```
00010                    XLIST
```

```
01970
00010     ;SOME MACROS FOR DEFINING CONFIGURATION
00020
00030     DEFINE NAME (A)
00040     <DEFINE NAME1
00050     <CONFIG:  ASCIZ /A/
00060     INTERNAL CONFIG
00070     >
00080     XP A,0
00090     SUBTTL A CONFIGURATION
00100     >
00110
00120     DEFINE DATE (A)
00130     <DEFINE DATE1
00140     <SYSDAT:  ASCIZ /A/
00150     INTERNAL SYSDAT
00160     >>
00170
00180     DEFINE VERSION (A,B)
00190     <DEFINE VERS1
00200     <SYSNUM:  XWD ↑D'A,↑D'B
00210     XP SYSMOD,↑D'A
00220     XP SYSVER,↑D'B
00230     INTERNAL SYSNUM
00240     >>
00250
00260     DEFINE CUSPTAPE (A)
00270     <DEFINE CUSP1
00280     <SYSTAP:  SIXBIT /A/
00290     INTERNAL SYSTAP
00300     >>
00310
00320     DEFINE ACPDL (J,CHJN,CHJPDN)
00330     <          CH'J'N=CHJN
00340      CH'J'PDN=CHJPDN
00350     >
```

```
00360
00370                   NAME <MINIMAL>
```

```
                                00380                DATE <8-16-65>
                                00390                VERSION 1,4
                                00400                CUSPTAPE DTA0
                                00410
                                00420      ;DEFINE THE IO PART OF THE SYSTEM
                                00430      ;THAT IS:
                                00440      ;           DEFINE INTERRUPT SERVICE ROUTINES TO BE USED
                                00450      ;          ASSIGN DEVICES TO PI CHANNELS
                                00460
                                00470      DEFINE SYSTEM
                                00480       <
                                00490       ASSOC APR,6,<>
                                00500       ASSOC CTY,3,<>
                                00510       ASSOC SCN,3,<TTY0,TTY1>
                                00520       ASSOC DTC,4,<DTA0>
                                00530      >
                                00540
                                00550
                                00560      DTSIZ=1    ;MULTIPLE DECTAPE DIRECTORIES
                                00570
                                00580      SCNLIN=1
                                00590
                                00600      ;DEFINE HIGHEST AC TO SAVE AND LENGTH OF PD LIST FOR EACH PI CHANNEL
                                00610
                                00620      ACPDL (1,0,0)
                                00630      ACPDL (2,0,0)
                                00640      ACPDL (3,11,20)
                                00650      ACPDL (4,11,20)
                                00660      ACPDL (5,0,0)
                                00670      ACPDL (6,17,20)
                                00680      ACPDL (7,0,0)
                                00020                NAME1
000000  466231 644632           CONFIG:    ASCIZ /MINIMAL/
000001  406300 000000
                                00030                DATE1
000002  341326 133132           SYSDAT:    ASCIZ /8-16-65/
000003  331520 000000
                                00040                VERS1
000004  000001 000004           SYSNUM:    XWD ↑D1,↑D4
                                00050                CUSP1
000005  446441 200000           SYSTAP:    SIXBIT /DTA0/
                                00060
                                00070      ;CONFIGURATION INDEPENDANT PART OF IOINIT FOLLOWS:
                                00080
                                00090      EXTERNAL ERROR
                                00100
                                00110      ;SETUP CHANNEL SAVE AND RESTORE ROUTINES
                                00120
                                00130      CHANU1=0
                                00140      CHANU2=0
                                00150      CHANU3=0
                                00160      CHANU4=0
                                00170      CHANU5=0
                                00180      CHANU6=0
                                00190      CHANU7=0
                                00200
                                00210      DEFINE ASSOC(A,NO,D)
```

```
00220      <IFE CHANU'NO,<
00230      CHANU'NO=1
00240      INTERNAL CH'NO'SAV,CH'NO',CH'NO'XIT,CH'NO'SAC
00250
00260      CH'NO'SAV: 0
00270       MOVEM CH'NO'N, CH'NO'SAC+CH'NO'N
00280       MOVEI CH'NO'N, CH'NO'SAC
00290       BLT CH'NO'N,CH'NO'SAC+CH'NO'N-1          ;DO ONLY ONCE FOR EACH CHANNE
00300       MOVE PDP, CH'NO'CJ
00310       JRST @CH'NO'SAV
00320
00330
00340      CH'NO'SAC: REPEAT CH'NO'N+1,<EXP 0>      ;SPACE TO SAVE SOME AC'S
00350                 EXP CH'NO'XIT         ;FIRST ENTRY IN PD LIST(CHAN. EXIT)
00360                 REPEAT CH'NO'PDN-1,<EXP 0>    ;REST OF PD LIST
00370
00380      CH'NO'XIT: MOVSI CH'NO'N, CH'NO'SAC
00390       BLT CH'NO'N, CH'NO'N
00400       JEN @CH'NO
00410
00420      CH'NO'CJ: XWD -CH'NO'PDN+1,CH'NO'SAC+CH'NO'N+1     ;INIT. SETTING OF P
00430
00440      CH'NO':    0          ;PC STORED HERE BY JSR
00450       JRST .+1 ;INSTR. AT END OF SERVICE CHAIN
00460       AOS CH'NO'ERR        ;SPURIOUS INTERRUPT, ADD TO COUNT
00470       JEN @CH'NO           ;AND DISMISS
00480      >
00490      >
00500      ;GENERATE THE SAVE AND RESTORE ROUTINES
00510
00520                 SYSTEM
                   ASSOC APR,6,<>
000006  000000 000000    CH6SAV:   0
000007  202740 000033'              MOVEM CH6N, CH6SAC+CH6N
000010  201740 000014'              MOVEI CH6N, CH6SAC
000011  251740 000032'              BLT CH6N,CH6SAC+CH6N-1          ;DO ONLY ONCE FOR EACH CHANNEL
000012  200140 000057'              MOVE PDP, CH6CJ
000013  254020 000006'              JRST @CH6SAV
000014  000000 000000    EXP 0
000015  000000 000000    EXP 0
000016  000000 000000    EXP 0
000017  000000 000000    EXP 0
000020  000000 000000    EXP 0
000021  000000 000000    EXP 0
000022  000000 000000    EXP 0
000023  000000 000000    EXP 0
000024  000000 000000    EXP 0
000025  000000 000000    EXP 0
000026  000000 000000    EXP 0
000027  000000 000000    EXP 0
000030  000000 000000    EXP 0
000031  000000 000000    EXP 0
000032  000000 000000    EXP 0
000033  000000 000000    EXP 0     ;SPACE TO SAVE SOME ACS
000034  000000 000054'              EXP CH6XIT          ;FIRST ENTRY IN PD LIST(CHAN. EXIT)
000035  000000 000000    EXP 0
000036  000000 000000    EXP 0
000037  000000 000000    EXP 0
000040  000000 000000    EXP 0
000041  000000 000000    EXP 0
```

```
000042  000000 000000    EXP 0
000043  000000 000000    EXP 0
000044  000000 000000    EXP 0
000045  000000 000000    EXP 0
000046  000000 000000    EXP 0
000047  000000 000000    EXP 0
000050  000000 000000    EXP 0
000051  000000 000000    EXP 0
000052  000000 000000    EXP 0
000053  000000 000000    EXP 0      ;REST OF PD LIST
000054  205740 000014'    CH6XIT:    MOVSI CH6N, CH6SAC
000055  251740 000017                BLT CH6N, CH6N
000056  254520 000060'               JEN @CH6
000057  777761 000034'    CH6CJ:     XWD -CH6PDN+1,CH6SAC+CH6N+1   ;INIT. SETTING OF PD POINTER(PDP)
000060  000000 000000    CH6:       0          ;PC STORED HERE BY JSR
000061  254000 000062'               JRST .+1   ;INSTR. AT END OF SERVICE CHAIN
000062  350000 000317'               AOS CH6ERR           ;SPURIOUS INTERRUPT, ADD TO COUNT
000063  254520 000060'               JEN @CH6   ;AND DISMISS
                                     ASSOC CTY,3,<>
000064  000000 000000    CH3SAV:    0
000065  202440 000103'               MOVEM CH3N, CH3SAC+CH3N
000066  201440 000072'               MOVEI CH3N, CH3SAC
000067  251440 000102'               BLT CH3N,CH3SAC+CH3N-1         ;DO ONLY ONCE FOR EACH CHANNEL
000070  200140 000127'               MOVE PDP, CH3CJ
000071  254020 000064'               JRST @CH3SAV
000072  000000 000000    EXP 0
000073  000000 000000    EXP 0
000074  000000 000000    EXP 0
000075  000000 000000    EXP 0
000076  000000 000000    EXP 0
000077  000000 000000    EXP 0
000100  000000 000000    EXP 0
000101  000000 000000    EXP 0
000102  000000 000000    EXP 0
000103  000000 000000    EXP 0      ;SPACE TO SAVE SOME ACS
000104  000000 000124'               EXP CH3XIT           ;FIRST ENTRY IN PD LIST(CHAN. EXIT)
000105  000000 000000    EXP 0
000106  000000 000000    EXP 0
000107  000000 000000    EXP 0
000110  000000 000000    EXP 0
000111  000000 000000    EXP 0
000112  000000 000000    EXP 0
000113  000000 000000    EXP 0
000114  000000 000000    EXP 0
000115  000000 000000    EXP 0
000116  000000 000000    EXP 0
000117  000000 000000    EXP 0
000120  000000 000000    EXP 0
000121  000000 000000    EXP 0
000122  000000 000000    EXP 0
000123  000000 000000    EXP 0      ;REST OF PD LIST
000124  205440 000072'    CH3XIT:    MOVSI CH3N, CH3SAC
000125  251440 000011                BLT CH3N, CH3N
000126  254520 000130'               JEN @CH3
000127  777761 000104'    CH3CJ:     XWD -CH3PDN+1,CH3SAC+CH3N+1   ;INIT. SETTING OF PD POINTER(PDP)
000130  000000 000000    CH3:       0          ;PC STORED HERE BY JSR
000131  254000 000132'               JRST .+1   ;INSTR. AT END OF SERVICE CHAIN
000132  350000 000314'               AOS CH3ERR           ;SPURIOUS INTERRUPT, ADD TO COUNT
000133  254520 000130'               JEN @CH3   ;AND DISMISS
                                     ASSOC SCN,3,<TTY0,TTY1>
```

```
                                        ASSOC DTC,4,<DTA0>
000134  000000 000000   CH4SAV:  0
000135  202440 000153'           MOVEM CH4N, CH4SAC+CH4N
000136  201440 000142'           MOVEI CH4N, CH4SAC
000137  251440 000152'           BLT CH4N,CH4SAC+CH4N-1          ;DO ONLY ONCE FOR EACH CHANNEL
000140  200140 000177'           MOVE PDP, CH4CJ
000141  254020 000134'           JRST @CH4SAV
000142  000000 000000   EXP 0
000143  000000 000000   EXP 0
000144  000000 000000   EXP 0
000145  000000 000000   EXP 0
000146  000000 000000   EXP 0
000147  000000 000000   EXP 0
000150  000000 000000   EXP 0
000151  000000 000000   EXP 0
000152  000000 000000   EXP 0
000153  000000 000000   EXP 0    ;SPACE TO SAVE SOME ACS
000154  000000 000174'                EXP CH4XIT              ;FIRST ENTRY IN PD LIST(CHAN. EXIT)
000155  000000 000000   EXP 0
000156  000000 000000   EXP 0
000157  000000 000000   EXP 0
000160  000000 000000   EXP 0
000161  000000 000000   EXP 0
000162  000000 000000   EXP 0
000163  000000 000000   EXP 0
000164  000000 000000   EXP 0
000165  000000 000000   EXP 0
000166  000000 000000   EXP 0
000167  000000 000000   EXP 0
000170  000000 000000   EXP 0
000171  000000 000000   EXP 0
000172  000000 000000   EXP 0
000173  000000 000000   EXP 0    ;REST OF PD LIST
000174  205440 000142'   CH4XIT:  MOVSI CH4N, CH4SAC
000175  251440 000011            BLT CH4N, CH4N
000176  254520 000200'           JEN @CH4
000177  777761 000154'   CH4CJ:  XWD -CH4PDN+1,CH4SAC+CH4N+1   ;INIT. SETTING OF PD POINTER(PDP)
000200  000000 000000   CH4:     0          ;PC STORED HERE BY JSR
000201  254000 000202'           JRST .+1   ;INSTR. AT END OF SERVICE CHAIN
000202  350000 000315'           AOS CH4ERR          ;SPURIOUS INTERRUPT, ADD TO COUNT
000203  254520 000200'           JEN @CH4   ;AND DISMISS
                        00530
                        00540    ;SET UP NULL CHANNEL ROUTINES FOR UNUSED CHANNELS
                        00550
                        00560    DEFINE NULCHN(J)
                        00570    <
                        00580    INTERNAL CH'J,CH'J'XIT
                        00590    CH'J:      0
                        00600    CH'J'XIT: AOS CH'J'ERR
                        00610     JEN @CH'J
                        00620    >
                        00630
                        00640               IFE CHANU1,<NULCHN(1)>
                        NULCHN(1)
000204  000000 000000   CH1:     0
000205  350000 000312'   CH1XIT:  AOS CH1ERR
000206  254520 000204'           JEN @CH1
                        00650               IFE CHANU2,<NULCHN(2)>
                        NULCHN(2)
000207  000000 000000   CH2:     0
```

```
000210  350000 000313'   CH2XIT:   AOS CH2ERR
000211  254520 000207'             JEN @CH2
                         00660                IFE CHANU3,<NULCHN(3)>

                         00670                IFE CHANU4,<NULCHN(4)>

                         00680                IFE CHANU5,<NULCHN(5)>
                         NULCHN(5)
000212  000000 000000    CH5:      0
000213  350000 000316'   CH5XIT:   AOS CH5ERR
000214  254520 000212'             JEN @CH5
                         00690                IFE CHANU6,<NULCHN(6)>

                         00700                IFE CHANU7,<NULCHN(7)>
                         NULCHN(7)
000215  000000 000000    CH7:      0
000216  350000 000320'   CH7XIT:   AOS CH7ERR
000217  254520 000215'             JEN @CH7
                         00710
```

```
                                00720
                                00730     ;ASSIGN DEVICE TO CHANNELS AND SETUP CORESPONDENCE TABLE
                                00740     ;OF CHANNELS TO SERVICE ROUTINES
                                00750
                                00760     DEFINE ASSOC (A,N,D)
                                00770     <          A'RET=CH'N'XIT
                                00780      A'SAV=CH'N'SAV
                                00790      A'SAC=CH'N'SAC
                                00800      A'CHL=CH'N
                                00810      A'CHN=N
                                00820      A'BIT=1
                                00830      REPEAT 7-N,<A'BIT=A'BIT*2>
                                00840      A'OFF=1000+A'BIT    ;CONO PI, A'OFF WILL TURN CHANNEL OFF
                                00850      A'ON=2000+A'BIT     ;TURN BACK ON
                                00860      A'ACT=4000+A'BIT    ;FORCE INTERRUPT ON CHAN.
                                00870     INTERN A'RET, A'SAV, A'CHL, A'CHN, A'SAC
                                00880     INTERNAL A'OFF,A'ON,A'ACT,A'BIT
                                00890      XWD A'CHL,A'INT
                                00900      EXTERNAL A'INT
                                00910     >
                                00920
                                00930     INTERNAL DEVINT
                                00940     DEVINT:   SYSTEM
                                          ASSOC APR,6,<>
000220  000060'000000                     XWD APRCHL,APRINT
                                          ASSOC CTY,3,<>
000221  000130'000000                     XWD CTYCHL,CTYINT
                                          ASSOC SCN,3,<TTY0,TTY1>
000222  000130'000000                     XWD SCNCHL,SCNINT
                                          ASSOC DTC,4,<DTA0>
000223  000200'000000                     XWD DTCCHL,DTCINT
                                00950     NDEV=.-DEVINT       ;NO. OF DEVICE INTERUPT SERVICE ROUTINES
                                00960     NDEVM1=NDEV-1       ;(USED BY ONCE)
                                00970     INTERNAL NDEVM1
                                00980
                                00990
```

```
                                01000
                                01010     ;INITIALIZE SOME IO DEVICES
                                01020     ;IOINI CALLED BY A PUSHJ PDP, FROM SYSINI AT SYSTEM INITIALIZATION
                                01030
                                01040     DEFINE IOINIT (A)
                                01050     <IRP A
                                01060     <         EXTERNAL A'INI
                                01070      PUSHJ PDP,A'INI
                                01080     >>
                                01090
                                01100     DEFINE ASSOC (A,B,C)
                                01110     <         IFIDN <A><MTC>,< IOINIT MTC>
                                01120      IFIDN <A><DTC>,< IOINIT DTC>
                                01130      IFIDN <A><LPT>,< IOINIT LPT>
                                01140      IFIDN <A><SCN>,< IOINIT SCN>
                                01150      IFIDN <A><PTP>,<IOINIT PTP>
                                01160      IFIDN <A><PTR>,<IOINIT PTR>
                                01170     >
                                01180
                                01190     INTERNAL IOINI
                                01200
                                01210     IOINI:    SYSTEM
                                          ASSOC APR,6,<>
                                          ASSOC CTY,3,<>
                                          ASSOC SCN,3,<TTY0,TTY1>
000224  260140 000000                     PUSHJ PDP,SCNINI
                                          ASSOC DTC,4,<DTA0>
000225  260140 000000                     PUSHJ PDP,DTCINI
000226  254000 000000             01220           JRST CLKINI          ;ALWAYS INIT. CLOCK
                                01230
                                01240     EXTERNAL CLKINI
```

```
                                01250
                                01260     ;CLOCK CONTROL PARAMETERS
                                01270
                                01280               CLDS=4000+APRCHN    ;CLOCK DISABLE
                                01290               CLEN=2000+APRCHN    ;CLOCK ENABLE
                                01300
                                01310               INTERNAL CLDS,CLEN
                                01320
                                01330
                                01340     ;BYTE POINTERS
                                01350
000227  270400 000014           01360     PUUOAC:   POINT 4,UUO,12      ;UUO AC FIELD
000230  000400 000000           01370     PIOMOD:   POINT 4,IOS,35      ;MODE BITS
000231  331106 000001           01380     PJOBN:    POINT 9,DEVCHR(DEVDAT),8      ;DEVICE JOB ASSIGNMENT
000232  220406 000001           01390     PJDCHN:   POINT 4,DEVCHR(DEVDAT),17     ;JOB DEVICE CHANNEL NO.
000233  140606 000001           01400     PUNIT:    POINT 6,DEVCHR(DEVDAT),23     ;DEVICE UNIT NO.
                                01410
                                01420     INTERNAL PUUOAC,PIOMOD,PJOBN,PJDCHN,PUNIT
                                01430
                                01440     ;COMMON SUBROUTINE RETURNS
                                01450
000234  350003 000000           01460     CPOPJ2:   AOS (PDP)
000235  350003 000000           01470     CPOPJ1:   AOS (PDP)
000236  263140 000000           01480     CPOPJ:    POPJ PDP,
                                01490
                                01500     INTERNAL CPOPJ,CPOPJ1,CPOPJ2
```

```
                                01510
                                01520      ,SYSTEM DATA STORAGE
                                01530
                                01540
                                01550      INTERNAL JOB,JOBADR,JBTADR,JBTSTS,USRREL,USRINF,USRJDA
                                01560      INTERNAL USRPDP,JOBDAT,USRDDT,USRSAV,USRUXT,USRLO,USRHI
                                01570      INTERNAL COMCNT,IOCOMP,USRPOV,STOPU,SCHEDF,TIME,JBTAD1
                                01580      INTERNAL MTAVAL,DCAVAL,DTAVAL,MTREQ,DCREQ,DTREQ,TTYTAB,CORTAB
                                01590      INTERNAL CH1ERR,CH2ERR,CH3ERR,CH4ERR,CH5ERR,CH6ERR,CH7ERR
                                01600      INTERNAL CORLST,CORTAB,CORTAL,SYSEND,SYSBEG,DEVOPR
                                01610
                                01620      JOBN=0     ;DEFINE NO. OF JOBS (0 THRU JOBN-1)
                                01630      ;THERE MUST BE MORE TTY DEVICE DATA BLOCKS THAN JOBS.
                                01640
                                01650      DEFINE ASSOC (A,N,D)
                                01660      <IRP D,<IFIDN <A><SCN>,<JOBN=JOBN+1>>>
                                01670                SYSTEM
                                           ASSOC APR,6,<>
                                           ASSOC CTY,3,<>
                                           ASSOC SCN,3,<TTY0,TTY1>
                                           ASSOC DTC,4,<DTA0>
                                01680      MJOBN=-JOBN
                                01690      INTERNAL JOBN,MJOBN
                                01700
                                01710
                                01720      SYSBEG:    ;FIRST LOC IN SYSTEM DATA AREA
                                01730      XP SYSBG1,SYSBEG+1  ;FIRST LOC+1
000237  000000 000000          01740      JOB:       0        ;CURRENT JOB NUMBER EXCEPT WEN SCHEDF IS NON-ZERO
000240  000000 000000          01750      JOBADR:    0        ;CONTAINS ADDRESS OF JOB CURRENTLY RUNNING
000241  000000 000000          01760      JOBDAT:    0        ;CONTAINS ADDRESS OF JOB DATA AREA
                                01770
                                01780      JBTADR:    BLOCK JOBN          ;C(LH)=PROTECT, C(RH)=RELOCATION
                                01790      XP JBTAD1,JBTADR+1  ;ADDRESS OF JOB 1(USED BY SYSMAK)
                                01800      JBTSTS:    BLOCK JOBN          ;CONTAINS STATUS INFORMATION FOR EACH J
                                01810
000246  000000 000000          01820      USRPDP:    0        ;USER PUSH DOWN POINTER
000247  000000 000000          01830      USRREL:    0        ;LH=0, RH CONTAINS CONTENTS OF PROTECTION REGISTE
                                01840      USRLO:     ;FIRST LOC CLEARED BY SETUSR SUBROUTINE
000250  000000 000000          01850      USRUXT:    0        ;UNUSED, JOBUXT USED TO SAVE UUO PC(UUO0)
000251  000000 000000          01860      USRLEV:    0        ;UNUSED, JOBLEV USED TO SAVE LOC. 40
000252  000000 000000          01870      USRSAV:    0        ;TEMPORARY STORAGE FOR UUO HANDLER
000253  000000 000000          01880      USRPOV:    0        ;PUSH DOWN OVERFLOW TRAP
                                01890                 BLOCK 2
000256  000000 000000          01900      USRINF:    0        ;UN LAYED OUT USER INFORMATION
                                01910      USRJDA:    BLOCK 20 ;RH=JOB DEVICE ASSIGNMENTS FOR THIS USER,LH=UUOS
                                01920      XP USRHI,,-1        ;LAST LOC CLEARED BY SETUSR ROUTINE
                                01930      XP USRPFI,,-1       ;LAST LOC PROTECTED FROM IO SERVICE
                                01940      XP USRPFU,,         ;LAST LOC PROTECTED FROM USER PROGRAM
000277  000000 000000          01950      USRDDT:    0        ;STARTING ADDR OF USER DDT
                                01960
```

```
                                01970
                                01980      ;DEVICE JUST BECOME AVAILABLE FLAGS
000300  000000 000000           01990      MTAVAL:   0          ;MAGNETIC TAPE
000301  000000 000000           02000      DCAVAL:   0          ;DATA CONTROL
000302  000000 000000           02010      DTAVAL:   0          ;DECTAPE
                                02020
                                02030      ;NUMBER OF JOBS WAITING FOR BUSY DEVICES(-1=NONE, 0=1 USING, 1=1 USIN
000303  777777 777777           02040      MTREQ:    -1         ;MAGNETIC TAPE
000304  777777 777777           02050      DCREQ:    -1         ;DATA CONTROL
000305  777777 777777           02060      DTREQ:    -1         ;DECTAPE
000306  000000 000000           02070      IOCOMP:   0          ;NUMBER OF USERS IN IO WAIT STATE
000307  000000 000000           02080      COMCNT:   0          ;NUMBER OF COMMANDS TYPED-IN BUT NOT DECODED
000310  000000 000000           02090      STOPU:    0          ;NON-ZERO WHEN CLOCK INTERRUPT FORCED TO STOP USE
000311  000000 000000           02100      SCHEDF:   0          ;NON-ZERO WHEN CLOCK ROUTINE IS SCHEDULING
                                02110
000312  000000 000000           02120      CH1ERR:   0          ;SPURIOUS INTERRUPT COUNTS FOR EACH CHANNEL
000313  000000 000000           02130      CH2ERR:   0
000314  000000 000000           02140      CH3ERR:   0
000315  000000 000000           02150      CH4ERR:   0
000316  000000 000000           02160      CH5ERR:   0
000317  000000 000000           02170      CH6ERR:   0
000320  000000 000000           02180      CH7ERR:   0
                                02190
                                02200                 USRLO1=USRLO+1
                                02210                 INTERNAL USRLO1
```

```
                                02220
000321  000000 000000           02230     TIME:     0                   ;TIME SYSTEM HAS RUN IN 60THS OF A SECO
                                02240
                                02250
                                02260     XP TTYLEN,SCNLIN+1  ;LENGTH OF TTY TRANSLATOR TABLE(INCLUDING CTY)
                                02270     TTYTAB:   BLOCK TTYLEN          ;TTY TRANSLATOR TABLE
                                02280                                     ;SIGN BIT = 1 IF COMMAND JUST TYPED
                                02290                                     ;BITS 1 - 9, JOB CONSOLE IS ATTACHED TO
                                02300                                     ;BITS 18-35, THE DEVICE DATA BLOCK FOR
000324  000000 000000           02310     DEVOPR:   0           ;SIXBIT PHYSICAL NAME OF OPERATORS
                                02320                         ;CONSOLE SET BY SCNSER TO FIRST ACTIVE TTY.
                                02330     ;LOCATIONS FOR CORE ALLOCATION
                                02340     XP CORBLK,↑D256       ;NO. OF 1K BLOCKS POSSIBLE
                                02350     CORTAB:   BLOCK <CORBLK>/↑D36+1         ;1K BLOCK USE BIT TABLE
                                02360                                     ;A 1 MEANS BLOCK IS IN USE
000335  000000 000000           02370     CORLST:   0           ;1 BIT BYTE POINTER TO LAST FREE BLOCK POSSIBLE
000336  000000 000000           02380     CORTAL:   0           ;TOTAL NO. OF FREE CORE BLOCKS LEFT
                                02390     ;CORLST AND CORTAL ARE SET UP AT SYSTEM INITIALIZATION
                                02400
                                02410     SYSEND=.-1            ;LAST LOC. CLEARED BY SYSINI
                                02420
                                02430     INTERNAL SYSSIZ
                                02440     EXTERNAL SYSFIN
000337  000000 000000           02450     SYSSIZ:   EXP SYSFIN            ;SIZE OF MONITOR(LAST LOC. USED)
```

```
                                02460
                                02470
                                02480                   END,
```

THERE ARE NO ERRORS

PROGRAM BREAK IS 000340

SYMBOL TABLE

```
A                   000000  INT
AC1                 000015  INT
AC2                 000016  INT
AC3                 000017  INT
AL                  000001  INT
APRACT              004002  INT
APRBIT              000002  INT
APRCHL              000060' INT
APRCHN              000006  INT
APRINT              000220' EXT
APROFF              001002  INT
APRON               002002  INT
APRRET              000054' INT
APRSAC              000014' INT
APRSAV              000006' INT
ASSCON              400000  INT
ASSPRG              200000  INT
B                   000014  INT
BUFPNT              000012  INT
BUFWRD              000013  INT
CH1                 000204' INT
CH1ERR              000312' INT
CH1N                000000
CH1PDN              000000
CH1XIT              000205' INT
CH2                 000207' INT
CH2ERR              000313' INT
CH2N                000000
CH2PDN              000000
CH2XIT              000210' INT
CH3                 000130' INT
CH3CJ               000127'
CH3ERR              000314' INT
CH3N                000011
CH3PDN              000020
CH3SAC              000072' INT
CH3SAV              000064' INT
CH3XIT              000124' INT
CH4                 000200' INT
CH4CJ               000177'
CH4ERR              000315' INT
CH4N                000011
CH4PDN              000020
CH4SAC              000142' INT
CH4SAV              000134' INT
CH4XIT              000174' INT
CH5                 000212' INT
CH5ERR              000316' INT
CH5N                000000
CH5PDN              000000
CH5XIT              000213' INT
CH6                 000060' INT
CH6CJ               000057'
CH6ERR              000317' INT
CH6N                000017
```

SYMBOL TABLE

```
CH6PDN          000020
CH6SAC          000014' INT
CH6SAV          000006' INT
CH6XIT          000054' INT
CH7             000215' INT
CH7ERR          000320' INT
CH7N            000000
CH7PDN          000000
CH7XIT          000216' INT
CHANU1          000000
CHANU2          000000
CHANU3          000001
CHANU4          000001
CHANU5          000000
CHANU6          000001
CHANU7          000000
CLDS            004006  INT
CLEN            002006  INT
CLKINI          000226' EXT
CLOSB           002000  INT
CLSIN           000002  INT
CLSOUT          000001  INT
COMCNT          000307' INT
CONFIG          000000' INT
CORBLK          000400  INT
CORLST          000335' INT
CORTAB          000325' INT
CORTAL          000336' INT
CPOPJ           000236' INT
CPOPJ1          000235' INT
CPOPJ2          000234' INT
CTYACT          004020  INT
CTYBIT          000020  INT
CTYCHL          000130' INT
CTYCHN          000003  INT
CTYINT          000221' EXT
CTYOFF          001020  INT
CTYON           002020  INT
CTYRET          000124' INT
CTYSAC          000072' INT
CTYSAV          000064' INT
D               000017  INT
DAT             000005  INT
DCAVAL          000301' INT
DCL             000001  INT
DCREQ           000304' INT
DCW             020000  INT
DDI             000007  INT
DDO             000006  INT
DDTMEM          000037  INT
DDTSYM          000036  INT
DEN             000004  INT
DEVADR          000007  INT
DEVBUF          000006  INT
DEVCHR          000001  INT
```

SYMBOL TABLE

```
DEVCTR              000011  INT
DEVDAT              000006  INT
DEVIAD              000007  INT
DEVINT              000220' INT
DEVIOS              000002  INT
DEVLOG              000005  INT
DEVMOD              000004  INT
DEVNAM              000000  INT
DEVOAD              000010  INT
DEVOPR              000324' INT
DEVPTR              000010  INT
DEVSER              000003  INT
DGF                 000012  INT
DIN                 000003  INT
DLK                 000005  INT
DOU                 000002  INT
DR                  000016  INT
DRL                 000000  INT
DSI                 000011  INT
DSO                 000010  INT
DTAVAL              000302' INT
DTCACT              004010  INT
DTCBIT              000010  INT
DTCCHL              000200' INT
DTCCHN              000004  INT
DTCINI              000225' EXT
DTCINT              000223' EXT
DTCOFF              001010  INT
DTCON               002010  INT
DTCRET              000174' INT
DTCSAC              000142' INT
DTCSAV              000134' INT
DTREQ               000305' INT
DTSIZ               000001
DTW                 040000  INT
DVAVAL              000040  INT
DVCDR               100000  INT
DVDIR               000004  INT
DVDIRI              400000  INT
DVIN                000002  INT
DVLPT               040000  INT
DVMTA               000020  INT
DVOUT               000001  INT
DVTTY               000010  INT
ENTRB               020000  INT
ERROR               000000  EXT
I                   000010  INT
IB                  000013  INT
IBUFB               200000  INT
INITB               400000  INT
INPB                010000  INT
IO                  000020  INT
IOACT               010000  INT
IOREG               000002  INT
IORKTL              040000  INT
```

SYMBOL TABLE

```
IOCOMP          000306' INT
IOCON           000040  INT
IODEND          020000  INT
IODERR          200000  INT
IODISC          400000  INT
IODONE          400000  INT
IODTER          100000  INT
IOEND           000040  INT
IOFST           000004  INT
IOIMPM          400000  INT
IOINI           000224' INT
IONRCK          000100  INT
IORDEL          000100  INT
IORET           000020  INT
IOS             000000  INT
IOSTRT          000010  INT
IOUSE           400000  INT
IOW             000001  INT
IOWC            000020  INT
IOWS            400000  INT
ITEM            000004  INT
JBFADR          000000  INT
JBFCTR          000002  INT
JBFPTR          000001  INT
JBTAD1          000243' INT
JBTADR          000242' INT
JBTSTS          000244' INT
JBUF            000005  INT
JDAT            000011  INT
JERR            002000  INT
JIOW            100000  INT
JNA             004000  INT
JOB             000237' INT
JOBADR          000240' INT
JOBDAT          000241' INT
JOBN            000002  INT
LOOKB           040000  INT
MINIMA          000000  INT
MJOBN       777777777776  INT
MTAVAL          000300' INT
MTREQ           000303' INT
MTW             010000  INT
NDEV            000004
NDEVM1          000003  INT
OBUFB           100000  INT
OUTPB           004000  INT
PDP             000003  INT
PICHN           000100  INT
PIOMOD          000230' INT
PJDCHN          000232' INT
PJOBN           000231' INT
PROG            000007  INT
PUNIT           000233' INT
PUUOAC          000227' INT
RUN             200000  INT
```

SYMBOL TABLE

```
RUNABL          204000  INT
SCHEDF          000311' INT
SCNACT          004020  INT
SCNBIT          000020  INT
SCNCHL          000130' INT
SCNCHN          000003  INT
SCNINI          000224' EXT
SCNINT          000222' EXT
SCNLIN          000001
SCNOFF          001020  INT
SCNON           002020  INT
SCNRET          000124' INT
SCNSAC          000072' INT
SCNSAV          000064' INT
STOPU           000310' INT
SYSBEG          000237' INT
SYSBG1          000240' INT
SYSDAT          000002' INT
SYSEND          000336' INT
SYSFIN          000337' EXT
SYSMOD          000001  INT
SYSNUM          000004' INT
SYSSIZ          000337' INT
SYSTAP          000005' INT
SYSVER          000004  INT
TAC             000001  INT
TAC1            000002  INT
TEM             000010  INT
TIME            000321' INT
TTYATC          020000  INT
TTYLEN          000002  INT
TTYTAB          000322' INT
TTYUSE          010000  INT
USRDDT          000277' INT
USRHI           000276' INT
USRINF          000256' INT
USRJDA          000257' INT
USRLEV          000251'
USRLO           000250' INT
USRLO1          000251' INT
USRMOD          010000  INT
USRPDP          000246' INT
USRPFI          000276' INT
USRPFU          000277' INT
USRPOV          000253' INT
USRREL          000247' INT
USRSAV          000252' INT
USRUXT          000250' INT
UUO             000014  INT

END OF ASSEMBLY
```

```
01970
00010     ;SOME MACROS FOR DEFINING CONFIGURATION
00020
00030     DEFINE NAME (A)
00040     <DEFINE NAME1
00050     <CONFIG:  ASCIZ /A/
00060     INTERNAL CONFIG
00070     >
00080     XP A,0
00090     SUBTTL A CONFIGURATION
00100     >
00110
00120     DEFINE DATE (A)
00130     <DEFINE DATE1
00140     <SYSDAT:  ASCIZ /A/
00150     INTERNAL SYSDAT
00160     >>
00170
00180     DEFINE VERSION (A,B)
00190     <DEFINE VERS1
00200     <SYSNUM:  XWD ↑D'A,↑D'B
00210     XP SYSMOD,↑D'A
00220     XP SYSVER,↑D'B
00230     INTERNAL SYSNUM
00240     >>
00250
00260     DEFINE CUSPTAPE (A)
00270     <DEFINE CUSP1
00280     <SYSTAP:  SIXBIT /A/
00290     INTERNAL SYSTAP
00300     >>
00310
00320     DEFINE ACPDL (J,CHJN,CHJPDN)
00330     <          CH'J'N=CHJN
00340      CH'J'PDN=CHJPDN
00350     >
```

```
00360
00370                   NAME <MINIMAL>
```

```
00380                   DATE <8-16-65>
00390                   VERSION 1,4
00400                   CUSPTAPE DTA0
00410
00420       ;DEFINE THE IO PART OF THE SYSTEM
00430       ;THAT IS:
00440       ;           DEFINE INTERRUPT SERVICE ROUTINES TO BE USED
00450       ;          ASSIGN DEVICES TO PI CHANNELS
00460
00470       DEFINE SYSTEM
00480        <
00490        ASSOC APR,6,<>
00500        ASSOC CTY,3,<>
00510        ASSOC SCN,3,<TTY0,TTY1>
00520        ASSOC DTC,4,<DTA0>
00530       >
00540
00550
00560       DTSIZ=1    ;MULTIPLE DECTAPE DIRECTORIES
00570
00580       SCNLIN=1
00590
00600       ;DEFINE HIGHEST AC TO SAVE AND LENGTH OF PD LIST FOR EACH PI CHANNEL
00610
00620       ACPDL (1,0,0)
00630       ACPDL (2,0,0)
00640       ACPDL (3,11,20)
00650       ACPDL (4,11,20)
00660       ACPDL (5,0,0)
00670       ACPDL (6,17,20)
00680       ACPDL (7,0,0)
00020
00030       ;DEFINITIONS OF DEVCHN AND DEVBIT
00040       ;THESE ALSO OCCUR IN IOINI1
00050
00060       DEFINE ASSOC (A,N,D)
00070       <
00080        A'CHN=N
00090       >
00100
00110                   SYSTEM
            ASSOC APR,6,<>
            ASSOC CTY,3,<>
            ASSOC SCN,3,<TTY0,TTY1>
            ASSOC DTC,4,<DTA0>
00120
```

00130

```
00140
00150      ;APR PI BITS
00160
00170      APRBIT=1
00180      REPEAT 7-APRCHN,<APRBIT=APRBIT*2>
APRBIT=APRBIT*2
00190      XP PION,200          ;CONO PI,PION TURNS PI SYSTEM ON
00200      XP PIOFF,400         ;TURN IT OFF
00210      XP PICLK,PION+1B24+APRBIT     ;TURN PI ON, AND FORCE CLOCK INT.
00220      XP CLKOFF,1000+APRCHN         ;CONO APR,CLKOFF TURNS CLOCK FLAG OFF
```

```
                                00230
                                00240     ;ASSEMBLE ALL DEVICE DATA BLOCKS AND LINK THEM TOGETHER
                                00250
ER
                                00270
                                00280     DEFINE SCNDDB (A,B,C)
                                00290     <          INTERNAL C'DB
                                00300     C'DB:      ZZ=.
                                00310      SIXBIT /C/
                                00320      XWD A'CHN*PICHN,STTYBF+1     ;LONG ENOUGH FOR PRINTING
                                00330                          ;SEQUENCED CARD IMAGE.
                                00340                          ;USER BUFFERS ARE 2 WORDS
                                00350                          ;LONGER THAN THE MONITORY TTY BUFFERS.
                                00360      Ø
                                00370     EXTERNAL TTYDSP
                                00380      XWD C,TTYDSP
                                00390      XWD DVTTY+DVIN+DVOUT,3
                                00400      Ø
                                00410      Ø
                                00420      XWD PROG,Ø
                                00430      XWD PROG,Ø
                                00440      XP TTYPTR,.-ZZ
                                00450      Ø
                                00460      XP TTYCTR,.-ZZ
                                00470      Ø
                                00480      XP TTYSAV,.-ZZ
                                00490      Ø
                                00500      XP TTYBUF,.-ZZ
                                00510      XP TTYBM1,TTYBUF-1
                                00520     XP STTYBF,20
                                00530     XP STTYB1,STTYBF+1  ;LENGTH+1
                                00540      BLOCK STTYBF
                                00550     XP TTYBFE,.-ZZ-1
                                00560
                                00570
                                00580     ;LINE NO. PARAMETERS
                                00590     XP TTYLEN,SCNLIN+1  ;LENGTH OF TTY TRANSLATOR TABLE(INCLUDING TTY)
                                00600     XP TSCNLN,SCNLIN-1  ;HIGHEST TTY LINE NO.(NOT COUNTING CTY)
                                00610     XP TCONLN,TSCNLN+1  ;CTY LINE NUMBER
                                00620     XP MTTYLN,-TTYLEN   ;NEGATIVE LENGTH OF TRANSLATOR TABLE
                                00630     XP FSNCHN,SCNCHN*101 ;CHANNEL ASSIGN, FOR FULL DUPLEX SCN.
                                00640      XP TTYLST,TTY0DB   ;FIRST TTY DEVICE DATA BLOCK
                                00650      >
                                00660
                                00670     ;NEG. NO. OF TELTYPE DEVICE DATA BLOCKS
                                00680
                                00690     MLTTYL=0
                                00700     DEFINE ASSOC (A,N,D)
                                00710     <IRP D,<IFIDN <A>,<SCN>,<MLTTYL=MLTTYL-1>>>
                                00720
                                00730
                                00740               SYSTEM
                                          ASSOC APR,6,<>
                                          ASSOC CTY,3,<>
                                          ASSOC SCN,3,<TTY0,TTY1>
                                          ASSOC DTC,4,<DTA0>
                                00750
```

```
00760       INTERNAL MLTTYL
00770
```

```
00780
00790      ;MAG TAPE DEVICE DATA BLOCK
00800
00810      MTCNUM=0
00820
00830      DEFINE MTCDDB (A,B,C)
00840      <          INTERNAL C'DB
00850      C'DB:      SIXBIT /C/
00860      MTCNUM=MTCNUM+1
00870       XWD IORET+A'CHN*PICHN,<MTCNUM-1>*10000+201
00880
00890       0
00900       XWD C,MTDISP
00910      EXTERNAL MTDISP
00920       XWD 4400+DVMTA+DVIN+DVOUT,154403
00930       0
00940       0
00950       XWD PROG,0
00960       XWD PROG,0
00970      >
```

```
00980
00990     ;DECTAPE DEVICE DATA BLOCKS
01000
01010     DTCNUM=0
01020
01030     DEFINE DTCDDB (A,B,C)
01040     <          INTERNAL C'DB
01050     C'DB:      ZZ=.
01060      SIXBIT /C/
01070     DTCNUM=DTCNUM+1
01080      XWD IORET+A'CHN*PICHN,<DTCNUM-1>*10000+200
01090      0
01100      XWD C,UTDSP
01110     EXTERNAL UTDSP
01120      XWD 4400+DVDIR+DVIN+DVOUT,154403
01130      0
01140      0
01150      0
01160      0
01170     XP UFREE,.-ZZ          ;NEXT FREE BLOCK NO.
01180      0
01190     XP UDIR,.-ZZ           ;LINK TO DIRECTORY IN DATA BLOCK
01200      IFE DTSIZ,<           EXP DIRBUF
01210     >
01220     IFN DTSIZ,<           EXP DTDIR+200*<DTCNUM-1>
01230     >
01240     >
01250     >
```

```
01260
01270      ;LINE PRINTER DEVICE DTA BLOCK
01280
01290      DEFINE LPTDDB (A,B,C)
01300      <INTERNAL LPTDB,LPTDAT,LPTCHR,LPTIOS,LPTSER,LPTMOD
01310      INTERNAL LPTBUF,LPTPTR,LPTADR,LPTSV1
01320      EXTERNAL LPTDSP
01330
01340      LPTDB:
01350      LPTDAT:   SIXBIT /LPT/
01360      LPTCHR:   XWD A'CHN*PICHN,32
01370      LPTIOS:   0
01380      LPTSER:   XWD C,LPTDSP
01390      LPTMOD:   XWD 0+DVOUT,3
01400       0
01410      LPTBUF:   0
01420      LPTPTR:   0
01430      LPTADR:   XWD PROG,0
01440      LPTSV1:   0
01450
01460      XP LPTCLB,LPTCHN+200 ;PI CHANNEL AND BUSY FLAG
01470      XP LPTCHB,11*LPTCHN ;LINE PRINTER ERROR AND DATA CHANNELS
01480      >
```

```
01490
01500      ;CARD READER DEVICE DATA BLOCK
01510
01520      DEFINE CDRDDB (A,B,C)
01530      <INTERNAL CDRDB,CDRDAT,CRDIS
01540      EXTERNAL CDRDSP
01550
01560      CDRDB:
01570      CDRDAT:   SIXBIT /CDR/
01580       XWD A'CHN*PICHN,34 ;LONG ENOUGH FOR BINARY CARDS
01590       0
01600       XWD C,CDRDSP
01610       XWD DVCDR+1400+DVIN,14403
01620       0
01630       0
01640       XWD PROG,0
01650       0
01660       0
01670      CRDIS:    JRST .
01680      >
```

```
01690
01700      ;PAPER TAPE READER DEVICE DATA BLOCK
01710
01720      DEFINE PTRDDB (A,B,C)
01730      <INTERNAL PTRDB,PTRDAT,PTRCHR,PTRIOS,PTRSER
01740      INTERNAL PTRMOD,PTRBUF,PTRADR,PTRPTR,PTRCTR,PTRSVC,PTRSV1
01750      EXTERNAL PTRDSP
01760
01770      PTRDB:
01780      PTRDAT:   SIXBIT /PTR/
01790      PTRCHR:   XWD A'CHN*PICHN,41
01800      PTRIOS:   0
01810      PTRSER:   XWD C,PTRDSP
01820      PTRMOD:   XWD 1000+DVIN,14403
01830       0
01840      PTRBUF:   0
01850      PTRADR:   XWD PROG,0
01860      PTRPTR:   0
01870      PTRCTR:   0
01880      PTRSVC:   0
01890      PTRSV1:   0
01900      >
```

```
01910
01920      ;PAPER TAPE PUNCH DEVICE DATA BLOCK
01930
01940      DEFINE PTPDDB (A,B,C)
01950      <INTERNAL PTPDB,PTPDAT,PTPCHR,PTPIOS,PTPSER,PTPMOD,PTPBUF
01960      INTERNAL PTPPTR,PTPADR,PTPCTR,PTPCNT,PTPCHA,PTPSIO
01970      EXTERNAL PTPDSP
01980
01990      PTPDB:
02000      PTPDAT:   SIXBIT /PTP/
02010      PTPCHR:   XWD A'CHN*PICHN,41
02020      PTPIOS:   0
02030      PTPSER:   XWD C,PTPDSP
02040      PTPMOD:   XWD 1000+DVOUT,14403
02050       0
02060      PTPBUF:   0
02070      PTPPTR:   0
02080      PTPADR:   XWD PROG,0
02090      PTPCTR:   0
02100      PTPCNT:   0
02110      PTPCHA:   0
02120      PTPSIO:   0
02130      >
```

```
                                02140
                                02150     ;GENERATE DEVICE DATA BLOCKS NEEDED FOR THIS CONFIGURATION
                                02160
                                02170     DEFINE ASSOC (A,B,C)
                                02180     <
                                02190     IRP C,<
                                02200                ;DEFINE FORWARD LINL SYMBOL
                                02210      LINK
                                02220     ;
                                02230     ;
                                02240     ;
                                02250      A'DDB A,B,C
                                02260
                                02270     C=0          ;SET LINK TO 0(IN CASE THIS IS LAST DDB)
                                02280     DEFINE LINK
                                02290     <C=.>
                                02300     >
                                02310     >
                                02320
                                02330     INTERNAL DEVLST
                                02340
000000  000001'000000         02350     DEVLST:   XWD FIRDB,0          ;BEGINNING OF DEVICE DATA BLOCK CHAIN
                                02360
                                02370     DEFINE LINK
                                02380     <FIRDB=.>
                                02390
                                02400               SYSTEM
                                          ASSOC APR,6,<>
                                          ASSOC CTY,3,<>
                                          ASSOC SCN,3,<TTY0,TTY1>
000001  646471 200000                     SIXBIT /TTY0/
000002  000300 000021                     XWD SCNCHN*PICHN,STTYBF+1      ;LONG ENOUGH FOR PRINTING
000003  000000 000000                     0
000004  000035'000000                     XWD TTY0,TTYDSP
000005  000013 000003                     XWD DVTTY+DVIN+DVOUT,3
000006  000000 000000                     0
000007  000000 000000                     0
000010  000007 000000                     XWD PROG,0
000011  000007 000000                     XWD PROG,0
000012  000000 000000                     0
000013  000000 000000                     0
000014  000000 000000                     0
000035  646471 210000                     SIXBIT /TTY1/
000036  000300 000021                     XWD SCNCHN*PICHN,STTYBF+1      ;LONG ENOUGH FOR PRINTING
000037  000000 000000                     0
000040  000071'000004'                    XWD TTY1,TTYDSP
000041  000013 000003                     XWD DVTTY+DVIN+DVOUT,3
000042  000000 000000                     0
000043  000000 000000                     0
000044  000007 000000                     XWD PROG,0
000045  000007 000000                     XWD PROG,0
000046  000000 000000                     0
000047  000000 000000                     0
000050  000000 000000                     0
                                          ASSOC DTC,4,<DTA0>
000071  446441 200000                     SIXBIT /DTA0/
000072  000420 000200                     XWD IORET+DTCCHN*PICHN,<DTCNUM-1>*10000+200
```

```
000073  000000 000000                   0
000074  000000 000000                   XWD DTA0,UTDSP
000075  004407 154403                   XWD 4400+DVDIR+DVIN+DVOUT,154403
000076  000000 000000                   0
000077  000000 000000                   0
000100  000000 000000                   0
000101  000000 000000                   0
000102  000000 000000                   0
000103  000000 000104'                  EXP DTDIR+200*<DTCNUM-1>
```

```
                        02410
                        02420               LIT
                        02430
                        02440               IFE DTSIZ,<         DIRBUF:   BLOCK 200
                        02450     INTERNAL DIRBUF
                        02460     >

                        02470     IFN DTSIZ,<DTDIR:   BLOCK DTCNUM*200
                        02480     INTERNAL DTDIR
                        02490     >
                        DTDIR:    BLOCK DTCNUM*200
                        INTERNAL DTDIR

                        02500
                        02510               END,
```

THERE ARE NO ERRORS

PROGRAM BREAK IS 000304

SYMBOL TABLE

```
A                   000000  INT
AC1                 000015  INT
AC2                 000016  INT
AC3                 000017  INT
AL                  000001  INT
APRBIT              000002
APRCHN              000006
ASSCON              400000  INT
ASSPRG              200000  INT
B                   000014  INT
BUFPNT              000012  INT
BUFWRD              000013  INT
CH1N                000000
CH1PDN              000000
CH2N                000000
CH2PDN              000000
CH3N                000011
CH3PDN              000020
CH4N                000011
CH4PDN              000020
CH5N                000000
CH5PDN              000000
CH6N                000017
CH6PDN              000020
CH7N                000000
CH7PDN              000000
CLKOFF              001006  INT
CLOSB               002000  INT
CLSIN               000002  INT
CLSOUT              000001  INT
CTYCHN              000003
D                   000017  INT
DAT                 000005  INT
DCL                 000001  INT
DCW                 020000  INT
DDI                 000007  INT
DDO                 000006  INT
DDTMEM              000037  INT
DDTSYM              000036  INT
DEN                 000004  INT
DEVADR              000007  INT
DEVBUF              000006  INT
DEVCHR              000001  INT
DEVCTR              000011  INT
DEVDAT              000006  INT
DEVIAD              000007  INT
DEVIOS              000002  INT
DEVLOG              000005  INT
DEVLST              000000' INT
DEVMOD              000004  INT
DEVNAM              000000  INT
DEVOAD              000010  INT
DEVPTR              000010  INT
DEVSER              000003  INT
DGF                 000012  INT
```

SYMBOL TABLE

```
DIN                 000003  INT
DLK                 000005  INT
DOU                 000002  INT
DR                  000016  INT
DRL                 000000  INT
DSI                 000011  INT
DSO                 000010  INT
DTA0                000000
DTA0DB              000071' INT
DTCCHN              000004
DTCNUM              000001
DTDIR               000104' INT
DTSIZ               000001
DTW                 040000  INT
DVAVAL              000040  INT
DVCDR               100000  INT
DVDIR               000004  INT
DVDIRI              400000  INT
DVIN                000002  INT
DVLPT               040000  INT
DVMTA               000020  INT
DVOUT               000001  INT
DVTTY               000010  INT
ENTRB               020000  INT
FIRDB               000001'
FSNCHN              000303  INT
I                   000010  INT
IB                  000013  INT
IBUFB               200000  INT
INITB               400000  INT
INPB                010000  INT
IO                  000020  INT
IOACT               010000  INT
IOBEG               000002  INT
IOBKTL              040000  INT
IOCON               000040  INT
IODEND              020000  INT
IODERR              200000  INT
IODISC              400000  INT
IODONE              400000  INT
IODTER              100000  INT
IOEND               000040  INT
IOFST               000004  INT
IOIMPM              400000  INT
IONRCK              000100  INT
IORDEL              000100  INT
IORET               000020  INT
IOS                 000000  INT
IOSTRT              000010  INT
IOUSE               400000  INT
IOW                 000001  INT
IOWC                000020  INT
IOWS                400000  INT
ITEM                000004  INT
JBFADR              000000  INT
```

SYMBOL TABLE

```
JBFCTR              000002  INT
JBFPTR              000001  INT
JBUF                000005  INT
JDAT                000011  INT
JERR                002000  INT
JIOW                100000  INT
JNA                 004000  INT
LOOKB               040000  INT
MINIMA              000000  INT
MLTTYL         777777777776  INT
MTCNUM              000000
MTTYLN         777777777776  INT
MTW                 010000  INT
OBUFB               100000  INT
OUTPB               004000  INT
PDP                 000003  INT
PICHN               000100  INT
PICLK               004202  INT
PIOFF               000400  INT
PION                000200  INT
PROG                000007  INT
RUN                 200000  INT
RUNABL              204000  INT
SCNCHN              000003
SCNLIN              000001
STTYB1              000021  INT
STTYBF              000020  INT
TAC                 000001  INT
TAC1                000002  INT
TCONLN              000001  INT
TEM                 000010  INT
TSCNLN              000000  INT
TTY0                000035'
TTY0DB              000001' INT
TTY1                000071'
TTY1DB              000035' INT
TTYATC              020000  INT
TTYBFE              000033  INT
TTYBM1              000013  INT
TTYBUF              000014  INT
TTYCTR              000012  INT
TTYDSP              000040' EXT
TTYLEN              000002  INT
TTYLST              000001' INT
TTYPTR              000011  INT
TTYSAV              000013  INT
TTYUSE              010000  INT
UDIR                000012  INT
UFREE               000011  INT
USRMOD              010000  INT
UTDSP               000074' EXT
UUO                 000014  INT
ZZ                  000071'

END OF ASSEMBLY
```