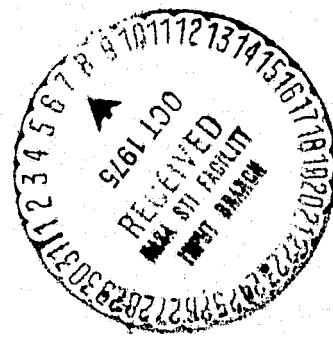


# FINAL REPORT OF BASIC CONTRACT

## GENERAL PURPOSE SIMULATION SYSTEM OF THE DATA MANAGEMENT SYSTEM FOR SPACE SHUTTLE MISSION 18

**CONTRACT NAS8-31458**

**July 15, 1975**



**PREPARED FOR:**

**DATA SYSTEMS LABORATORY  
National Aeronautics and Space Administration  
George C. Marshall Space Flight Center, Alabama 35812**

(NASA-CR-143942) GENERAL PURPOSE SIMULATION  
SYSTEM OF THE DATA MANAGEMENT SYSTEM FOR  
SPACE SHUTTLE MISSION 18 Final Report (D P  
Associates, Inc., Huntsville, Ala.) 103 p  
HC \$5.25

N75-31946

Unclas  
CSCL 05B G3/82 35827



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## FOREWORD

This document presents results of work performed by D P Associates, Inc., Huntsville, Alabama, under Contract NAS8-31458 (SB420-8(a)-75-C-122) for the George C. Marshall Space Flight Center, Data Systems Laboratory. Technical coordination was through Mr. Frank Crumbley, Mr. Douglas Thomas and Mr. James Mabry.

## ABSTRACT

This report presents the simulation program of the science and engineering data management system for Space Shuttle. The programming language used was General Purpose Simulation System V (OS). The data flow was modeled from its origin at the experiments or subsystems to transmission from Space Shuttle. Mission 18 was the particular flight chosen for simulation. First, the general structure of the program is presented and the trade studies which were performed are identified. Inputs required to make runs are discussed followed by identification of the output statistics. Some areas for model modifications are pointed out. The appendices contain a detailed model configuration, program listing and results.

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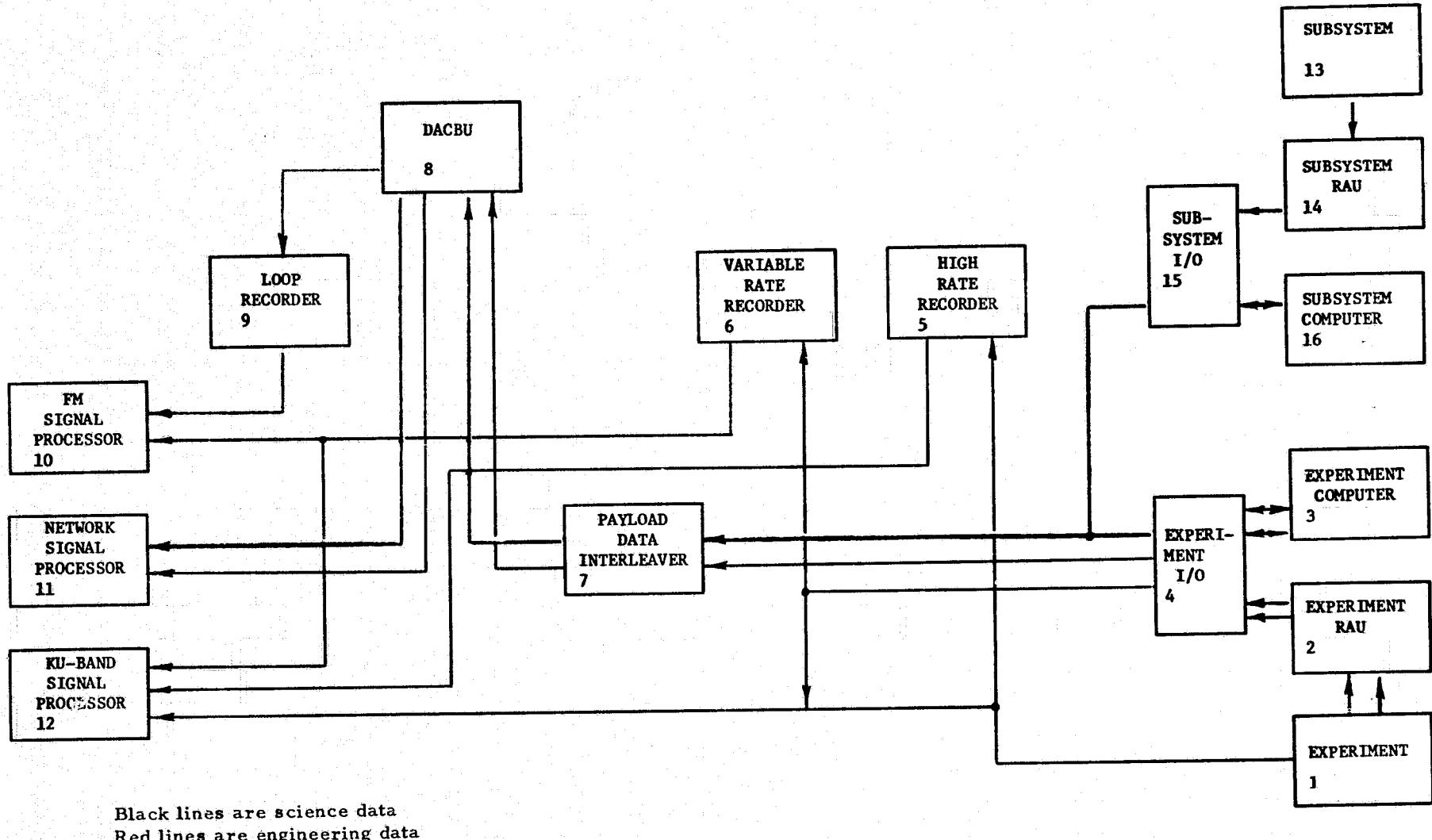
## SPACE SHUTTLE DATA MANAGEMENT SYSTEM SIMULATION

### Introduction

The data management system for Space Shuttle is a complicated arrangement of interconnected devices which carry several types of data simultaneously. Understanding the interrelationships of data flowing through this system and how actions of one set or burst of data effect the progress of other data by analytical study is a prohibitively complicated task. When it is realized that over four hundred Space Shuttle flights are planned, each with a similarly complicated data management system, the need for simulation becomes apparent.

The objective of this task was to write a simulation of the data management system using GPSS (General Purpose Simulation System) in such a way as to determine possible bottlenecks, loses of information, and other changing effects on data under alternative conditions. As a basis from which future expansion can be made the program developed handles science and engineering data from its' origin at the mission experiments and subsystems to transmission from one of three signal processors onboard shuttle. Mission 18 was chosen as a representation case for simulation. The data generated by detached payloads and the GPC (General Purpose Computer) were not considered.

GPSS is a discrete event simulation language which allows the programmer to set up a model of a system with the relationships between the parts or blocks of the model defined. Units, called transactions, are then generated and sent through the program. They proceed in a way defined by the model.



Black lines are science data  
Red lines are engineering data

Data Flow Model  
Fig. 1

## Research Methodology

### Assumption

All data which flows through the simulation is in bits. One unit of simulation clock time is .01 hours or 36 seconds. This unit was chosen to achieve simulation of the entire seven day (16800 time units) mission with reasonable computer run times and still allow sufficient resolution in the generation of data. Thus, if an experiment has an output rate of 30 thousand bits per second there would be  $30 \times 36$  or 1080 thousand bits generated in one time unit. In each time unit that data is generated a transaction is created and the data flow associated with that time unit is assigned to the transaction as a parameter. The transaction then enters the model. Each block in the model (shown in figure 1) has a transfer rate associated with it which represents the handling capacity of the block in bits. This is the amount of data the block can handle in one time unit and is defined as a storage capacity in the program. Appendix A gives a more detailed description of the model configuration. (The module numbers in Appendix A correspond to the numbers in the blocks of Figures 1, 3, 4 and 5).

### Experiment Schedules

A schedule of experiments from Mission 18 was used to create a tape for input to the GPSS model. A data flow rate is associated with each experiment so that each time unit an experiment is scheduled to be running that experiments' flow rate is put on a transaction. This data represents scientific information. Engineering data from the experiments is generated at a constant rate. This constant rate simulates monitoring and control of experiments. All data from subsystems are classified as engineering data. These bit rates are the sum of a

constant rate and a rate keyed to, and calculated as, a percent of the experiment data flow rate.

#### Downlink Schedule

The schedule for sending signals from the shuttle is part of the simulation program rather than on a separate device which has to be read in, as is the experiment schedule. This inclusion is possible because the downlink availability is considered to be cyclic on a per day basis. Therefore, only one day's schedule need be initialized and the following days are programmed to be derived from the first day.

#### Data Flow Modules

The simulation was modularized for ease in programming and documentation. These modules are outlined in Figure 2. The first module is the creation of the input tape and is separate from the main program. Modules 2, 3 and 4 run consecutively on the program listing with the exception that Part 3 of modules 3 and 4 are combined. The graphical output section is considered part of the downlink schedule, module 5.

Figures 3-5 illustrate the parts of the model used in each module.

#### Trade Studies

Four modifications to the basic system configuration were run to obtain insight into the behavior of the model. These modifications are listed in Figure 6. The results are shown in Appendix C.

## User Notes

### Input Requirements

The simulation program was written for the IBM 360 at MSFC. The job cards necessary to access this machine and to make the experiment tape available are shown below.

```
JOB CARD
// EXEC GPSSV,PARM=B
//GPSS.DJBTAP1 DD UNIT=TAPE9,VOLUME=SER=A0614,LABEL=(,BLP),
// DISP=(OLD,KEEP)
//GPSS,DINPUT1 DD *
```

The experiment tape contains a fullword matrix shown in Appendix D. Each column represents the start of an experiment. The rows are the start times (in hundredths of hours), the experiment numbers (107 is XCN-007, 44 is XEQ-044, the rest are XOP experiments) and the duration of the experiment respectively. A FORTRAN program was also written to convert the experiment schedule cards given to cards suitable for input to the tape program.

If changes in block capacities are required they can be implemented by changing the storage definitions. Changes in the percent of data allocated to branches in the data flow are made in the variable definition statements. In order to investigate the effects of changes in data rates associated with each experiment the function definitions would be altered. The first number of each pair of numbers in the function represents the experiment and the second number is the corresponding data flow rate in K bits per time period.

### Output Characteristics

The most informative parts of output are the storage statistics. This section lists each block that was used. The outputs are shown in Appendix B.

For the experiment and subsystem computers the average contents, entities and average time/unit are contained in the section titled "User Chains." User Chain 4 is the experiment computers and User Chain 16 is the subsystem computer. In both sections "Entities" is in thousands of bits. Under the "Facilities" section facility 50 represents the downlink availability "Average Utilization During Total Time" is the percent of time the downlink is available during the missions.

The amount of data lost is given under "Fullword Savevalves." Numbers 2 thru 16 correspond to the block numbers shown in Figure 1. If a block number is not present no data was lost at that point. The contents are in thousands of bits.

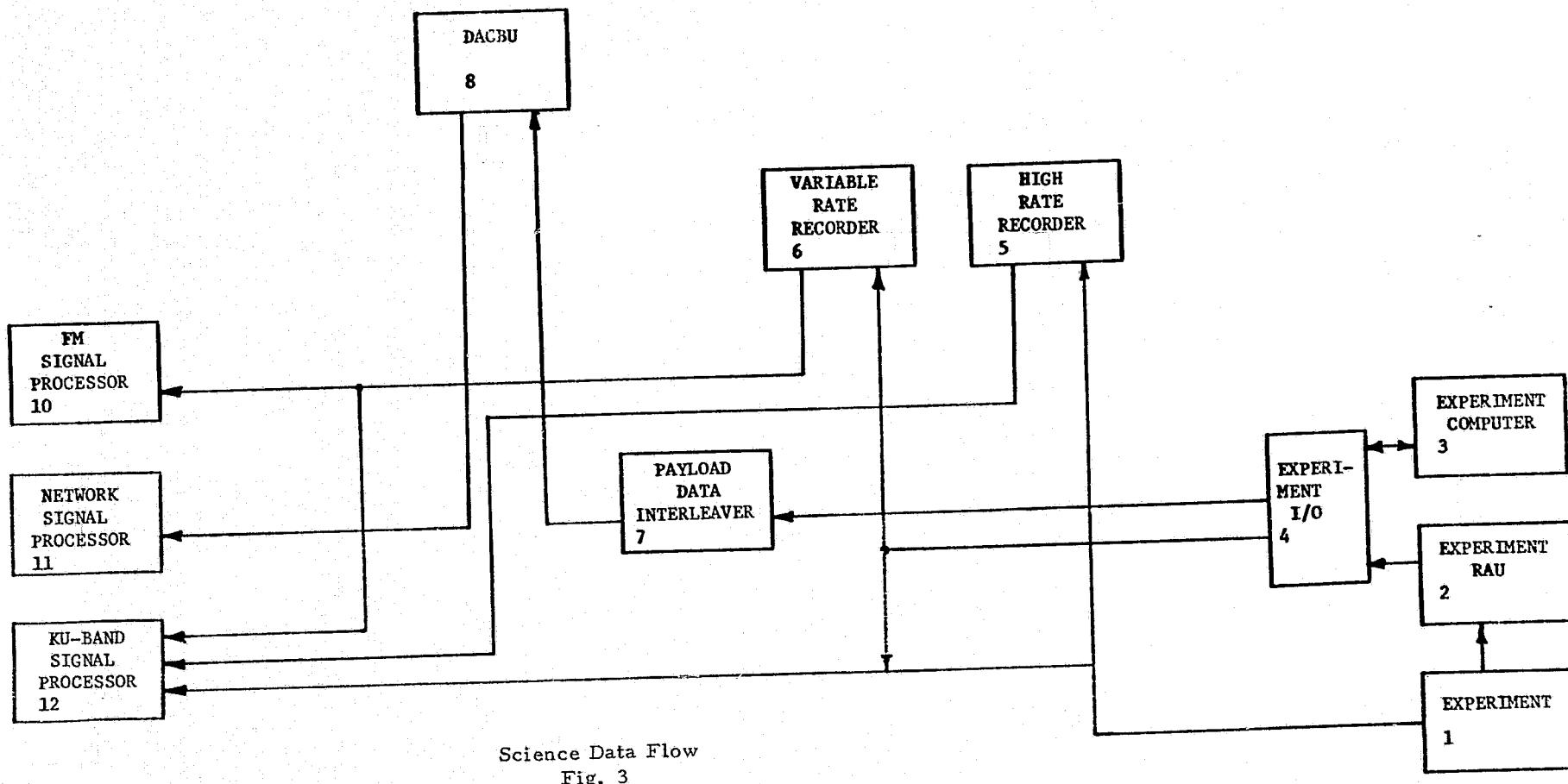
The block counts at the beginning of the output section are keyed to the program listing and give the number of transactions which have entered a program block (a line of code in GPSS is called a block, these blocks are not the same as blocks in the model).

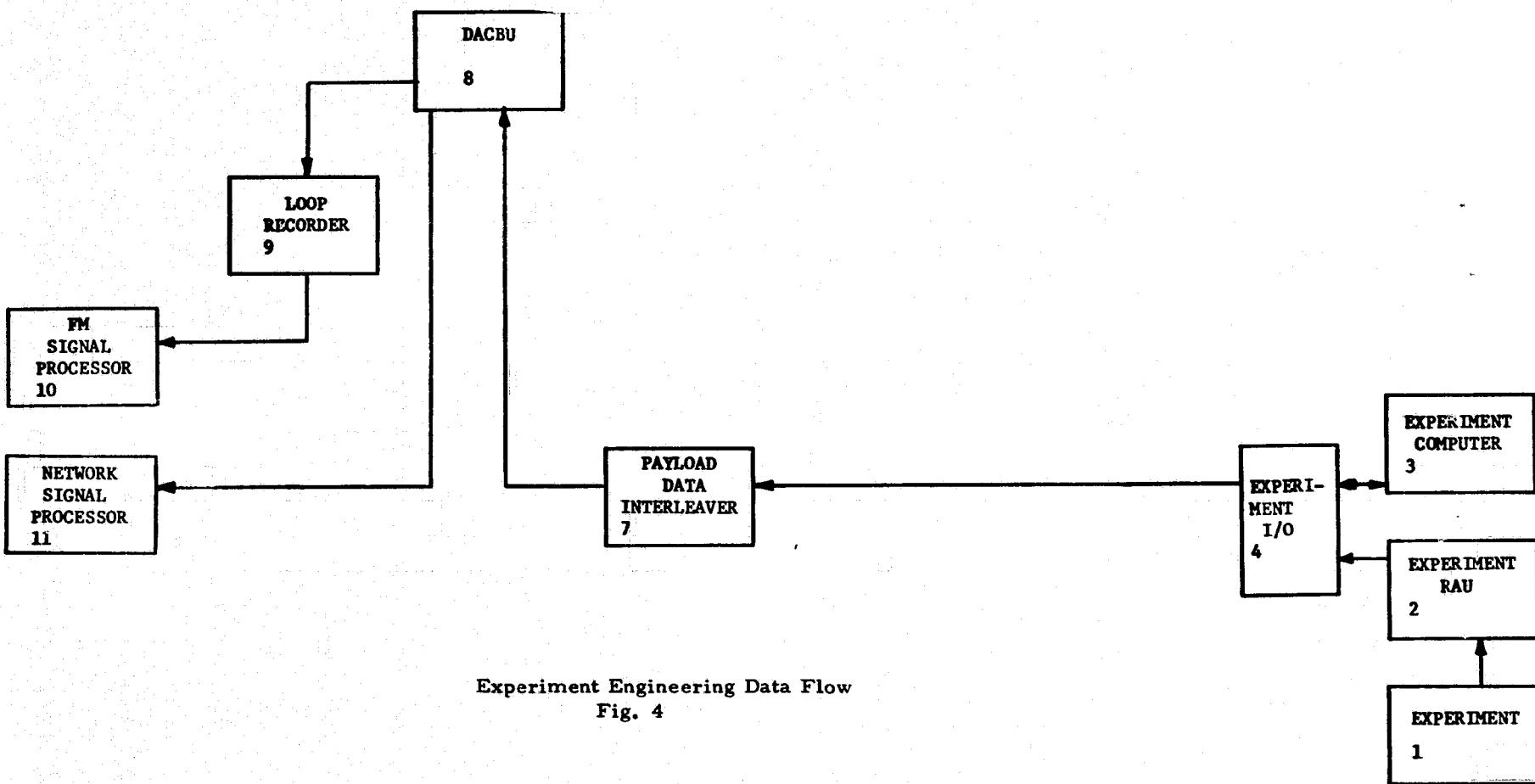
The graphical output gives a representation of the status of various model blocks at 6 hour intervals. The graphs for experiment and subsystem RAU and I/O blocks as well as the KU Band signal processor block represent maximum contents. The other graphs represent current contents. These current contents blocks will not show any data unless it is being delayed at the block no matter how much data has gone through. This is because any data that goes into a block and is not delayed will immediately leave that block and since the graphs are made at the end of the time unit, nothing will appear as current contents (See Figures 7 thru 15).

SPACE SHUTTLE DATA SYSTEM SIMULATION  
PROGRAM MODULES

<u>Module</u>	<u>Description</u>
1	Experiment Data Input (Experiment Science Data and Subsystem Engineering Data).
2	Experiment Science Data Part 1. Experiment to I/O Part 2. I/O to Computer. Computer to I/O to Payload Data Interleaver to transmit. Part 3. I/O to KU-Band or V. R. Rec. Part 4. Experiment to KU-Band or H. R. Rec.
3	Experiment Engineering Data Part 1. Experiment to I/O Part 2. I/O to Computer. Computer to I/O to Payload Data Interleaver. Part 3. Payload Data Interleaver to transmit.
4	Subsystem Engineering Data Part 1. Subsystem to I/O Part 2. I/O to Computer. Computer to I/O to Payload Data Interleaver. Part 3. Payload Data Interleaver to transmit.
5	Downlink Schedule

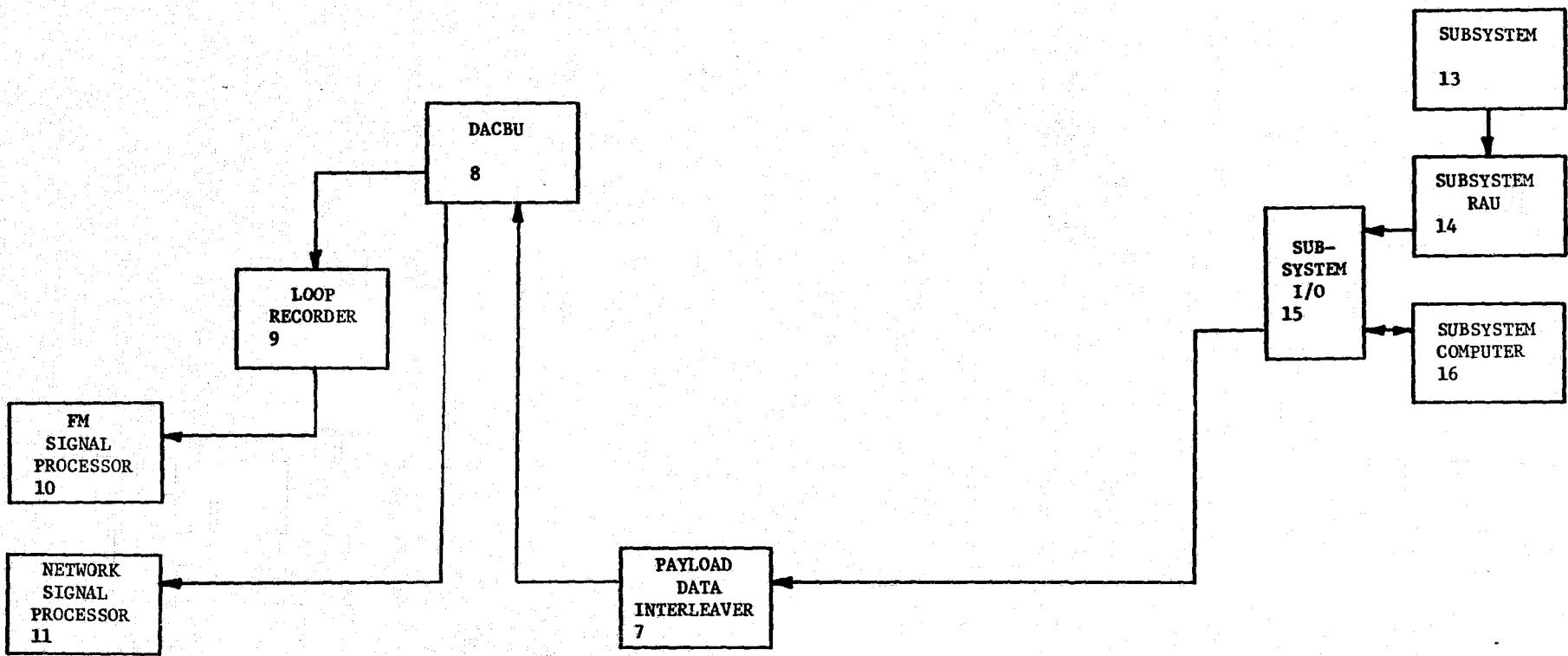
Figure 2





Experiment Engineering Data Flow

Fig. 4



Subsystem Engineering Data Flow

Fig 5

## **MODIFICATIONS TO BASIC DATA SYSTEM CONFIGURATION**

**Modification 1: Capacity of high rate recorder increased by 25%.**

**Modification 2: Capacities of experiment and subsystem computers increased by 50%.**

**Modification 3: KU-Band Signal Processor failure 50 hours into mission.**

**Modification 4: Competing requirement for Downlink resulting in 10% decrease in Downlink availability.**

**Figure 6**

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LINE NUMBER

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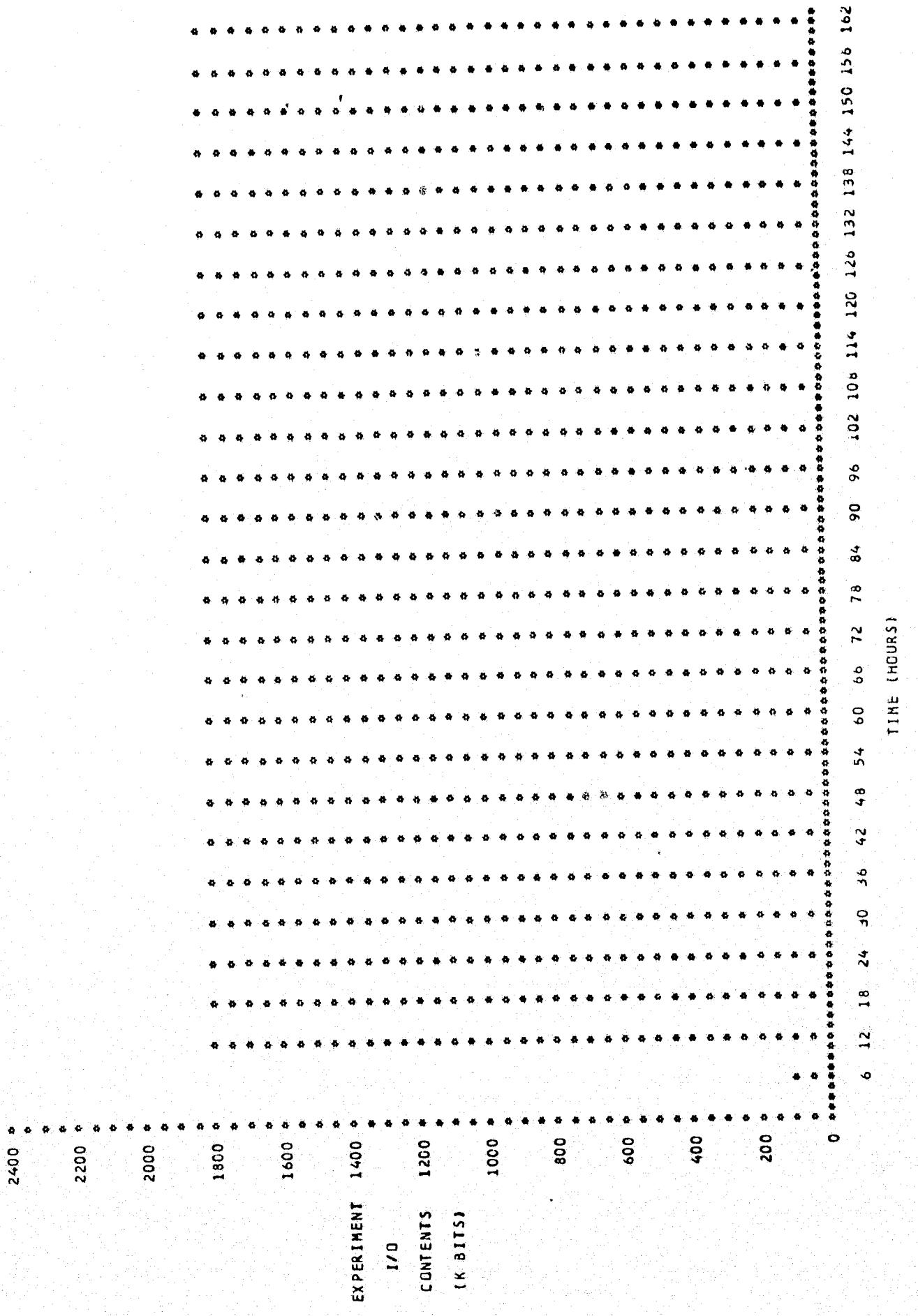


FIGURE 8: CONTENTS OF EXPERIMENT I/O AS A FUNCTION OF TIME.

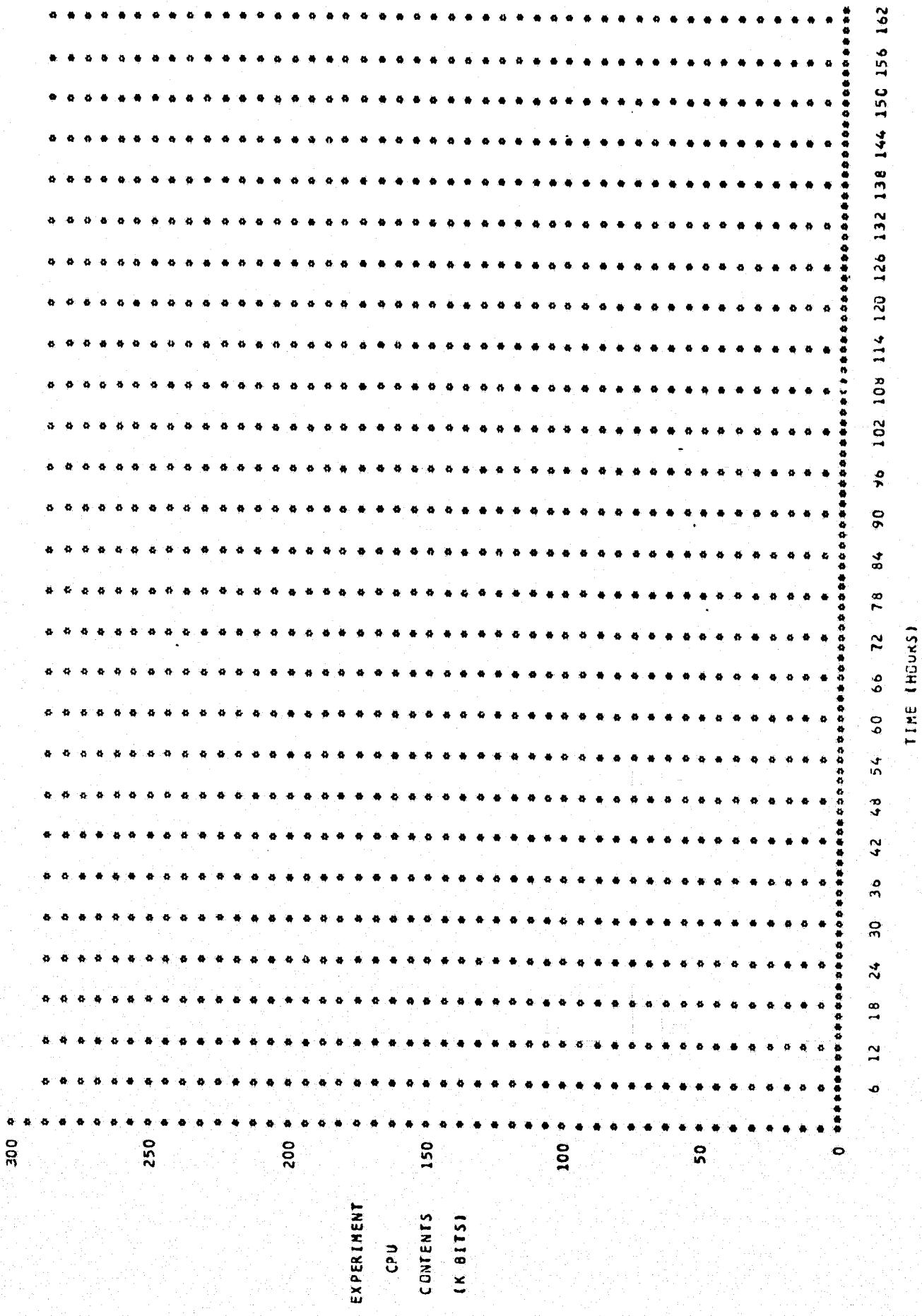


FIGURE 9: CONTENTS OF EXPERIMENT CPU AS A FUNCTION OF TIME.

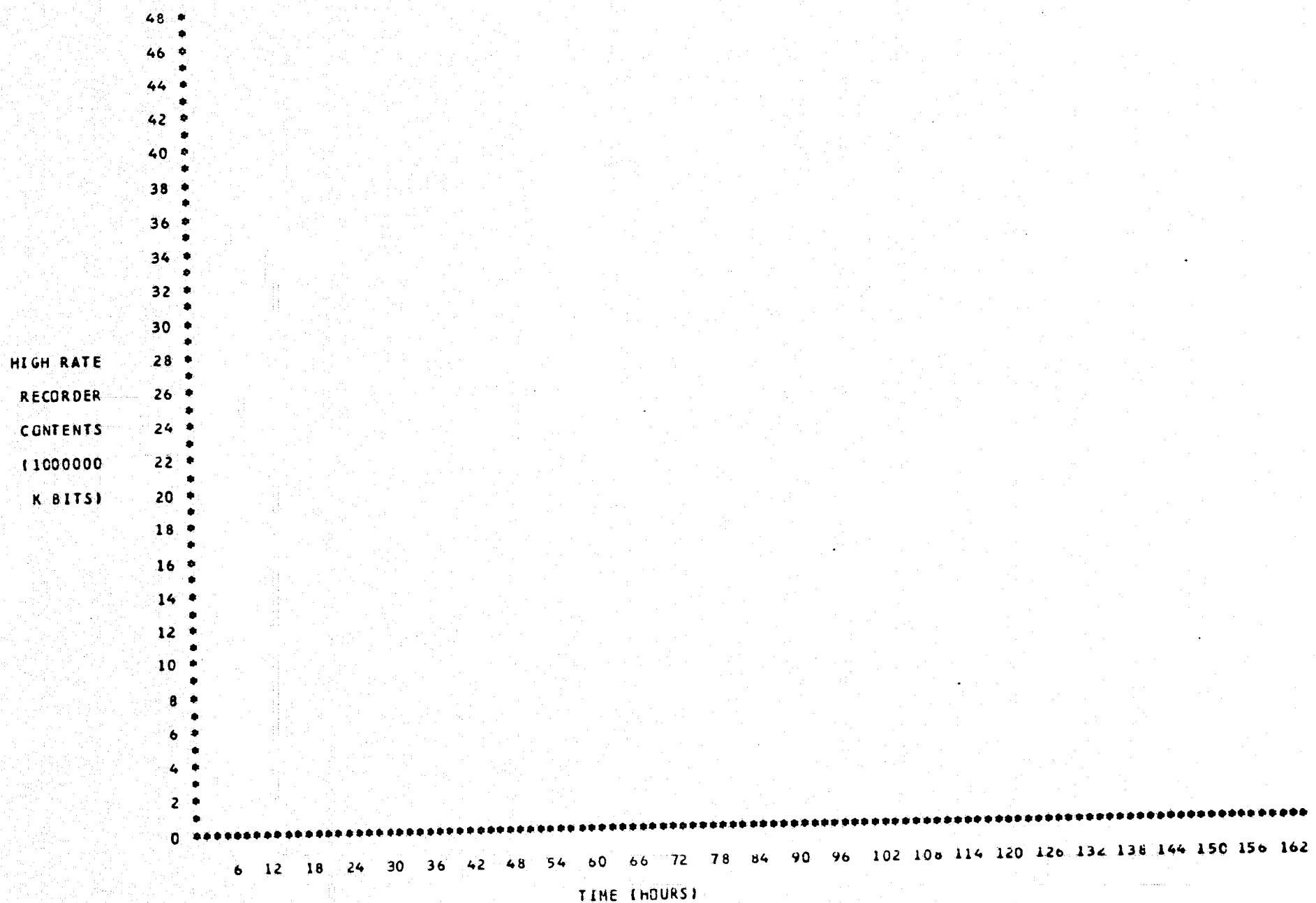


FIGURE 10: CONTENTS OF HIGH RATE RECORDER AS A FUNCTION OF TIME.

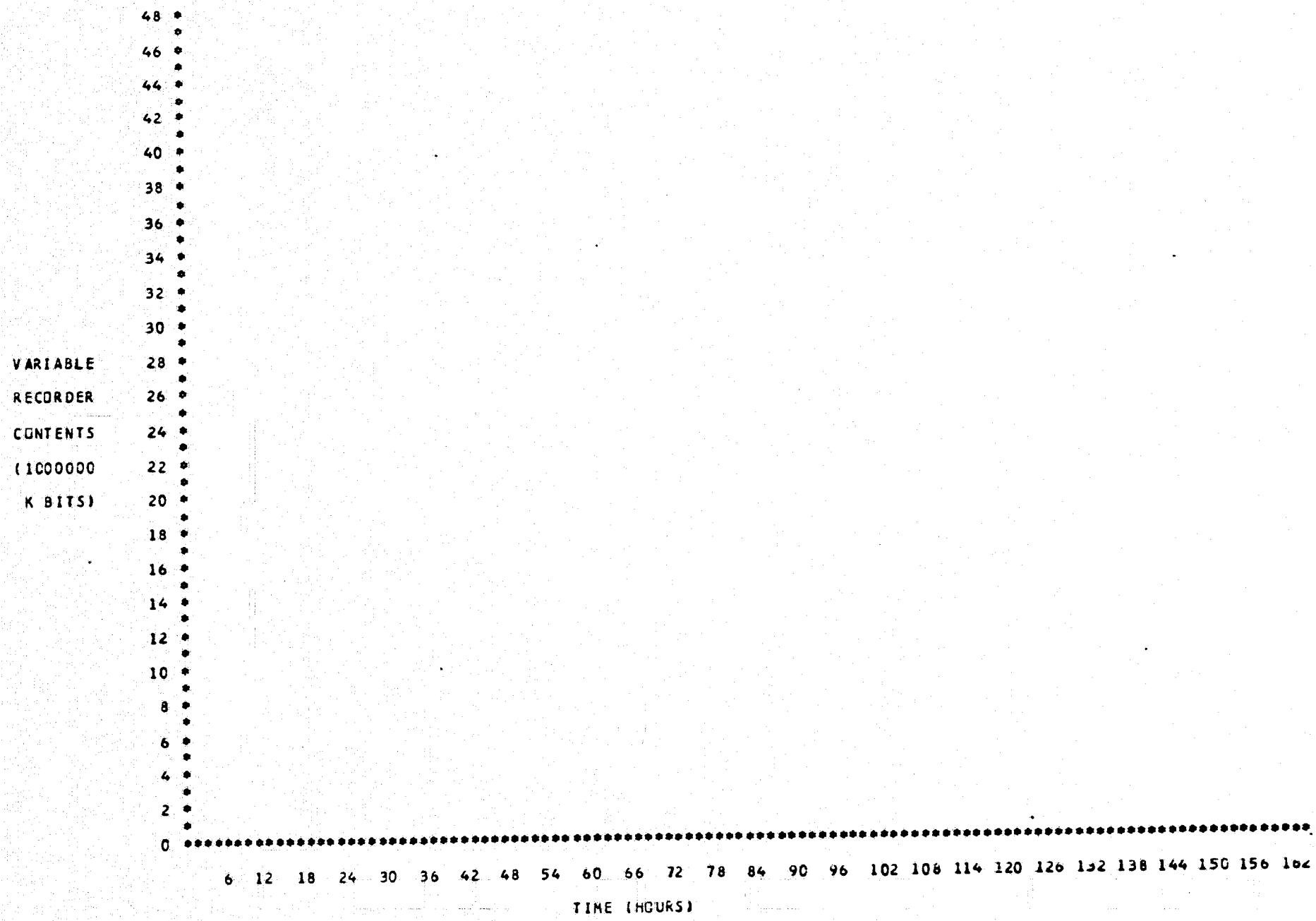


FIGURE II: CONTENTS OF VARIABLE RATE RECORDER AS A FUNCTION OF TIME.

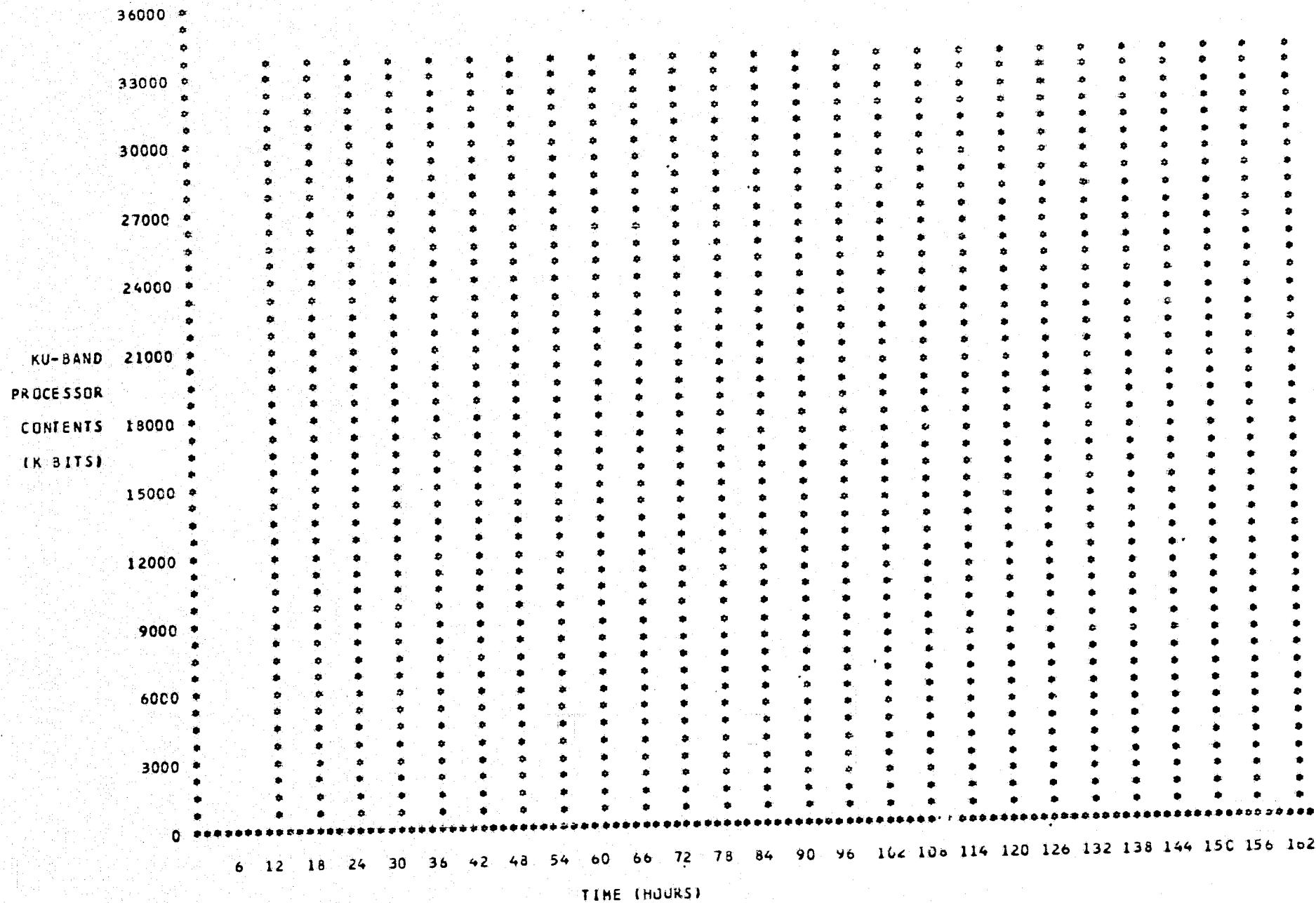


FIGURE 12: CONTENTS OF KU-BAND PROCESSOR AS A FUNCTION OF TIME.

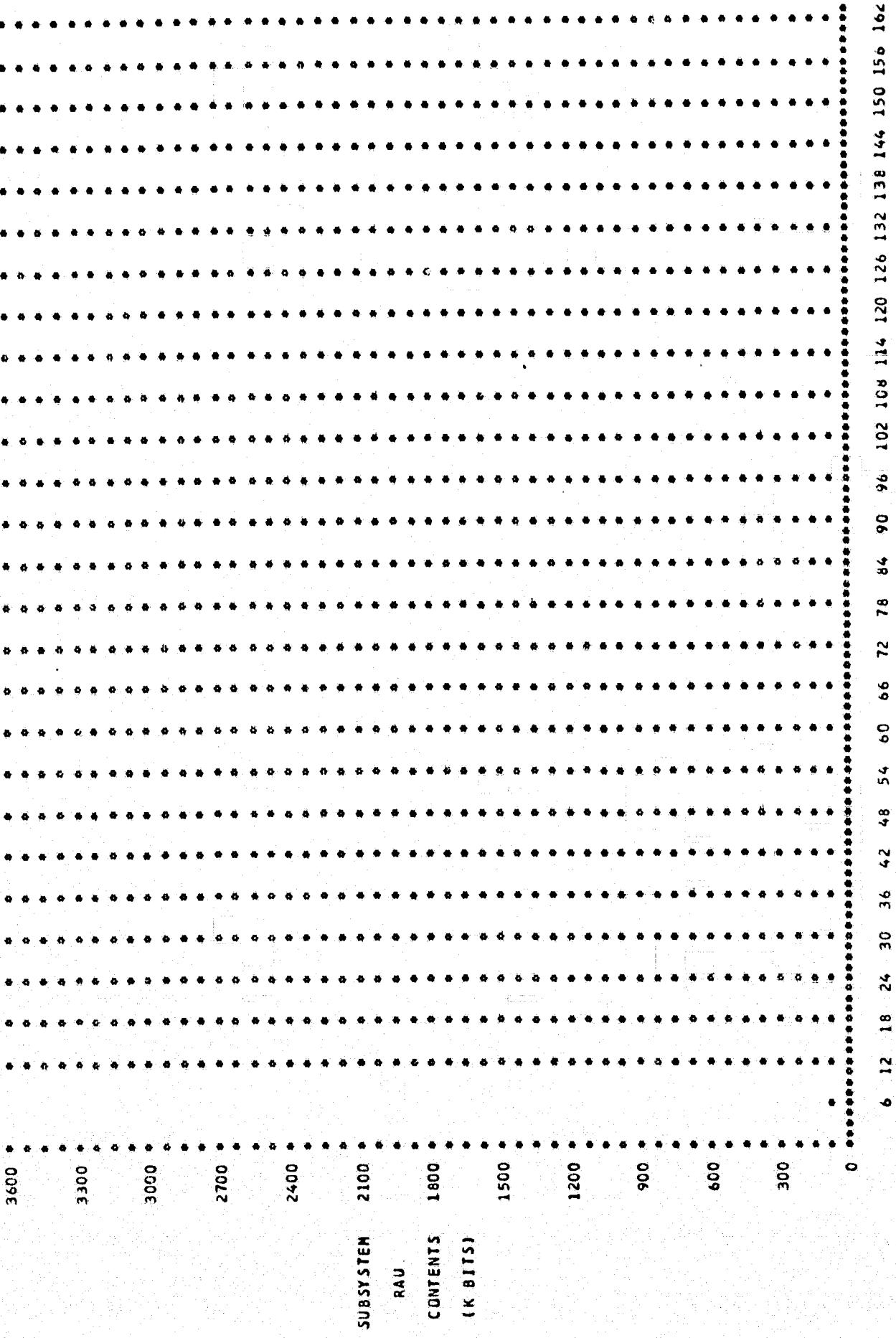


FIGURE 13: CONTENTS OF SUBSYSTEM RAU AS A FUNCTION OF TIME.

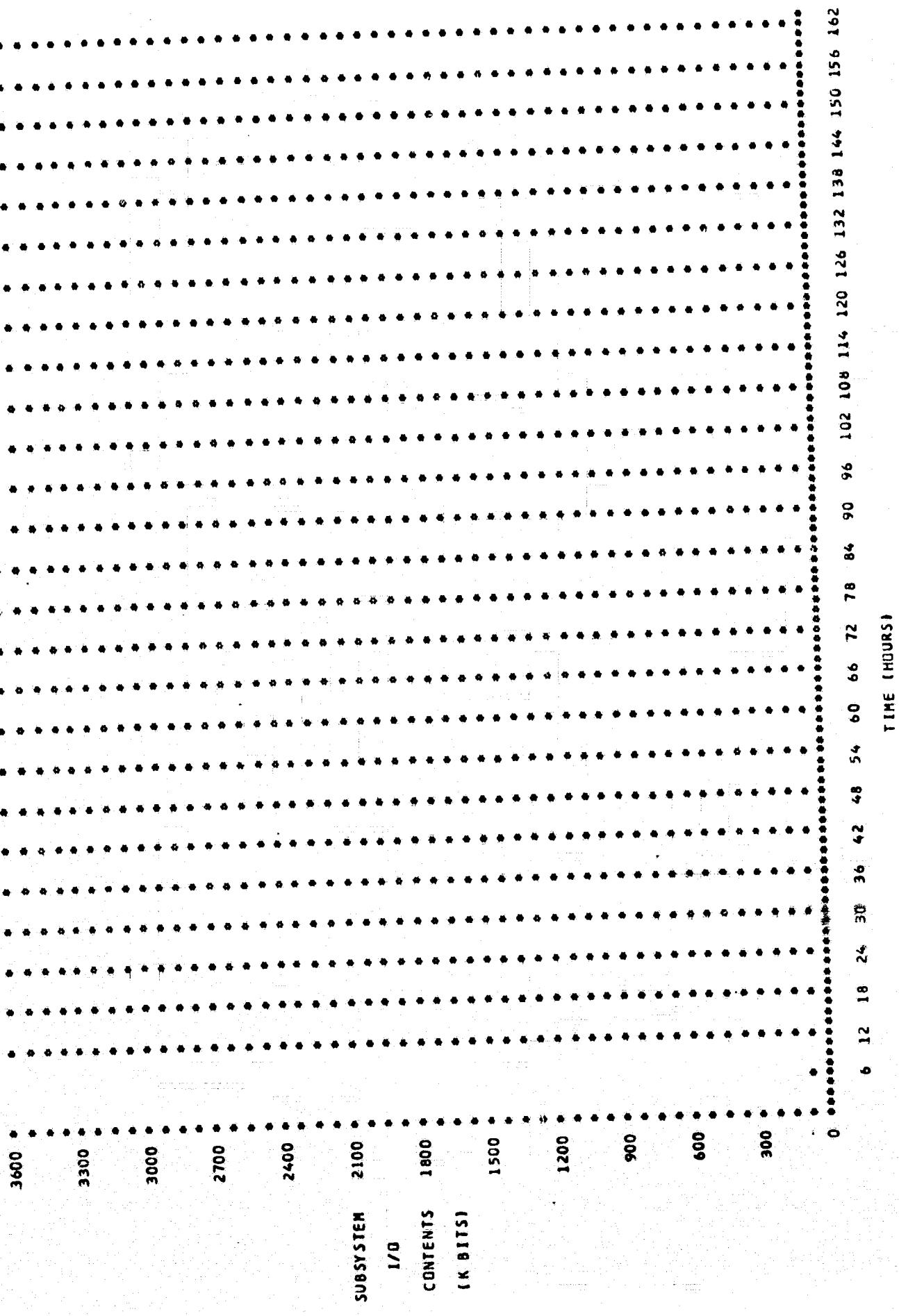


FIGURE 14: CONTENTS OF SUBSYSTEM I/O AS A FUNCTION OF TIME.

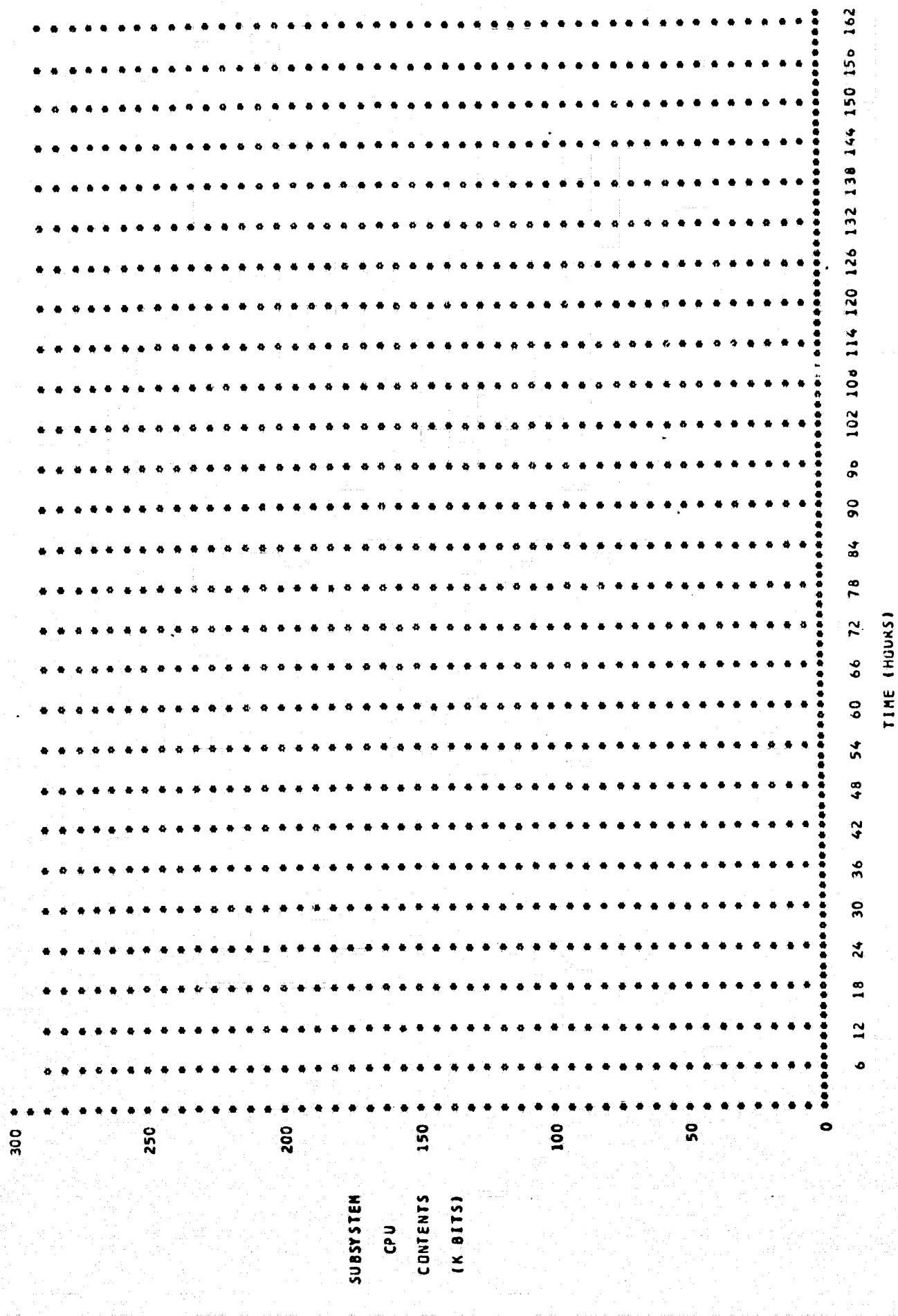


FIGURE 15: CONTENTS OF SUBSYSTEM CPU AS A FUNCTION OF TIME.

### Model Modification

In order to make sensitivity runs it is necessary to change certain program statements. This can be done in many cases in the same compilation since GPSS allows certain changes to be made and the program to be then run again.

For modification one (Figure 2) the storage capacity of the high rate recorder was changed in the storage definition card, statement 229. For modification two, storage definitions for 4 and 16 were increased 50% to represent a corresponding increase in computer capacity. In order to fail the KU Band signal processor in modification three, it was necessary to add a section that would generate a transaction when failure occurred and fill the KU Band thus preventing any actual data from entering. Modification four required changing the initial cards in module 5. The time span for each acquisition was reduced 10%.

## **APPENDICES**

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Appendix A  
SYSTEM MODULE I/O CONFIGURATION

<u>Module</u>	<u>Configuration</u>
1	<p><b>Experiment</b></p> <ul style="list-style-type: none"><li>● Science Data<ul style="list-style-type: none"><li>● Inputs: None</li><li>● Outputs: Compiled from mission schedule.<ul style="list-style-type: none"><li>● 95 percent direct transmission.</li><li>● 5 percent transmitted to RAU.</li></ul></li></ul></li> <li>● Engineering Data<ul style="list-style-type: none"><li>● Inputs: None</li><li>● Outputs: Transmitted to RAU. Rate 3KBPS.</li></ul></li></ul>
2	<p><b>Experiment RAU</b></p> <ul style="list-style-type: none"><li>● Science Data<ul style="list-style-type: none"><li>● Inputs: From Experiment at rate compiled from mission schedule.</li><li>● Outputs: Transmitted to Experiment I/O at 1MBPS.</li></ul></li> <li>● Engineering Data<ul style="list-style-type: none"><li>● Inputs: From Experiment at 3KBPS.</li><li>● Outputs: Transmitted to Experiment I/O at 1MBPS.</li></ul></li></ul>
3	<p><b>Experiment I/O</b></p> <ul style="list-style-type: none"><li>● Science Data<ul style="list-style-type: none"><li>● Inputs:<ul style="list-style-type: none"><li>● Experiment RAU at 1MBPS.</li><li>● Experiment Computer at 8KBPS.</li></ul></li><li>● Outputs:<ul style="list-style-type: none"><li>● Experiment Computer at 8KBPS; thru Experiment I/O to Payload Data Interleaver at 8KBPS.</li><li>● To Variable Rate Recorders (Downlink not available) or to FM Signal Processor (Downlink available, KU BAND Signal Processor not available) or KU BAND Signal Processor (Downlink available) at 1MBPS.</li></ul></li></ul></li></ul>

<u>Module</u>	<u>Configuration</u>
	<ul style="list-style-type: none"> <li>● Engineering Data</li> <li>● Inputs: <ul style="list-style-type: none"> <li>● Experiment RAU at 1MBPS.</li> <li>● Experiment Computer at 1MBPS.</li> </ul> </li> <li>● Outputs: Payload Data Interleaver at 1MBPS.</li> </ul>
4	<p>Experiment Computer</p> <ul style="list-style-type: none"> <li>● Science Data <ul style="list-style-type: none"> <li>● Inputs: Experiment I/O at 8KBPS.</li> <li>● Outputs: Experiment I/O at 8KBPS.</li> </ul> </li>   <li>● Engineering Data <ul style="list-style-type: none"> <li>● Inputs: Experiment I/O at 8KBPS.</li> <li>● Outputs: Experiment I/O at 8KBPS.</li> </ul> </li> </ul>
5	<p>High Rate Recorders</p> <ul style="list-style-type: none"> <li>● Science Data <ul style="list-style-type: none"> <li>● Inputs: Experiment at rate compiled from mission schedule.</li> <li>● Capacity: 30MBPS input; 36,000 M bits total.</li> <li>● Outputs: KU BAND Signal Processor at 30MBPS.</li> </ul> </li>   <li>● Engineering Data N/A</li> </ul>
6	<p>Variable Rate Recorders</p> <ul style="list-style-type: none"> <li>● Science Data <ul style="list-style-type: none"> <li>● Inputs: Experiment I/O.</li> <li>● Capacity: 30MBPS input; 36,000 M bits total.</li> <li>● Outputs: KU BAND Signal Processor at 30MBPS or FM Signal Processor at 5MBPS.</li> </ul> </li>   <li>● Engineering Data N/A</li> </ul>

<u>Module</u>	<u>Configuration</u>
7	<p><b>Payload Data Interleaver</b></p> <ul style="list-style-type: none"> <li>● Science Data</li> <li>● Inputs: <ul style="list-style-type: none"> <li>● Experiment I/O at 8KBPS.</li> <li>● Payload Signal Processor (omit).</li> </ul> </li> <li>● Outputs: DACBU at 16KBPS.</li> </ul> <ul style="list-style-type: none"> <li>● Engineering Data</li> <li>● Inputs: <ul style="list-style-type: none"> <li>● Experiment I/O, Subsystem I/O at 64KBPS.</li> <li>● Payload Signal Processor (omit).</li> </ul> </li> <li>● Outputs: DACBU at 64KBPS.</li> </ul>
8	<p><b>DACBU</b></p> <ul style="list-style-type: none"> <li>● Science Data <ul style="list-style-type: none"> <li>● Inputs: Payload Data Interleaver at 64KBPS.</li> <li>● Outputs: Network Signal Processor at 64KBPS.</li> </ul> </li>   <li>● Engineering Data <ul style="list-style-type: none"> <li>● Inputs: <ul style="list-style-type: none"> <li>● Payload Data Interleaver at 64KBPS.</li> <li>● GPC IOB (omit).</li> </ul> </li> <li>● Outputs: <ul style="list-style-type: none"> <li>● Loop Recorder at 128KBPS.</li> <li>● Network Signal Processor at 128KBPS.</li> </ul> </li> </ul> </li> </ul>
9	<p><b>Loop Recorder</b></p> <ul style="list-style-type: none"> <li>● Science Data <ul style="list-style-type: none"> <li>N/A</li> </ul> </li>   <li>● Engineering Data <ul style="list-style-type: none"> <li>● Inputs: DACB at 128KBPS.</li> <li>● Outputs: FM Signal Processor at 128KBPS.</li> </ul> </li> </ul>
10	<p><b>FM Signal Processor</b></p> <ul style="list-style-type: none"> <li>● Science Data <ul style="list-style-type: none"> <li>● Inputs: Variable Rate Recorder at 5MBPS.</li> <li>● Outputs: Ground at 1MBPS.</li> </ul> </li>   <li>● Engineering <ul style="list-style-type: none"> <li>● Inputs: Loop Recorder at 128KBPS.</li> <li>● Outputs: Ground at 1MBPS.</li> </ul> </li> </ul>

<u>Module</u>	<u>Configuration</u>
11	<p><b>Network Signal Processor</b></p> <ul style="list-style-type: none"> <li>● Science           <ul style="list-style-type: none"> <li>● Inputs: DACBU at 64KBPS.</li> <li>● Outputs: Ground at 96 or 192 KBPS or KU-BAND Signal Processor at 192KBPS.</li> </ul> </li>   <li>● Engineering           <ul style="list-style-type: none"> <li>● Inputs: DACBU at 192KBPS.</li> <li>● Outputs: Ground at 96 or 192 KBPS or KU-BAND Signal Processor at 192KBPS.</li> </ul> </li> </ul>
12	<p><b>KU-BAND Signal Processor</b></p> <ul style="list-style-type: none"> <li>● Science Data           <ul style="list-style-type: none"> <li>● Inputs:               <ul style="list-style-type: none"> <li>● Experiment at rate determined by mission schedule.</li> <li>● High Rate Recorders at 30MBPS.</li> <li>● Variable Rate Recorders at 30MBPS.</li> <li>● Network Signal Processor at 192KBPS.</li> </ul> </li> <li>● Outputs: Ground at 30MBPS.</li> </ul> </li>   <li>● Engineering Data           <ul style="list-style-type: none"> <li>● Inputs: Network Signal Processor at 192KBPS.</li> <li>● Outputs: Ground at 30MBPS.</li> </ul> </li> </ul>
13	<p><b>Subsystem</b></p> <ul style="list-style-type: none"> <li>● Science Data           <ul style="list-style-type: none"> <li>N/A</li> </ul> </li>   <li>● Engineering Data           <ul style="list-style-type: none"> <li>● Inputs: None</li> <li>● Outputs: RAU at 3KBPS plus 10 percent of experiment data rate compiled from mission schedule.</li> </ul> </li> </ul>
14	<p><b>Subsystem RAU</b></p> <ul style="list-style-type: none"> <li>● Science Data           <ul style="list-style-type: none"> <li>N/A</li> </ul> </li>   <li>● Engineering Data           <ul style="list-style-type: none"> <li>● Inputs: Subsystem a 3KBPS plus 10 percent of experiment data rate compiled from mission schedule.</li> <li>● Outputs: Subsystem I/O at 1MBPS.</li> </ul> </li> </ul>

<u>Module</u>	<u>Configuration</u>
15	<p><b>Subsystem I/O</b></p> <ul style="list-style-type: none"> <li>● Science Data N/A</li> <li>● Engineering Data           <ul style="list-style-type: none"> <li>● Inputs:               <ul style="list-style-type: none"> <li>● Subsystem RAU at 1MBPS.</li> <li>● Experiment Computer at 8KBPS.</li> </ul> </li> <li>● Outputs:               <ul style="list-style-type: none"> <li>● Experiment Computer at 8KBPS.</li> <li>● Payload Data Interleaver at 1MBPS.</li> </ul> </li> </ul> </li> </ul>
16	<p><b>Experiment Computer</b></p> <ul style="list-style-type: none"> <li>● Science Data N/A</li> <li>● Engineering Data           <ul style="list-style-type: none"> <li>● Inputs: Subsystem I/O at 8KBPS.</li> <li>● Outputs: Subsystem I/O at 8KBPS.</li> </ul> </li> </ul>

Appendix B

\* \* \* G P S S V - O S V E R S I O N \* \* \*  
\*\*\* IBM PROGRAM PRODUCT 5734-XS2 (V1M3) \*\*\*

STATEMENT NUMBER
1
2
3

REALLOCATE COM,59500  
REALLOCATE BLO,750,VAR,51  
REALLOCATE FAC,50,STD,25,LOG,1,FSV,500,BVR,1,CHA,20,TAB,1

BLOCK NUMBER	LOC	OPERATION	A,B,C,D,E,F,G,H,I SIMULATE 25	COMMENTS	STATEMENT NUMBER
			*****	*****	4
			*****	*****	5
			*****	*****	6
			**	**	7
			**	**	8
			**	**	9
	D. P. ASSOCIATES, INC.				10
			**	**	11
			**	**	12
			**	**	13
			**	**	14
			*****	*****	15
			*****	*****	16
	*	*	MACRO DEFINITION FOR TRANSMISSION OF ALL DATA TO NEXT UNIT		17
					18
	TRNSA STARTMACRO				19
	#A GATE SNF	#B,HC			20
	TEST GE	#D,PF3,HE			21
	#F ENTER	#B,PF3			22
	BUFFER				23
	LEAVE	#B,PF3			24
	TRANSFER	#G			25
	ENDMACRO				26
	*	*	MACRO DEFINITION FOR TRANSMISSION OF PART DATA TO NEXT UNIT		27
	*	*	#A (TRNSP MACRO) = HE (TRNSA MACRO)		28
	*	*	#F (TRNSP MACRO) = #A (TRNSA MACRO)		29
	*	*	#H (TRNSP MACRO) = #F (TRNSA MACRO)		30
	TRNSP STARTMACRO				31
	#A ASSIGN	#B,HC,PF			32
	SPLIT	1,#D			33
	PRIORITY	HE			34
	ASSIGN	3,#I,PF			35
	ADVANCE	1			36
	TRANSFER	#F			37
	#D ASSIGN	3,#G,PF			38
	TRANSFER	#H			39
	ENDMACRO				40
	*	*	MACRO DEFINITION FOR DELAY TRANSMISSION TO NEXT UNIT		41
	*	*	#A (WAITA MACRO) = HC (TRNSA MACRO)		42
	*	*	#D (WAITA MACRO) = HA (TRNSA MACRO)		43
	WAITA STARTMACRO				44
	#A PRIORITY	#B			45
	QUEUE	HC,PF3			46
	ADVANCE	1			47
	DEPART	HC,PF3			48
	TRANSFER	#D			49
	ENDMACRO				50
	*	*	MACRO DEFINITION FOR TRANSMISSION OF ALL DATA TO SIGNAL PROCESSOR		51
					52
	TMITA STARTMACRO				53
					54
					55
					56
					57
					58

#A	GATE SNF	#B,HC	59
	TEST GE	#D,PF3,HE	60
	ENTER	#B,PF3	61
	BUFFER		62
	LEAVE	#B,PF3	63
	TERMINATE		64
	ENDMACRO		65
•	MACRO DEFINITION FOR TRANSMISSION OF PART DATA TO SIGNAL PROCESSOR		66
•	#A (TMITP MACRO) = HE (TMITA MACRO)		67
•			68
	TMITP STARTMACRO		69
#A	ASSIGN	#B,HC,PF	70
	SPLIT	1,#D	71
	ASSIGN	3,#F,PF	72
	TRANSFER	+HE	73
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 230 ASSIGN 3,V32,PF 462  
 231 TRANSFER ,KUSIG 463  
 \*  
 \* H.R. RECORDER 464  
 \*  
 \* TRANSMIT ALL DATA TO H.R. RECORDER 465  
 RECD4 MACRO HRREC,5,LUSE5,R5,PF3,PART5,DUMPS 466  
 232 HRREC ASSIGN 5,PF3,PF 467  
 233 GATE SNF 5,LUSE5 467  
 234 TEST GE R5,PF3,PART5 467  
 235 ENTER 5,PF3 467  
 236 TRANSFER ,DUMPS 468  
 \* TRANSMIT PART DATA TO H.R. RECORDER 469  
 RECDP MACRO PART5,10,R5,5,11,PF10,PF11,DUMP5,5+,V41 469  
 237 PART5 ASSIGN 10,R5,PF 469  
 238 ENTER 5,R5 469  
 239 ASSIGN 11,V41,PF 469  
 240 SAVEVALUE 5+,PF11 469  
 241 ASSIGN 3,PF10 469  
 242 TRANSFER ,DUMPS 469

	*	RECORD DATA LOST	470
	*		471
243	*	LOSES SAVEVALUE 5+,PF3	472
244	*	TERMINATE	473
	*		474
	*	DUMP H.R. RECORDER TO KU-BAND	475
	*		476
	*	DUMP ALL DATA TO KU-BAND	477
	*	DUMPA MACRO DUMPS5,DLAY5,12,DLA5A,R12,SEA12,5,KUSIG	478
245	*	DUMPS GATE U 5C,DLAYS	479
246	*	GATE SNF 12,DLA5A	479
247	*	TEST GE R12,PF3,SEA12	479
248	*	LEAVE 5,PF5	479
249	*	TRANSFER ,KUSIG	479
	*	DUMP PART DATA TO KU-BAND	480
250	*	DUMPP MACRO SEA12,10,R12,4,0,DLA5A,PF10,5,V32,MOVE5	481
251	*	SEA12 ASSIGN 1C,R12,PF	481
252	*	SPLIT 1,MOVE5	481
253	*	PRIORITY 4	481
254	*	ADVANCE 0	481
255	*	ASSIGN 3,V32,PF	481
256	*	TRANSFER ,DLA5A	481
257	*	MOVE5 ASSIGN 3,PF10	481
258	*	LEAVE 5,PF5	481
259	*	JUMP1 MACRO KUSIG	482
260	*	TRANSFER ,KUSIG	482
261	*	DELAY UNTIL DLWNLINK AVAILABLE	483
	*	DLAY1 MACRO DLAY5,3,DUMPS	484
259	*	DLAYS PRIORITY 3	484
260	*	ADVANCE V5	484
261	*	TRANSFER ,DUMPS	485
	*	DELAY ONE TIME UNIT	485
262	*	DLAY2 MACRO DLA5A,1,DUMPS	486
263	*	DLASA PRIORITY 1	486
264	*	ADVANCE 1	486
	*	TRANSFER ,DUMPS	487
	***	*****	488
	**	** MODULE 3. EXPERIMENT ENGINEERING DATA	489
	**	**	490
	***	*****	491
	*		492
	*		493
	*	INPUT EXPERIMENT DATA	494
	*		495
265	*	GENERATE 1,,200,14775,10,25PF	496
266	*	ASSIGN 3,108,PF	497
	*		498
	*	PART 1. EXPERIMENT TO I/O	499
	*		500
	*	EXPERIMENT RAU	501
	*		502
	*	TRANSMIT ALL DATA TO EXPERIMENT RAU	503
	*	TRNSA MACRO RAUPT,2,HOLD2,R2,SOME2,RAUG0,10PRT	504
267	*	RAUPT GATE SNF 2,HOLD2	504
268	*	TEST GE R2,PF3,SOME2	504

269	RAUGO	ENTER	2,PF3	504
270	BUFFER			504
271	LEAVE	2,PF3		504
272	TRANSFER	.IOPRT		504
*	TRANSMIT PART DATA TO EXPERIMENT RAU			505
273	TRNSP MACRO	SOME2,10,R2,TRVL2,12,RAUPT,PF10,RAUGO,V22		506
274	SOME2	ASSIGN 1C,R2,PF		506
275	SPLIT 1,TRVL2			506
276	PRIORITY 12			506
277	ASSIGN 3,V22,PF			506
278	ADVANCE 1			506
279	TRANSFER ,KAUPT			506
280	TRVL2	ASSIGN 3,PF10,PF		506
	TRANSFER ,RAUGO			507
*	DELAY TRANSMISSION ONE TIME UNIT			508
281	WAITA MACRO	HOLD2,11,2,RAUGO		508
282	HOLD2	PRIORITY 11		508
283	QUEUE 2,PF3			508
284	ADVANCE 1			508
285	DEPAKT 2,PF3			508
	TRANSFER ,RAUGO			509
*	EXPERIMENT I/O			510
*	TRANSMIT ALL DATA TO EXPERIMENT I/O			511
286	TRNSA MACRO	IOPRT,3,HOLD3,R3,SOME3,IOGOS,SPLZ3		512
287	IOPRT GATE SNF	3,HULD3		513
288	TEST GE	R3,PF3,SUME3		513
289	IOGOS	ENTER 3,PF3		513
290	BUFFER			513
291	LEAVE 3,PF3			513
	TRANSFER ,SPLZ3			514
*	TRANSMIT PART DATA TO EXPERIMENT I/O			515
292	TRNSP MACRO	SOME3,10,R3,TRVL3,16,IOPRT,PF10,IOGOS,V30		515
293	SOME3	ASSIGN 1C,K3,PF		515
294	SPLIT 1,TRVL3			515
295	PRIORITY 16			515
296	ASSIGN 3,V30,PF			515
297	ADVANCE 1			515
298	TRANSFER ,IOPRT			515
299	TRVL3	ASSIGN 3,PF10,PF		515
	TRANSFER ,IOGOS			516
*	DELAY TRANSMISSION ONE TIME UNIT			517
300	WAITA MACRO	HOLD3,15,3,IOPRT		517
301	HOLD3	PRIORITY 15		517
302	QUEUE 3,PF3			517
303	ADVANCE 1			517
304	DEPAKT 3,PF3			517
	TRANSFER ,IOPRT			518
*	EXTRM COULD BE CHANGED TO AN ASSIGN BEFORE PDSEG IF SOME DATA			519
*	BYPASSES THE COMPUTER.			520
305	SPLZ3	SPLIT 1,EXTRM		521
306	ASSIGN 3,V15,PF			522
307	TEST L PF3,1,EDCPU			523
308	ASSIGN 3,1,PF			524
*	PART 2. I/O TO COMPUTER TO I/O TU PAYLOAD DATA INTERLEAVER			525

\*  
 \* EXPERIMENT COMPUTER  
 \*  
 \* TRANSMIT DATA TO EXPERIMENT COMPUTER  
 309 COMPA MACRO EDCPU,R4,FOREB,4,FOREA 526  
 310 EDCPU TEST GE R4,PF3,FOREB 527  
 311 ENTER 4,PF3 528  
 312 FOREA LINK 4,FIFO 529  
 313 COMPB MACRO FOREB,R4,FUREC,FORED,4,FOREA,V9 530  
 314 FOREB TEST G R4,0,FOREC 530  
 315 ASSIGN 4,R4,PF 530  
 316 SPLIT 1,FORED 531  
 317 ENTER 4,R4 531  
 318 TRANSFER ,FOREA 531  
 319 FORED ASSIGN 3,V9,PF 531  
 320 COMPC MACRO FOREC,FOREA,4,FOREE,FOREF,BUFE4 531  
 321 FOREC SPLIT 1,FOKEA 531  
 322 QUEUE 4 531  
 323 SEIZE 4 531  
 324 DEPART 4 531  
 325 FOREE UNLINK 4,FOREF,1 531  
 326 SPLIT 1,BUFE4 531  
 327 RELEASE 4 531  
 328 TERMINATE BUFE4,4,X23,FOREG,FOREH,V4,FOREE,V3,X22,4- 531  
 329 COMPD MACRO 4 531  
 330 BUFE4 SEIZE 531  
 331 BUFFER 531  
 332 TEST E PF3,X23,FOREG 531  
 333 RELEASE 4 531  
 334 TERMINATE X23,PF3,FOREH 531  
 335 FOREG TEST L 531  
 336 ASSIGN 3,V4,PF 531  
 337 TRANSFER ,FOKEE 531  
 338 FOREH ASSIGN 3,V3,PF 531  
 339 ASSIGN 2,X22,PF 531  
 340 RELEASE 4 531  
 341 SAVEVALUE 4-,PF3 531  
 342 LINK 4,LIFO 531  
 343 COMPE MACRO FOREF,23,22,4+ 531  
 344 FOREF SAVEVALUE 23,PF3 531  
 345 SAVEVALUE 22,PF2 531  
 346 SAVEVALUE 4+,PF3 531  
 347 TERMINATE 531  
 \*\*\*\*\*  
 \* EXPERIMENT ENGINEERING DATA STOPS HERE SINCE IT IS NOT CALLED 531  
 \* FROM THE COMPUTER 531  
 \*\*\*\*\*  
 \* TRANSMIT ALL DATA BACK THRU EXPERIMENT I/O 531  
 348 TRNSA MACRO IOEXP,3,STP3,R3,HAF3,IOETR,SEGPD 531  
 349 IOEXP GATE SNF 3,STP3 531  
 350 TEST GE R3,PF3,HAF3 531  
 351 IOETR ENTER 3,PF3 531  
 352 BUFFER 531  
 353 LEAVE 3,PF3 531  
 354 TRANSFER ,SEGPD 531  
 \* TRANSMIT PART DATA BACK THRU EXPERIMENT I/O 531  
 355 TRNSP MACRO HAF3,10,R3,ZIP3,16,IOEXP,PF10,IOETR,V23 531  
 356 540 531  
 357 540 531  
 358 540 531  
 359 540 531  
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 362 540 531  
 363 540 531  
 364 540 531  
 365 540 531  
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 368 540 531  
 369 541 531  
 370 542 531

349	HAF3	ASSIGN	10,R3,PF	542
350		SPLIT	1,ZIP3	542
351		PRIORITY	16	542
352		ASSIGN	3,V23,PF	542
353		ADVANCE	1	542
354		TRANSFER	,IOEXP	542
355	ZIP3	ASSIGN	3,PF10,PF	542
356		TRANSFER	,IODETR	542
	* DELAY TRANSMISSION ONE TIME UNIT			543
	WAITA	MACRO	STP3,15,3,IODEXP	544
357	STP3	PRIORITY	15	544
358		QUEUE	3,PF3	544
359		ADVANCE	1	544
360		DEPART	3,PF3	544
361		TRANSFER	,IOEXP	544
	* PART 3. PAYLOAD DATA INTERLEAVER TO TRANSMIT			545
	SEGPD	TRANSFER	,PDSEG	546
362			*****	547
	**		**	548
	**	MODULE 4. SUBSYSTEM ENGINEERING DATA	**	549
	**		**	550
	*****		*****	551
	*		*	552
	*		*	553
	*		*	554
	*		*	555
	*		*	556
	*		*	557
	*		*	558
	*		*	559
363		GENERATE	1,,20C,14775,,25PF	560
364		ASSIGN	3,108,PF	561
365		TRANSFER	,SKIP	562
366	MOOL4	ASSIGN	4,PF3,PF	563
367		ASSIGN	3,FN\$FLOW1,PF	564
368		ASSIGN	3,V15,PF	565
369	SKIP	PRIORITY	10	566
370		TEST E	PF3,0,ERAUS	567
371		TERMINATE		568
	*		*	569
	*	SUBSYSTEM RAU		570
	*		*	571
	*	TRANSMIT ALL DATA TO SUBSYSTEM RAU		572
372	TRNSA	MACRO	ERAUS,14,WAT14,R14,PRT14,ERAUN,EIDSG	573
373	ERAUS	GATE SNF	14,WAT14	573
374		TEST GE	R14,PF3,PRT14	573
375	ERAUN	ENTER	14,PF3	573
376		BUFFER		573
377		LEAVE	14,PF3	573
		TRANSFER	,EIDSG	573
	*	TRANSMIT PART DATA TO SUBSYSTEM RAU		574
378	TRNSP	MACRO	PRT14,10,R14,MVP14,12,ERAUS,PF10,ERAUN,V34	575
379	PRT14	ASSIGN	10,R14,PF	575
380		SPLIT	1,MVP14	575
381		PRIORITY	12	575
382		ASSIGN	3,V34,PF	575
		ADVANCE	1	575

383	TRANSFER	,ERAUS	575
384	MVP14 ASSIGN	3,PF10,PF	575
385	TRANSFER	,ERAUN	575
*	DELAY TRANSMISSION ONE TIME UNIT		576
	WAITA MACRO	WAT14,11,14,ERAUS	577
386	WAT14 PRIORITY	11	577
387	QUEUE	14,PF3	577
388	ADVANCE	1	577
389	DEPART	14,PF3	577
390	TRANSFER	,ERAUS	577
*			578
*	SUBSYSTEM I/O		579
*			580
*	TRANSMIT ALL DATA TO SUBSYSTEM I/O		581
	TRNSA MACRO	EIOSG,15,WAT15,R15,PRT15,EIDEN,SPL15	582
391	EIOSG GATE SNF	15,WAT15	582
392	TEST GE	R15,PF3,PRT15	582
393	EIDEN ENTEK	15,PF3	582
394	BUFFER		582
395	LEAVE	15,PF3	582
396	TRANSFER	,SPL15	582
*	TRANSMIT PART DATA TO SUBSYSTEM I/O		583
	TRNSP MACRO	PRT15,10,R15,MVP15,16,EIOSG,PF10,EIDEN,V35	584
397	PRT15 ASSIGN	10,R15,PF	584
398	SPLIT	1,MVP15	584
399	PRIORITY	16	584
400	ASSIGN	3,V35,PF	584
401	ADVANCE	1	584
402	TRANSFER	,EIOSG	584
403	MVP15 ASSIGN	3,PF10,PF	584
404	TRANSFER	,EIDEN	584
*	DELAY TRANSMISSION ONE TIME UNIT		585
	WAT1A MACRO	WAT15,15,15,EIOSG	585
405	WAT15 PRIORITY	15	586
406	QUEUE	15,PF3	586
407	ADVANCE	1	586
408	DEPART	15,PF3	586
409	TRANSFER	,EIOSG	586
*			587
*	ENGINEERING SUBSYSTEM DATA IN I/O; 90 PERCENT TERMINATED 10		588
*	PERCENT TO SUBSYSTEM COMPUTER.		589
*			590
*	SBTM COULD BE CHANGED TO AN ASSIGN BEFORE PDSEG IF SUME DATA		591
*	BYPASSES THE COMPUTER.		592
410	SPL15 SPLIT	1,SBTRM	593
411	ASSIGN	3,V15,PF	594
412	TEST L	PF3,1,SBCPU	595
413	ASSIGN	3,1,PF	596
*			597
*	PART 2. I/O TO COMPUTER TU I/O TO PAYLOAD DATA INTERLEAVER		598
*			599
*	SUBSYSTEM COMPUTER		600
*			601
*	TRANSMIT DATA TO SUBSYSTEM COMPUTER		6C2
414	COMPA MACRO	SBCPU,R16,TEENB,16,TEENA	6C3
415	SBCPU TEST GE	H16,PF3,TEENB	6C3
	ENTER	16,PF3	6C3

416 TEENA LINK 16,FIFO 603  
 COMPB MACRO TEEN8,R16,TEENC,TEEND,16,TEENA,V9  
 417 TEENB TEST G R16,O,TEENC 604  
 418 ASSIGN 4,R16,PF 604  
 419 SPLIT 1,TEEND 604  
 420 ENTER 16,R16 604  
 421 TRANSFER .TEENA 604  
 422 TEEND ASSIGN 3,V9,PF 604  
 COMPC MACRO TEENC,TEENA,16,TEENE,TEENF,BUF16 605  
 423 TEENC SPLIT 1,TEENA 605  
 424 QUEUE 16 605  
 425 SEIZE 16 605  
 426 DEPART 16 605  
 427 TEENE UNLINK 16,TEENF,1 605  
 428 SPLIT 1,BUF16 605  
 429 RELEASE 16 605  
 430 TERMINATE 606  
 COMPD MACRO BUF16,16,X25,TEENG,TEENH,V12,TEENE,V11,X24,16-  
 431 BUF16 SEIZE 16 606  
 432 BUFFER 606  
 433 TEST E PF3,X25,TEENG 606  
 434 RELEASE 16 606  
 435 TERMINATE 606  
 436 TEENG TEST L X25,PF3,TEENH 606  
 437 ASSIGN 3,V12,PF 606  
 438 TRANSFER ,TEENE 606  
 439 TEENH ASSIGN 3,V11,PF 606  
 440 ASSIGN 2,X24,PF 606  
 441 RELEASE 16 606  
 442 SAVEVALUE 16-,PF3 606  
 443 LINK 16,LIFO 607  
 444 COMPE MACRO TEENF,25,24,16+ 607  
 445 TEENF SAVEVALUE 25,PF3 607  
 446 SAVEVALUE 24,PF2 607  
 447 SAVEVALUE 16+,PF3 607  
 TERMINATE 608  
 \*\*\*\*\* 609  
 \* SUBSYSTEM ENGINEERING DATA STOPS HERE SINCE IT IS NOT CALLED 610  
 \* FROM THE COMPUTER 611  
 \*\*\*\*\* 612  
 \* TRANSMIT ALL DATA BACK THRU SUBSYSTEM I/O 613  
 448 TRNSA MACRO IOSUB,15,STP15,R15,HAF15,I0STR,PDSEG 613  
 449 IOSUB GATE SNF 15,STP15 613  
 450 TEST GE R15,PF3,HAF15 613  
 451 I0STR ENTER 15,PF3 613  
 452 BUFFER 613  
 453 LEAVE 15,PF3 613  
 TRANSFER ,PDSEG 614  
 \* TRANSMIT PART DATA BACK THRU SUBSYSTEM I/O 615  
 454 TRNSP MACRO HAF15,10,R15,ZIP15,16,I0SUB,PF10,I0STR,V35 615  
 455 HAF15 ASSIGN 10,R15,PF 615  
 456 SPLIT 1,ZIP15 615  
 457 PRIORITY 16 615  
 458 ASSIGN 3,V35,PF 615  
 459 ADVANCE 1 615  
 460 TRANSFER ,IOSUB 615  
 ZIP15 ASSIGN 3,PF10,PF 615

461	TRANSFER ,I0STR	615
*	DELAY TRANSMISSION ONE TIME UNIT	616
	WAITA MACRO STP15,15,15,I0SUB	617
462	STP15 PRIORITY 15	617
463	QUEUE 15,PF3	617
464	ADVANCE 1	617
465	DEPART 15,PF3	617
466	TRANSFER ,I0SUB	618
*	TRANSMIT TO PAYLOAD DATA INTERLEAVER	619
467	TRANSFER ,PDSEG	620
*	PART 3. PAYLOAD DATA INTERLEAVER TO TRANSMIT	621
*	PAYLOAD DATA INTERLEAVER	622
*	TRANSMIT ALL DATA TO PAYLOAD DATA INTERLEAVER	623
	TRNSA MACRO PCSEG,7,WAIT7,R7,PAKT7,PDENT,DCSEG	624
468	PDSEG GATE SNF 7,WAIT7	625
469	TEST GE R7,PF3,PART7	626
470	PDENT ENTER 7,PF3	626
471	BUFFER	626
472	LEAVE 7,PF3	626
473	TRANSFER ,DCSEG	626
*	TRANSMIT PART DATA TO PAYLOAD DATA INTERLEAVER	627
	TRNSP MACRO PART7,10,R7,MOV7,16,PDSEG,PF10,PDENT,V27	628
474	PART7 ASSIGN 10,R7,PF	628
475	SPLIT 1,MOV7	628
476	PRIORITY 16	628
477	ASSIGN 3,V27,PF	628
478	ADVANCE 1	628
479	TRANSFER ,PDSEG	628
480	MOV7 ASSIGN 3,PF10,PF	628
481	TRANSFER ,PDENT	628
*	DELAY TRANSMISSION ONE TIME UNIT	629
	WAITA MACRO WAIT7,15,7,PDSEG	630
482	WAIT7 PRIORITY 15	630
483	QUEUE 7,PF3	630
484	ADVANCE 1	630
485	DEPART 7,PF3	630
486	TRANSFER ,PDSEG	631
*	DATA ACQUISITION CONTROL AND BUFFER UNIT	632
*	TRANSMIT ALL DATA TO DACBU	633
	TRNSA MACRO DCSEG,8,WAIT8,R8,PART8,DCENT,DLSEG	634
487	DCSEG GATE SNF 8,WAIT8	635
488	TEST GE R8,PF3,PART8	635
489	DCENT ENTER 8,PF3	635
490	BUFFER	635
491	LEAVE 8,PF3	635
492	TRANSFER ,DLSEG	635
*	TRANSMIT PART DATA TO DACBU	636
	TRNSP MACRO PART8,10,R8,MOV8,16,DCSEG,PF10,DCENT,V28	637
493	PART8 ASSIGN 10,K8,PF	637
494	SPLIT 1,MOV8	637
495	PRIORITY 16	637
496	ASSIGN 3,V28,PF	637

497	ADVANCE	1	637
498	TRANSFER	,DCSEG	637
499	MOV P8 ASSIGN	3,PF10,PF	637
500	TRANSFER	,DCENT	637
	* DELAY TRANSMISSION ONE TIME UNIT		637
	WAITA MACRO	WAIT8,15,8,DCSEG	639
501	WAIT8 PRIORITY	15	639
502	QUEUE	8,PF3	639
503	ADVANCE	1	639
504	DEPART	8,PF3	639
505	TRANSFER	,DCSEG	640
	* DOWNLINK AVAILABLE?		641
506	DLSEG GATE U	50,LMREC	642
	* KU-BAND		643
	* TRANSMIT ALL DATA TO KU-BAND		644
	TMITA MACRO	KUPRT,12,NSPRT,R12,PTL12	645
507	KUPRT GATE SNF	12,NSPRT	646
508	TEST GE	R12,PF3,PTL12	647
509	ENTER	12,PF3	648
510	BUFFER		648
511	LEAVE	12,PF3	648
512	TERMINATE		649
	* TRANSMIT PART DATA TO KU-BAND		650
	TMITP MACRO	PTL12,10,R12,NSPRT,KUPRT,V32	650
513	PTL12 ASSIGN	10,R12,PF	650
514	SPLIT	1,NSPRT	650
515	ASSIGN	3,V32,PF	650
516	TRANSFER	,KUPRT	651
	* NETWORK SIGNAL PROCESSOR		652
	* TRANSMIT ALL DATA TO NETWORK SIGNAL PROCESSOR		653
	TMITA MACRO	NSPRT,11,LMREC,R11,PRT11	654
517	NSPRT GATE SNF	11,LMREC	655
518	TEST GE	R11,PF3,PRT11	655
519	ENTER	11,PF3	655
520	BUFFER		655
521	LEAVE	11,PF3	655
522	TERMINATE		656
	* TRANSMIT PART DATA TO NETWORK SIGNAL PROCESSOR		657
	TMITP MACRO	PRT11,10,R11,LMREC,NSPRT,V31	657
523	PRT11 ASSIGN	10,R11,PF	657
524	SPLIT	1,LMREC	657
525	ASSIGN	3,V31,PF	657
526	TRANSFER	,NSPRT	658
	* LOOP MAINTENANCE RECORDER		659
	* TRANSMIT ALL DATA TO L.M. RECORDER		660
	RECDMA MACRO	LMREC,9,LOSE9,R9,PART9,4608,DUMP9,LHRC1,4608	661
527	LMREC ASSIGN	5,PF3,PF	662
528	GATE SNF	9,LOSE9	662
529	TEST GE	R9,PAKT9,4608	662

530	ENTER	9,PART9	662
531	TRANSFER	,DUMP9	662
*	TRANSMIT PART DATA TO L.M. RECORDER		663
532	RECDP MACRO	PART9,10,R9,9,11,PF10,PF11,DUMP9,9+,V29	664
533	PART9 ASSIGN	10,R9,PF	664
534	ENTER	9,R9	664
535	ASSIGN	11,V29,PF	664
536	SAVEVALUE	9+,PF11	664
537	ASSIGN	3,PF10	664
	TRANSFER	,DUMP9	665
*	DUMP L.M. RECORDER TO F.M. SIGNAL PROCESSOR		666
*	DUMP ALL DATA TO F.M. SIGNAL PROCESSOR		667
538	DUMPA MACRO	DUMP9,DLAY9,10,DLA9A,R10,PRA10,9,FMPRT	668
539	DUMP9 GATE U	5C,DLAY9	669
540	GATE SNF	10,DLA9A	669
541	TEST GE	R10,PF3,PRA10	669
542	LEAVE	9,PF5	669
*	DUMP PART DATA TO F.M. SIGNAL PROCESSOR		670
543	DUMPP MACRO	PRA10,10,R10,4,1,DUMP9,PF10,9,V30,MVA10	671
544	PRA10 ASSIGN	10,R10,PF	671
545	SPLIT	1,MVA10	671
546	PRIORITY	4	671
547	ADVANCE	1	671
548	ASSIGN	3,V30,PF	671
549	TRANSFER	,DUMP9	671
550	MVA10 ASSIGN	3,PF10	671
	LEAVE	9,PF5	672
551	JUMPI MACRO	FMPRT	672
	TRANSFER	,FMPRT	673
*	DELAY UNTIL DWNLINK AVAILABLE		674
552	DLAY1 MACRO	DLAY9,3,DUMP9	674
553	DLAY9 PRIORITY	3	674
554	ADVANCE	V5	674
	TRANSFER	,DUMP9	675
*	DELAY ONE TIME UNIT		676
555	DLAY2 MACRO	DLA9A,1,DUMP9	676
556	DLA9A PRIORITY	1	676
557	ADVANCE	1	676
	TRANSFER	,DUMP9	677
*	F.M. SIGNAL PROCESSOR		678
*	TRANSMIT ALL DATA TO F.M. SIGNAL PROCESSOR		679
558	TMITA MACRO	FMPRT,10,DUMP9,R10,SEG10	680
559	FMPRT GATE SNF	1C,DUMP9	681
560	TEST GE	R10,PF3,SEG10	682
561	ENTER	1C,PF3	682
562	BUFFER		682
563	LEAVE	1C,PF3	682
	TERMINATE		683
*	TRANSMIT PART DATA TO F.M. SIGNAL PROCESSOR		684
564	TMITP MACRO	SEG10,10,R10,DUMP9,FMPRT,V30	684
	SEG10 ASSIGN	1C,R10,PF	684

565	SPLIT	1,DUMP9	684
566	ASSIGN	3,V30,PF	684
567	TRANSFER	,FNPRT	684
568	EXTRM TERMINATE		685
569	SBTRM TERMINATE		686
570	LOSE9 SAVEVALUE	3+,PF3	687
571	TERMINATE		688
*****			
572	**		689
573	** MODULE 5. DOWNLINK SCHEDULE		690
574	**		691
575	*****		692
576	2 MATRIX X,1,60		693
577	INITIAL MX2(1,1),417/MX2(1,2),422/MX2(1,3),425/MX2(1,4),500		694
578	INITIAL MX2(1,5),503/MX2(1,6),561/MX2(1,7),583/MX2(1,8),594		695
579	INITIAL MX2(1,9),600/MX2(1,10),728/MX2(1,11),742		696
580	INITIAL MX2(1,12),761/MX2(1,13),772/MX2(1,14),900		697
581	INITIAL MX2(1,15),906/MX2(1,16),928/MX2(1,17),950		698
582	INITIAL MX2(1,18),1106/MX2(1,19),1117/MX2(1,20),1283		699
583	INITIAL MX2(1,21),1286/MX2(1,22),1339/MX2(1,23),1344		700
584	INITIAL MX2(1,24),1411/MX2(1,25),1425/MX2(1,26),1439		701
585	INITIAL MX2(1,27),1444/MX2(1,28),1500/MX2(1,29),1511		702
586	INITIAL MX2(1,30),1572/MX2(1,31),1592/MX2(1,32),1606		703
587	INITIAL MX2(1,33),1608/MX2(1,34),1672/MX2(1,35),1675		704
588	INITIAL MX2(1,36),1731/MX2(1,37),1758/MX2(1,38),1897		705
589	INITIAL MX2(1,39),1914/MX2(1,40),1928/MX2(1,41),1939		706
590	INITIAL MX2(1,42),2069/MX2(1,43),2072/MX2(1,44),2094		707
591	INITIAL MX2(1,45),2117/MX2(1,46),2272/MX2(1,47),2289		708
592	INITIAL MX2(1,48),2447/MX2(1,49),2453/MX2(1,50),2511		709
593	INITIAL MX2(1,51),2517/MX2(1,52),2586/MX2(1,53),2594		710
594	INITIAL MX2(1,54),2611/MX2(1,55),2617/MX2(1,56),2672		711
595	INITIAL MX2(1,57),2683/MX2(1,58),2728/MX2(1,59),2739		712
596	INITIAL MX2(1,60),2797		713
597	GENERATE ,400,1,50,25PF	CREATE CONTCL TRANS.	714
598	LOOP2 ASSIGN 1+,1,PF	SET INDEX	715
599	TEST E PF1,1,MOVE1	FIRST TIME THROUGH?	716
600	SAVEVALUE 50,V18		717
601	ASSIGN 2,V19,PF	SET FIRST CHANGE TIME	718
602	TRANSFER ,DLINK	GO TO DOWN LINK SECTION	719
603	MOVE1 ASSIGN 2,V20,PF	FIND NEXT STATUS CHANGE	720
604	DLINK ADVANCE PF2		721
605	ASSIGN 1+,1,PF	INCREMENT EVENT COUNT	722
606	ASSIGN 2,V20,PF	FIND NEXT CHANGE	723
607	SEIZE 50	TIES UP FACILITY 50	724
608	ADVANCE PF2	DWN LINK AVAILABLE	725
609	RELEASE 50	RELEASES FACILITY 50	726
610	TEST E PF1,60,GOHED	DETERMINE TIME NEXT DOWNLNK	727
611	ASSIGN 1,0,PF		728
612	ASSIGN 3+,1,PF		729
613	ASSIGN 4,1,PF		730
614	SAVEVALUE 50,V6		731
615	ADVANCE 3	TO END OF CYCLE	732
616	TRANSFER ,LOOP2		733
617	GUHED ASSIGN 4,V17,PF		734
618	CKDLK SAVEVALUE 50,V6		735
619	TRANSFER ,LOOP2		736
620	PLUTA GENERATE 600,,,2,25PF		737
621			738

596 SAVEVALUE V42,SM2 117  
 597 SAVEVALUE V43,SM3 740  
 598 SAVEVALUE V44,SM4 741  
 599 SAVEVALUE V45,V36 742  
 600 SAVEVALUE V46,V57 743  
 601 SAVEVALUE V47,SM12 744  
 602 SAVEVALUE V48,SM14 745  
 603 SAVEVALUE V49,SM15 746  
 604 SAVEVALUE V50,SM16 747  
 605 TERMINATE 748  
 606 GENERATE 16300 749  
 607 TERMINATE 1 750  
 START 1 751  
 REPORT 752  
 OUTPUT 753  
 GRAPH X,131,T27 754  
 ORIGIN 50,22 755  
 X ,1,3,...,NU 756  
 Y 0,200,12,4 757  
 5 STATEMENT 22,10,EXPERIMENT 758  
 8 STATEMENT 24,3,RHU 759  
 6 STATEMENT 26,5,CONTENTS 760  
 6 STATEMENT 26,5,(K BITS) 761  
 26 STATEMENT 52,106,6 12 18 24 30 36 42 48 54 60 66 72 1 762  
 78 84 90 96 102 108 114 120 126 132 138 144 150 156 162 763  
 60 STATEMENT 54,12,TIME (HOURS) 764  
 8 STATEMENT 58,59,FIGURE 7: CONTENTS OF EXPERIMENT RHU AS A FUNCT1 765  
 ION OF TIME 766  
 ENDGRAPH 767  
 EJECT 768  
 GRAPH X,131,T27 769  
 ORIGIN 50,22 770  
 X ,1,3,...,NU 771  
 Y 0,200,12,4 772  
 5 STATEMENT 22,10,EXPERIMENT 773  
 5 STATEMENT 24,3,I/O 774  
 5 STATEMENT 26,3,CONTENTS 775  
 5 STATEMENT 26,3,(K BITS) 776  
 26 STATEMENT 52,106,6 12 18 24 30 36 42 48 54 60 66 72 1 777  
 78 84 90 96 102 108 114 120 126 132 138 144 150 156 162 778  
 60 STATEMENT 54,12,TIME (HOURS) 779  
 8 STATEMENT 58,59,FIGURE 8: CONTENTS OF EXPERIMENT I/O AS A FUNCT1 780  
 ION OF TIME 781  
 ENDGRAPH 782  
 EJECT 783  
 GRAPH X,131,T14 784  
 ORIGIN 50,22 785  
 X ,1,3,...,NU 786  
 Y 0,50,6,8 787  
 5 STATEMENT 22,10,EXPERIMENT 788  
 5 STATEMENT 24,3,CPU 789  
 5 STATEMENT 26,3,CONTENTS 790  
 5 STATEMENT 26,3,(K BITS) 791  
 26 STATEMENT 52,106,6 12 18 24 30 36 42 48 54 60 66 72 1 792  
 78 64 70 96 102 108 114 120 126 132 138 144 150 156 162 793  
 50 STATEMENT 54,12,TIME (HOURS) 794  
 3 STATEMENT 58,59,FIGURE 9: CONTENTS OF EXPERIMENT CPU AS A FUNCT1 795

TION OF TIME.		790
ENDGRAPH		797
EJECT		798
GRAPH X,191,217		799
ORIGIN 50,22		800
X ,1,3,,,NO		801
Y 0,2,24,2		802
5	STATEMENT 22,9,HIGH RATE	803
6	STATEMENT 24,8,RECORDER	804
6	STATEMENT 26,8,CONTENTS	805
6	STATEMENT 28,8,(1000000	806
7	STATEMENT 30,7,K BITS)	807
26	STATEMENT 52,106,6 12 18 24 30 36 42 48 54 60 66 72 1	808
78 84 90 96	102 108 114 120 126 132 138 144 150 156 162	809
60	STATEMENT 54,12,TIME (HOURS)	810
8	STATEMENT 58,64,FIGURE 10: CONTENTS OF HIGH RATE RECORDER AS A 1	811
FUNCTION OF TIME.		812
ENDGRAPH		813
EJECT		814
GRAPH X,221,247		815
ORIGIN 50,22		816
X ,1,3,,,NO		817
Y 0,2,24,2		818
6	STATEMENT 22,8,VARIABLE	819
6	STATEMENT 24,8,RECORDER	820
6	STATEMENT 26,8,CONTENTS	821
6	STATEMENT 28,8,(1000000	822
7	STATEMENT 30,7,K BITS)	823
26	STATEMENT 52,106,6 12 18 24 30 36 42 48 54 60 66 72 1	824
78 84 90 96	102 108 114 120 126 132 138 144 150 156 162	825
60	STATEMENT 54,12,TIME (HOURS)	826
8	STATEMENT 58,63,FIGURE 11: CONTENTS OF VARIABLE RATE RECORDER A1	827
SA FUNCTION OF TIME.		828
ENDGRAPH		829
EJECT		830
GRAPH X,251,277		831
ORIGIN 50,22		832
X ,1,3,,,NO		833
Y 0,300,12,4		834
7	STATEMENT 22,7,KU-BAND	835
5	STATEMENT 24,9,PROCESSOR	836
5	STATEMENT 26,8,CONTENTS	837
6	STATEMENT 28,8,(K BITS)	838
26	STATEMENT 52,106,6 12 18 24 30 36 42 48 54 60 66 72 1	839
78 84 90 96	102 108 114 120 126 132 138 144 150 156 162	840
60	STATEMENT 54,12,TIME (HOURS)	841
8	STATEMENT 58,63,FIGURE 12: CONTENTS OF KU-BAND PROCESSOR AS A F1	842
UNCTION OF TIME.		843
ENDGRAPH		844
EJECT		845
GRAPH X,281,307		846
ORIGIN 50,22		847
X ,1,3,,,NO		848
Y 0,300,12,4		849
5	STATEMENT 22,9,SUBSYSTEM	850
9	STATEMENT 24,3,RAU	851
6	STATEMENT 26,8,CONTENTS	852

6	STATEMENT	28,8,(K BITS)		853
26	STATEMENT	52,106,6 12 18 24 30 36 42 48 54 60 66 72 1		854
78	84 90 96	102 108 114 120 126 132 138 144 150 156 162		855
60	STATEMENT	54,12,TIME (HOURS)		856
8	STATEMENT	58,58,FIGURE 13:CONTENTS OF SUBSYSTEM RAU AS A FUNCTII		857
ON OF TIME.				
	ENDGRAPH			858
	EJECT			859
	GRAPH	X,311,337		860
	ORIGIN	50,22		861
	X	,1,3,,,NO		862
	Y	0,300,12,4		863
5	STATEMENT	22,9,SUBSYSTEM		864
8	STATEMENT	24,3,I/O		865
6	STATEMENT	26,8,CONTENTS		866
6	STATEMENT	28,8,(K BITS)		867
26	STATEMENT	52,106,6 12 18 24 30 36 42 48 54 60 66 72 1		868
78	84 90 96	102 108 114 120 126 132 138 144 150 156 162		869
60	STATEMENT	54,12,TIME (HOURS)		870
8	STATEMENT	58,58,FIGURE 14:CONTENTS OF SUBSYSTEM I/O AS A FUNCTII		871
ON OF TIME.				
	ENDGRAPH			872
	EJECT			873
	GRAPH	X,341,367		874
	ORIGIN	50,22		875
	X	,1,3,,,NO		876
	Y	0,50,6,8		877
5	STATEMENT	22,9,SUBSYSTEM		878
8	STATEMENT	24,3,CPU		879
6	STATEMENT	26,8,CONTENTS		880
6	STATEMENT	28,8,(K BITS)		881
26	STATEMENT	52,106,6 12 18 24 30 36 42 48 54 60 66 72 1		882
78	84 90 96	102 108 114 120 126 132 138 144 150 156 162		883
60	STATEMENT	54,12,TIME (HOURS)		884
8	STATEMENT	58,58,FIGURE 15:CONTENTS OF SUBSYSTEM CPU AS A FUNCTII		885
ON OF TIME.				
	ENDGRAPH			886
	END			887
				888
				889
				890

RELATIVE CLOCK	16800 ABSOLUTE CLOCK			16800							
BLOCK COJNTS	BLOCK CURRENT	TOTAL	BLOCK CURRENT	TOTAL	BLOCK CURRENT	TOTAL	BLOCK CURRENT	TOTAL	BLOCK CURRENT	TOTAL	
1	0	0	11	0	51476	21	0	0	31	0	0
2	0	929	12	0	51476	22	0	0	32	0	0
3	0	929	13	0	25738	23	0	0	33	0	0
4	0	3	14	0	25738	24	0	0	34	0	0
5	0	926	15	0	25738	25	0	0	35	0	0
6	0	926	16	0	25738	26	0	0	36	0	0
7	0	24812	17	0	25738	27	0	0	37	0	0
8	0	51476	18	0	25738	28	0	0	38	0	0
9	0	25738	19	0	25738	29	0	0	39	0	0
10	0	926	20	0	0	30	0	0	40	0	0
BLOCK CURRENT	TOTAL	BLOCK CURRENT	TOTAL	BLOCK CURRENT	TOTAL	BLOCK CURRENT	TOTAL	BLOCK CURRENT	TOTAL	BLOCK CURRENT	
51	0	0	61	0	25738	71	0	43247	81	0	17509
52	0	51476	62	0	0	72	0	86494	82	0	17509
53	0	25738	63	0	0	73	0	43247	83	0	24276
54	0	25738	64	0	0	74	0	43247	84	0	24276
55	0	25738	65	0	0	75	0	43247	85	0	24276
56	0	25738	66	0	0	76	0	43247	86	0	24276
57	0	0	67	0	51476	77	0	43247	87	0	24276
58	0	25738	68	0	25738	78	0	1462	88	0	32586
59	0	0	69	0	25738	79	0	1462	89	0	32586
60	0	25738	70	0	25738	80	0	41785	90	0	32586
BLOCK CURRENT	TOTAL	BLOCK CURRENT	TOTAL	BLOCK CURRENT	TOTAL	BLOCK CURRENT	TOTAL	BLOCK CURRENT	TOTAL	BLOCK CURRENT	
101	0	0	111	0	0	121	0	0	131	0	0
102	0	0	112	0	0	122	0	0	132	0	0
103	0	0	113	0	0	123	0	0	133	0	0
104	0	0	114	0	0	124	0	0	134	0	0
105	0	0	115	0	0	125	0	0	135	0	0
106	0	0	116	0	0	126	0	0	136	0	0
107	0	0	117	0	0	127	0	0	137	0	0
108	0	0	118	0	0	128	0	0	138	0	0
109	0	0	119	0	0	129	0	0	139	0	0
110	0	0	120	0	0	130	0	0	140	0	0
BLOCK CURRENT	TOTAL	BLOCK CURRENT	TOTAL	BLOCK CURRENT	TOTAL	BLOCK CURRENT	TOTAL	BLOCK CURRENT	TOTAL	BLOCK CURRENT	
151	0	0	161	0	0	171	0	0	181	0	0
152	0	25738	162	0	0	172	0	0	182	0	0
153	0	25738	163	0	3494	173	0	0	183	0	0
154	0	25738	164	0	3494	174	0	6988	184	0	0
155	0	25738	165	0	3494	175	0	3494	185	0	0
156	0	25738	166	0	3494	176	0	3494	186	0	0
157	0	25738	167	0	3494	177	0	3494	187	0	0
158	0	25738	168	0	0	178	0	3494	188	0	0
159	0	0	169	0	0	179	0	0	189	0	0
160	0	0	170	0	0	180	0	0	190	0	0
BLOCK CURRENT	TOTAL	BLOCK CURRENT	TOTAL	BLOCK CURRENT	TOTAL	BLOCK CURRENT	TOTAL	BLOCK CURRENT	TOTAL	BLOCK CURRENT	
201	0	0	211	0	0	221	0	25738	231	0	0
202	C	3494	212	0	0	222	0	25738	232	0	3494
203	0	3494	213	0	0	223	0	25738	233	0	3494
204	0	3494	214	0	0	224	0	25738	234	0	3494
205	0	0	215	0	0	225	0	25738	235	0	3494
206	0	0	216	0	0	226	0	25738	236	0	3494
207	0	0	217	0	0	227	0	25738	237	0	3494
208	0	0	218	0	0	228	0	0	238	0	248
209	0	0	219	0	0	229	0	0	239	0	249

210	0	0	220	0	25738	230	0	0	240	0	0	250	0	0
BLOCK CURRENT	TOTAL													
251	0	261	0	3494	271	0	14775	281	0	0	291	0	14775	
252	0	262	0	0	272	0	14775	282	0	0	292	0	0	
253	0	263	0	0	273	0	0	283	0	0	293	0	0	
254	0	264	0	0	274	0	0	284	0	0	294	0	0	
255	0	265	0	14775	275	0	0	285	0	0	295	0	0	
256	0	266	0	14775	276	0	0	286	0	14775	296	0	0	
257	0	267	0	14775	277	0	0	287	0	14775	297	0	0	
258	0	268	0	14775	278	0	0	288	0	14775	298	0	0	
259	0	3494	269	0	14775	279	0	0	289	0	14775	299	0	
260	0	3494	270	0	14775	280	0	0	290	0	14775	300	0	
BLOCK CURRENT	TOTAL													
301	0	311	0	14776	321	0	14749	331	0	44748	341	0	44848	
302	0	312	0	14749	322	0	44848	332	0	30099	342	0	44549	
303	0	313	0	1	323	0	89696	333	0	30099	343	0	0	
304	0	314	0	2	324	0	44848	334	0	12649	344	0	0	
305	0	29550	315	0	1	325	0	44848	335	0	12649	345	0	
306	0	14775	316	0	1	326	0	44848	336	0	12649	346	0	
307	0	14775	317	0	1	327	0	44848	337	0	12649	347	0	
308	0	0	318	0	29498	328	0	44848	338	0	12649	348	0	
309	0	14775	319	0	14749	329	0	2100	339	0	44848	349	0	
310	0	26	320	0	14749	330	0	2100	340	0	44848	350	0	
BLOCK CURRENT	TOTAL													
351	0	361	0	0	371	0	14148	381	0	0	391	0	26365	
352	0	362	0	0	372	0	26365	382	0	0	392	0	26365	
353	0	363	0	14775	373	0	26365	383	0	0	393	0	26365	
354	0	364	0	14775	374	0	26365	384	0	0	394	0	26365	
355	0	365	0	14775	375	0	26365	385	0	0	395	0	26365	
356	0	0	366	0	25738	376	0	26365	386	0	396	0	26365	
357	0	0	367	0	25738	377	0	26365	387	0	397	0	0	
358	0	0	368	0	25738	378	0	0	388	0	398	0	0	
359	0	0	369	0	40513	379	0	0	389	0	399	0	0	
360	0	0	370	0	40513	380	0	0	390	0	400	0	0	
BLOCK CURRENT	TOTAL													
401	0	411	0	26365	421	0	1	431	0	50530	441	0	24165	
402	0	412	0	26365	422	0	1	432	0	50530	442	0	24160	
403	0	413	0	0	423	0	52678	433	0	50530	443	0	24160	
404	0	414	0	26365	424	0	26339	434	0	2173	444	0	50530	
405	0	0	415	0	26	425	0	26339	435	0	2173	445	0	
406	0	0	416	0	26366	426	0	26339	436	0	48357	446	0	
407	0	0	417	0	26339	427	0	50530	437	0	24191	447	0	
408	0	0	418	0	1	428	0	101060	438	0	24191	448	0	
409	0	0	419	0	2	429	0	50530	439	0	24166	449	0	
410	0	52730	420	0	1	430	0	50530	440	0	24166	450	0	
BLOCK CURRENT	TOTAL													
451	0	0	461	0	0	471	0	0	481	0	0	491	0	
452	0	0	462	0	0	472	0	0	482	0	0	492	0	
453	0	0	463	0	0	473	0	0	483	0	0	493	0	
454	0	0	464	0	0	474	0	0	484	0	0	494	0	
455	0	0	465	0	0	475	0	0	485	0	0	495	0	
456	0	0	466	0	0	476	0	0	486	0	0	496	0	
457	0	0	467	0	0	477	0	0	487	0	0	497	0	
458	0	0	468	0	0	478	0	0	488	0	0	498	0	
459	0	0	469	0	0	479	0	0	489	0	0	499	0	
460	0	0	470	0	0	480	0	0	490	0	0	500	0	

BLOCK CURRENT	TOTAL										
501	0	511	0	521	0	531	0	541	0	542	0
502	0	512	0	522	0	532	0	543	0	544	0
503	0	513	0	523	0	533	0	545	0	546	0
504	0	514	0	524	0	534	0	547	0	548	0
505	0	515	0	525	0	535	0	549	0	550	0
506	0	516	0	526	0	536	0	550	0	551	0
507	0	517	0	527	0	537	0	552	0	553	0
508	0	518	0	528	0	538	0	554	0	555	0
509	0	519	0	529	0	539	0	556	0	557	0
510	0	520	0	530	0	540	0	558	0	559	0

BLOCK CURRENT	TOTAL										
551	0	561	0	571	0	581	0	591	0	592	0
552	0	562	0	572	0	582	0	593	0	594	0
553	0	563	0	573	0	583	1	595	0	596	0
554	0	564	0	574	0	584	0	597	0	598	0
555	0	565	0	575	0	585	0	599	0	600	0
556	0	566	0	576	0	586	0	600	0	601	0
557	0	567	0	577	0	587	0	602	0	603	0
558	0	568	0	14775	578	0	197	588	0	604	0
559	0	569	0	26365	579	0	204	589	0	605	0
560	0	570	0	580	0	590	0	606	1	607	1

BLOCK CURRENT	TOTAL								
601	0	28							
602	0	28							
603	0	28							
604	0	28							
605	0	28							
606	0	1							
607	0	1							

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\*       FACILITIES  
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FACILITY	NUMBER	-AVERAGE UTILIZATION DURING-					TRANSACTION NUMBER	SEIZING	PREEMPTING
		ENTRIES	AVERAGE TIME/TRAN	TOTAL TIME	AVAIL. TIME	UNAVAIL. TIME			
4	128582	.000	.000				100.0		
16	76869	.000	.000				100.0		
50	204	69.422	.842				100.0	6	

## STORAGES

STORAGE	CAPACITY	-AVERAGE UTILIZATION DURING-										CURRENT CONTENTS	MAXIMUM CONTENTS
		AVERAGE CONTENTS	ENTRIES	AVERAGE TIME/UNIT	TOTAL TIME	AVAIL.	UNAVAIL.	CURRENT TIME	PERCENT STATUS	CURRENT AVAILABILITY			
RAUEX	36000	.000	8674698	.000	.000				100.0		1800		
IOEXP	36000	.000	8674698	.000	.000				100.0		1800		
CPUEX	288	284.355	288	16587.406	.987				100.0	288	288		
HREC	36000000	9877.769	20397390	8.136	.000				100.0		7722C6		
VKREC	36000000	467.540	965472	8.136	.000				100.0		36506		
KUSIG	1080000	.000	140960572	.000	.000				100.0		34200		
RAUSU	36000	.000	14987124	.000	.000				100.0		3600		
IOSUB	36000	.000	14987124	.000	.000				100.0		3600		
CPUSU	288	284.355	288	16587.406	.987				100.0	288	288		

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\*                   QUEUES  
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QUEUE	MAXIMUM CONTENTS	AVERAGE CONTENTS	TOTAL ENTRIES	ZERO ENTRIES	PERCENT ZEROS	AVERAGE TIME/TRANS	S AVERAGE TIME/TRANS	TABLE NUMBER	CURRENT CONTENTS
4	1	.000	40487	40487	100.0	.000	.000		
16	1	.000	26339	26339	100.0	.000	.000		

S AVERAGE TIME/TRANS = AVERAGE TIME/TRANS EXCLUDING ZERO ENTRIES

USER CHAIN	TOTAL ENTRIES	AVERAGE LINES/TRANS	CURRENT CONTENTS	AVERAGE CONTENTS	MAXIMUM CONTENTS
4	77439	• 892	5	4.114	54
16	50532	3.210	2	9.655	28

USER CHAINS

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 \*  
 \* FULLWORD SAVEVALUES  
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 \*\*\*\*

| NUMBER - CONTENTS |
|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| 4 861932          | 16 1497871        | 20 297            | 5 16689           | 21 101            | 5 108             | 22 102            | 44 23             |
| 24 44             | 25 297            | 50 1800           | 106 1800          | 107 1800          | 108 1800          | 109 1800          | 103 22            |
| 104 1800          | 105 1800          | 111 1800          | 112 1800          | 113 1800          | 114 1800          | 115 1800          | 100 1800          |
| 110 1800          | 111 1800          | 117 1800          | 118 1800          | 119 1800          | 120 1800          | 121 1800          | 109 1800          |
| 116 1800          | 117 1800          | 123 1800          | 124 1800          | 125 1800          | 126 1800          | 127 1800          | 115 1800          |
| 122 1800          | 131 108           | 132 1800          | 138 1800          | 139 1800          | 140 1800          | 141 1800          | 135 1800          |
| 128 1800          | 137 1800          | 143 1800          | 144 1800          | 145 1800          | 146 1800          | 147 1800          | 140 1800          |
| 136 1800          | 149 1800          | 155 1800          | 156 1800          | 157 1800          | 158 1800          | 159 1800          | 153 1800          |
| 142 1800          | 155 1800          | 163 288           | 164 288           | 165 288           | 166 288           | 167 288           | 160 288           |
| 154 1800          | 169 288           | 175 288           | 176 288           | 177 288           | 178 288           | 179 288           | 173 288           |
| 162 288           | 175 288           | 181 288           | 182 288           | 183 288           | 184 288           | 185 288           | 177 288           |
| 168 288           | 187 288           | 188 288           | 252 34200         | 253 34200         | 254 34200         | 255 34200         | 200 34200         |
| 174 288           | 256 34200         | 257 34200         | 258 34200         | 264 34200         | 265 34200         | 266 34200         | 266 34200         |
| 180 288           | 262 34200         | 263 34200         | 269 34200         | 270 34200         | 271 34200         | 272 34200         | 272 34200         |
| 186 288           | 268 34200         | 274 34200         | 275 34200         | 276 34200         | 277 34200         | 278 34200         | 278 34200         |
| 255 34200         | 274 34200         | 282 3600          | 283 3600          | 284 3600          | 285 3600          | 286 3600          | 286 3600          |
| 261 34200         | 294 3600          | 288 3600          | 289 3600          | 290 3600          | 291 3600          | 292 3600          | 292 3600          |
| 267 34200         | 300 3600          | 294 3600          | 295 3600          | 296 3600          | 297 3600          | 298 3600          | 298 3600          |
| 273 34200         | 306 3600          | 301 3600          | 302 3600          | 303 3600          | 304 3600          | 304 3600          | 304 3600          |
| 281 108           | 306 3600          | 307 3600          | 308 3600          | 309 3600          | 310 3600          | 311 3600          | 312 3600          |
| 287 3600          | 314 3600          | 315 3600          | 316 3600          | 317 3600          | 318 3600          | 319 3600          | 310 3600          |
| 293 3600          | 320 3600          | 321 3600          | 322 3600          | 323 3600          | 324 3600          | 324 3600          | 324 3600          |
| 299 3600          | 326 3600          | 327 3600          | 328 3600          | 329 3600          | 330 3600          | 330 3600          | 330 3600          |
| 305 3600          | 332 3600          | 333 3600          | 334 3600          | 335 3600          | 336 3600          | 336 3600          | 336 3600          |
| 313 3600          | 338 3600          | 341 3600          | 342 3600          | 343 3600          | 344 3600          | 344 3600          | 344 3600          |
| 319 3600          | 346 288           | 347 288           | 348 288           | 349 288           | 350 288           | 350 288           | 288 288           |
| 325 3600          | 352 288           | 353 288           | 354 288           | 355 288           | 356 288           | 356 288           | 288 288           |
| 331 3600          | 358 288           | 359 288           | 360 288           | 361 288           | 362 288           | 362 288           | 288 288           |
| 337 3600          | 364 288           | 288 288           | 288 288           | 288 288           | 288 288           | 288 288           | 288 288           |
| 345 288           | 364 288           | 365 288           | 366 288           | 367 288           | 368 288           | 368 288           | 288 288           |
| 351 288           | 368 288           | 369 288           | 370 288           | 371 288           | 372 288           | 372 288           | 288 288           |
| 357 288           | 374 288           | 375 288           | 376 288           | 377 288           | 378 288           | 378 288           | 288 288           |
| 363 288           | 374 288           | 375 288           | 376 288           | 377 288           | 378 288           | 378 288           | 288 288           |

\* \* \* \* \*  
 FULLWORD MATRICES  
 \* \* \* \* \*

FULLWORD MATRIX		2									
ROW/COLUMN		1	2	3	4	5	6	7	8	9	10
1		417	422	425	500	503	561	583	594	600	728
ROW/COLUMN		11	12	13	14	15	16	17	18	19	20
1		742	761	772	900	906	928	950	1106	1117	1283
ROW/COLUMN		21	22	23	24	25	26	27	28	29	30
1		1286	1339	1344	1411	1425	1439	1444	1500	1511	1572
ROW/COLUMN		31	32	33	34	35	36	37	38	39	40
1		1592	1606	1608	1672	1675	1731	1758	1897	1914	1928
ROW/COLUMN		41	42	43	44	45	46	47	48	49	50
1		1939	2039	2072	2094	2117	2272	2289	2447	2453	2511
ROW/COLUMN		51	52	53	54	55	56	57	58	59	60
1		2517	2586	2594	2611	2617	2672	2683	2728	2739	2797

RELATIVE CLOCK		1680C ABSOLUTE CLOCK				16800								
BLOCK COUNTS		BLOCK CURRENT	TOTAL	BLOCK CURRENT	TOTAL	BLOCK CURRENT	TOTAL	BLOCK CURRENT	TOTAL	BLOCK CURRENT	TOTAL			
1	0	929	11	0	51476	21	0	31	0	0	41	0	0	
2	0	929	12	0	25738	22	0	32	0	25738	42	0	0	
3	0	3	13	0	25738	23	0	33	0	25738	43	0	0	
4	0	926	14	0	25738	24	0	34	0	25738	44	0	0	
5	0	926	15	0	25738	25	0	35	0	25738	45	0	0	
6	0	24812	16	0	25738	26	0	36	0	25738	46	0	0	
7	0	51476	17	0	25738	27	0	37	0	25738	47	0	0	
8	0	25738	18	0	25738	28	0	38	0	0	48	0	0	
9	0	926	19	0	0	29	0	39	0	0	49	0	0	
10	0	51476	20	0	0	30	0	40	0	0	50	0	0	
BLOCK CURRENT		BLOCK CURRENT	TOTAL	BLOCK CURRENT	TOTAL	BLOCK CURRENT	TOTAL	BLOCK CURRENT	TOTAL	BLOCK CURRENT	TOTAL			
51	0	51476	61	0	0	71	0	86494	81	0	17509	91	0	0
52	0	25738	62	0	0	72	0	43247	82	0	24276	92	0	0
53	0	25738	63	0	0	73	0	43247	83	0	24276	93	0	0
54	0	25738	64	0	0	74	0	43247	84	0	24276	94	0	0
55	0	25738	65	0	0	75	0	43247	85	0	24276	95	0	0
56	0	C	66	0	51476	76	0	43247	86	0	24276	96	0	0
57	0	25738	67	0	25738	77	0	1462	87	0	32586	97	0	0
58	0	C	68	0	25738	78	0	1462	88	0	32586	98	0	0
59	0	25738	69	0	25738	79	0	41785	89	0	32586	99	0	0
60	0	25738	70	0	43247	80	0	17509	90	0	32586	100	0	0
BLOCK CURRENT		BLOCK CURRENT	TOTAL	BLOCK CURRENT	TOTAL	BLOCK CURRENT	TOTAL	BLOCK CURRENT	TOTAL	BLOCK CURRENT	TOTAL			
101	0	C	111	0	0	121	0	0	131	0	0	141	0	0
102	0	C	112	0	0	122	0	0	132	0	0	142	0	0
103	0	C	113	0	0	123	0	0	133	0	0	143	0	0
104	0	0	114	0	0	124	0	0	134	0	0	144	0	0
105	0	C	115	0	0	125	0	0	135	0	0	145	0	0
106	0	C	116	0	0	126	0	0	136	0	0	146	0	0
107	0	C	117	0	0	127	0	0	137	0	0	147	0	0
108	0	0	118	0	0	128	0	0	138	0	0	148	0	0
109	0	C	119	0	0	129	0	0	139	0	0	149	0	0
110	0	0	120	0	0	130	0	0	140	0	0	150	0	0
BLOCK CURRENT		BLOCK CURRENT	TOTAL	BLOCK CURRENT	TOTAL	BLOCK CURRENT	TOTAL	BLOCK CURRENT	TOTAL	BLOCK CURRENT	TOTAL			
151	0	25738	161	0	0	171	0	0	181	0	0	191	0	0
152	0	25738	162	0	3494	172	0	6988	182	0	0	192	0	0
153	0	25738	163	0	3494	173	0	3494	183	0	0	193	0	0
154	0	25738	164	0	3494	174	0	3494	184	0	0	194	0	0
155	0	25738	165	0	3494	175	0	3494	185	0	0	195	0	0
156	0	25738	166	0	0	176	0	3494	186	0	0	196	0	0
157	0	25738	167	0	0	177	0	0	187	0	0	197	0	0
158	0	C	168	0	0	178	0	0	188	0	0	198	0	0
159	0	C	169	0	0	179	0	0	189	0	0	199	0	0
160	0	0	170	0	0	180	0	0	190	0	0	200	0	3496
BLOCK CURRENT		BLOCK CURRENT	TOTAL	BLOCK CURRENT	TOTAL	BLOCK CURRENT	TOTAL	BLOCK CURRENT	TOTAL	BLOCK CURRENT	TOTAL			
201	0	3494	211	0	0	221	0	25738	231	0	3494	241	0	0
202	0	3494	212	0	0	222	0	25738	232	0	3494	242	0	6988
203	0	C	213	0	0	223	0	25738	233	0	3494	243	0	3494
204	0	0	214	0	0	224	0	25738	234	0	0	244	0	3494
205	0	0	215	0	0	225	0	25738	235	0	0	245	0	3494
206	0	0	216	0	0	226	0	0	236	0	0	246	0	3494
207	0	0	217	0	0	227	0	0	237	0	0	247	0	0
208	0	0	218	0	25738	228	0	0	238	0	0	248	0	0
209	0	0	219	0	25738	229	0	0	239	0	0	249	0	0

210	0	0	220	0	25738	230	0	3494	240	0	0	250	0	0
BLOCK CURRENT	TOTAL													
251	0	0	261	0	0	271	0	0	281	0	0	291	0	0
252	0	0	262	0	14775	272	0	0	282	0	0	292	0	0
253	0	0	263	0	14775	273	0	0	283	0	14775	293	0	0
254	0	0	264	0	14775	274	0	0	284	0	14775	294	0	0
255	0	0	265	0	14775	275	0	0	285	0	14775	295	0	0
256	0	3494	266	0	14775	276	0	0	286	0	14775	296	0	0
257	0	3494	267	0	14775	277	0	0	287	0	14775	297	0	0
258	0	3494	268	0	14775	278	0	0	288	0	14775	298	0	0
259	0	0	269	0	14775	279	0	0	289	0	0	299	0	0
260	0	0	270	0	0	280	0	0	290	0	0	300	0	0
BLOCK CURRENT	TOTAL													
301	0	0	311	0	2	321	0	44848	331	0	12649	341	0	0
302	0	29550	312	0	1	322	0	44848	332	0	12649	342	0	0
303	0	14775	313	0	1	323	0	44848	333	0	12649	343	0	0
304	0	14775	314	0	1	324	0	44848	334	0	12649	344	0	0
305	0	0	315	0	29498	325	0	44848	335	0	12649	345	0	0
306	0	14775	316	0	14749	326	0	2100	336	0	44848	346	0	0
307	0	26	317	0	14749	327	0	2100	337	0	44848	347	0	0
308	0	14776	318	0	14749	328	0	42748	338	0	44848	348	0	0
309	0	14749	319	0	44848	329	0	30099	339	0	44848	349	0	0
310	0	1	320	0	89696	330	0	30099	340	0	0	350	0	0
BLOCK CURRENT	TOTAL													
351	0	0	361	0	14775	371	0	26365	381	0	0	391	0	26305
352	0	0	362	0	14775	372	0	26365	382	0	0	392	0	26305
353	0	0	363	0	25738	373	0	26365	383	0	0	393	0	26305
354	0	0	364	0	25738	374	0	26365	384	0	0	394	0	0
355	0	0	365	0	25738	375	0	0	385	0	0	395	0	0
356	0	0	366	0	40513	376	0	0	386	0	0	396	0	0
357	0	0	367	0	40513	377	0	0	387	0	0	397	0	0
358	0	0	368	0	14148	378	0	0	388	0	26365	398	0	0
359	0	0	369	0	26365	379	0	0	389	0	26365	399	0	0
360	0	14775	370	0	26365	380	0	0	390	0	26305	400	0	0
BLOCK CURRENT	TOTAL													
401	0	0	411	0	26365	421	0	26339	431	0	2173	441	0	50530
402	0	0	412	0	26	422	0	26339	432	0	2173	442	0	50530
403	0	0	413	0	26366	423	0	26339	433	0	48357	443	0	50530
404	0	0	414	0	26339	424	0	50530	434	0	4191	444	0	50530
405	0	0	415	0	1	425	0	101060	435	0	24191	445	0	0
406	0	0	416	0	2	426	0	50530	436	0	24166	446	0	0
407	0	52730	417	0	1	427	0	50530	437	0	24166	447	0	0
408	0	26365	418	0	1	428	0	50530	438	0	24166	448	0	0
409	0	26365	419	0	1	429	0	50530	439	0	24166	449	0	0
410	0	0	420	0	52678	440	0	50530	440	0	24166	450	0	0
BLOCK CURRENT	TOTAL													
451	0	0	461	0	0	471	0	0	481	0	0	491	0	0
452	0	0	462	0	0	472	0	0	482	0	0	492	0	0
453	0	0	463	0	0	473	0	0	483	0	0	493	0	0
454	0	0	464	0	0	474	0	0	484	0	0	494	0	0
455	0	0	465	0	0	475	0	0	485	0	0	495	0	0
456	0	0	466	0	0	476	0	0	486	0	0	496	0	0
457	0	0	467	0	0	477	0	0	487	0	0	497	0	0
458	0	0	468	0	0	478	0	0	488	0	0	498	0	0
459	0	0	469	0	0	479	0	0	489	0	0	499	0	0
460	0	0	470	0	0	480	0	0	490	0	0	500	0	0

BLOCK	CURRENT	TOTAL												
501	0	C	511	0	0	521	0	0	531	0	0	541	6	0
502	0	C	512	0	0	522	0	0	532	0	0	542	0	0
503	0	0	513	0	0	523	0	0	533	0	0	543	0	0
504	0	C	514	0	0	524	0	0	534	0	0	544	0	0
505	0	C	515	0	0	525	0	0	535	0	0	545	0	0
506	0	C	516	0	0	526	0	0	536	0	0	546	0	0
507	0	0	517	0	0	527	0	0	537	0	0	547	0	0
508	0	0	518	0	0	528	0	0	538	0	0	548	0	0
509	0	0	519	0	0	529	0	0	539	0	0	549	0	0
510	0	0	520	0	0	530	0	0	540	0	0	550	0	0

BLOCK	CURRENT	TOTAL	BLOCK	CURRENT	TOTAL	BLOCK	CURRENT	TOTAL	BLOCK	CURRENT	TOTAL	BLOCK	CURRENT	TOTAL
551	0	0	561	0	0	571	0	7	581	0	203	591	0	20
552	0	0	562	0	0	572	0	7	582	0	6	592	0	28
553	0	0	563	0	0	573	0	7	583	0	6	593	0	28
554	0	0	564	0	14775	574	0	197	584	0	6	594	0	20
555	0	0	565	0	-26365	575	0	204	585	0	6	595	0	20
556	0	0	566	0	0	576	0	204	586	0	6	596	0	28
557	0	0	567	0	0	577	0	204	587	0	6	597	0	28
558	0	0	568	0	1	578	0	204	588	0	197	598	0	28
559	0	0	569	0	204	579	1	204	589	0	197	599	0	20
560	0	0	570	0	204	580	0	203	590	0	197	600	0	28

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\*           FACILITIES    \*  
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FACILITY	NUMBER	AVERAGE UTILIZATION DURING			CURRENT STATUS	PERCENT AVAILABILITY	TRANSACTION NUMBER
		AVERAGE ENTRIES	AVERAGE TIME/TRAN	TOTAL TIME			
4	128582	.000	.000			100.0	
10	76869	.000	.000			100.0	
50	204	69.422	.842			100.0	6

## STORAGES

STORAGE	CAPACITY	AVERAGE CONTENTS	ENTRIES	AVERAGE UTILIZATION DURING			CURRENT STATUS	PERCENT AVAILABILITY	CURRENT CONTENTS	MAXIMUM CONTENTS
				AVERAGE TIME/UNIT	TOTAL TIME	AVAIL. TIME				
RAUEX	3600C	.000	8674698	.000	.000			100.0		1000
IEZXP	3600C	.000	8674698	.000	.000			100.0		1000
CPUEX	288	284.355	288	10587.406	.987			100.0		288
HRREC	45000000C	9877.769	20397390	8.136	.000			100.0		772200
VRREC	36000000C	467.540	965472	8.136	.000			100.0		36566
RUSIG	10800000	.000	140960572	.060	.000			100.0		34200
RAUSU	3600C	.000	14987124	.000	.000			100.0		3600
IGSUB	3600C	.000	14937124	.000	.000			100.0		3600
CPUSU	288	284.355	288	16587.406	.987			100.0		288

\* \* \* \* \* QUEUES \* \* \* \* \*

QUEUE	MAXIMUM CONTENTS	AVERAGE CONTENTS	TOTAL ENTRIES	ZERO ENTRIES	PERCENT ZEROS	AVERAGE TIME/TRANS	SAVERAGE TIME/TRANS	TABLE NUMBER	CURRENT CONTENTS
4	1	.000	40487	40487	100.0	.000	.000		
16	1	.000	26339	26339	100.0	.000	.000		

\$AVERAGE TIME/TRANS = AVERAGE TIME/TRANS EXCLUDING ZERO ENTRIES

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\* \* USER CHAINS \* \*  
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USER CHAIN	TOTAL ENTRIES	AVERAGE TIME/TRANS	CURRENT CONTENTS	AVERAGE CONTENTS	MAXIMUM CONTENTS
4	77439	.892	5	4.114	54
16	56532	3.210	2	9.555	28

\* FULLWORD SAVEVALUES \*

NUMBER	CONTENTS										
4	861932	16	1497871	20	5	21	5	22	44	23	22
24	44	25	297	50	16689	101	108	102	1800	103	1600
104	1800	105	1800	106	1800	107	1800	108	1800	109	1800
110	1800	111	1800	112	1800	113	1800	120	1800	121	1800
116	1800	117	1800	118	1800	119	1800	126	1800	127	1800
122	1800	123	1800	124	1800	125	1800	134	1800	135	1800
128	1800	131	108	132	1800	133	1800	140	1800	141	1800
130	1800	137	1800	138	1800	139	1800	152	1800	153	1800
142	1800	143	1800	144	1800	145	1800	158	1800	161	1800
148	1800	149	1800	150	1800	151	1800	166	200	167	200
154	1800	155	1800	156	1800	157	1800	172	200	173	200
162	200	163	200	164	200	165	200	176	200	177	200
168	200	169	200	170	200	171	200	178	200	179	200
174	200	175	200	176	200	177	200	184	200	185	200
180	200	181	200	182	200	183	200	252	34200	253	34200
186	200	187	200	188	200	189	200	259	34200	254	34200
255	34200	256	34200	257	34200	258	34200	259	34200	260	34200
261	34200	262	34200	263	34200	264	34200	265	34200	266	34200
267	34200	268	34200	269	34200	270	34200	271	34200	272	34200
273	34200	274	34200	275	34200	276	34200	277	34200	278	34200
281	3600	282	3600	283	3600	284	3600	285	3600	286	3600
287	3600	288	3600	289	3600	290	3600	291	3600	292	3600
293	3600	294	3600	295	3600	296	3600	297	3600	298	3600
299	3600	300	3600	301	3600	302	3600	303	3600	304	3600
305	3600	306	3600	307	3600	308	3600	311	3600	312	3600
313	3600	314	3600	315	3600	316	3600	317	3600	318	3600
319	3600	320	3600	321	3600	322	3600	323	3600	324	3600
325	3600	326	3600	327	3600	328	3600	329	3600	330	3600
331	3600	332	3600	333	3600	334	3600	335	3600	336	3600
337	3600	338	3600	341	3600	342	3600	343	3600	344	3600
345	200	346	200	347	200	348	200	349	200	350	200
351	200	352	200	353	200	354	200	355	200	356	200
357	200	358	200	359	200	360	200	361	200	362	200
363	200	364	200	365	200	366	200	367	200	368	200

## RELATIVE CLOCK

## 1680C ABSOLUTE CLOCK

## 1680C

## BLOCK COUNTS

## BLOCK CURRENT

	TOTAL	BLOCK CURRENT	TOTAL						
1	C	929	11	C	51476	21	0	6	G
2	C	929	12	C	25738	22	0	34	L
3	O	3	13	C	25736	23	0	33	U
4	C	926	14	C	25738	24	0	34	C
5	C	926	15	C	25738	25	0	35	C
6	O	24812	16	C	25738	26	0	35	O
7	C	51476	17	C	25738	27	0	37	G
8	C	25738	18	C	25738	28	0	38	C
9	C	926	19	C	25738	29	0	37	U
10	C	51476	20	C	25738	30	0	40	C

## BLOCK CURRENT

	TOTAL	BLOCK CURRENT	TOTAL						
51	D	51476	61	C	0	71	U	17496	91
52	C	25738	62	G	0	72	0	24206	92
53	C	25738	63	C	0	73	0	24206	93
54	C	25738	64	C	0	74	C	24206	94
55	C	25738	65	C	0	75	C	24206	95
56	C	0	66	O	51476	76	0	24206	76
57	O	25738	67	O	25738	77	0	1472	87
58	C	0	68	O	25738	78	0	1472	88
59	C	25738	69	O	25738	79	6	41702	89
60	C	25738	70	O	43234	80	0	17496	90

## BLOCK CURRENT

	TOTAL	BLOCK CURRENT	TOTAL						
101	C	0	111	U	0	121	0	131	0
102	C	C	112	C	0	122	C	132	U
103	G	6	113	O	0	123	0	133	O
104	O	0	114	O	0	124	0	134	O
105	C	C	115	O	0	125	C	135	C
106	C	C	116	G	C	126	0	136	O
107	C	O	117	C	0	127	0	137	O
108	C	C	118	G	C	128	0	138	O
109	O	G	119	O	0	129	0	139	O
110	O	C	120	G	0	130	U	140	U

## BLOCK CURRENT

	TOTAL	BLOCK CURRENT	TOTAL						
151	G	25738	101	O	0	171	0	181	0
152	C	25738	152	J	3494	172	U	6988	182
153	C	25738	103	C	3494	173	0	3494	183
154	O	25738	164	O	3494	174	0	3494	184
155	C	25738	105	C	3494	175	0	3494	185
156	C	45738	106	C	0	176	0	3494	186
157	C	25738	107	O	0	177	0	187	0
158	C	0	108	C	0	178	C	188	U
159	O	0	109	G	0	179	U	189	U
160	O	O	170	O	0	180	0	190	0

## BLOCK CURRENT

	TOTAL	BLOCK CURRENT	TOTAL						
201	C	3494	211	O	0	221	0	231	U
202	C	3494	212	C	0	222	C	232	U
203	O	0	213	C	0	223	0	233	U
204	C	C	214	U	0	224	C	234	U
205	O	0	215	U	0	225	0	235	U
206	C	C	216	C	0	226	U	236	U
207	C	C	217	U	0	227	0	237	0
208	C	O	218	G	25738	228	0	238	0
209	O	0	219	O	25738	229	0	239	0

BLOCK CURRENT	TOTAL								
251	U	C	201	0	0	271	C	281	U
252	C	C	202	0	14775	272	0	202	0
253	C	C	203	0	14775	273	0	283	0
254	U	0	204	0	14775	274	0	204	0
255	C	C	205	0	14775	275	0	205	0
256	0	3494	206	0	14775	276	0	206	0
257	C	3494	207	0	14775	277	0	287	0
258	0	3494	208	C	14775	278	0	288	0
259	C	C	209	0	14775	279	0	289	U
260	C	C	270	0	0	280	0	290	0
BLOCK CURRENT	TOTAL								
301	C	C	311	0	2	321	C	44848	331
302	C	24556	312	0	1	322	0	44848	332
303	C	14775	313	0	1	323	0	44848	333
304	U	14775	314	0	1	324	0	44848	334
305	0	C	315	0	29472	325	0	44848	335
306	0	14775	316	0	14736	326	0	2950	336
307	0	39	317	0	14736	327	0	2090	337
308	0	14776	318	0	14736	328	0	42755	338
309	C	14736	319	0	44848	329	0	30112	339
310	C	1	320	C	89890	330	0	30112	340
BLOCK CURRENT	TOTAL								
351	C	0	301	0	14775	371	0	26305	381
352	0	C	302	0	14775	372	0	26305	382
353	C	C	303	0	25738	373	0	26305	383
354	U	C	304	0	25758	374	0	26305	384
355	C	C	305	0	25738	375	0	305	0
356	C	C	306	0	40513	376	0	380	0
357	C	C	307	0	40513	377	0	387	0
358	0	C	308	0	14148	378	0	388	0
359	C	U	309	0	26305	379	0	307	0
360	C	14775	370	0	26305	380	0	390	0
BLOCK CURRENT	TOTAL								
401	C	C	411	0	26305	421	0	20326	431
402	C	C	412	0	39	422	0	20326	432
403	0	0	413	C	26366	423	0	20326	433
404	C	C	414	C	26326	424	0	51139	434
405	C	C	415	0	1	425	0	10278	435
406	C	C	416	0	2	426	0	51139	436
407	C	52730	417	C	1	427	0	51139	437
408	0	28325	418	0	1	428	0	51139	438
409	0	26365	419	C	1	429	0	51139	439
410	C	C	420	C	52692	430	0	51139	440
BLOCK CURRENT	TOTAL								
451	0	C	461	0	C	471	0	0	481
452	C	C	462	0	0	472	0	0	482
453	0	0	463	0	C	473	0	0	483
454	C	C	464	0	5	474	0	0	484
455	C	C	465	0	0	475	0	0	485
456	C	C	466	0	0	476	0	0	486
457	C	C	467	0	0	477	0	0	487
458	C	C	468	0	0	478	0	0	488
459	0	C	469	0	0	479	0	0	489
460	C	C	470	0	0	480	0	0	490

BLOCK CURRENT	TOTAL								
521	0	511	0	521	0	531	0	541	0
522	0	512	0	522	0	532	0	542	0
523	0	513	0	523	0	533	0	543	0
524	0	514	0	524	0	534	0	544	0
525	0	515	0	525	0	535	0	545	0
526	0	516	0	526	0	536	0	546	0
527	0	517	0	527	0	537	0	547	0
528	0	518	0	528	0	538	0	548	0
529	0	519	0	529	0	539	0	549	0
530	0	520	0	530	0	540	0	550	0

BLOCK CURRENT	TOTAL								
551	0	531	0	571	0	581	0	591	0
552	0	532	0	572	0	582	0	592	0
553	0	533	0	573	0	583	0	593	0
554	0	534	0	14775	574	584	0	594	0
555	0	535	0	20365	575	585	0	595	0
556	0	536	0	576	0	586	0	596	0
557	0	537	0	577	0	587	0	597	0
558	0	538	0	578	0	588	0	598	0
559	0	539	0	204	579	589	0	599	0
560	0	570	0	204	580	590	0	600	0

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651	0	28							
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AVERAGE UTILIZATION DURING				TRANSACTION NUMBER			
FACILITY	NUMBER	AVERAGE	TOTAL	CURRENT	PERCENT	TRANSACTION	NUMBER
ENTRIES		TIME/FRAUD	AVAIL.	TIME	AVAILABILITY	SEIZING	PREPMTING
4	128556	.000	.000	100.0	100.0	0	0
19	77403	.000	.000	100.0	100.0	0	0
52	254	.040	.422	94.2	94.2	0	0

STORAGE	CAPACITY	AVERAGE ENTRIES	AVERAGE TIME/UNIT	AVERAGE UTILIZATION DURING TIME	PERCENT UNAVAIL.	CURRENT STATUS	MAXIMUM CAPACITY
LPUSX	36000	8074698	.030	.000	100.0	100.0	100.0
LPEX	36000	8674698	.030	.000	100.0	100.0	100.0
LPUEX	432	420.365	422	10550.859	986	100.0	100.0
LPNEC	360000000	25777769	23977579	0.136	999	100.0	30668
LPREC	36000000	467.540	905472	0.136	999	100.0	34200
LPSL	180000	145906572	145906572	0.000	0.000	100.0	3000
LPNSU	30000	0.00	14907124	0.000	0.000	100.0	3000
LPSO	432	426.365	432	16580.859	986	100.0	100.0
LPUSU	432	426.365	432	16580.859	986	100.0	100.0

QUEUES

QUEUE	MAXIMUM CONTENTS	AVERAGE CONTENTS	TOTAL ENTRIES	ZERO ENTRIES	PERCENT ZERO ENTRIES	AVERAGE TIME/TRANS	AVERAGE TIME/TRANS	TABLE NUMBER	SAVAGEAGE	CURRENT CONTENTS
4	1	.000	46474	40474	100.0	.000	.000	.000	.000	.000

AVERAGE TIME/TRANS = AVERAGE TIME/TRANS EXCLUDING ZERO ENTRIES

## USER CHAIN      USER CHAIN

	TOTAL TRANSACTIONS	AVERAGE TIME/TRANS	CURRENT CONTENTS	AVERAGE CONTENTS	MAXIMUM CONTENTS
4	77423	0.77	5	4.503	54
5	51143	4.232	4	13.637	41
10					

\* FULLWORD SAVEVALUES \*

NUMBER	CONTENTS										
4	661931	16	1497727	20	59	10539	101	5	21	22	44
24	44	25	69	50	10539	101	105	102	1800	103	20
104	1800	105	1800	100	1800	107	1800	108	1800	109	1800
110	1800	111	1800	112	1800	113	1800	114	1800	115	1800
116	1800	117	1800	118	1800	119	1800	120	1800	121	1800
122	1800	123	1800	124	1800	125	1800	126	1800	127	1800
128	1800	131	1800	132	1800	133	1800	134	1800	135	1800
130	1800	137	1800	138	1800	139	1800	140	1800	141	1800
142	1800	143	1800	144	1800	145	1800	146	1800	147	1800
145	1800	149	1800	156	1800	151	1800	152	1800	153	1800
154	1803	155	1800	156	1800	157	1800	158	1800	159	1800
162	432	163	432	164	432	165	432	166	432	167	432
168	432	169	432	170	432	171	432	172	432	173	432
174	432	175	432	176	432	177	432	178	432	179	432
180	432	181	432	182	432	183	432	184	432	185	432
185	432	187	432	188	432	189	432	190	432	191	432
255	34200	256	34200	257	34200	258	34200	259	34200	260	34200
261	34200	262	34200	263	34200	264	34200	265	34200	266	34200
267	34200	268	34200	269	34200	270	34200	271	34200	272	34200
273	34200	274	34200	275	34200	276	34200	277	34200	278	34200
281	108	282	3600	283	3600	284	3600	285	3600	286	3600
297	3003	298	3600	299	3600	300	3600	291	3600	292	3600
299	3003	294	3600	295	3600	296	3600	297	3600	298	3600
305	3600	306	3600	307	3600	308	3600	311	3600	312	3600
313	3600	314	3600	315	3600	316	3600	317	3600	318	3600
319	3600	320	3600	321	3600	322	3600	323	3600	324	3600
325	3600	326	3600	327	3600	328	3600	329	3600	330	3600
331	3600	332	3600	333	3600	334	3600	335	3600	336	3600
337	3600	338	3600	341	432	342	432	343	432	344	432
345	432	346	432	347	432	348	432	349	432	350	432
351	432	352	432	353	432	354	432	355	432	356	432
357	432	358	432	359	432	360	432	361	432	362	432
363	432	364	432	365	432	366	432	367	432	368	432

RELATIVE CLOCK	16800	ABSOLUTE CLOCK	16800	RELATIVE CLOCK	16800	ABSOLUTE CLOCK	16800						
BLOCK COUNTS	TOTAL	BLOCK CURRENT	TOTAL	BLOCK COUNTS	TOTAL	BLOCK CURRENT	TOTAL	BLOCK COUNTS	TOTAL	BLOCK CURRENT	TOTAL		
1	0	929	11	0	51470	21	0	0	31	2	41	0	
2	0	929	12	0	25738	22	0	0	32	0	42	0	
3	0	93	13	0	25738	23	0	0	33	0	43	0	
4	0	926	14	0	25738	24	0	0	34	0	44	0	
5	0	926	15	0	25738	25	0	0	35	0	45	0	
6	0	24812	16	0	25738	26	0	0	36	0	46	0	
7	0	31470	17	0	25738	27	0	0	37	0	47	0	
8	0	25738	18	0	25738	28	0	0	38	0	48	0	
9	0	926	19	0	0	29	0	0	39	0	49	0	
10	0	51470	20	0	0	30	0	0	40	0	50	0	
BLOCK CURRENT	TOTAL	BLOCK CURRENT	TOTAL	BLOCK CURRENT	TOTAL								
51	0	51470	61	0	0	71	0	66494	81	0	17588	91	0
52	0	25738	62	0	0	72	0	43247	82	0	24276	92	0
53	0	25738	63	0	0	73	0	43247	83	0	24276	93	0
54	0	25738	64	0	0	74	0	43247	84	0	24276	94	0
55	0	25738	65	0	0	75	0	43247	85	0	24276	95	0
56	0	0	66	0	51470	76	0	43247	86	0	24276	96	0
57	0	25738	67	0	25738	77	0	1462	87	0	32586	97	0
58	0	0	68	0	25738	78	0	1462	88	0	32586	98	0
59	0	25738	69	0	25738	79	0	41705	89	0	32586	99	0
60	0	25738	70	0	43247	80	0	17588	90	0	32586	100	0
BLOCK CURRENT	TOTAL	BLOCK CURRENT	TOTAL	BLOCK CURRENT	TOTAL								
101	0	0	111	0	0	121	0	6	131	0	141	0	
102	0	0	112	0	0	122	0	0	132	0	142	0	
103	0	0	113	0	0	123	0	0	133	0	143	0	
104	0	0	114	0	0	124	0	0	134	0	144	0	
105	0	0	115	0	0	125	0	0	135	0	145	0	
106	0	0	116	0	0	126	0	0	136	0	146	0	
107	0	0	117	0	0	127	0	0	137	0	147	0	
108	0	0	118	0	0	128	0	0	138	0	148	0	
109	0	0	119	0	0	129	0	0	139	0	149	0	
110	0	0	120	0	0	130	0	0	140	0	150	0	
BLOCK CURRENT	TOTAL	BLOCK CURRENT	TOTAL	BLOCK CURRENT	TOTAL								
151	0	25738	161	0	0	171	0	0	181	0	191	0	
152	0	23092	162	0	20193	172	0	23087	182	0	192	0	
153	0	6343	163	0	20193	173	0	21991	183	0	193	0	
154	0	6343	164	0	20193	174	0	1096	184	0	194	0	
155	0	6343	165	0	20193	175	0	348	185	0	195	0	
156	0	6343	166	0	0	176	0	848	186	0	196	0	
157	0	6343	167	0	0	177	0	848	187	0	197	0	
158	0	0	168	0	0	178	0	848	188	0	21981	198	0
159	0	0	169	0	0	179	0	0	189	0	199	0	
160	0	0	170	0	0	180	0	0	190	0	200	0	
BLOCK CURRENT	TOTAL	BLOCK CURRENT	TOTAL	BLOCK CURRENT	TOTAL								
201	0	0	211	0	19345	221	0	25738	231	0	241	0	
202	0	3494	212	0	19345	222	0	23092	232	0	20193	242	0
203	0	3494	213	0	19345	223	0	6343	233	0	7827	243	0
204	0	3494	214	0	0	224	0	6343	234	0	7826	244	0
205	0	0	215	0	0	225	0	6343	235	0	7826	245	0
206	0	0	216	0	0	226	0	5393	236	0	246	0	
207	0	0	217	0	0	227	0	5393	237	0	247	0	
208	0	19345	218	0	0	228	0	5393	238	0	248	0	
209	0	19345	219	0	0	229	0	0	237	0	249	0	

216	0	19345	220	0	25738	230	0	0	240	0	1	250	0	848
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BLOCK CURRENT	TOTAL										
251	C	848	261	C	848	271	0	14775	281	0	0
252	0	0	262	0	848	272	0	14775	282	0	0
253	0	0	263	0	848	273	0	14775	283	0	0
254	0	0	264	0	0	274	0	14775	284	0	0
255	0	0	265	C	0	275	0	0	285	0	0
256	C	0	266	C	0	276	0	0	286	0	0
257	0	0	267	0	14775	277	0	0	287	0	0
258	C	0	268	0	14775	278	0	0	288	0	0
259	0	C	269	0	14775	279	0	0	289	0	0
260	0	0	270	0	14775	280	0	0	290	0	0

BLOCK CURRENT	TOTAL										
301	0	0	311	0	14775	321	0	14749	331	0	2100
302	0	C	312	0	26	322	0	14749	332	0	341
303	0	0	313	0	14776	323	0	14749	333	0	42748
304	0	0	314	0	14749	324	0	44848	334	0	3099
305	0	0	315	0	1	325	0	89696	335	0	3099
306	C	0	316	0	2	326	0	44848	336	0	12649
307	0	29550	317	0	1	327	0	44848	337	0	12649
308	0	14775	318	0	1	328	0	44848	338	0	12649
309	0	14775	319	0	1	329	0	44848	339	0	12649
310	0	0	320	0	29498	330	0	44848	340	0	12649

BLOCK CURRENT	TOTAL										
351	0	0	361	0	0	371	0	40513	381	0	391
352	C	0	362	0	0	372	0	40513	382	0	392
353	0	0	363	0	0	373	0	14148	383	0	393
354	0	0	364	0	0	374	0	26365	384	0	394
355	0	0	365	0	14775	375	0	26365	385	0	395
356	0	0	366	0	14775	376	0	26365	386	0	396
357	0	0	367	0	14775	377	0	26365	387	0	397
358	0	0	368	0	25738	378	0	26365	388	0	398
359	0	0	369	0	25738	379	0	26365	389	0	399
360	0	0	370	0	25738	380	0	390	0	0	400

BLOCK CURRENT	TOTAL										
401	0	0	411	0	0	421	0	2	431	0	50530
402	C	0	412	0	52730	422	0	1	432	0	50530
403	0	0	413	0	26365	423	0	1	433	0	50530
404	C	0	414	0	26365	424	0	1	434	0	50530
405	0	0	415	0	0	425	0	52678	435	0	50530
406	0	0	416	0	26365	426	0	26339	436	0	2173
407	0	0	417	0	20	427	0	20339	437	0	2173
408	C	0	418	0	26366	428	0	26339	438	0	48357
409	0	0	419	0	26339	429	0	50530	439	0	24191
410	0	0	420	0	1	430	0	1C160	440	0	24191

BLOCK CURRENT	TOTAL										
451	0	0	461	0	0	471	0	0	481	0	491
452	C	0	462	0	0	472	0	0	482	0	492
453	C	0	463	0	0	473	0	0	483	0	493
454	C	0	464	0	0	474	0	0	484	0	494
455	C	0	465	0	0	475	0	0	485	0	495
456	0	0	466	0	0	476	0	0	486	0	496
457	0	C	467	0	0	477	0	0	487	0	497
458	0	0	468	0	0	478	0	0	488	0	498
459	0	0	469	0	0	479	0	0	489	0	499
460	C	0	470	0	0	480	0	0	490	0	500

BLOCK CURRENT	TOTAL										
501	0	511	0	521	0	531	0	541	0	551	0
502	0	512	0	522	0	532	0	542	0	552	0
503	0	513	0	523	0	533	0	543	0	553	0
504	0	514	0	524	0	534	0	544	0	554	0
505	0	515	0	525	0	535	0	545	0	555	0
506	0	516	0	526	0	536	0	546	0	556	0
507	0	517	0	527	0	537	0	547	0	557	0
508	0	518	0	528	0	538	0	548	0	558	0
509	0	519	0	529	0	539	0	549	0	559	0
510	0	520	0	530	0	540	0	550	0	560	0

BLOCK CURRENT	TOTAL										
551	0	561	0	571	0	581	0	591	0	601	0
552	0	562	0	572	0	582	0	592	0	602	0
553	0	563	0	573	0	583	0	593	0	603	0
554	0	564	0	574	0	584	0	594	0	604	0
555	0	565	0	575	0	585	0	595	0	605	0
556	0	566	0	576	0	586	1	596	0	606	1
557	0	567	0	577	0	587	0	597	0	607	0
558	0	568	0	578	0	588	0	598	0	608	0
559	0	569	0	579	0	589	0	599	0	609	0
560	0	570	0	580	0	590	0	600	0	610	1

BLOCK CURRENT	TOTAL								
601	0	611	0	621	0	631	0	641	0
602	0	612	0	622	0	632	0	642	0
603	0	613	0	623	0	633	0	643	0
604	0	614	0	624	0	634	0	644	0
605	0	615	0	625	0	635	0	645	0
606	0	616	0	626	0	636	0	646	0
607	0	617	0	627	0	637	0	647	0
608	0	618	0	628	0	638	0	648	0
609	0	619	0	629	0	639	0	649	0
610	0	620	0	630	0	640	0	650	0

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FACILITIES  
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FACILITY NUMBER	ENTRIES	AVERAGE UTILIZATION DURING		CURRENT STATUS	PERCENT AVAILABILITY	TRANSACTION NUMBER
		TOTAL TIME	UNAVAIL. TIME			
4	128582	.000	.000		100.0	
15	70359	.000	.000		100.0	
50	234	.69422	.842		100.0	
				6		

## STORAGES

STORAGE	CAPACITY	AVERAGE CONTENTS	ENTRIES	AVERAGE UTILIZATION DURING				PERCENT STATUS	CURRENT AVAILABILITY	MAXIMUM CONTENTS
				AVERAGE TIME/UNIT	TOTAL TIME	AVAIL.	UNAVAIL.			
RAUEX	36000	.000	8674598	.000	.000			100.0		1800
IUEXP	36000	.000	8674598	.000	.000			100.0		1800
CPUEX	288	284.355	268	16587.406	.987			100.0	288	288
HRREC	36000000	1521924.000	41121762	6792.621	.547			100.0	36707000	36000000
VKREC	36000000	467.540	5655595	1.554	.000			100.0		36566
FMSIG	36000	.000	4613153	.000	.000			100.0	1080000	1080000
KUSIG	1080000	753571.375	35524348	358.740	.702			100.0		3600
RAUSU	36000	.000	14957124	.000	.000			100.0		3600
IUSUB	36000	.000	14987124	.000	.000			100.0		3600
CPUSU	288	284.355	288	16587.406	.987			100.0	288	288

QUEUE	MAXIMUM CONTENTS	AVERAGE CONTENTS	TOTAL ENTRIES	ZERO ENTRIES	PERCENT ZEROES	AVERAGE TIME/TRANS	SAVERAGE TIME/TRANS	TABLE NUMBER	CURRENT CONTENTS
4	1	.000	47487	47407	101.0	.000	.000	16	.000
16	1	.000	20359	26539	102.0	.000	.000		

SAVERAGE TIME/TRANS = AVERAGE TIME/TRANS EXCLUDING ZERO ENTRIES

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\* USER CHAINS  
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USER CHAIN	TOTAL ENTRIES	AVERAGE TIME/TRANS	CURRENT CONTENTS	AVERAGE CONTENTS	MAXIMUM CONTENTS
4	77439	.892	5	4.114	5
16	57532	3.217	2	9.655	23

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\* FULLWORD SAVEVALUES \*  
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| NUMBER - CONTENTS |
|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| 4 861932          | 5 65703C66        | 12 36000000       | 16 1457871        | 20 5              | 21 5              |                   |
| 22 44             | 23 22             | 24 44             | 25 297            | 26 16689          | 101 109           |                   |
| 102 1800          | 103 1800          | 104 1800          | 105 1800          | 106 1800          | 107 1800          |                   |
| 113 1810          | 109 1820          | 110 1800          | 111 1800          | 112 1800          | 113 1800          |                   |
| 114 1800          | 115 1800          | 116 1800          | 117 1800          | 118 1800          | 119 1800          |                   |
| 120 1800          | 121 1800          | 122 1800          | 123 1800          | 124 1800          | 125 1800          |                   |
| 120 1800          | 127 1800          | 128 1800          | 131 1800          | 132 1800          | 133 1800          |                   |
| 134 1800          | 135 1800          | 136 1800          | 137 1800          | 138 1800          | 139 1800          |                   |
| 140 1810          | 141 1800          | 142 1800          | 143 1800          | 144 1800          | 145 1800          |                   |
| 146 1800          | 147 1800          | 148 1800          | 149 1800          | 150 1800          | 151 1800          |                   |
| 152 1800          | 153 1800          | 154 1800          | 155 1800          | 156 1800          | 157 1800          |                   |
| 158 1800          | 161 288           | 162 288           | 163 288           | 164 288           | 165 288           |                   |
| 165 288           | 167 288           | 168 288           | 169 288           | 170 288           | 171 288           |                   |
| 172 288           | 173 288           | 174 288           | 175 288           | 176 288           | 177 288           |                   |
| 178 288           | 179 288           | 180 288           | 181 288           | 182 288           | 183 288           |                   |
| 184 288           | 185 288           | 186 288           | 187 288           | 188 288           | 189 288           |                   |
| 200 13            | 201 16            | 202 20            | 203 20            | 204 35            | 205 36            |                   |
| 208 36            | 207 36            | 208 36            | 209 36            | 210 36            | 211 36            |                   |
| 212 36            | 213 36            | 214 36            | 215 36            | 216 36            | 217 36            |                   |
| 218 36            | 281 108           | 282 3600          | 283 3600          | 284 3600          | 285 3600          |                   |
| 280 3600          | 287 3600          | 288 3600          | 289 3600          | 290 3600          | 291 3600          |                   |
| 292 3600          | 293 3600          | 294 3600          | 295 3600          | 296 3600          | 297 3600          |                   |
| 298 3600          | 299 3600          | 300 3600          | 301 3600          | 302 3600          | 303 3600          |                   |
| 304 3600          | 305 3600          | 306 3600          | 307 3600          | 308 3600          | 311 318           |                   |
| 312 3600          | 313 3600          | 314 3600          | 315 3600          | 316 3600          | 317 3600          |                   |
| 318 3600          | 319 3600          | 320 3600          | 321 3600          | 322 3600          | 323 3600          |                   |
| 324 3600          | 325 3600          | 326 3600          | 327 3600          | 328 3600          | 329 3600          |                   |
| 330 3600          | 331 3600          | 332 3600          | 333 3600          | 334 3600          | 335 3600          |                   |
| 336 3600          | 337 3600          | 338 3600          | 341 3600          | 342 3600          | 343 3600          |                   |
| 344 288           | 345 288           | 346 288           | 347 288           | 348 288           | 349 288           |                   |
| 352 288           | 351 288           | 352 288           | 353 288           | 354 288           | 355 288           |                   |
| 358 288           | 357 288           | 358 288           | 359 288           | 360 288           | 361 288           |                   |
| 362 288           | 363 288           | 364 288           | 365 288           | 366 288           | 367 288           |                   |
| 368 288           |                   |                   |                   |                   |                   |                   |

RELATIVE CLOCK		16800 - ABSOLUTE CLOCK		16800	
BLOCK COUNTS		BLOCK CURRENT		TOTAL	
		TOTAL	TOTAL	TOTAL	TOTAL
1	C	929	11	51475	21
2	C	929	12	25738	22
3	C	93	13	25738	23
4	C	926	14	25738	24
5	C	926	15	25738	25
6	C	24812	16	25738	26
7	C	51476	17	25738	27
8	C	25738	18	25738	28
9	C	926	19	25738	29
10	C	51476	20	25738	30
BLOCK CURRENT		TOTAL	BLOCK CURRENT	TOTAL	BLOCK CURRENT
51	C	51475	61	0	86494
52	C	25738	62	0	43247
53	C	25738	63	0	43247
54	C	25738	64	0	43247
55	C	25738	65	0	43247
56	C	0	66	0	43247
57	C	25738	67	0	1402
58	C	0	68	0	1402
59	C	25738	69	0	41785
60	C	25738	70	0	17509
BLOCK CURRENT		TOTAL	BLOCK CURRENT	TOTAL	BLOCK CURRENT
101	C	0	111	0	121
102	C	0	112	0	122
103	C	0	113	0	123
104	C	0	114	0	124
105	C	0	115	0	125
106	C	0	116	0	126
107	C	0	117	0	127
108	C	0	118	0	128
109	C	0	119	0	129
110	C	0	120	0	130
BLOCK CURRENT		TOTAL	BLOCK CURRENT	TOTAL	BLOCK CURRENT
151	C	25738	161	0	171
152	C	25738	162	0	172
153	C	25738	163	0	173
154	C	25738	164	0	174
155	C	25738	165	0	175
156	C	25738	166	0	176
157	C	25738	167	0	177
158	C	0	168	0	178
159	C	0	169	0	179
160	C	0	170	0	180
BLOCK CURRENT		TOTAL	BLOCK CURRENT	TOTAL	BLOCK CURRENT
201	C	5572	211	0	221
202	C	5572	212	0	222
203	C	0	213	0	223
204	C	0	214	0	224
205	C	0	215	0	225
206	C	0	216	0	226
207	C	0	217	0	227
208	C	0	218	0	228
BLOCK CURRENT		TOTAL	BLOCK CURRENT	TOTAL	BLOCK CURRENT
209	C	0	219	0	229

213	0	0	220	0	25738	230	0	5572	240	0	0	250	0	0
BLOCK CURRENT	TOTAL													
251	0	261	0	271	0	281	0	291	0	291	0	291	0	
252	0	262	0	272	0	282	0	292	0	292	0	292	0	
253	0	263	0	273	0	283	0	293	0	293	0	293	0	
254	0	264	0	274	0	284	0	294	0	294	0	294	0	
255	0	265	0	275	0	285	0	295	0	295	0	295	0	
256	0	266	0	276	0	286	0	296	0	296	0	296	0	
257	0	267	0	277	0	287	0	297	0	297	0	297	0	
258	0	268	0	278	0	288	0	298	0	298	0	298	0	
259	0	269	0	279	0	289	0	299	0	299	0	299	0	
260	0	270	0	280	0	290	0	300	0	300	0	300	0	
BLOCK CURRENT	TOTAL													
311	0	311	0	321	0	44848	331	12649	341	0	0	0	0	
312	0	29550	512	322	0	44948	332	17549	342	0	0	0	0	
313	0	14775	313	323	0	44848	333	12649	343	0	0	0	0	
314	0	14775	314	324	0	44848	334	12549	344	0	0	0	0	
315	0	315	0	325	0	44348	335	14049	345	0	0	0	0	
316	0	14775	316	326	0	2170	336	44348	346	0	0	0	0	
317	0	26	317	0	327	0	2100	337	44548	347	0	0	0	
318	0	14770	318	328	0	42748	338	44348	348	0	0	0	0	
319	0	14749	319	329	0	35099	339	44848	349	0	0	0	0	
320	0	89698	320	330	0	30099	340	350	350	0	0	0	0	
BLOCK CURRENT	TOTAL													
351	0	0	361	0	14775	371	0	20305	381	0	0	341	0	26365
352	0	0	362	0	14775	372	0	20305	382	0	0	342	0	26365
353	0	0	363	0	25738	373	0	20305	383	0	0	343	0	26365
354	0	0	364	0	25738	374	0	20305	384	0	0	344	0	0
355	0	0	365	0	25738	375	0	?	385	0	0	395	0	0
356	0	0	366	0	40313	376	0	386	0	0	0	396	0	0
357	0	0	367	0	40513	377	0	387	0	0	0	397	0	0
358	0	0	368	0	14143	378	0	388	0	25355	398	0	0	0
359	0	0	369	0	26365	379	0	389	0	26365	399	0	0	0
360	0	14775	370	0	26365	380	0	390	0	26365	400	0	0	0
BLOCK CURRENT	TOTAL													
401	0	0	411	0	20365	421	0	20339	431	0	2173	441	0	50530
402	0	0	412	0	20	422	0	25339	432	0	2173	442	0	50530
403	0	0	413	0	26366	423	0	26339	433	0	43357	443	0	50530
404	0	0	414	0	20339	424	0	50530	434	0	24191	444	0	50530
405	0	0	415	0	1	425	0	101367	435	0	24191	445	0	0
406	0	0	416	0	2	426	0	3330	436	0	24166	446	0	0
407	0	52750	417	0	1	427	0	50530	437	0	24166	447	0	0
408	0	28385	418	0	1	428	0	50530	438	0	24166	448	0	0
409	0	26365	419	0	1	429	0	51530	439	0	24166	449	0	0
410	0	0	420	0	52678	430	0	50530	440	0	24166	450	0	0
BLOCK CURRENT	TOTAL													
451	0	0	461	0	5	471	0	0	431	0	7	471	0	0
452	0	0	462	0	7	472	0	482	0	0	472	0	0	
453	0	0	463	0	0	473	0	483	0	0	493	0	0	
454	0	0	464	0	7	474	0	484	0	0	474	0	0	
455	0	0	465	0	7	475	0	485	0	0	475	0	0	
456	0	0	466	0	7	476	0	486	0	0	476	0	0	
457	0	0	467	0	7	477	0	487	0	0	477	0	0	
458	0	0	468	0	7	478	0	488	0	0	478	0	0	

BLOCK CURRENT	TOTAL										
531	0	511	0	521	0	531	0	541	0	551	0
532	0	512	0	522	0	532	0	542	0	552	0
533	0	513	0	523	0	533	0	543	0	553	0
534	0	514	0	524	0	534	0	544	0	554	0
535	0	515	0	525	0	535	0	545	0	555	0
536	0	516	0	526	0	536	0	546	0	556	0
537	0	517	0	527	0	537	0	547	0	557	0
538	0	518	0	528	0	538	0	548	0	558	0
539	0	519	0	529	0	539	0	549	0	559	0
540	0	520	0	530	0	540	0	550	0	560	0

BLOCK CURRENT	TOTAL											
551	0	561	0	571	0	581	0	591	0	601	0	
552	0	562	0	572	0	582	0	592	0	602	0	
553	0	563	0	573	0	583	0	593	0	603	0	
554	0	564	0	14775	574	197	564	0	594	0	604	0
555	0	565	0	26365	575	204	585	0	595	0	605	0
556	0	566	0	576	0	586	0	596	0	606	0	
557	0	567	0	577	0	587	0	597	0	607	0	
558	0	568	0	578	0	588	0	598	0	608	0	
559	0	569	0	579	0	589	0	599	0	609	0	
560	0	570	0	204	580	203	590	0	600	0	610	0

BLOCK CURRENT	TOTAL								
601	0	23							
602	0	28							
603	0	28							

## FACILITIES

FACILITY NUMBER	ENTRIES	AVERAGE UTILIZATION DURING-			CURRENT STATUS	PERCENT AVAILABILITY	TRANSACTION NUMBER
		NUMBER	AVERAGE TIME/FACILITY	TOTAL TIME			
4	126582	.01	.000		100.		
16	70809	.050	.750		100.0		
30	274	03.137	0.766		100.0	6	

## STORAGES

STORAGE	CAPACITY	AVERAGE CONTENTS	ENTRIES	-AVERAGE UTILIZATION DURING-		CURRENT STATUS	PERCENT AVAILABILITY	CURRENT CONTENTS	MAXIMUM CONTENTS
				TIME	UNIT				
KAUER	360.00	.000	6674696	.000	.000		100.0	1820	1820
ISEXP	300.00	.00	6674693	.000	.000		100.0	288	288
CPJEX	288	284.355	288	16587.400	.987		100.0		865918
HAREC	3600.000	19251.332	36672732	10.544	.000		100.0		40999
VRREC	360.000	911.131	1451753	10.544	.000		100.0		36200
KUSIG	1580.000	.000	147960572	.000	.000		100.0		3600
RHUSU	360.00	.600	14987124	.000	.000		100.0		3600
TJSOB	360.00	.00	14987124	.000	.000		100.0		288
CPUSU	288	284.355	288	16587.400	.987		100.0	288	288

QUEJES

QUEJE	MAXIMUM CONTENTS	AVERAGE CONTENTS	TOTAL ENTRIES	ZERU ENTRIES	PERCENT ZEROS	AVERAGE TIME/TRANS	\$ AVERAGE TIME/TRANS	TABLE NUMBER	CURRENT CONTENTS
1	.000	.000	40487	40487	100.0	.000	.000	070	.000
4	.000	.000	20337	20337	100.0	.000	.000		
AVERAGE TIME/TRANS = AVERAGE TIME/TRANS EXCLUDING ZERU ENTRIES									

USER CHAIN	TOTAL ENTRIES	AVERAGE TIME/TRANS	CURRENT CONTENTS	AVERAGE CONTENTS	MAXIMUM CONTENTS
4	77434	.892	5	4.114	54
16	27532	3.210	2	9.655	23

| NUMBER - CONTENTS |
|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| 351932            | 16                | 1497371           | 27                | 5                 | 21                | 44                | 22                |
| 24                | 44                | 25                | 27                | 5                 | 16639             | 102               | 103               |
| 1-4               | 146               | 163               | 180               | 106               | 180               | 108               | 164               |
| 1-7               | 130               | 111               | 130               | 112               | 130               | 113               | 115               |
| 115               | 130               | 117               | 180               | 118               | 180               | 119               | 180               |
| 122               | 130               | 123               | 180               | 124               | 180               | 125               | 180               |
| 125               | 147               | 131               | 168               | 132               | 180               | 133               | 180               |
| 133               | 130               | 137               | 150               | 138               | 160               | 139               | 160               |
| 1-2               | 163               | 143               | 180               | 144               | 160               | 145               | 180               |
| 1-4               | 150               | 149               | 150               | 150               | 180               | 151               | 180               |
| 1-5               | 130               | 155               | 180               | 156               | 180               | 157               | 180               |
| 1-6               | 206               | 163               | 208               | 164               | 208               | 165               | 208               |
| 1-6               | 266               | 167               | 288               | 170               | 268               | 171               | 288               |
| 176               | 208               | 175               | 286               | 176               | 288               | 177               | 288               |
| 1-9               | 206               | 181               | 288               | 182               | 288               | 183               | 288               |
| 1-2               | 233               | 187               | 208               | 188               | 230               | 252               | 253               |
| 255               | 34220             | 256               | 34220             | 257               | 34220             | 258               | 34220             |
| 261               | 34220             | 262               | 34220             | 263               | 34220             | 264               | 34220             |
| 267               | 34220             | 268               | 34200             | 269               | 34200             | 270               | 34200             |
| 273               | 34220             | 274               | 34220             | 275               | 34220             | 276               | 34220             |
| 281               | 108               | 232               | 3600              | 282               | 3600              | 284               | 3600              |
| 287               | 3200              | 288               | 3600              | 289               | 3600              | 290               | 3600              |
| 293               | 3100              | 294               | 3600              | 295               | 3600              | 296               | 3600              |
| 297               | 3300              | 300               | 3600              | 301               | 3600              | 302               | 3600              |
| 303               | 3500              | 306               | 3600              | 307               | 3600              | 308               | 3600              |
| 313               | 3600              | 314               | 3600              | 315               | 3600              | 316               | 3600              |
| 319               | 3600              | 320               | 3600              | 321               | 3600              | 322               | 3600              |
| 325               | 3600              | 326               | 3600              | 327               | 3600              | 328               | 3600              |
| 331               | 3610              | 332               | 3600              | 333               | 3600              | 334               | 3600              |
| 337               | 3520              | 338               | 3600              | 341               | 3600              | 342               | 3600              |
| 343               | 298               | 346               | 288               | 347               | 286               | 348               | 286               |
| 351               | 286               | 352               | 288               | 353               | 286               | 354               | 286               |
| 357               | 288               | 358               | 288               | 359               | 288               | 360               | 288               |
| 363               | 236               | 364               | 288               | 365               | 288               | 366               | 288               |

**SAMPLE DMS STATISTICS**

EQPT NO.	STATISTIC	BASE	1	2	3	4
2	Experiment RAU					
	MAX. CONTENTS (K BITS)	1800	1800	1800	1800	1800
	AVG. TIME/TRANS.	0	0	0	0	0
	TOTAL ENTRIES	8,674,698	8,674,698	8,674,698	8,674,698	8,674,698
3	Experiment I/O					
	MAX. CONTENTS (K BITS)	1800	1800	1800	1800	1800
	AVG. TIME/TRANS.	0	0	0	0	0
	TOTAL ENTRIES	8,674,698	8,674,698	8,674,698	8,674,698	8,674,698
4	Experiment Computer					
	MAX. CONTENTS (K BITS)	288	288	432*	288	288
	AVG. TIME/TRANS.	.892	.892	.977*	.892	.892
	TOTAL ENTRIES	77,439	77,439	77,426*	77,439	77,439
	DATA LOST (K BITS)	861,932	861,932	861,931*	861,932	861,932
14	Subsystem RAU					
	MAX. CONTENTS (K BITS)	3600	3600	3600	3600	3600
	AVG. TIME/TRANS.	0	0	0	0	0
	TOTAL ENTRIES	14,987,124	14,987,124	14,987,124	14,987,124	14,987,124
15	Subsystem I/O					
	MAX. CONTENTS (K BITS)	3600	3600	3600	3600	3600
	AVG. TIME/TRANS.	0	0	0	0	0
	TOTAL ENTRIES	14,987,124	14,987,124	14,987,124	14,987,124	14,987,124
16	Subsystem Computer					
	MAX. CONTENTS (K BITS)	288	288	432*	288	288
	AVG. TIME/TRANS.	3.21	3.21	4.282*	3.21	3.21
	TOTAL ENTRIES	50,532	50,532	51,143*	50,532	50,532
	DATA LOST (K BITS)	1,497,871	1,497,871	1,497,727*	1,497,871	1,497,871
5	High Rate Recorder					
	MAX. CONTENTS (K BITS)	772,206	772,206	772,206	36,000,000*	865,818*
	AVG. TIME/TRANS.	8.136	8.136	8.136	8792.621*	10.544*
	TOTAL ENTRIES	20,397,390	20,397.390	20,397.390	41,121,762*	30,672,732*
	DATA LOST (K BITS)	0	0	0	65,703,066*	0
	DUMPS (TRANSACTIONS)	3,494	3,494	3,494	848*	5572*
6	Variable Rate Recorder					
	MAX. CONTENTS (K BITS)	36,566	36,566	36,566	36,566	40,999*
	AVG. TIME/TRANS.	8.136	8.136	8.136	1.554*	10.544*
	TOTAL ENTRIES	965,472	965,472	965,472	5,055,595*	1,451,753*
	DATA LOST (K BITS)	0	0	0	0	0
	DUMPS (TRANSACTIONS)	3,494	3,494	3,494	848*	5572*

EQPT NO.	STATISTIC	BASE	1	2	3	4
10	FM Signal Processor					
	MAX. CONTENTS	0	0	0	1,620*	0
	AVG. TIME/TRANS.	0	0	0	0	0
	TOTAL ENTRIES	0	0	0	4,813,158*	0
	DATA LOST (K BITS)	0	0	0	0	0
12	KU-Band Signal Processor					
	MAX. CONTENTS	34,200	34,200	34,200	34,200	34,200
	AVG. TIME/TRANS.	0	0	0	0	0
	TOTAL ENTRIES	140,960,572	140,960,572	140,960,572	35,524,348*	140,960,572
	DATA LOST (K BITS)	0	0	0	36,000,000*	0

\* DATA DIFFERENT FROM BASE DATA

## Program To Create Experiment Schedule Tape

BLOCK NUMBER	PLC	OPERATION A,B,C,D,E,F,G,H,I	COMMENTS	STATEMENT NUMBER
	***	***	***	1
	**	**	**	2
	**	D. P. ASSOCIATES, INC.	**	3
	**	SHUTTLE MISSION 18 DATA SYSTEM	**	4
	**	MODULE 1: CREATION OF DATA ENTRIES	**	5
	***	***	***	6
	**	**	**	7
	**	**	**	8
	***	***	***	9
	*	*	*	10
	SIMULATE			11
	AN INITIAL CARD IS REQUIRED FOR EACH DATA ENTRY. MATRIX MX1 WILL			12
	CONTAIN THE FOLLOWING DATA ELEMENTS:			13
	MX1(1,J) THE TIME FROM LAUNCH OF DATA ENTRY J.			14
	MX1(2,J) EXPERIMENT NUMBER I.D. OF DATA ENTRY J.			15
I	MATRIX X,3,929			16
	MX1(3,J) DURATION OF DATA ENTRY J.			17
	INITIAL MX1(1,1),731/MX1(2,1),1C7/MX1(3,1),12			18
	INITIAL MX1(1,2),769/MX1(2,2),1C7/MX1(3,2),14			19
	INITIAL MX1(1,3),786/MX1(2,3),44/MX1(3,3),14			20
	INITIAL MX1(1,4),80C/MX1(2,4),1C7/MX1(3,4),7			21
	INITIAL MX1(1,5),861/MX1(2,5),1C7/MX1(3,5),10			22
	INITIAL MX1(1,6),899/MX1(2,6),1C7/MX1(3,6),13			23
	INITIAL MX1(1,7),94C/MX1(2,7),44/MX1(3,7),20			24
	INITIAL MX1(1,8),960/MX1(2,8),1C7/MX1(3,8),4			25
	INITIAL MX1(1,9),967/MX1(2,9),1C7/MX1(3,9),13			26
	INITIAL MX1(1,10),1015/MX1(2,10),107/MX1(3,10),17			27
	INITIAL MX1(1,11),1100/MX1(2,11),107/MX1(3,11),12			28
	INITIAL MX1(1,12),1101/MX1(2,12),44/MX1(3,12),11			29
	INITIAL MX1(1,13),1166/MX1(2,13),107/MX1(3,13),13			30
	INITIAL MX1(1,14),1181/MX1(2,14),107/MX1(3,14),13			31
	INITIAL MX1(1,15),1195/MX1(2,15),107/MX1(3,15),13			32
	INITIAL MX1(1,16),1298/MX1(2,16),107/MX1(3,16),13			33
	INITIAL MX1(1,17),1342/MX1(2,17),107/MX1(3,17),8			34
	INITIAL MX1(1,18),16C0/MX1(2,18),7/MX1(3,18),22			35
	INITIAL MX1(1,19),18C0/MX1(2,19),12/MX1(3,19),27			36
	INITIAL MX1(1,20),1873/MX1(2,20),5/MX1(3,20),13			37
	INITIAL MX1(1,21),1877/MX1(2,21),12/MX1(3,21),88			38
	INITIAL MX1(1,22),1879/MX1(2,22),7/MX1(3,22),84			39
	INITIAL MX1(1,23),1956/MX1(2,23),5/MX1(3,23),12			40
	INITIAL MX1(1,24),1970/MX1(2,24),12/MX1(3,24),30			41
	INITIAL MX1(1,25),1972/MX1(2,25),7/MX1(3,25),16			42
	INITIAL MX1(1,26),1990/MX1(2,26),7/MX1(3,26),7			43
	INITIAL MX1(1,27),1993/MX1(2,27),5/MX1(3,27),20			44
	INITIAL MX1(1,28),2034/MX1(2,28),5/MX1(3,28),12			45
	INITIAL MX1(1,29),2039/MX1(2,29),4/MX1(3,29),3			46
	INITIAL MX1(1,30),2047/MX1(2,30),12/MX1(3,30),7			47
	INITIAL MX1(1,31),2056/MX1(2,31),12/MX1(3,31),105			48
	INITIAL MX1(1,32),2056/MX1(2,32),5/MX1(3,32),13			49
	INITIAL MX1(1,33),2059/MX1(2,33),7/MX1(3,33),57			50
	INITIAL MX1(1,34),2116/MX1(2,34),5/MX1(3,34),13			51
	INITIAL MX1(1,35),212C/MX1(2,35),7/MX1(3,35),9			52
	INITIAL MX1(1,36),2134/MX1(2,36),7/MX1(3,36),9			53
	INITIAL MX1(1,37),2145/MX1(2,37),7/MX1(3,37),14			54
	INITIAL MX1(1,38),2153/MX1(2,38),5/MX1(3,38),19			55

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3	TRANSFER	,EXP1		950
4	EXP	ASSIGN 12+,1,PF	NUMBER DATA ENTRIES	951
5		ADVANCE V1	DELAY INTERARRIVAL TIME	952
6	EXP1	ASSIGN 1,MX1{1,P12},PF	RECORD TIME FROM LAUNCH	953
7		ASSIGN 2,MX1{2,P12},PF	RECORD EXPERIMENT NUMBER	954
8		ASSIGN 3,MX1{3,P12},PF	RECORD DATA ENTRY DURATION	955
9		WRITE JDTA1	CREATE JOBTAPE RECORD	956
10		TEST E P12,929,EXP		957
11	TERMINATE	1		958
1	CLEAR	MX1		959
2	VARIABLE	MX1{1,P12}-MX1{1,V21}	COMPUTE INTERARRIVAL TIME	960
2	VARIABLE	P12-1		961
	START	1		962
	END			963