

LENGTH OF PRG 20077

		IDENT	INITIAL	
		INCLUDE	↑SYSMAC	
	1			
	2			
	3			
	4	UWBDEF		
	102	.*		.*
	103	.*		.*
	104	.*		.*
	105	.*		.*
	106	.*		.*
	107	.*		.*
	108	CONBLOCK EQU	0	POINTER TO 8 WORD CONTROL BLOCK
00000	109	BFPTR EQU	CONBLOCK+1	POINTER TO CURRENT CORE BUFFER
00001	110	.*		-0 IF NO BUFFER PRESENT
00002	111	BLKPOS EQU	BFPTR+1	CURRENT BLOCK POSITION
00003	112	IMADR EQU	BLKPOS+1	ADDRESS OF WORD COUNT AND IMAGE
00004	113	CALLBAD EQU	IMADR+1	CALL BACK ADDRESS
	114	.*		RTJ MACHERR
00006	115	RDIST EQU	CALLBAD+2	ENI BLOCK,CBI
	116	.*		UJP IMPURE
00010	117	WCNT EQU	RDIST+2	TEMPORARY WORD COUNT
00011	118	CBLOCK EQU	WCNT+1	ADDRESS OF CURRENT BLOCK
00012	119	TIMAD EQU	CBLOCK+1	TEMPORARY FOR CURRENT POSITION
00013	120	PSALOC EQU	TIMAD+1	ADDRESS OF ASSOCIATED PSA
00013	121	DISKBUSY EQU	PSALOC	BUFFER UNSAFE FLAG
	122	.*		ENI BLOCK,CBI
00015	123	EXITADD EQU	PSALOC+2	UJP IMPURE RETURN ADDRESS
00016	124	PFSAVE EQU	EXITADD+1	TEMP TO SAVE THE CONTENTS OF PF1
00017	125	UWBWC EQU	PFSAVE+1	TEMP TO SAVE WC AND CALL BACK
00020	126	UWBRET EQU	UWBWC+1	ADDRESS IF CALL TO UWBLOCKB
00021	127	UWBX3 EQU	UWBWC+2	TEMP TO SAVE RETURN ADDRESS IF
	128	.*		CALL TO UWBLOCKB
	129	.*		BIT23 IF LAST RECORD WAS ILOGOFF
00022	130	BATCHPNT EQU	UWBX3+1	POINTER TO THE PROPER BATCH Q
00023	131	DESTLP EQU	BATCHPNT+1	DESTINATION LINE PRINTER
00024	132	UWMAX EQU	DESTLP+1	NUMBER OF WORDS IN SHORT BLOCK
	133	.*		.*
	134	.*		THE FOLLOWING ARE USED ONLY FOR
	135	.*		DEVICES THAT COME FROM THE POP8
00024	136	EXPDATA EQU	UWMAX	BIT23 SEZZ EXPECTING DATA
	137	.*		BITS 14--0 HAVE 64 WORD BLOCK
	138	.*		ADDRESS
00025	139	COMWORD EQU	EXPDATA+1	12 BIT BYTES WITH THE CONTROL
	140	.*		BLOCK INFORMATION
00026	141	DEVTYPE EQU	COMWORD+1	BITS 14--0 HAVE UWBLOCK ROUTINE
	142	.*		POINTER
00027	143	UWMAXA EQU	DEVTYPE+1	NUMBER OF WORDS IN LONGER BLOCKS
	144	.*		.*
	145	.*		.*

```

6          URBDEF
7          *
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00000	11	FB	EQU	0	POINTER TO NEXT FILE BLOCK
00001	12	BLF	EQU	FB+1	COUNT OF BLOCKS IN THIS FILE
00002	13	BFBGN	EQU	BLF+1	QUARTER PAGE NUMBER OF CURRENT
00003	14				512 WORD BLOCK
	15	BFCPP	EQU	BFBGN+1	POINTER TO NEXT WORD TO BE
	16				LOADED FROM THIS BLOCK. THIS
	17				POINTER IS RELATIVE TO THE
00004	18				BEGINNING OF THE CURRENT BLOCK
	19	CALBAK	EQU	BFCPP+1	GO TO THIS ADDRESS WHEN BUFFER
	20				IS DONE AFTER AN INTERRUPT
00005	21				BIT23 SEZZ CALBAK
	22	IMAD	EQU	CALBAK+1	LOCATION WHERE RECORD IS TO BE
	23				PLACED OR MOVED FROM.
00006	24	LNIM	EQU	IMAD+1	MAXIMUM ALLOWABLE RECORD SIZE
00007	25	KILLFLAG	EQU	LNIM+1	STI *,0
00010	26	ENAD	EQU	KILLFLAG+1	END BLOCK,X1
00011	27	NJM	EQU	ENAD+1	UJP IMPURE
00012	28	ENIT	EQU	NJM+1	TEMP FOR INDEX 3
	29				IF BIT23 DEVICE MUST BE STARTED
	30				BY OPERATOR
	31				IF BIT22 DO NOT PROCESS FORMS ON
	32				THIS DEVICE
	33				IF BIT21 THEN STOP MACRO
	34				IF BIT20 THEN BUFFER IS UNSAFE
	35				BIT19 IS A QUEUEING FLAG
00013	36	DEVBLK	EQU	ENIT+1	PNTR TO FOUR WORD BLOCK
00014	37	COUNT	EQU	DEVBLK+1	COUNT OF WORDS IN RECORD
00015	38	POSI	EQU	COUNT+1	RELATIVE LOCATION IN BUFFER
00016	39	PFWORD	EQU	POSI+1	CONTENTS OF PF1
00016	40	FORMSWRD	EQU	PFWORD	
	41				BIT19 SEZ WAITING FOR
	42				OPERATOR TO READY DEVICE
	43				BIT20 SEZ WANTS FORMS
	44				BIT21 SEZ HAS FORMS
	45				BIT22 SEZ TAKE FORMS OUT
	46				BIT23 SEZ SAME AS BIT22 BUT
	47				DRIVER IS WAITING TO OUTPUT NEXT
	48				FILE
00017	49	IDENT	EQU	PFWORD+1	BCD IDENT OF THE DEVICE
00020	50	URBEXITA	EQU	IDENT+1	END BLOCK,X1
00021	51	URBEXIT	EQU	URBEXITA+1	UJP IMPURE
00022	52	QINGLOC	EQU	URBEXIT+1	ADDRESS TO GO TO WHEN FILES
	53				ARE UNEQUIPPED
00023	54	QPNT	EQU	QINGLOC+1	POINTER TO NXPTR AND LXPTR
00024	55	QEMPTY	EQU	QPNT+1	ADDRESS TO TELL DRIVER THAT IT
	56				HAS TO MORE FILES TO OUTPUT
00025	57	STRTLOC	EQU	QEMPTY+1	ADDRESS TO TELL DRIVER TO START
	58				FILE
	59				
	60				

06724 P  
 07103 P  
 07273 P  
 00031 P  
 06241 P

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ENTRY BUILDBLK  
 ENTRY BUILDCRQ  
 ENTRY BLDLPTAB  
 ENTRY INITIAL  
 ENTRY LINKIT  
  
 EXT A  
 EXT ACCNUM  
 EXT ACCWORDS  
 EXT ARRAYTBL  
 EXT BATCHQ  
 EXT BIT17  
 EXT BIT19  
 EXT BIT20  
 EXT BIT2322  
 EXT BLANKS  
 EXT BLKFLAG  
 EXT BLOCKS  
 EXT BLOCKSL  
 EXT BLOCKSP1  
 EXT BLOCKTBL  
 EXT BUSY  
 EXT CHCHECK  
 EXT CR  
 EXT CREATE  
 EXT DATEB.1  
 EXT DAYSCHD  
 EXT DISKPNT  
 EXT DKCONTAB  
 EXT DKSTATAB  
 EXT DKSTATBL  
 EXT DKINT  
 EXT ENDOS3  
 EXT ENDREAD  
 EXT ENOSYMBK  
 EXT FDACC  
 EXT FDATE  
 EXT FDBUSY  
 EXT FDCDATE  
 EXT FDELNTH  
 EXT FDEFF  
 EXT FDHASH  
 EXT FDLNGTH  
 EXT FOLP  
 EXT FDSELECT  
 EXT FOSYM  
 EXT FOTFL  
 EXT FOURN  
 EXT FILEDIR  
 EXT FINK  
 EXT FLAGS  
 EXT FPCNT  
 EXT FREEBLK  
 EXT GETBLK  
 EXT GETCHEC  
 EXT FREEMEM  
 EXT FREECHEC  
 EXT FREPANIC  
 EXT GETMEM  
 EXT HIGHMEM  
 EXT I1  
 EXT I2  
 EXT I3  
 EXT IDLE  
 EXT IDLEPC  
 EXT ILLWRITE  
 EXT INNER  
 EXT INSTL  
 EXT INTPDL  
 EXT INHIBIT  
 EXT IOBUSY  
 EXT IRUNBIT  
 EXT IS  
 EXT LATEFLAG  
 EXT LIBLAD  
 EXT LIBMOVE  
 EXT LUNLIST  
 EXT MEMARRAY

DEFINED EXT. SO LOADER WILL LINK

DEFINED EXT. SO LOADER WILL LINK  
 DEFINED EXT. SO LOADER WILL LINK  
 DEFINED EXT. SO LOADER WILL LINK

TABLE OF DISK CONTROLLERS  
 TABLE OF UNIT CONNECT CODES  
 LENGTH OF DKSTATAB

LENGTH OF A FILE DIRECTORY ENTRY

86	EXT	MSELOAD
87	EXT	MSFMCOUNT
88	EXT	MSUNITS
89	EXT	MSUNITM1
90	EXT	MXSLIST
91	EXT	NBATCHQ
92	EXT	NIRUNBIT
92+001	EXT	NORMSYS
93	EXT	NUMDKCON
94	EXT	NUMPAGES
95	EXT	PAGETABL
96	EXT	PARINT
97	EXT	PC
98	EXT	PDP8QS
99	EXT	PF1
99+001	EXT	PHANNUM
100	EXT	PR. IMAGE
101	EXT	PURELIST
102	EXT	PURETABL
103	EXT	RADARP
103+001	EXT	RATETAB
104	EXT	READ
105	EXT	REGSAVE
106	EXT	RETURN
107	EXT	RF
108	EXT	SELLOOK
108+001	EXT	SCHDTAB
108+002	EXT	SHIFTRAT
109	EXT	SWAPUNIT
110	EXT	SWBIT
111	EXT	SYSCM
112	EXT	SYSCODE
113	EXT	SYSVAL
114	EXT	TOMORROW
114+001	EXT	TPUNITS
115	EXT	TRAFFER
116	EXT	TVCON
117	EXT	TVINT
118	EXT	TVTABEL
119	EXT	TVUNIT
120	EXT	UDHASH
121	EXT	UDLENGTH
122	EXT	UDSELECT
123	EXT	USERDIR
124	EXT	USRNUM
125	EXT	VMM
126	EXT	WRITE
127	EXT	WRITENS
128	EXT	XIOLE

MSUNITS - 1

DEFINED EXT. SO LOADER WILL LINK

NUMBER OF DISK CONTROLLERS

00022	130				
00032	131	CLOCK	EQU	22B	
00770	132	CLOCKLIM	EQU	32B	
04000	133	CON	EQU	770B	
00037	134	CORE	EQU	4000B	PFLCC * 2+11
00100	135	DATE	EQU	37B	
07773	136	DEVLIST	EQU	64	
07774	137	DINT	EQU	7773B	
00000	138	EINT	EQU	7774B	
00000	139	IMPURE	EQU	00000B	
00000	140	IO	EQU	0	
00100	141	LABEL	EQU	100B	LENGTH OF A DISK LABEL
00036	142	LEVEL	EQU	36B	LEVEL OF INTERRUPT PROCESSING
	143				
00000	144	MSLIDENT	EQU	00B	SYSTEM IDENTIFIER
00001	145	MSLDN	EQU	01B	DEVICE NUMBER
00002	146	MSLLFBN	EQU	02B	LOW FILE BLOCK NUMBER
00003	147	MSLHFBN	EQU	03B	HIGH FILE BLOCK NUMBER
00004	148	MSLPFBN	EQU	04B	PROTECTED FILE BLOCK NUMBER
	149	*	EQU	05B	AVAILABLE
00006	150	MSLBLK	EQU	06B	ADDRESS OF BLOCKS (BITS 14-0)
	151	*	EQU	07B	DEVICE CODE
	152				
00010	153	MSLFDLOC	EQU	10B	LOCATION OF THE FILE DIRECTORY
00012	154	MSLFDSEL	EQU	12B	FILE DIRECTORY SCATTER FUNCTION
00014	155	MSLFDHSH	EQU	14B	FILE DIRECTORY SCATTER CONSTANT
00017	156	MSLFDLE	EQU	17B	FDELNTH
00020	157	MSLUDLOC	EQU	20B	LOCATION OF THE USER DIRECTORY
00022	158	MSLUDSEL	EQU	22B	USER DIRECTORY SCATTER FUNCTION
00024	159	MSLUDHSH	EQU	24B	USER DIRECTORY SCATTER CONSTANT
	160				
00000	161	DEFQUE	EQU	0	DEFAULT QUEUE FOR BATCH RESTORE
	162	*			IF SPECIFIED QUEUE IS MISSING
00035	163	NU	EQU	35B	
00001	164	PFLCC	EQU	001B	PAGE FILE ADDRESS
00000	165	PFR	EQU	000B	
00000	166	PFH	EQU	000B	
00140	167	PS	EQU	140B	USER PAGE FILE AREA
00550	168	RIS	EQU	550B	
00554	169	ROS	EQU	554B	
00000	170	SELECT	EQU	0	
00000	171	SENSE	EQU	0	
	172	SYSBASE	EQU	HIGHMEM	
01000	173	WPFB	EQU	1000B	NUMBER OF WORDS PER FILE BLOCK
10000	174	MXBUFFER	EQU	10000B	
11000	175	ACCESS	EQU	MXBUFFER+WPFB	
00012	176	GFDLENTH	EQU	10	LENGTH OF FILE DIRECTORY ENTRY
05000	177	GOREW	EQU	CORE+WPFB	
00001	178	X1	EQU	1	
00002	179	X2	EQU	2	
00003	180	X3	EQU	3	
00001	181	BLK	EQU	X1	
00003	182	PSA	EQU	X3	
	183				
	184				

FCBDEF

```

*****
*
* FILE CONTROL BLOCK DEFINITIONS
*
*
* ACCWORD EQU 0 ACCOUNTING WORD (MUST BE 0)
* LP EQU 1 LOAD POINT BLOCK
* COREP EQU 2 CORE POINTER IF NON-ZERO
* IF BIT23 = 1, CORE BLOCK HAS
* BEEN WRITTEN INTO
* BLOCK NUMBER OF THE CURRENT BLOC
* CURRENT POSITION POINTER
* (REL. POSIT. WITHIN BLOCK CBP)
* BIT23 SEZ READ-ONLY
* BIT22 SEZ AT LOAD POINT
* BIT21 SEZ END OF DATA
* BIT20 SEZ FILE MARK JUST READ
*
* BIT18 SEZ BINARY RECORD PROCESSE
* BIT17 SEZ ABNORMAL/UNAVAILABLE
* BIT16 SEZ ADDRESS ERROR
* BIT15 SEZ SAVED FILE
*
* BLKR EQU 5 NUMBER OF BLOCKS BEYOND
    
```

00006

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96  
97

\*  
EPP EQU 6  
\*  
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\*  
TFL EQU 7

THE CURRENT BLOCK  
END POSITION POINTER  
BIT22 SEZ THE FILE HAS CHANGED  
BIT21 SEZ POSITIONER READY  
BIT20 SEZ DESTRUCTIVE READ  
FILE DIRECTORY  
BITS 15-18 CONTAIN THE HT  
BITS 00-14 CONTAIN END POSITION  
TOTAL LENGTH IN BLOCKS

00007

184+001

HTDEF

00001  
00002  
00003  
00004  
00005  
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\*  
HTFILE EQU 018  
HTLP EQU 028  
HTPUN EQU 038  
HTCR EQU 048  
HTMT EQU 050  
HTTTY EQU 068  
HTPLOT EQU 078  
HTNULL EQU 108  
HTTV EQU 118  
HTRAF EQU 128  
HTTASK EQU 138  
HTMSF EQU 148  
HTPTP EQU 158  
HTMAX EQU 168  
HTMASK EQU 178  
\*  
\*\*\*\*\*

FILE  
LINE PRINTER  
CARD PUNCH  
CARD READER  
MAGNETIC TAPE  
TELETYPE  
X/Y PLOTTER  
ONLINE INCINERATOR  
CRT DISPLAY  
RANDOM ACCESS FILE  
FUTURE INPUT FOR REMOTE BATCH  
USER DISKPACK  
PAPER TAPE PUNCH  
(NUMBR OF HARDWARE TYPES) + 1  
MASK FOR THE HARDWARE TYPE

			186			
			187			
	00000	P	188	Z	EQU	*
			189			
			190			
	00000	P	191	ZERO	EQU	*
00000	00000000		192		OCT	00000000
00001	00000000		193		OCT	00000000
00002	00000000		194		OCT	00000000
00003	00000000		195		OCT	00000000
	00004	P	196		ORGR	ZERO+00004B
00004	00000000		197		OO	IMPURE
00005	14000000		198		NOP	IMPURE
00006	01077777	X	199		UJP	INNER
00007	00000000		200		OCT	00000000
	00010	P	201		ORGR	ZERO+00010B
00010	00000000		202		OO	IMPURE
00011	14000000		203		NOP	IMPURE
00012	00777777	X	204		RTJ	REGSAVE
00013	01077777	X	205		UJP	TRAPPER
	00014	P	206		ORGR	ZERO+00014B
00014	00000000		207		OO	IMPURE
00015	01077777	X	208		UJP	ILLWRITE
00016	00000000		209		OCT	00000000
00017	00000000		210		OCT	00000000
	00020	P	211		ORGR	ZERO+00020B
00020	00000000		212		OO	IMPURE
00021	14000000		213		NOP	IMPURE
00022	00000022		214		HLT	*-ZERO
	00023	P	215		ORGR	ZERO+00023B
00023	14000000		216		NOP	0
00024	14000000		217		NOP	0
00025	14000000		218		NOP	0
00026	14600006	X	219		ENA	INNER
00027	44000006		220		SWA	00006B
00030	01000026	X	221		UJP	INNER
	00031		222	RESIDENT	EQU	*-ZERO

STANDARD INTERRUPTS

BDP/FLOATING POINT INTERRUPTS

ILLEGAL WRITE INTERRUPT

MEMORY ERROR INTERRUPT

THE PHANTOM USES THIS CODE

RESTORE WORD 6

```

224 * INDEX 2 CONTAINS THE LOCATION OF THE DISK TABLES IN BOOT WHICH
225 * IS 128 WORDS LONG
226
227 INITIAL EQU *
228 SHAQ -12
229 SWA ZREADX
230 ENA 0
231 SHAQ 12
232 SWA ZWRITEX
233 LDAQ 1
234 STAQ SYSNAME
235 ENA IRUNBIT
236 SSA INHIBIT
237 STA INHIBIT
238 PAUS 04008+SENSE
239 UJP *-1
240 ENI 37B,X1
241 ENA,S -1
242 TIM 37B+IMPURE,0
243 RAD *-1
244 IJD *-2,X1
245 ENI 0,X1
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LOAD THE NAME OF THE RUNNING SYSTEM AND SAVE IT  
 PREVENT ENDING BEFORE INITIAL IS DONE  
 WAIT FOR THE TYPEWRITER  
 CLEAR THE LOWER 37 REG. FILE LOCATIONS  
 X2 MUST NOT BE CHANGED BEFORE THIS POINT  
 JUMP IF NOT ON-LINE  
 LABEL BLOCK NUMBER TO A  
 SAVE THE DEVICE NUMBER  
 CALL THE BOOT DISK DRIVER  
 LOAD THE DEVICE NUMBER  
 JUMP IF NOT DEVICE 00  
 LOAD THE CONNECT CODE FOR MS00  
 AND SAVE IT  
 LOAD THE SYSTEM IDENTIFIER  
 CHECK FOR STANDARD SYSTEM  
 SAVE FOR LATER  
 LOAD THE LOW FILE BLOCK NUMBER  
 ADD THE PROTECTED BLOCK NUMBER  
 STORE THE LAST LIBRARY ADDRESS+1  
 SAVE IN FREEBLK  
 SAVE IN GETBLK  
 GET THE LOCATION OF THE FILE DIRECTORY AND SAVE IT  
 SAVE DIRECTORY LENGTH ALSO  
 GET THE FILE DIRECTORY SCATTER FUNCTION AND SAVE IT  
 GET THE FILE DIRECTORY HASH CONSTANT AND SAVE IT  
 GET THE LENGTH OF A FILE DIRECTOR ENTRY PANIC IF NOT WHAT IOLISTS THINKS IT SHOULD BE  
 GET THE LOCATION AND LENGTH OF THE USER DIRECTORY AND SAVE THEM  
 GET THE USER DIRECTORY SCATTER FUNCTION AND SAVE IT  
 GET THE USER DIRECTORY HASH CONSTANT AND SAVE IT  
 LOAD THE ADDRESS OF BLOCKS  
 RELOCATE  
 SAVE FOR END  
 COMPUTE THE AMOUNT OF STORAGE ON THIS UNIT  
 DON'T COUNT PROTECTED BLOCKS  
 GET THE CONNECT CODE AGAIN

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00031 00031 P
00032 13077763 P
00033 44007450 P
00034 14600000
00035 13000014
00036 44007453 P
00037 25000001
00038 45007706 P
00040 14677777 X
00041 35077777 X
00042 40000041 X
00043 77600400
00044 01000043 P
00045 14100037
00046 14477776
00047 53430037
00050 34000047 P
00051 02500047 P
00052 14100000

00053 00053 P
00054 25200000
00055 04500000
00056 01000062 P
00057 10500000
00058 21177777 X
00059 04500000
00061 15100001
00062 41100057 X
00063 03200216 P
00064 13000030
00065 47100212 P
00066 14104000
00067 00707447 P
00070 54104001
00071 02500131 P
00072 20200000
00073 44001264 P
00074 20004000
00075 36007633 P
00076 40010075 P
00077 20004002
00100 30004004
00101 40077777 X
00102 44077777 X
00103 44077777 X
00104 25004010
00105 40077777 X
00106 41077777 X
00107 25004012
00110 45077777 X
00111 20004014
00112 40077777 X
00113 20004017
00114 04477777 X
00115 00000115 P
00116 25004020
00117 40077777 X
00120 41077777 X
00121 25004022
00122 45077777 X
00123 20004024
00124 40077777 X
00125 20004006
00126 30200001
00127 44077777 X
00130 44000434 P

00131 00131 P
00132 20004003
00133 31004002
00134 15600001
00135 31004004
00136 34007455 P
00137 20200000

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QX1



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00137 17677000
00140 14710077
00141 12400011
00142 14177777 X
00143 06177777 X
00144 01000146 P
00145 01000174 P

00146 14100000
00147 15100001
00150 47100146 P
00151 15177776
00152 05100142 X
00153 01000155 P
00154 00000154 P
00155 20200000
00156 17677777
00157 40100143 X
00160 12000014
00161 53700000
00162 17300007
00163 12000006
00164 17600070
00165 53740000
00166 14677777 X
00167 44377777 X
00170 53300000
00171 12000017
00172 35100157 X
00173 40100172 X

00174 14300000
00175 21200000
00176 20000212 P
00177 12400011
00200 13077766
00201 41377777 X
00202 10377777 X
00203 01000205 P
00204 00000204 P
00205 47300174 P
00206 13000022
00207 17600007
00210 53500000
00211 20107467 P
00212 14100000
00213 40107775 P
00214 14600000
00215 40177777 X
00216 10100077
00217 01000221 P
00220 00000220 P
00221 15200002
00222 05177777 X
00223 01000053 P
00224 20004003
00225 40000244 P
00226 14677777 X
00227 05600222 X
00230 01000232 P
00231 00000231 P
    
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ANA 77000B
ENQ 10077B
SHQ 9
ENI NUMDKCON,X1
MEQ DKCONTAB,X1
UJP *+2
UJP CONEXIST

*
ENI IMPURE,X1
INI 1,X1
STI *-2,X1
INI -1,X1
ISG NUMDKCON,X1
UJP *+2
HLT *
LDA 0,X2
ANA 77777B
STA DKCONTAB,X1
SHA 12
TAI X3
ANI 7B,X3
SHA 6
ANA 70B
IAI X3
ENA DKINT
SWA INSTL,X3
TIA X3
SHA 15
SSA DKCONTAB,X1
STA DKCONTAB,X1

CONEXIST ENI IMPURE,X3
LDQ 0,X2
LDA QX1X
SHQ 9
SHAQ -9
STQ DKSTATAB,X3
ISI DKSTATBL,X3
UJP *+2
HLT *
STI CONEXIST,X3
SHAQ 24-6
ANA 7B
TAI X1
LDA FBPC,X1
ENI IMPURE,X1
STA FBPCDEV,X1
ENA 0
STA ARRAYTBL,X1
ISI DEVLIST-1,X1
UJP *+2
HLT *
INI 2,X2
ISG MSUNITS,X1
UJP DKZIP01
LDA CORE+MSLHFBN
STA HFBN
ENA SWAPUNIT
ASG MSUNITS
UJP *+2
HLT *
    
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JUST THE CHANNEL AND EQUIPMENT
FORM THE PROPER MASK

ENTER THE OF DISK CONTROLLERS
LOOK FOR THE PROPER CONTROLLER

JUMP IF WE ALREADY KNOW ABOUT
THIS ONE
ENTER THE NUMBER OF CONTROLLERS
WE KNOW ABOUT

SKIP IF TOO MANY

SOMEBODY BLEW IT
GET THE UNIT STUFF AGAIN

SAVE THE UNIT STUFF

FIND THE CHANNEL AND EQUIPMENT
NUMBERS

AN INTERRUPT CODE IS NOW IN X3.
ADDRESS FOR DISK INTERRUPTS
STORE INTO INTSORT TABLES
CHANNEL AND EQUIPMENT TO (A)

SAVE THEM IN THE TABLE

ENTER POSITION IN DKSTATAB
LOAD THE CONNECT CODE AGAIN
LOAD THE DEVICE NUMBER

SAVE THE CONNECT CODE WORD
IS THE TABLE LONG ENOUGH

DKSTATAB IS NOT LONG ENOUGH

DEVICE CODE TO A

FIND THE NUMBER OF FILE BLOCKS
PER CYLINDER FOR THE DEVICE
ENTER THE DEVICE NUMBER

SAY UNIT IS ON LINE

GET THE HIGHEST FILE BLOCK NO.
SAVE FOR REGEN.

EVEN SYSTEMS PROGRAMMERS MAKE
MISTAKES PERIODICALLY, SO CHECK
UP ON THEM
    
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*****
* SECTION TO TEST FOR MEMORY AVAILABILITY AND SET PAGETABL *
* ACCORDINGLY *
*****
```

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00232 20000256 P
00233 40000022
00234 14677777 X
00235 17474000
00236 44000320 P
00237 14200177
00240 54310076 P
00241 14600007
00242 77660000
00243 01000331 P
00244
    01224 P
    01224 P
00245 21222324
00252 27256067
    00034
    00254 P
00254 14607777
00255 44000021
00256 01000257 P
00257 77630000
00260 77730000
00261 20000021
00262 17607777
00263 14700005
00264 03400307 P
00265 77600400
00266 01000265 P
00267 14177774
00270 12000014
00271 14700000
00272 13000003
00273 43401227 P 00245 3
00274 02100271 P
00275 53200000
00276 12000017
00277 14177775
00300 14700000
00301 13000003
00302 43401255 P 00253 1
00303 02100300 P
00304 11001224 P 00245 0
00305 14700034
00306 00707426 P
00307 53300000
00310 36010076 P
00311 03000357 P
00312 01000325 P
    00313 P
00313 05200020
00314 01000316 P
00315 01000331 P
00316 53200000
00317 12000013
00320 14700000
00321 04200000
00322 03700327 P
00323 14400001
00324 34001644 P
    00325 P
00325 20007734 P
00326 01000355 P
    00327 P
00327 14600774
00330 77644000
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LDA NONEXIST
STA 00022B
ENA SYSBASE
ANA,S 74000B
SWA TMAV01Z
ENI 200B-1,X2
LDI ENOPOINT,X3
ENA 7
AOS
UJP TMAV04

HFBN BSS 1

TMAVMESSEQU,C *
TMAVMESCEQU,C *
BCD,C 23,ABCD PARITY ERROR PAGE
TMAVMESPBCD,C 5,XXX^^
TMAVMESLEQU,C *-TMAVMESSE

TMAV03 EQU *
ENA 07777B
SWA 00021B
UJP *+1
CRA
VFD A12/DINT
LDA 00021B
ANA 7777B
ENQ 0005B
AQJ,EQ NONEX02
PAUS 0400B
UJP *-1
ENI -3,X1
SHA 12
ENQ 0
SHAQ 3
SQCH TMAVMESCE+3,X1
IJI *-3,X1
TIA X2
SHA 15
ENI -2,X1
ENQ 0
SHAQ 3
SQCH TMAVMESP+2,X1
IJI *-3,X1
ECHA TMAVMESSE
ENQ TMAVMESLE
RTJ OUT

NONEX02 TIA X3
SCA ENOPOINT
AZJ,EQ TMAV08
UJP TMAV01X

TMAV01 EQU *
ISG 20B,X2
UJP *+2
UJP TMAV04
TIA X2
SHA 11
ENQ IMPURE
ISE 0,X2
AQJ,LT TMAV04X
ENA,S 1
RAD SYSPAGE
EQU *
LDA SYSCON
UJP TMAV06

TMAV04X EQU *
ENA 774B
APF 0,X2
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```
MASK TO THE BASE OF THE PAGE
SAVE THE SYSTEM BASE
MAX NUMBER OF PAGES ON 3L00
LOAD THE BASE OF THE SYSTEM

THE HIGHEST FILE BLOCK NO.

PRINT OUT GARBAGE FOR THE ERROR
CODE

LOAD THE INTERRUPT CODE

ROP/STO NO RESPONSE
JUMP IF OK
WAIT ON THE TYPEWRITER

PRINT 4 DIGIT CODE

STORE THE INTERRUPT CODE

PAGE NUMBER TO A

PRINT OUT THE PAGE NUMBER

ENTER THE FCA
AND THE LENGTH

HAVE WE ALLOCATED ANY MEMORY
YET
JUMP IF NOT

SKIP IF IMPOSSIBLE TO BE SYSTEM

PAGE NUMBER TO A
FORM CORE ADDRESS
ENTER THE BASE OF THE SYSTEM
PAGE ZERO IS ALWAYS SYSTEM
JUMP IF NOT SYSTEM MEMORY
REMEMBER HOW MANY PAGES IN THE
SYSTEM

SET PAGE FILE TO NON-EXISTANT
```

00331	53200000	P	444	TMAV04	EQU	*		
00332	12000002		445		TIA	X2		PAGE NUMBER TO A
00333	77640160		446		SHA	2		SHIFT FOR THE PAGE FILE
00334	55400000		447		APF	160B+PFW		
00335	14103776		448		VFD	A9/ROS		
00336	14700000		449		ENI	3776B,X1		
00337	14477777		450		ENQ	0		
00340	40100001		451		ENA,S	77777B		
00341	20100001		452		STA	1,X1		
00342	45100000		453	TMAV02	LDA	1,X1		
00343	25100000		454		STAQ	0,X1		
00344	02500342	P	455		LOAQ	0,X1		TEST ALL WORDS IN THE PAGE
00345	41100000		456		IJD	TMAV02,X1		
00346	21100000		457		STQ	0,X1		
00347	55000000		458		LDQ	0,X1		
00350	03500254	P	459		VFD	A9/RIS		
00351	03600254	P	460		AQJ,NE	TMAV03		
00352	14600001	P	461		AQJ,GE	TMAV03		
00353	34077777	X	462		ENA	1		COUNT UP NUMBER OF FREE PAGES
00354	14600000		463		RAD	FPCNT		
00355	40300000		464	TMAV06	ENA	0		STORE THE PAGE TABLE ENTRY
00356	15377776		465		STA	0,X3		
00357	02600313	P	466	TMAV08	INI	-1,X3		
00360	53300000		467		IJD	TMAV01,X2		
00361	16477777		468		TIA	X3		BASE OF PAGE TABLE TO A
00362	30010076	P	469		XOA,S	77777B		
00363	47310076	P	470		ADA	ENDPOINT		COMPUTE LENGTH OF PAGETABLE
00364	53500000	P	471		STI	ENDPOINT,X3		SAVE BASE OF THE SYSTEM
00365	25006346	P	472		TAI	X1		
00366	00706241	P	473		LDQA	BCONPAGE		#NUMPAGES#
00367	25006343	P	474		RTJ	LINKIT		
00370	15177776		475		LDQA	BCONPGM1		#NPAGESM1# NUMPAGES - 1
00371	00706241	P	476		INI	-1,X1		
00372	54110076	P	477		RTJ	LINKIT		
00373	15100001		478		LOI	ENDPOINT,X1		
00374	25006351	P	479		INI	1,X1		FORM ADDRESS OF PAGETABL
00375	00706241	P	480		LDQA	BCONPAGTB		#PAGETABL#
00376	14600000		481		RTJ	LINKIT		
00377	14277777	X	482		ENA	0		
00400	01000403	P	483		ENI	NUMPAGES,X2		
00401	15177776		484		UJP	*+3		GENERATE PAGETIME
00402	40100000		485		INI	-1,X1		
00403	02600401	P	486		STA	0,X1		
00404	25006354	P	487		IJD	*-2,X2		
00405	00706241	P	488		LDQA	BCONPAGTI		#PAGETIME#
00406	14600000		489		RTJ	LINKIT		
00407	14200377	X	490		ENA	0		
00410	01000413	P	491		ENI	NUMPAGES,X2		
00411	15177776		492		UJP	*+3		
00412	40100000		493		INI	-1,X1		
00413	02600411	P	494		STA	0,X1		GENERATE PAGEMSA
00414	25006357	P	495		IJD	*-2,X2		
00415	00706241	P	496		LDQA	BCONPAGEM		#PAGEMSA#
00416	15177776		497		RTJ	LINKIT		
00417	47110076	P	498		INI	-1,X1		
			499		STI	ENDPOINT,X1		SAVE THE BASE OF THE SYSTEM
			500					
00420	14200001		501		ENI	PFL0C,X2		SET UP THE #CORE# ADDRESSES
00421	20277777	X	502		LDA	PAGETABL,X2		CHECK FOR NO PARITY ERRORS
00422	04400000		503		ASE,S	0		
00423	00000423	P	504		HLT	*		IF PAGE 1 IS BAD SO IS PAGE ZERO
00424	53200000		505		TIA	X2		PAGE NUMBER TO A
00425	12000002		506		SHA	2		FORM 1/4 PAGE NUMBER
00426	77644000		507		APF	0,X2		
00427	14600000		508		ENA	0		
00430	77664000		509		AIS			
00431	77680000		510		AOS			
00432	14600022		511		ENA	22B		SIMULATE THE PARITY STOP SWITCH
00433	40000022		512		STA	00022B		

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\* SECTION TO PROCESS THE BLOCK DIRECTORY \*  
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00434 1460000J  
00435 14104000  
00436 00707447 P  
00437 14300000  
00440 14200000  
00441 25307471 P  
00442 33204000  
00443 13400000  
00444 03000451 P  
00445 15200003  
00446 05200776  
00447 01000441 P  
00450 00000450 P  
00451 20204002  
00452 40307471 P  
00453 15300002  
00454 05300050  
00455 01000440 P

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BLOCKSR	ENA	IMPURE	
	ENI	CORE,X1	
	RTJ	ZREAD	
	ENI	0,X3	
BKR01	ENI	0,X2	
BKR02	LDAQ	BLKLIST,X3	
	SBAQ	CORE,X2	
	SCAQ		
	AZJ,EQ	BKR03	
	INI	3,X2	
	ISG	WPF8-2,X2	
	UJP	BKR02	
	HLT	*	
BKR03	LDA	CORE+2,X2	
	STA	BLKLIST,X3	
	INI	2,X3	
	ISG	BLKLNTH,X3	
	UJP	BKR01	

ENTER THE ADDRESS OF BLOCKS  
SET THE CORE ADDRESS

START AT THE BEGINNING OF THE LIS

LOAD THE CURRENT SYMBOL  
CHECK FOR A MATCH

JUMP IF SO  
POINT TO THE NEXT ELEMENT  
SYMBOL BLOCK IS JUST ONE BLOCK  
LONG JUMP IF NOT DONE  
NECESSARY SYMBOL IS NOT PRESENT  
LOAD THE VALUE OF THE SYMBOL  
AND SAVE IT

DO WE WANT ANY MORE SYMBOLS  
LOOP BACK IF SO

00456	14300000		542	ENI	0,X3	NO TV CONTROLLERS FOUND YET
00457	14200000		543	ENI	0,X2	START AT THE BEGINNING OF THE
	00460	P	544	EQU	*	BLOCK
00460	25204000		545	LDAQ	CORE,X2	LOAD A SYMBOL
00461	33007630	P	546	SBAQ	TV	IS IT TV
00462	13400000		547	SCAQ	0	
00463	03100522	P	548	AZJ,NE	TVSETUP9	JUMP IF NOT
00464	04000000		549	ISE	IMPURE,0	
00465	01000476	P	550	UJP	TVSETUP2	
00466	20204002		551	LDA	CORE+2,X2	LOAD THE CONNECT CODE
00467	17677000		552	ANA	77000B	
00470	16600015		553	XOA	15B	SET NON EXISTANT UNIT
00471	44077777	X P	554	SWA	TVCON	SAVE FOR THE DRIVER
00472	44000464	P	555	SWA	TVSETUP1	SET THE FLAG
00473	17670000		556	ANA	70000B	SAVE THE CHANNEL NUMBER
00474	44000512	P P P	557	SWA	TVSETUP3	
00475	47006162	P P P	558	STI	PHANTV,0	REMEMBER TV EXIST FOR PHANTOM
	00476		559	EQU	*	
00476	20204002		560	LDA	CORE+2,X2	LOAD THE CONNECT CODE
00477	15300001		561	INI	1,X3	
00500	12000014		562	SHA	12	
00501	53500000		563	TAI	X1	
00502	17100007		564	ANI	00007B,X1	SAVE THE CHANNEL NUMBER
00503	12000006		565	SHA	6	
00504	17600070		566	ANA	70B	SAVE THE EQUIPMENT NUMBER
00505	53540000		567	IAI	X1	
00506	14677777	X	568	ENA	TVINT	SET UP FOR EQUIPMENT INTERRUPTS
00507	44100167	X	569	SWA	INSTL,X1	
00510	20204002		570	LDA	CORE+2,X2	LOAD THE CONNECT CODE AGAIN
00511	17470000		571	ANA,S	70000B	CHECK FOR THE PROPER CHANNEL
00512	04600000		572	ASE	IMPURE	TVS MUST ALL BE ON THE SAME
00513	00000513	P	573	HCT	*	CHANNEL
00514	20204002		574	LDA	CORE+2,X2	LOAD THE VALUE AGAIN
00515	12077766		575	SHA	-9	GET THE EQUIPMENT NUMBER
00516	53500000		576	TAI	X1	
00517	17100007		577	ANI	00007B,X1	
00520	13077736		578	SHAQ	-9-24	GET THE NUMBER OF UNITS
00521	43477777	X	579	SQCH	TVTABLE,X1	AND SAVE IT
00522	15200003		580	INI	3,X2	POINT TO THE NEXT SYMBOL
00523	05200776	P	581	ISG	WPPB-2,X2	SKIP IF AT THE END OF THE BLOCK
00524	01000460	P	582	UJP	TVSETUP	LOOP BACK IF NOT DONE
	00525		583			
00525	21007531	P	584	LDA	TTY	LOAD NUMBER OF TELETYPES
00526	14100000		585	ENI	0,X1	START WITH LOW EQUIPMENT NUMBERS
00527	14200002		586	ENI	2,X2	
	00530	P	587	EQU	*	
00530	41277777	X	588	STQ	TVTABLE,X2	SAVE THE LOW TERMINAL NUMBER
00531	22400521	X	589	LACH	TVTABLE,X1	ARE ANY TV'S THERE
00532	53040000		590	AQA		COMPUTE THE LOW TERMINAL NUMBER
00533	13000030		591	SHAQ	24	FOR THE NEXT CONTROLLER
00534	10100007		592	ISI	7,X1	
00535	02200530	P	593	IJI	TVSETUPA,X2	
00536	13000030		594	SHAQ	24	
00537	53500000		595	TAI	X1	TERMINAL NUMBER OF HIGHEST NON
00540	25006506	P	596	LDAQ	BCDTRMNM	BATCH JOB TO X1
00541	00706241	P	597	RTJ	LINKIT	#TRMNUM#
00542	15100001		598	INI	1,X1	
00543	25006271	P	599	LDAQ	BCDBATNM	GET TERM NUMB OF LOWEST BATCH
00544	47100555	P P P	600	STI	PSAXX02,X1	#BATNUM#
00545	00706241	P	601	RTJ	LINKIT	
00546	20007527	P	602	LDA	BATCH	HOW MANY BATCH QUEUES DO WE WANT
00547	05400001		603	ASG,S	1	MUST BE ATLEAST ONE FOR REMOTE
00550	14600001		604	ENA	1	
00551	53500000		605	TAI	X1	
00552	25006340	P	606	LDAQ	BCDNBAT	#NBATPSA#
00553	47100556	P	607	STI	PSAXX04,X1	
00554	00706241	P	608	RTJ	LINKIT	
00555	14600000		609	ENA	IMPURE	ENTER TERMINAL NUMBER OF LOWEST
00556	15600000		610	INA	IMPURE	BATCH AND COMPUTE TOTAL NUMBER
00557	53600000		611	TAI	X2	OF TERMINALS
00560	53500000		612	TAI	X1	
00561	25006517	P	613	LDAQ	BCDUSRMX	#USRMX#
00562	00706241	P P P	614	RTJ	LINKIT	
00563	54110076	P	615	LDI	ENDPOINT,X1	
00564	14600000		616	ENA	0	BUILD PSABLK
00565	02600566	P	617	IJD	*+1,X2	
00566	40100000		618	STA	0,X1	
00567	15177776		619	INI	-1,X1	
00570	02600566	P	620	IJD	*-2,X2	

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PSAXX02  
PSAXX04

00571	47110076	P	621		STI	ENDPOINT,X1	
00572	15100001		622		INI	1,X1	
00573	25006412	P	623		LDAQ	BCDFPSABL	#PSABLK#
00574	47100605	P	624		STI	PSAXX06,X1	
00575	00706241	P	625		RTJ	LINKIT	
00576	54107531	P	626		LDI	TTY,X1	LOAD THE NUMBER OF TELETYPES
00577	15100001		627		INI	1,X1	
00600	25006511	P	628		LDAQ	BCDTTNUM	#TTNUM#
00601	00706241	P	629		RTJ	LINKIT	
00602	25006514	P	630		LDAQ	BCDTV8	#TVBLOCK#
00603	00706241	P	631		RTJ	LINKIT	
00604	54100555	P	639		LDI	PSAXX02,X1	LOAD NUMBER OF FIRST BATCH PSA
00605	15100000		640	PSAXX06	INI	IMPURE,X1	RELOCATE WITHIN PSABLK
00606	25006274	P	641		LDAQ	BCDBPSA	#BATCHPSA#
00607	00706241	P	642		RTJ	LINKIT	

00610	14300000	P	655	ENI	0,X3	POINT TO THE BEGINNING OF EQNLIST
00611	01000635		656	UJP	EQND5	AND JUMP TO THE BOTTEM OF THE LOO
			657			
00612	14200000		658	EQND1	0,X2	POINT TO BEGINNING OF SYMBOL BLOC
00613	25307554	P	659	EQND2	EQNLIST,X3	GET DEVICE NAME
00614	33204000		660		CORE,X2	IS THIS THE DEVICE
00615	13400000		661			
00616	03100631	P	662	AZJ,NE	EQND3	JUMP IF NOT
00617	20307556	P	663	LDA	EQNLIST+2,X3	LOAD SET UP ROUTINE ADDRESS
00620	44000625	P	664	SWA	EQNRTJ	
00621	20204002		665	LDA	CORE+2,X2	LOAD THE CONNECT CODE
00622	54110076	P	666	LDI	ENDPOINT,X1	LOAD FREE CORE POINTER
00623	47200627	P	667	STI	*+4,X2	SAVE X2
00624	47300526	P	668	STI	*+2,X3	SAVE X3
00625	00700000		669	EQNRTJ	IMPURE	
00626	14300000		670	RTJ	IMPURE,X3	
00627	14200000		671	ENI	IMPURE,X2	
00630	47110076	P	672	STI	ENPOINT,X1	SAVE NEW POINTER
00631	15200003		673	EQND3	3,X2	ARE WE AT THE END OF THE SYMBOL
00632	05200776		674	ISG	WPF8-2,X2	BLOCK
00633	01000613	P	675	UJP	EQND2	JUMP IF MORE LEFT
00634	15300004		676	INI	EQNL,X3	POINT TO THE NEXT DEVICE
00635	05300054		677	EQND5	EQNLNTH,X3	IS THE DEVICE REALLY THERE
00636	01000612	P	678	UJP	EQND1	JUMP BACK IF SO
00637	54110076	P	679	LDI	ENDPOINT,X1	LOAD THE MEMORY POINTER
00640	00777777	X	680	RTJ	PDP8QS	BUILD THE PDP8 QUEUS
00641	47110076	P	681	STI	ENDPOINT,X1	

00642	54110076	P	683	LDI	ENDPOINT,X1	BUILD THE BLOCK TABLE
00643	54206727	P	684	LDI	BLKENI,X2	LOAD THE TABLE LENGTH
00644	01000650	P	685	UJP	*+4	
00645	20206737	P	686	LDA	TEMPDINT,X2	LOAD A TABLE ENTRY
00646	40100000		687	STA	0,X1	AND MOVE IT INTO FREE STORAGE
00647	15177776		688	INI	-1,X1	
00650	02600645	P	689	IJD	*-3,X2	
00651	47110076	P	690	STI	ENDPOINT,X1	SAVE NEW SYSTEM ADDRESS
00652	15100001		691	INI	1,X1	POINT TO BASE OF THE TABLE
00653	25006302	P	692	LDAQ	BCDLOCK	
00654	00706241	P	693	RTJ	LINKIT	FIX THE POINTERS
00655	54110076	P	694	LDI	ENDPOINT,X1	
00656	15100002		695	INI	2,X1	POINT TO TABLE +1
00657	25006310	P	696	LDAQ	BCDCLKP1	
00660	00706241	P	697	RTJ	LINKIT	
00661	54106727	P	698	LDI	BLKENI,X1	
00662	25006305	P	699	LDAQ	BCDCLKL	
00663	00706241	P	700	RTJ	LINKIT	
00664	54110076	P	701	LDI	ENDPOINT,X1	
00665	54207106	P	702	LDI	CRSENI,X2	LOAD LENGTH OF CARD READER TABLE
00666	01000702	P	703	UJP	STAR08	
	00667	P	704	EQU	*	
00667	25207115	P	705	LDAQ	TEMPCRS,X2	LOAD MACRO POINTER AND NUMBER
00670	53700000		706	TAI	X3	OF TIMES TO MULTI PROGRAM
00671	53100000		707	TIA	X1	
00672	15477776		708	INA,S	-1	
00673	44300022		709	SWA	BATCHPNT,X3	SAVE BLOCKS POINTER IN THE MACRO
00674	45177776		710	STAQ	-1,X1	PUT THE ENTRY INTO BLOCKS
00675	05500000		711	QSG,S	0	SKIP IF REALLY A CARD READER
00676	01000702	P	712	UJP	*+4	
00677	14600002		713	ENA	2	REMEMBER HOW LONG THE TABLE IS
00700	34001005	P	714	RAD	STAR10	
00701	15177775		715	INI	-2,X1	
00702	10600000		716	ISQ	0,X2	
00703	02600667	P	717	IJD	STAR06,X2	
00704	15177775		718	INI	-2,X1	
00705	53100000		719	TIA	X1	GENERATE AN ENTRY FOR REMOTE BATC
00706	14700000		720	ENQ	0	
00707	15600001		721	INA	1	
00710	45100001		722	STAQ	1,X1	
00711	47110076	P	723	STI	ENDPOINT,X1	
00712	15100001		724	INI	1,X1	
00713	25006475	P	725	LDAQ	BCDCLK	#TASKQ#
00714	00706241	P	726	RTJ	LINKIT	

```

*****
726+002 *
726+003 * THE NEXT FOURTEEN LINES OF CODE PRODUCE THE APPROPRIATE
726+004 * NUMBER OF TAPE QUEUES CORRESPONDING TO #TPUNITS#.
726+005 *
726+006 * EACH QUEUE IS MULTIPROGRAMMED TO THE MAXIMUM NUMBER OF JOBS
726+007 * THAT CAN POSSIBLY RUN FROM THAT QUEUE. EACH QUEUE ELEMENT
726+008 * IS MARKED WITH BIT23 TO SAY TO THE SCHEDULR THAT IT IS
726+009 * A TAPE QUEUE.
726+010 *
*****
    
```

00715	14277777	X	726+012	ENI	TPUNITS,X2	NUMBER OF TAPE DRIVES
00716	01000733	P	726+013	UJP	STAR091	START THE LLOP
	00717	P	726+014	EQU	*	
00717	15177775		726+015	INI	-2,X1	GRAB SOME MORE STORAGE
00720	53200000		726+016	TIA	X2	GET THE NUMBER OF THE QUEUE
00721	15600001		726+017	INA	1	MAKE IT THE NUMBER OF TAPES
00722	40007721	P	726+018	STA	TEMP1	TEMP FOR DIVISION
00723	14600715	X	726+019	ENA	TPUNITS	THE NUMBER OF TAPES POSSIBLE
00724	13077747		726+020	SHAQ	-24	DOWN FOR DIVIDE
00725	51007721	P	726+021	DVA	TEMP1	DIVIDEND
00726	13000030		726+022	SHAQ	24	QUOTIENT DOWN TO Q
00727	15577776		726+023	INQ,S	-1	NUMBER OF SIMULTANEOUS JOBS
00730	53100000		726+024	TIA	X1	POINTER TO ITSELF
00731	35007642	P	726+025	SSA	BIT23	SET BIT TO SAY TAPE QUEUE
00732	45100000		726+026	STAQ	0,X1	PLACE INTO MEMORY
	00733	P	726+027	EQU	*	
00733	02600717	P	726+028	IJD	STAR09,X2	LOOP TO GENERATE ALL QUEUES
00734	14600723	X	726+029	ENA	TPUNITS	NUMBER OF TAPE DRIVES
00735	12000001		726+030	SHA	1	MULTIPLY BY 2
00736	34001005	P	726+031	RAD	STAR10	COUNT FOR LATER USE
00737	47107552	P	726+032	STI	TAPEQP,X1	SAVE POINTER TO TAPE QUEUE
00740	15177775		726+033	INI	-2,X1	BACK UP TO NEEDED STORAGE
00741	53100000		726+034	TIA	X1	POINTER TO WHERE WE ARE
00742	14700000		726+035	ENQ	0	MULTIPROGRAMMED TO 1



00743	45100000		726+036	STAQ	0,X1	INTO MEMORY
00744	47107550	P	726+037	STI	FASTQP,X1	#FASTQ#
00745	15177775		726+038	INI	-2,X1	BACK UP FOR TWO MORE WORDS
00746	53100000		726+039	TIA	X1	POINTER TO THE BLOCK
00747	14700000		726+040	ENQ	0	ALSO MULTIPROGRAMMED TO 1
0J750	45100000		726+041	STAQ	0,X1	MAKE ENTRY
00751	47107546	P	726+042	STI	NITEQP,X1	#NITEQ#
00752	15177776		726+043	INI	-1,X1	BACK UP FREE STORAGE POINTER
00753	47110076	P	726+044	STI	ENDPOINT,X1	SAVE FOR LATER
00754	15100001		728	INI	1,X1	
00755	25006277	P	729	LDAQ	BCOQBQ	#BATCHQ#
00756	00706241	P	730	RTJ	LINKIT	
00757	54110076	P	731	LDI	ENDPOINT,X1	
00760	15100002		732	INI	2,X1	
00761	25006423	P	733	LDAQ	BCDQTAB	#QTABLE#
00762	00706241	P	734	RTJ	LINKIT	
00763	20007552	P	734+001	LDA	TAPEQP	GET THE POINTER TO THE TAPE QUEUE
00764	17677777		734+002	ANA	77777B	MASK TO 15 BITS
00765	14777777	X	734+003	ENQ	BATCHQ	POINTER TO START OF QUEUES
00766	16577777		734+004	XOQ,S	77777B	FLIP BITS
00767	53040000		734+005	AQA		ADD TOGETHER
00770	53500000		734+006	TAI	X1	FOR LINKING VALUE
00771	16177777		734+007	XOI	77777B,X1	NEGATE IT
00772	25006431	P	734+008	LDAQ	BCDNQ	#NTAPEQ#
00773	00706241	P	734+009	RTJ	LINKIT	LINK UP THE VALUES
00774	20007550	P	734+010	LDA	FASTQP	
00775	17677777		734+011	ANA	77777B	POINTER TO THE FAST QUEUE
00776	14700765	X	734+012	ENQ	BATCHQ	POINTER TO THE BATCH QUEUES
00777	16577777		734+013	XOQ,S	77777B	FLIP ALL BITS
01000	53040000		734+014	AQA		ADD TO -BATCHQ
01001	12077776		734+015	SHA	-1	DIVIDE BY 2
01002	53500000		734+016	TAI	X1	FOR LINKING UP THE VALUE
01003	25006426	P	734+017	LDAQ	BCDFQN	#FASTQN#
01004	00706241	P	734+018	RTJ	LINKIT	
01005	14100006		734+019	ENI	6+IMPURE,X1	2*(NITE+FAST+TASK)=6 QUEUES
01006	25006335	P	736	LDAQ	BCDNBTQ	#NBATCHQ#
01007	00706241	P	737	RTJ	LINKIT	
01010	54207267	P	738	LDI	MAXLP,X2	
01011	54110076	P	739	LDI	ENDPOINT,X1	
01012	01001020	P	740	UJP	STAR14	
01013	20207277	P	741	LDA	TEMPLP,X2	LOAD THE TABLE ELEMENT
01014	03101016	P	742	AZJ,NE	*+2	JUMP IF A PRINTER IS THERE
01015	20007277	P	743	LDA	TEMPLP	ELSE LOAD THE STANDARD PRINTER
01016	40100000		744	STA	0,X1	
01017	15177776		745	INI	-1,X1	
	01020	P	745+001	EQU	*	
01020	10600000		745+002	ISD	0,X2	SKIP IN 2 WORD CHUNKS
01021	02601013	P	745+003	IJD	STAR12,X2	LOOP THROUGH ALL LP#S
			747			
01022	47110076	P	748	STI	ENDPOINT,X1	SAVE THE MEMORY ADDRESS
01023	15100001		749	INI	1,X1	
01024	25006327	P	750	LDAQ	BCDLPAB	#LPAB#
01025	00706241	P	751	RTJ	LINKIT	
01026	54107267	P	752	LDI	MAXLP,X1	LOAD THE LENGTH OF THE TABLE
01027	25006332	P	753	LDAQ	BCDLPB	#LPB#
01030	00706241	P	754	RTJ	LINKIT	
01031	14104000		754+001	ENI	CORE,X1	READ IN THE SHIFT SCHEDULE
01032	20007533	P	754+002	LDA	HOURS	GET THE DISK ADDRESS
01033	00707447	P	754+003	RTJ	ZREAD	
01034	54110076	P	754+004	LDI	ENDPOINT,X1	MOVE THE TABLE INTO CORE
01035	14200012		754+005	ENI	10,X2	
	01036	P	754+006	EQU	*	
01036	20204000		754+007	LDA	CORE,X2	
01037	40100000		754+008	STA	0,X1	
01040	15177776		754+009	INI	-1,X1	
01041	02601036	P	754+010	IJD	HOURSCHD,X2	LOOP TO MOVE ALL THE WORDS
01042	47110076	P	754+011	STI	ENDPOINT,X1	UPDATE THE POINTER TO FREE STORAG
01043	15100001		754+012	INI	1,X1	
01044	25006453	P	754+013	LDAQ	BCDSCHD	
01045	00706241	P	754+014	RTJ	LINKIT	PLUG HE POINTERS TO THE HOUR SCHE
01046	15100007		754+015	INI	7,X1	
01047	25006450	P	754+016	LDAQ	BCDRATE	
01050	00706241	P	754+017	RTJ	LINKIT	PLUG THE POINTERS TO THE RATE FAC
01051	54104013		754+018	LUI	CORE+11,X1	GET THE NUMBER OF SHIFTS.
01052	25006445	P	754+019	LDAQ	BCDSHFT	
01053	00706241	P	754+020	RTJ	LINKIT	

```

754+023 *
754+024 *      THIS SECTION BUILDS #SENDTAB#
754+025 *
754+026 *      THIS TABLE IS FORMED THUS --
754+027 *
754+028 *      WORD 1 -- BCD IDENT ( 4 BCD CHARACTERS )
754+029 *      WORD 2 -- VFD A9/HARDWARE TYPE,A15/POINTER
754+030 *
754+031 *      IF THE HARDWARE TYPE IS A LINE PRINTER, THE POINTER IS A
754+032 *      RELATIVE POINTER INTO LPTAB.  IF THE HARDWARE TYPE IS TASK,
754+033 *      THE POINTER IS A POINTER TO THE APPROPRIATE QUEUE LOCATION.
754+034 *
*****

```

01054	54110076	P	754+036		GET FREE STORAGE POINTER
01055	15177776		754+037	LOI	ENDPOINT,X1
01056	14200734	X	754+038	INI	-1,X1
01057	25007551	P	754+039	ENI	TPUNITS,X2
01060	01001065	P	754+040	LDAQ	MISENDP
01061	45100000		754+041	UJP	*+5
01062	15600100		754+042	STAQ	0,X1
01063	15700002		754+043	INA	H#10#
01064	15177775		754+044	INQ	2
01065	02601061	P	754+045	INI	-2,X1
01066	54207267	P	754+046	IJD	*-4,X2
01067	01001077	P	754+047	LOI	MAXLP,X2
	01070	P	754+048	UJP	BLDSTL2
01070	21207300	P	754+049	EQU	*
01071	53200000		754+050	LDQ	TEMPLP+1,X2
01072	12077776		754+051	TIA	X2
01073	35007553	P	754+052	SHA	-1
01074	13000030		754+053	SSA	LPTYPE
01075	45100000		754+054	SHAQ	24
01076	15177775		754+055	STAQ	0,X1
	01077	P	754+056	INI	-2,X1
01077	10600000		754+057	EQU	*
01100	02601070	P	754+058	ISO	0,X2
01101	14200010		754+059	IJD	BLDSTL1,X2
01102	01001106	P	754+060	ENI	ISENDTBL,X2
01103	25207541	P	754+061	UJP	BLDSTL0
01104	45100000		754+062	LDAQ	ISENDTB,X2
01105	15177775		754+063	STAQ	0,X1
	01106	P	754+064	INI	-2,X1
01106	10600000		754+065	EQU	*
01107	02601103	P	754+066	ISD	0,X2
01110	15100002		754+067	IJD	*-4,X2
01111	25006434	P	754+068	INI	2,X1
01112	00706241	P	754+069	LDAQ	BCDSTAB
01113	15100001		754+070	RTJ	LINKIT
01114	25006437	P	754+071	INI	1,X1
01115	00706241	P	754+072	LDAQ	BCDSTAB1
01116	15177775		754+073	RTJ	LINKIT
01117	20010076	P	754+074	INI	-2,X1
01120	47110076	P	754+075	LDA	ENDPOINT
01121	16177777		754+076	STI	ENDPOINT,X1
01122	53540000		754+077	XOI	77777B,X1
01123	15100001		754+078	IAI	X1
01124	25006442	P	754+079	INI	1,X1
01125	00706241	P	754+080	LDAQ	BCDSTABL
			754+081	RTJ	LINKIT
			754+082		

```

754+084 *
754+085 *      INITIALIZE THE LOWER RATE #NITE# QUEUE.
754+086 *
*****

```

01126	53010037		754+088		GET THE CURRENT DATE
01127	00777777	X	754+089	TMQ	DATE
01130	20177777	X	754+090	RTJ	SHIFTRAT
01131	12077774		754+091	LDA	RATETAB,X1
01132	44077777	X	754+092	SHA	-3
			754+093	SWA	LATEFLAG

```

GET THE CURRENT DATE
COMPUTE SCHEDULE FROM IT
GET CURRENT MULTIPLYER
DIVIDE BY 8
AND SET/CLEAR FLAG AS NECESSARY

```

757  
758  
759

```
*****  
*  
* SECTION TO PROCESS THE SECURITY BLOCK *  
*  
*****
```

01133 14104000  
01134 20007517 P  
01135 06707447 P  
01136 25004002  
01137 45007700 P  
01140 53420037  
01141 14600001  
01142 53040000  
01143 53420032  
01144 53410022  
01145 53010037  
01146 17577740  
01147 15700040  
01150 00702564 P  
01151 41077777 X  
01152 20004000  
01153 40007727 P  
01154 17477737  
01155 03001172 P  
01156 11004714 P  
01157 14700033  
01160 00707426 P  
01161 20004000  
01162 00001162 P  
01163 77644562 P  
01172 01172 P

01163 0

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763  
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783  
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785  
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788

ENI  
LDA  
RTJ  
LDAQ  
STAQ  
TAM  
ENA  
AQA  
TAM  
TQM  
TMQ  
ANQ,S  
INQ  
RTJ  
STQ  
LDA  
STA  
ANA,S  
AZJ,EQ  
ECHA  
ENG  
RTJ  
LDA  
HLT  
BCD  
EQU

CORE,X1  
SECURITY  
ZREAD  
CORE+2  
LDT  
DATE  
1  
CLOCKLIM  
CLOCK  
DATE  
777408  
408  
ADJUST  
TOMORROW  
CORE  
SECWORD  
-000408  
SAFE  
USMSG  
27  
OUT  
CORE  
\*  
7,^UNSAFE CONDITION EXISTS^^^  
\*

GET THE ADDRESS OF SECURITY BLOCK

SET THE CLOCK TO INTERRUPT  
LOAD THE CLOCK RF LOCATION

CHECK FOR UNSAFE CONDITIONS  
SAVE THE WORD FOR LATER  
MASK OUT THE SYSTEM RUNNING BIT

LOAD THE NUMBER

USMSG  
SAFE

791  
792  
793  
  
795  
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799  
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815  
816  
817  
818

01172 14104000  
01173 20007511 P  
01174 00707447 P  
01175 14100777  
01176 20104000  
01177 53600000  
01200 05200227 X  
01201 01001203 P  
01202 00001202 P  
01203 20200215 X  
01204 03201227 P  
01205 53200000  
01206 13077747  
01207 51007731 P  
01210 42005126 P  
01211 43005127 P  
01212 11005070 P  
01213 14700043  
01214 00707426 P  
01215 00003700  
01216 77663025  
01227 02501176 P

01225 2  
01225 3  
01216 0

RQDVCHK

RQDVMSG  
RQDVLOOP

ENI  
LCA  
RTJ  
ENI  
LDA  
TAI  
ISG  
UJP  
HLT  
LDA  
AZJ,GE  
TIA  
SHAQ  
DVA  
SACH  
SQCH  
ECHA  
ENQ  
RTJ  
HLT  
BCD  
IJD

CORE,X1  
RQDVLIST  
ZREAD  
WPFB-1,X1  
CORE,X1  
X2  
MSUNITS,X2  
\*+2  
\*  
ARRAYTBL,X2  
RQDVLOOP  
X2  
-24  
D10  
RQDVMSG+30  
RQDVMSG+31  
RQDVMSG  
35  
OUT  
3700B  
9,^WHERE IS MASS STORAGE DEVICE XX^^  
RQDVCHK,X1

IS THE DEVICE ON LINE  
JUMP IF SO

\*\*\*\*\*  
\* SECTION TO CHECK FOR ALL REQUIRED MASS STORAGE DEVICES \*  
\*\*\*\*\*

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822  
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840  
841

```
*****  
*  
*           SECTION TO FIND THE DATE OF THE LAST LONG BACKUP  
*  
*****
```

01230 20007475 P  
01231 14104000  
01232 00707447 P  
01233 14100000  
01234 25104000  
01235 12000014  
01236 17607777  
01237 05604001  
01240 01001242 P  
01241 01001246 P  
01242 15100002  
01243 05100777  
01244 01001234 P  
01245 14700000  
01246 41007677 P

```
          LDA      BACKLOG  
          ENI      CORE,X1  
          RTJ      ZREAD  
          ENI      0,X1  
BKL01    LDAQ     CORE,X1  
          SHA      12  
          ANA      7777B  
          ASG      4001B  
          UJP      *+2  
          UJP      BKL02  
          INI      2,X1  
          ISG      WPF8-1,X1  
          UJP      BKL01  
          ENQ      0  
BKL02    STQ      LBKDATE
```

```

844
845
846
*****
*
*          LOAD THE AUTOLOAD/AUTODUMP REGION
*
*****
848
849
850      ENI          77B,X1          LOAD THE AUTOLOAD/AUTODUMP REGION
851      LDA          AUTOLOAD,X1
852      STA          3700B,X1
853      IJD          *-2,X1
854      UJP          AUTODONE
855
856      *          THIS IS THE PROGRAM WHICH ACTUALLY RESIDES IN THE EXECUTIVE
857      *          MODE AUTOLOAD/AUTODUMP REGION
858
859      CHN          EQU          0          MASS STORAGE CHANNEL NUMBER
860      EQN          EQU          0010B     MASS STORAGE EQUIPMENT NUMBER
861      BOOT        EQU          00010B    DISK ADDRESS OF BOOT
862      ABNORMAL    EQU          0004B     STATUS BIT FOR ABNORMAL CONDITION
863      DKBUSY      EQU          0002B     STATUS BIT FOR DKBUSY
864      DKLOAD      EQU          0010B     FUNCTION CODE FOR DKLOAD ADDRESS
865      DKREAD      EQU          0040B     FUNCTION CODE FOR DKREAD
866
867      ZZ          EQU          *-3700B
868      AUTOLOAD    EQU          *
869      ENQ          EQU          BOOT
870      ENI          EQU          ALOAD,X2   SAY THIS WAS AUTOLOAD
871      ZAP          EQU          *-ZZ
872      IOCL        EQU          7777B
873      STQ          EQU          DISKADD
874      LACH        EQU          CHANNEL    LOAD THE CHANNEL NUMBER
875      ACI          EQU          0
876      ENA          EQU          0
877      ACR          EQU          0
878      CONNECT     EQU          *-ZZ
879      CHANNEL     EQU          CONNECT*4+1 CHARACTER ADDRESS OF THE CHANNEL
880      *          *          NUMBER IN THE CONNECT INSTRUCTION
881      *
882      MSD0CON    EQU          *
883      CON          EQU          EQN,CHN
884      UJP          ZAP
885      SEL          EQU          DKLOAD,SELECT
886      UJP          ZAP
887      OUTW        EQU          IO,DISKADD,DISKADD+1
888
889      UJP          ZAP
890      ENI          EQU          *-ZZ+2,1
891      UJP          WAIT
892      SEL          EQU          DKREAD,SELECT
893      UJP          ZAP
894      ALOAD       EQU          0,X2          JUMP TO THE PROPER INPW
895      INPW        EQU          *-ZZ
896
897      UJP          ZAP
898      LDA          EQU          CONNECT
899      ENI          EQU          00000B,1
900      WAIT        EQU          *-ZZ
901      EXS          EQU          ABNORMAL,SENSE
902      UJP          ZAP
903      EXS          EQU          ABNORMAL+DKBUSY,SENSE
904      UJP          WAIT
905      INS          EQU          0001B,SENSE
906      UJP          ZAP
907      UJP          0,1
908
909      ORGR        EQU          ZZ+3740B     ORGR TO AUTODUMP
910      HLT          EQU          03740B
911      ENQ          EQU          4          START WITH PAGE 1
912      PFCHEC02    EQU          *-ZZ
913      ENI          EQU          17B,X2     20B PAGES / BANK
914      PFCHEC04    EQU          *-ZZ
915      PFA          EQU          0,X2
916      ANA          EQU          0774B
917      AQJ,NE      EQU          *-ZZ+3
918      INQ          EQU          004B
919      UJP          PFCHEC02

```

```

01247 14100077
01250 20101254 P
01251 40103700
01252 02501250 P
01253 01001354 P

      00000
      00010
      00010
      00004
      00002
      00010
      00040

      75353 P
01254 14700010 P
01255 14203724
      03702
01256 77517777
01257 41003777
01260 22017441 03710 1
01261 77540000
01262 14600000
01263 77634000
      03710
      17441

      01264 P
01264 77000010
01265 01003702
01266 77100010
01267 01003702
01270 76004000
01271 00003777
01272 01003702
01273 14103721
01274 01003731
01275 77100040
01276 01003702
01277 01200000
      03724
01300 74004000
01301 00000000
01302 01003702
01303 20003710
01304 14100000
      03731
01305 77200004
01306 01003702
01307 77200006
01310 01003731
01311 77300001
01312 01003702
01313 01100000

      01314 P
01314 00003740
01315 14700004
      03742
01316 14200017
      03743
01317 77654000
01320 17600774
01321 03503750
01322 15700004
01323 01003742

```

01324 02603743  
 01325 13080030  
 01326 77640001  
           03753  
 01327 14700000  
 01330 14203756  
 01331 01003702  
 01332 74010000  
 01333 00004000  
 01334 01003702  
 01335 14104000  
 01336 01003731  
           01353 P  
           03777  
 01353 00000000  
           01354 P  
           01354 P

920  
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 935

          IJD  
           SHAQ  
           APF  
 ENDREADA EQU  
           ENQ  
           ENI  
           UJP  
           INPW  
  
           UJP  
           ENI  
           UJP  
           ORGR  
 DISKADD EQU  
           VFD  
           ORGR  
 AUTODONE EQU

PFCHEC04,X2  
 24  
 1  
 \*-ZZ  
 IMPURE  
 \*-ZZ+2,X2  
 ZAP  
 IO,4000B,4000B+4000B  
  
 ZAP  
 4000B,X1  
 WAIT  
 ZZ+03777B  
 \*-ZZ  
 A24/IMPURE  
 ZZ+4000B  
 \*

CHECK ALL OF STATE ZERO  
 PAGE NUMBER TO A  
  
 ENTER THE ADDRESS OF THE END PAGE  
 ENTER THE ADDRESS OF THE INPW  
  
 READ A PAGE  
  
 ENTER THE RETURN ADDRESS

938  
939  
940  
941

```
*****
*
* SECTION TO CHECK THAT THE BPI AND BPO SWITCHES ON THE CONSOLE *
* ARE NOT ACTIVE *
*****
```

943

01354 20007537 P  
01355 77700000  
01356 40007537 P  
01357 12077774  
01360 16000001  
01361 17600001  
01362 34077777 X  
01363 77630000  
01364 53020022  
01365 40007675 P  
01366 14600007  
01367 77664000  
01370 77660000  
01371 14600001  
01372 12000002  
01373 14200016  
01374 77644161  
01375 02801374 P  
01376 14600002  
01377 12000002  
01400 77640160  
01401 55400000  
01402 14177776  
01403 21077777  
01404 21100000  
01405 02501404 P  
01406 55000000  
01407 21007662 P  
01410 14107777  
01411 55400000  
01412 41100000  
01413 02501412 P  
01414 55000000  
01415 21007663 P  
01416 55400000  
01417 41000002  
01420 55000000  
01421 21007662 P  
01422 41000005  
01423 14700000  
01424 20001431 P  
01425 40000006  
01426 14600040  
01427 77634000  
01430 01077777  
01431 01001432 P  
01432 77630000  
01433 53020022  
01434 31007675 P  
01435 14700454  
01436 03601364 P  
01437 14600000  
01440 77664000  
01441 77660000

944  
945  
946  
947  
947+001  
947+002  
947+003  
947+004  
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994

SWCHK

BPIUJP

```
LDA SLSBITS
SLS STA SLSBITS
SHA -3
XCA 00001B
ANA 00001B
RAD NORMSYS
CRA
TNA CLOCK
STA TIME
ENA 7
AOS
ENA PFL0C
SHA 2
ENI 16B,X2
APF 161B+PFW,X2
IJD *-1,X2
ENA PFL0C+1
SHA 2
APF 160B+PFW
VFD A9/ROS
ENI 77776B,X1
LDQ 77777B
LDQ 0,X1
IJD *-1,X1
VFD A9/RIS
LDQ NOP
ENI 7777B,X1
VFD A9/ROS
STQ 00000,X1
IJD *-1,X1
VFD A9/RIS
LDQ STQZERO
VFD A9/ROS
STQ 00002
VFD A9/RIS
LDQ NOP
STQ 00005B
ENQ 0
LDA BPIUJP
STA 00006B
ENA 40B
ACR
UJP 77777B
UJP *+1
CRA
TMA CLOCK
SBA TIME
ENQ 300
AQJ,GE SWCHK
ENA 0
AIS
AOS
```

```
GET SLSBITS FROM SYMBOLS BLK
ALLOW A TO BE CHANGED
SAVE FOR FUTURE REFERENCE
GET EXPERIMENTAL/NORMAL SYS BIT
FLIP IT
MASK TO 1 BITS
MAKE EXPERIMENTAL SYSTEM IF NOT
JUST IN CASE
```

SET PROGRAM STATE

JUMP IF A SWITCH WAS SET



997  
998  
999

\*\*\*\*\*  
\* SECTION TO CHECK THE BDP \*  
\*\*\*\*\*

01442	25001477	P		1001
01443	45000011			1002
01444	20007525	P		1003
01445	36007632	P		1004
01446	64006370	P	01476 0	1005
01447	00006370	P	01476 0	1006
01450	00010001			1007
01451	03001502	P		1008
01452	11006274	P	01457 0	1009
01453	14700030			1010
01454	00707426	P		1011
01455	77630000			1012
01456	00003700			1013
				1014
01457	77776364			1015
				1016
01465	77776364			1017
	00030			1018
				1019
01473	11006324	P	01465 0	1020
01474	14700030			1021
01475	01001454	P		1022
01476				1023
				1024
01477	14000000			1025
01500	01001501	P		1026
01501	03001473	P		1027
	01502	P		1028
01502	77630000			1029

	LOAQ	BDPJUMP	
	STAQ	00011B	
	LOA	BDP	CHECK THE SYMBOL BLOCK FOR
	SCA	BCDON	PROPER STATUS
	MVE	BDPBUFF,0,1,BDPBUFF,0,1	THIS SHOULD TRAP TO 10
	AZJ,EQ	BDPOK	JUMP IF BDP SHOULD BE ON
	ECHA	BDPMESS	
	ENQ	24	
BDPOUT	RTJ	OUT	
	CRA		
	HLT	3700B	
BDPMESS	BCD	06,^^TURN OFF THE BDP^^^^^^	
BDPMESS1	BCD	6,^^TURN ON THE BDP^^^^^^	
BDPMES1L	EQU,C	*-BDPMESS1	
BDPON	ECHA	BDPMESS1	
	ENQ	BDPMES1L	
	UJP	BDPOUT	
BDPBUFF	BSS	1	
BDPJUMP	NOP	0	
	UJP	*+1	
	AZJ,EQ	BDPON	JUMP IF BDP SHOULD BE ON
BDPOK	EQU	*	
	CRA		

1032  
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 1061

01503 14600006  
 01504 00101507 P  
 01505 47007710 P  
 01506 15477776  
 01507 00201512 P  
 01510 47007711 P  
 01511 15477776  
 01512 00301515 P  
 01513 47007712 P  
 01514 15477776  
 01515 00401520 P  
 01516 47007713 P  
 01517 15477776  
 01520 00501523 P  
 01521 47007714 P  
 01522 15477776  
 01523 00601526 P  
 01524 47007715 P  
 01525 15477776  
 01526 03001532 P  
 01527 11026064 P  
 01530 14700036  
 01531 00707426 P

05415 0

\*\*\*\*\*  
 \* SECTION TO CHECK THE JUMP SWITCHES \*  
 \*\*\*\*\*

ENA 6  
 SJ1 \*+3  
 STI SJ1FLAG,0  
 INA,S -1  
 SJ2 \*+3  
 STI SJ2FLAG,0  
 INA,S -1  
 SJ3 \*+3  
 STI SJ3FLAG,0  
 INA,S -1  
 SJ4 \*+3  
 STI SJ4FLAG,0  
 INA,S -1  
 SJ5 \*+3  
 STI SJ5FLAG,0  
 INA,S -1  
 SJ6 \*+3  
 STI SJ6FLAG,0  
 INA,S -1  
 AZJ,EQ \*+4  
 ECHA SJMESS  
 ENQ 30  
 RTJ OUT

SAY NO SWITCHES SET

JUMP IF NO SWITCHES SET  
 TELL THE OPERATOR TO TURN  
 THE SWITCHES OFF

```

*****
*
* SECTION TO CHECK FOR READ STORAGE SWITCHS BEING SET
*
*****
    
```

			1064			
			1065			
			1066			
			1068			
			1069			
01532	77630000		1070	CRA		
01533	14600007		1071	ENA	7	SET THE ISR AND OSR
01534	77664000		1072	AIS		
01535	77660000		1073	AOS		
01536	14476027		1074	ENA,S	-1000	SET A FAKE REFERENCE TIME
	01537 P		1075	STOCHECA EQU	*	
01537	40007675 P		1076	STA	TIME	
	01540 P		1077	STOCHECB EQU	*	
01540	14200016		1078	ENI	208-1-1,X2	
01541	14604000		1079	ENA	4000B	SET THE WHOLE STATE EXCLUDED
01542	77644161		1080	APF	161B+PFW,X2	
01543	02601542 P		1081	IJD	*-1,X2	
			1082			
01544	14600004		1083	ENA	PFLOC+PFLOC+PFLOC+PFLOC	
01545	77640160		1084	APF	160B+PFW	
01546	14100006		1085	ENI	STOPROL-1,X1	
01547	20101565 P		1086	LDA	STOPRO,X1	
01550	55400000		1087	VFD	A9/ROS	
01551	40100000		1088	STA	0,X1	
01552	55000000		1089	VFD	A9/RIS	
01553	02501547 P		1090	IJD	*-4,X1	
01554	20007662 P		1091	LDA	NOP	
01555	40000005 P		1092	STA	00005B	
01556	20001574 P		1093	LDA	STOUJPA	SET THE VARIOUS JUMPS
01557	40000015		1094	STA	00015B	
01560	20001607 P		1095	LDA	STOUJP	
01561	40000006		1096	STA	00006B	
01562	14600040		1097	ENA	40B	SET PROGRAM STATE
01563	77634000		1098	ACR		
01564	01000000		1099	UJP	0	
			1100			
	01565 P		1101			
01565	53010022		1102	STOPRO EQU	*	
01566	15700764		1103	TMQ	CLOCK	WAIT 1/2 SECOND FOR THE ILLEGAL
01567	20000000		1104	INQ	500	WRITE
01570	40000000		1105	LDA	0	PROVIDE READ OP CYCLE
01571	53020022		1106	STA	0	AND STORE OP CYCLE
01572	03700002		1107	TMA	CLOCK	
01573	00000006		1108	AQJ,LT	*-STOPRO-3	HAVE WE WAITED LONG ENOUGH
	00007		1109	HLT	*-STOPRO	
			1110	STOPROL EQU	*-STOPRO	
			1111			
			1112			
01574	01001575 P		1113	STOUJPA UJP	*+1	
01575	77630000		1114	CRA		
01576	53020022		1115	TMA	CLOCK	IS IT TIME TO BITCH
01577	21007675 P		1116	LDQ	TIME	
01600	03701540 P		1117	AQJ,LT	STOCHECB	JUMP IF NOT
01601	11007134 P	01627 0	1118	ECHA	STOMESS	
01602	14700034		1119	ENQ	28	
01603	00707426 P		1120	RTJ	OUT	
01604	53020022		1121	TMA	CLOCK	SET THE NEW TIME
01605	15623420		1122	INA	10000	
01606	01001537 P		1123	UJP	STOCHECA	
			1124			
01607	01001610 P		1125	STOUJP UJP	*+1	
01610	77630000		1126	CRA		
01611	77650160		1127	PFA	160B+PFR	SET THE SECOND PAGE
01612	77640161		1128	APF	161B+PFW	
01613	14604000		1129	ENA	4000B	
01614	77640160		1130	APF	160B+PFW	
01615	55400000		1131	VFD	A9/ROS	
01616	34004002		1132	RAD	04002B	
01617	34004003		1133	RAD	04003B	
01620	34004005		1134	RAD	04005B	
01621	55000000		1135	VFD	A9/RIS	
01622	20001636 P		1136	LDA	STOUJPD	
01623	40000006		1137	STA	00006B	
01624	14600040		1138	ENA	40B	SET PROGRAM STATE
01625	77634000		1139	ACR		
01626	01004000		1140	UJP	4000B	
			1141			

01627	77776364	1142	STOMESS	BCD,C	28,^ATURN OFF READ STORAGE^A^A^A^A
		1143			
01636	01001637 P	1144	STOUJPD	UJP	*+1
01637	77530000	1145			
01640	14600000	1146			0
01641	77664000	1147			
01642	77660000	1148			
		1149			

1152  
1153  
1154  
1155

```
*****
*
* SECTION TO PRINT AN INFORMATIVE MESSAGE IF NOT ALL MEMORY
* IS AVAILABLE TO THE SYSTEM
*
*****
```

1157  
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1168  
1169  
1170  
1171  
1172  
1173  
1173+001  
1175  
1176  
1177  
1178  
1179  
1180  
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1185  
1186  
1187  
1188  
1189  
1190

```
01643 14100000
01644 14700000
01645 01001663 P
01646 77464543
01657 20100421 X
01660 03101662 P
01661 15700001
01662 15100001
01663 05100407 X
01664 01001657 P
01665 20007535 P
01666 03401710 P
01667 03601676 P
01670 14600077
01671 42007236 P 01647 2
01672 14600005
01673 34001705 P
01674 16477777
01675 34001706 P
01676 14600000
01677 51007731 P
01700 43007240 P 01650 0
01701 13077747
01702 51007731 P
01703 43007237 P
01704 42007236 P
01705 11007230 P 01647 3
01706 14700042 P 01647 2
01707 00707426 P 01646 0
01710 01710 P
```

```
SYSPAGE ENI 0,X1
ENQ IMPURE ENTER NUMBER OF RESIDENT PAGES
UJP MCK03
COREMSG BCD 9,^ONLY XXX PAGES OF CORE AVAILABLE^
MCK01 LDA PAGETABL,X1
AZJ,NE MCK02
INQ 1
MCK02 INI 1,X1
MCK03 ISG NUMPAGES,X1
LDA MCK01
PAGECORE HOW MANY PAGES SHOULD THERE BE
AQJ,EQ MCK04
AQJ,GE MCK03X
ENA 77B JUMP IF NOT ENOUGH PAGES
SACH COREMSG+6 MOVE THE RETURN
ENA 5 REMOVE THE FIRST FIVE CHARACTERS
RAD MCK03Y
XOA,S -0
RAD MCK03YY
MCK03X ENA 0
DVA D10
SQCH COREMSG+8
SHAQ -24
DVA D10
SQCH COREMSG+7
SACH COREMSG+6
MCK03Y ECHA COREMSG+IMPURE ENTER FCA OF THE MESSAGE
MCK03YY ENQ 34+IMPURE
MCK04 RTJ OUT
EQU *
```

1192  
1193  
1194

```
*****
*
* SECTION TO INITIALIZE THE MEMORY PAGE ARRAY WORD (MEMARRAY)
*
*****
```

```
01710 14577777
01711 14600000
01712 14100020
01713 02101657 X
01714 14000000
01715 13100001
01716 17477774
01717 40077777 X
01720 14600774
01721 14200160
01722 77644020
01723 02601722 P
```

```
ENQ,S 77777B
ENA 0
ENI 16,X1
MEQ PAGETABL,1
NOP
SHAQ 1,X1
ANA,S 77774B
STA MEMARRAY
1204
1205
1206 ENA 774B SET STATES 1 - 7 TO NON-EXISTANT
1207 ENI 177B-17B,X2 MEMORY
1208 APF 020B+PFW,X2
1209 IJD *-1,X2
```

1212  
1213  
1214

```
*****
*
*           SECTION TO ALLOCATE THE MEMORY IN PAGE ZERO
*
*****
```

01724 14100030  
01725 20100000 P  
01726 40100000  
01727 02501725 P

1216  
1217  
1218  
1219  
1220  
1221

```
ENI    RESIDENT-1,X1
LDA    ZERO,X1           MOVE THE ZERO RESIDENT DOWN TO 0
STA    00000B,X1
IJD    *-2,X1
```

01730 14300010  
01731 14600400  
01732 14200400

1222  
1223  
1224  
1225  
1226  
1227

\* ALLOCATE THE MEMORY IN 1/4 PAGE ZERO

```
ENI    8,X3              SAY 1/8 PAGE
ENA    00400B           FIRST 1/8 PAGE
ENI    00400B,X2
```

01733 53500000 P  
01734 00777777 X  
01735 01735 P

1228  
1229  
1230  
1231

PZ01

```
EQU    *
TAI    X1                SAVE THE ADDRESS
RTJ    FREEMEM
```

01736 53200000  
01737 20777776  
01738 53600000

1232  
1233  
1234

PZ02

```
EQU    *
TIA    X2                GET THE LAST DECREMENT
SHA    -1
TAI    X2                SAVE THE CURRENT DECREMENT
```

01740 16477777  
01741 53140000  
01742 05600031  
01743 02701735 P  
01744 02701733 P

1235  
1236  
1237  
1238  
1239

```
XQA,S  77777B
AIA    X1                OBTAIN THE NEXT ADDRESS
ASG    RESIDENT         IS IT OK
IJD    PZ02,X3          TRY FOR ANOTHER ADDRESS
IJD    PZ01,X3          GO FREE THE BLOCK
```

01745 14101000  
01746 14200011  
01747 14600001

1240  
1241  
1242  
1243

\* ALLOCATE THE MEMORY IN 1/4 PAGES 1-3

```
ENI    1000B,X1         START WITH 1/4 PAGES
ENI    9,X2
```

01750 12200000  
01751 53140000  
01752 14703701

1244  
1245  
1246  
1247

PZ03

```
ENA    1
SHA    0,X2             FORM BLOCK SIZE IN WORDS
AIA    X1               GET BLOCK ADDRESS
ENQ    3701B           START OF THE AUTOLOAD REGION
AQQ,GE PZ04            JUMP IF IT WONT FIT
```

01753 03601763 P  
01754 44001756 P  
01755 53100000

1248  
1249  
1250  
1251

```
SWA    *-2
TIA    X1
ENI    IMPURE,X1       PUT BLOCK ADDRESS INTO X1
STI    *+1,X2         BASE 2 LOG OF SIZE TO INDEX 3
```

01756 14100000  
01757 47201760 P  
01760 14300000  
01761 00701734 X  
01762 01001747 P  
01763 02601747 P

1252  
1253  
1254  
1255  
1256  
1257

PZ04

```
ENI    IMPURE,X3
RTJ    FREEMEM
UJP    PZ03
IJD    PZ03,X2        GO FREE THE STORAGE
                        TRY FOR ANOTHER BLOCK
                        LOOP THRU ALL SIZE BLOCKS
```

```

1260
1261
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1291
1292
1293
1294
1295
1296
1297
1298
1299
1299+001
1299+002
1300
1301
1302
1303
1304
1305
1306
1307
1308
1309
1310
1311
1312
1313
1314
1315
1316
1317
01764 54210076 P
01765 15200002
01766 47201775 P
01767 15277775
01770 17274000
01771 14300012
01772 14600001
01773 12300000
01774 53240000
01775 05600000
01776 01002000 P
01777 01002005 P
02000 44002003 P
02001 53200000
02002 00701761 X
02003 14200000
02004 01001772 P
02005 02701772 P
02006 14300007
02007 00777777 X
02010 53500000
02011 25006316 P
02012 00706241 P
02013 15177777 X
02014 25006321 P
02015 00706241 P
02016 20007523 P
02017 40077777 X
02020 14177777 X
02021 15177777 X
02022 25006324 P
02023 00706241 P
02024 14200177
02025 20277777 X
02026 40202020 X
02027 02602025 P
02030 14602026 X
02031 40002030 X
02032 14100000
02033 25106271 P
02034 03002036 P
02035 00002036 P
02036 15100003
02037 05100231
02040 01002033 P
    
```

```

*****
*
* SECTION TO FREE AVAILABLE MEMORY BELOW THE SYSTEM AND ABOVE
* THE NEAREST PAGE BOUNDARY TO THE FREE STORAGE LIST
*
*****
    
```

```

LDI ENDPPOINT,X2 LOAD END OF ALLOCATED MEMORY
INI 2,X2
STI FREESKIP,X2
INI -2,X2
ANI 74000B,X2
ENI 10,X3
FREE1 ENA 1
SHA 0,X3
ATA X2
FREESKIP ASG IMPURE
UJP FREE2
UJP FREE3
FREE2 SWA *+3
TIA X2
RTJ FREEMEM
ENI IMPURE,X2
UJP FREE1
FREE3 IJD FREE1,X3
    
```

```

*****
*
* SECTION TO MOVE IDLE INTO FREE STORAGE
*
*****
    
```

```

ENI 7,X3 ASK FOR 128 WORDS
RTJ GETMEM
TAI X1 X1 = IDLE PSA ADDRESS
LDAQ BCDIDLE LINK IDLE
RTJ LINKIT
INI USRNUM,X1
LDAQ BCDSYSVL
RTJ LINKIT
LDA USER GET SYSTEM USER CODE
STA SYSVAL AND SAVE FOR USE LATER
ENI IDLE,X1
INI VMM,X1
LDAQ BCDZROPG
RTJ LINKIT
ENI 2+7-1,X2 PSA LENGTH - 1
LDA XIDLE,X2 GET INFO FROM PROTOTYPE
STA IDLE,X2 SAVE IT IN IDLE
IJD *-2,X2 LOOP TIL DONE
STA IDLE FORCE IDLE TO POINT TO ITSELF
ENI 0,X1 CHECK FOR EXTERNAL CHAINS THAT
LDAQ LINKTAB,X1 WERE NOT PLUGGED
AZJ,EQ *+2 JUMP IF PLUGGED
HLT *+1
INI 3,X1
ISG LINKTABL,X1
UJP STAR16
STAR16
    
```

1320  
1321  
1322  
1323

```

*****
*
* SECTION TO ARRANGE THE PURE CODE LIST AND GENERATE THE EVEN
* PARITY WORDS FOR THE ENDING BOUNDARIES
*
*****
    
```

02041	14177777	X	1325		
02042	05100001		1326	ENI	PURELIST,X1
02043	01002124	P	1327	ISG	1,X1
02044	17100001		1328	UJP	PURE07
02045	02502077	P	1329	ANI	00001B,X1
02046	14102041	X	1330	IJD	PURERROR,X1
02047	15177775		1331	ENI	PURELIST,X1
02050	05100001		1332	INI	-2,X1
02051	01002074	P	1333	ISG	1,X1
02052	25177777	X	1334	UJP	PURE04
02053	45007721	P	1335	LDAQ	PURETABL,X1
02054	15177775		1336	STAQ	TEMP1
02055	21102052	X	1337	INI	-2,X1
02056	03602050	P	1338	LDQ	PURETABL,X1
02057	25102055	X	1339	AQJ,GE	PURE02
02060	45007723	P	1340	LDAQ	PURETABL,X1
02061	25007721	P	1341	STAQ	TEMP2
02062	45102057	X	1342	LDAQ	TEMP1
02063	25007723	P	1343	STAQ	PURETABL,X1
02064	15100002		1344	LDAQ	TEMP2
02065	45102062	X	1345	INI	2,X1
02066	01002046	P	1346	STAQ	PURETABL,X1
02067	15177776		1347	UJP	PURE01
02070	25102065	X	1348	INI	-1,X1
02071	15100001		1349	LDAQ	PURETABL,X1
02072	17677777		1350	INI	1,X1
02073	03602077	P	1351	ANA	77777B
02074	25102070	X	1352	AQJ,GE	PURERROR
02075	05500000		1353	LDAQ	PURETABL,X1
02076	03202100	P	1354	QSG,S	0
02077	00002077	P	1355	AZJ,GE	*+2
02100	17777777		1356	HLT	*
02101	03602077	P	1357	ANQ	77777B
02102	15100002		1358	AQJ,GE	PURERROR
02103	05102045	X	1359	INI	2,X1
02104	01002067	P	1360	ISG	PURELIST,X1
02105	14100000		1361	UJP	PURE03
02106	25102074	X	1362	ENI	0,X1
02107	17777777		1363	LDAQ	PURETABL,X1
02110	44002115	P	1364	ANQ	77777B
02111	16877777		1365	SWA	PURE06
02112	53040000		1366	XOA	77777B
02113	53800000		1367	AQA	
02114	14800000		1368	TAI	X2
02115	36200000		1369	ENA	0
02116	02602115	P	1370	SCA	IMPURE,X2
02117	41007721	P	1371	IJD	PURE06,X2
02120	40407721	P	1372	STQ	TEMP1
02121	15100002		1373	STA,I	TEMP1
02122	05102103	X	1374	INI	2,X1
02123	01002106	P	1375	ISG	PURELIST,X1
	02124	P	1376	UJP	PURE05
			1377	EQU	*



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*
* SECTION TO ASK THE OPERATOR FOR THE DATE AND TIME AND SET THE
* DATE AND CLOCK REGISTER FILE LOCATIONS ACCORDINGLY
* IT CHECKS THAT THE CURRENT TIME IS NOT PREVIOUS TO THE LAST
* TIME THE SYSTEM WAS ENDED AND IT MUST BE WITHIN 24 HOURS AFTER
* THAT TIME IF THESE CONDITIONS ARE NOT MET THE OPERATOR
* MAY PRESS #CLEAR# TO OVERRIDE THIS CHECK
* IF THE CURRENT TIME IS PREVIOUS TO THE TIME THE LAST LBACKUP
* WAS RUN IT WILL FORCE SYSTEM PROGRAMMER INTERVENTION TO START
* THE SYSTEM
*
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02124 53010037  
02125 41007700 P  
02126 11037320 P P 07664 0  
02127 47002663 P P  
02130 14700015  
02131 00707426 P  
02132 77600400  
02133 01002132 P  
02134 14600000  
02135 40007673 P P P  
02136 40007674 P P P  
02137 40007675 P P P  
02140 11037362 P 07674 2  
02141 53420033  
02142 11037354 P 07673 0  
02143 53420023  
02144 77750000  
02145 77600400  
02146 01002145 P  
02147 77602000  
02150 01002152 P P P  
02151 01002126 P P  
02152 53010023  
02153 03402632 P P 07667 1  
02154 11037335 P P  
02155 14700013  
02156 00707426 P  
02157 14600000  
02160 40007675 P P  
02161 77600400  
02162 01002161 P P P  
02163 11037370 P P 07676 0  
02164 53420033  
02165 11037364 P 07675 0  
02166 53420023  
02167 77750000  
02170 77600400  
02171 01002170 P  
02172 77602000  
02173 01002175 P P P  
02174 01002154 P P P  
02175 22037354 P 07673 0  
02176 05400002  
02177 05400000  
02200 01002126 P P P  
02201 50007731 P P P  
02202 23037355 P 07673 1  
02203 05500012  
02204 05500000  
02205 01002126 P  
02206 53040000  
02207 53600000  
02210 15477762  
02211 03202126 P P  
02212 22037356 P 07673 2  
02213 05400004  
02214 05400000  
02215 01002126 P P P  
02216 50007731 P P P  
02217 23037357 P 07673 3  
02220 05500012  
02221 05500000  
02222 01002126 P  
02223 53040000

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TMQ DATE
STQ LDT
ECHA DATEMESS
STI CLFLAG,0
ENQ DATEMESL
RTJ OUT
PAUS 0400B
UJP *-1
ENA 0
STA DATEWORD
STA DATEWORD+1
STA TIME
ECHA DATEWORD+6
TAM 33B
ECHA DATEWORD
TAM 23B
CTI
PAUS 0400B
UJP *-1
PAUS 2000B
UJP *+2
UJP DREPEAT
TMQ 23B
AQJ,EQ NOTIMEX
ECHA TIMEMESS
ENQ TIMEMESL
RTJ OUT
ENA 0
STA TIME
PAUS 0400B
UJP *-1
ECHA TIME+4
TAM 33B
ECHA TIME
TAM 23B
CTI
PAUS 0400B
UJP *-1
PAUS 2000B
UJP *+2
UJP TREPEAT
LACH DATEWORD
ASG,S 2
ASG,S 0
UJP DREPEAT
MUA D10
LQCH DATEWORD+1
QSG,S 10
QSG,S 0
UJP DREPEAT
AQA
TAI X2
INA,S -13
AZJ,GE DREPEAT
LACH DATEWORD+2
ASG,S 4
ASG,S 0
UJP DREPEAT
MUA D10
LQCH DATEWORD+3
QSG,S 10
QSG,S 0
UJP DREPEAT
AGA
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SENSE FOR TYPEWRITER BUSY  
WAIT FOR IT

SKIP IF REPEAT

SKIP IF REPEAT

SAVE THE MONTH

022224	537000000		1458	TAI	X3
022225	03002126	P	1459	AZJ,EG	DREPEAT
022226	14700040		1460	ENQ	32
022227	03602126	P	1461	AQJ,GE	DREPEAT
022230	22037364	P	1462	LACH	TIME
022231	05400003		1463	ASG,S	3
022232	05400000		1464	ASG,S	0
022233	01002126	P	1465	UJP	DREPEAT
022234	50007731	P	1466	MUA	D10
022235	23037365	P	1467	LQCH	TIME+1
022236	05500012		1468	QSG,S	10
022237	05500000		1469	QSG,S	0
022240	01002126	P	1470	UJP	DREPEAT
022241	53040000		1471	AQA	
022242	53500000		1472	TAI	X1
022243	14700030		1473	ENQ	24
022244	03602126	P	1474	AQJ,GE	DREPEAT
022245	22037360	P	1475	LACH	DATEWORD+4
022246	05400012		1476	ASG,S	10
022247	05400000		1477	ASG,S	0
022250	01002126	P	1478	UJP	DREPEAT
022251	50007731	P	1479	MUA	U10
022252	23037361	P	1480	LQCH	DATEWORD+5
022253	05500012		1481	QSG,S	10
022254	05500000		1482	QSG,S	0
022255	01002126	P	1483	UJP	DREPEAT
022256	53040000		1484	AQA	
022257	12000004		1485	SHA	4
022260	53240000		1486	AIA	X2
022261	12000005		1487	SHA	5
022262	53340000		1488	AIA	X3
022263	12000005		1489	SHA	5
022264	53140000		1490	AIA	X1
022265	40007701	P	1491	STA	LDT+1
022266	22037366	P	1492	LACH	TIME+2
022267	05400006		1493	ASG,S	6
022270	05400000		1494	ASG,S	0
022271	01002126	P	1495	UJP	DREPEAT
022272	50007731	P	1496	MUA	D10
022273	23037367	P	1497	LQCH	TIME+3
022274	05500012		1498	QSG,S	10
022275	05500000		1499	QSG,S	0
022276	01002126	P	1500	UJP	DREPEAT
022277	53040000		1501	AQA	
02300	50007733	P	1502	MUA	D60000
02301	13000030		1503	SHAQ	24
02302	14600001		1504	ENA	1
02303	53040000		1505	AQA	
02304	53420032		1506	TAM	CLOCKLIM
02305	53410022		1507	TQM	CLOCK
02306	21007701	P	1508	LQO	LDT+1
02307	53410037		1509	TQM	DATE
02310	01002634	P	1510	UJP	NOTIME
	02311	P	1510+001	CHK	*
02311	53010037		1510+002	TMQ	DATE
02312	00702534	P	1510+003	RTJ	DAY
02313	53700000		1533	TAI	X3
02314	14100000		1534	ENI	0,X1
02315	14700060		1535	ENQ	60B
02316	01002322	P	1536	UJP	DCHK04
02317	22412332	P	1537	LACH	DAYS,X1
02320	15100001		1538	INI	1,X1
02321	03502317	P	1539	AQJ,NE	DCHK03
02322	02702317	P	1540	IJD	DCHK03,X3
02323	14200031		1541	ENI	DTQ,X2
02324	22412332	P	1542	LACH	DAYS,X1
02325	42412220	P	1543	SACH	DTMSG,X2
02326	15100001		1544	INI	1,X1
02327	15200001		1545	INI	1,X2
02330	03502324	P	1546	AQJ,NE	*-4
02331	53020037		1547	TMA	DATE
02332	12077765		1548	SHA	-10
02333	17600017		1549	ANA	17B
02334	53700000		1550	TAI	X3
02335	14100000		1551	ENI	0,X1
02336	02702342	P	1552	IJD	DCHK06,X3
02337	22412432	P	1553	LACH	BCDMONTH,X1
02340	15100001		1554	INI	1,X1
02341	03502337	P	1555	AQJ,NE	DCHK05

SAVE THE DAY

SAVE THE HOUR

YEAR IS NOW IN A

GET TODAY'S DATE ( HOPEFULLY )  
AND COMPUTE DAY OF WEEK

02342	02702337	P		1556	IJD	DCHK05,X3
02343	22412432	PP	02506 2	1557	LACH	BCDMONTH,X1
02344	42412220	P	02444 0	1558	SACH	DTMSG,X2
02345	15100001			1559	INI	1,X1
02346	15200001			1560	INI	1,X2
02347	03502343	P		1561	AQJ,NE	*-4
02350	53020037			1562	TMA	DATE
02351	17601740			1563	ANA	1740B
02352	13077742			1564	SHAQ	-29
02353	51007731	P		1565	DVA	D10
02354	42412220	P	02444 0	1566	SACH	DTMSG,X2
02355	04600000			1567	ASE	0
02356	15200001			1568	INI	1,X2
02357	13000030			1569	SHAQ	24
02360	42412220	P	02444 0	1570	SACH	DTMSG,X2
02361	14600073			1571	ENA	738
02362	42412221	P	02444 1	1572	SACH	DTMSG+1,X2
02363	14600060			1573	ENA	608
02364	42412222	P	02444 2	1574	SACH	DTMSG+2,X2
02365	53010037			1575	TMQ	DATE
02366	12477761			1576	SHQ	-14
02367	17700177			1577	ANQ	177B
02370	15703554			1578	INQ	1900
02371	15200006			1579	INI	6,X2
02372	14300003			1580	ENI	3,X3
02373	14600000			1581	ENA	0
02374	51007731	P		1582	DVA	D10
02375	13000030			1583	SHAQ	24
02376	42412220	P	02444 0	1584	SACH	DTMSG,X2
02377	15277776			1585	INI	-1,X2
02400	02702373	P		1586	IJD	*-5,X3
02401	14177766			1587	ENI	1-DTEQ,X1
02402	22412331	PP	02466 1	1588	LACH	DTEND+9,X1
02403	42412225	P	02445 1	1589	SACH	DTMSG+5,X2
02404	15200001			1590	INI	1,X2
02405	02102402	P		1591	IJI	*-3,X1
02406	53010037			1592	TMQ	DATE
02407	17700037			1593	ANQ	37B
02410	14600021			1594	ENA	21B
02411	05700014			1595	QSG	12
02412	42412223	P	02444 3	1596	SACH	DTMSG+3,X2
02413	05700015			1597	QSG	13
02414	01002416	P		1598	UJP	*+2
02415	15577763			1599	INQ,S	-12
02416	05700001			1600	QSG	1
02417	14700014			1601	ENQ	12
02420	14600000			1602	ENA	0
02421	51007731	P		1603	DVA	D10
02422	04600000			1604	ASE	0
02423	42412215	P	02443 1	1605	SACH	DTMSG-3,X2
02424	13000030			1606	SHAQ	24
02425	42412216	P	02443 2	1607	SACH	DTMSG-2,X2
02426	53020022			1608	TMA	CLOCK
02427	13077747			1609	SHAQ	-24
02430	51007733	P		1610	DVA	D60000
02431	13077747			1611	SHAQ	-24
02432	51007731	P		1612	DVA	D10
02433	42412220	P	02444 0	1613	SACH	DTMSG,X2
02434	13000030			1614	SHAQ	24
02435	42412221	P	02444 1	1615	SACH	DTMSG+1,X2
02436	53200000			1616	TIA	X2
02437	13000030			1617	SHAQ	24
02440	15700005			1618	INQ	DTEQ-5
02441	11012220	PP	02444 0	1619	ECHA	DTMSG
02442	00707426	PP		1620	RTJ	OUT
02443	01002126	P		1621	UJP	DREPEAT
02444	77774751			1622	BCD,C	25,^^PRESS CLEAR IF THIS IS
	00031			1623	DTQ	*-DTMSG
02452	60662524			1624	BCD,C	39,WEDNESDAY, SEPTEMBER 31, 1984 1053 PM
02464	60606060			1625	DTEND	10, S PM
	00012			1626	EQU,C	*-DTEND
	12332	P		1627	DAYS	*
02466	47446264			1628	BCD,C	8,SUNDAY,
02470	73604446			1629	BCD,C	8,MONDAY,
02472	73606364			1630	BCD,C	9,TUESDAY,
02474	70736066			1631	BCD,C	11,WEDNESDAY,
02477	73606330			1632	BCD,C	10,THURSDAY,
02502	26513124			1633	BCD,C	8,FRIDAY,
02504	62216364			1634	BCD,C	10,SATURDAY,

02506	12432	P	1635	BCDMONTH	BCD,C	*
02510	73604121		1636		BCD,C	8, JANUARY
02512	70602625		1637		BCD,C	9, FEBRUARY
02514	51706044		1638		BCD,C	6, MARCH
02515	60214751		1639		BCD,C	6, APRIL
02516	31436044		1640		BCD,C	4, MAY
02520	21706041		1641		BCD,C	5, JUNE
02521	41644370		1642		BCD,C	5, JULY
02522	60216427		1643		BCD,C	7, AUGUST
02523	62254763		1644		BCD,C	10, SEPTEMBER
02525	51604623		1645		BCD,C	8, OCTOBER
02527	51604546		1646		BCD,C	9, NOVEMBER
02531	25516024		1647		BCD,C	9, DECEMBER
02534			1648		BSS	0

SET THE PC TO A WORD BOUNDARY

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1648+001 *****
1648+003 *
1648+004 *
1648+005 *
1648+006 *
1648+007 *
1648+008 *
1648+009 *
*****
THIS ROUTINE WILL TAKE THE DATE AS FOUND IN Q AND
PRODUCE THE DAY OF THE WEEK CORRESPONDING TO THIS DATE
AND RETURN THIS VALUE IN THE ACCUMULATOR.
THIS ROUTINE ASSUMES THAT JANUARY 1, 1900 WAS A MONDAY.
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02534	01000000		1648+011				
02535	41007673	P	1648+012	DAY	UJP	IMPURE	
02536	13000016		1648+013		STQ	DATEWORD	USE AS A TEMP
02537	17600017		1648+014		SHAQ	24-10	THROW AWAY HOUR AND DAY OF MONTH
02540	53600000		1648+015		ANA	17B	AND LEAVE ONLY THE MONTH BITS
02541	20007673	P	1648+016		TAI	X2	FOR LOOPING
02542	12077772		1648+017		LDA	DATEWORD	GET THE DATE AGAIN
02543	17600037		1648+018		SHA	-5	THROW AWAY THE HOUR
02544	02602550	P	1648+019		ANA	37B	MASK TO JUST THE DAY
02545	23436320	P	1648+020		IJD	DAY02,X2	START THE COUNTING LOOP
02546	15577776		1648+021	DAY01	LQCH	MONTHS,X2	NUMBER OF DAYS IN THE MONTH
02547	53040000		1648+022		INQ,S	-1	BACK UP 1
02550	02602545	P	1648+023		AQA		ADD TOGETHER INTO TOTAL
02551	53600000		1648+024	DAY02	IJD	DAY01,X2	CONTINUE LOOPING UNTIL DONE
02552	20007673	P	1648+025		TAI	X2	NUMBER OF DAYS THIS YEAR TO X2
02553	12077761		1648+026		LDA	DATEWORD	GET THE DATE AGAIN
02554	17600177		1648+027		SHA	-5-5-4	GET ONLY THE YEAR
02555	53640000		1648+028		ANA	177B	TAKE NO CHANCES ON CRAP
02556	12077775		1648+029		TAI	X2	ADD 1 DAY FOR EACH YEAR PAST 1900
02557	53240000		1648+030		SHA	-2	NUMBER OF LEAP YEARS SINCE 1900
02560	13077747		1648+031		AIA	X2	AND ADD TO TOTAL
02561	51007730	P	1648+032		SHAQ	-24	DOWN TO Q
02562	13000030		1648+033		DVA	07	TAKE MOD 7
02563	01002534	P	1648+034		SHAQ	24	AND UP TO A FOR EXITING
			1648+035		UJP	DAY	RETURN TO CALLER

02564	01000000		1649	ADJUST	UJP	IMPURE	
02565	27007463	P	1650		LDL	LEAPBITS	
02566	05400001		1651		ASG,S	1	
02567	15600001		1652		INA	1	LEAP YEAR
02570	15600035		1653		INA	29	
02571	42036321	P	1654		SACH	MONTHS+1	STORE NUMBER OF DAYS+1 IN FEB
02572	13000016		1655	ADJUSTX	SHAQ	14	
02573	53500000		1656		TAI	X1	MONTH TO X1
02574	13000005		1657		SHAQ	5	
02575	53600000		1658		TAI	X2	DAY TO X2
02576	17100017		1659		ANI	17B,X1	
02577	17200037		1660		ANI	37B,X2	
02600	13000035		1661		SHAQ	29	
02601	04200000		1662		ISE	0,X2	
02602	01002614	P	1663		UJP	ADJ02	
02603	22436316	P	1664		LACH	MONTHS-2,X1	
02604	16477777		1665	ADJ01	XOA,S	-0	
02605	53240000		1666		AIA	X2	SUBTRACT OUT THE DAYS IN THIS
02606	15600041		1667		INA	1*2+5+1	MONTH LEAVING THE DAYS IN NEXT
02607	17576037		1668		ANQ,S	-(37B*2+5)	MONTH ADD 1 MONTH + 1 DAY
02610	12000005		1669		SHA	5	CLEAR THE DAY FIELD
02611	53040000		1670		AQA		SHIFT INTO DAY POSITION
02612	13000030		1671		SHAQ	24	
02613	01002572	P	1672		UJP	ADJUSTX	
02614	05100015		1673	ADJ02	ISG	13,X1	
02615	01002620	P	1674		UJP	*+3	
02616	15710000		1675		INQ	10000B	

02617	01002572	P		1676	UJP	ADJUSTX
02620	22436317	P	07463 3	1677	LACH	MONTHS-1,X1
02621	44002622	P		1678	SWA	*+1
02622	05200000	P		1679	ISG	IMPURE,X2
02623	01002625	P		1680	UJP	ADJ03
02624	01002604	P		1681	UJP	ADJ01
02625	27007462	P		1682	LDL	HOURBITS
02626	05600030	P		1683	ASG	24
02627	01002564	P		1684	UJP	ADJUST
02630	15700010	P		1685	INQ	10B
02631	01002572	P		1686	UJP	ADJUSTX
02632	14600077	P		1687	ENA	77B
02633	44002663	P		1688	SWA	CLFLAG
	02634	P		1689	EQU	*
02634	53020037	P		1690	TMA	DATE
02635	21007677	P		1691	LDQ	LBKDATE
02636	03702126	P		1692	AQJ,LT	DREPEAT
02637	53010037	P		1693	TMQ	DATE
02640	00702564	P		1694	RTJ	ADJUST
02641	53020037	P		1695	TMA	DATE
02642	03502126	P		1696	AQJ,NE	DREPEAT
02643	53020037	P		1697	TMA	DATE
02644	13077765	P		1698	SHAQ	-10
02645	53600000	P		1699	TAI	X2
02646	17200017	P		1700	ANI	17B,X2
02647	05200015	P		1701	ISG	13,X2
02650	05200001	P		1702	ISG	1,X2
02651	01002126	P		1703	UJP	DREPEAT
02652	13000005	P		1704	SHAQ	5
02653	17600037	P		1705	ANA	37B
02654	03002126	P		1706	AZJ,EQ	DREPEAT
02655	23436317	P	07463 3	1707	LQCH	MONTHS-1,X2
02656	03602126	P		1708	AQJ,GE	DREPEAT
02657	53020037	P		1709	TMA	DATE
02658	17600037	P		1710	ANA	37B
02661	14700030	P		1711	ENQ	24
02662	03602126	P		1712	AQJ,GE	DREPEAT
02663	04000000	P		1713	ISE	IMPURE,0
02664	01002674	P		1714	UJP	TMSET
02665	53020037	P		1715	TMA	DATE
02666	21007700	P		1716	LDQ	LDT
02667	03702311	P		1717	AQJ,LT	DCHK
02670	15700040	P		1718	INQ	40B
02671	00702564	P		1719	RTJ	ADJUST
02672	53020037	P		1720	TMA	DATE
02673	03602311	P		1721	AQJ,GE	DCHK
02674	53010037	P		1722	TMQ	DATE
02675	00702534	P		1722+001	RTJ	DAY
02676	44077777	X		1722+002	SWA	DATEB.1
02677	53500000	X		1722+003	TAI	X1
02700	20177777	X		1722+004	LDA	SCHDTAB,X1
02701	40077777	X		1722+005	STA	DAYSCHD
02702	53010037	X		1722+006	TMQ	DATE
02703	17577740	X		1723	ANQ,S	77740B
02704	15700040	X		1724	INQ	40B
02705	00702564	P		1725	RTJ	ADJUST
02706	41001151	X		1726	STQ	TOMORROW
				1727		
02707	11037350	P	07672 0	1728	ECHA	CROR
02710	14700004	P		1729	ENQ	4
02711	00707426	P		1730	RTJ	OUT

COMPUTE DAY FOR TODAY  
INITIALIZE THE CURRENT SCHEDULE  
FIX UP TOMMORROWS DATE.

1733  
1734  
1735

\*\*\*\*\*  
\* SECTION TO INITIALIZE THE I/O CHANNELS AND INTERRUPT PROCESSOR \*  
\*\*\*\*\*

02712 77517377  
02713 77307777  
02714 14000000  
02715 77507377  
02716 77537000  
02717 77520777  
02720 53430036  
02721 14600001  
02722 53420035

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1748

IOCL 7377B  
INS 7777B,0  
NOP 0  
INCL 7377B  
SCIM 7000B  
SSIM 0777B  
TIM LEVEL,0  
ENA 1  
TAM NU

HIT THE DATA CHANNELS  
CLEAR THE INTERNAL FAULTS  
AVOID THE SKIP  
CLEAR THE INTERNAL INTERRUPTS  
CLEAR FAULT AND SEARCH/MOVE BITS  
SET FOR THE CLOCK AND I/O  
INITIALIZE THE INTERRUPT LEVEL  
IDLE IS THE ONLY USER

02723 77600400  
02724 01002723 P  
02725 14302727 P  
02726 01077777 X

1749  
1750  
1751  
1752

PAUS 0400B  
UJP \*-1  
ENI \*+2,X3  
UJP CHCHECK

SENSE FOR TYPEWRITER BUSY  
WAIT FOR IT  
START THE CHANNEL OVER TIME  
CHECKING

```

1755 *****
1756 * SECTION TO WRITE THE TERMINATION ROUTINE OUT ONTO MASS STORAGE *
1757 * *****
1759
1760 LDA ENDBLOCK
1761 ENQ ENDOS3 18 BIT CORE ADDRESS
1762 ENI WRITE,X2
1763 ENI 40000,X1 LENGTH TO WRITE
1764 RTJ MSIO WRITE OUT THE END ROUTINE
1765 RTJ MSIO LDQ BLOCKTBL+1
1766 LDA BLOCKTBL
1767 LDA ENDBLOCK
1768 SWA ENDREAD
1769 AQJ,GE ENDIA SAVE FOR THE SYSTEM END ROUTINE
1770 SBA BLOCKTBL JUMP IF ENDBLOCK NOT ON DEVICE 00
1771 AZJ,LT BLOCKTBL CONVERT RELATIVE TO DEVICE 00
1772 SHA ENDIA JUMP IF NOT ON ANY DEVICE
1773 DVA FBPCDEV,0 SHIFT FOR THE DIVIDE
1774 SHQ 15 DIVIDE BY FILE BLOCKS/CYLINDER
1775 SHA 12 MERGE THE CYLINDER AND SECTOR
1776 SWA ENDREADA CREATE THE DISK ADDRESS
1777 SHA -15 SAVE FOR MANUAL DUMPING
1778 ASE 0 CHECK FOR A 15 BIT ADDRESS
1779 HLT * SKIP IF OK
1780 ENDIA CANNOT HANDLE END ROUTINE
1781 LDA BLOCKTBL LDQ BLOCKTBL+1
1782 LDA MSFBLOCK IS THE USER DISK PACK ROUTINE
1783 AQJ,GE MSFPANIC ON MS00
1784 SBA BLOCKTBL
1785 AZJ,LT MSFPANIC
1786 LDA MSFBLOCK BEFORE THE START OF MS00
1787 SWA MSFLOAD SAVE THE FILE BLOCK NUMBER FOR
1788 SHA -15 OPMSG
1789 ASE 0 CHECK FOR 15 BIT ADDRESS
1790 HLT *
1791 LDA MSFBLOCK
1792 ENQ MSFMOUNT
1793 ENI WRITE,X2
1794 ENI 10000,X1
1795 RTJ MSIO WRITE THE ROUTINE OUT

```

```

02727 20007501 P
02730 14777777 X
02731 14277777 X
02732 14104000
02733 00707372 P
02734 25000062 X
02735 20007501 P
02736 44077777 X
02737 03602751 P
02740 31002734 X
02741 03302751 P
02742 13077747
02743 51007775 P
02744 12400017
02745 13000014
02746 44003753
02747 12077760
02750 04600000
02751 00002751 P
02752 25002740 X
02753 20007505 P
02754 03602763 P
02755 31002752 X
02756 03302763 P
02757 20007505 P
02760 44077777 X
02761 12077760
02762 04600000
02763 00002753 P
02764 20007505 P
02765 14777777 X
02766 14202731 X
02767 14101000
02770 00707372 P

```

1798  
1799  
1800  
1801

```
*****
*
* SECTION TO READ IN THE SUBSTITUTION BLOCK AND CREATE THE
* SUBSTITUTION LIST FROM IT
*
*****
```

1803  
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02771 14704000  
02772 14277777 X  
02773 14101000  
02774 20007507 P  
02775 00707372 P  
02776 14100777  
02777 15177776  
03000 25104000  
03001 05577777  
03002 00003002 P  
03003 05400000  
03004 00003004 P  
03005 03003015 P  
03006 14300002  
03007 00702007 X  
03010 25104000  
03011 45300001  
03012 20077777 X  
03013 47303012 X  
03014 40300000  
03015 02502777 P

```

ENQ CORE ENTER THE BUFFER ADDRESS
ENI READ,X2 INDICATE A READ
ENI WPFB,X1 PROCESS A FILE BLOCK
LDA MXSBLOCK
RTJ MSIO CALL SYSTEM MASS STORAGE DRIVER
ENI WPFB-1,X1
INI -1,X1
LDAQ CORE,X1 LOAD THE SUBSTITUTION WORDS
QSG,S 77777B SKIP IF LEGAL
HLT * MXSBLOCK IS GARBAGE
ASG,S 0 SKIP IF LEGAL
HLT * MXSBLOCK IS GARBAGE
AZJ,EQ MXSLOOPX
ENI 2,X3
RTJ GETMEM
LDAQ CORE,X1
STAQ 1,X3
LDA MXSLIST
STI MXSLIST,X3
STA 0,X3
MXSLOOPX IJD MXSLOOP,X1

```

1829  
1830  
1831  
1832

```
*****
*
* SECTION TO UPDATE THE DATE AND TIME WORDS IN THE SECURITY
* BLOCK AND TO SET THE SYSTEM RUNNING BIT
*
*****
```

1834  
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03016 20007517 P  
03017 14704000  
03020 14101000  
03021 14202772 X  
03022 00707372 P  
03023 53020037  
03024 53010022  
03025 45004002  
03026 14600040  
03027 35004000  
03030 40004000  
03031 20007517 P  
03032 14704000  
03033 14101000  
03034 14202766 X  
03035 00707372 P

```

LDA SECURITY
ENQ CORE
ENI WPFB,X1
ENI READ,X2
RTJ MSIO READ IN THE SECURITY BLOCK
IMA DATE UPDATE THE TIME AND DATE
IMQ CLOCK
STAQ CORE+2
ENA 00040B SET THE SYSTEM RUNNING BIT
SSA CORE+0
STA CORE+0
LDA SECURITY
ENQ CORE
ENI WPFB,X1
ENI WRITE,X2
RTJ MSIO WRITE THE SECURITY BLOCK BACK OUT

```



```

1854
1855
1856
1858
1859
03036 14477777
03037 40007720 P
03040 20007471 P
03041 40077777 X
03042 14101000
03043 14203021 X
03044 14704000
03045 00707372 P
03046 20004001
03047 30007720 P
03050 05600001
03051 04400000
03052 00003052 P
03053 20003041 X
03054 40007720 P
03055 14100000
03056 20104002
03057 03303071 P
03060 04400017
03061 00003061 P
03062 15100021
03063 05100776
03064 01003056 P
03065 20004000
03066 21000101 X
03067 03603041 P
03070 00003070 P
03071 12000001
03072 04400001
03073 00003073 P
03074 53100000
03075 21003053 X
03076 13000030
03077 45003075 X
03100 20004000
03101 05400000
03102 04477777
03103 00003103 P
    
```

```

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1897
    
```

```

*****
*
* SECTION TO CHECK THE ACCOUNTING FILE AND FIND THE END OF IT
*
*****
    
```

```

ACC01 ENA,S 77777B
STA BACKPTR
LDA ACCBLOCK
STA ACCWORDS
ENI WPFB,X1
ENI READ,X2
ENQ CORE
RTJ MSIO
LDA CORE+1
SCA BACKPTR
ASG 1
ASE,S 0
HLT *
LDA ACCWORDS
STA BACKPTR
ENI 0,X1
LDA CORE+2,X1
AZJ,LT ACC03
ASE,S 15
HLT *
INI 17,X1
ISG WPFB-2,X1
UJP ACC02
LDA CORE
LDQ LIBLAD
AQJ,GE ACC01
HLT *
ACC03 SHA 1
ASE,S 1
HLT *
TIA X1
LDQ ACCWORDS
SHAQ 24
STAQ ACCWORDS
LDA CORE
ASG,S 0
ASE,S 77777B
HLT *
    
```

```

1ST BACKWARD POINTER SHOULD BE -0
READ IN A FILE BLOCK
LOAD THE BACKWARD POINTER
COMPARE WITH WHAT IT SHOULD BE
SKIP IF NOT EQUAL
SKIP IF OK
INCONSISTANT FILE BLOCK POINTERS
LOAD THE CURRENT BLOCK NUMBER
WHICH SHOULD BE THE NEXT BACKPTR
ACCOUNTING FILE SYNC ERROR
LOAD LAST LIBRARY ADDRESS
JUMP IF OK
ACCOUNTING FILE GOES INTO LIBRARY
SKIP IF A GENUINE FILE MARK
ACCOUNTING FILE SYNC ERROR
LOAD THE LAST FORWARD POINTER
SKIP IF POSITIVE
SKIP IF 77777777
IMPROPERLY ENDED ACCOUNTING FILE
    
```

1900  
1901  
1902  
1903

```

*****
*
* SECTION TO START WORRYING ABOUT THE DISK TABLES AND
* ALLOCATE THE BIT ARRAY IN STATE 1
*
*****
    
```

1905

03104 14677777 X  
03105 15601200 X  
03106 44003116 P  
03107 14377777 X  
03110 20301203 X  
03111 03303117 P  
03112 20302755 X  
03113 30007473 P  
03114 40303104 X  
03115 15600001  
03116 40300000  
03117 02703110 P

1906  
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1918  
1919

```

EN A DISKPNT COMPUTE THE ADDRESS OF
INA MSUNITS DISKPNT+MSUNITS AND SAVE IT
SW A DISKPNTB
EN I MSUNITH1,X3
DISKPNTA EQU *
LDA ARRAYTBL,X3
AZJ,LT DISKPNTC IS THE DEVICE ON LINE
LDA BLOCKTBL,X3 JUMP IF NOT
ADA ARRAY LOAD THE LOAD POINT BLOCK
STA DISKPNT,X3 RELOCATE TO THE ARRAY BLOCK
INA 1 RELOCATE TO THE 4 BLOCK LIST
DISKPNTB STA IMPURE,X3
DISKPNTC IJD LOOP THRU ALL THE UNITS
    
```

COMPUTE THE ADDRESS OF DISKPNT+MSUNITS AND SAVE IT

IS THE DEVICE ON LINE  
JUMP IF NOT  
LOAD THE LOAD POINT BLOCK  
RELOCATE TO THE ARRAY BLOCK

RELOCATE TO THE 4 BLOCK LIST

LOOP THRU ALL THE UNITS

GET THE HIGHEST FILE BLOCK NO.

03120 20000244 P  
03121 15600027  
03122 13077747  
03123 51007732 P  
03124 44003143 P  
03125 14200000  
03126 14101663 X  
03127 03127 P

1920  
1921  
1922  
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1926  
1927  
1928

```

LDA HFBN
INA 23
SHAQ -24
DVA D24
SW A MAXADD SAVE FOR THE CHECKS
EN I 0,X2
FINPAGE EN I NUMPAGES,X1 SEARCH PAGE TABLE LOOKING FOR
EQU * PAGES WE ARE NOT USING
ENA 0
ENQ,S 77777B
MEQ PAGETABL,1
HLT *
LDA SYSCON SET THE PAGE TO SYSTEM
STA PAGETABL,X1
TIA X1 SET THE PAGE FILE
SHA 2
APF 20B+PFW,X2
INI 1,X2
TIA X2 HAVE WE ALLOCATED ENOUGH CORE
SHA 11 SKIP IF ENOUGH
MAXADD ASG IMPURE
UJP FINPAGE
ENA 1
AOS
ENA 774B SET THE REST OF THE STATE
STI SJ1SETED,X2 NON-EXISTANT
APF 20B+PFW,X2
ISI 17B,X2
UJP *-2
    
```

SAVE FOR THE CHECKS

SEARCH PAGE TABLE LOOKING FOR PAGES WE ARE NOT USING

SET THE PAGE TO SYSTEM

SET THE PAGE FILE

HAVE WE ALLOCATED ENOUGH CORE

SKIP IF ENOUGH

SET THE REST OF THE STATE  
NON-EXISTANT

03130 14577777  
03131 06101713 X  
03132 00003132 P  
03133 20007734 P  
03134 40103131 X  
03135 53100000  
03136 12000002  
03137 77644020  
03140 15200001  
03141 53200000  
03142 12000013  
03143 05600000  
03144 01003127 P  
03145 14600001  
03146 77660000  
03147 14600774  
03150 47203106 P  
03151 77644020  
03152 10200017  
03153 01003151 P

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1946  
1947  
1948  
1949  
1950  
1951

```

FINPAGE EQU *
ENA 0
ENQ,S 77777B
MEQ PAGETABL,1
HLT *
LDA SYSCON SET THE PAGE TO SYSTEM
STA PAGETABL,X1
TIA X1 SET THE PAGE FILE
SHA 2
APF 20B+PFW,X2
INI 1,X2
TIA X2 HAVE WE ALLOCATED ENOUGH CORE
SHA 11 SKIP IF ENOUGH
MAXADD ASG IMPURE
UJP FINPAGE
ENA 1
AOS
ENA 774B SET THE REST OF THE STATE
STI SJ1SETED,X2 NON-EXISTANT
APF 20B+PFW,X2
ISI 17B,X2
UJP *-2
    
```

ASSUME NO SWITCH ONE

JUMP IF REALLY OFF

THERE SEEMS TO BE TROUBLE ON THE DISKS SO REGENERATE THE DISK  
TURN ON SJ1  
TABLES JUST TO BE ON THE SAFE SIDE  
SAY TO CLEAR BITS

03154 21004615 P  
03155 20007710 P  
03156 03003165 P

1952  
1953  
1954  
1955

```

LDQ SSA0X1 ASSUME NO SWITCH ONE
LDA SJ1FLAG
AZJ,EQ SJ1JUMP JUMP IF REALLY OFF
    
```

03157 14477776 P  
03160 44004603 P  
03161 44007710 P  
03162 14477777  
03163 44003172 P  
03164 21004616 P  
03165 41004606 P

1956  
1957  
1958  
1959  
1960  
1961  
1962  
1963  
1964  
1965

```

SETSJ1 EQU *
ENA,S -1
SW A FRBLKENA THERE SEEMS TO BE TROUBLE ON THE
SW A SJ1FLAG DISKS SO REGENERATE THE DISK
ENA,S 77777B TURN ON SJ1
SW A FILLNA TABLES JUST TO BE ON THE SAFE
LDA LPA0X1 SIDE
SJ1JUMP EQU * SAY TO CLEAR BITS
STQ FRBLKLOG
    
```

FORM THE CORE ADDRESS

FILL THE ARRAY

03166 14600000  
03167 12000013  
03170 15477776  
03171 53600000  
03172 14400000  
03173 55400000  
03174 40200000  
03175 02603174 P  
03176 55000000

1966  
1967  
1968  
1969  
1970  
1971  
1972  
1973  
1974

```

SJ1SETED ENA IMPURE
SHA 11
INA,S -1
TIA X2
FILLNA ENA,S IMPURE
ROS
STA 0,X2
IJD *-1,X2
RIS
    
```

SHOULD WE ASSUME THE DISK TABLES ARE GOOD JUMP IF NOT

03177 20007710 P 1976  
 03200 03103302 P 1977  
 1978  
 1979  
 1981  
 1982  
 1983  
 1984  
 1986  
 1987  
 03201 14303107 X 1988  
 03202 20303114 X P 1989  
 03203 03303267 P 1990  
 03204 14577777 P 1991  
 03205 45007636 P 1992  
 03206 14100100 P 1993  
 03207 14203043 X 1994  
 03210 14704000 P 1995  
 03211 00707372 P 1996  
 03212 20004000 P 1997  
 03213 04477777 P 1998  
 03214 03303157 P 1999  
 03215 20004001 P 2000  
 03216 21007637 P 2001  
 03217 03503157 P 2002  
 03220 13000001 P 2003  
 03221 03503157 P 2004  
 03222 14100077 P 2005  
 03223 20104000 P 2006  
 03224 03003230 P 2007  
 03225 04100001 P 2008  
 03226 00704572 P 2009  
 03227 03403157 P 2010  
 03230 02503223 P 2011  
 03231 21007636 P 2012  
 03232 20004000 P 2013  
 03233 03103205 P 2014  
 03234 20403116 P 2015  
 03235 14577777 P 2016  
 03236 45007636 P 2017  
 03237 14100100 P 2018  
 03240 14203207 X 2019  
 03241 14704000 P 2020  
 03242 00707372 P 2021  
 03243 20004001 P 2022  
 03244 21007637 P 2023  
 03245 03503157 P 2024  
 03246 13000001 P 2025  
 03247 03503157 P 2026  
 03250 14100077 P 2027  
 03251 14200003 P 2028  
 03252 20104000 P 2029  
 03253 03003263 P 2030  
 03254 04100001 P 2031  
 03255 01003257 P 2032  
 03256 01003263 P 2033  
 03257 20104000 P 2034  
 03260 53240000 P 2035  
 03261 00704617 P 2036  
 03262 02603257 P 2037  
 03263 02503251 P 2038  
 03264 21007636 P 2039  
 03265 20004000 P 2040  
 03266 03103236 P 2041  
 03267 02703202 P 2042  
 03270 20007727 P 2043  
 03271 03005107 P 2044  
 03272 21004516 P 2045  
 03273 41004606 P 2046  
 03274 47004624 P 2047  
 03275 14600001 P 2048  
 2049  
 2050  
 2051  
 2052  
 2053  
 2054

```

*****
*
* SECTION TO GENERATE THE BIT ARRAY IN STATE ONE IF
* THE DISK TABLES ARE ASSUMED TO BE GOOD
*
*****

RESTAR02  ENI      MSUNITM1,X3
           EQU     *
           LDA     DISKPNT,X3
           AZJ,LT  RESTAR12
           ENQ,S   77777B
           RESTAR04  EQU     *
           STAQ    CURBLOCK
           ENI     64,X1
           ENI     READ,X2
           ENQ     CORE
           RTJ     MSIO
           LDA     CORE
           ASE,S   77777B
           AZJ,LT  SETSJ1
           LDA     CORE+1
           LDQ     BACKPNT
           AQJ,NE  SETSJ1
           SHAQ    1
           AQJ,NE  SETSJ1
           ENI     63,X1
           LDA     CORE,X1
           AZJ,EQ  *+4
           ISE     1,X1
           RTJ     FRBLK
           AQJ,EQ  SETSJ1
           IJD     *-5,X1
           LDQ     CURBLOCK
           LDA     CORE
           AZJ,NE  RESTAR04

RESTAR06  LDA,I   DISKPNT8 *X3*
           ENQ,S   77777B
           EQU     *
           STAQ    CURBLOCK
           ENI     64,X1
           ENI     READ,X2
           ENQ     CORE
           RTJ     MSIO
           LDA     CORE+1
           LDQ     BACKPNT
           AQJ,NE  SETSJ1
           SHAQ    1
           AQJ,NE  SETSJ1
           ENI     63,X1
           EQU     *
           ENI     3,X2
           LDA     CORE,X1
           AZJ,EQ  RESTAR10
           ISE     1,X1
           UJP     *+2
           UJP     RESTAR10
           LDA     CORE,X1
           AIA     X2
           RTJ     ROACH
           IJD     *-3,X2
           RESTAR10 IJD    RESTAR08,X1
           LDQ     CURBLOCK
           LDA     CORE
           AZJ,NE  RESTAR06

RESTAR08  ENI     3,X2
           EQU     *
           ENI     3,X2
           LDA     CORE,X1
           AZJ,EQ  RESTAR10
           ISE     1,X1
           UJP     *+2
           UJP     RESTAR10
           LDA     CORE,X1
           AIA     X2
           RTJ     ROACH
           IJD     *-3,X2
           RESTAR10 IJD    RESTAR08,X1
           LDQ     CURBLOCK
           LDA     CORE
           AZJ,NE  RESTAR06

RESTAR12  IJD     RESTAR02,X3
           LDA     SECWORD
           AZJ,EQ  GLERCH
           LDQ     LPA0X1
           STQ     FRBLKLOG
           STI     ROACHXX,0
           ENA     1
    
```

IS THE DEVICE ON LINE  
 SET THE FIRST BACKWARD POINTER  
 SAVE THE POINTERS  
 READ 64 WORDS  
 CHECK THE FORWARD POINTER  
 RE GENERATE THE TABLES IF GARBAGE  
 CHECK THE BACKWARD POINTER  
 YESTERDAY WAS A GOOD DAY  
 I WONDER IF ANYONE DID ANYTHING  
 LOAD A BLOCK NUMBER  
 ZERO'S SHOULD BE OK  
 DON'T FREE THE BACKWARD POINTER  
 FREE THE BLOCK  
 PANIC IF TROUBLE  
 LOAD THE CURRENT BLOCK NUMBER  
 LOAD THE NEXT BLOCK NUMBER  
 LOOP BACK IF THERE IS MORE  
 LOAD START OF THE FOUR BLOCK LIST  
 SET THE FIRST BACKWARD POINTER  
 SAVE THE POINTERS  
 READ 64 WORDS  
 CHECK THE BACKWARD POINTER  
 FREE 4 BLOCKS FOR EACH ADDRESS  
 IGNORE ZERO ADDRESSES  
 SKIP IF THE BACKWARD POINTER  
 LOAD THE BLOCK NUMBER  
 ADD THE PROPER BIAS  
 LOOP 3 TIMES  
 LOAD THE CURRENT BLOCK NUMBER  
 LOAD THE FORWARD POINTER  
 AND LOOP BACK IF THERE IS MORE  
 LOOP THRU ALL THE MASS STORAGE  
 WAS THE SYSTEM ENDED PROPERLY  
 LAST TIME  
 CLEAR BITS WHEN FRBLK IS CALLED  
 DONT ALLOW ROACH TO PANIC  
 REMEMBER THAT WE ARE JUST LOOKING

03276 44003473 P  
03277 11024254 P  
03300 14700062  
03301 00707426 P

05053 0

2055  
2056  
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SWA  
ECHA  
ENQ  
RTJ

MSFIX03X  
BCMSG  
BCMSG  
OUT

AT BUSY FILES

TELL THE OPERATOR WE CHECKING

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*****
*
* SECTION TO RECREATE THE MASS STORAGE BIT ARRAYS IF REQUESTED
*
*****
```

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03302 14611000 P
03303 12077764
03304 53600000
03305 77654000
03306 04600774
03307 00003307 P
03310 53200000
03311 12000002
03312 77644000
03313 20203134 X
03314 04400000
03315 00003315 P
03316 20007734 P
03317 40203313 X
03320 14100114 X
03321 16177777
03322 15111001
03323 47103532 P
03324 54103473 P
03325 02503450 P
03326 11024336 P 05067 2
03327 14700030
03330 00707426 P
03331 20007714 P
03332 03103336 P
03333 11037350 P 07672 0
03334 14700002
03335 01003340 P
03336 11024366 P 05075 2
03337 14700044
03340 00707426 P
03341 14103201 X
03342 03342 X
03343 20103110 X
03344 03203347 X
03345 20103112 X
03346 00704572 P
03347 01003416 P
03350 20103344 X
03351 14704000
03352 14203240 X
03353 47103355 P
03354 14100100
03355 00707372 P
03356 14100000
03357 54304004 P
03360 02703361 P
03361 00003360
03362 14600000
03363 30004002
03364 40004002 P
03365 00704572 P
03366 14600001
03367 02703362 P
03370 20007477 P
03371 30103347 X
03372 14704000
03373 14203351 X
03374 47103376 P
03375 14101000
03376 00707372 P
03377 14100000
03400 14301000 P
03401 01003414 P
03402 34304000
03403 20304001 P
03404 03003414
03405 15477776
03406 40304001
03407 25103370 X
03408 30304000
```

```
REGEN EQU *
ENA ACCESS
SHA -11
TAI X2
PFA PFR,X2
ASE D774B
HLT *
TIA X2
SHA 2
APF PFW,X2
LDA PAGETABL,X2
ASE,S 0
HLT *
LDA SYSCON
STA PAGETABL,X2
ENI FDELNTH,X1
XOI -0,X1
INI MXBUFFER+WPFB+1,X1
STI FDMAX,X1
LDI MSFIX03,X1
IJD MSFIX01,X1
ECHA RGMMSG
ENQ RGMMSG
RTJ OUT
LDA SJ5FLAG
AZJ,NE *+4
ECHA CRCR
ENQ 2
UJP *+3
ECHA FCMSG
ENQ FCMSG
RTJ OUT
ENI MSUNITM1,X1
EQU *
LDA ARRAYTBL,X1
AZJ,GE *+4
LDA BLOCKTBL,X1
RTJ FRBLK
UJP MSZAP04
LDA BLOCKTBL,X1
ENQ CORE
ENI READ,X2
STI *+3,X1
ENI LABEL,X1
RTJ MSIO
ENI IMPURE,X1
LDI CORE+MSLPFB,X3
IJD *+2,X3
HLT *
ENA 0
ADA CORE+MSLLFBN
STA CORE+MSLLFBN
RTJ FRBLK
ENA 1
IJD MSZAP02,X3
LDA BADTRAX
ADA BLOCKTBL,X1
ENQ CORE
ENI READ,X2
STI *+3,X1
ENI WPFB,X1
RTJ MSIO
ENI IMPURE,X1
ENI WPFB,X3
UJP MSZAP03Z
RAD CORE,X3
LDA CORE+1,X3
AZJ,EQ MSZAP03Z
INA,S -1
STA CORE+1,X3
LDAQ BLOCKTBL,X1
ADA CORE,X3
```

```
SET UP THE PAGE FILE FOR
REFERENCING THE FILE BLOCKS
PAGE NUMBER TO X2
ARE THE ADDRESSES BEING USED

PAGE NUMBER BACK TO A
FORM 1/4 PAGE NUMBER

IS THE PAGE BEING USED
SKIP IF NOT

SET PAGE TABLE TO SAY WE ARE
ARE USING THE PAGE
ENTER WORDS PER FD ENTRY

STORE WPFB-FDELNTH+1
ARE WE JUST CHECKING BUSY FILES
JUMP IF SO
TELL THE OPERATOR THAT WE
ARE RECREATING THE DISK TABLES

IS SJ5 ON
JUMP IF SJ5 IS SET

SAY WE ARE CHECKING THE FILE
STRUCTURES ALSO

NUMBER OF UNITS - 1.

IS THE UNIT ON LINE

LOAD THE LOAD POINT BLOCK ON THE
MISSING DEVICE AND FREE IT

LOAD THE LABEL ADDRESS

AND READ THE LABEL
SAVE INDEX X1
ENTER THE WORD COUNT

RESTORE INDEX X1
LOAD COUNT OF PROTECTED BLOCKS
JUMP IF SOME PROTECTED BLOCKS
THE LABEL HAS TO BE PROTECTED

GET THE CURRENT FILE BLOCK NUMBER

FREE THE BLOCK

LOOP TIL DONE WITH PROT STUFF
READ IN THE LIST OF BAD TRACKS
FOR EACH DEVICE
```

03410	03603414	P	2139	AQJ,GE	MSZAP03Z	
03411	00704572	P	2140	RTJ	FRBLK	
03412	14600001		2141	ENA	1	
03413	01003401	P	2142	UJP	MSZAP03	
03414	10700000		2143	ISD	0,X3	
03415	02703402	P	2144	IJD	MSZAP03X,X3	
03416	02503342	P	2145	IJD	MSK02,X1	LOOP TILL DONE WITH ALL DISKS
			2146			
03417	54300106	X	2147	LDI	FDLENGTH,X3	GET THE LENGTH OF THE FILE
03420	01003424	P	2148	UJP	*+4	DIRECTORY
03421	53300000		2149	TIA	X3	
03422	30000105	X	2150	ADA	FILEDIR	
03423	00704572	P	2151	RTJ	FRBLK	FREE ALL BLOCKS THAT THE FILE
03424	02703421	P	2152	IJD	*-3,X3	DIRECTORY OCCUPIES
03425	54300120	X	2153	LDI	UDLENGTH,X3	GET THE LENGTH OF THE USER
03426	01003432	P	2154	UJP	*+4	DIRECTORY
03427	53300000		2155	TIA	X3	
03430	30000117	X	2156	ADA	USERDIR	
03431	00704572	P	2157	RTJ	FRBLK	FREE ALL THE BLOCKS THAT THE
03432	02703427	P	2158	IJD	*-3,X3	USER DIRECTORY OCCUPIES
03433	20007471	P	2159	LDA	ACCBLOCK	GET THE FIRST BLOCK OF THE
			2160			ACCOUNTING FILE
	03434	P	2161	* MSACC01 EQU *		
03434	40007656	P	2162	STA	POINT	SAVE THE BLOCK NUMBER
03435	14200001		2163	ENI	1,X2	
03436	00704572	P	2164	RTJ	FRBLK	FREE THE BLOCK
03437	20007656	P	2165	LDA	POINT	LOAD THE BLOCK NUMBER AGAIN
03440	14707716	P	2166	ENQ	FREEBUFF	
03441	14203372	X	2167	ENI	READ,X2	
03442	14100002		2168	ENI	2,X1	READ TWO WORDS
03443	00707372	P	2169	RTJ	MSIO	
03444	20007716	P	2170	LDA	FREEBUFF	LOAD THE FORWARD POINTER
03445	03103434	P	2171	AZJ,NE	MSACC01	LOOP BACK IF NOT THE END
03446	04677777		2172	ASE	777778	ONE LAST CHECK
03447	00003447	P	2173	HLT	*	IT WAS OK BEFORE

Address	Hex	Op	Label	Macro	Op	Comment
2175				MACRO	ILLEGAL	
2176				NAME	LEGAL	
2177				LDQ	LIBLAD	LOAD LAST LIBRARY ADDRESS
2178				AQJ,GE	*+5	JUMP IF NOT IN THE LIBRARY
2179				AZJ,EQ	*+2	ZERO IS BAD
2180				RTJ	FDERROR	BUT NOT AS BAD AS NON-ZERO
2181				AZJ,GE	*-1	+0 IS VERY BAD
2182				RTJ	\$ILLEGAL	-0 IS JUST BAD
2183				END		
2184						
2185						
03450	11177777	P	37777 3	MSFIX01 EQU	*	
03451	40007655	P		ECHA	177777B	SET MAX WORD COUNT FOR SEQUENTIAL FILES
03452	14603526	P		STA	MAXGAP	SET THE RETURN ADDRESS
03453	44003507	P		ENA	MSFIX04	FOR CHECKOUT COMPLETION
03454	14600000			SWA	FILEDONE	START WITH THE 0TH FD BLOCK
03455	40007703	P		ENA	0	SAVE THE RELATIVE FD BLOCK NUMBER
03456	14710000			MSFIX02 STA	MSDIRBLK	READ IT INTO MXBUFFER
03457	30003422	X		ENQ	MXBUFFER	FORM THE REAL BLOCK NUMBER
03460	14203441	X		ADA	FILEDIR	
03461	14101000			ENI	READ,X2	
03462	00707372	P		ENI	WPF8,X1	
03463	77730000			RTJ	MSIO	READ IN THE FILE BLOCK
03464	14110000			VFD	A12/DINT	
	03465	P		ENI	MXBUFFER,X1	
03465	25177777	X		MSFIX03 EQU	*	
03466	03003527	P		LDQA	FDSYM,X1	LOAD THE FILE NAME
03467	47103526	P		AZJ,EQ	MSFIX04X	ZERO INDICATES A VACANT POSITION
03470	20177777	X		STI	MSFIX04,X1	SAVE THE FD BLOCK POSITION
03471	03303514	X		LDA	FDCDATE,X1	LOAD THE LAST CHANGE DATE WORD
03472	20177777	X		AZJ,LT	MSFXNA	JUMP IF FILE IS UNAVAILABLE
03473	04000000			LDA	FDBUSY,X1	IS THE FILE BUSY
03474	03003514	P		ISE	IMPURE,0	SKIP IF LOOKING AT ALL FILES
03475	14604714	P		AZJ,EQ	MSFXNA	JUMP IF NOT BUSY
03476	44007360	P		ENA	MSERROR	RECOVER FROM MASS STORAGE ERRORS
03477	20177777	X		SWA	IR	
03500	12077760			LDA	FDEPP,X1	
03501	17600017			SHA	-15	
03502	14700017			ANA	HTMASK	
03503	14100004			ENQ	HTMASK	
03504	06207456	P		ENI	HTLNTH,X1	
03505	00704671	P		MEQ	HTLIST,2	
03506	01507457	P		RTJ	FDERROR	ILLEGAL HT IN FILE DIRECTORY
				UJP,I	HTLIST+1,X1	
03507	01000000			FILEDONE UJP	IMPURE	WHERE TO GO WHEN FINISHED WITHEAC
03510	20177777	X		FZL	LDA	FOLP,X1
03511	03103513	P		AZJ,NE	*+2	FOR ZERO LENGTH FILES, THE LOAD POINT BLOCK SHOULD BE 77777777
03512	03303514	P		AZJ,LT	MSFXNA	JUMP IF IT IS
03513	00704702	P		RTJ	ERROR	
03514	20103472	X		MSFXNA LDA	FDBUSY,X1	LOAD THE BUSY COUNTER
03515	05400000			ASG,S	0	WHICH SHOULD NOT BE NEGATIVE
03516	00704671	P		RTJ	FDERROR	GOOD GRIEF CHARLIE BROWN, IT WAS
03517	03003507	P		AZJ,EQ	FILEDONE	JUMP IF NOT BUSY
03520	47003534	P		STI	FDWFLAG,0	SET THE FD BLOCK CHANGE FLAG
03521	14600000			ENA	0	AND SET THE FDBUSY WORD TO ZERO
03522	40103514	X		STA	FDBUSY,X1	
03523	20007644	P		LDA	BIT21	LOAD THE BACKUP REQUEST BIT
03524	35103470	X		SSA	FDCDATE,X1	AND SET IT INTO THE FDCDATE WORD
03525	40103524	X		STA	FDCDATE,X1	
03526	14100000			MSFIX04 ENI	IMPURE,X1	
03527	15103320	X		MSFIX04X INI	FDELNTH,X1	
03530	14607353	P		ENA	SMASH	IRRECOVERABLE MASS STORAGE ERRORS
03531	44007360	P		SWA	IR	ARE NOT ACCEPTABLE AT THIS POINT
03532	05100000			ISG	IMPURE,X1	IMPURE = MXBUFFER+WPF8-FDELNTH+1
03533	01003465	P		UJP	MSFIX03	
03534	04000001			FDWFLAG ISE	1+IMPURE,0	SKIP IF THE CURRENT FD BLOCK HAS BEEN CHANGED AND NEEDS TO BE
03535	01003545	P		UJP	FDWX	REWRITTEN ONTO THE DISKS
03536	14710000			ENQ	MXBUFFER	LOAD THE RELATIVE FD BLOCK NUMBER
03537	20007703	P		LDA	MSDIRBLK	CONVERT TO ABSOLUTE BLOCK NUMBER
03540	30003457	X		ADA	FILEDIR	AND WRITE IT OUT
03541	14203034	X		ENI	WRITE,X2	ENTER THE WORD COUNT
03542	14101000			ENI	WPF8,X1	CLEAR THE FD CHANGE FLAG
03543	47103534	P		STI	FDWFLAG,X1	CALL THE MASS STORAGE DRIVER
03544	00707372	P		RTJ	MSIO	
	03545	P		FDWX EQU	*	
03545	20007703	P		LDA	MSDIRBLK	

03546	15600001		2254	INA	1	ADVANCE TO THE NEXT BLOCK
03547	21003417	X	2255	LDQ	FLENGTH	LOAD THE FILE DIRECTORY LENGTH
03550	03703455	P	2256	AQJ,LT	MSFIX02	JUMP IF MORE DIRECTORY BLOCKS
			2257			
			2258			
03551	14600012		2259	ENA	GFDELNTH	SEE IF INITIAL AGREES WITH
03552	04603527	X	2260	ASE	FDELNTH	ACTUAL FDE LENGTH
03553	00003553	P	2261	HLT	*	NOPE
03554	14607745	P	2262	ENA	FKFD	ADDRESS OF FAKE FILE DIRECTORY
03555	44003526	P	2263	SWA	MSFIX04	STICK IN CHECK ROUTINE
03556	14603657	P	2264	ENA	RETBFCHK	ADDRESS TO RETURN AFTER CHECK
03557	44003507	P	2265	SWA	FILEDONE	ADDRESS IN JUMP INSTRUCTION
03560	20007513	P	2266	LDA	SAVEBBLK	ADDRESS OF BATCH SAVE BLOCK
03561	00706710	P	2267	RTJ	SETBUP	GO INITILIZE READ AND WRITE ROUT.
03562	14600050		2268	ENA	40	SAY THAT BATCH RECORDS CANNOT BE
03563	48007655	P	2269	STA	MAXGAP	GREATER THAN 40 WORDS
03564	44006547	P	2270	SWA	CHKCHK2	SAY NOT TO FREE FIRST BLOCK
03565	14107745	P	2271	ENA	FKFD,X1	ADDRESS OF FAKE FILE DIRECTORY
03566	14600001		2272	ENA	HIFILE	GET FILE HARDWARE TYPE
03567	12000017		2273	SHA	15	MOVE HARDWARE TYPE TO POSITION
03570	40103477	X	2274	STA	FDEPP,X1	SAVE THE HARDWARE TYPE
03571	25007521	P	2275	LDAQ	ACCOUNT	GET SYSTEM JOB NUMBER
03572	45177777	X	2276	STAQ	FOACC,X1	PUT IN FAKE FILE DIRECTORY
03573	14100002		2277	ENI	2,X1	SAY 2 WORDS OF HEADER INFORMATION
03574	14307734	P	2278	ENI	TEMPCTLB-1,X3	WHERE TO PUT THEM
03575	00706522	P	2279	RTJ	GSAVEBUF	GO GET THE WORDS
03576	01003700	P	2280	UJP	BATCHDN	WE ARE DONE HERE - GOODBYE
03577	20007735	P	2281	LDA	TEMPCTLB	GET FIRST WORD RETURNED
03600	03003677	P	2282	AZJ,EQ	POSDN	POSSIBLE DONE, CHECK FOR NEGITIVE
03601	14100002		2283	ENI	2,X1	2 WORD RECORDS
03602	00706603	P	2284	RTJ	FILEIT	WRITE OUT HEADER INFORMATION
03603	14107745	P	2285	ENI	FKFD,X1	ADDRESS OF DIRECTORY FAKE
03604	25007735	P	2286	LDAQ	TEMPCTLB	GET WORDS RETURNED
03605	04000000		2287	ISE	IMPURE,0	SKIP IF BATCH RESTORATION
03606	01003614	P	2288	UJP	DEVREST	DEVICE RESTORATION
03607	13077771		2289	SHAQ	-6	MOVE TO Q FOR A SEC.
03610	20007774	P	2290	LDA	BNAME	GET NAME FOR BATCH GROUP
03611	13000006		2291	SHAQ	6	NUMBER BACK WITH NAME
03612	40103465	X	2292	STA	FDSYM,X1	PUT NAME INTO FAKE FILE DIRECTORY
03613	01003620	P	2293	UJP	REST01	CONTINUE
03614	40103612	X	2294	STA	FDSYM,X1	SAVE NAME
03615	13000011		2295	SHAQ	9	SKOOT RECORD LENGTH OVER TO A
03616	17600777		2296	ANA	777B	LENGTH ONLY
03617	40007655	P	2297	STA	MAXGAP	SAVE FOR CHECKING
	03620	P	2298	EQU	*	
03620	14700000		2299	ENQ	0	
03621	15100001		2300	INI	1,X1	SAVE SYMBOL ON MAP
03622	41103614	X	2301	STQ	FDSYM,X1	ZERO INITIAL ENTRY COUNTER
03623	54207736	P	2302	LOI	TEMPCTLB+1,X2	GET COUNT OF ELEMENTS IN GROUP
03624	01003672	P	2303	UJP	BCHKLPEN	GO TO END OF LOOP
03625	14100007		2304	ENI	IMPURE+7,X1	SAY HOW MANY WORDS OF INFO
03626	14307734	P	2305	ENI	TEMPCTLB-1,X3	WHERE TO PUT THE 7 OR 2 WORDS
03627	00706522	P	2306	RTJ	GSAVEBUF	GO GET 7 OR 2 WORD BLOCK
03630	00003630	P	2307	HLT	*	FILE TROUBLE
03631	20407760	P	2308	LDA,I	INDTFL	GET PARTICULAR LENGTH
03632	03003667	P	2309	AZJ,EQ	REWRIT	JUMP SINCE DUMMY ENTRY
03633	14107745	P	2310	ENI	FKFD,X1	GET FAKE FILE DIRECTORY POINTER
03634	40177777	X	2311	STA	FDIFL,X1	SAVE LENGTH FOR CHECKING ROUTINE
03635	20407761	P	2312	LDA,I	INDFLP	GET FILE LOAD POINT
03636	40103510	X	2313	STA	FDLP,X1	SAVE IN FAKE F.D. FOR CHECK
03637	14600000		2314	ENA	0	
03640	40103522	X	2315	STA	FDBUSY,X1	CLEAR BUSY STATUS
03641	40103525	X	2316	STA	FDCDATE,X1	ZERO POSSIBLE BIT 23 IN DATE WORD
			2317			
03642	15100001		2318	INI	1,X1	SAVE SYMBOL ON MAP
03643	20103622	X	2319	LDA	FDSYM,X1	GET CURRENT ELEMENT BCD COUNT
03644	30007757	P	2320	ADA	KONST	INCREMENT IT
03645	40007721	P	2321	STA	TEMP1	
03646	37077777	X	2322	LPA	BLANKS	
03647	40007723	P	2323	STA	TEMP2	
03650	12000025		2324	SHA	21	
03651	30007723	P	2325	ADA	TEMP2	
03652	16477777		2326	XOA,S	7777B	
03653	30007721	P	2327	ADA	TEMP1	
03654	40103643	X	2328	STA	FDSYM,X1	SAVE UPDATED COUNT
			2329			
03655	47203657	P	2330	STI	BLPSVX2,X2	SAVE X2 SO WONT BE HIT
03656	01004257	P	2331	UJP	FILE	GO CHECK OUT FILE
	03657	P	2332	EQU	*	
				RETBFCHK		



03657	14200000		2333	BLPSVX2	ENI	IMPURE,X2	RESTORE X2 FOR IJD
03660	14107745	P	2334		ENI	FKFD,X1	ADDRESS OF FAKE FILE DIRECTORY
03661	20103640	X	2335		LDA	FDBUSY,X1	SEE IF WAS SET BUSY
03662	03103674	P	2336		AZJ,NE	BOBTCH	BAD FILE SCRAP IT
03663	20103641	X	2337		LDA	FDCDATE,X1	OR ABNORMAL
03664	03303674	P	2338		AZJ,LT	BDBTCH	BAD FILE HERE TOO
03665	20103634	X	2339		LDA	FDTFL,X1	GET NEW FILE DIRECTORY LENGTH
03666	40407760	P	2340		STA,I	INDIFL	PUT IN TEMP FILE CONTROL BLOCK
03667	14307734	P	2341	REWRT	ENI	TEMPCTLB-1,X3	WHERE TO WRITE FROM
03670	54103625	P	2342		LDI	BCHKLPBG,X1	LENGTH TO WRITE
03671	00706603	P	2343		RTJ	FILEIT	WRITE OUT UPDATED BATCH INFO.
03672	02603625	P	2344	BCHKLPEN	IJD	BCHKLPBG,X2	DO ANOTHER ONE
03673	01003573	P	2345		UJP	NWBQUE	GO GET ANOTHER BATCH QUEUE
03674	14600000		2346	BDBTCH	ENA	0	
03675	40407760	P	2347		STA,I	INDTFL	SET FILE LENGTH TO ZERO
03676	01003667	P	2348		UJP	REWRT	GO WRITE UPDATED INFO
03677	03203601	P	2349	POSDN	AZJ,GE	CWRITES	NOT 77777777 SO NOT DONE
03700	00706660	P	2350	BATCHON	RTJ	BLOCKON	WRITE OUT UNFILLED BLOCKS
03701	04000000		2351	BCHKON	ISE	IMPURE,0	SKIP IF FIRST TIME THROUGH
03702	01003717	P	2352		UJP	CALLDN	ALL DONE WITH WORK
03703	14607735	P	2353		ENA	TEMPCTLB	WHERE THE LOAD POINT WILL BE FOR
03704	44007761	P	2354		SWA	INDFLP	DEVICES
03705	15600001		2355		INA	1	
03706	44007760	P	2356		SWA	INDTFL	SAY WHERE THE FILE LENGTH WILL BE
03707	14600002		2357		ENA	2	
03710	44003625	P	2358		SWA	BCHKLPBG	SAVE THE ELEMENT LENGTH
03711	44003701	P	2359		SWA	BCHKON	FIX SO WONT BE BACK
03712	44003605	P	2360		SWA	RESTOO	FIX SO WILL GET RECORD LENGTH
03713	44006547	P	2361		SWA	CHKCHK2	SAY NOT TO FREE FIRST BLOCK
			2362				
03714	20007515	P	2363		LDA	SAVEDEBK	ADDRESS OF DEVICE SAVE BLOCK
03715	00706710	P	2364		RTJ	SETBUP	INITILIZE I/O STUFF AGAIN
03716	01003573	P	2365		UJP	NWBQUE	GO GET FIRST DEVICE BLOCK
	03717	P	2366	CALLDN	EQU	*	
			2367				
			2368				
03717	14611000		2369		ENA	ACCESS	SET PAGE TABLE TO SAY WE ARE NOT
03720	12077764		2370		SHA	-11	USING THE ADDRESSES SPECIFIED BY
03721	53600000		2371		TAI	X2	ACCESS ANY MORE
03722	77654000		2372		PFA	PFR,X2	GET 1/4 PAGE NUMBER WE ARE USING
03723	12077775		2373		SHA	-2	
03724	53500000		2374		TAI	X1	PAGE NUMBER TO X1
03725	14600000		2375		ENA	0	
03726	40103317	X	2376		STA	PAGETABL,X1	RESET THE PAGE FILE TO
03727	14600774		2377		ENA	0774B	NON-EXISTANT
03730	77644000		2378		APF	PFW,X2	

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 2409  
 2410  
 2411

03731 20003013 X  
 03732 01003752 P  
           03733 P  
 03733 14100003  
 03734 20300002  
 03735 53140000  
 03736 00704572 P  
 03737 02503734 P  
 03740 20300003  
 03741 04477777  
 03742 01003744 P  
 03743 01003751 P  
 03744 14100003  
 03745 20300003  
 03746 53140000  
 03747 00704572 P  
 03750 02503745 P  
           03751 P  
 03751 20300001  
 03752 53700000  
 03753 02703733 P  
 03754 01005107 P

```

*****
*
*           SECTION TO SET ALL BLOCKS IN THE SUBSTITUTION LIST AS
*           BEING USED
*
*****
    
```

```

LDA      MXSLIST
UJP      MSFIX07
EQU      *
MSFIX06  EQU      3,X1
          LDA      1+1,X3
          AIA      X1
          RTJ      FRBLK
          IJD      *-3,X1
          LDA      2+1,X3
          ASE,S    77777B
          UJP      *+2
          UJP      MSFIX06X
          ENI      3,X1
          LDA      2+1,X3
          AIA      X1
          RTJ      FRBLK
          IJD      *-3,X1
          EQU      *
          LDA      0+1,X3
          TAI      X3
          IJD      MSFIX06,X3
          UJP      GLERCH
    
```

```

LOAD THE SUBSTITUTION LIST WORD
JUMP TO THE END OF THE LOOP

SET 4 BLOCKS BUSY IN CASE THIS
IS REALLY A PAGE

LOAD THE SUBSTITUTION BLOCK
IGNORE -0 BLOCKS

FREE A PAGE AS ABOVE

LOAD THE NEXT POINTER
PUT THE ADDRESS INTO X3
JUMP IF THERE IS ANOTHER LINK
    
```

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```

*****
*
* THE FOLLOWING ERRORS SHOULD BE DETECTED BY THIS CODE
*
* BAD MAJOR ACCESS BLOCK NUMBER
* BAD MINOR ACCESS BLOCK NUMBER
* BAD DATA BLOCK NUMBER
* POINTERS ON DATA BLOCKS DO NOT MATCH MINOR BLOCK POINTERS
* BAD FDEPP
* FORWARD / BACKWARD POINTERS ON DATA BLOCKS DO NOT AGREE
* FDBUSY IS NEGATIVE
* FDTFL IS NEGATIVE
* FIRST DATA BLOCK BACK POINTER IS NOT -0
* LAST DATA BLOCK FORWARD POINTER IS NOT -0
*
*****
    
```

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03755 14600000 P  
03756 40007652 P  
03757 54103526 P  
03760 20103665 X  
03761 05400000 P  
03762 00704671 P  
03763 03003510 P  
03764 40007660 P  
03765 20103661 X  
03766 05400000 P  
03767 00704671 P  
03770 35007714 P  
03771 03104060 P  
03772 20103636 X  
03773 21003066 X  
04001 00704617 P  
04002 47004011 P  
04003 20103772 X  
04004 14711000 X  
04005 14203460 X  
04006 14101000 X  
04007 00707372 P  
04010 77730000 P  
04011 14100000 P  
04012 20007656 P  
04013 40007720 P  
04014 20111000 X  
04015 21003773 X  
04023 00704617 P  
04024 20007720 P  
04025 40007656 P  
04026 20111000 P  
04027 15100001 P  
04030 47104011 P  
04031 14711000 X  
04032 14204005 X  
04033 14101000 P  
04034 00707372 P  
04035 77730000 P  
04036 14300000 P  
04037 20311000 X  
04040 21004015 X  
04046 00704617 P  
04047 20007652 P  
04050 15600001 P  
04051 21007660 P  
04052 03603507 P  
04053 40007652 P  
04054 10300777 P  
04055 01004037 P  
04056 54103526 P  
04057 01004003 P

```

RAF EQU *
ENA 0
STA STA
LUI FXTFL
LDA MSFIX04,X1
ASG,S FDTFL,X1
RTJ 0
AZJ,EQ FDERROR
STA FZL
LDA LNTH
ASG,S FDBUSY,X1
RTJ 0
SSA SJ5FLAG
AZJ,NE RAFCHK
LDA FOLP,X1
LEGAL RXERROR
RTJ ROACH
STI RAF02,0
LDA FOLP,X1
ENQ ACCESS
ENI READ,X2
ENI WPF0,X1
RTJ MSIO
VFD A12/DINT
ENI IMPURE,X1
LDA POINT
STA BACKPTR
LDA ACCESS,X1
LEGAL RXERROR
RTJ ROACH
LDA BACKPTR
STA POINT
LDA ACCESS,X1
ENI 1,X1
STI RAF02,X1
ENQ ACCESS
ENI READ,X2
ENI WPF0,X1
RTJ MSIO
VFD A12/DINT
ENI 0,X3
LDA ACCESS,X3
LEGAL RXERROR
RTJ ROACH
LDA FXTFL
INA 1
LDQ LNTH
AQJ,GE FILEDONE
STA FXTFL
ISI WPF0-1,X3
UJP RAF03
LDI MSFIX04,X1
UJP RAF01
    
```

```

SECTION TO HANDLE A RAF
SET CALCULATED LENGTH TO ZERO

FILE LENGTH SHOULD BE POSITIVE
JUMP IF ZERO LENGTH

LOAD THE BUSY COUNTER
SHOULD NOT BE NEGATIVE

DO WE WANT TO CHECK ALL FILES
EXAMINE THOROUGHLY IF IT WAS BUSY

CHECK THE MAJOR BLOCK ADDRESS
FREE THE MAJOR ACCESS BLOCK

READ IN THE MAJOR ACCESS BLOCK

ENTER POSITION IN MAJOR ACCESS BL
SAVE THE ADDRESS OF THE LAST DATA
BLOCK IN CASE WE TRUNCATE THE FIL

CHECK THE MINOR ACCESS BLOCK
FREE THE MINOR ACCESS BLOCK
RESTORE THE ADDRESS OF THE LAST
DATA BLOCK

READ IN THE MINOR ACCESS BLOCK

CHECK THE DATA BLOCK
FREE THE DATA BLOCK
LOAD THE CALCULATED LENGTH
ASSUME LAST BLOCK WAS OK
LOAD LENGTH FROM THE DIRECTORY
JUMP IF ENOUGH BLOCKS PROCESSED
REMEMBER THE CALCULATED LENGTH
IS THERE MORE IN THIS MINOR
ACCESS BLOCK JUMP IF SO
LOAD THE CURRENT FD POSITION AND
REREAD THE MAJOR ACCESS BLOCK
    
```

04060	47003534	P	2487	RAFCHK	EQU	*FDWFLAG,0	SET THE FD BLOCK CHANGE FLAG
04061	14600000	P	2488		STI	0	
04062	40103765	X	2489		ENA	FDBUSY,X1	ZERO THE FDBUSY WORD
04063	14477777		2490		STA	777778	0TH BACKWARD POINTER
04064	40007720	P	2491		ENA,S	BACKPTR	
04065	47004105	P	2492		STA	RAFCK02,0	
04066	20104003	X	2493		STI	FDLP,X1	LOAD MAJOR ACCESS BLOCK ADDRESS
04067	21004040	X	2494		LDA	FXERROR	CHECK MAJOR ACCESS BLOCK
04075	00704617	P	2495		LEGAL	ROACH	FREE THE MAJOR ACCESS BLOCK
04076	54103526	P	2496	RAFCK01	RTJ	MSFIX04,X1	LOAD THE FD BLOCK POSITION
04077	20104066	X	2497		LDI	FDLP,X1	LOAD MAJOR ACCESS BLOCK ADDRESS
04100	14711000		2498		LDA	ACCESS	ENTER THE BUFFER ADDRESS
04101	14204032	X	2499		ENQ	READ,X2	READ IT INTO CORE
04102	14101000		2500		ENI	WPF8,X1	
04103	00707372	P	2501		ENI	MSIO	
04104	14111000		2502		RTJ	ACCESS,X1	
04105	20100000		2503	RAFCK02	ENI	IMPURE,X1	LOAD MINOR ACCESS BLOCK NUMBER
04106	21004067	X	2504		LDA	FXERROR	CHECK MINOR ACCESS BLOCK
04114	00704617	P	2505		LEGAL	ROACH	FREE THE MINOR ACCESS BLOCK
04115	21007720	P	2506		RTJ	BACKPTR	RESTORE POINT IN CASE WE HAVE TO
04116	41007656	P	2507		LDQ	POINT	SET THE LAST FORWARD POINTER
04117	20404105	P	2508		STQ	RAFCK02	RESTORE THE BLOCK NUMBER
04120	14711000		2509		LDA,I	ACCESS	READ IN THE MINOR ACCESS BLOCK
04121	14204101	X	2510		ENQ	READ,X2	
04122	14101000		2511		ENI	WPF8,X1	
04123	00707372	P	2512		ENI	MSIO	
04124	20004105	P	2513		RTJ	RAFCK02	LOAD THE MAJOR ACCESS BLOCK LOC
04125	15600001		2514		LOA	1	INCREMENT TO THE NEXT MINOR BLOCK
04126	44004105	P	2515		INA	RAFCK02	AND STORE IT BACK
04127	14300000		2516		SWA	0,X3	X3 IS MINOR ACCESS BLOCK LOC
04130	21011000		2517		ENI	ACCESS	FAKE PREVIOUS FORWARD POINTER IF
04131	04600001		2518		LDQ	1	THIS IS THE FIRST BLOCK
04132	21007716	P	2519		ASE	FREEDUFF	OTHERWISE, USE THE REAL ONE
04133	20311000		2520	RAFCK03	LDQ	ACCESS,X3	THE MINOR ACCESS BLOCK POINTER
04134	03504137	P	2521		LDA	*+3	MUST BE CONSISTANT WITH THE
04135	13000014		2522		AQJ,NE	12	POINTERS IN THE DATA BLOCKS
04136	03404140	P	2523		SHAQ	*+2	JUMP IF OK
04137	00704201	P	2524		AQJ,EQ	12	
04140	13000014	P	2525		RTJ	FXERROR	SHIFT BACK INTO PLACE
04141	21004106	X	2526		SHAQ	12	CHECK THE DATA BLOCK NUMBER
04147	00704617	P	2527		LEGAL	FXERROR	
04150	20311000		2528		RTJ	ROACH	LOAD THE DATA BLOCK NUMBER
04151	14707716	P	2529		LOA	ACCESS,X3	READ IN THE TWO POINTER WORDS
04152	14204121	X	2530		ENQ	FREEDUFF	FROM THE CURRENT DATA BLOCK
04153	14100002		2531		ENI	READ,X2	
04154	00707372	P	2532		ENI	2,X1	
04155	20007717	P	2533		RTJ	MSIO	LOAD THE BACKWARD POINTER
04156	36007720	P	2534		LDA	FREEDUFF+1	CHECK WITH WHAT IT SHOULD BE
04157	03004161	P	2535		SCA	BACKPTR	
04160	00704201	P	2536		AZJ,EQ	*+2	RESULT MUST BE +0
04161	03304160	P	2537		RTJ	FXERROR	
04162	20311000		2538		AZJ,LT	*-1	
04163	40007720	P	2539		LDA	ACCESS,X3	LOAD THE DATA BLOCK NUMBER
04164	14600001		2540		STA	BACKPTR	WHICH IS THE NEXT BACK POINTER
04165	34007652	P	2541		ENA	1	INCREMENT THE LENGTH OF THE FILE
04166	21007716	P	2542		RAD	FXTFL	
04167	10300777		2543		LDQ	FREEDUFF	LOAD THE FORWARD POINTER
04170	01004133	P	2544		ISI	WPF8-1,X3	SKIP IF END OF MINOR ACCESS BLOCK
04171	13000030		2545		UJP	RAFCK03	LOOP BACK
04172	21004141	X	2546		SHAQ	24	FORWARD POINTER TO THE A REGISTER
04200	01004076	P	2547		LEGAL	FXERROR	IF THE FORWARD POINTER IS REASONA
			2548		UJP	RAFCK01	ASSUME ANOTHER MINOR ACCESS BLOCK
			2549				
			2550				
04201	01000000		2551	RXERROR	UJP	IMPURE	RAF ERROR
04202	54103526	P	2552		LDI	MSFIX04,X1	LOAD DIRECTORY POSITION
04203	20103570	X	2553		LDA	FDEPP,X1	LOAD THE END POSITION POINTER
04204	53600000		2554		TAI	X2	AND SAVE FOR LATER
04205	21007652	P	2555		LDQ	FXTFL	LOAD THE CALCULATED LENGTH
04206	20103760	X	2556		LDA	FXTFL,X1	LOAD THE THEORETICAL LENGTH
04207	05200776		2557		ISG	WPF8-2,X2	SKIP IF BAD END POSITION POINTER
04210	03403507	P	2558		AQJ,EQ	FILEDONE	JUMP IF EVERYTHING IS FINE
04211	41104206	X	2559		STQ	FDTFL,X1	CHANGE THEORETICAL TO CALCULATED
04212	14600051		2560		ENA	H#R#	RAF ERROR
04213	21004201	P	2561		LDQ	FXERROR	LOAD THE CALLING ADDRESS
04214	00704717	P	2562		RTJ	PRINTERR	TELL THE OPERATOR ABOUT IT
04215	14477777		2563		ENA,S	777778	FDLP FOR ZERO LENGTH RAF
04216	05500001		2564		QSG,S	1	SKIP IF NON-ZERO LENGTH
04217	40104077	X	2565		STA	FDLP,X1	SET THE FDLP WORD IF ZERO LENGTH

04220	14600775		2566	ENA	WPF8-3	LARGEST POSSIBLE EPP
04221	05500001		2567	QSG,S	1	SKIP IF NON-ZERO LENGTH
04222	14600000		2568	ENA	0	USE 0 IF ZERO LENGTH
04223	44104203	X	2569	SWA	FDEPP,X1	SET THE FDEPP WORD
04224	20007643	P	2570	LDA	BIT22	LOAD THE RECOVERY REQUEST BIT
04225	35007642	P	2571	SSA	BIT23	SET IN THE DATA NOT PRESENT BIT
04226	37103663	X	2572	LPA	FDCDATE,X1	AND LOAD THEM FROM THE FDCDATE
04227	13000030		2573	SHAQ	24	SAVE THEM IN Q
04230	20007646	P	2574	LDA	DMASK	LOAD THE MASK FOR THE DATA
04231	37177777	X	2575	LPA	FDATE,X1	LEAVE THE LAST REFERENCE DATE
04232	53040000		2576	AQA		SET IN THE PREVIOUS BITS
04233	35007644	P	2577	SSA	BIT21	AND SET THE BACKUP REQUEST BIT
04234	40104226	X	2578	STA	FDCDATE,X1	AND STORE THE THING AWAY
04235	20104211	X	2579	LDA	FDTFL,X1	LOAD THE FILE LENGTH
04236	03003507	P	2580	AZJ,EQ	FILEDONE	ALL DONE IF ZERO
04237	20007656	P	2581	LDA	POINT	OTHERWISE, SET THE LAST FORWARD
04240	14711000		2582	ENQ	ACCESS	POINTER TO 77777777
04241	14204152	X	2583	ENI	READ,X2	READ IN THE LAST DATA BLOCK
04242	14101000		2584	ENI	WPF8,X1	
04243	00707372	P	2585	RTJ	MSIO	
04244	20011000		2586	LDA	ACCESS	LOAD THE FORWARD POINTER
04245	03104247	P	2587	AZJ,NE	*+2	JUMP IF NOT 77777777
04246	03303507	P	2588	AZJ,LT	FILEDONE	JUMP IF IT IS ALREADY 77777777
04247	14477777		2589	ENA,S	777777	
04250	40011000		2590	STA	ACCESS	STORE THE FORWARD POINTER
04251	20007656	P	2591	LDA	POINT	LOAD THE BLOCK NUMBER
04252	14711000		2592	ENQ	ACCESS	AND WRITE THE THING BACK OUT
04253	14203541	X	2593	ENI	WRITE,X2	
04254	14101000		2594	ENI	WPF8,X1	
04255	00707372	P	2595	RTJ	MSIO	
04256	01003507	P	2596	UJP	FILEDONE	DONE AT LAST

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```

*****
*
* THE FOLLOWING ERRORS SHOULD BE DETECTED BY THIS CODE
*
* FILE LENGTH IS NEGATIVE
* FDBUSY IS NEGATIVE
* BAD BLOCK NUMBER (LOAD POINT BLOCK)
* BAD BLOCK NUMBER (LAST BLOCK)
* BAD BLOCK NUMBER (NOT FIRST OR LAST BLOCK)
* FORWARD AND BACKWARD POINTERS DO NOT AGREE
* BAD WORD COUNT ON A RECORD
* LEADING AND TRAILING WORD COUNTS DO NOT MATCH
* EOD WORD BEFORE THE LAST BLOCK
* -U FORWARD POINTER IN THE MIDDLE OF A RECORD
* LAST DATA BLOCK FORWARD POINTER IS NOT -0
* FIRST DATA BLOCK BACK POINTER IS NOT -0
*
*****
    
```

04257 04257 P  
04260 54103526 X  
04261 20104235 X  
04262 05400000 P  
04263 00704671 P  
04264 03003510 P  
04265 20104062 X  
04266 05400000 P  
04267 00704671 P  
04270 35007714 P  
04271 03104341 P  
04272 14477777 P  
04273 40007720 P  
04274 20104260 X  
04275 13000030 X  
04276 20104217 X  
04277 05500002 P  
04300 01004331 P  
04301 41007702 P  
04307 21004172 X  
04307 40007656 P  
04310 14707716 P  
04311 14100002 X  
04312 14204241 X  
04313 00707372 P  
04314 20007720 P  
04315 36007717 P  
04316 05600001 P  
04317 04400000 P  
04320 00704702 P  
04321 20007656 P  
04322 40007720 P  
04323 00704617 P  
04324 20007716 P  
04325 21007702 P  
04326 15577776 P  
04327 04500001 P  
04330 01004300 P  
04331 21004301 X  
04337 00704617 P  
04340 01003507 P

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```

FILE EQU *
LDI MSFIX04,X1
LDA FDTFL,X1
ASG,S 0
RTJ FDERROR
AZJ,EQ FZL
LDA FDBUSY,X1
ASG,S 0
RTJ FDERROR
SSA SJ5FLAG
AZJ,NE FILECHK
ENA,S 77777B
STA BACKPTR
LDA FDTFL,X1
SHAQ 24
LDA FDLP,X1
QSG,S 2
MSFX02 UJP MSFX03
STQ ACCLNTH
LEGAL ERROR
STA POINT
ENQ FREEBUFF
ENI 2,X1
ENI READ,X2
RTJ MSIO
LDA BACKPTR
SCA FREEBUFF+1
ASG 1
ASE,S 0
RTJ ERROR
LDA POINT
STA BACKPTR
RTJ ROACH
LDA FREEBUFF
LDQ ACCLNTH
INQ,S -1
QSE,S 1
MSFX03 UJP MSFX02
LEGAL ERROR
RTJ ROACH
UJP FILEDONE
    
```

```

LOAD THE LENGTH OF THE FILE
LENGTH MUST BE POSITIVE
BAD NEWS
JUMP IF ZERO LENGTH
LOAD THE BUSY COUNTER
WHICH SHOULD ALSO BE POSITIVE
DO WE WANT TO CHECK ALL FILES
EXAMINE THOROUGHLY IF IT WAS BUSY

LOAD THE LENGTH OF THE FILE
PUT THE LENGTH INTO Q
LOAD THE STARTING BLOCK NUMBER
SKIP IF MORE THAN 1 BLOCK

IS THE BLOCK NUMBER REASONABLE
SAVE THE CURRENT BLOCK NUMBER

BLOCK POINTERS DO NOT AGREE
LOAD THE CURRENT BLOCK
SAVE THE NEXT BACKWARD POINTER
FREE THE BLOCK

IS THE BLOCK REASONABLE
FREE THE BLOCK
    
```

04341	47003534	P	2662	FILECHK	EQU	*
04342	14600000		2663		STI	FDWFLAG,0
04343	40104264	X	2664		ENA	0
04344	47007651	P	2665		STA	FDBUSY,X1
04345	14600001		2666		STI	FXEPP,0
04346	40007652	P	2667		ENA	1
04347	20104275	X	2668		STA	FXTFL
04350	21004331	X	2669		LDA	FULP,X1
04356	40007656	P	2670		LEGAL	FXERROR
04357	40007650	P	2671		STA	POINT
04360	14204312	X	2672		STA	FXBLOCK
04361	14101000		2673		ENI	READ,X2
04362	14711000		2674		ENI	WPFB,X1
04363	00707372	P	2675		ENQ	ACCESS
04364	20011001		2676		RTJ	MSIO
04365	03004367	P	2677		LDA	ACCESS+1
04366	00704702	P	2678		AZJ, EQ	*+2
04367	03204366	P	2679		RTJ	ERROR
04370	20007656	P	2680		AZJ, GE	*-1
04371	40007720	P	2681		LDA	POINT
04372	00704617	P	2682		STA	BACKPTR
04373	14200000		2683		RTJ	ROACH
04374	47207651	P	2684		ENI	0,X2
04375	20211002		2685	PM03	STI	FXEPP,X2
04376	03204414	P	2686		LDA	ACCESS+2,X2
04377	37007645	P	2687		AZJ, GE	PM05
04400	03104414	P	2688		LPA	BIT16M1
04401	20211002		2689		AZJ, NE	PM05
04402	40007653	P	2690		LDA	ACCESS+2,X2
04403	12000001		2691		STA	GAP
04404	04400001		2692		SHA	1
04405	00704514	P	2693		ASE, S	1
04406	15200001		2694		RTJ	FXERROR
04407	05200776		2695		INI	1,X2
04410	01004374	P	2696		ISG	WPFB-2,X2
04411	14700000		2697		UJP	PM03
04412	14600001		2698		ENQ	0
04413	01004427	P	2699		ENA	1
04414	40007653	P	2700		UJP	PM06
04415	03004503	P	2701	PM05	STA	GAP
04416	37007645	P	2702		AZJ, EQ	PMEOD
04417	21007655	P	2703		LPA	BIT16M1
04420	03704423	P	2704		LQ	MAXGAP
04421	03404423	P	2705		AQJ, LT	*+3
04422	00704514	P	2706		AQJ, EQ	*+2
04423	53240000		2707		RTJ	FXERROR
04424	15600002		2708		AIA	X2
04425	13077747		2709		INA	2
04426	51007647	P	2710		SHAQ	-24
04427	53600000		2711		DVA	KWPFBM2
04430	41007657	P	2712	PM06	TAI	X2
04431	01004466	P	2713		STQ	POSITION
04432	47204465	P	2714		UJP	PM08
04433	20011777	P	2715	PM07	STI	PMX2,X2
04434	40007654	P	2716		LDA	ACCESS+WPFB-1
04435	20011000		2717		STA	LASTWORD
04436	21004350	X	2718		LDA	ACCESS
04444	40007656	P	2719		LEGAL	FXERROR
04445	14711000		2720		STA	POINT
04446	14101000		2721		ENQ	ACCESS
04447	14204360	X	2722		ENI	WPFB,X1
04450	00707372	P	2723		ENI	READ,X2
04451	14600001		2724		RTJ	MSIO
04452	34004477	P	2725		ENA	1
04453	20011001		2726		RAD	DELTA
04454	36007720	P	2727		LDA	ACCESS+1
04455	03004457	P	2728		SCA	BACKPTR
04456	00704514	P	2729		AZJ, EQ	*+2
04457	03304456	P	2730		RTJ	FXERROR
04460	20007656	P	2731		AZJ, LT	*-1
04461	40007720	P	2732		LDA	POINT
04462	00704617	P	2733		STA	BACKPTR
04463	20007654	P	2734		RTJ	ROACH
04464	40011001		2735		LDA	LASTWORD
04465	14200000		2736		STA	ACCESS+1
04466	02604432	P	2737	PMX2	ENI	IMPURE,X2
04467	54207657	P	2738	PM08	IJD	PM07,X2
04470	20211001		2739		LDI	POSITION,X2
			2740		LDA	ACCESS+2-1,X2

SET THE FD CHANGE FLAG

SET THE FDBUSY WORD TO ZERO  
ASSUME ZERO LENGTH TO BEGIN WITH

LOAD THE STARTING BLOCK NUMBER  
CHECK LOAD POINT BLOCK ADDRESS  
USE IT AS THE CURRENT DATA BLOCK  
SAVE AS THE ENDING BLOCK ALSO  
READ THE BLOCK INTO CORE

LOAD THE BACKWARD POINTER

POINTER MUST BE -0

LOAD CURRENT BLOCK NUMBER  
SAVE FOR NEXT BACKWARD POINTER  
FREE THE BLOCK  
X2 IS EPP  
SAVE AS THE CURRENT EPP LOCATION  
LOAD THE INTER RECORD GAP WORD  
JUMP IF NOT A FILE MARK  
CHECK WORD COUNT - MAYBE BATCH  
WORD COUNT ≠ 0 PROBABLY BATCH JOB  
GET GAP WORD BACK  
SAVE IT FOR LATER  
FILE MARK = 40000000  
SKIP IF A GENUINE FILE MARK  
THE END HAS BEEN REACHED  
INCREMENT PAST THE FILE MARK  
SKIP IF THE END OF THE BLOCK  
LOOP BACK  
SET NEW EPP  
AND READ IN 1 BLOCK

SAVE GAP INFO FOR LATER  
JUMP IF END MARKER  
MASK TO A WORD COUNT  
CHECK FOR LEGAL INTER RECORD GAP

WORD COUNT IS TOO LARGE  
ADD IN THE CURRENT POSITION  
ADD TWO IR GAP WORDS  
SHIFT FOR THE DIVIDE  
DIVIDE BY WORDS PER FILE BLOCK  
SET THE NUMBER OF BLOCKS TO READ  
AND SAVE WHAT WILL BE THE NEW EPP  
JUMP TO THE LOOP TEST  
SAVE THE NUMBER OF BLOCKS TO READ  
LOAD THE LAST WORD FROM THIS  
BLOCK AND SAVE IT  
LOAD THE FORWARD POINTER  
CHECK NEXT BLOCK FOR LEGAL ADDRESS  
SAVE AS THE CURRENT BLOCK NUMBER  
READ IN THE BLOCK

REMEMBER WE READ THIS BLOCK

LOAD THE BACKWARD POINTER  
CHECK THE THEORETICAL VALUE

RESULT MUST BE +0

LOAD THE ADDRESS OF THE BLOCK  
SAVE AS THE NEXT BACKWARD POINTER  
FREE THE BLOCK  
LOAD THE LAST WORD FROM THE  
PREVIOUS BLOCK AND STORE IT THERE  
ENTER REMAINING BLOCK COUNT  
LOOP BACK  
LOAD THE NEW EPP  
LOAD ENDING IR GAP WORD

04471 36007653 P  
 04472 03004474 P  
 04473 00704514 P  
 04474 03304473 P  
 04475 20007656 P  
 04476 40007650 P  
 04477 14600000  
 04500 47004477 P  
 04501 34007652 P  
 04502 01004374 P  
 04503 20011000  
 04504 03004506 P  
 04505 00704514 P  
 04506 03204505 P  
 04507 54103526 P  
 04510 20007652 P  
 04511 21104273 X  
 04512 03403507 P  
 04513 00704514 P

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2799  
2800  
2801  
2802  
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2806  
2807  
2808

DELTA

PMEOD

FXERROR

FX01

FX02

SCA  
AZJ, EQ  
RTJ  
AZJ, LT  
LDA  
STA  
ENA  
STI  
RAD  
UJP  
LDA  
AZJ, EQ  
RTJ  
AZJ, GE  
LOI  
LDA  
LDQ  
AQJ, EQ  
RTJ

UJP  
LDQ  
ENA  
RTJ  
LDA  
SSA  
LPA  
SHAQ  
LDA  
LPA  
AQA  
SSA  
STA  
LDQ  
STQ  
LDA  
TAI  
ASG  
QSE, S  
UJP  
ENQ  
STQ  
ENQ, S  
STQ  
UJP  
LDA  
ENQ  
ENI  
RTJ  
LDA  
AZJ, NE  
AZJ, GE  
LDA  
AZJ, NE  
AZJ, GE  
ENA  
STA  
ENA, S  
STA  
ENQ  
ENI  
ENI  
LDA  
RTJ  
UJP

GAP  
\*+2  
FXERROR  
\*-1  
POINT  
FXBLOCK  
IMPURE  
DELTA, 0  
FXTFL  
PM03  
ACCESS  
\*+2  
FXERROR  
\*-1  
MSFIX04, X1  
FXTFL  
FOTFL, X1  
FILEDONE  
FXERROR

IMPURE  
FXERROR  
H#F#  
PRINTERR  
BIT22  
BIT23  
FDCDATE, X1  
24  
DMASK  
FDATE, X1  
BIT21  
FDCDATE, X1  
FXTFL  
FOTFL, X1  
FXEPP  
X3  
1  
1  
FX01  
0  
FOTFL, X1  
77777B  
FOLP, X1  
FILEDONE  
FXBLOCK  
ACCESS  
READ, X2  
WPF8, X1  
MSIO  
ACCESS  
FX02  
FX02  
ACCESS+2, X3  
FX02  
FILEDONE  
0  
ACCESS+2, X3  
77777B  
ACCESS  
ACCESS  
WRITE, X2  
WPF8, X1  
FXBLOCK  
MSIO  
FILEDONE

COMPARE WITH BEGINNING IR GAP  
 RESULT MUST BE +0  
 LOAD THE CURRENT BLOCK NUMBER  
 SAVE AS THE NEW ENDING BLOCK  
 ENTER THE NUMBER OF BLOCKS PASSED  
 SET DELTA BACK TO ZERO  
 ADD INTO THE CALCULATED TFL  
 LOOP BACK  
 LOAD THE LAST FORWARD POINTER  
 IT MUST BE 77777777  
 LOAD THE FD BLOCK POSITION  
 LOAD THE CALCULATED FILE LENGTH  
 LOAD THE THEORETICAL VALUE  
 JUMP IF THE FILE IS INTACT

FILE ERRORS  
 LOAD THE CALLING ADDRESS  
 FILE ERROR  
 TELL THE OPERATOR ABOUT IT  
 LOAD THE RECOVERY REQUEST BIT  
 AND THE DATA NOT PRESENT BIT  
 AND LOAD THEM FROM THE FDCDATE  
 SAVE THEM IN Q TEMPORARILY  
 LOAD THE MASK FOR THE DATE  
 AND LEAVE THE LAST REFERENCE DATE  
 MERGE THE BITS FROM THE FDCDATE  
 AND SET THE BACKUP REQUEST BIT  
 AND STORE THE THING BACK  
 LOAD THE CALCULATED LENGTH  
 STORE IT INTO THE FD ENTRY  
 LOAD THE CALCULATED EPP VALUE  
 SAVE FOR FUTURE USE  
 SKIP IF EPP IS NON-ZERO  
 SKIP IF A ZERO LENGTH FILE  
 SET THE TFL WORD TO ZERO  
 USE 77777777 AS THE FIRST BLOCK  
 ALL DONE  
 LOAD THE ENDING BLOCK NUMBER  
 AND READ IT IN  
 LOAD THE FORWARD POINTER  
 JUMP IF NOT 77777777  
 LOAD THE END OF DATA WORD  
 JUMP IF NOT 00000000  
 DONE IF 00000000  
 STORE THE END OF DATA WORD  
 AND SET THE FORWARD POINTER  
 TO 77777777  
 AND THEN WRITE THE BLOCK BACK OUT



04572	01000000		2810	FRBLK	UJP	IMPURE	
04573	47104612	P	2811		STI	FRBLKX1,X1	
04574	47204613	P	2812		STI	FRBLKX2,X2	
04575	13077747		2813		SHAQ	-24	BLOCK NUMBER TO 0
04576	51007732	P	2814		DVA	D24	
04577	53500000		2815		TAI	X1	WORD NUMBER TO X1
04600	13000030		2816		SHAQ	24	
04601	53600000		2817		TAI	X2	BIT POSITION TO X2
04602	16277777		2818		XOI	77777B,X2	
04603	14400001		2819	FRBLKENA	ENA,S	1+IMPURE	
04604	12200027		2820		SHA	23,X2	SHIFT BIT INTO PROPER POSITION
04605	55400000		2821		ROS		
04606	00004606	P	2822	FRBLKLOG	HLT	*+IMPURE	
04607	21100000		2823		LDQ	0,X1	LOAD THE VIRGIN WORD
04610	40100000		2824		STA	0,X1	STORE THE NEW WORD BACK
04611	55000000		2825		RIS		
04612	14100000		2826	FRBLKX1	ENI	IMPURE,X1	
04613	14200000		2827	FRBLKX2	ENI	IMPURE,X2	
04614	01004572	P	2828		UJP	FRBLK	
04615	35100000		2829				
04616	37100000		2830	SSAOX1	SSA	0,X1	
			2831	LPAOX1	LPA	0,X1	
			2832				
			2833				
04617	01000000		2834	ROACH	UJP	IMPURE	
04620	40007656	P	2835		STA	POINT	SAVE THE BLOCK NUMBER
04621	21004436	X	2836		LDQ	LIBLAD	LOAD THE LAST LIBRARY ADDRESS+1
04622	03704666	P	2837		AQJ,LT	ROACH05	JUMP IF A BAD BLOCK NUMBER
04623	00704572	P	2838		RTJ	FRBLK	FREE THE BLOCK
04624	04000001		2839	ROACHXX	ISE	IMPURE+1,0	SKIP IF CHECKING BUSY FILES
04625	03404627	P	2840		AQJ,EQ	*+2	JUMP IF SPACE SHARING
04626	01004617	P	2841		UJP	ROACH	
04627	00004627	P	2842		HLT	*	
04630	20003731	X	2843		LDA	MXSLIST	VERY BAD NEWS
04631	01004641	P	2844		UJP	ROACH03	GENERATE A SUBSTITUTION OF
04632	20200002		2845	ROACH01	LDA	2,X2	77777777 FOR THIS BLOCK
04633	21007656	P	2846		LDQ	POINT	WHICH SHOLD PREVENT THE SITUATION
04634	03504640	P	2847		AQJ,NE	ROACH02	FROM GETTING ANY WORSE
04635	14477777		2848		ENA,S	77777B	ATTACK EXISTING SUBSTITUTION
04636	40200003		2849		STA	3,X2	
04637	01004653	P	2850		UJP	ROACH04	
04640	20200001		2851	ROACH02	LUA	1,X2	ADVANCE TO THE NEXT LINK IN THE
04641	53600000		2852	ROACH03	TAI	X2	SUBSTITUTION LIST
04642	02604632	P	2853		IJD	ROACH01,X2	JUMP IF IT EXISTS
04643	14300002		2854		ENI	2,X3	OTHERWISE, CREATE A NEW LINK AND
04644	00703007	X	2855		RTJ	GETMEM	PUT IT INTO THE SUBSTITUTION LIST
04645	20007656	P	2856		LDA	POINT	LOAD THE BLOCK NUMBER
04646	14577777		2857		ENQ,S	77777B	SUBSTITUTE 77777777
04647	45300001		2858		STAQ	1,X3	STORE INTO THE LINK
04650	20004630	X	2859		LDA	MXSLIST	AND CHAIN THE LINK INTO THE LIST
04651	40300000		2860		STA	0,X3	
04652	47304650	X	2861		STI	MXSLIST,X3	
04653	14277770		2862	ROACH04	ENI	-7,X2	PRINT 8 OCTAL DIGITS
04654	21007656	P	2863		LDQ	POINT	FOR THE BLOCK NUMBER
04655	77600400		2864		PAUS	0400B	SENSE FOR TYPEWRITER BUSY
04656	01004655	P	2865		UJP	*-1	WAIT FOR IT
04657	14600000		2866		ENA	0	ZERO THE A REGISTER
04660	13000003		2867		SHAQ	3	SHIFT IN AN OCTAL DIGIT
04661	42424250	P	2868		SACH	SSMSG+36,X2	STORE INTO THE MESSAGE
04662	02204657	P	2869		IJI	*-3,X2	LOOP BACK
04663	11024204	P	2870		ECHA	SSMSG	ENTER THE MESSAGE ADDRESS
04664	14700045		2871		ENQ	37	ENTER THE MESSAGE LENGTH
04665	00707426	P	2872		RTJ	OUT	PRINT IT OUT
04666	54204617	P	2873	ROACH05	LDI	ROACH,X2	LOAD WHERE WE CAME FROM
04667	47204671	P	2874		STI	FDERROR,X2	SEND IT AHEAD
04670	00004670	P	2875		HLT	*	
04671	14000000		2876	FDERROR	NOP	IMPURE	FILE DIRECTORY ERROR
04672	54103526	P	2877		LDI	MSFIX04,X1	LOAD THE DIRECTORY POSITION
04673	14600001		2878		ENA	1	AND PUT THE FREEZE ON THE FILE
04674	40104343	X	2879		STA	FDUSY,X1	SET THE BUSY COUNTER TO 1
04675	24007642	P	2880		LCA	BIT23	AND CLEAR THE FILE PROTECTION BIT
04676	37104223	X	2881		LPA	FDEPP,X1	TO PREVENT SOMEONE FROM EQUIPPING
04677	40104676	X	2882		STA	FDEPP,X1	THIS FILE
04700	20004671	P	2883		LDA	FDERROR	LOAD THE ADDRESS WE CAME FROM
04701	44004702	P	2884		SWA	ERROR	AND SEND IT AHEAD ALSO
04702	14000000		2885	ERROR	NOP	IMPURE	MODERATELY SERIOUS ERRORS
04703	14600024		2886		ENA	H#D#	DIRECTORY ERROR
04704	21004702	P	2887		LDQ	ERROR	LOAD THE CALLING ADDRESS
04705	00704717	P	2888	ERRORX	RTJ	PRINTERR	AND TELL THE OPERATOR

04706	54103526	P		2889	LDI	MSFIX04,X1	LOAD THE FD ENTRY POSITION
04707	20104530	X		2890	LDA	FDCCDATE,X1	LOAD THE LAST CHANGE DATE WORD
04710	35007642	P		2891	SSA	BIT23	SET THE UNAVAILABLE BIT
04711	35007643	P		2892	SSA	BIT22	SET THE RECOVERY REQUEST BIT
04712	40104707	X		2893	STA	FDCCDATE,X1	STORE THE WORD BACK
04713	01003507	P		2894	UJP	FILEDONE	
				2895			
				2896			
	04714	P		2897	MSERROR EQU	*	RUN-OF-THE-MILL IR MS ERRORS
04714	14700000			2898	CALLMSIO ENQ	IMPURE	ADDRESS OF LAST CALL TO MSIO
04715	14600044			2899	ENA	H#M#	SAY MASS STORAGE ERROR
04716	01004705	P		2900	UJP	ERRORX	
				2901			
				2902			
				2903	PRINTERR UJP	IMPURE	
04717	01000000			2904	LDI	MSFIX04,X1	LOAD THE FILE DIRECTORY POSITION
04720	54103526	P		2905	STI	FDWFLAG,0	SET THE FD BLOCK CHANGE FLAG
04721	47003534	P		2906	PAUS	0400B	SENSE FOR TYPEWRITER BUSY
04722	77600400			2907	UJP	*-1	WAIT FOR THE TYPEWRITER
04723	01004722	P		2908	SACH	NAMEMSG+1	SAVE THE ERROR CODE
04724	42024135	P	05027 1	2909	ANQ	77777B	MASK TO 15 BITS
04725	17777777			2910	ENA	1+Z	Z IS A PROGRAM RELOCATABLE D0000
04726	14800001	P		2911	XOA,S	-0	SUBTRACT FROM THE ADDRESS WE CAME FROM
04727	16477777			2912	AQA		AND THEN STORE THE RELATIVE ADDRESS INTO THE MESSAGE
04730	53040000			2913	SHAQ	-15	
04731	13077760			2914	ENI	-4,X2	
04732	14277773			2915	ENA	0	
04733	14600000			2916	SHAQ	3	GET THE NEXT OCTAL DIGIT
04734	13000003			2917	SACH	FEMSG+25,X2	AND STORE IT INTO THE MESSAGE
04735	42424131	P	05026 1	2918	IJI	*-3,X2	LOOP BACK
04736	02204733	P		2919	ECHA	FEMSG	ENTER THE ADDRESS OF THE MESSAGE WHICH IS 26 CHARACTERS LONG
04737	11024100	P	05020 0	2920	ENQ	26	AND THEN PRINT IT
04740	14700032			2921	RTJ	0400B	SENSE FOR TYPEWRITER BUSY
04741	00707426	P		2922	PAUS	*-1	WAIT FOR IT
04742	77600400			2923	UJP	FDSYM,X1	LOAD THE NAME OF THE FILE
04743	01004742	P		2924	LDAQ	NAMENAME	STORE INTO THE MESSAGE
04744	25103654	X		2925	STAQ	FDACC,X1	LOAD THE ACCOUNT NUMBER
04745	45005032	P		2926	LDA	6,X1	ALLOW SEVEN DECIMAL DIGITS
04746	20103572	X		2927	ENI	-24	SHIFT FOR THE DIVIDE
04747	14100006			2928	SHAQ	D10	DIVIDE BY TEN
04750	13077747			2929	DVA	NAMEACC,X1	STORE THE DIGIT
04751	51007731	P		2930	SQCH	*-3,X1	AND LOOP BACK
04752	43424161	P	05034 1	2931	IJD	MSFIX04,X1	LOAD THE FD BLOCK POSITION
04753	02504750	P		2932	LDA	FDEPP,X1	OBTAIN THE HARDWARE TYPE
04754	54103526	P		2933	SHA	-15	
04755	20104677	X		2934	ANA	HTMASK	
04756	12077760			2935	SHAQ	-3	
04757	17600017			2936	ENI	NAMEHT	AND PUT IT IN THE MESSAGE
04760	13077774			2937	SACH	0	
04761	42024143	P	05030 3	2938	ENA	3	
04762	14600000			2939	SHAQ	NAMEHT+1	
04763	13000003			2940	SACH	FOURN,X1	LOAD THE USER NUMBER
04764	42024144	P	05031 0	2941	LDA	-18	CHECK THE LEADING CHARACTER
04765	20177777	X		2942	SHAQ	77B	MASK OFF THE SIGN EXTENSION
04766	13077755			2943	ANA	10	SKIP IF NOT NUMERIC
04767	17600077			2944	ASG	NPRT01	
04770	05600012			2945	UJP	0,X2	PROCESS FOUR BCD CHARACTERS
04771	01005003	P		2946	ENI	NAMEUSER,X2	STORE THE CHARACTER AWAY
04772	14200000			2947	SACH	6	SHIFT THE NEXT CHARACTER IN
04773	42424171	P	05036 1	2948	SHAQ	3,X2	SKIP IF DONE
04774	13000006			2949	ISI	*-3	LOOP BACK
04775	10200003			2950	UJP	77B	PLACE A CARRIAGE RETURN IN THE MESSAGE
04776	01004773	P		2951	ENQ	NAMEUSER+4	SHORT MESSAGE IF ALPHA USER CODE
04777	14700077			2952	SQCH	-3	
05000	43024175	P	05037 1	2953	ENQ,S	NPRT02	
05001	14577774			2954	UJP	6,X1	PROCESS A 7 DIGIT USER CODE
05002	01005012	P		2955	ENI	-6	SHIFT INTO 0
05003	14100006			2956	SHAQ	D10	DIVIDE BY TEN
05004	13077771			2957	DVA	NAMEUSER,X1	STORE THE DECIMAL DIGIT
05005	51007731	P		2958	SQCH	-24	SHIFT FOR THE NEXT DIVIDE
05006	43424171	P	05036 1	2959	SHAQ	*-3,X1	LOOP BACK
05007	13077747			2960	IJD	0	REGULAR MESSAGE LENGTH
05010	02505005	P		2961	ENQ	NAMEMSG	ENTER THE ADDRESS OF THE MESSAGE
05011	14700000			2962	ECHA	NAMEMSGL	COMPUTE THE MESSAGE LENGTH
05012	11024134	P	05027 0	2963	INQ	OUT	PRINT IT OUT
05013	15700045			2964	RTJ	MSFIX04,X1	LOAD THE FILE DIRECTORY POSITION FOR THE SYSTEMS PROGRAMMER
05014	00707426	P		2965	LDI	PRINTERR	AND RETURN TO THE CALLER
05015	54103526	P		2966	SLS		
05016	77700000			2967	UJP		
05017	01004717	P					

05020	77263143	2968	FEMSG	BCD
05027	77236080	2969	NAMEMSG	BCD,C
05030	30631330	2970	NAMEHT	BCD,C
05032	45454545	2971	NAMEHT	BCD,C
05034	60212121	2972	NAMEACC	BCD,C
05036	61646464	2973	NAMEUSER	BCD,C
	00045	2974	NAMEMSG	EQU,C
05041	77446443	2975	SSMSG	BCD
05053	77776270	2976	BCMSG	BCD,C
	00062	2977	BCMSG	EQU,C
05067	77775125	2978	RGMSG	BCD,C
	00030	2979	RGMSG	EQU,C
05075	25626021	2980	FCMSG	BCD,C
	00044	2981	FCMSG	EQU,C
05106		2982	BSS	

7, ^FILE ERROR FOUND AT XXXXX  
7, ^C HT=  
5, HT  
9, NNNNNNNN  
8, AAAAAAA/  
8, UUUUUU^  
\*-NAMEMSG  
10, ^MULTIPLE USE FOR FILE BLOCK XXXXXXXX  
50, ^^SYSTEM NOT ENDED PROPERLY CHECKING BUSY FILES^^  
\*-BCMSG  
24, REGENERATING DISK TABLES  
\*-RGMSG  
36, AND CHECKING ALL FILE STRUCTURES^^^^  
\*-FCMSG  
0

2985  
2986  
2987  
2988  
2989  
2990  
2991

```

*****
*
* SECTION TO GENERATE FILE BLOCK NUMBERS FOR THE BLOCKS
* THAT HAVE SET BITS IN THE BIT ARRAY AND TO CALL FREEBLK
* TO GET THE INFORMATION WRITTEN OUT ON THE DISKS
*
*****
    
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2993  
2994  
2995  
2996  
2997  
2998  
2999  
3000  
3001  
3002  
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3062

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05107 14303341 X
05110 20303342 X
05111 03305125 P
05112 20303202 X
05113 14707634 P
05114 14100002
05115 14204565 X
05116 00707372 P
05117 20305112 X
05120 15600001
05121 14707634 P
05122 14100002
05123 14205115 X
05124 00707372 P
05125 02705110 P

05126 20003406 X
05127 15600030
05130 13077747
05131 51007732 P
05132 44005342 P

05133 54103143 P
05134 15177776
05135 14200030 P
05136 05136 X
05137 54377777 X
05140 01005147 P
05141 14600110
05142 44000005
05143 00700004
05144 77740000
05145 54305136 X
05146 02705145 P

05147 05147 P
05150 55400000
05151 25100000
05152 13200000
05153 03105155 P
05154 03205342 P
05155 17600017
05156 53700000
05157 53200000
05160 40005236 P
05161 01305162 P
05162 01005237 P
05163 01005241 P
05164 01005254 P
05165 01005256 P
05166 01005276 P
05167 01005300 P
05170 01005257 P
05171 01005314 P
05172 01005316 P
05173 01005320 P
05174 01005323 P
05175 01005326 P
05176 01005332 P
05177 01005334 P
05200 01005337 P

05201 53100000
05202 50007732 P
05203 53240000
    
```

```

GLERCH EQU *
CLOBSTAR LDA MSUNITM1,X3
          LDA ARRAYTBL,X3
          AZJ,LT CLOBEND
          LDA DISKPNT,X3
          ENQ MZEROS
          ENI 2,X1
          ENI WRITE,X2
          RTJ MSIO
          LDA DISKPNT,X3
          INA 1
          ENQ MZEROS
          ENI 2,X1
          ENI WRITE,X2
          RTJ MSIO
          CLOBEND IJD CLOBSTAR,X3

          LDA BLOCKTBL,0
          INA 24
          SHAQ -24
          DVA D24
          SWA JLUPCHEG

          LDI MAXADD,X1
          INI -1,X1
          ENI 24,X2
          EQU *
          LDI BLKFLAG,X3
          ISG 1,X3
          UJP JZOT
          ENA 110B
          SWA 00005B
          RTJ 00004B
          VFD A12/EINT
          LDI BLKFLAG,X3
          IJD *-1,X3

          EQU *
          ROS 0,X1
          LOAQ 0,X2
          RIS *+2
          SHAQ JLUPCHEG
          AZJ,NE
          AZJ,GE
          ANA 17B
          TAI X3
          TIA X2
          STA JX2
          UJP *+1,X3
          UJP J00
          UJP J01
          UJP J02
          UJP J03
          UJP J04
          UJP J05
          UJP J06
          UJP J07
          UJP J10
          UJP J11
          UJP J12
          UJP J13
          UJP J14
          UJP J15
          UJP J16

          TIA X1
          MUA D24
          AIA X2
    
```

```

CLOBBER THE STARTING BLOCK FOR
THE DISK TABLES
JUMP IF NOT ON LINE

WRITE JUST 2 WORDS

CLOBBER THE FOUR BLOCK LIST
WRITE 2 WORDS AGAIN

LOAD THE LOW FILE BLOCK NUMBER
24 BITS WORTH OF BIAS
AND COMPUTE THE LOWEST WORD TO
CHECK FOR SPACE

LOAD THE NUMBER OF WORDS TO CHECK
COUNT DOWN TO MAKE USEFUL

IS FREEBLK WRITING ON THE
DISKS

FAKE A CLOCK INTERRUPT

WAIT FOR TABLES TO FINISH

LOAD SOME BITS

LOOK AT JUST FOUR BITS

BIT POSITION TO A
SAVE FOR NEXT TIME
    
```

05204	40007721	P	3063	STA	TEMP1	SAVE THE BLOCK NUMBER
05205	14577777		3064	ENG,S	77777B	
05206	14203105	X	3065	ENI	MSUNITS,X2	ARE ALL FOUR BLOCKS ON THE
05207	07105126	X	3066	MTH	BLOCKTBL,1	SAME CYLINDER
05210	00005210	P	3067	HLT	*	
05211	13077747		3068	SHAQ	-24	
05212	51207775	P	3069	DVA	FBPCDEV,X2	
05213	20207775	P	3070	LDA	FBPCDEV,X2	
05214	15700003		3071	INQ	3	
05215	03605222	P	3072	AQJ,GE	*+5	JUMP IF THEY ARE
05216	54205236	P	3073	LDI	JX2,X2	
05217	15200003		3074	INI	3,X2	ADJUST THE ADDRESS
05220	14477776		3075	ENA,S	-1	SKIP JUST ONE BIT
05221	01005243	P	3076	UJP	J01RAD	
			3077			
05222	20007721	P	3078	LDA	TEMP1	LOAD THE BLOCK NUMBER
05223	15600024		3079	INA	20	
05224	14200004		3080	ENI	4,X2	FREE A PAGE
05225	77730000		3081	VFD	A12/DINT	
05226	00777777	X	3082	RTJ	FREEBLK	
05227	14477773		3083	ENA,S	-4	SKIP FOUR BITS
05230	34005236	P	3084	RAD	JX2	
			3085			
05231	54205236	P	3086	JLDI	LDI	JX2,X2
05232	05240000		3087	JISG	ISG	40000B,X2
05233	05200001		3088		ISG	1,X2
05234	01005341	P	3089		UJP	JINI
05235	01005136	P	3090		UJP	JLOOP
			3091			
05236	00000000		3092	JX2	VFD	A24/IMPURE
			3093			
05237	15277773		3094	J00	INI	-4,X2
05240	01005232	P	3095		UJP	JISG
			3096			
05241	15200003		3097	J01	INI	3,X2
05242	14477773		3098	J01ENA	ENA,S	-4
05243	34005236	P	3099	J01RAD	RAD	JX2
05244	53100000		3100	J01TIA	TIA	X1
05245	50007732	P	3101		MUA	D24
05246	53240000		3102		AIA	X2
05247	15600024		3103		INA	20
05250	14200001		3104		ENI	1,X2
05251	77730000		3105		VFD	A12/DINT
05252	00705226	X	3106		RTJ	FREEBLK
05253	01005231	P	3107		UJP	JLOI
			3108			
05254	15200002		3109	J02	INI	2,X2
05255	01005242	P	3110		UJP	J01ENA
			3111			
05256	15200001		3112	J03	INI	1,X2
05257	14300001		3113	J03ENIX3	ENI	1,X3
05260	14477773		3114	J03ENA	ENA,S	-4
05261	34005236	P	3115	J03RAD	RAD	JX2
05262	53100000		3116		TIA	X1
05263	50007732	P	3117		MUA	D24
05264	53240000		3118		AIA	X2
05265	15600024		3119		INA	20
05266	14200001		3120		ENI	1,X2
05267	77730000		3121		VFD	A12/DINT
05270	15600001		3122	J03LOOP	INA	1
05271	40007721	P	3123		STA	TEMP1
05272	00705252	X	3124		RTJ	FREEBLK
05273	20007721	P	3125		LOA	TEMP1
05274	02705270	P	3126		IJD	J03LOOP,X3
05275	01005231	P	3127		UJP	JLOI
			3128			
05276	15200001		3129	J04	INI	1,X2
05277	01005242	P	3130		UJP	J01ENA
			3131			
05300	14477773		3132	J05	ENA,S	-4
05301	34005236	P	3133		RAD	JX2
05302	53100000		3134		TIA	X1
05303	50007732	P	3135		MUA	D24
05304	53240000		3136		AIA	X2
05305	15600025		3137		INA	1+20
05306	14200001		3138		ENI	1,X2
05307	77730000		3139		VFD	A12/DINT
05310	00705272	X	3140		RTJ	FREEBLK
05311	54205236	P	3141		LDI	JX2,X2

05312	15200007	P	3142	INI	4+3,X2	ADJUST THE ADDRESS
05313	01005244		3143	UJP	J011IA	
	05257	P	3144			
			3145	J06	EQU	J03ENIX3
05314	14300002		3146			
05315	01005260	P	3147	J07	ENI	2,X3
			3148	UJP	J03ENA	FREE THREE BLOCKS
			3149			
05316	15277774		3150	J10	INI	-3,X2
05317	01005232	P	3151	UJP	J1SG	SKIP 3 BITS
			3152			
05320	14477774		3153	J11	ENA,S	-3
05321	15200003		3154	INI	3,X2	SKIP 3 BITS
05322	01005243	P	3155	UJP	J01RAD	ADJUST THE ADDRESS
			3156			
05323	14477774		3157	J12	ENA,S	-3
05324	15200002		3158	INI	2,X2	SKIP 3 BITS
05325	01005243	P	3159	UJP	J01RAD	ADJUST THE ADDRESS
			3160			
05326	14477774		3161	J13	ENA,S	-3
05327	15200001		3162	INI	1,X2	SKIP 3 BITS
05330	14300001		3163	ENI	1,X3	ADJUST THE ADDRESS
05331	01005261	P	3164	UJP	J03RAD	FREE 2 BLOCKS
			3165			
05332	15277775		3166	J14	INI	-2,X2
05333	01005232	P	3167	UJP	J1SG	SKIP TWO BITS
			3168			
05334	15200003		3169	J15	INI	3,X2
05335	14477775		3170	ENA,S	-2	ADJUST THE ADDRESS
05336	01005243	P	3171	UJP	J01RAD	SKIP TWO BITS
			3172			
05337	15277776		3173	J16	INI	-1,X2
05340	01005232	P	3174	UJP	J1SG	SKIP 1 BIT
			3175			
05341	15200030		3176	JINI	INI	24,X2
05342	10500000		3177	JLUPCHEC	ISD	IMPURE,X1
05343	01005136	P	3178	UJP	JLOOP	SKIP IF FINISHED
05344	77730000		3179	VFD	A12/DINT	
			3180			
05345	14200017		3181	ENI	178,X2	208 PAGES
05346	14700774		3182	ENQ	7748	
	05347	P	3183	SS1A	*	
05347	77654020		3184	EQU		
05350	03405357	P	3185	PFA	208,X2	FREE THE PAGES IN PAGE TABLE
05351	12077775		3186	AQJ,EG	SS1B	WE DID NOT USE THIS PAGE
05352	53500000		3187	SHA	-2	
05353	14600000		3188	TAI	X1	
05354	40103726	X	3189	ENA	0	
05355	14600774		3190	STA	PAGETABL,X1	
05356	77844020		3191	ENA	7748	SET THE PAGE NON-EXISTANT
05357	02605347	P	3192	SS1B	208+PFW,X2	LOOP THRU THE WHOLE STATE
			3193	IJD	SS1A,X2	
05360	20007455	P	3194	LDA	MXSPACE	LOAD THE TOTAL SPACE COUNTER
05361	13077747		3195	SHAQ	-24	
05362	51007731	P	3196	DVA	010	
05363	14777777		3197	ENQ	77777B	
05364	03705366	P	3198	AQJ,LT	*+2	
05365	14677777		3199	ENA	77777B	32000 IS A BIG LIMIT
05366	44077777	X	3200	SWA	FREPANIC	START FREEING IF THERE ARE THIS
			3201	*		NUMBER OF BLOCKS TO FREE
			3202			
05367	14100226	X	3203	ENI	SWAPUNIT,X1	FIGURE THE LOW DEVICE NUMBER FOR
05370	20105110	X	3204	LDA	ARRAYTBL,X1	USER IO
05371	03205373	P	3205	AZJ,GE	*+2	
05372	02505370	P	3206	IJD	*-2,X1	
05373	47177777	X	3207	STI	SELLOOK,X1	SAVE THE HIGH SYSTEM UNIT
05374	15100001		3208	INI	1,X1	NOW TRY FOR USER UNITS
05375	20105370	X	3209	LDA	ARRAYTBL,X1	IS THE UNIT ON LINE
05376	03205402	P	3210	AZJ,GE	*+4	
05377	10105107	X	3211	ISI	MSUNITM1,X1	
05400	01005375	P	3212	UJP	*-3	
05401	01005403	P	3213	UJP	*+2	USE THE HIGH SYSTEM UNIT AS THE
05402	47105373	X	3214	STI	SELLOOK,X1	LOW USER UNIT
			3215			
05403	14302031	X	3216	ENI	IDLE,PSA	ENTER THE ADDRESS OF THE IDLE PSA
05404	14600000		3217	ENA	0	
05405	40377777	X	3218	STA	SYSCM,PSA	REMOVE IDLE FROM CONTR-L MODE
05406	14677777	X	3219	ENA	RADARP	MOVE RADAR INTO VIRTUAL MEMORY
05407	00777777	X	3220	RTJ	LIBMOVE	

05410 20007642 P  
05411 40305405 X  
05412 77664000  
05413 77660000

3221  
3222  
3223  
3224

LDA  
STA  
AIS  
AOS

BIT23  
SYSCM,PSA

PUT IDLE BACK INTO CONTROL MODE  
SET ISR AND OSR BACK TO ZERO

```

3227
3228
05414 01005432 P
05415 77776364
05425 05425 P
05426 11026064 P
05427 14700036
05428 04000001
05430 00707426 P
05431 47005427 P
05432 05432 P
05433 00105425 P
05434 00405425 P
05435 00505425 P
05436 00605440 P
05437 00205425 P
05438 00305425 P
05439 05440 P
    
```

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3252
    
```

```

*****
*
* SECTION TO CHECK THE JUMP SWITCHES
*
*****
    
```

```

UJP SJTEST
SJMESS BCD 8,^^TURN OFF THE JUMP SWITCHES^^
SJPRINT EQU *
ECHA SJMESS
ENQ 30
ISE IMPURE+1,0 SKIP IF NO PRINT
RTJ OUT
STI *-2,0 JUST PRINT THE MESSAGE ONCE
EQU *
SJ1 SJPRINT
SJ4 SJPRINT
SJ5 SJPRINT
SJ6 SJEND
SJ2 SJPRINT
SJ3 SJPRINT
EQU *
SJEND EQU
    
```

```

3254
3255
3256
    
```

```

*****
*
* SECTION TO INITIALIZE THE CRT TERMINALS
*
*****
    
```

```

05440 20000471 X
05441 12077763
05442 77540000
05443 53500000
05444 14800001
05445 12100000
05446 35007661 P
05447 40005512 P
05450 14100007
05451 05451 P
05452 22400531 X
05453 03005525 P
05454 53100000
05455 12000011
05456 44005467 P
05457 01005515 P
05460 01000000
05461 54205457 P
05462 53020022
05463 53010022
05464 03405462 P
05465 10300062
05466 01277775
05467 01200000
05468 77000000
05470 00705457 P
05471 05300001
05472 01005515 P
05473 14300001
05474 77100026
05475 00705457 P
05476 14300001
05477 77100011
05500 00705457 P
05501 05300001
05502 01005515 P
05503 14300000
05504 77007724 P
05505 00007723 P
05506 00005504 P
05507 14300001
05510 77300007
05511 00705457 P
05512 77512000
05513 05300000
    
```

```

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3302
3303
    
```

```

LDA TVCON GET THE TV CONNECT CODE
SHA -12 GET THE CHANNEL NUMBER
ACI
TAI X1
ENA 1 FORM THE MASK FOR A CLCA
SHA 0,X1 INSTRUCTION
SSA CLCA
STA TVCLCA
ENI 7,X1
EQU *
LACH TVTABLE,X1 ARE THERE TV#S ON THE EQUIPMENT
AZJ, EQ TVINEND
TIA X1
SHA 9
SWA TVINCON
UJP TVINEXT
UJP IMPURE
LDI *-1,X2 GET THE RETURN ADDRESS
TMA CLOCK
TMQ CLOCK
AQJ, EQ *-1 WAIT 1 MILLISECOND
ISI 50,X3 50 DIFFERENT TIMES
UJP -2,X2 TRY AGAIN
UJP 0,X2 QUIT TRYING
VFD A9/CON,A15/IMPURE
RTJ TVREJECT
ISG 1,X3
UJP TVINEXT UNIT DID NOT RESPOND
ENI 1,X3
SEL 00268,SELECT TRY TO SELECT STATION INTERRUPT
RTJ TVREJECT
ENI 1,X3
SEL 00118,SELECT CLEAR THE SCREEN
RTJ TVREJECT
ISG 1,X3
UJP TVINEXT
ENA 0
INPW 10,TEMP2,TEMP2+1 USE STATE ZERO
READ A WORD
HLT *-2
ENI 1,X3
INS 00178,SENSE PRRITY CHANNEL READ OR WRITE ETC
RTJ TVREJECT
TVCLCA CLCA I IMPURE TURN OFF THE GREEN LIGHTS
ISI 1,X4
    
```



05514	01005515	P		3304	**	UJP	TVINEXT
				3305	**		
				3306	**		
				3307	**		
				3308	**	ENI	1,X3
				3309	**	SEL	0010,SELECT
05515	22026337	P	05467 3	3310		RTJ	TVREJECT
05516	15600001			3311	TVINEXT	LACH	TVINCON+3
05517	42026337	P	05467 3	3312		INA	1
05520	14300001			3313		SACH	TVINCON+3
05521	05600015			3314		ENI	1,X3
05522	01005467	P		3315		ASG	13
05523	77100026			3316		UJP	TVINCON
05524	00705457	P		3317		SEL	0026B,SELECT
05525	02505451	P		3318	TVINEND	RTJ	TVREJECT
						IJD	TVINSTRT,X1

INSERT THE FOLLOWING CODE WHEN  
WHEN THE CONTROLLER IS FIXED

RESET THE SCREEN AGAIN

GET THE UNIT NUMBER  
INCREMENT IT  
AND STORE IT BACK

A TV CONTROLLER CAN HAVE 12 UNITS

SELECT STATION INTERRUPT

05526	54307106	P	3320	LDI	CRSENI,X3	GENERATE START UP BLOCKS
05527	01005548	P	3321	UJP	GENBLK04	FOR CARD READER DEVICES
	05530	P	3322	EQU	*	
05530	14100001		3323	ENI	1,X1	SAY DEVICE 1
05531	14200001		3324	ENI	1,X2	SAY 1 BLOCK WANTED
05532	00777777	X	3325	RTJ	GETBLK	OBTAIN A FILE BLOCK
05533	13000030		3326	SHAQ	24	SAVE THE BLOCK NUMBER IN Q
05534	47305545	P	3327	STI	GENBLK02,X3	
05535	20307115	P	3328	LDA	TEMPCRS,X3	LOAD THE MACRO ADDRESS
05536	53700000		3329	TAI	X3	
05537	41300011		3330	STQ	CBLOCK,X3	
05540	20300000		3331	LDA	0,X3	DOES THIS MACRO HAVE A
05541	03005545	P	3332	AZJ,EQ	GENBLK02	CONTROL BLOCK
05542	53600000		3333	TAI	X2	CONTROL BLOCK ADDRESS TO X2
05543	41200001		3334	STQ	LP,X2	
05544	41200003		3335	STQ	CBP,X2	
05545	14300000		3336	ENI	IMPURE,X3	
05546	10700000		3337	GENBLK02	0,X3	
05547	02705530	P	3338	GENBLK04	ISD	
			3339	IJD	GENBLOCK,X3	
05550	20007503	P	3340	LDA	IMAGEBLK	WRITE THE 512 PRINTER IMAGE BUFFE
05551	00777777	X	3341	RTJ	PR.IMAGE	OUT ON THE DISK
			3342			
			3343			
05552	14100000		3344	ENI	0,X1	START AT THE BEGINNING
05553	01005562	P	3345	UJP	STRDRV04	
	05554	P	3346	EQU	*	
05554	20107557	P	3347	LDA	EQNLST+3,X1	LOAD THE ROUTINE ADDRESS
05555	47105560	P	3348	STI	*+3,X1	
05556	44005557	P	3349	SWA	*+1	
05557	00700000		3350	RTJ	IMPURE	CALL THE ROUTINE
05560	14100000		3351	ENI	IMPURE,X1	
05561	15100004		3352	INI	EQNL,X1	ADVANCE TO THE NEXT ENTRY
05562	05100054		3353	STRDRV04	EQNLNTH,X1	SKIP IF FINISHED
05563	01005554	P	3354	UJP	STRDRV02	

3357  
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3362

```

*****
* THIS CODE WILL TRY TO FREE CORE IN PAGE LENGTH GROUPS BETWEEN THE *
* LOWER SYSTEM BOUND #SYSBASE# AND THE SYMBOL #ZERO#, THIS IS DONE TO *
* ALLOW MORE ROOM FOR BATCH JOBS AND DEVICE OUTPUT TO BE RESTORED. *
* THIS ROOM WILL PROBABLY NOT BE NEEDED BUT FREED JUST IN CASE. *
*****
    
```

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3387  
3388

05564 14600000 P  
05565 12077764  
05566 44005575 P  
05567 14600234 X  
05570 12077764  
05571 53600000  
05572 14700000  
05573 05200001  
05574 00005574 P  
05575 05200000  
05576 01005600 P  
05577 01005611 P  
05600 14600774  
05601 77644000  
05602 41205354 X  
05603 14600001  
05604 34000353 X  
05605 12200000  
05606 34001717 X  
05607 15200001  
05610 01005575 P  
  
05611 47206203 P

```

ENR      ZERO      WORDS AFTER THIS NOT HIT
SHA      -11        FIND OUT PAGE ADDRESS
SWA      PGCHK     SAVE IN CHECK INSTRUCTION
ENR      SYSBASE   LOWER PAGE TO FREE
SHA      -11        GET ACTUAL PAGE ADDRESS
TAI      X2        USE X2 FOR TABLE INDEXING
ENQ      0
ISG      1,X2     SKIP IF NOT PAGE ZERO
HLT      *        SOMETHING WIERD HERE
PGCHK    ISG      IMPURE,X2  SKIP IF DONE FREEING PAGES
UJP      *+2     NOT DONE
UJP      GIVPDN  DONE WITH THIS FREEING OF PAGES
ENR      7748    NON-EXISTANT MEMORY
APF      0+PFW,X2 SET PAGE FILE
STQ      PAGETABL,X2 SAY PAGE IS AVAILABLE
ENR      1
RAD      FPCNT    INCRIMENT FREE PAGE COUNT
SHA      0,X2
RAD      MEMARRAY FIX MEMARRAY
INI      1,X2    TRY TO FREE NEXT PAGE
UJP      PGCHK   GO TRY TO DO IT
GIVPDN  STI      GIVINIT,X2 PAGE TO START ON AFTER INITIAL
    
```

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3392  
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3401  
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3404  
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3408  
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3413  
3414  
3415

```

*****
* THIS SECTION WILL BUILD DEVICE I/O QUEUES FORM INFORMATION IN SAVEDBLK
* ON MASS STORAGE DEVICE ZERO
* SWITCH 4 ON WILL CAUSE THIS SECTION TO BE SKIPPED
*
* THE SUSPENDED DEVICE INFORMATION IS DESTROYED AT THE END OF THIS SECTI
* ON. SO IF A CRASH OCCURS THE INFO IS LOST
*
* THE FORMAT FOR THE DEVICE SAVE INFORMATION IS AS FOLLOWS.
*
* WORD 1 MACRO IDENT NAME
* WORD 2 HEADER INFO. BITS 0-14 HAVE COUNT OF SAVED FREE
* STORAGE BLOCKS. BITS 15-23 HAVE MAX RECORD LENGTH
*
* WORDS 3,4 SPECIFICATION BLOCK. CONTAINS LOAD POINT BLOCK IN
* FIRST WORD AND FILE LENGTH IN BLOCKS IN SECOND WORD
*
* THERE ARE AS MANY PAIRS AS SPECIFIED IN WORD 2 OF HEADER INFO
* INFORMATION GROUPS FOLLOW ONE ANOTHER WITH NO DELIMETER. EACH GROUP
* HAS A HEADER RECORD AND THEN A NUMBER OF SPECIFICATION RECORDS.
*
* THE BATCH SAVE INFORMATION IS THE SAME EXCEPT FOR HAVING 7 WORD
* SPECIFICATION BLOCKS INSTEAD OF 2 WORDS AS IN DEVICE BLOCKS.
* THE 7 WORDS ARE A COPY OF THE BATCH FILE CONTROL BLOCK MINUS THE
* ACCOUNTING WORD
*****
    
```

05612	20007713	P	3418	LDA	SJ4FLAG	SEE IF WE SHOULD RESTORE FILES
05613	03106010	P	3419	AZJ,NE	SAVESKP	NOPE
05614	20007537	P	3420	LDA	SLSBITS	CHECK AND SEE IF WE
05615	17600004		3421	ANA	4B	RESTORE INFORMATION
05616	03006010	P	3422	AZJ,EQ	SAVESKP	NOPE
05617	14607353	P	3423	ENA	SMASH	NO IRRECOVERABLE ERRORS ALLOWED
05620	44007360	P	3424	SWA	IR	
05621	77730000	J	3425	VFD	A12/DINT	
05622	47006546	P	3426	STI	CHKCHK,0	SAY WE ARE REALLY BUILDING QUEUE
05623	20007515	P	3427	LDA	SAVEDBLK	GET OUTPUT DEVICE SAVE BLOCK
05624	00706710	P	3428	RTJ	SETBUP	GO INITILIZE I/O ROUTINES
	05625	P	3429	EQU	*	
05625	14100002		3430	ENI	2,X1	LENGTH OF ELEMENT
05626	14307734	P	3431	ENI	TEMPCTLB-1,X3	ADDRESS TO PUT STUFF IN -1
05627	00706522	P	3432	RTJ	GSAVEBUF	GO GET IDENT AND LENGTH
05630	01005727	P	3433	UJP	SAVEON	SPLIT SINCE DONE
05631	20007735	P	3434	LDA	TEMPCTLB	CHECK TO SEE IF DEVICE NAMED 0000
05632	03005727	P	3435	AZJ,EQ	SAVEON	WAS RETURNED - IF SO WE ARE DONE
05633	54207736	P	3436	LDI	TEMPCTLB+1,X2	GET COUNT OF ELEMENTS
05634	05200001		3437	ISG	1,X2	SKIP IF COUNT OK
05635	00005625	P	3438	HLT	BGNSVLP	0 DEVICES, CHECK FOR ERROR
05636	14577777		3439	ENQ,S	77777B	MASK FOR SEARCH
05637	14177777	X	3440	ENI	BLOCKSL,X1	LENGTH OF MACRO IDENT TABLE
05640	06277777	X	3441	MEQ	BLOCKS,2	LOOK FOR DEVICE
05641	01005713	P	3442	UJP	DEVMIS	DEVICE MISSING - REWRITE INFO.
05642	20177777	X	3443	LDA	BLOCKSP1,X1	GET MACRO ADDRESS
05643	44005701	P	3444	SWA	PCBPOS	SAVE ADDRESS OF MACRO BLOCK
05644	53200000		3445	TIA	X2	COUNT TO A
05645	34077777	X	3446	RAD	IOBUSY	INC CURRENT COUNT OF OUTPUT I/O
05646	01005706	P	3447	UJP	ESVBLP	JUMP TO END OF LOOP
	05647	P	3448	EQU	*	
05647	14307734	P	3449	ENI	TEMPCTLB-1,X3	WHERE TO PUT STUFF -1
05650	14100004		3449+001	ENI	4,X1	MOVE 4 WORDS
05651	00706522	P	3451	RTJ	GSAVEBUF	GO GET ELEMENT
05652	00005652	P	3452	HLT	*	FILE TROUBLE
05653	20007736	P	3453	LDA	TEMPCTLB+1	GET FILE LENGTH
05654	03005710	P	3454	AZJ,EQ	DFERROR	DUMMY ENTRY - IGNORE IT
05655	14305403	X	3454+001	ENI	IDLE,PSA	POINT TO IDLE AS THE USER
05656	20007740	P	3454+002	LDA	TEMPCTLB+3	GET JOB NUMBER
05657	40377777	X	3454+003	STA	ACCNUM,PSA	SAY IDLE IS THE USER
05660	53420077		3454+004	TAM	77B	AND SAVE #ABORTED# BIT
05661	14300003		3455	ENI	3,X3	SAY 8 WORD BLOCK FOR FAKE CONTROL
05662	00704644	X	3456	RTJ	GETMEM	BLOCK
05663	20007736	P	3456+001	LDA	TEMPCTLB+1	GET LOAD POINT BLOCK
05664	40300001		3458	STA	LP,X3	PUT IN FAKE CONTROL BLOCK
05665	20007737	P	3458+001	LDA	TEMPCTLB+2	GET TOTAL FILE LENGTH
05666	17677777		3458+002	ANA	77777B	MASK TO 32K BLOCKS
05667	40300007		3460	STA	TFL,X3	SAVE IN FAKE CONTROL BLOCK
05670	21007737	P	3460+001	LDQ	TEMPCTLB+2	GET PART OF RECORD COUNT

05671	20007735	P	3460+002	LDA	TEMPCTLB	AND THE UPPER 6 TO A
05672	12000006		3460+003	SHA	6	SHIFT TO LOWER 6 OF A
05673	13000011		3460+004	SHAQ	9	THE REST FROM Q TO A
05674	17677777		3460+005	ANA	77777B	MASK TO 32K RECORDS (*512)
05675	40300000		3460+006	STA	0,X3	AND PLACE INTO CONTROL BLOCK
05676	20007740	P	3460+007	LDA	TEMPCTLB+3	GET JOB NUMBER AGAIN
05677	12077774		3460+008	SHA	-3	BIT22 TO BIT19
05700	40300006		3460+009	STA	EPP,X3	PLACE INTO CONTROL BLOCK
			3461			
05701	14100000		3462	PCBPOS	ENI	IMPURE,X1
05702	47205705	P	3463		STI	*+3,X2
05703	14205705	P	3464		ENI	*+2,X2
05704	01500022		3465		UJP,I	QINGLOC,X1
05705	14200000		3466		ENI	IMPURE,X2
			3467			
05706	02605647	P	3468	ESVBLP	IJD	BSVBLP,X2
05707	01005625	P	3469		UJP	BGNSVLP
			3470			
05710	14477776		3471	DFERROR	ENA,S	-1
05711	34005645	X	3472		RAD	IOBUSY
05712	01005706	P	3473		UJP	ESVBLP
			3474			
05713	14307734	P	3475	DEVMIS	ENI	TEMPCTLB-1,X3
05714	14100002		3476		ENI	2,X1
05715	00706603	P	3477		RTJ	FILEIT
05716	54207736	P	3478		LDI	TEMPCTLB+1,X2
05717	01005725	P	3479		UJP	DVMSLPE
	05720	P	3480	DVMSLPB	EQU	*
05720	14100002		3481		ENI	2,X1
05721	00706522	P	3482		RTJ	GSAVEBUF
05722	00005722	P	3483		HLT	*
05723	14100002		3484		ENI	2,X1
05724	00706603	P	3485		RTJ	FILEIT
05725	02605720	P	3486	DVMSLPE	IJD	DVMSLPB,X2
05726	01005625	P	3487		UJP	BGNSVLP
			3488			
	05727	P	3489	SAVEDN	EQU	*
05727	00706660	P	3490		RTJ	BLOCKDN
05730	00706676	P	3491		RTJ	FRELBLK

AND THE UPPER 6 TO A  
 SHIFT TO LOWER 6 OF A  
 THE REST FROM Q TO A  
 MASK TO 32K RECORDS (\*512)  
 AND PLACE INTO CONTROL BLOCK  
 GET JOB NUMBER AGAIN  
 BIT22 TO BIT19  
 PLACE INTO CONTROL BLOCK

ADDRESS OF MACRO  
 SAVE X2 FOR A BIT  
 RETURN ADDRESS  
 JUMP TO APPROPRIATE ROUTINE  
 RESTORE COUNTING INDEX

LOOP TILL QUEUES BUILT  
 GET NEXT DEVICE

DECRIMENT I/O BUSY  
 GO TRY NEXT FILE

ADDRESS STUFF COMMING FROM  
 2 WORD SPECIFICATION RECORD  
 GO FILE AWAY  
 GET COUNT OF ELEMENTS  
 GO TO END OF LOOP

2 WORD ELEMENTS  
 GET ELEMENT  
 FILE TROUBLE  
 2 WORDS TO WRITE  
 GO FILE AWAY  
 LOOP TILL ALL MOVED  
 GO TRY ANOTHER GROUP

WRITE LAST BLOCK  
 GO FREE UNUSED BLOCKS

3494  
3495  
3496

```
*****
*                                     *
*           THIS CODE WILL RESTORE THE LAST NIGHTS BATCH INFORMATION.       *
*                                     *
*****
```

05731	20007513	P	3499	LDA	SAVEBBLK	ADDRESS OF BATCH INFO
05732	00706710	P	3500	RTJ	SETBUP	GO INITILIZE I/O ROUTINES
05733	14307734	P	3501	RBTCHLP	TEMPCTLB-1,X3	WHERE TO READ -1
05734	14100002		3502	ENI	2,X1	2 WORD ELEMENTS
05735	00706522	P	3503	RTJ	GSAVEBUF	GO GET INFO
05736	01006006	P	3504	UJP	BEXIT	DONE WITH FILE
05737	20007735	P	3505	LDA	TEMPCTLB	
05740	03306006	P	3506	AZJ,LT	BEXIT	NOTHING THERE SPLIT
05741	05677777	X	3507	ASG	NBATCHQ	SKIP IF QUEUE NUMBER TO LARGE
05742	01005744	P	3508	UJP	*+2	NOPE USE THIS NO.
05743	14600000		3509	ENA	DEFQUE	GET DEFAULT QUEUE ADDRESS
05744	44005777	P	3510	SWA	BATCHOPT	SAVE THE QUE POINTER
05745	14607735	P	3511	ENA	TEMPCTLB	ADDRESS OF LIST TEMP
05746	40007735	P	3512	STA	TEMPCTLB	POINT WORD AT ITSELF
05747	54207736	P	3513	LDI	TEMPCTLB+1,X2	GET COUNT OF ELEMENTS
05750	01005776	P	3514	UJP	EBLOOP	GO TO END OF LOOP
05751	14100007		3515	BBLOOP	ENI	7,X1
05752	14307735	P	3516	ENI	TEMPCTLB,X3	SAY SEVEN WORD RECORDS
05753	00706522	P	3517	RTJ	GSAVEBUF	WHERE TO PUT WORDS -1
05754	00005754	P	3518	HLT	*	GO GET INFO
05755	20007744	P	3519	LDA	TEMPCTLB+TFL	FILE TROUBLE
05756	03005776	P	3520	AZJ,EQ	EBLOOP	GET FILE LENGTH
05757	14300003		3521	ENI	3,X3	JUMP IF DUMMY ENTRY
05760	00705662	X	3522	RTJ	GETMEM	SAY WE WANT AN 8 WORD BLOCK
05761	40300000		3523	STA	0,X3	GO GET THE MEMORY
05762	35077777	X	3524	SSA	BIT17	POINT THE BLOCK AT ITSELF
05763	40407735	P	3525	STA,I	TEMPCTLB	SET INDIRECT BIT
05764	20007740	P	3525+001	LDA	TEMPCTLB+CBP	LINK INTO LIST
05765	37007642	P	3525+002	LPA	BIT23	GET JOB NUMBER TEMP
05766	34407735	P	3525+003	RAD,I	TEMPCTLB	LEAVE ONLY #TASK# BIT
05767	16477777		3525+004	XOA,S	7777B	UPDATE THE ENTRY
05770	34007740	P	3525+005	RAD	TEMPCTLB+CBP	FLIP ALL BITS
05771	14177771		3526	ENI	-6,X1	CLEAR BIT IF SET
05772	20107744	P	3527	LDA	TEMPCTLB+6+1,X1	COUNT -1 OF WORDS TO MOVE
05773	40300001		3528	STA	1,X3	GET WORD TO MOVE
05774	15300001		3529	INI	1,X3	SAVE IN BLOCK
05775	02105772	P	3530	IJI	*-3,X1	INC BLOCK POINTER
05776	02605751	P	3531	EBLOOP	IJD	LOOP TILL INFO MOVED
05777	14100000		3532	BATCHOPT	ENI	LOOP TILL LIST BUILT
			3533			RELATIVE ADDRESS FOR THIS QUEUE
06000	20500776	X	3533+001	LDA,I	BATCHQ,X1	GET ASSOCIATED POINTER
06001	37007642	P	3533+002	LPA	BIT23	RETAIN THE #MT QUEUE# BIT
06002	35007735	P	3533+003	SSA	TEMPCTLB	OR IN THE POINTER
06003	04607735	P	3533+004	ASE	TEMPCTLB	SKIP IF THE START OF CHAIN
			3533+005	*		(PREVENT PROGRAMMER ERROR)
06004	40506000	X	3535	STA,I	BATCHQ,X1	APPEND QUEUE
			3536			
06005	01005733	P	3537	UJP	RBTCHLP	GET NEXT BATCH GROUP
	06006	P	3538	8EXIT	EQU	*
			3539			
06006	00706660	P	3540	RTJ	BLOCKDN	
06007	00706676	P	3541	RTJ	FRELBLK	GO FREE UNUSED BLOCKS
			3542			
	06010	P	3543	SAVESKP	EQU	*

3546  
3547  
3548  
3549

```

*****
*
* SECTION TO WRITE OUT THE SUBSTITUTION LIST IN CASE ANY
* SUBSTITUTIONS HAVE BEEN CREATED BY INITIAL
*
*****
    
```

3551

```

06010 14304652 P
      06011 P
06011 20300000
06012 03006033 P
06013 53700000
06014 21300002
06015 14106010 X
      06016 P
06016 20100000
06017 03006011 P
06020 53600000
06021 20200001
06022 03406026 P
06023 53200000
06024 53500000
06025 01006016 P

      06026 P
06026 20200000
06027 40100000
06030 21200002
06031 41300002
06032 53200000
06033 14300002
06034 00702002 X
06035 01006010 P

06036 14100777
06037 14600000
06040 40104000
06041 02506040 P
06042 14106015 X
06043 14200000
06044 20100000
06045 03006055 P
06046 53500000
06047 25100001
06050 45204000
06051 15200002
06052 05201001
06053 01006044 P
06054 00006054 P

      06055 P
06055 14101000
06056 14277777 X
06057 14704000
06060 20007507 P
06061 00707372 P
    
```

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3601  
3602

```

SUB00 EQU *
      ENI MXSLIST,X3
SUB01 EQU *
      LDA 0,X3
      AZJ,EQ SUB05
      TAI X3
      LDQ 2,X3
      ENI MXSLIST,X1
SUB03 EQU *
      LDA 0,X1
      AZJ,EQ SUB01
      TAI X2
      LDA 1,X2
      AQJ,EQ SUB04
      TIA X2
      TAI X1
      UJP SUB03

SUB04 EQU *
      LDA 0,X2
      STA 0,X1
      LDQ 2,X2
      STQ 2,X3
      TIA X2
      ENI 2,X3
      RTJ FREEMEM
      UJP SUB00

SUB05 ENI WPFB-1,X1
      ENA 0
      STA CORE,X1
      IJD *-1,X1
      ENI MXSLIST,X1
SUB06 ENI 0,X2
      LDA 0,X1
      AZJ,EQ SUB07
      TAI X1
      LDAQ 1,X1
      STAQ CORE,X2
      INI 2,X2
      ISG WPFB+1,X2
      UJP SUB06
      HLT *

SUB07 EQU *
      ENI WPFB,X1
      ENI WRITENS,X2
      ENQ CORE
      LDA MXSBLOCK
      RTJ MSIO
    
```

```

JUMP IF THE END OF THE LIST
NEXT POINTER TO X3
LOAD THE SECOND BLOCK NUMBER

LOAD THE POINTER WORD
JUMP IF THE END OF THE LIST
POINTER TO X2
LOAD THE FIRST BLOCK NUMBER
JUMP IF MULTIPLE SUBSTITUTION
PUT THE POINTER INTO X1

REMOVE THE MULTIPLE SUBSTITUTION

MXSLIST BLOCK ADDRESS TO A
ITS FOUR WORDS LONG

START OVER

FILL A FILE BLOCK WITH ZEROS

MOVE THE SUBSTITUTION LIST INTO T
BLOCK
LOAD A POINTER WORD
JUMP IF DONE
BLOCK ADDRESS TO X1
LOAD THE BLOCK NUMBERS
SAVE THE IN THE FILE BLCOK
POINT TO THE NEXT POSITION
SKIP IF TOO MANY

WRITE THE NEW SUBSTITUTION BLOCK
    
```

3605  
3606  
3607

```

*****
*                               *
*           SECTION TO SET IDLES REGISTERS           *
*                               *
*****
    
```

```

06062 14305655 X
06063 14477777
06064 40305657 X
06065 14677777 X
06066 40377777 X
06067 14600000
06070 77664000
06071 77660000
06072 14700000
06073 55700000
06074 45377777 X
06075 40377777 X
06076 40377777 X
06077 40377777 X
06100 40377777 X
06101 14600060
06102 44377777 X
06103 14604000
06104 14200037
06105 77644140
06106 02606105 P
06107 14100037
06110 14700000
06111 14600001
06112 53410040
06113 34006112 P
06114 02506112 P
06115 14677777 X
06116 35077777 X
06117 40006116 X
06120 14677777 X
06121 53420036
    
```

3609  
3610  
3611  
3611+001  
3611+002  
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```

ENI
ENA,S
STA
ENA
STA
ENA
AIS
AOS
ENQ
AQE
STAQ
STA
STA
STA
STA
ENA
SWA
ENA
ENI
APP
IJD
ENI
ENQ
ENA
TQM
RAD
IJD
ENA
SSA
STA
ENA
TAM
IDLE,PSA
77777B
ACCNUM,PSA
IDLEPC
PC,PSA
0
0
A,PSA
I1,PSA
I2,PSA
I3,PSA
IS,PSA
60B
CR,PSA
4000B
177B-PS,X2
PS+PFW,X2
*-1,X2
37B,X1
0
1
40B+IMPURE
*-1
*-2,X1
SWBIT
FLAGS
FLAGS
INTPOL
LEVEL
    
```

SET IDLE#S ACCOUNT TO 7777777B  
GET ADDRESS OF IDLE PROGRAM

ZERO THE E REGISTER

INITIALIZE THE PAGE FILE



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 3671  
 3672  
 3673  
 3674  
 3674+001  
 3674+002  
 3674+003  
 3674+004  
 3675  
 3675+001  
 3677  
 3678  
 3679  
 3680  
 3681

\*\*\*\*\*  
 \*  
 \* SECTION TO LOG IN THE PHANTOM \*  
 \*  
 \*\*\*\*\*

06122 20007537 P  
 06123 17600001  
 06124 03006166 P  
 06125 20000042 X  
 06126 40006126 P  
 06127 14600000  
 06130 40006125 X  
 06131 14100000  
 06132 14206134 P  
 06133 01006135 P  
 06134 00006134 P  
 06135 00777777 X  
 06136 20006126 P  
 06137 40006130 X  
 06140 20077777 X  
 06141 34377777 X  
 06142 14677777 X  
 06143 40377777 X  
 06144 20077777 X  
 06145 35306102 X  
 06146 40306145 X  
 06147 20007521 P  
 06150 40306064 X  
 06151 25007706 P  
 06152 15377777 X  
 06153 45300010  
 06154 14601056 X  
 06155 40300027  
 06156 25007704 P  
 06157 45300030  
 06160 20010076 P  
 06161 40300034  
 06162 14600001  
 06163 40300036  
 06164 20007537 P  
 06165 40300035 P  
 06166 P

LOGPHAN LDA SLSBITS  
 ANA 00001B  
 AZJ,EG NOPHAN  
 LDA INHIBIT  
 INHISAVE STA INHISAVE  
 ENA 0  
 STA INHIBIT  
 ENI 0,BLK  
 ENI \*+2,X2  
 UJP \*+2  
 HLT \*  
 RTJ CREATE  
 LDA INHISAVE  
 STA INHIBIT  
 LDA BIT20  
 RAD SYSCODE,PSA  
 ENA TVUNIT  
 STA LUNLIST,PSA  
 LDA BIT19  
 SSA CR,PSA  
 STA CR,PSA  
 LDA ACCOUNT  
 STA ACCNUM,PSA  
 LDAQ SYSNAME  
 INI RF,PSA  
 STAQ 10B,PSA  
 ENA TPUNITS  
 STA 27B,PSA  
 LDAQ PHANNAME  
 STAQ 30B,PSA  
 LDA ENDPOINT  
 STA 34B,PSA  
 PHANTV ENA 1+IMPURE  
 STA 36B,PSA  
 LDA SLSBITS  
 STA 35B,PSA  
 NOPHAN EQU \*

DO WE WANT THE PHANTOM  
 JUMP IF NOT  
 LOAD INHIBIT AND SAVE FOR LATER  
 SET INHIBIT SO THAT PHANTOM WILL  
 BE ABLE TO LOG IN  
 THE PHANTOM IS TERMINAL ZERO  
 ENTER THE NO LOGIN RETURN  
 GO CREATE THE PSA  
 RESTORE INHIBIT  
 INDICATE THE PHANTOM  
 PLACE TV INTO THE LUNLIST  
 ALLOW READ  
 SET THE PHANTOMS ACCOUNT NUMBER  
 LOAD THE NAME OF THE RUNNING  
 SYSTEM AND SAVE IT  
 IN PHANTOMS RF50 AND 51  
 GIVE PHAN THE TAPED ON THE SYSTE7  
 PLACE PHANTOM NAME IN RF70,71  
 SET THE LOW END OF SYSTEM MEMORY  
 STORE INTO PHANTOM'S RF74  
 TELL PHANTOM IF TV'S EXIST  
 PHANTOMS RF 76  
 GET SELECT STOP BITS WORD  
 PUT BITS IN PHANTOMS RF75

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06166 14100042  
06167 20106175 P  
06170 40104000  
06171 02506167 P  
06172 77600400  
06173 01006172 P  
06174 01004000  
06175 06175 P  
06176 02175 P  
06175 14600774  
06176 14306062 X  
06177 44377777 X  
  
06200 20010076 P  
06201 12077764  
06202 44004010  
06203 14200000  
06204 14700000  
06205 04010  
06205 05200000  
06206 01004013  
06207 01004024  
06210 41205602 X  
06211 14600001  
06212 34005604 X  
06213 12200000  
06214 34005606 X  
06215 14600774  
06216 77644000  
06217 15200001  
06220 01004010  
06221 04024  
  
06221 14200001  
06222 14700000  
06223 41206210 X  
06224 20006212 X  
06225 15600003  
06226 12000014  
06227 53420006  
06230 53430023  
06231 14477777 X  
06232 37006137 X  
06233 40006232 X  
06234 20004042  
06235 40000022  
06236 01077777 X  
06237 01077777 X  
00042

\*\*\*\*\*  
\* SECTION TO SET ALL PAGE FILE LOCATIONS NOT BEING USED BY \*  
\* RESIDENT TO NON-EXISTANT MEMORY AND TO ACTUALLY START THE \*  
\* SYSTEM \*  
\*\*\*\*\*

ENI QLENGTH,X1  
LDA QX,X1  
STA CORE,X1  
IJD \*-2,X1  
PAUS 0400B  
UJP \*-1  
UJP CORE  
EQU \*  
EQU QX-CORE  
ENA 774B  
ENI IDLE,X3  
SWA PF1,X3  
  
LDA ENDPPOINT  
SHA -11  
SWA GIVINT01  
ENI IMPURE,X2  
ENQ 0  
EQU \*-Q  
ISG IMPURE,X2  
UJP \*-Q+2  
UJP GIVINT02  
STQ PAGETABL,X2  
ENA 1  
RAD FPCNT  
SHA 0,X2  
RAD MEMARRAY  
ENA 774B  
APF PFW,X2  
INI 1,X2  
UJP GIVINT01  
EQU \*-Q  
  
ENI PFLOC,X2  
ENQ 0  
STQ PAGETABL,X2  
LDA FPCNT  
INA 3  
SHA 12  
TAM 6B  
TIM 23B,0  
ENA,S NIRUNBIT  
LPA INHIBIT  
STA INHIBIT  
LDA \*-Q+3  
STA 00022B  
UJP RETURN  
UJP PARINT  
EQU \*-QX-1

POINT TO NON-EXISTANT MEMORY

GET LOWER END OF REAL SYSTEM  
PAGE NO. NOT TO FREE  
PUT IN CHECK INSTRUCTION  
GET THE NEXT PAGE TO FREE

STILL SOME TO FREE  
DONE - SPLIT  
MAKE THE PAGE AVAILABLE

INCRIMENT FREE PAGE COUNT  
FIX FOR MEMARRAY

MAKE THIS PAGE NON-EXISTANT  
LOOK AT NEXT PAGE  
LOOP

GIVE THE #CORE# ADDRESS BACK  
TO THE SYSTEM

SAY WE CAN END NOW

QLENGTH

	3739		MACRO	LAB,,ADD		
	3740		NAME	LINKMAC		
	3741		IF	T#LINKCNT EQ 0,LINKCNT EQU -1		
	3742	LINKCNT	REQU	LINKCNT+1		
	3743		PUNCH	#EXS,LINK:\$LINKCNT=\$ADD/#		
	3744	\$LAB	BCD	2,\$ADD		
	3745		EXT	LINK:\$LINKCNT		
	3746		OO	LINK:\$LINKCNT		
	3747		END			
	3748					
	3749		MACRO	LAB,,ADD		
	3750		NAME	LINKNAME		
	3751		PUNCH	#EXS,\$ADD(1)=\$ADD(2)/#		
	3752	\$LAB	BCD	2,\$ADD(2)		
	3753		EXT	\$ADD(1)		
	3754		OO	\$ADD(1)		
	3755		END			
	3756					
	3757					
06240	54106263	P	LINKEX	LDI	LINKVAL,X1	RESTORE X1
06241	01000000	P	LINKIT	UJP	IMPURE	
06242	47106263	P		STI	LINKVAL,X1	SAVE THE VALUE OF THE SYMBOL
06243	45006267	P		STAQ	LINKSYM	SAVE THE SYMBOL
06244	14100231			ENI	LINKTABL,X1	
06245	14577777			ENQ,S	77777B	
06246	20006267	P	LINKMEQ	LOA	LINKSYM	
06247	06306271	P		MEQ	LINKTAB,3	
06250	00006250	P		HLT	*	
06251	20106272	P		LOA	LINKTAB+1,X1	CHECK THE SECOND HALF
06252	36006270	P		SCA	LINKSYM+1	
06253	03106246	P		AZJ,NE	LINKMEQ	
06254	41106271	P		STQ	LINKTAB,X1	CLOBBER THE ENTRY
06255	20106273	P		LOA	LINKTAB+2,X1	LOAD THE CHAIN ADDRESS
06256	53500000		LINKPLUG	TAI	X1	
06257	04177777			ISE	77777B,X1	SKIP IF END OF THE CHAIN
06260	01006262	P		UJP	*+2	
06261	01006240	P		UJP	LINKEX	
06262	21100000			LDQ	0,X1	LOAD THE NEXT POINTER
06263	14600000		LINKVAL	ENA	IMPURE	ENTER THE SYMBOL VALUE
06264	44100000			SWA	0,X1	
06265	13000030			SHAQ	24	
06266	01006256	P		UJP	LINKPLUG	
06267	00000000		LINKSYM	VFD	A24/IMPURE,A24/IMPURE	
	06271	P	LINKTAB	EQU	*	
06271	22216323		BCDBATNM	LINKNAME	BTCHNUMP,BATCHNUM	
06274	22216323		BCDBPSA	LINKNAME	BTCHPSAP,BATCHPSA	
06277	22216323		BCDBQ	LINKNAME	BATCHQP,BATCHQ	
06302	22434623		BCDBLOCK	LINKNAME	BLOCKSP,BLOCKS	
06305	22434623		BCDBLKL	LINKNAME	BLOCKSLP,BLOCKSL	FOR PHANTOM AND DUMPER
06310	22434623		BCDBLKP1	LINKMAC	BLOCKSP1	
06313	23512623			LINKMAC	CRFCBLK	
06316	31244325		BCDIDLE	LINKMAC	IDLE	
06321	62708265		BCDSYSVL	LINKMAC	SYSVAL	
06324	71514647		BCDZROPG	LINKMAC	ZROPAGE	
06327	43476321		BCDLPTAB	LINKMAC	LPTAB	
06332	43476321		BCDLPTBL	LINKMAC	LPTABL	
06335	45222163		BCDNBTQ	LINKNAME	NBATCHQP,NBATCHQ	
06340	45222163		BCDNBAT	LINKNAME	NBATPSAP,NBATPSA	
06343	45472127		BCDNPGM1	LINKMAC	NPAGESM1	
06346	45644447		BCDNPAGE	LINKNAME	NUMPAGEP,NUMPAGES	
06351	47212725		BCDPAGTB	LINKNAME	PAGETABP,PAGETABL	
06354	47212725		BCDPAGTI	LINKNAME	PAGETIMP,PAGETIME	
06357	47212725		BCDPAGEM	LINKNAME	PAGEMSA,PAGEMSA	
06362	47244710			LINKMAC	PDP8CG	
06365	47244710			LINKMAC	PDP8CQL	
06370	47244710			LINKMAC	PDP8IQ	
06373	47244710			LINKMAC	PDP8IQL	
06376	47244710			LINKMAC	PDP8OQ	
06401	47244710			LINKMAC	PDP8OQL	
06404	47434663			LINKMAC	PLOTBLOC	
06407	47510122			LINKMAC	PR1BLOC	
06412	47622122		BCDPSABL	LINKNAME	PSABLKP,PSABLK	
06415	47634722			LINKMAC	PTPBLOC	
06420	47644522			LINKMAC	PUNBLOC	
06423	50632122		BCDQTAB	LINKNAME	QTABLEP,QTABLE	
06426	26216263		BCDFQN	LINKMAC	FASTQN	

06431	45632147	3816+002	BCDNTQ	LINKMAC	NTAPEQ
06434	62254524	3816+003	BCDSTAB	LINKMAC	SENDTAB
06437	62254524	3816+004	BCDSTAB1	LINKMAC	SENDTAB1
06442	62254524	3816+005	BCDSTABL	LINKMAC	SENDTABL
06445	45623031	3816+006	BCDSHFT	LINKMAC	NSHIFT
06450	51216325	3816+007	BCDRATE	LINKMAC	RATETAB
06453	62233024	3816+008	BCDSCHD	LINKMAC	SCHDTAB
06456	30623163	3819		LINKMAC	HSITAB
06461	30623143	3820		LINKMAC	HSILOC
06464	30623163	3821		LINKMAC	HSITABL
06467	63214725	3822		LINKNAME	TAPELISP,TAPELIST
06472	63456444	3822+001		LINKNAME	TNUMLISP,TNUMLIST
06475	63216242	3823	BCDTQ	LINKMAC	TASKQ
06500	63224342	3826		LINKMAC	TBLKLIST
06503	63476445	3827		LINKNAME	TPUNITSP,TPUNITS
06506	63514445	3828	BCDTRMNM	LINKMAC	TRMNUM
06511	63634564	3829	BCDITNUM	LINKMAC	ITNUM
06514	63652243	3830	BCDTV8	LINKMAC	TVBLOCK
06517	64625144	3831	BCDUSRMX	LINKNAME	USRMAXP,USRMAX
	00231	3832	LINKTABL	EQU	*-LINKTAB

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```

*****
* THIS ROUTINE HANDLES THE BLOCKING FOR DEVICE AND BATCH RESTORATION
* X2 AND X3 ARE RESTORED
*
* ENTER WITH DATA INPUT ADDRESS -1 IN X3 AND WORDS TO MOVE IN X1
*
* THE REASON FOR TRANSFER ADDRESS -1 IN X3 IS THAT IT SIMPLIFIES PUTTING
* INFORMATION INTO FREE STORAGE BLOCKS OBTAINED FROM GETMEM. ALSO THIS
* ALLOWS ACTUAL MOVE COUNTS TO BE ENTERED IN X3.
*****
    
```

06522	01000000		3846	GSAVEBUF	UJP	IMPURE		
06523	47306571	P	3847		STI	STINST,X3	ADDRESS TO PUT STUFF IN.	
06524	47106573	P	3848		STI	MVCNT,X1	SAVE COUNT	
06525	47206577	P	3849		STI	GX2SVE,X2	SAVE X2	
06526	14300001		3850		ENI	1,X3	INITIALIZE OUTPUT POINTER	
06527	14101001		3851	GX1SVE	ENI	IMPURE+WPFB+1,X1	FIX X1	
	06530	P	3852	MVSVLP	EQU	*		
06530	05101000		3853		ISG	WPFB,X1	SEE IF DONE WITH THIS BLOCK	
06531	01006570	P	3854		UJP	SVOK	NOPE DONT READ ANYTHING	
06532	20007636	P	3855		LDA	CURBLOCK	GET NEXT DISK ADDRESS	
06533	03306577	P	3856		AZJ,LT	GX2SVE	NO MORE BLOCKS	
06534	14704000		3857		ENQ	CORE	ADDRESS TO READ INTO	
06535	14101000		3858		ENI	WPFB,X1	NUMBER OF WORDS TO READ	
06536	14204547	X	3859		ENI	READ,X2	FUNCTION	
06537	00707372	P	3860		RTJ	MSIO	GO READ IN SAVE BLOCK	
06540	25007636	P	3861		LDAQ	CURBLOCK	ADDRESS OF THIS AND LAST BLOCK	
06541	40007637	P	3862		STA	CURBLOCK+1	FIX BACK POINTER	
06542	20004001		3863		LDA	CORE+1	CHECK BLOCKS BACK POINTER	
06543	03406545	P	3864		AQJ,EQ	*+2	JUMP IF OK	
06544	00006544	P	3865		HLT	*	SOMETHING WRONG	
06545	20007637	P	3866		LDA	CURBLOCK+1	ADDRESS OF THIS BLOCK	
06546	04000001		3867	CHKCHK	ISE	IMPURE+1,0	SKIP IF NOT FILE CHECK	
06547	04000001		3868	CHKCHK2	ISE	IMPURE+1,0	SKIP IF TO CHECK FILE	
06550	01006555	P	3869		UJP	FILEOK	NOPE DONT CALL FREBLK	
06551	47306553	P	3870		STI	*+2,X3	SAVE X3 FOR A BIT	
06552	00704617	P	3871		RTJ	ROACH	SAY THIS BLOCK IS OK	
06553	14300000		3872		ENI	IMPURE,X3	RESTORE INDEX	
06554	20007637	P	3873		LDA	CURBLOCK+1	ADDRESS OF THIS BLOCK AGAIN	
06555	47006547	P	3874	FILEOK	STI	CHKCHK2,0	CHECK THE REST OF THE BLOCKS	
06556	54106700	P	3875		LDI	FBLKPTR,X1	GET FREE BLOCK PTR	
06557	05100012		3876		ISG	FBLKTBLL,X1	SEE IF TABLE FULL	
06560	01006562	P	3877		UJP	*+2	STILL ROOM IN TABLE	
06561	00006561	P	3878		HLT	*	YES TABLE FULL - HLT	
06562	40107762	P	3879		STA	FBLKTBL,X1	SAVE FREE BLOCK IN TABLE FOR	
06563	15100001		3880		INI	1,X1	REWRITES	
06564	47106700	P	3881		STI	FBLKPTR,X1	SAVE POINTER	
06565	20004000		3882		LDA	CORE	GET NEXT BLOCK POINTER	
06566	40007636	P	3883		STA	CURBLOCK	NEXT BLOCK TO READ	
06567	14100002		3884		ENI	2,X1	NEW POSITION POINTER	
	06570	P	3885	SVOK	EQU	*		
06570	20104000		3886		LDA	CORE,X1	GET WORD	
06571	40300000		3887		STA	IMPURE,X3	STORE INFO	
06572	15100001		3888		INI	1,X1	INCRIMENT CORE POINTER	
06573	10300000		3889		ISI	IMPURE,X3	SEE IF DONE	
06574	01006530	P	3890		UJP	MVSVLP	DO NEXT WORD	
06575	14600001		3891		ENA	1		
06576	34006522	P	3892		RAD	GSAVEBUF	DATA MOVED RETURN	
06577	14200000		3893	GX2SVE	ENI	IMPURE,X2	RESTORE X2	
06600	54306571	P	3894		LDI	STINST,X3	RESTORE X3	
06601	47106527	P	3895		STI	GX1SVE,X1	SAVE X1 FOR NEXT TIME	
06602	01006522	P	3896		UJP	GSAVEBUF	RETURN	

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3900  
3901  
3902  
3903

\*\*\*\*\*  
\* THIS SUBROUTINE WILL MOVE THE INFO FROM DATA AREA SPECIFIED BY \*  
\* X3+1 TO THE OUTPUT BUFFER. THE ROUTINE WILL TAKE CARE OF ALL I/O \*  
\* THAT NEED BE DONE WHILE BUILDING BLOCKS. \*  
\* BLOCKDN IS CALLED TO EMPTY THE PARTIALLY FILLED BUFFER. \*  
\*\*\*\*\*

06603 01000000  
06604 47206647 P  
06605 47306641 P  
06606 47106644 P  
06607 14300001  
06610 54206677 P  
06611 05200001  
06612 01006652 P  
06613 14200000  
06614 05201000  
06615 01006641 P  
06616 54106677 P  
06617 20107762 P  
06620 15100001  
06621 47106677 P  
06622 40005000  
06623 40007640 P  
06624 20007641 P  
06625 14705000  
06626 14205123 X  
06627 14101000  
06630 00707372 P  
06631 14200777  
06632 14477777  
06633 40205000  
06634 02606633 P  
06635 25007640 P  
06636 41005001  
06637 40007641 P  
06640 14200002  
06641 20300000  
06642 40205000  
06643 15200001  
06644 10300000  
06645 01006614 P  
06646 47206613 P  
06647 14200000  
06650 54306641 P  
06651 01006603 P  
  
06652 20007762 P  
06653 40007641 P  
06654 14200002  
06655 14600001  
06656 44006677 P  
06657 01006641 P  
  
06660 01000000  
06661 54106677 P  
06662 04100000  
06663 01006670 P  
06664 14600001  
06665 44006677 P  
06666 20007762 P  
06667 01006671 P  
06670 20007641 P  
06671 14705000  
06672 14206626 X  
06673 14101000  
06674 00707372 P  
06675 01006660 P

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FILEIT UJP IMPURE  
STI FIX2SVE,X2  
STI LOADINS,X3  
STI MVCNTW,X1  
ENI 1,X3  
LDI NFBLKTPT,X2  
ISG 1,X2  
UJP WFIRST  
ENI IMPURE,X2  
ISG WPFB,X2  
UJP LOADINS  
LDI NFBLKTPT,X1  
LDA FBLKTBL,X1  
INI 1,X1  
STI NFBLKTPT,X1  
STA COREW  
STA CUWBLOCK  
LDA CUWBLOCK+1  
ENQ COREW  
ENI WRITE,X2  
ENI WPFB,X1  
RTJ MSIO  
ENI WPFB-1,X2  
ENA,S 777777  
STA COREW,X2  
IJD \*-1,X2  
LDAQ CUWBLOCK  
STQ COREW+1  
STA CUWBLOCK+1  
ENI 2,X2  
LDA IMPURE,X3  
STA COREW,X2  
INI 1,X2  
ISI IMPURE,X3  
UJP BGNMVL P  
STI CURLOC,X2  
ENI IMPURE,X2  
LDI LOADINS,X3  
UJP FILEIT  
  
WFIRST LDA FBLKTBL  
STA CUWBLOCK+1  
ENI 2,X2  
ENA 1  
SWA NFBLKTPT  
UJP LOADINS  
  
BLOCKDN UJP IMPURE  
LDI NFBLKTPT,X1  
ISE 0,X1  
UJP BBLKDN  
ENA 1  
SWA NFBLKTPT  
LDA FBLKTBL  
UJP \*+2  
LDA CUWBLOCK+1  
ENQ COREW  
ENI WRITE,X2  
ENI WPFB,X1  
RTJ MSIO  
UJP BLOCKDN

SAVE X2  
WHERE DATA COMING FROM  
SAVE NUMBER TO MOVE  
INITIALIZE INPUT POINTER  
SEE IF FIRST TIME THROUGH  
SKIP IF NOT SO  
GO DO INITIALIZATION  
CURRENT LOCATION IN X2  
IS BUFFER FULL  
NOPE PUT WORD IN  
GET NEXT FREE BLOCK  
GET BLOCK TO USE  
SAY ONE MORE USED  
SAVE NEW VALUE  
SAVE THE NEW FORWARD POINTER  
  
GET ADDRESS OF FULL BLOCK  
ACTUAL CORE ADDRESS FOR MSIO  
FUNCTION  
  
WRITE OUT FULL BLOCK  
  
FILL BUFFER WITH 77777777  
LOOP  
  
NEW BACKWARD POINTER  
FIX BACK PTR FOR NEXT TIME  
FIX X2  
GET WORD TO MOVE  
PUT IN BUFFER  
INC BUFFER POINTER  
SEE IF DONE  
GO CONTINUE  
SAVE CURRENT LOCATION  
RESTORE X2  
GET X3 BACK  
  
GET ACTUAL MAJOR BLOCK  
SAY THIS IS BLOCK WE ARE IN.  
INITIALIZE CURRENT LOCATION  
  
SET TO 1 MEANING BLOCK USED  
GO DO MOVE  
  
SEE IF THINGS INITIALIZED  
SKIP IF NOT INITIALIZED  
DO WRITE  
  
SET TO 1 MEANING BLOCK USED  
GET THE MAJOR BLOCK  
DONT LOAD ADDRESS  
GET BLOCK WE ARE IN  
CORE ADDRESS TO WRITE FROM  
FUNCTION CODE  
NUMBER OF WORDS TO WRITE  
DO WRITE  
RETURN

3969  
3970  
3971

\*\*\*\*\*  
\* THIS ROUTINE WILL FREE ALL UNUSED BLOCKS EXCEPT THE FIRST BLOCK. \*  
\*\*\*\*\*

06676 01000000  
06677 14100000  
06700 05100000  
06701 01006703 P  
06702 01006676 P  
06703 20107762 P  
06704 14200001  
06705 00705310 X  
06706 15100001  
06707 01006700 P  
  
06710 01000000  
06711 14577777  
06712 45007636 P  
06713 47006677 P  
06714 47006700 P  
06715 14601001  
06716 44006527 P  
06717 14477777  
06720 14100777  
06721 40105000  
06722 02506721 P  
06723 01006710 P

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3996

FRELBLK UJP IMPURE  
NFBLKTPT ENI IMPURE,X1  
FBLKPTR ISG IMPURE,X1  
  
FRETBLK LDA FRELBLK  
ENI 1,X2  
RTJ FREEBLK  
INI 1,X1  
UJP FBLKPTR  
  
SETBUP UJP IMPURE  
ENQ,S 77777B  
STAQ CURBLOCK  
STI NFBLKTPT,0  
STI FBLKPTR,0  
ENA WPFB+1  
SWA GX1SVE  
ENA,S 77777B  
ENI WPFB-1,X1  
STA COREW,X1  
IJD \*-1,X1  
UJP SETBUP

POINTER TO NEXT BLOCK TO USE  
SKIP IF ALL USED OR FREED  
GO FREE UNUSED BLOCKS  
  
GET BLOCK TO FREE  
SAY ONLY ONE BLOCK  
GO FREE IT  
LOOK AT NEXT BLOCK  
  
INITIALIZE INPUT ROUTINE  
ZERO USED FREE BLOCKS POINTER  
ZERO AVAILABLE FREE BLOCKS PTR  
  
FORCE FIRST READ  
  
MAKE WRITING BLOCK ALL 77777777  
LOOP TILL FILLED  
RETURN

06724	01000000		3998	BUILD0LK	UJP	IMPURE	
06725	53100000		3999		TIA	X1	SYMBOL VALUE TO A
06726	13000030		4000		SHAQ	24	AND NOW Q
06727	14200000		4001	BLKENI	ENI	IMPURE,X2	ENTER TABLE POSITION
06730	20100017		4002		LDA	IDENT,X1	LOAD THE BCD IDENT
06731	45206737	P	4003		STAQ	TEMPIDNT,X2	
06732	15200002		4004		INI	2,X2	
06733	47206727	P	4005		STI	BLKENI,X2	
06734	05200144		4006		ISG	TEMPIDNL,X2	SKIP IF TOO LARGE
06735	01006724	P	4007		UJP	BUILD0LK	EXIT IF OK
06736	00006736	P	4008		HLT	*	
			4009				
06737			4010	TEMPIDNT	BSS	100	
	00144		4011	TEMPIDNL	EQU	*-TEMPIDNT	
			4012				
			4013				
			4014				
			4015	BUILD0RQ	UJP	IMPURE	
07103	01000000		4016		TIA	X1	MACRO ADDRESS TO A
07104	53100000		4017		INQ,S	-1	
07105	15577776		4018	CRSENI	ENI	IMPURE,X2	
07106	14200000		4019		STAQ	TEMPCRS,X2	
07107	45207115	P	4020		INI	2,X2	
07110	15200002		4021		STI	CRSENI,X2	
07111	47207106	P	4022		ISG	TEMPCRSL,X2	
07112	05200144		4023		UJP	BUILD0RQ	
07113	01007103	P	4024		HLT	*	
07114	00007114	P	4025				
			4026	TEMPCRS	BSS	100	
07115			4027	TEMPCRSL	EQU	*-TEMPCRS	
			4027+001				
			4027+002				
			4027+003	BLKLP02	EQU	*	
07261	47307266	P	4027+004		STI	BLKLPX3,X3	SAVE INDEX THREE TIL LATER
07262	53700000	P	4027+005		TAI	X3	FORM POINTER
07263	21300017		4027+006		LDQ	IDENT,X3	GET IDENT FROM MACRO
07264	45207277	P	4027+007		STAQ	TEMPLP,X2	SAVE INTO TABLE
07265	15200002		4027+008		INI	2,X2	UPDATE POINTER
07266	14300000		4027+009	BLKLPX3	ENI	IMPURE,X3	RESTORE INDEX 3
07267	05200000		4030	MAXLP	ISG	IMPURE,X2	CHECK FOR A NEW MAX
07270	01007272	P	4031		UJP	*+2	
07271	47207267	P	4032		STI	MAXLP,X2	
07272	15277776		4033		INI	-1,X2	RESTORE X2
07273	01000000		4034	BLDLPTAB	UJP	IMPURE	
07274	05200050		4035		ISG	TEMPLPL,X2	SKIP IF UNREASONABLE
07275	01007261	P	4036		UJP	BLKLP02	
07276	00007276	P	4037		HLT	*	
07277			4037+001	TEMPLP	BSS	40	ALLOW FOR 20 LINE PRINTERS
	00050		4039	TEMPLPL	EQU	*-TEMPLP	



```

*****
*
*           PSUEDO DISK DRIVERS
*
*   MSIO WILL CALL THE SYSTEM DISK DRIVER AND WAIT FOR
*   COMPLETION BEFORE RETURNING
*
*   ZREAD WILL CALL THE DISK DRIVER IN BOOT
*
*****
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4052
4053   WLIM   ENI   IMPURE,X3   ENTER THE COUNTER
4054       LDI   TEMP2,X1   RESTORE THE WORD COUNT
4055       LOAQ  TEMP1   AND THE ADDRESSES
4056       IJD   MSIOZ,X3
4057   SMASH HLT   *
4058
4059   IRWAIT VFD   A12/EINT
4060       LDI   BUSY,X1
4061       IJD   *-1,X1   WAIT IF BUSY
4062       VFD   A12/DINT
4063   IR     UJP   SMASH+IMPURE   IRRECOVERABLE MASS STORAGE ERROR
4064
4065   IRERR  LDI   TEMP2+1,X2   LOAD THE IO COMMAND
4066       ISE   READ,X2
4067       UJP   WLIM
4068       ENA   IRWAIT
4069       SWA   MSIO
4070       UJP   IOWAIT
4071
4072
4073   IOWAIT UJP   IRERR
4074       STI   MSFLAG,0
4075       UJP   0,X3   RETURN
4076   MSIO   UJP   IMPURE
4077       STI   MSIOX3,X3
4078       STAQ  TEMP1
4079       STI   TEMP2,X1
4080       STI   TEMP2+1,X2   SAVE THE IO COMMAND
4081   MSIOZ ENI   9,X3   TRY WRITES 9 TIMES
4082       EQU   *
4083       STI   WLIM,X3
4084       ENI   IOWAIT,X3
4085       STI   MSFLAG,X1
4086       VFD   A12/DINT
4087       RTJ   FINK
4088       LDA   MSIO
4089       SWA   CALLMSIO
4090       VFD   A12/EINT
4091       LOAQ  MSICTEM   RESTORE AQ
4092       UJP   *+2
4093   MUSIC  IJD   MUSIC1,X1   THIS MUSIC IS FOR THE BENEFIT
4094       ENI   200,X1   OF THE OPERATORS
4095       TMQ   22B
4096       STAQ  MSICTEM   SAVE AQ
4097   MUSIC1 SHAQ  -10
4098       EQU   *
4099       AQA
4100   MSFLAG ISE   IMPURE,0   SKIP IF DISK TRANSFER IS DONE
4101       UJP   MUSIC   PLAY SOME MORE MUSIC
4102   MSIOX3 ENI   IMPURE,X3
4103       VFD   A12/DINT
4104       UJP   MSIO
4105
4106   OUT     UJP   IMPURE
4107       STI   OUTX1,X1   SAVE INDEX 1
4108       LOI   BUSY,X1   LOAD THE TYPEWRITER BUSY FLAG
4109       ISG   1,X1
4110       UJP   OUTX1
4111       VFD   A12/EINT
4112       LDI   BUSY,X1
4113       IJD   *-1,X1   JUMP IF THE TYPEWRITER IS BUSY
4114       VFD   A12/DINT
4115   OUTX1 ENI   IMPURE,X1   RESTORE INDEX X1
4116       PAUS  0400B
4117       UJP   *-1
4118       TAM   23B
4119       AQA

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07347 14300000
07350 54107723 P
07351 25007721 P
07352 02707400 P
07353 00007353 P

07354 77740000
07355 54177777 X
07356 02507355 P
07357 77730000
07358 01007353 P

07361 54207724 P
07362 04208536 X
07363 01007347 P
07364 14607354 P
07365 44007372 P
07366 01007370 P

07367 01007361 P
07370 47007421 P
07371 01300000
07372 01000000
07373 47307423 P
07374 45007721 P
07375 47107723 P
07376 47207724 P
07377 14300011 P
      07400 P
07401 47307347 P
07402 14307370 P
07403 47107421 P
07404 77730000 P
07405 00777777 X
07406 20007372 P
07407 44004714 P
07408 77740000 P
07409 25007725 P
07410 01007413 P
07411 02507417 P
07412 14100310 P
07413 53010022 P
07414 45007725 P
07415 13077765 P
      07417 P
07418 53040000
07419 13077774
07420 04000000
07421 01007412 P
07422 14300000
07423 77730000
07424 01007372 P
07425

07426 01000000
07427 47107437 P
07430 54107355 X
07431 05100001
07432 01007437 P
07433 77740000
07434 54107430 X
07435 02507434 P
07436 77730000
07437 14100000
07440 77600400
07441 01007440 P
07442 53420023
07443 53040000

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07444	53420033	4120	IAM	33B	
07445	77760000	4121	CTO		
07446	01007426 P	4122	UJP	OUT	
		4123			
07447	01000000	4124	ZREAD	UJP	IMPURE
07450	00700000	4125	ZREADX	RTJ	IMPURE
07451	01007447 P	4126		UJP	ZREAD
		4127			
07452	01000000	4128	ZWRITE	UJP	IMPURE
07453	00700000	4129	ZWRITEX	RTJ	IMPURE
07454	01007452 P	4130		UJP	ZWRITE

07455	00000000	4132			A24/IMPURE	TEMP FOR THE COUNT OF THE TOTAL
		4133	MXSPACE	VFD		AMOUNT OF MASS STORAGE SPACE
		4134	*			
	07456 P	4135	HTLIST	EQU	*	
07456	00000012	4136		VFD	09/000,A15/HTRAF,09/000,A15/RAF	
07460	00000001	4137		VFD	09/000,A15/HTFILE,09/000,A15/FILE	
		4138	HTLNTH	EQU	*-HTLIST	
07462	00000037	4139	HOURBITS	OCT	00000037	
07463	00140000	4140	LEAPBITS	OCT	00140000	
07464	40354037	4141	MONTHS	VFD	A6/32,A6/29,A6/32,A6/31	
07465	40374040	4142		VFD	A6/32,A6/31,A6/32,A6/32	
07466	37403740	4143		VFD	A6/31,A6/32,A6/31,A6/32	
	07467 P	4144	FBPC	EQU	*	FILE BLOCKS PER CYLINDER
07467	00000024	4145		DEC	20	853/854
07470	00001000	4146		DEC	512	813/814
	07471 P	4147	BLKLIST	EQU	*	
		4148				
07471	21232322	4149	ACCBLOCK	BCD	2,ACCBLOCK	
07473	21515121	4150	ARRAY	BCD	2,ARRAY	
07475	22212342	4151	BACKLOG	BCD	2,BACKLOG	
07477	22212463	4152	BADTRAX	BCD	2,BADTRAX	
07501	25452422	4153	ENDBLOCK	BCD	2,ENDBLOCK	
07503	31442127	4154	IMAGEBLK	BCD	2,IMAGEBLK	
07505	44622622	4155	MSFBLOCK	BCD	2,MSFBLOCK	
07507	44676222	4156	MXSBLOCK	BCD	2,MSFBLOCK	
07511	51502465	4157	RQDVLIST	BCD	2,RQDVLIST	
07513	62216525	4158	SAVEBBLK	BCD	2,SAVEBBLK	
07515	62216525	4159	SAVEDBLK	BCD	2,SAVEDBLK	
07517	62252364	4160	SECURITY	BCD	2,SECURITY	
07521	21232346	4161	ACCOUNT	BCD	2,ACCOUNT	
07523	64622551	4162	USER	BCD	2,USER	
07525	22244760	4163	BDP	BCD	2,BDP	
07527	22216323	4164	BATCH	BCD	2,BATCH	
07531	63637060	4165	TTY	BCD	2,TTY	
07533	30466451	4165+001	HOURS	BCD	2,HOURS	
07535	47212725	4167	PAGECORE	BCD	2,PAGECORE	
07537	62436222	4168	SLSBITS	BCD	2,SLSBITS	
		4169	*			CONTENTS OF A AFTER SLS
		4170	*			BIT00 SET LOG PHANTOM IN
		4171	*			BIT 00 CLEAR DONT LOG PHANTOM IN
		4172	*			BIT01 SET SEZZ RUN AUTO JOBS
		4173	*			NOT SET SEZZ DONT RUN AUTO JOBS
		4174	*			BIT 02 SET SEZZ RESTORE DEVICE
		4174+001	*			AND BATCH INFORMATION
		4174+002	*			BIT 03 SET SAYS NORMAL OS3
		4175				BIT 03 CLEAR SAYS EXPERIMENTAL
	00050	4175	BLKLNTH	EQU	*-BLKLIST	
		4176				
		4176+001				
	07541 P	4176+002	ISENOTB	EQU	*	
07541	62316325	4176+003		VFD	H24/SITE,A9/0,A15/0	
07543	63216242	4176+004		VFD	H24/TASK,A9/HTTASK,A15/000008	
	07546 P	4176+005	NITEQP	EQU	*+1	
07545	45316325	4176+006		VFD	H24/NITE,A9/HTTASK,A15/IMPURE	
	07550 P	4176+007	FASTQP	EQU	*+1	
07547	26216263	4176+008		VFD	H24/FAST,A9/HTTASK,A15/IMPURE	
		4176+009	ISENDTBL	EQU	*-ISENDTB	
		4176+010				
	07552 P	4176+011	TAPEQP	EQU	*+1	
07551	44630160	4176+012	MTSENDP	VFD	H24/MT1,A9/HTTASK,A15/IMPURE	
		4176+013				
07553	00200000	4176+014	LPTYPE	VFD	A9/HTLP,A15/00000	
		4177				
		4178				
		4179	MACRO		,,DEVICE	
		4180	NAME		IOSETUP	
		4181	EXT		\$DEVICE:\$.SUP	
		4182	EXT		\$DEVICE:\$.STR	
		4183	BCD		2,\$DEVICE	
		4184	00		\$DEVICE:\$.SUP	
		4185	00		\$DEVICE:\$.STR	
		4186	END			
		4187				
		4188				
	07554 P	4189	EQNLIST	EQU	*	
07554	23516060	4190		IOSETUP	CR	
	00004	4191	EQNL	EQU	*-EQNLIST	LENGTH OF ONE ENTRY
07560	30623160	4192		IOSETUP	HSI	
07564	30626363	4193		IOSETUP	HSTT	
07570	43476060	4194		IOSETUP	LP	

07574	44636060	4195	IOSETUP	MT	
07600	47244710	4196	IOSETUP	PDP8	
07604	47434663	4197	IOSETUP	PLOT	
07610	47634760	4198	IOSETUP	PTP	
07614	47644560	4199	IOSETUP	PUN	
07620	63254260	4200	IOSETUP	TEK	
07624	64636060	4201	IOSETUP	UT	
	00054	4202	EQNLNTH	EQU	*-EQNLIST
		4203			
07630	6365606J	4204	TV	BCD	2,TV
		4205			
07632	46456060	4206	BCDON	BCD	1,ON
07633	46620360	4207	BCDOS3	BCD	1,OS3
07634	77777777	4208	MZEROS	OCT	-0,-0
07636	00000000	4209	CURBLOCK	VFD	A24/IMPURE,A24/IMPURE CURRENT BLOCK ADDRESS
	07637	4210	BACKPNT	EQU	CURBLOCK+1 THEORETIC BACKWARD POINTER
07640	00000000	4211	CURBLOCK	VFD	A24/IMPURE,A24/IMPURE
		4212			
07642	40J00000	4213	BIT23	OCT	40000000
07643	20000000	4214	BIT22	OCT	20000000
07644	10000000	4215	BIT21	OCT	10000000
07645	00177777	4216	BIT16M1	OCT	00177777
07646	07777777	4217	DMASK	OCT	07777777
07647	00000776	4218	KWPFBM2	VFD	A24/WPFB-2
07650	00000000	4219	FXBLOCK	VFD	A24/IMPURE
07651	00000000	4220	FXEPP	VFD	09/000,A15/IMPURE
07652	00000000	4221	FXTFL	VFD	A24/IMPURE
07653	00000000	4222	GAP	VFD	A24/IMPURE
07654	00000000	4223	LASTWORD	VFD	A24/IMPURE
07655	00000000	4224	MAXGAP	VFD	A24/IMPURE
07656	00000000	4225	POINT	VFD	A24/IMPURE
07657	00000000	4226	POSITION	VFD	A24/IMPURE
07660	00000000	4227	LNTH	VFD	A24/IMPURE
07661	77512000	4228	CLCA	CLCA	0
07662	14000000	4229	NOP	NOP	
07663	41000000	4230	STQZERO	STQ	000000
07664	77242163	4231	DATEMESS	BCD,C	13,^DATE MMDDYY^
	00015	4232	DATEMESL	EQU,C	*-DATEMESS
07667	77776331	4233	TIMEMESS	BCD,C	11,^TIME HHMM^
	00013	4234	TIMEMESL	EQU,C	*-TIMEMESS
07672	77777777	4235	CRCR	BCD	1,^AAA^
07673	00000000	4236	DATEWORD	VFD	A24/IMPURE,A24/IMPURE
07675	00000000	4237	TIME	VFD	A24/IMPURE,A24/IMPURE
07677	00000000	4238	LBKDATE	VFD	A24/IMPURE
07700	00000000	4239	LDT	VFD	A24/IMPURE,A24/IMPURE
07702	00000000	4240	ACCLNTH	VFD	A24/IMPURE
07703	00000000	4241	MSDIRBLK	VFD	A24/IMPURE
		4242			
07704	47302145	4242+001	PHANNAME	VFD	H24/PHAN,09/0,A15/PHANNUM
07706	00000000	4243	SYSNAME	VFD	A24/IMPURE,A24/IMPURE
07710	00000077	4244	SJ1FLAG	00	IMPURE+77B
07711	00000077	4245	SJ2FLAG	00	IMPURE+77B
07712	00000077	4246	SJ3FLAG	00	IMPURE+77B
07713	00000077	4247	SJ4FLAG	00	IMPURE+77B
07714	00000077	4248	SJ5FLAG	00	IMPURE+77B
07715	00000077	4249	SJ6FLAG	00	IMPURE+77B
		4250			
07716	00000000	4251	FREEBUFF	VFD	A24/IMPURE,A24/IMPURE
07720	J0000000	4252	BACKPTR	VFD	A24/IMPURE
07721	00000000	4253	TEMP1	VFD	A24/IMPURE,A24/IMPURE
07723	00000000	4254	TEMP2	VFD	A24/IMPURE,A24/IMPURE
07725	00000000	4255	MUSICTEM	VFD	A24/IMPURE,A24/IMPURE
07727	00000000	4256	SECWORD	VFD	A24/IMPURE
		4257	*		TEMP FOR THE BAND CONTENTS OF WORD ZERO OF THE SECURITY BLOCK
		4258			
07730	00000007	4259	D7	DEC	7
07731	00000012	4260	D10	DEC	10
07732	00000030	4261	D24	DEC	24
07733	00165140	4262	D60000	DEC	60000
07734	46000000	4263	SYSCON	OCT	40000000
07735		4264	TEMPCTLB	BSS	8
07745		4265	FKFD	BSS	GFDELNTH
07757	66666667	4266	KONST	OCT	66666667B
07760	00007743	4267	INDTFL	00	TEMPCTLB+TFL-1
07761	00007735	4268	INDFLP	00	TEMPCTLB+LP-1
07762		4269	FBLKTBL	BSS	10
	00012	4270	FBLKTBL	EQU	*-FBLKTBL
07774	00222330	4271	BNAME	BCD	1,08CH
07775		4272	FBPCDEV	BSS	DEVLIST

MAX RECORD SIZE FOR FILE TYPE DEV

TEMP FOR THE BAND  
CONTENTS OF WORD ZERO OF THE  
SECURITY BLOCK

SYSTEM PAGE CONSTANT

ROOM FOR FILE DIRECTORY ENTRY

LIST OF FREE FILE BLOCKS

10075 00000000  
10076 00020076

4273  
4274  
4275  
4276  
4277  
4278

DISKIONT VFD  
ENDPOINT VFD

A24/IMPURE  
A24/IMPURE+END-1

=0 IF DISK IDENT IS #OS3 #

10077 20077 P

END BSS  
EQU  
END

4000B\*2  
\*  
INITIAL

LEAVE ROOM FOR FREE STORAGE

NO LINES WITH ERRORS



BCHKLRPG	03625P	2304	2342	03670P	2344	03672P	2358	03710P		
BCHKLREN	03372P	2344	2303	03624P						
BCMSG	05053P	2976	2977	05067P	2056	03277P				
BCMSG1	00062	2977	2057	03300P						
BDBTCH	03674P	2346	2336	03662P	2338	03664P				
BDF	07525P	4163	1005	01444P						
BDFBUFF	01476P	1023	1007	01446P	1007	01446P				
BDFJUMP	01477P	1025	1003	01442P						
BDFMES1L	00030	1018	1021	01474P						
BDFMESS	01457P	1015	1009	01452P						
BDFMESS1	01465P	1017	1018	01473P	1020	01473P				
BDFPCK	01502P	1028	1008	01451P						
BDFPON	01473P	1020	1027	01501P						
BDFPOT	01454P	1011	1022	01475P						
BEXIT	06006P	3538	3504	05736P	3506	05740P				
BFBGN	00002	13	15	00000P						
BFCPP	00003	15	19	00000P						
BFPTR	00001	109	111	00000P						
BGNMVLV	06614P	3915	3940	06645P						
BGNSVLP	05625P	3429	3438	05635P	3469	05707P	3487	05726P		
BIT16M1	07645P	4216	2688	04377P	2703	04416P				
BIT17		20	3524	05762P						
BIT19	X	21	3667	06144P						
BIT20	X	22	3663	06140P						
BIT21	X	4215	2234	03523P	2577	04233P	2774	04527P		
BIT22		4214	2570	04224P	2767	04520P	2892	04711P		
BIT23		4213	726+25	00731P	2571	04225P	2768	04521P	2880	04675P
			3525+2	05765P	3533+2	06001P			2891	04710P
									3221	05410P
* BIT2322	X	22+1								
BKL01	01234P	831	839	01244P						
BKL02	01246P	841	836	01241P						
BKR01	00440P	525	538	00455P						
BKR02	00441P	526	532	00447P						
BKR03	00451P	534	529	00444P						
BLANKS		23	2322	03646P						
BLODLPDAB	E	4034	11	00000P						
BLODSTL0	01106P	754+65	754+61	01102P						
BLODSTL1	01070P	754+49	754+59	01100P						
BLODSTL2	01077P	754+57	754+48	01067P						
BLF	00001	12	13	00000P						
BLK	00001	181	3656	06131P						
BLKENI	06727P	4001	684	00643P	698	00661P	4005	06733P		
BLKFLAG		24	3022	05136P	3029	05145P				
BLKLIST	X	4147	4175	07541P	526	00441P	535	00452P		
BLKLNTH	00050	4175	537	00454P						
BLKLPO2	07261P	4027+3	4036	07275P						
BLKLPO3	07266P	4027+9	4027+4	07261P						
BLKPOS	00002	111	112	00000P						
* BLKR	00005	88								
BLOCKDN	06660P	3953	2350	03700P	3490	05727P	3540	06006P	3966	06675P
BLOCKS		25	3441	05640P						
BLOCKS1		26	3440	05637P						
BLOCKSLP	X	3753	3754	06307P						
BLOCKSP	X	3753	3754	06304P						
BLOCKSP1	X	27	3443	05642P						
BLOCKSR	00434P	521	294	00130P						
BLOCKTBL	X	28	253	00057P	256	00062P	1766	02734P	1770	02740P
			1914	03112P	2103	03344P	2106	03347P	2123	03370P
			3066	05207P						
BLPSVX2	03657P	2333	2330	03655P						
BNAME	07774P	4271	2290	03610P						
BOOT	00010	861	869	01254P						
BPIUJP	01431P	986	981	01424P						
BSVBLP	05647P	3448	3468	05706P						
BTCHNUP	X	3753	3754	06273P						
BTCHPSAP	X	3753	3754	06276P						
BUILDBLK	E	3998	9	00000P	4007	06735P				
BUILDORG	E	4015	10	00000P	4023	07113P				
BUSY	X	29	4060	07355P	4108	07430P	4112	07434P		
CALLBAK	00004	19	22	00000P						
CALLBAD	00004	113	115	00000P						
CALLDN	03717P	2366	2352	03702P						
CALLMSIO	04714P	2898	4088	07406P						
CBLOCK	00011	118	119	00000P						
CBP	00003	76	3335	05544P	3330	05537P				
CHANNEL	17441	879	874	01260P	3525+1	05764P	3525+5	05770P		
CHCHECK	X	30	1752	02726P						
CHKCHK	06546P	3867	3426	05622P						
CHKCHK2	06547P	3868	2270	03564P	2361	03713P	3874	06555P		







FDELNTH	X	45	2578 04234P	2769 04522P	2775 04530P	2890 04707P	2893 04712P		
FDEPP	X	46	232 00114P	2082 03320P	2238 03527P	2260 03552P			
FDERROR		2876	2211 03477P	2274 03570P	2553 04203P	2569 04223P	2881 04676P	2882 04677P	
FDHASH	X	47	2933 04755P						
FDLENGTH	X	48	2217 03505P	2229 03516P	2439 03762P	2444 03767P	2180 03776P	2180 04020P	
FDLP	X	49	2180 04043P	2180 04072P	2180 04111P	2180 04144P	2180 04175P	2624 04262P	
FDMAX		2241	2628 04266P	2180 04304P	2180 04334P	2180 04353P	2180 04441P	2874 04667P	
FDSELECT	X	50	2883 04700P						
FDSYM	X	51	280 00112P						
FDTFL	X	52	276 00106P	2147 03417P	2255 03547P				
FDURN	X	53	2223 03510P	2313 03636P	2447 03772P	2451 04003P	2494 04066P	2498 04077P	
FDWFLAG		2243	2565 04217P	2635 04275P	2669 04347P	2786 04543P			
FDWX		2252	2085 03323P						
FEMSG		2968	278 00110P	2292 03612P	2294 03614P	2301 03622P	2319 03643P	2328 03654P	
FILE		2620	2201 03465P						
FILECHK		2662	2924 04744P						
FILEDIR	X	54	2311 03634P	2339 03665P	2437 03760P	2556 04206P	2559 04211P	2579 04235P	
FILEDONE		2220	2622 04260P	2633 04273P	2757 04511P	2777 04532P	2784 04541P		
FILEIT		3906	2941 04765P						
FILEOK		3874	2231 03520P	2250 03543P	2488 04060P	2663 04341P	2905 04721P		
FILLENA		1970	2244 03535P						
FINK	X	55	2917 04735P	2919 04737P					
FINPAGE		1928	2331 03556P	4137 07461P					
FIX2SVE		3942	2630 04270P						
FKFD		4265	275 00105P						
FLAGS	X	56	2190 03453P	2150 03422P	2194 03457P	2247 03540P	2558 04210P	2580 04236P	
FORMSWRD		40	2588 04246P	2596 04256P	2660 04340P	2758 04512P	2787 04544P	2798 04557P	
FPCNT	X	57	2808 04571P	2894 04713P					
FRBLK		2810	2284 03602P	2343 03671P	3477 05715P	3485 05724P	3944 06651P		
FRBLKENA		2819	3869 06550P						
FRBLKLOG		2822	1961 03163P						
FRBLKX1		2326	4086 07404P						
FRBLKX2		2827	1942 03144P						
FREE1		1272	3907 06604P						
FREE2		1278	2262 03554P	2271 03565P	2285 03603P	2310 03633P	2334 03660P		
FREE3		1283	3637 06116P	3638 06117P					
FREEBLK	X	58	463 00353P	3382 05604P	3713 06212P	3725 06224P			
FREEBUFF		4251	2011 03226P	2104 03345P	2119 03364P	2140 03411P	2151 03423P	2157 03431P	
FREECHEC	X	62	2164 03436P	2396 03736P	2405 03747P	2828 04614P	2838 04623P		
FREEMEM	X	61	1958 03160P						
FREESKIP		1275	1964 03165P	2052 03273P					
FRELBLK		3974	2811 04573P						
FREPANIC	X	63	2812 04574P						
FRETBLK		3979	1282 02004P	1283 02005P					
FXU1		2788	1276 01776P						
FXU2		2799	1277 01777P						
FXBLOCK		4219	3082 05226P	3106 05252P	3124 05272P	3140 05310P	3981 06705P		
FXEPP		4220	2166 03440P	2170 03444P	2520 04132P	2530 04151P	2534 04155P	2543 04166P	
FXERROR		2763	2641 04310P	2646 04315P	2653 04324P				
FXTFL		4221	272 00102P						
FZL		2223	272 00102P						
GAP		4222	272 00102P						
GENBLK02		3336	1230 01734P	1255 01761P	1280 02002P	3578 06034P			
GENBLK04		3337	1268 01766P						
GENBLOCK		3322	3491 05730P	3541 06007P	3978 06702P				
GETBLK	X	59	3200 05366P						
GETCHEC	X	60							
GETMEM	X	64							
GDELNTH		176							
GIVINIT		3705							
GIVINT01		3707							
GIVINT02		3720							
GIVPDN		3388							
GLERCH		2995							
GSAVEBUF		3846							

Table with columns for labels (e.g., GXLSVE, GX2SVE, HFCN, HIGHMEM), addresses, and numerical values. Includes asterisks for specific rows like HTCR, HTFILE, HTLIST, HTLNTH, HTLP, HTMASK, HTMAX, HTMSF, HTMT, HTNULL, HTPLOT, HTPTP, HTPUN, HTRAF, HTTASK, HTTY, and HTTV. Also includes rows for IOLEPC, ILLWRITE, IMAD, IMADR, IMAGEBLK, IMPURE, INDFLP, INDTFL, INHIBIT, INHISAVE, INITIAL, INNER, INSTL, INTPDL, and IO.

IOBUSY X 79 3446 05645P 3472 05711P  
IOWAIT 07370P 4073 4070 07366P 4083 07401P  
IR 07360P 4063 2210 03476P 2240 03531P 3424 05620P  
IRERR 07361P 4065 4072 07367P  
IRUNBIT X 80 235 00040P  
IRWAIT 07354P 4059 4068 07364P  
IS X 81 3623 06100P  
ISENDB 07541P 4176+2 4176+9 07551P 754+62 01103P  
ISENDBL 00010 4176+9 754+60 01101P  
J00 05237P 3094 3044 05162P  
J01 05241P 3097 3045 05163P  
J01ENA 05242P 3098 3110 05255P 3130 05277P  
J01RAD 05243P 3099 3076 05221P 3155 05322P 3159 05325P 3171 05336P  
J01TIA 05244P 3100 3143 05313P  
J02 05254P 3109 3046 05164P  
J03 05256P 3112 3047 05165P  
J03ENA 05260P 3114 3148 05315P  
J03ENIX3 05257P 3113 3145 05314P  
JJ3LOOP 05270P 3122 3126 05274P  
J03RAD 05261P 3115 3164 05331P  
J04 05276P 3129 3048 05166P  
J05 05300P 3132 3049 05167P  
J06 05257P 3145 3050 05170P  
J07 05314P 3147 3051 05171P  
J10 05316P 3150 3052 05172P  
J11 05320P 3153 3053 05173P  
J12 05323P 3157 3054 05174P  
J13 05326P 3161 3055 05175P  
J14 05332P 3166 3056 05176P  
J15 05334P 3169 3057 05177P  
J16 05337P 3173 3058 05200P  
JINI 05341P 3176 3089 05234P  
JISG 05232P 3087 3095 05240P 3151 05317P 3167 05333P 3174 05340P  
JLDI 05231P 3086 3107 05253P 3127 05275P  
JLOOP 05136P 3021 3090 05235P 3178 05343P  
JLUPCHEC 05342P 3177 3016 05132P 3038 05154P  
JX2 05236P 3092 3042 05160P 3073 05216P 3084 05230P 3086 05231P 3099 05243P 3115 05261P  
3133 05301P 3141 05311P  
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JZDT 05147P 3032 3024 05140P  
KILLFLAG 00007 25 26 00000P  
KONST 07757P 4266 2320 03644P  
KWPF3M2 07647P 4218 2711 04426P  
LABEL 00100 141 2110 03353P  
LASTWORD 07654P 4223 2717 04434P 2735 04463P  
LATEFLAG X 81+1 754+93 01132P  
LBKDATE 07677P 4238 841 01246P 1691 02635P  
LDT 07700P 4239 767 01137P 1395 02125P 1491 02265P 1508 02306P 1716 02666P  
LEAPBITS 07463P 4140 1650 02565P  
LEVEL 00036 142 1745 02720P 3640 06121P  
LIBLAD X 82 271 00101P 1884 03066P 2177 03773P 2177 04015P 2177 04040P 2177 04067P  
2177 04106P 2177 04141P 2177 04301P 2177 04331P 2177 04350P  
2177 04436P 2836 04621P  
LIBMOVE X 83 3220 05407P  
LINK0000 X 3745 3746 06312P  
LINK0001 X 3745 3746 06315P  
LINK0002 X 3745 3746 06320P  
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LINK0022 X 3745 3746 06444P  
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LINK0024 X 3745 3746 06452P  
LINK0025 X 3745 3746 06455P



Table with columns for labels (e.g., MSIOZ, MSK02, MSLBLK), values, and addresses. Includes a 'PARINT' label at the bottom.







STAR06	00667P	704	717	00703P						
STAR08	00702P	716	703	00666P						
STAR09	00717P	726+14	726+28	00733P						
STAR091	00733P	726+27	726+13	00716P						
STAR10	01005P	734+19	714	00700P	726+31	00736P				
STAR12	01013P	741	745+3	01021P						
STAR14	01020P	745+1	740	01012P						
STAR16	02033P	1312	1317	02040P						
STINST	06571P	3887	3847	06523P	3894	06600P				
STOCHEGA	01537P	1075	1123	01606P						
STOCHECB	01540P	1077	1117	01600P						
STOMESS	01627P	1142	1118	01601P						
STOPRO	01565P	1102	1110	01574P	1086	01547P	1108	01572P	1109	01573P
STOPROL	00007	1110	1085	01546P						
STOUJP	01607P	1125	1095	01560P						
STOUJPA	01374P	1113	1093	01556P						
STOUJPD	01636P	1145	1136	01622P						
STQZERO	07663P	4230	974	01415P						
STRDRV02	05554P	3346	3354	05563P						
STRDRV04	05562P	3353	3345	05553P						
*STRTLOC	00025	57								
SUB00	06010P	3553	3579	06035P						
SUB01	06011P	3555	3563	06017P						
SUB03	06016P	3561	3569	06025P						
SUB04	06026P	3571	3566	06022P						
SUB05	06035P	3581	3557	06012P						
SUB06	06044P	3587	3594	06053P						
SUB07	06055P	3597	3588	06045P						
SVOK	06570P	3885	3854	06531P						
SWAPUNIT	X	109	360	00226P	3203	05367P				
SWBIT	X	110	3636	06115P						
SWCHK	01364P	949	991	01436P						
SYSBASE	X	172	375	00234P	3369	05567P				
SYSCM	X	111	3218	05405P	3222	05411P				
SYSCODE	X	112	3664	06141P						
SYSCON	07734P	4263	438	00325P	1933	03133P	2080	03316P		
SYSSNAME	07706P	4243	234	00037P	3672	06151P				
SYSPAGE	01644P	1160	436	00324P						
SYVAL	X	113	1299+2	02017P						
TAPELISP	X	3753	3754	06471P						
TAPEQP	07552P	4176+11	726+32	00737P	734+1	00763P				
TEK.STR	X	4182	4185	07623P						
TEK.SUP	X	4181	4184	07622P						
TEMP1	07721P	4253	726+18	00722P	726+21	00725P	1336	02053P	1342	02061P
			2321	03645P	2327	03653P	3063	05204P	3078	05222P
			4055	07351P	4077	07374P				
TEMP2	07723P	4254	1341	02060P	1344	02063P	2323	03647P	2325	03651P
			4054	07350P	4065	07361P	4078	07375P	4079	07376P
			4027	07261P	705	00667P	3328	05535P	4019	07107P
TEMPCRS	07115P	4026	4022	07112P						
TEMPCRSL	00144	4027	2278	03574P	2281	03577P	2286	03604P	2302	03623P
TEMPCTLB	07735P	4264	2353	03703P	3431	05626P	3434	05631P	3436	05633P
			3454+2	05656P	3456+1	05663P	3458+1	05665P	3460+1	05670P
			3475	05713P	3478	05716P	3501	05733P	3505	05737P
			3513	05747P	3516	05752P	3519	05755P	3525	05763P
			3525+5	05770P	3527	05772P	3533+3	06002P	3533+4	06003P
			4006	06734P						
TEMPIDNL	00144	4011	4011	07103P	686	00645P	4003	06731P		
TEMPIDNT	06737P	4010	4039	07347P	741	01013P	743	01015P		
TEMLP	07277P	4037+1	4035	07274P			754+50	01070P	4027+7	07264P
TEMLPL	00050	4039	4035	07274P						
TFL	00007	97	3460	05667P	3519	05755P	4267	07760P		
TIMAD	00012	119	120	00000P						
TIME	07675P	4237	950	01365P	989	01434P	1076	01537P	1116	01577P
			1425	02163P	1427	02165P	1462	02230P	1467	02235P
			1419	02155P						
TIMEESL	00013	4234	1419	02155P						
TIMEESS	07667P	4233	4234	07672P	1418	02154P				
TMAV01	00313P	426	467	00357P						
TMAV01X	00325P	437	424	00312P						
TMAV01Z	00320P	432	377	00236P						
TMAV02	00342P	454	456	00344P						
TMAV03	00254P	392	460	00350P	461	00351P				
TMAV04	00331P	444	382	00243P	429	00315P				
TMAV04X	00327P	441	434	00322P						
TMAV06	00355P	465	439	00326P						
TMAV08	00357P	467	423	00311P						
TMAVMESC	00245P	387	408	00273P						
TMAVMESL	00034	390	418	00305P						
TMAVMESP	00252P	389	415	00302P						
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