```
a   a  aaaa   a   a    a     aaaaa  aaa   a      aaa               a            aaaa   aaaa    aaaa  aaaa  aaaaa
a   a  a   a  a   a   aa     a      a  a  a a    a  a              a            a   a  a   a   a  a  a  a  a   a
a   a  a   a  a   a   a      aaaa   a aa  a a    a                 a            a   a  aaaa    a     a  a  a   a
aaaaa  a   a  a       a         a   aa a  aaaaa  a                 a            a   a  a   a   a     a  a  a   a
a   a  a   a  a   a   a         a   a  a      a  a  a       aa     a     aa     a   a  a   a   a  a  a  a  a   a
a   a  aaaa   a   a   a       aaa   aaa       a   aaa       aaaaa  aa    aaaa   aaaa   aaaa    aaaa  aaaa      a
```

12/24/81   12:42:43   PRINTOUT #924

DENNIS HAUGH

```
         000001                                    2   TITLE DBTL SOFTWARE
         000002                                    4   XDEF E$DBTL         NEEDED FOR MODULE MAP
                         0387
         000003          0000                       5  S$DBTL EQU $        START OF MODULE DBTL
```

```
000004                              1000 /EJECT
000005                              1010 *
000006                              1020 *IO DRIVERS
000007                              1030 *
000008              0000            1040 $IOCH0 EQU Z'0000'                 IO CHANNELS
000009              0040            1050 $IOCH1 EQU Z'0040'
000010              0080            1060 $IOCH2 EQU Z'0080'
000011              00C0            1070 $IOCH3 EQU Z'00C0'
000012                              1080 *
000013              0001            1090 $OTCTL EQU Z'0001'                 CONTROL INFORMATION OUTPUT
000014              0002            1100 $ICTLI EQU Z'0002'                 INPUT INT CONTROL INFO
000015              0003            1110 $ICTLO EQU Z'0003'                 OUTPUT INT CONTROL INFO
000016              0005            1120 $OCCTL EQU Z'0005'                 OUTPUT CHANNEL CONTROL
000017              0006            1130 $TSKRI EQU Z'0006'                 INPUT TASK REGISTER
000018              0007            1140 $TSKRO EQU Z'0007'                 OUTPUT TASK REGISTER
000019              0008            1150 $INMBA EQU Z'0008'                 INPUT MEMORY BYTE ADDRESS
000020              000A            1160 $INMMA EQU Z'000A'                 INPUT MEMORY MODULE ADDRESS
000021              000C            1170 $INRNG EQU Z'000C'                 INPUT RANGE RESIDUE
000022              000F            1180 $OBCTL EQU Z'000F'                 OUTPUT BUFFER CONTROL
000023              0010            1190 $CFGAI EQU Z'0010'                 INPUT CNFG REGISTER A
000024              0011            1200 $CFGAO EQU Z'0011'                 OUTPUT CNFG REGISTER A
000025              0012            1210 $CFGBI EQU Z'0012'                 INPUT CNFG REGISTER B
000026              0013            1220 $CFGBO EQU Z'0013'                 OUTPUT CNFG REGISTER B
000027                              1230 *
000028              0018            1240 $ISTS1 EQU Z'0018'                 INPUT STATUS REG 1
000029              001A            1250 $ISTS2 EQU Z'001A'                 INPUT STATUS REG 2
000030              0026            1260 $IDINP EQU Z'0026'                 INPUT DEVICE ID
000031                              1270 *
000032              0009            1280 $IOLD EQU Z'0009'  SIMPLE LOAD (NO DIRECTION)
000033              0009            1290 $IOLDI EQU $IOLD+$IOCH0            LOAD AND START DCW EXECUTION (TO US)
000034              0049            1300 $IOLDO EQU $IOLD+$IOCH1            LOAD AND START DCW EXECUTION (FROM US)
000035                              1310 *
000036                              1320 *MISCELLANEOUS CHANNELS
000037                              1330 *
000038              0000            1340 CPUOCH EQU 0          CHANNEL OF CPU#0
000039              0400            1350 BTLDCH EQU Z'0400'                 BOOTLOAD CHANNEL
000040              FF80            1355 LASTCH EQU Z'FF80' LAST POSSIBLE L6 CHANNEL TO CHECK FOR DISKETTE
000041                              1360 *
000042                              1370 *
000043                              1380 *CLOCK BLOCK DEFINITIONS
000044                              1390 *
000045              0001            1400 FPTR EQU 1            FIRST BLOCK POINTER
000046              0002            1410 LPTR EQU 2            LAST BLOCK POINTER (SAF)
000047                              1420 *
000048              0003            1430 USRDTA EQU 3          START OF DATA IN QUEUE BLOCKS
000049                              1440 *
000050              0003            1450 SWORD EQU 3           S-REGISTER OR STATUS
000051              0004            1460 UWORD EQU 4           USERS XB7
000052              0006            1470 RWORD EQU 6           RUN ADDRESS
```

```
000053                          2000 /EJECT
000054                          2001 *
000055                          2002 *ASCII VALUES
000056                          2003 *
000057                          2004 *CONTROL CHARACTERS
000058                          2005 *
000059          000D            2006 $ASCCR EQU 13
000060          000A            2007 $ASCLF EQU 10
000061          001B            2008 $ASCEC EQU 27
000062          0D0A            2009 $CRLF EQU $ASCCR*Z'0100'+$ASCLF      C/R L/F PAIR
000063                          2010 *
000064                          2011 *NUMBERS (0-9)
000065                          2012 *
000066          0030            2013 $ASC0 EQU 48
000067          0031            2014 $ASC1 EQU 49
000068          0032            2015 $ASC2 EQU 50
000069          0033            2016 $ASC3 EQU 51
000070          0034            2017 $ASC4 EQU 52
000071          0035            2018 $ASC5 EQU 53
000072          0036            2019 $ASC6 EQU 54
000073          0037            2020 $ASC7 EQU 55
000074          0038            2021 $ASC8 EQU 56
000075          0039            2022 $ASC9 EQU 57
000076                          2023 *
000077                          2024 *LETTERS (A-Z)
000078                          2025 *
000079          0041            2026 $ASCA EQU 65
000080          0042            2027 $ASCB EQU 66
000081          0043            2028 $ASCC EQU 67
000082          0044            2029 $ASCD EQU 68
000083          0045            2030 $ASCE EQU 69
000084          0046            2031 $ASCF EQU 70
000085          0047            2032 $ASCG EQU 71
000086          0048            2033 $ASCH EQU 72
000087          0049            2034 $ASCI EQU 73
000088          004A            2035 $ASCJ EQU 74
000089          004B            2036 $ASCK EQU 75
000090          004C            2037 $ASCL EQU 76
000091          004D            2038 $ASCM EQU 77
000092          004E            2039 $ASCN EQU 78
000093          004F            2040 $ASCO EQU 79
000094          0050            2041 $ASCP EQU 80
000095          0051            2042 $ASCQ EQU 81
000096          0052            2043 $ASCR EQU 82
000097          0053            2044 $ASCS EQU 83
000098          0054            2045 $ASCT EQU 84
000099          0055            2046 $ASCU EQU 85
000100          0056            2047 $ASCV EQU 86
000101          0057            2048 $ASCW EQU 87
000102          0058            2049 $ASCX EQU 88
000103          0059            2050 $ASCY EQU 89
000104          005A            2051 $ASCZ EQU 90
```

```
000105                              2052 /EJECT
000106                              2053 *
000107                              2054 *SPECIAL CHARACTERS
000108                              2055 *
000109              0020            2056 $ASCSP EQU 32
000110              0024            2057 $ASCDL EQU 36
000111              0027            2058 $ASCAP EQU 39
000112              0028            2059 $ASCLP EQU 40
000113              0029            2060 $ASCRP EQU 41
000114              002A            2061 $ASCAS EQU 42
000115              002B            2062 $ASCPL EQU 43
000116              002C            2063 $ASCCM EQU 44
000117              002D            2064 $ASCDS EQU 45
000118              002E            2065 $ASCDT EQU 46
000119              002F            2066 $ASCFS EQU 47
000120              003A            2067 $ASCCN EQU 58
000121              003B            2068 $ASCSC EQU 59
000122              003C            2069 $ASCLT EQU 60
000123              003D            2070 $ASCEQ EQU 61
000124              003E            2071 $ASCGT EQU 62
000125              003F            2072 $ASCQM EQU 63
000126              0040            2073 $ASCAT EQU 64
000127              005C            2074 $ASCBS EQU 92
000128              005E            2075 $ASCUA EQU 94
000129              005F            2076 $ASCBA EQU 95
000130              007F            2077 $ASCRO EQU 127
000131              7F7F            2078 $RORO EQU $ASCRO*Z'0100'+$ASCRO        TIME DELAY PAIR
000132                              2079 *
000133                              2030 *CONTROL CHARACTERS
000134                              2081 *
000135              0005            2082 $ACCE EQU $ASCE-64
000136              0018            2083 $ACCX EQU $ASCX-64
000137              001A            2084 $ACCZ EQU $ASCZ-64
000138                              2085 *
000139              0009            2086 $ASCHT EQU 9          HORIZONTAL TAB
000140              000B            2087 $ASCVT EQU 11         VERTICAL TAB
000141              000C            2088 $ASCFF EQU 12         FORM FEED
000142              0019            2089 $ASCEM EQU 25         END MEDIA
000143              001D            2090 $ASCGS EQU 29         GROUP SEPERATOR
000144              001E            2091 $ASCRS EQU 30         RECORD SEPERATOR
```

```
000145                                 2092 /EJECT
000146                                 2093 *
000147                                 2094 *SPEED ASSIGNMENT TABLES
000148                                 2095 *
000149          0000                   2096 $S10 EQU 0              LEVEL6 CODING FOR SPEED TABLES
000150          0002                   2097 $S15 EQU 2
000151          0003                   2098 $S30 EQU 3
000152          0004                   2099 $S60 EQU 4
000153          0005                   2100 $S120 EQU 5
000154          0006                   2101 $S180 EQU 6
000155          000A                   2102 $S240 EQU 10
000156          000B                   2103 $S480 EQU 11
000157          000C                   2104 $S960 EQU 12
000158          000D                   2105 $S1920 EQU 13
000159                                 2106 *
000160          0010                   2107 $SMAX EQU 16            UP TO SIXTEEN DIFFERENT SPEED SETTINGS
000161                                 2108 *
000162                                 2109 *
000163                                 2110 *SET MODE CONSTANTS
000164                                 2111 *
000165          0040                   2112 SM$000 EQU Z'0040'                          BASE FOR MODE SETTING COMMANDS
000166                                 2113 *
000167          0040                   2114 SM$ECH EQU Z'0040'                          SET ECHOPLEX
000168          0041                   2115 SM$ROT EQU Z'0041'                          SET RAW OUTPUT
000169          0042                   2116 SM$MFR EQU Z'0042'                          MAINFRAME READY
000170          0043                   2117 SM$E00 EQU Z'0043'                          MAINFRAME LOGICAL END OF OUTPUT
000171          0044                   2118 SM$FRD EQU Z'0044'                          SET FRIDEN MODE
000172          0045                   2119 SM$RDO EQU Z'0045'                          READ OUTSTANDING
000173          0046                   2120 SM$IDY EQU Z'0046'                          IDLE DELAY (TIME/FILL)
000174                                 2121 *
000175          0060                   2122 SM$DLY EQU Z'0060'                          SET DELAY PARAMETERS
000176          0060                   2123 SM$DL0 EQU SM$DLY+0
000177          0061                   2124 SM$DL1 EQU SM$DLY+1
000178          0062                   2125 SM$DL2 EQU SM$DLY+2
000179          0063                   2126 SM$DL3 EQU SM$DLY+3
000180          0064                   2127 SM$DL4 EQU SM$DLY+4
000181          0065                   2128 SM$DL5 EQU SM$DLY+5
000182          0066                   2129 SM$DL6 EQU SM$DLY+6
000183          0067                   2130 SM$DL7 EQU SM$DLY+7
000184                                 2131 *
000185          0068                   2132 SM$OMD EQU Z'0068'                          SET OUTPUT MODE
000186          0068                   2133 SM$OM0 EQU SM$OMD+0
000187          0069                   2134 SM$OM1 EQU SM$OMD+1
000188          006A                   2135 SM$OM2 EQU SM$OMD+2
000189          006B                   2136 SM$OM3 EQU SM$OMD+3
```

```
000190                              3000 /EJECT
000191                              3001 *
000192                              3002 *HARDWARE SPECIFIC INFORMATION
000193                              3003 *
000194                              3004 *START OF INTERRUPT VECTOR (IV00) AND FAULT VECTOR (FV00)
000195                              3005 *     +1=IV01    -1=FV01
000196                              3006 ********** IVECT EQU Z'0080'
000197                              3007 *
000198                              3008 *BIT MASK ASSIGNMENTS
000199                              3009 *
000200            0001              3010 $MKB7 EQU Z'0001'
000201            0002              3011 $MKB6 EQU Z'0002'
000202            0004              3012 $MKB5 EQU Z'0004'
000203            0008              3013 $MKB4 EQU Z'0008'
000204            0010              3014 $MKB3 EQU Z'0010'
000205            0020              3015 $MKB2 EQU Z'0020'
000206            0040              3016 $MKB1 EQU Z'0040'
000207            0080              3017 $MKI EQU Z'0080'
000208            0100              3018 $MKR7 EQU Z'0100'
000209            0200              3019 $MKR6 EQU Z'0200'
000210            0400              3020 $MKR5 EQU Z'0400'
000211            0800              3021 $MKR4 EQU Z'0800'
000212            1000              3022 $MKR3 EQU Z'1000'
000213            2000              3023 $MKR2 EQU Z'2000'
000214            4000              3024 $MKR1 EQU Z'4000'
000215            8000              3025 $MKM1 EQU Z'8000'
000216                              3026 *
000217            7000              3027 $MKR13 EQU $MKR1+$MKR2+$MKR3
000218            0F00              3028 $MKR47 EQU $MKR4+$MKR5+$MKR6+$MKR7
000219            0070              3029 $MKB13 EQU $MKB1+$MKB2+$MKB3
000220            000F              3030 $MKB47 EQU $MKB4+$MKB5+$MKB6+$MKB7
000221            9090              3031 $MKSTD EQU $MKM1+$MKI+$MKR3+$MKB3        STANDARD REGISTERS TO SAVE
000222                              3032 *
000223                              3033 *
000224                              3034 *IV SAVED REGISTERS OFFSET
000225                              3035 *
000226            FFFC              3036 $IVLEV EQU Z'FFFC'                  LEVEL ASSOCIATED (SOFT)
000227            FFFF              3037 $IVTSA EQU Z'FFFF'                  TSAP
000228            0000              3038 $IVDEV EQU 0          DEVICE
000229            0001              3039 $IVMSK EQU 1          MASK
000230            0003              3040 $IVP EQU 3
000231            0004              3041 $IVS EQU 4
000232            0005              3042 $IVREG EQU 5          START OF REGISTERS
000233            000B              3043 $IVB1 EQU 11
000234            000C              3044 $IVI EQU 12
000235            0013              3045 $IVR1 EQU 19
000236            0014              3046 $IVM1 EQU 20
000237            001B              3047 $IVT EQU 27
```

```
000238                          3048 /EJECT
000239                          3049 *
000240                          3050 *TRAP SAVE AREA OFFSETS
000241                          3051 *
000242          0000            3052 $TSAL EQU 0           NEXT LINK
000243          0001            3053 $TSAI EQU 1           INDICATOR REGISTER
000244          0002            3054 $TSAR3 EQU 2          XR3
000245          0003            3055 $TSACM EQU 3          COMMAND
000246          0004            3056 $TSAZ EQU 4           Z-WORD
000247          0005            3057 $TSAA EQU 5           ADDRESS
000248          0006            3058 $TSAP EQU 6           P-REGISTER
000249          0001            3059 $TSAPX EQU $TSAP-$TSAA          P-REG AS ADDRESSED BY TRAP ROUTINE
000250          0007            3060 $TSAB3 EQU 7          XB3
000251          0003            3061 $TSATM EQU 8-$TSAA               TEMP WORD
000252          0008            3062 $TSAWD EQU 8           FOR NON-TRAP ROUTINES, THE TEMP WORD
000253          0009            3063 $TSALN EQU 9           LENGTH OF TRAP SAVE AREA
000254                          3064 *
000255                          3065 *
000256          6000            3066 $SRGP3 EQU Z'6000'               SREGISTER PRIORITY 3
000257                          3067 *
000258                          3068 *
000259                          3069 *LEVEL INSTRUCION WORDS
000260                          3070 *
000261          803F            3071 $LVEXI EQU Z'803F'              SUSPEND, SCAN, AND DISPATCH
000262          4000            3072 $LVSCH EQU Z'4000'              SCHEDULE INTERRUPT, DEFER
000263          8000            3073 $LVEXE EQU Z'8000'              SUSPEND, SCAN, SCHEDULE, AND DISPATCH
000264          0000            3074 $LVENT EQU Z'0000'              SCHEDULE, SCAN, DISPATCH (RETURN LATER)
000265          0080            3075 $LVDIS EQU Z'0080'              INHIBIT
000266          8080            3076 $LVDSX EQU Z'8080'              SUSPEND,INHIBIT
000267          0000            3077 $LVDIE EQU $LVENT+0             CRASH LEVEL INSTRUCTIONS DATA
000268                          3078 *
000269                          3079 *MODE REGISTER CONSTANTS
000270                          3080 *
000271          8080            3081 $M1JST EQU Z'8080'              SET JUMP TRACE
000272          8000            3082 $M1JRS EQU Z'8000'              RESET JUMP TRACE
000273          0080            3083 $M1JTS EQU Z'0080'              TEST JUMP TRACE
```

```
000274                          3084 /EJECT
000275                          3085 *
000276                          3086 *ASSIGNED LEVELS
000277                          3087 *
000278        0000              3088 ERRLEV EQU 0          POWER FAIL AND CRASH LEVEL
000279        0001              3089 WDTLEV EQU 1          WATCH DOG TIMER LEVEL
000280        0002              3090 TSOVLV EQU 2          TRAP SAVE AREA OVERFLOW AREA
000281        0003              3091 HANGLV EQU 3          STARTUP AND HANG LEVEL
000282        0004              3092 RTCLEV EQU 4          REAL TIME CLOCK LEVEL
000283        0005              3093 WATLEV EQU 5          WATCH COPY LEVEL
000284        0008              3094 MCPLEV EQU 8          ASYNC MLCP LINE CARD
000285        000A              3095 SX25LV EQU 10         SYNC MLCP LINE CARD (USING X25)
000286        0010              3096 CPLRLV EQU 16         COUPLER LEVELS (16,17,18,19)
000287        0030              3097 NETLEV EQU 48         X25 NETWORK PACKET LEVEL
000288        0031              3098 SBSCLV EQU 49         SYNC MLCP LINE CARD (USING BSC)
000289        0036              3099 CNSLEV EQU 54         CONSOLE HARDWARE LEVEL (BASE FOR SOFTWARE)
000290        0037              3100 SYCLEV EQU CNSLEV+1                          SYSTEMS CONTROL LEVEL
000291        0038              3101 MSGLEV EQU SYCLEV+1                          SYSTEMS MESSAGES LEVEL
000292        003C              3102 DBGLEV EQU 60         DEBUGGER PRIMARY; SECONDARY=+1
000293        003E              3103 DEVLEV EQU 62         LOWEST LEVEL FOR INVERTED SYNCHRONIZATION
000294                          3104 *
000295        0078              3105 ONESEC EQU 120        CLOCK IS 120 TIMES PER SECOND (.0083333)
```

```
000296                              4000 /EJECT
000297                              4010 *
000298                              4020 *INPUT MESSAGE BUFFER DEFINITION
000299                              4030 *
000300                              4040 *FIRST BUFFER IN LINK WORD(0)
000301              0002            4050 CURBUF EQU 2          CURRENT BUFFER ADDRESS
000302              0003            4060 CURLEN EQU CURBUF+1                         CURRENT LENGTH
000303              0004            4070 NSBERR EQU CURLEN+1                         ERROR COUNTERS
000304              0005            4080 MFLAGS EQU NSBERR+1                         INTERNAL TO MESSAGE FLAGS
000305                              4090 *
000306                              4100 *
000307                              4110 *INTERNAL TO MESSAGE FLAGS (MFLAGS)
000308                              4120 *
000309              8000            4130 LTLONG EQU Z'8000'                          LINE IS CURRENTLY TOO LONG
000310              4000            4140 IFINAL EQU Z'4000'                          FINAL DELIVERY
000311              2000            4150 TRPCLK EQU Z'2000'                          FINAL DELIVERY TRAPS CLOCKING READ
000312                              4160 *
000313                              4170 *
000314                              4180 *MESSAGE STYLE BLOCK DEFINITION
000315                              4190 *
000316              0000            4200 FRSTCK EQU 0          FIRST CLOCK TO SET
000317              0001            4210 SCNDCK EQU FRSTCK+1                          SECOND (SUBSEQUENT) CLOCK TO SET
000318              0002            4220 INPMAX EQU SCNDCK+1                          MAX LINE LENGTH
000319              0003            4230 STYFGS EQU INPMAX+1                          INPUT STYLE BITS
000320                              4240 *
000321                              4250 *
000322                              4260 *DEFINITIONS OF INPUT STYPE BITS
000323                              4270 *
000324              8000            4280 UNEDIT EQU Z'8000'                          DATA SHOULD NOT BE EDITED
000325              4000            4290 IGNLTL EQU Z'4000'                          LINE TOO LONGS ARE IGNORED (ELSE MSG ABORT)
000326              2000            4300 IGNNSB EQU Z'2000'                          NO-STOP-BIT ERRORS ARE COUNTED AND FLAGGED
000327              1000            4310 ESCQTL EQU Z'1000'                          ESCAPES DONE WITH NO MESSAGE
000328              0800            4320 ESCDTA EQU Z'0800'                          ESCAPE IS DATA (ELSE IT IS LINE CANCEL)
000329              0400            4330 BKRDTA EQU Z'0400'                          BACKARROW IS DATA (ELSE IT IS CHARACTER DELETE)
000330              0200            4340 IGNENQ EQU Z'0200'                          ENQUIRY IS IGNORED (ELSE MSG GENERATED)
000331              0100            4350 IGNLFD EQU Z'0100'                          LINE FEEDS IGNORED (ELSE TREATED AS DATA)
000332              0080            4360 IGNDEL EQU Z'0080'                          RUBOUTS ARE IGNORED (ELSE TREATED AS DATA)
000333              0040            4370 IGNULL EQU Z'0040'                          NULLS ARE IGNORED (ELSE TREATED AS BREAK)
000334                              4380 *****************************************************************************************
000335                              4390 *                                                                                      *
000336                              4400 *                             STANDARD DEVICE TYPE ID'S                               *
000337                              4410 *                                                                                      *
000338                              4420 *****************************************************************************************
000339              2408            4430 COUPID    EQU     Z'2408' COUPLER DEVICE TYPE
000340              2010            4440 DISKID    EQU     Z'2010' DIU 9101 DISKETTE
000341              2118            4450 ASYID     EQU     Z'2118' ASYNCHRONOUS CHANN"EL ID FOR MLCP
000342              2158            4460 BISID     EQU     Z'2158' BISYNC CHANN"EL ID FOR MLCP
```

```
000343                              5000 /EJECT
000344                              5010 *
000345                              5020 *COUPLER CONTROL BLOCK DEFINITIONS
000346                              5030 *
000347                              5040 *LEAVE ROOM FOR QUEUEING PRIORITY AND LINK
000348              0002            5050 USERQ EQU 2          QUEUE OF USERS CONNECTED TO THIS COUPLER
000349              0005            5060 CPFLGS EQU USERQ+3                 FLAGS CONTROLLING FLOW
000350              0006            5070 COUPST EQU CPFLGS+1                COUPLER I/O STATE
000351                              5080 *
000352              0007            5090 PSBCLK EQU COUPST+1                PLEASE STAND BY CLOCK
000353              0008            5100 PSBCNT EQU PSBCLK+1                PLEASE STAND BY COUNTER
000354              0009            5110 DEADCT EQU PSBCNT+1                DEAD CONNECTION COUNT
000355                              5120 *
000356              000A            5130 OMSGFB EQU DEADCT+1                FIRST BUFFER OF OUTPUT MESSAGES
000357              000B            5140 OMSGFP EQU OMSGFB+1                ASSOCIATED POINTER
000358              000C            5150 OMSGLB EQU OMSGFP+1                LAST BUFFER OF OUTPUT MESSAGES
000359              000D            5160 OMSGLP EQU OMSGLB+1                ASSOCIATED POINTER
000360              000E            5170 IMSGBP EQU OMSGLP+1                INPUT BUFFER PARSE POINTER
000361              000F            5180 IMSGCM EQU IMSGBP+1                INPUT COMMAND/LENGTH
000362              0010            5190 IMSGLN EQU IMSGCM+1                INPUT PORT(LINE)
000363              0011            5200 IMSGBK EQU IMSGLN+1                STARTING BLOCK OF MESSAGE
000364                              5210 *
000365              0012            5220 SPICMD EQU IMSGBK+1                SPECIAL INTERRUPT COMMAND
000366              0013            5230 TAL66 EQU SPICMD+1                 H66 REQUESTED IO WORDS
000367              0014            5240 TAL6 EQU TAL66+1    LEVEL6 ALLOWED IO WORDS
000368              0015            5250 IOWDS EQU TAL6+1    ACTUAL NUMBER OF WORDS IO'ED
000369              0016            5260 L6BUFR EQU IOWDS+1                 IO ADDRESS IN LEVEL6
000370              0017            5270 H66DTA EQU L6BUFR+1                IO ADDRESS IN HIS6600
000371              0019            5280 MBXLOC EQU H66DTA+2                LOCATION OF MAILBOX IN HIS6600
000372              001B            5290 MBXPKG EQU MBXLOC+2                CONTENTS OF HIS6600 MAILBOX
000373              0024            5300 STSLOC EQU MBXPKG+9                LOCATION OF STATUS IN HIS6600
000374              0026            5310 STATUS EQU STSLOC+2                CONTENTS OF STATUS WRITTEN TO HIS6600
000375              002B            5320 CIVDEV EQU STATUS+5                LAST DEV WORD FROM INTERRUPT
000376              002C            5330 LSTSTS EQU CIVDEV+1                LAST HARDWARE STATUS READ
000377              002E            5340 SPISTS EQU LSTSTS+2                SPURIOUS INTERRUPT STATUS
000378                              5350 *
000379              0030            5360 DCWLST EQU SPISTS+2                DCW LIST FOR IO OPERATIONS
000380                              5370 *
000381              003C            5380 CPLRBL EQU DCWLST+12               COUPLER BLOCK LENGTH
000382                              5390 *
000383                              5400 *
000384                              5410 *DEFINITIONS OF COUPLER FLAGS
000385                              5420 *
000386              8000            5430 IOBUSY EQU Z'8000'                BUSY DOING TERMINATE REQUIRED I/O
000387              4000            5440 BUFBSY EQU Z'4000'                BUFFER ACTIVE
000388              2000            5450 SLRDCK EQU Z'2000'                SLOW READS CLOCK RUNNING
000389                              5460 *
000390              0800            5470 RLDSET EQU Z'0800'                RELOAD AT EVERY REQUEST
000391              0400            5480 L6RSET EQU Z'0400'                LEVEL6 HAS RESET ALL USERS
```

```
000392                              5490 /EJECT
000393                              5500 *
000394                              5510 *CONTROL INFORMATION FOR COUPLER
000395                              5520 *
000396              0020            5530 L66RDC EQU Z'0020'                    AGREED CONSTANT FOR READ
000397              0030            5540 L66WTC EQU Z'0030'                    AGREED CONSTANT FOR WRITE
000398                              5550 *
000399              0004            5560 MBXWDS EQU 4         MBX IS 4 WORDS ON H66 SIDE
000400              0002            5570 STSWDS EQU 2         STATUS IS 2 WORDS ON H66 SIDE
000401              0200            5580 CPBFLN EQU 512       L6 LENGTH OF I/O BUFFER
000402                              5590 *
000403                              5600 *
000404                              5610 *HIS6600 INTERRUPT CELLS
000405                              5620 *
000406              0003            5630 H66TRM EQU 3         INITIATE/TERMINATE
000407              0007            5640 H66SPC EQU 7         SPECIAL
000408                              5650 *
000409              00C3            5660 INTH66 EQU Z'0003'+$IOCH3            INTERRUPT HIS6600
000410                              5670 *
000411                              5680 *
000412                              5690 *MISCELLANEOUS L6 IO INFORMATION
000413                              5700 *
000414              0011            5720 COUPSL EQU CPLRLV+1                   SPECIAL INTERRUPT (FROM HIS6600)
000415              0012            5730 COUPTL EQU COUPSL+1                   TERMINATE INTERRUPT FOR L6 OPERATION
000416              0013            5740 COUPWL EQU COUPTL+1                   SLAVE BUFFER PROCESSING LEVEL
000417                              5750 *
000418                              5760 *DCW COMMANDS
000419                              5770 *
000420              0038            5780 DWDSCI EQU Z'0038'                    DISCONNECT AND INTERRUPT
000421              003D            5790 DW6T66 EQU Z'003D'                    XFER L6 TO H66
000422              003E            5800 DW66T6 EQU Z'003E'                    XFER H66 TO L6
000423              003C            5810 DWCNFG EQU Z'003C'                    STORE CONFIGURATION STATUS
000424                              5820 *
000425              0018            5830 DCWLEN EQU 2*6*2    LENGTH OF OUR DCW LISTS
000426                              5840 *
000427                              5850 *DATA TRANSFER MODES
000428                              5860 *
000429              0001            5870 ASCMOD EQU Z'0001'                    ASCII MODE
000430              0002            5880 BCDMOD EQU Z'0002'                    BCD MODE
000431              0003            5890 BINMOD EQU Z'0003'                    BINARY MODE
000432              0011            5900 TLAMOD EQU Z'0011'                    TRANSLITERATION MODE A
000433              0021            5910 TLBMOD EQU Z'0021'                    TRANSLITERATION MODE B
000434              0041            5920 MSBMOD EQU Z'0041'                    ASCII MODE WITH MSB TEST
000435              0051            5930 TLCMOD EQU Z'0051'                    TRANSLITERATION MODE A WITH MSB TEST
000436              0061            5940 TLDMOD EQU Z'0061'                    TRANSLITERATION MODE B WITH MSB TEST
```

```
000437                                      5950 /EJECT
000438                                      5960 *
000439                                      5970 *PENDING STATES FOR COUPLER SOFTWARE
000440                                      5980 *
000441                  0000                5990 CIDLE EQU 0          IDLE
000442                  0001                6000 MBXRD EQU 1          MBX READING STATE
000443                  0002                6010 IOXFR EQU 2          IO TRANSFER STATE
000444                  0003                6020 STSWT EQU 3          STATUS WRITE STATE
000445                  0004                6030 CFGRD EQU 4          CONFIGURATION READ
```

```
        000446                          10000 /EJECT ** DISKETTE BOOTSTRAP ROUTINE **
        000447                          10010 ************************************************************
        000448                          10020 *  THE BOOTSTRAP STEPS ARE :
        000449                          10030 *    1. READ TRACK 0, SECTORS 5-25   (TRAP ROUTINES, ETC...)
        000450                          10040 *    2. READ TRACK 0, SECTORS 1-4    (TRAP VECTORS, 0-100 (16))
        000451                          10050 *    3. READ TRACKS 1, ON
        000452                          10060 *    4. CLIMB THROUGH LEVEL 4 VECTOR
        000453                          10070 ************************************************************
        000454                          10080 *
        000455                          10090 *BOOTLOAD SOFTWARE AND LOW CORE DEFINITIONS
        000456                          10100 *
        000457                          10110 XDEF SERROR         LEVEL WHERE CRASH OCCURRED
                    013A
        000458                          10120 XDEF MODULE         LIST OF MODULE POINTERS
                    0366
        000459                          10130 XDEF TRAPER         COMMON TRAP CATCH
                    035F
        000460                          10140 XDEF $TSALS
                    0010
        000461                          10150 XDEF $RTCLK,$WDTMR
                    0014
                    0017
        000462                          10160 XDEF $INTBT         INTERRUPT SCHEDULE BITS
                    0020
        000463                          10170 XDEF $BOOT
                    0100
        000464                          10130 XDEF $TV01,$TV02,$TV03,$TV04,$TV05
                    007F
                    007E
                    007D
                    007C
                    007B
        000465                          10190 XDEF $TV06,$TV07,$TV08,$TV09,$TV10
                    007A
                    0079
                    0078
                    0077
                    0076
        000466                          10200 XDEF $TV11,$TV12,$TV13,$TV14,$TV15
                    0075
                    0074
                    0073
                    0072
                    0071
        000467                          10210 XDEF $TV16,$TV17,$TV18,$TV19,$TV20
                    0070
                    006F
                    006E
                    006D
                    006C
        000468                          10220 XDEF $TV21,$TV22,$TV23,$TV24,$TV25
                    0068
```

```
                                    006A
                                    0069
                                    0068
                                    0067
          000469                              10230   XDEF $TV26,$TV27,$TV28,$TV29,$TV30
                                    0066
                                    0065
                                    0064
                                    0063
                                    0062
          000470                              10240   XDEF $TV31,$TV32,$TV33,$TV34,$TV35
                                    0061
                                    0060
                                    005F
                                    005E
                                    005D
          000471                              10250   XDEF $TV36,$TV37,$TV38,$TV39,$TV40
                                    005C
                                    005B
                                    005A
                                    0059
                                    0058
          000472                              10260   XDEF $TV41,$TV42,$TV43,$TV44,$TV45
                                    0057
                                    0056
                                    0055
                                    0054
                                    0053
          000473                              10270   XDEF $TV46
                                    0052
```

```
000474                            10280 /EJECT
000475                            10290 *
000476                            10300 * BOOTLOAD SOFTWARE AND LOW CORE DEFINITIONS
000477                            10310 *
000478                            10320 *          DEFINITIONS
000479          0068              10330 HEADRS  EQU       104          NUMBER OF FORMAT BYTES/TRACK ON DIU9101
000480          0000              10340 ZERO    EQU       0
000481          0001              10350 ONE     EQU       1
000482          0002              10360 TWO     EQU       2
000483                            10370 *
000484                            10380 *          REGISTER DEFINTIONS
000485          0020              10390 RANGE   EQU       $R2          NUMBER OF BYTES
000486          0020              10400 CHANEL  EQU       $R1          CHANNEL (WITH DIRECTION)
000487          0020              10410 TRACK   EQU       $R4          TRACK NUMBER
000488                            10420 *
000489          0020              10430 TRNS    EQU       $B6          SUBROUTINE RETURN REGISTER
000490          0020              10440 BASE    EQU       $B7          CURRENT SEGMENT BEGINNING
000491                            10450 *
000492                            10460 *          DISKETTE OPERATION CODES
000493          0009              10470 O$ADDR  EQU       Z'0009'      MEMORY ADDRESS SET
000494          000D              10480 O$RANG  EQU       Z'000D'      SET TRANSFER LENGTH IN BYTES
000495          0011              10490 O$CWA   EQU       Z'0011'      SET TRACK&HEAD
000496          0013              10500 O$CWB   EQU       Z'0013'      SET SECTOR NUMBER
000497          0003              10510 O$INTC  EQU       Z'0003'      SET INTERRUPT CONTROL WORD
000498          0007              10520 O$TASK  EQU       Z'0007'      OUTPUT TASK REG (READ&WRITE)
000499          0001              10530 O$CNTL  EQU       Z'0001'      SET CONTROL WORD
000500                            10540 *
000501          000C              10550 I$RANG  EQU       Z'000C'      READ RANGE REG
000502          0010              10560 I$CWA   EQU       Z'0010'      READ TRACK&HEAD
000503          0012              10570 I$CWB   EQU       Z'0012'      READ SECTOR NUMBER
000504          0002              10580 I$INTC  EQU       Z'0002'      READ INTERRUPT CONTROL
000505          0026              10590 I$DVID  EQU       Z'0026'      GET DEVICE TYPE
000506          0006              10600 I$TASK  EQU       Z'0006'      READ TASK REG
000507          0018              10610 I$STAT  EQU       Z'0018'      GET STATUS
000508                            10620 *
000509                            10630 *          DEVICE ORDERS (DATA BUS COMMANDS)
000510          0000              10640 ORCAL$  EQU       Z'0000'      RECALIBRATE
000511          0100              10650 OSEEK$  EQU       Z'0100'      SEEK
000512          8000              10660 OFRMT$  EQU       Z'8000'      FORMATTED WRITE
000513          8100              10670 ORW$    EQU       Z'8100'      READ/WRITE DATA
000514          8500              10680 ODDRW$  EQU       Z'8500'      DELETED DATA READ/WRITE
000515          8300              10690 ODRW$   EQU       Z'8300'      DIAGNOSTIC READ/WRITE
000516          C000              10700 OWRAP$  EQU       Z'C000'      WRAPAROUND READ/WRITE
000517                            10710 *
000518                            10720 *
000519          0100              10730 U       EQU       Z'0100'      UPPER HALF ADJUSTER
000520                            10740 *
000521                            10750 *
000522                            10760 *          DISKETTE DEFINTIONS
000523          0D00              10770 TRKSIZ  EQU       26*128       BYTE PER TRACK
000524          0080              10780 SECSIZ  EQU       128          BYTES PER SECTOR
000525          0280              10790 LOWSEC  EQU       5*128        BYTES OF SHUFFLED LOW MEMORY
```

```
        000526                           10800 /EJECT
        000527                           10810 *
        000528                           10820 *
        000529                           10830        XLOC    ENDING        END OF CONGLOMERATION
        000530                           10840        XDEF    $IVECT
                        0080
        000531                           10850        XDEF    START         BEGINNING MARKER
                        0100
        000532                           10860        XLOC    INIT          REAL SOFTWARE INIT
```

```
000533                              10870 /EJECT
000534                              10880 *
000535                              10890 **************************************************************
000536                              10900 *     THE FOLLOWING 'SURREALISTIC' TRAP VECTORS, ETC
000537                              10910 *       ARE DEFINED TO CORRECTLY SATISFIY XDEF'S
000538                              10920 *       EXPECTED BY THE REST OF THE L6 SOFTWARE.
000539                              10930 **************************************************************
000540                              10940 *
000541    0000         0000         10950          RESV     16,Z'0000'          00X TO 0FX
000542    0010  02E1                10960 $TSALS  DC       <TSABKO             FIRST TRAP BLOCK (10X)
000543    0011         0000         10970          RESV     3,Z'0000'           11X TO 13X
000544    0014         0000         10980 $RTCLK  RESV     3,Z'0000'           REAL TIME CLOCK LOCATIONS
000545    0017  0000                10990 $WDTMR  DC       Z'0000'             WATCH DOG TIMER
000546    0018         0000         11000          RESV     8,Z'0000'           18X THRU 1FX
000547    0020         0000         11010 $INTBT  RESV     4,Z'0000'           INTERRUPT SCHEDULE BITS
000548                              11020 *
000549                              11030 * TRAP VECTORS
000550                              11040 *
000551    0024         0000         11050          RESV     46,Z'0000'          UNUSED PORTION OF SAF TRAP VECTOR
000552    0052  02FE                11060 $TV46   DC       <HLTP46             TRAP VECTOR 46
000553    0053  0300                11070 $TV45   DC       <HLTP45             TRAP VECTOR 45
000554    0054  0302                11080 $TV44   DC       <HLTP44             TRAP VECTOR 44
000555    0055  0304                11090 $TV43   DC       <HLTP43             TRAP VECTOR 43
000556    0056  0306                11100 $TV42   DC       <HLTP42             TRAP VECTOR 42
000557    0057  0308                11110 $TV41   DC       <HLTP41             TRAP VECTOR 41
000558    0058  030A                11120 $TV40   DC       <HLTP40             TRAP VECTOR 40
000559    0059  030C                11130 $TV39   DC       <HLTP39             TRAP VECTOR 39
000560    005A  030E                11140 $TV38   DC       <HLTP38             TRAP VECTOR 38
000561    005B  0310                11150 $TV37   DC       <HLTP37             TRAP VECTOR 37
000562    005C  0312                11160 $TV36   DC       <HLTP36             TRAP VECTOR 36
000563    005D  0314                11170 $TV35   DC       <HLTP35             TRAP VECTOR 35
000564    005E  0316                11180 $TV34   DC       <HLTP34             TRAP VECTOR 34
000565    005F  0318                11190 $TV33   DC       <HLTP33             TRAP VECTOR 33
000566    0060  031A                11200 $TV32   DC       <HLTP32             TRAP VECTOR 32
000567    0061  031C                11210 $TV31   DC       <HLTP31             TRAP VECTOR 31
000568    0062  031E                11220 $TV30   DC       <HLTP30             TRAP VECTOR 30
000569    0063  0320                11230 $TV29   DC       <HLTP29             TRAP VECTOR 29
000570    0064  0322                11240 $TV28   DC       <HLTP28             TRAP VECTOR 28
000571    0065  0324                11250 $TV27   DC       <HLTP27             TRAP VECTOR 27
000572    0066  0326                11260 $TV26   DC       <HLTP26             TRAP VECTOR 26
000573    0067  0328                11270 $TV25   DC       <HLTP25             TRAP VECTOR 25
000574    0068  032A                11280 $TV24   DC       <HLTP24             TRAP VECTOR 24
000575    0069  032C                11290 $TV23   DC       <HLTP23             TRAP VECTOR 23
000576    006A  032E                11300 $TV22   DC       <HLTP22             TRAP VECTOR 22
000577    006B  0330                11310 $TV21   DC       <HLTP21             TRAP VECTOR 21
000578    006C  0332                11320 $TV20   DC       <HLTP20             TRAP VECTOR 20
000579    006D  0334                11330 $TV19   DC       <HLTP19             TRAP VECTOR 19
000580    006E  0336                11340 $TV18   DC       <HLTP18             TRAP VECTOR 18
000581    006F  0338                11350 $TV17   DC       <HLTP17             TRAP VECTOR 17
000582    0070  033A                11360 $TV16   DC       <HLTP16             TRAP VECTOR 16
000583    0071  033C                11370 $TV15   DC       <HLTP15             TRAP VECTOR 15
000584    0072  033E                11380 $TV14   DC       <HLTP14             TRAP VECTOR 14
```

```
000585  0073  0340          11390 $TV13    DC      <HLTP13         TRAP VECTOR 13
000586  0074  0342          11400 $TV12    DC      <HLTP12         TRAP VECTOR 12
000587  0075  0344          11410 $TV11    DC      <HLTP11         TRAP VECTOR 11
000588  0076  0346          11420 $TV10    DC      <HLTP10         TRAP VECTOR 10
000589  0077  0348          11430 $TV09    DC      <HLTP09         TRAP VECTOR 09
000590  0078  034A          11440 $TV08    DC      <HLTP08         TRAP VECTOR 08
000591  0079  034C          11450 $TV07    DC      <HLTP07         TRAP VECTOR 07
000592  007A  034E          11460 $TV06    DC      <HLTP06         TRAP VECTOR 06
000593  007B  0350          11470 $TV05    DC      <HLTP05         TRAP VECTOR 05
000594  007C  0352          11480 $TV04    DC      <HLTP04         TRAP VECTOR 04
000595  007D  0354          11490 $TV03    DC      <HLTP03         TRAP VECTOR 03
000596  007E  0356          11500 $TV02    DC      <HLTP02         TRAP VECTOR 02
000597  007F  035C          11510 $TV01    DC      <HLTP01         TRAP VECTOR 01
000598                      11520 *
000599                      11530 *
000600                      11540 * INTERRUPT VECTORS
000601                      11550 *
000602              0080    11560 $IVECT   EQU     $               80X START OF INTERRUPT VECTOR
000603  0080  02CC          11570          DC      <ERRIV          LOCATION OF POWER FAIL/CRASH VECTOR
000604  0081  0000          11580          DC      Z'0000'         LOCATION OF WATCH DOG TIMER VECTOR
000605  0082  02B4          11590          DC      <TSOVIV         LOCATION OF TRAP SAVE AREA OVERFLOW VECTOR
000606  0083  0000          11600          DC      Z'0000'         HANG LEVEL
000607  0084  029C          11610          DC      <INITIV         INITIALIZATION THEN REAL TIME CLOCK
000608  0085        0000    11620          RESV    58,Z'0000'      INTERRUPT VECTORS 05 THRU 62 ARE PROGRAMMED
000609  00BF  0284          11630          DC      <IDLEIV         LOCATION OF IV63 WHICH IS IDLE VECTOR
000610                      11640 *
000611  00C0        0000    11650          RESV    64,Z'0000'      UNUSED PORTION OF SAF INTERRUPT VECTOR
```

```
000612                                  11660 /EJECT   CODE STARTING POINT
000613                                  11670 *
000614                                  11680 *
000615                                  11690 * BOOTLOAD SOFTWARE (STARTS AT 0100X)
000616                                  11700 *
000617                                  11710 * REAL TIME CLOCK AND WATCH DOG TIMER ARE ASSUMED OFF AFTER BOOTLOAD
000618                                  11720 *
000619                                  11730 *
000620                                  11740 *****************************************************************
000621                                  11750 *   FIRST EXECUTION STEP -
000622                                  11760 *      READ TRACK 0, SECTORS 5-25
000623                                  11770 *      GETS THE TRAP ROUTINES, ETC...
000624                                  11780 *      IN PARTICULAR, GETS REST OF BOOTSTRAP
000625                                  11790 START   RESV    0               MARK START FOR DISKETTE WRITER
000626                                  11800 $BOOT   RESV    0               START OF BOOTSTRAP
000627  0100  ABC0 0027                 11810         LAB     $B2,CMDLIS      SET STANDARD COMMAND LIST PTR
000628  0102  4C00                      11820         LDV     TRACK,ZERO      DO TRACK ZERO FIRST
000629  0103  A870 0A80                 11830         LDR     RANGE,=TRKSIZ-LOWSEC "DO ALL BUT FIRST FIVE SECTORS NOW
000630  0105  FB80 0480                 11840         LAB     BASE,<MORE2     SET HIGHER BASE
000631  0107  E3C0 0003                 11850         LNJ     TRNS,READ       READ MOST OF TRACK 0
000632  0109  0F80 0240                 11860         B       <CONT          TRICKY BOOTSTRAP TRANSFER
```

```
000633                               11870  /EJECT ** ROUTINE TO READ FROM DISKETTE **
000634                               11880  ******************************************************
000635                               11890  *    READ ROUTINE USING REGISTERS FOR PARAMETERS
000636                               11900  *       THE COMMAND LIST AND DATA LIST ARE
000637                               11910  *       THE SAME LENGTH AND PRESET FOR A READ CHAIN
000638                               11920  *    LENGTH, TRKNUM, & SECNUM ARE SET BY CALLER
000639                               11930  ******************************************************
000640                               11940  READ     RESV        0
000641                               11950  *
000642                               11960  *   ON INPUT
000643                               11970  *       R1 = CHANNEL NUMBER
000644                               11980  *       R2 = RANGE
000645                               11990  *       R3 USED AS COMMAND LIST OFFSET
000646                               12000  *       R4 = TRACK NUMBER
000647                               12010  *       B7 = DATA LOCATION PTR
000648                               12020  *       B6 = RETURN POINTER
000649                               12030  *       B3 ==> DATA LIST POINTER
000650                               12040  *       B2 ==> COMMAND LIST POINTER
000651                               12050  *
000652              3F27             12060  BADSTS   EQU         Z'3F27'         BAD STATUS BITS
000653              1616             12070  HALT     EQU         Z'1616'         BAD STATUS FLAG
000654              003F             12080  MASK     EQU         Z'003F'         COMMAND MASK
000655                               12090  *
000656     010B     AF00 012D        12100           STR         RANGE,<LENGTH   SET RANGE REG
000657     010D     FFC0 001E        12110           STB         BASE,DATLOC     STUFF MEMORY ADDRESS
000658     010F     C780 012E        12120           STH         TRACK,<TRKNUM   STUFF TRACK NUMBER
000659                               12130  *
000660     0111     BBC0 001A        12140           LAB         $B3,DATLIS      SET DATA LIST PTR AFRESH
000661     0113     3C00             12150           LDV         $R3,ZERO        NOTHING DONE YET
000662                               12160  *
000663                               12170  IOLOOP   RESV        0
000664     0114     3D08             12180           CMV         $R3,DATLEN      DONE YET?
000665     0115     0980        T    12190           BNE         >+$A            NOPE
000666     0116     8386             12200           JMP         TRNS            YEP
000667                               12210  *
000668                               12220  $A       RESV        0
000669     0117     E2FE             12230           LLH         $R6,$B2.+$R3    GET COMMAND
000670     0118     D873             12240           LDR         $R5,+$B3        GET DATA BUS INFO
000671                               12250  $B       RESV        0
000672     0119     E451             12260           OR          $R6,=CHANEL     GET CHANNEL ALSO
000673     011A     8055             12270           IO          =$R5,=$R6
           011B     0056
000674                               12280  *
000675     011C     E570 003F        12290           AND         $R6,=MASK       ISOLATE COMMAND
000676     011E     6D18             12300           CMV         $R6,I$STAT      STATUS CHECK?
000677     011F     09F5             12310           BNE         >IOLOOP         NOPE, DON'T WORRY 'BOUT IT
000678                               12320  *
000679     0120     07F9        T    12330           BIOF        >-$B            AWAIT COMPLETION
000680     0121     D570 3F27        12340           AND         $R5,=BADSTS     STATUS OK?
000681     0123     5971             12350           BEZ         $R5,>IOLOOP     SORIGHT
000682                               12360  *
000683     0124     9870 1616        12370           LDR         $R1,=HALT       SET FLAG
```

```
000684  0126  8E70 0000          12380          LEV      =$LVDIE           PLAY TAPS
000685                           12390 *
000686                           12400 CMDLIS   RESV     0
000687  0128  090D               12410          DC       O$ADDR*U+O$RANG   SET START & LENGTH
000688  0129  1113               12420          DC       O$CWA*U+O$CWB     SET SEEK & SECTOR
000689  012A  0718               12430          DC       O$TASK*U+I$STAT   SEEK & DESTROY
000690  012B  0718               12440          DC       O$TASK*U+I$STAT   READ TASK
000691                           12450 *
000692                           12460 DATLIS   RESV     0
000693  012C  0000               12470 DATLOC   DC       0                 START ADDRESS
000694  012D  0000               12480 LENGTH   DC       0                 RANGE
000695  012E  0000               12490 TRKNUM   DC       0                 TRACK NUMBER
000696  012F  0500               12500 SECNUM   DC       LOWSEC/SECSIZ*U   STARTING SECTOR
000697  0130  0100               12510          DC       OSEEK$            SEEK ORDER
000698  0131  0000               12520          DC       0                 FOR STATUS
000699  0132  8100               12530          DC       ORW$              READ DATA ORDER
000700  0133  0000               12540          DC       0                 FOR STATUS
000701        0134               12550 DATEND   EQU      $                 MARK LIST END
000702        0008               12560 DATLEN   EQU      $-DATLIS
000703                           12570 ************************************************************************
000704                           12580 *        HANDLE TSA AREA OVERFLOW
000705                           12590 TSAOVR   RESV     0
000706  0134  8C00 013A          12600          STS      <SERROR           SAVE CRASH LEVEL
000707  0136  3E70 0000          12610          LEV      =$LVDIE           ADIOS
000708                           12620 $B       RESV     0
000709  0138  0000               12630          HLT
000710  0139  0FFF         T     12640          B        >-$B
000711                           12650 *
000712  013A  0000               12660 SERROR   DC       Z'0000' LEVEL SAVIOR
```

```
000713                        12670 /          REGRETTABLE TRICKY, KLUDGE FOR BOOTSTRAPPING
000714  0140                  12680            ORG     $BOOT+X'0040'        SPACE FOR SECTOR SCHISM
000715           0140         12690 MORE       EQU     $                    START OF BOOTSTRAP CONTINUATION
000716  0134                  12700            ORG     DATEND               RESET PC FOR RESERVATION
000717  0134     0000         12710            RESV    (MORE-DATEND),Z'0000' "SPACE FOR SECOND PART OF BOOTSTRAP
000718  0140                  12720            ORG     $BOOT+X'0040'        RESET PC FOR REAL
```

```
000719                              12730 /EJECT
000720                              12740 *
000721                              12750 *      THE FOLLOWING REAL TRAP VECTORS, ETC ARE PUT TO DISKETTE
000722                              12760 *         SECTORS 1-4 BUT READ INTO 0-FF
000723                              12770 *
000724   0140        0000          12780         RESV     16,Z'0000'         00X TO 0FX
000725   0150   02E1               12790 TSALS   DC       <TSABK0            FIRST TRAP BLOCK (10X)
000726   0151        0000          12800         RESV     3,Z'0000'          11X TO 13X
000727   0154        0000          12810 RTCLK   RESV     3,Z'0000'          REAL TIME CLOCK LOCATIONS
000728   0157   0000               12820 WDTMR   DC       Z'0000'            WATCH DOG TIMER
000729   0158        0000          12830         RESV     8,Z'0000'          18X THRU 1FX
000730   0160        0000          12840 INTBT   RESV     4,Z'0000'          INTERRUPT SCHEDULE BITS
000731                              12850 *
000732                              12860 * TRAP VECTORS
000733                              12870 *
000734   0164        0000          12880         RESV     46,Z'0000'         UNUSED PORTION OF SAF TRAP VECTOR
000735   0192   02FE               12890 TV46    DC       <HLTP46            TRAP VECTOR 46
000736   0193   0300               12900 TV45    DC       <HLTP45            TRAP VECTOR 45
000737   0194   0302               12910 TV44    DC       <HLTP44            TRAP VECTOR 44
000738   0195   0304               12920 TV43    DC       <HLTP43            TRAP VECTOR 43
000739   0196   0306               12930 TV42    DC       <HLTP42            TRAP VECTOR 42
000740   0197   0308               12940 TV41    DC       <HLTP41            TRAP VECTOR 41
000741   0198   030A               12950 TV40    DC       <HLTP40            TRAP VECTOR 40
000742   0199   030C               12960 TV39    DC       <HLTP39            TRAP VECTOR 39
000743   019A   030E               12970 TV38    DC       <HLTP38            TRAP VECTOR 38
000744   019B   0310               12980 TV37    DC       <HLTP37            TRAP VECTOR 37
000745   019C   0312               12990 TV36    DC       <HLTP36            TRAP VECTOR 36
000746   019D   0314               13000 TV35    DC       <HLTP35            TRAP VECTOR 35
000747   019E   0316               13010 TV34    DC       <HLTP34            TRAP VECTOR 34
000748   019F   0318               13020 TV33    DC       <HLTP33            TRAP VECTOR 33
000749   01A0   031A               13030 TV32    DC       <HLTP32            TRAP VECTOR 32
000750   01A1   031C               13040 TV31    DC       <HLTP31            TRAP VECTOR 31
000751   01A2   031E               13050 TV30    DC       <HLTP30            TRAP VECTOR 30
000752   01A3   0320               13060 TV29    DC       <HLTP29            TRAP VECTOR 29
000753   01A4   0322               13070 TV28    DC       <HLTP28            TRAP VECTOR 28
000754   01A5   0324               13080 TV27    DC       <HLTP27            TRAP VECTOR 27
000755   01A6   0326               13090 TV26    DC       <HLTP26            TRAP VECTOR 26
000756   01A7   0328               13100 TV25    DC       <HLTP25            TRAP VECTOR 25
000757   01A8   032A               13110 TV24    DC       <HLTP24            TRAP VECTOR 24
000758   01A9   032C               13120 TV23    DC       <HLTP23            TRAP VECTOR 23
000759   01AA   032E               13130 TV22    DC       <HLTP22            TRAP VECTOR 22
000760   01AB   0330               13140 TV21    DC       <HLTP21            TRAP VECTOR 21
000761   01AC   0332               13150 TV20    DC       <HLTP20            TRAP VECTOR 20
000762   01AD   0334               13160 TV19    DC       <HLTP19            TRAP VECTOR 19
000763   01AE   0336               13170 TV18    DC       <HLTP18            TRAP VECTOR 18
000764   01AF   0338               13180 TV17    DC       <HLTP17            TRAP VECTOR 17
000765   01B0   033A               13190 TV16    DC       <HLTP16            TRAP VECTOR 16
000766   01B1   033C               13200 TV15    DC       <HLTP15            TRAP VECTOR 15
000767   01B2   033E               13210 TV14    DC       <HLTP14            TRAP VECTOR 14
000768   01B3   0340               13220 TV13    DC       <HLTP13            TRAP VECTOR 13
000769   01B4   0342               13230 TV12    DC       <HLTP12            TRAP VECTOR 12
000770   01B5   0344               13240 TV11    DC       <HLTP11            TRAP VECTOR 11
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000771  01B6  0346          13250 TV10    DC      <HLTP10           TRAP VECTOR 10
000772  01B7  0348          13260 TV09    DC      <HLTP09           TRAP VECTOR 09
000773  01B8  034A          13270 TV08    DC      <HLTP08           TRAP VECTOR 08
000774  01B9  034C          13280 TV07    DC      <HLTP07           TRAP VECTOR 07
000775  01BA  034E          13290 TV06    DC      <HLTP06           TRAP VECTOR 06
000776  01BB  0350          13300 TV05    DC      <HLTP05           TRAP VECTOR 05
000777  01BC  0352          13310 TV04    DC      <HLTP04           TRAP VECTOR 04
000778  01BD  0354          13320 TV03    DC      <HLTP03           TRAP VECTOR 03
000779  01BE  0356          13330 TV02    DC      <HLTP02           TRAP VECTOR 02
000780  01BF  035C          13340 TV01    DC      <HLTP01           TRAP VECTOR 01
000781                      13350 *
000782                      13360 *
000783                      13370 * INTERRUPT VECTORS
000784                      13380 *
000785         01C0         13390 IVECT   EQU     $                 80 (16) START OF INTERRUPT VECTORS
000786  01C0  02CC          13400         DC      <ERRIV            LOCATION OF POWER FAIL/CRASH VECTOR
000787  01C1  0000          13410         DC      Z'0000'           LOCATION OF WATCH DOG TIMER VECTOR
000788  01C2  02B4          13420         DC      <TSOVIV           LOCATION OF TRAP SAVE AREA OVERFLOW VECTOR
000789  01C3  0000          13430         DC      Z'0000'           HANG LEVEL
000790  01C4  029C          13440         DC      <INITIV           INITIALIZATION THEN REAL TIME CLOCK
000791  01C5        0000    13450         RESV    58,Z'0000'        INTERRUPT VECTORS 05 THRU 62 ARE PROGRAMMED
000792  01FF  0284          13460         DC      <IDLEIV           LOCATION OF IV63 WHICH IS IDLE VECTOR
000793                      13470 *
000794  0200        0000    13480         RESV    64,Z'0000'        UNUSED PORTION OF SAF INTERRUPT VECTOR
```

```
      000795                              13490 /          REAL CODE LOADED AT LOCATION 'MORE'
      000796                              13500 ****************************************************
      000797                              13510 *   CONTINUATION OF BOOTSTRAP
      000798                              13520 *      1. READ TRACK 0, SECTORS 1-4 (TRAP VECTORS, ETC.)
      000799                              13530 *      2. LOOP, READING TRACKS 1, ON TIL "ENDING"
      000800                              13540 *      3. CLIMB TO LEVEL 4 FOR REGULAR INITIALIZATION
      000801                              13550 ****************************************************
      000802                              13560          XLOC       INITCP,RSTART
      000803                              13570 CONT     RESV       0                SECONDARY BOOTSTRAPPING
  E   000804               0480          13580 MORE2    EQU        ALS(CONT,ONE)    BYTE IT!
      000805  0240  F870 0100             13590          LDR        $R7,=ONE*U       START NOW WITH SECTOR =ONE*U
      000806  0242  FF00 012F             13600          STR        $R7,<SECNUM
      000807  0244  A870 0200             13610          LDR        RANGE,=LOWSEC-SECSIZ "4 SECTORS
      000808  0246  FCC0 0031             13620          LDB        BASE,ZILCH       READ IV'S & TRAP VECTORS
      000809  0248  9F40 004E             13630          STR        CHANEL,L63$R1    SAVE CHANNEL NUMBER FOR LOW LIFE
      000810  024A  E380 010B             13640          LNJ        TRNS,<READ
      000811  024C  8E70 803F             13650          LEV        =$LVEXI          CONTINUE ON A LOWER LEVEL
      000812  024E  8380 0000     X       13660          JMP        <RSTART          REBOOT SHTICK
      000813                              13670 *
      000814                              13680 RESTOF   RESV       0                ENTRY FROM LEVEL 63 VECTOR
      000815                              13690 *
      000816  0250  ABC0 FED7             13700          LAB        $B2,CMDLIS       RESET COMMAND LIST PTR
      000817  0252  8700 012F             13710          CL         <SECNUM          SET NORMAL READ START AT SECTOR 0
      000818  0254  A870 0D00             13720          LDR        RANGE,=TRKSIZ    READ FULL TRACK
      000819                              13730 *
      000820  0256  F800 0277             13740          LDR        $R7,<ENDO        FIND #WORDS TOTAL
      000821  0258  CB80 0100             13750          LAB        $B4,<$BOOT
      000822  025A  CF80 0277             13760          STB        $B4,<ENDO
      000823  025C  F200 0277             13770          SUB        $R7,<ENDO
      000824                              13780 *
      000825               0200          13790 ADJUST   EQU        Z'0200'          ACCOUNT FOR 256 WORD HOLE
      000826  025E  FBC7 0200             13800          LAB        BASE,BASE.ADJUST WITH TRACK 0 READING
      000827                              13810 *
      000828                              13820 BTLOOP   RESV       0
      000829  0260  F270 0680             13830          SUB        $R7,=TRKSIZ/2    COUNT DOWN WORDS TRANSMITTED
      000830  0262  7A00          T       13840          BGZ        $R7,>+$C         MORE TO BE DONE
      000831                              13850 *
      000832  0263  F870 2408             13860          LDR        $R7,=COUPID      FAKE OUT INITCP WITH R5 &R7
      000833  0265  D870 0400             13870          LDR        $R5,=BTLDCH      INIT BOOTLOAD COUPLER
      000834  0267  E380 0000     X       13880          LNJ        TRNS,<INITCP     GO TO IT
      000835                              13890 *  WEIRDO DELAY LOOP TO PREVENT COUPLER I/O COLLISION
      000836                              13900 *    DONE BECAUSE HOST BOOT TIME LAG PREVENTS $BOOT CLEAR SINCE
      000837                              13910 *    SOFTWARE IS NOT ALL PRESENT AT INITCP'S FIRST CALL
      000838                              13920 $A      RESV       0
      000839  0269  89C7 0006             13930          CMZ        $B7.COUPST       IS COUPLER DONE JERKING OFF?
      000840  026B  09FE          T       13940          BNE        >-$A             NOPE,CHECK AGAIN
      000841                              13950 *
      000842  026C  8740 FE93             13960          CL         $BOOT            MAKE LIKE HOST TCL & TELL INIT AL HERE
      000843  026E  8E70 8004             13970          LEV        =$LVEXE+RTCLEV   GET ON WITH IT
      000844                              13980 *
      000845                              13990 IDLE     RESV       0
      000846  0270  0000                  14000          HLT
```

```
000847  0271  OFFF                14010           B       >IDLE                   LOOP FOR IDLENESS
000848                            14020 *
000849                            14030 SC        RESV    0
000850  0272  4E01                14040           ADV     TRACK,=ONE              NEXT TRACK
000851  0273  FBA7                14050           LAB     BASE,BASE.RANGE         ADVANCE TO NEXT
000852  0274  E380 010B           14060           LNJ     TRNS,<READ             READ NEXT TRACK
000853  0276  OFEA                14070           B       >BTLOOP
000854                            14080 *
000855  0277  0000           X    14090 ENDC      DC      <ENDING                 LET LINKER TELL US FINAL ADDRESS
000856  0278  0000                14100 ZILCH     RESV    1,0                     ZERO BASING CELL
```

```
     000857                                14110 /EJECT
     000858                                14120          XDEF      DATE,TIME
                        0279
                        027D
     000859  0279       0000                14130 DATE     RESV      4,Z'0000'
     000860  027D       0000                14140 TIME     RESV      4,Z'0000'
```

```
000861                          14150 /EJECT
000862                          14160 *
000863                          14170 * BOOTLOAD IDLE LEVEL
000864                          14180 *
000865                  FFFF    14190 $ALL    EQU     Z'FFFF'        ISM1 CONTEXT ENTIRELY
000866                  0284    14200 IDLEIV  EQU     $+3            LEVEL ROUTINE WHEN WE ARE IDLE
000867    0281          0000    14210         RESV    3,Z'0000'      MMA,RFU,TSAP
000868    0284  0000            14220         DC      Z'0000'        DEV
000869    0285  FFFF            14230         DC      $ALL           SAVE INDICATORS AND MODE 1
000870    0286  0000            14240         DC      Z'0000'
000871    0287  0250            14250         DC      <RESTOF        BOOTSTRAP CONTINUATION
000872    0288  6000            14260         DC      $SRGP3         PRIORITY LEVEL
000873    0289          0000    14270         RESV    14,Z'0000'     ROOM FOR REGISTERS
000874    0297  0000 0000       14280 L63$R1  RESV    2,Z'0000'      R1 = CHANNEL NUMBER

000875                          14290 *
000876                          14300 * START OF EXEC INITIALIZATION LEVEL
000877                          14310 *
000878                  029C    14320 INITIV  EQU     $+3            LEVEL ROUTINE WHEN WE START EXEC UP
000879    0299          0000    14330         RESV    3,Z'0000'      MMA,RFU,TSAP
000880    029C  0000            14340         DC      Z'0000'        DEV
000881    029D  FFFF            14350         DC      $ALL           SAVE MODE REGISTER 1
000882    029E  0000            14360         DC      Z'0000'
000883    029F  0000        X   14370         DC      <INIT          DISKETTE COPY ROUTINE
000884    02A0  6000            14380         DC      $SRGP3         PRIORITY LEVEL
000885    02A1          0000    14390         RESV    16,Z'0000'     ROOM FOR REGISTERS
000886                          14400 *
000887                          14410 * TRAP OVERFLOW INTERRUPT
000888                          14420 *
000889                  02B4    14430 TSOVIV  EQU     $+3            LEVEL ROUTINE WHEN WE ARE OVER TRAPPED
000890    02B1          0000    14440         RESV    3,Z'0000'      MMA,RFU,TSAP
000891    02B4  0000            14450         DC      Z'0000'        DEV
000892    02B5  FFFF            14460         DC      $ALL           SAVE MODE REGISTER 1
000893    02B6  0000            14470         DC      Z'0000'
000894    02B7  0134            14480         DC      <TSAOVR        TSA OVERFLOW HANDLER
000895    02B8  6000            14490         DC      $SRGP3         PRIORITY LEVEL
000896    02B9          0000    14500         RESV    16,Z'0000'     ROOM FOR REGISTERS
000897                          14510 *
000898                          14520 * POWER FAIL OR CRASH INTERRUPT
000899                          14530 *
000900                  02CC    14540 ERRIV   EQU     $+3            LEVEL ROUTINE WHEN WE ARE IDLE
000901    02C9          0000    14550         RESV    3,Z'0000'      MMA,RFU,TSAP
000902    02CC  0000            14560         DC      Z'0000'        DEV
000903    02CD  FFFF            14570         DC      $ALL           SAVE MODE REGISTER 1
000904    02CE  0000            14580         DC      Z'0000'
000905    02CF  0000            14590         DC      Z'0000'        PREG PLUGGED WHEN WE LEFT LEVEL0
000906    02D0  6000            14600         DC      $SRGP3         PRIORITY LEVEL
000907    02D1          0000    14610         RESV    16,Z'0000'     ROOM FOR REGISTERS
```

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000908                            14620 /EJECT
000909                            14630 *
000910                            14640 * TRAP HANDLING MECHANISMS
000911                            14650 *
000912                            14660 *
000913                            14670 * TRAP SAVE AREAS
000914                            14680 *
000915   02E1  02EA               14690 TSABK0   DC      <TSABK1           LINK TO SECOND
000916   02E2       0000          14700          RESV    $TSALN-1,Z'0000'  ROOM FOR REMAINDER OF TSA
000917                            14710 *
000918   02EA  02F3               14720 TSABK1   DC      <TSABK2           LINK TO THIRD
000919   02EB       0000          14730          RESV    $TSALN-1,Z'0000'  ROOM FOR REMAINDER OF TSA
000920                            14740 *
000921   02F3  0000               14750 TSABK2   DC      Z'0000'           ONLY HAVE 3 ACTIVE TSA'S
000922   02F4       0000          14760          RESV    $TSALN-1,Z'0000'  ROOM FOR REMAINDER OF TSA
000923                            14770 *
000924                            14780 * TRAP HANDLERS
000925                            14790 *
000926   02FC  0F80 035D          14800 HLTRPX   B       <HLTRAP           ALLOWS SHORT ADDRESS
000927                            14810 *
000928   02FE  3C2E               14820 HLTP46   LDV     $R3,Z'2E'         LOAD TRAP NUMBER
000929   02FF  0FFD               14830          B       >HLTRPX           CRASH
000930   0300  3C2D               14840 HLTP45   LDV     $R3,Z'2D'         LOAD TRAP NUMBER
000931   0301  0FFB               14850          B       >HLTRPX           CRASH
000932   0302  3C2C               14860 HLTP44   LDV     $R3,Z'2C'         LOAD TRAP NUMBER
000933   0303  0FF9               14870          B       >HLTRPX           CRASH
000934   0304  3C2B               14880 HLTP43   LDV     $R3,Z'2B'         LOAD TRAP NUMBER
000935   0305  0FF7               14890          B       >HLTRPX           CRASH
000936   0306  3C2A               14900 HLTP42   LDV     $R3,Z'2A'         LOAD TRAP NUMBER
000937   0307  0FF5               14910          B       >HLTRPX           CRASH
000938   0308  3C29               14920 HLTP41   LDV     $R3,Z'29'         LOAD TRAP NUMBER
000939   0309  0FF3               14930          B       >HLTRPX           CRASH
000940   030A  3C28               14940 HLTP40   LDV     $R3,Z'28'         LOAD TRAP NUMBER
000941   030B  0FF1               14950          B       >HLTRPX           CRASH
000942   030C  3C27               14960 HLTP39   LDV     $R3,Z'27'         LOAD TRAP NUMBER
000943   030D  0FEF               14970          B       >HLTRPX           CRASH
000944   030E  3C26               14980 HLTP38   LDV     $R3,Z'26'         LOAD TRAP NUMBER
000945   030F  0FED               14990          B       >HLTRPX           CRASH
000946   0310  3C25               15000 HLTP37   LDV     $R3,Z'25'         LOAD TRAP NUMBER
000947   0311  0FEB               15010          B       >HLTRPX           CRASH
000948   0312  3C24               15020 HLTP36   LDV     $R3,Z'24'         LOAD TRAP NUMBER
000949   0313  0FE9               15030          B       >HLTRPX           CRASH
000950   0314  3C23               15040 HLTP35   LDV     $R3,Z'23'         LOAD TRAP NUMBER
000951   0315  0FE7               15050          B       >HLTRPX           CRASH
000952   0316  3C22               15060 HLTP34   LDV     $R3,Z'22'         LOAD TRAP NUMBER
000953   0317  0FE5               15070          B       >HLTRPX           CRASH
000954   0318  3C21               15080 HLTP33   LDV     $R3,Z'21'         LOAD TRAP NUMBER
000955   0319  0FE3               15090          B       >HLTRPX           CRASH
000956   031A  3C20               15100 HLTP32   LDV     $R3,Z'20'         LOAD TRAP NUMBER
000957   031B  0FE1               15110          B       >HLTRPX           CRASH
000958   031C  3C1F               15120 HLTP31   LDV     $R3,Z'1F'         LOAD TRAP NUMBER
000959   031D  0FDF               15130          B       >HLTRPX           CRASH
```

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000960  031E  3C1E      15140 HLTP30   LDV     $R3,Z'1E'      LOAD TRAP NUMBER
000961  031F  0FDD      15150          B       >HLTRPX        CRASH
000962  0320  3C1D      15160 HLTP29   LDV     $R3,Z'1D'      LOAD TRAP NUMBER
000963  0321  0FDB      15170          B       >HLTRPX        CRASH
000964  0322  3C1C      15180 HLTP28   LDV     $R3,Z'1C'      LOAD TRAP NUMBER
000965  0323  0FD9      15190          B       >HLTRPX        CRASH
000966  0324  3C1B      15200 HLTP27   LDV     $R3,Z'1B'      LOAD TRAP NUMBER
000967  0325  0FD7      15210          B       >HLTRPX        CRASH
000968  0326  3C1A      15220 HLTP26   LDV     $R3,Z'1A'      LOAD TRAP NUMBER
000969  0327  0FD5      15230          B       >HLTRPX        CRASH
000970  0328  3C19      15240 HLTP25   LDV     $R3,Z'19'      LOAD TRAP NUMBER
000971  0329  0FD3      15250          B       >HLTRPX        CRASH
000972  032A  3C18      15260 HLTP24   LDV     $R3,Z'18'      LOAD TRAP NUMBER
000973  032B  0FB2      15270          B       >HLTRAP        CRASH
000974  032C  3C17      15280 HLTP23   LDV     $R3,Z'17'      LOAD TRAP NUMBER
000975  032D  0FB0      15290          B       >HLTRAP        CRASH
000976  032E  3C16      15300 HLTP22   LDV     $R3,Z'16'      LOAD TRAP NUMBER
000977  032F  0FAE      15310          B       >HLTRAP        CRASH
000978  0330  3C15      15320 HLTP21   LDV     $R3,Z'15'      LOAD TRAP NUMBER
000979  0331  0FAC      15330          B       >HLTRAP        CRASH
000980  0332  3C14      15340 HLTP20   LDV     $R3,Z'14'      LOAD TRAP NUMBER
000981  0333  0FAA      15350          B       >HLTRAP        CRASH
000982  0334  3C13      15360 HLTP19   LDV     $R3,Z'13'      LOAD TRAP NUMBER
000983  0335  0FA8      15370          B       >HLTRAP        CRASH
000984  0336  3C12      15380 HLTP18   LDV     $R3,Z'12'      LOAD TRAP NUMBER
000985  0337  0FA6      15390          B       >HLTRAP        CRASH
000986  0338  3C11      15400 HLTP17   LDV     $R3,Z'11'      LOAD TRAP NUMBER
000987  0339  0FA4      15410          B       >HLTRAP        CRASH
000988  033A  3C10      15420 HLTP16   LDV     $R3,Z'10'      LOAD TRAP NUMBER
000989  033B  0FA2      15430          B       >HLTRAP        CRASH
000990  033C  3C0F      15440 HLTP15   LDV     $R3,Z'0F'      LOAD TRAP NUMBER
000991  033D  0FA0      15450          B       >HLTRAP        CRASH
000992  033E  3C0E      15460 HLTP14   LDV     $R3,Z'0E'      LOAD TRAP NUMBER
000993  033F  0F9E      15470          B       >HLTRAP        CRASH
000994  0340  3C0D      15480 HLTP13   LDV     $R3,Z'0D'      LOAD TRAP NUMBER
000995  0341  0F9C      15490          B       >HLTRAP        CRASH
000996  0342  3C0C      15500 HLTP12   LDV     $R3,Z'0C'      LOAD TRAP NUMBER
000997  0343  0F9A      15510          B       >HLTRAP        CRASH
000998  0344  3C0B      15520 HLTP11   LDV     $R3,Z'0B'      LOAD TRAP NUMBER
000999  0345  0F98      15530          B       >HLTRAP        CRASH
001000  0346  3C0A      15540 HLTP10   LDV     $R3,Z'0A'      LOAD TRAP NUMBER
001001  0347  0F96      15550          B       >HLTRAP        CRASH
001002  0348  3C09      15560 HLTP09   LDV     $R3,Z'09'      LOAD TRAP NUMBER
001003  0349  0F94      15570          B       >HLTRAP        CRASH
001004  034A  3C08      15580 HLTP08   LDV     $R3,Z'08'      LOAD TRAP NUMBER
001005  034B  0F92      15590          B       >HLTRAP        CRASH
001006  034C  3C07      15600 HLTP07   LDV     $R3,Z'07'      LOAD TRAP NUMBER
001007  034D  0F90      15610          B       >HLTRAP        CRASH
001008  034E  3C06      15620 HLTP06   LDV     $R3,Z'06'      LOAD TRAP NUMBER
001009  034F  0F8E      15630          B       >HLTRAP        CRASH
001010  0350  3C05      15640 HLTP05   LDV     $R3,Z'05'      LOAD TRAP NUMBER
001011  0351  0F8C      15650          B       >HLTRAP        CRASH
```

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001012  0352  3C04              15660 HLTP04   LDV      $R3,Z'04'          LOAD TRAP NUMBER
001013  0353  0F8A              15670          B        >HLTRAP            CRASH
001014  0354  3C03              15680 HLTP03   LDV      $R3,Z'03'          LOAD TRAP NUMBER
001015  0355  0F88              15690          B        >HLTRAP            CRASH
001016  0356  3C02              15700 HLTP02   LDV      $R3,Z'02'          LOAD TRAP NUMBER
001017  0357  9070 0080         15710          MTM      $M1,=$M1JTS        TEST JUMP BIT FIRST
001018  0359  9070 8000         15720          MTM      $M1,=$M1JRS        THEN RESET IT
001019  035B  0F82              15730          B        >HLTRAP            CRASH
001020  035C  3C01              15740 HLTP01   LDV      $R3,Z'01'          LOAD TRAP NUMBER
001021                          15750 *
001022  035D  8388 035F         15760 HLTRAP   JMP      *<TRAPER           CALL TRAP SUBROUTINE
001023                          15770 *
001024  035F  0360              15780 TRAPER   DC       <TRPDIE            DIE IF WE WERENT EXPECTING FAULT
001025                          15790 *
001026  0360  8C00 013A         15800 TRPDIE   STS      <SERROR            SAVE LEVEL WHERE CRASH OCCURRED
001027  0362  8E70 0000         15810          LEV      =$LVDIE            CRASH
001028                          15820 $B       RESV     0
001029  0364  0000              15830          HLT                         BETTER SAFE THAN SORRY
001030  0365  0FFF          T   15840          B        >-$B
```

```
001031                                    15850 /EJECT
001032                                    15860 *
001033                                    15870 *MODULE POINTERS
001034                                    15880 *
001035                                    15890     XLOC E$CPLR,E$INIT,E$DBG1,E$DBG2
001036                                    15900     XLOC E$CLOK,E$MMRY,E$CONS,E$SYSC
001037                                    15910     XLOC E$SFCP,E$MLCP,E$TASY,E$RASY
001038                                    15920     XLOC E$ASML,E$DEVC,E$ATTC,E$MSGD
001039                                    15930     XLOC E$MBIN,E$DASY,E$SYNC,E$SYNP
001040                                    15940     XLOC E$DVIN,E$TYMN,E$RJEN,E$MTRS
001041                                    15950     XLOC E$NETX,E$NDPT
001042                                    15960 *
001043    0366   0387                     15970 MODULE DC <E$DBTL    OURSELVES
001044    0367   0000           X         15980     DC <E$CPLR       COUPLER
001045    0368   0000           X         15990     DC <E$CONS       MULTIPOINT CONSOLE
001046    0369   0000           X         16000     DC <E$SYSC       SYSTEMS CONSOLE INTERFACE
001047    036A   0000           X         16010     DC <E$DBG1       DEBUGGER PART 1
001048    036B   0000           X         16020     DC <E$DBG2       DEBUGGER PART 2
001049    036C   0000           X         16030     DC <E$CLOK       CLOCK MANIPULATORS
001050    036D   0000           X         16040     DC <E$MMRY       MEMORY MANAGEMENT
001051    036E   0000           X         16050     DC <E$INIT       INITIALIZATION
001052    036F   0000           X         16060     DC <E$SFCP       SOFT SIDE OF COUPLER
001053    0370   0000           X         16070     DC <E$MLCP       MLCP IO ROUTINES
001054    0371   0000           X         16080     DC <E$TASY       ASYNCHRONOUS PROTOCOL OUTPUT (MLCP)
001055    0372   0000           X         16090     DC <E$RASY       ASYNCHRONOUS PROTOCOL INPUT (MLCP)
001056    0373   0000           X         16100     DC <E$ASML       ASYNCHRONOUS PROTOCOL DRIVER (L6)
001057    0374   0000           X         16110     DC <E$DEVC       DEVICE INTERFACE
001058    0375   0000           X         16120     DC <E$DVIN       DEVICE INPUT
001059    0376   0000           X         16130     DC <E$MSGD       MESSAGES ROUTINES
001060    0377   0000           X         16140     DC <E$ATTC       MAINFRAME ATTACHMENTS
001061    0378   0000           X         16150     DC <E$DASY       DELAYS FOR ASYNCS
001062    0379   0000           X         16160     DC <E$MBIN       MOTHER BOARD INIT ROUTINES
001063    037A   0000           X         16170     DC <E$SYNC       SYNCHRONOUS PROTOCOL DRIVER (MLCP)
001064    037B   0000           X         16180     DC <E$SYNP       SYNCHRONOUS PROTOCOL DRIVER (L6)
001065    037C   0000           X         16190     DC <E$TYMN       TYMNET NETWORK CONTROL
001066    037D   0000           X         16200     DC <E$NETX       PACKET NETWORK CONTROL
001067    037E   0000           X         16210     DC <E$RJEN       REMOTE JOB ENTRY TERMINAL SUPPORT
001068    037F   0000           X         16220     DC <E$MTRS       METERS,CONFIGURATIONS
001069    0380   0000           X         16230     DC <E$NDPT       NODE POINT ROUTING
001070    0381        0000                16240     RESV 3,Z'0000'   END OF TABLE AND 2 SPARES
```

```
    001071                                    99990 /EJECT
    001072                                    99991 *
    001073                                    99992 *FORCE ALL MODULES TO BE 0MOD8 IN LENGTH
    001074                                    99993 *
    001075                          0387      99994 E$ENDR EQU $-S$DBTL+3
    001076   0384   0000                      99995   RESV ((E$ENDR+7)/8)*8-E$ENDR,Z'0000'

    001077                                    99996 *
    001078   0385   4442                      99997   DC 'DBTL'              MNEUMONIC NAME OF MODULE
             0386   544C
    001079   0387   0000                      99998 E$DBTL DC <S$DBTL   START OF ROUTINE
    001080   0388                             99999   END DBTL SOFTWARE
0001 ERR COUNT
02340 WORD SYMBOL TABLE
```

```
      $           ****       3    602   701   702   715   785   866   878   889   900  1075
M  $A             668
M  $A             838     665   840
N  $ACCE          135
N  $ACCX          136
N  $ACCZ          137
   $ALL           865     869   881   892   903
N  $ASC0           66
N  $ASC1           67
N  $ASC2           68
N  $ASC3           69
N  $ASC4           70
N  $ASC5           71
N  $ASC6           72
N  $ASC7           73
N  $ASC8           74
N  $ASC9           75
N  $ASCA           79
N  $ASCAP         111
N  $ASCAS         114
N  $ASCAT         126
N  $ASCB           80
N  $ASCBA         129
N  $ASCBS         127
N  $ASCC           81
N  $ASCCM         116
N  $ASCCN         120
   $ASCCR          59      62
N  $ASCD           82
N  $ASCDL         110
N  $ASCDS         117
N  $ASCDT         118
   $ASCE           83     135
N  $ASCEC          61
N  $ASCEM         142
N  $ASCEQ         123
N  $ASCF           84
N  $ASCFF         141
N  $ASCFS         119
N  $ASCG           85
N  $ASCGS         143
N  $ASCGT         124
N  $ASCH           86
N  $ASCHT         139
N  $ASCI           87
N  $ASCJ           88
N  $ASCK           89
N  $ASCL           90
   $ASCLF          60      62
N  $ASCLP         112
N  $ASCLT         122
N  $ASCM           91
```

```
N  $ASCN      92
N  $ASCO      93
N  $ASCP      94
N  $ASCPL    115
N  $ASCQ      95
N  $ASCQM    125
N  $ASCR      96
   $ASCRO    130    131
N  $ASCRP    113
N  $ASCRS    144
N  $ASCS      97
N  $ASCSC    121
N  $ASCSP    109
N  $ASCT      98
N  $ASCU      99
N  $ASCUA    128
N  $ASCV     100
N  $ASCVT    140
N  $ASCW     101
   $ASCX     102    136
N  $ASCY     103
   $ASCZ     104    137
M  $B        671
M  $B        708
M  $B       1028    679    710   1030
   $B2      ****     627    669    816
   $B3      ****     660    670
   $B4      ****     821    822
   $B6      ****     489
   $B7      ****     490    839
   $BOOT     626    463    714    718    821    842
   $C        849    830
N  $CFGAI     23
N  $CFGAO     24
N  $CFGBI     25
N  $CFGBO     26
N  $CRLF      62
N  $ICTLI     14
N  $ICTLO     15
N  $IDINP     30
N  $INMBA     19
N  $INMMA     20
N  $INRNG     21
   $INTBT    547    462
   $IOCH0      8     33
   $IOCH1      9     34
N  $IOCH2     10
   $IOCH3     11    409
   $IOLD      32     33     34
N  $IOLDI     33
N  $IOLDO     34
N  $ISTS1     28
```

```
N $ISTS2      29
N $IVB1      233
N $IVDEV     228
  $IVECT     602   530
N $IVI       234
N $IVLEV     226
N $IVM1      236
N $IVMSK     229
N $IVP       230
N $IVR1      235
N $IVREG     232
N $IVS       231
N $IVT       237
N $IVTSA     227
  $LVDIE     267   684   707  1027
N $LVDIS     265
N $LVDSX     266
  $LVENT     264   267
  $LVEXE     263   843
  $LVEXI     261   811
N $LVSCH     262
  $M1       ****  1017  1018
N $M1JRS     272
N $M1JST     271
  $M1JTS     273  1017
  $MKB1      206   219
N $MKB13     219
N $MKB2      205
  $MKB3      204   221
  $MKB4      203   220
N $MKB47     220
N $MKB5      202
N $MKB6      201
N $MKB7      200
  $MKI       207   221
N $MKM1      215
  $MKR1      214   217
N $MKR13     217
N $MKR2      213
  $MKR3      212   221
  $MKR4      211   218
N $MKR47     218
N $MKR5      210
N $MKR6      209
N $MKR7      208
N $MKSTD     221
N $OBCTL      22
N $OCCTL      16
N $OTCTL      13
  $R1       ****   486   683
  $R2       ****   485
  $R3       ****   661   664   669   928   930   932   934   936   938   940   942   944   946   948   950   952   954   956   958
```

		960	962	964	966	968	970	972	974	976	978	980	982	984	986	988	990	992	994	996
		998	1000	1002	1004	1006	1008	1010	1012	1014	1016	1020								
$R4	****	487																		
$R5	****	670	673	680	681	833														
$R6	****	669	672	673	675	676															
$R7	****	805	806	820	823	829	830	832												
N $RORO	131																			
$RTCLK	544	461																		
N $S10	149																			
N $S120	153																			
N $S15	150																			
N $S180	154																			
N $S1920	158																			
N $S240	155																			
N $S30	151																			
N $S480	156																			
N $S60	152																			
N $S960	157																			
N $SMAX	160																			
$SRGP3	256	872	884	895	906															
$TSAA	247	249	251																	
N $TSAB3	250																			
N $TSACM	245																			
N $TSAI	243																			
N $TSAL	242																			
$TSALN	253	916	919	922																
$TSALS	542	460																		
$TSAP	248	249																		
N $TSAPX	249																			
N $TSAR3	244																			
N $TSATM	251																			
N $TSAWD	252																			
N $TSAZ	246																			
N $TSKRI	17																			
N $TSKRO	18																			
$TV01	597	464																		
N $TV02	596																			
N $TV03	595																			
N $TV04	594																			
N $TV05	593																			
$TV06	592	465																		
N $TV07	591																			
N $TV08	590																			
N $TV09	589																			
N $TV10	588																			
$TV11	587	466																		
N $TV12	586																			
N $TV13	585																			
N $TV14	584																			
N $TV15	583																			
$TV16	582	467																		
N $TV17	581																			

```
N $TV18         580
N $TV19         579
N $TV20         578
  $TV21         577     468
N $TV22         576
N $TV23         575
N $TV24         574
N $TV25         573
  $TV26         572     469
N $TV27         571
N $TV28         570
N $TV29         569
N $TV30         568
  $TV31         567     470
N $TV32         566
N $TV33         565
N $TV34         564
N $TV35         563
  $TV36         562     471
N $TV37         561
N $TV38         560
N $TV39         559
N $TV40         558
  $TV41         557     472
N $TV42         556
N $TV43         555
N $TV44         554
N $TV45         553
  $TV46         552     473
  $WDTMR        545     461
  ADJUST        825     826
N ASCMOD        429
N ASYID         341
  BADSTS        652     680
  BASE          490     630     657     808     826     851
N BCDMOD        430
N BINMOD        431
N BISID         342
N BKRDTA        329
  BTLDCH         39     833
  BTLOOP        828     853
N BUFBSY        387
N CFGRD         445
  CHANEL        486     672     809
N CIDLE         441
  CIVDEV        375     376
  CMDLIS        686     627     816
  CNSLEV        289     290
  CONT          803     632     804
  COUPID        339     832
  COUPSL        414     415
  COUPST        350     352     839
```

```
  COUPTL    415   416
N COUPWL    416
N CPBFLN    401
  CPFLGS    349   350
N CPLRBL    381
  CPLRLV    286   414
N CPUOCH     38
  CURBUF    301   302
  CURLEN    302   303
  DATE      859   858
  DATEND    701   716   717
  DATLEN    702   664
  DATLIS    692   660   702
  DATLOC    693   657
N DBGLEV    292
N DCWLEN    425
  DCWLST    379   381
  DEADCT    354   356
N DEVLEV    293
N DISKID    340
N DW66T6    422
N DW6T66    421
N DWCNFG    423
N DWDSCI    420
  E$ASML   1038  1056
  E$ATTC   1038  1060
  E$CLOK   1036  1049
  E$CONS   1036  1045
  E$CPLR   1035  1044
  E$DASY   1039  1061
  E$DBG1   1035  1047
  E$DBG2   1035  1048
  E$DBTL   1079     2  1043
  E$DEVC   1038  1057
  E$DVIN   1040  1058
  E$ENDR   1075  1076
  E$INIT   1035  1051
  E$MBIN   1039  1062
  E$MLCP   1037  1053
  E$MMRY   1036  1050
  E$MSGD   1038  1059
  E$MTRS   1040  1068
  E$NDPT   1041  1069
  E$NETX   1041  1066
  E$RASY   1037  1055
  E$RJEN   1040  1067
  E$SFCP   1037  1052
  E$SYNC   1039  1063
  E$SYNP   1039  1064
  E$SYSC   1036  1046
  E$TASY   1037  1054
  E$TYMN   1040  1065
```

```
    ENDING      529  855
    ENDO        855  820   822   823
    ERRIV       900  603   786
N   ERRLEV      278
N   ESCDTA      328
N   ESCQTL      327
N   FPTR         45
    FRSTCK      316  317
    H66DTA      370  371
N   H66SPC      407
N   H66TRM      406
    HALT        653  683
N   HANGLV      281
N   HEADRS      479
    HLTP01     1020  597   780
    HLTP02     1016  596   779
    HLTP03     1014  595   778
    HLTP04     1012  594   777
    HLTP05     1010  593   776
    HLTP06     1008  592   775
    HLTP07     1006  591   774
    HLTP08     1004  590   773
    HLTP09     1002  589   772
    HLTP10     1000  588   771
    HLTP11      998  587   770
    HLTP12      996  586   769
    HLTP13      994  585   768
    HLTP14      992  584   767
    HLTP15      990  583   766
    HLTP16      988  582   765
    HLTP17      986  581   764
    HLTP18      984  580   763
    HLTP19      982  579   762
    HLTP20      980  578   761
    HLTP21      978  577   760
    HLTP22      976  576   759
    HLTP23      974  575   758
    HLTP24      972  574   757
    HLTP25      970  573   756
    HLTP26      968  572   755
    HLTP27      966  571   754
    HLTP28      964  570   753
    HLTP29      962  569   752
    HLTP30      960  568   751
    HLTP31      958  567   750
    HLTP32      956  566   749
    HLTP33      954  565   748
    HLTP34      952  564   747
    HLTP35      950  563   746
    HLTP36      948  562   745
    HLTP37      946  561   744
    HLTP38      944  560   743
```

```
    HLTP39   942    559    742
    HLTP40   940    558    741
    HLTP41   938    557    740
    HLTP42   936    556    739
    HLTP43   934    555    738
    HLTP44   932    554    737
    HLTP45   930    553    736
    HLTP46   928    552    735
    HLTRAP  1022    926    973    975    977    979    981    983    985    987    989    991    993    995    997    999   1001   1003   1005   1007
                   1009   1011   1013   1015   1019
    HLTRPX   926    929    931    933    935    937    939    941    943    945    947    949    951    953    955    957    959    961    963    965
                    967    969    971
  N I$CWA    502
  N I$CWB    503
  N I$DVID   505
  N I$INTC   504
  N I$RANG   501
    I$STAT   507    676    689    690
  N I$TASK   506
    IDLE     845    847
    IDLEIV   866    609    792
  N IFINAL   310
  N IGNDEL   332
  N IGNENQ   330
  N IGNLFD   331
  N IGNLTL   325
  N IGNNSB   326
  N IGNULL   333
    IMSGBK   363    365
    IMSGBP   360    361
    IMSGCM   361    362
    IMSGLN   362    363
    INIT     532    883
    INITCP   802    834
    INITIV   878    607    790
    INPMAX   318    319
  N INTBT    730
  N INTH66   409
  N IOBUSY   386
    IOLOOP   663    677    681
    IOWDS    368    369
  N IOXFR    443
  N IVECT    785
    L63$R1   874    809
  N L66RDC   396
  N L66WTC   397
    L6BUFR   369    370
  N L6RSET   391
  N LASTCH    40
    LENGTH   694    656
    LOWSEC   525    629    696    807
  N LPTR      46
```

```
     LSTSTS    376    377
  N  LTLONG    309
     MASK      654    675
     MBXLOC    371    372
     MBXPKG    372    373
  N  MBXRD     442
  N  MBXWDS    399
  N  MCPLEV    284
  N  MFLAGS    304
     MODULE   1043    458
     MORE      715    717
     MORE2     804    630
  N  MSBMOD    434
  N  MSGLEV    291
  N  NETLEV    287
     NSBERR    303    304
     O$ADDR    493    687
  N  O$CNTL    499
     O$CWA     495    688
  N  O$CWB     496
  N  O$INTC    497
     O$RANG    494    687
     O$TASK    498    689    690
  N  ODDRW$    514
  N  ODRW$     515
  N  OFRMT$    512
     OMSGFB    356    357
     OMSGFP    357    358
     OMSGLB    358    359
     OMSGLP    359    360
     ONE       481    804    805    850
  N  ONESEC    295
  N  ORCAL$    510
     ORW$      513    699
     OSEEK$    511    697
  N  OWRAP$    516
     PSBCLK    352    353
     PSBCNT    353    354
     RANGE     485    629    656    807    818    851
     READ      640    631    810    852
     RESTOF    814    871
  N  RLDSET    390
     RSTART    802    812
     RTCLEV    282    843
  N  RTCLK     727
  N  RWORD      52
     S$DBTL      3   1075   1079
  N  SBSCLV    288
     SCNDCK    317    318
     SECNUM    696    806    817
     SECSIZ    524    696    807
     SERROR    712    457    706   1026
```

```
  N SLRDCK     388
  N SM$000     165
  N SM$DL0     176
  N SM$DL1     177
  N SM$DL2     178
  N SM$DL3     179
  N SM$DL4     180
  N SM$DL5     181
  N SM$DL6     182
  N SM$DL7     183
    SM$DLY     175    176    177    178    179    180    181    182    183
  N SM$ECH     167
  N SM$E00     170
  N SM$FRD     171
  N SM$IDY     173
  N SM$MFR     169
  N SM$OM0     186
  N SM$OM1     187
  N SM$OM2     188
  N SM$OM3     189
    SM$OMD     185    186    187    188    189
  N SM$RDO     172
  N SM$ROT     168
    SPICMD     365    366
    SPISTS     377    379
    START      625    531
    STATUS     374    375
    STSLOC     373    374
  N STSWDS     400
  N STSWT      444
  N STYFGS     319
  N SWORD       50
  N SX25LV     285
    SYCLEV     290    291
    TAL6       367    368
    TAL66      366    367
    TIME       860    858
  N TLAMOD     432
  N TLBMOD     433
  N TLCMOD     435
  N TLDMOD     436
    TRACK      487    628    658    850
    TRAPER    1024    459   1022
    TRKNUM     695    658
    TRKSIZ     523    629    818    829
    TRNS       489    631    666    810    834    852
  N TRPCLK     311
    TRPDIE    1026   1024
    TSABK0     915    542    725
    TSABK1     918    915
    TSABK2     921    918
  N TSALS      725
```

```
   TSAOVR     705   894
   TSOVIV     889   605    788
N  TSOVLV     280
N  TV01       780
N  TV02       779
N  TV03       778
N  TV04       777
N  TV05       776
N  TV06       775
N  TV07       774
N  TV08       773
N  TV09       772
N  TV10       771
N  TV11       770
N  TV12       769
N  TV13       768
N  TV14       767
N  TV15       766
N  TV16       765
N  TV17       764
N  TV18       763
N  TV19       762
N  TV20       761
N  TV21       760
N  TV22       759
N  TV23       758
N  TV24       757
N  TV25       756
N  TV26       755
N  TV27       754
N  TV28       753
N  TV29       752
N  TV30       751
N  TV31       750
N  TV32       749
N  TV33       748
N  TV34       747
N  TV35       746
N  TV36       745
N  TV37       744
N  TV38       743
N  TV39       742
N  TV40       741
N  TV41       740
N  TV42       739
N  TV43       738
N  TV44       737
N  TV45       736
N  TV46       735
N  TWO        482
   U          519   687    688    689    690    696    805
N  UNEDIT     324
```

```
    USERQ      348   349
N USRDTA      48
N UWORD       51
N WATLEV     283
N WDTLEV     279
N WDTMR      728
    ZERO      480   628   661
    ZILCH     856   808
  562 LABELS
  491 REFERENCES
 1080 RECORDS
    0 U FLAGS
    5 M FLAGS
  332 N FLAGS
 3342 WORD CROSS REFERENCE TABLE
```

```
B**BB**BB**BB**BB**BB**BB**BB**BB**BB**BB**BB**BB**BB* COMPUTER SHARING SERVICES *BB**BB**BB**BB**BB**BB**BB**BB**BB**BB**BB**BB**BB**B
B**BB**BB**BB**BB**BB**BB**BB**BB**BB**BB**BB**BB**BB* COMPUTER SHARING SERVICES *BB**BB**BB**BB**BB**BB**BB**BB**BB**BB**BB**BB**B

aaaaa   a   a   aaaa                                              a              aaaa    aaaa    aaaa    aaaa   aaaaa
a       a   a   a   a                                             a              a   a   a   a   a   a   a   a   a
aaaa    aa  a   a   a                                             a              a   a   a   aaaa   a   a   aa  a   a
a       a aa   a   a                                              a              a   a   a   a   a   a   a   a   a
a       a   a   a   a                                             a     aa       a   a   a   a   a   a   a   a   a
aaaaa   a   a   aaaa                                              aaaaa   aa      aaaa    aaaa    aaaa    aaaa     a

B**BB**BB**BB**BB**BB**BB**BB**BB**BB**BB**BB**BB**EB* COMPUTER SHARING SERVICES *BB**BB**BB**BB**BB**BB**BB**BB**BB**BB**BB**BB**B
924 924 924 924 924 924 924 924 924 924 924 924 924 924 924 924 924 924 924 924 924 924 924 924 924 924 924 924 924 924 924 924 924 924
```

          12/24/81   12:45:34   PRINTOUT #924