 06	0.5771E 00	0.2782E 05	0.2321E 07	126

FILE STATISTICS

FILE NUMBER	ASSOCIATED NODE TYPE	AVERAGE LENGTH	STANDARD DEVIATION	MAXIMUM LENGTH	CURRENT LENGTH	AVERAGE WAITING TIME
1		503.9880	2.9791	504	504	*80805.0000
2		2.2563	1.4335	7	2	36371.4140
3		151.0701	78.7381	295	295	*88804.0000
4		212.9926	1.2547	214	213	7831.7695
5		71.8998	37.5914	142	142	*75360.0000
6		1.0000	0.0022	2	0	392.1128

REGULAR ACTIVITY STATISTICS

ACTIVITY INDEX	AVERAGE UTILIZATION	STANDARD DEVIATION	MAXIMUM UTILIZATION	CURRENT UTILIZATION	ENTITY COUNT
1	0.2699	0.4439	1	0	295
2	0.0025	0.0500	1	0	295
3	0.0007	0.0256	1	0	295
4	0.0006	0.0247	1	0	295
7	0.0071	0.0839	1	0	43
9	0.0004	0.0205	1	0	22
6	0.0006	0.0241	1	0	12
8	0.7183	0.4498	1	0	59

TRAINER MTBF-HINS 2297.5

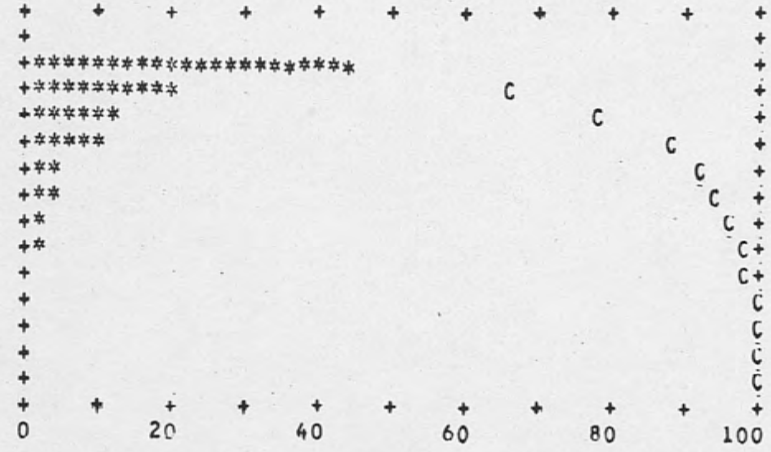
APPENDIX F

SLAM HISTOGRAM

HISTOGRAM NUMBER 1

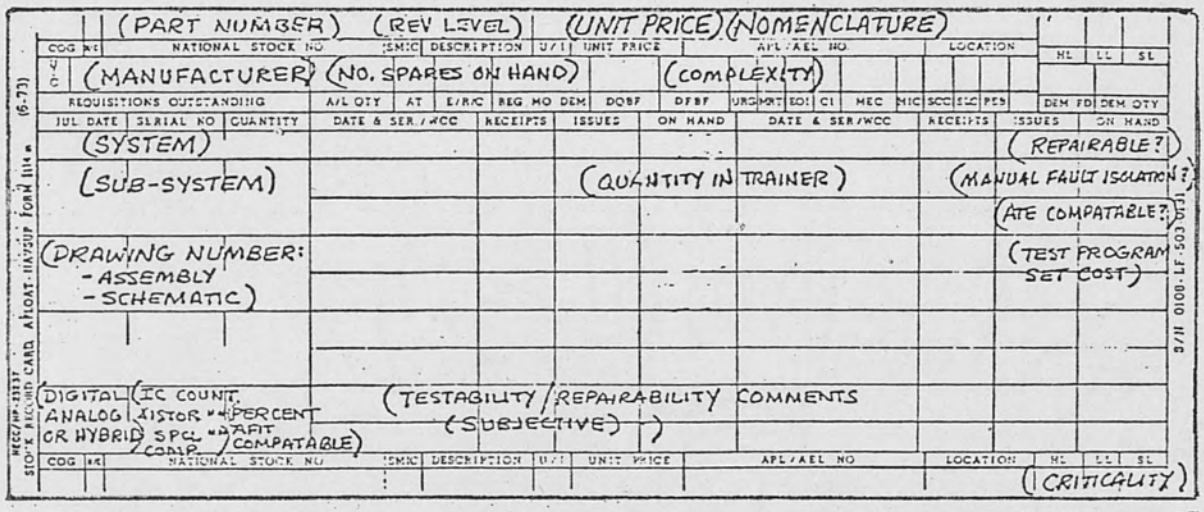
FAIL INTARL TIME

OBSV FREQ	RELA FREQ	CUML FREQ	UPPER CELL LIMIT
0	0.000	0.000	0.0000E 00
120	0.444	0.444	0.1200E 04
56	0.207	0.652	0.2400E 04
34	0.126	0.778	0.3600E 04
27	0.100	0.878	0.4800E 04
9	0.033	0.911	0.6000E 04
9	0.033	0.944	0.7200E 04
6	0.022	0.967	0.8400E 04
6	0.022	0.989	0.9600E 04
0	0.000	0.989	0.1080E 05
1	0.004	0.993	0.1200E 05
1	0.004	0.996	0.1320E 05
0	0.000	0.996	0.1440E 05
1	0.004	1.000	INF
270			



APPENDIX G

DATA COLLECTION FORM
(Fascimile)


(PART NUMBER) (REV LEVEL) (UNIT PRICE) (NOMENCLATURE)
COG
NATIONAL STOCK NO
DESCRIPTION
U/I
UNIT PRICE
APL/AEL NO
LOCATION
HL
LL
SL
(MANUFACTURER)
(NO. SPARES ON HAND)
(COMPLEXITY)
REQUISITIONS OUTSTANDING
A/L QTY
AT
E/R/C
REQ MO DEM
DQBF
DFBF
URG
MOT
EOI
CI
MEC
MIC
SCC
SLC
PES
DEM FD
DEM QTY
JUL DATE
SERIAL NO
QUANTITY
DATE & SER/WCC
RECEIPTS
ISSUES
ON HAND
(SYSTEM)
(REPAIRABLE?)
(SUB-SYSTEM)
(QUANTITY IN TRAINER)
(MANUAL FAULT ISOLATION?)
(ATE COMPATABLE?)
(DRAWING NUMBER:
- ASSEMBLY
- SCHEMATIC)
(TEST PROGRAM SET COST)
DIGITAL
ANALOG
OR HYBRID
(IC COUNT,
RESISTOR =
SPCL =
COMP
PERCENT
AFIT
COMPATABLE)
(TESTABILITY/REPAIRABILITY COMMENTS
(SUBJECTIVE))
(CRITICALITY)
(6-73)
STOCK RECORD CARD, AFLOAT-NAVSUP FORM 1114
9/11 0100-LF-503-0731

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