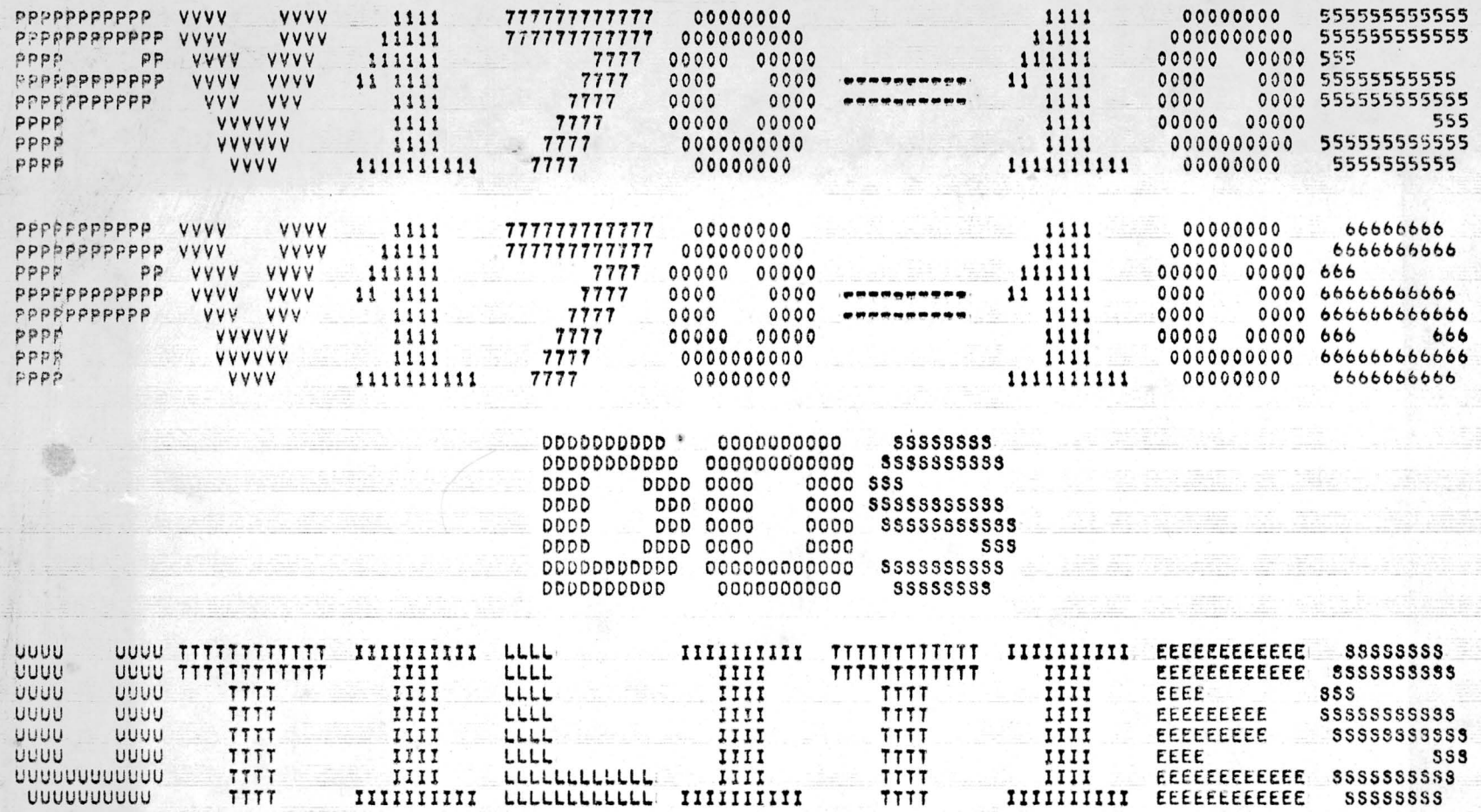
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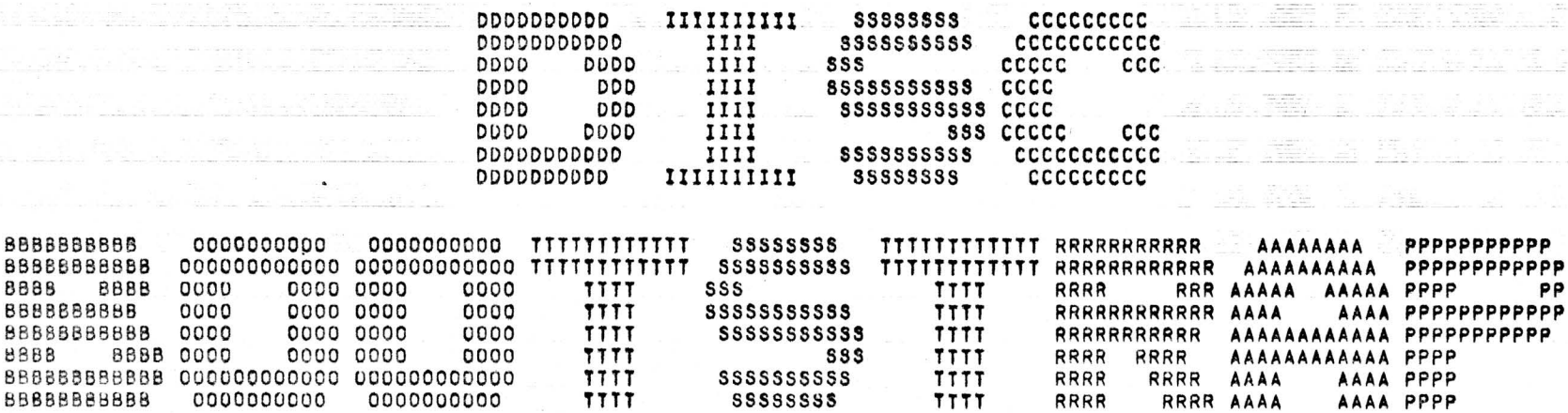
PPPPPPPPPPP VVVV VVVV 11111 7777777777 0000000000 11111 0000000000 5555555555
PPPP PP VVVV VVVV 111111 7777 00000 00000 111111 00000 00000 555
PPPPPPPPPPP VVVV VVVV 11 1111 7777 0000 0000 11 1111 0000 0000 5555555555
PPPPPPPPPPP VVV VVV 1111 7777 0000 0000 1111 0000 0000 5555555555
PPPP VVVVVV 1111 7777 00000 00000 1111 00000 00000 555
PPPP VVVVVV 1111 7777 0000000000 1111 0000000000 5555555555
PPPP VVVV 1111111111 7777 00000000 1111111111 00000000 5555555555
PPPPPPPPPP VVVV VVVV 1111 7777777777 00000000 1111 00000000 66666666
PPPPPPPPPPP VVVV VVVV 11111 7777777777 0000000000 11111 0000000000 6666666666
PPPP PP VVVV VVVV 111111 7777 00000 00000 111111 00000 00000 666
PPPPPPPPPPP VVVV VVVV 11 1111 7777 0000 0000 11 1111 0000 0000 66666666666
PPPPPPPPPP VVV VVV 1111 7777 0000 0000 1111 0000 0000 666666666666
PPPP VVVVVV 1111 7777 00000 00000 1111 00000 00000 666 666
PPPP VVVVVV 1111 7777 0000000000 1111 0000000000 666666666666
PPPP VVVV 1111111111 7777 00000000 1111111111 00000000 6666666666
DDDDDDDDD 0000000000 $$$$$$$$
DDDDDDDDDD 0000000000 $$$$$$$$$
DDDD DDDD 0000 0000 $$$
DDDD DDD 0000 0000 $$$$$$$$$$
DDDD DDD 0000 0000 $$$$$$$$$$
DDDD DDDD 0000 0000 $$$
DDDDDDDDDD 0000000000 $$$$$$$$$
DDDDDDDDD 0000000000 $$$$$$$$
UUUU UUUU TTTTTTTTTTTT IIIIIIIIII LLLL IIIIIIIIII TTTTTTTTTTTT IIIIIIIIII EEEEEEEEEEE $$$$$$$$
UUUU UUUU TTTTTTTTTTTT IIII LLLL IIII TTTTTTTTTTTT IIII EEEEEEEEEEE $$$$$$$$$
UUUU UUUU TTTT IIII LLLL IIII TTTT IIII EEEE $$$
UUUU UUUU TTTT IIII LLLL IIII TTTT IIII EEEEEEEEE $$$$$$$$$$
UUUU UUUU TTTT IIII LLLL IIII TTTT IIII EEEEEEEEE $$$$$$$$$$
UUUU UUUU TTTT IIII LLLL IIII TTTT IIII EEEE $$$
UUUUUUUUUUUU TTTT IIII LLLLLLLLLLLL IIII TTTT IIII EEEEEEEEEEE $$$$$$$$$
UUUUUUUUUU TTTT IIIIIIIIII LLLLLLLLLLLL IIIIIIIIII TTTT IIIIIIIIII EEEEEEEEEEE $$$$$$$$


DDDDDDDDDD IIIIIIIIII SSSSSSS CCCCCCCCC
DDDDDDDDDDD IIII SSSSSSSSS CCCCCCCCCCC
DDDD DDDD IIII SSS CCCCC CCC
DDDD DDD IIII SSSSSSSSSS CCCC
DDDD DDD IIII SSSSSSSSSS CCCC
DDDD DDDD IIII SSS CCCCC CCC
DDDDDDDDDD IIII SSSSSSSSS CCCCCCCCCCC
DDDDDDDDDD IIIIIIIIII SSSSSSS CCCCCCCCC

BBBBBBBBB OOOOOOOOO OOOOOOOOO TTTTTTTTTTT SSSSSSS TTTTTTTTTTT RRRRRRRRR AAAAAAAA PPPPPPPPP
BBBBBBBBBB OOOOOOOOO OOOOOOOOO TTTTTTTTTTT SSSSSSSSS TTTTTTTTTTT RRRRRRRRRR AAAAAAAAA PPPPPPPPPP
BBBB BBBB OOOO OOOO OOOO OOOO TTTT SSS TTTT RRRR RRR AAAAA AAAA PPPP PP
BBBBBBBBB OOOO OOOO OOOO OOOO TTTT SSSSSSSSS TTTT RRRRRRRRR AAAA AAAA PPPPPPPPP
BBBBBBBBB OOOO OOOO OOOO OOOO TTTT SSSSSSSSS TTTT RRRRRRRRR AAAAAAAAA PPPPPPPPP
BBBB BBBB OOOO OOOO OOOO OOOO TTTT SSS TTTT RRRR RRRR AAAAAAAAAA PPPP
BBBBBBBBB OOOOOOOOO OOOOOOOOO TTTT SSSSSSSSS TTTT RRRR RRRR AAAA AAAA PPPP
BBBBBBBBB OOOOOOOOO OOOOOOOOO TTTT SSSSSSS TTTT RRRR RRRR AAAA AAAA PPPP

```
00000                                IDENT   DKBOOT
00001                          $     EQU     1
00002  0000  208F              INH   INH
00003  0002  BBC0              ML    7,IOROUT        TAKE DEVICE ADDRESS
       0004  0000  F0032
00004  0006  273F                    ANK     A7,/3F      ADDR OF DISK UNIT
00005  0008  911C                    ADR     A1,A7         SET SEEK ZERO
00006  000A  921C                    ADR     A2,A7         SET READ SECTOR INSTRUCTION
00007  000C  270F                    ANK     A7,/F
00008  000E  3F42                    SLL     A7,2
00009  0010  1778                    ADK     A7,/78        /78 = /80 - 4 WORDS
00010  0012  BB3D                    MSR     6,A7          MULTX + I/O ROUTINE SET
00011  0014  0503                    LDK     A5,3
00012  0016  041A                    LDK     A4,/1A      BOOT1
00013                          *
00014  0018  8F1C                    ABR     A7            SEEK ZERO
00015  001A  050C              BOOT1 LDK     A5,/C
00016  001C  0420                    LDK     A4,/20      BOOT2
00017                          *
00018  001E  8F1C                    ABR     A7            READ SECTOR 1
00019  0020  8340              BOOT2 LD      A3,CW2        COMPUTE START ADDRESS
       0022  0000  F003C
00020                          *
00021  0024  9B20                    SUK,L   A3,/198
       0026  0198
00022                          *
00023  0028  812C                    LDR*    A1,A3
00024  002A  5C2C                    RB(4)   INH           SEEK ERROR ,LOOP
00025  002C  1304                    ADK     A3,4        A3 = START ADDRESS
00026  002E  8F0C                    ABR     A3          BRANCH TO IPL
00027  0030  0000                    DATA    0
00028  0032  45C0              IOROUT CIO    A5,$,0        IO ROUTINE TO BE TRANSFERRED
00029  0034  4DC0                    SST     A5,0          ABOVE MULTIPLEX CONTRL WORDS
00030  0036  5C04                    RB(4)   *-2
00031  0038  8F10                    ABR     A4            RETURN TO CALLING PROGRAM
00032  003A  4E66              CW1   DATA    /4E66       MULTIPLEX CONTRLO WORDS
00033  003C  3E00              CW2   DATA    /3E00
00034  003E  0002                    DATA    /0002         DEVICE ADDRESS
00035                                END     INH
```

```
          SYMBOL TABLE

S         0001  A   INH       0000  R   IOROUT  0032  R   BOOT1   001A  R
BOOT2     0020  R   CW2       003C  R   CW1     003A  R

          ASS,ERR,    00000
```

```
PPPPPPPPPPP  VVVV     VVVV      1111       66666666   555555555555                 00000000     00000000   777777777777
PPPPPPPPPPPP VVVV     VVVV     11111      6666666666  555555555555                00000000000   0000000000  777777777777
PPPP      PP  VVVV   VVVV     111111     666          555                        00000  00000 00000  00000        7777
PPPPPPPPPPPP  VVVV  VVVV    11 1111     66666666666  55555555555  ----------    0000    0000 0000    0000        7777
PPPPPPPPPPP    VVV  VVV        1111     666666666666 555555555555 ----------    0000    0000 0000    0000       7777
PPPP            VVVVVV        1111     666      666           555                00000  00000 00000  00000      7777
PPPP            VVVVVV        1111     666666666666 555555555555                0000000000   0000000000     7777
PPPP             VVVV      1111111111   6666666666   5555555555                 00000000     00000000     7777
```

```
                          DDDDDDDDDD    IIIIIIIIII    SSSSSSSS     CCCCCCCCC
                          DDDDDDDDDDD     IIII      SSSSSSSSSS   CCCCCCCCCCC
                          DDDD    DDDD    IIII     SSS          CCCCC    CCC
                          DDDD     DDD    IIII     SSSSSSSSSS  CCCC
                          DDDD     DDD    IIII      SSSSSSSSSS CCCC
                          DDDD    DDDD    IIII            SSS CCCCC    CCC
                          DDDDDDDDDDD     IIII     SSSSSSSSS   CCCCCCCCCCC
                          DDDDDDDDDD    IIIIIIIIII    SSSSSSS     CCCCCCCCC
```

```
PPPPPPPPPPP  RRRRRRRRRRR  EEEEEEEEEEEE MMMM     MMMM   AAAAAAAA   RRRRRRRRRRR  KKKK    KKKK
PPPPPPPPPPPP RRRRRRRRRRRR EEEEEEEEEEEE MMMMM   MMMMM  AAAAAAAAAA  RRRRRRRRRRRR KKKK   KKKK
PPPP      PP RRRR     RRR EEEE         MMMMMMMMMMMMM AAAAA  AAAAA RRRR     RRR KKKK KKKK
PPPPPPPPPPPP RRRRRRRRRRRR EEEEEEEEE    MMMMMMMMMMMMM AAAA    AAAA RRRRRRRRRRRR KKKKKKKK
PPPPPPPPPPP  RRRRRRRRRR   EEEEEEEEE    MMMM MM MMMM AAAAAAAAAAAA RRRRRRRRRR   KKKKKKKK
PPPP         RRRR  RRRR   EEEE         MMMM    MMMM AAAAAAAAAAAA RRRR  RRRR   KKKK KKKK
PPPP         RRRR   RRRR  EEEEEEEEEEE  MMMM    MMMM AAAA    AAAA RRRR   RRRR  KKKK   KKKK
PPPP         RRRR    RRRR EEEEEEEEEEE  MMMM    MMMM AAAA    AAAA RRRR    RRRR KKKK    KKKK
```

```
00000                                   IDENT    PRMK02
00001                                   ENTRY    PREMRK
00002  0000  8F20                       AB,L     PREMRK
       0002  0000  F
00003                           IPLDD   EQU       *
00004  0004  0000                        DATA     0          SECTOR ID
00005  0006  0190                        DATA     400
00006                           *
00007                           *
00008                           SIO     EQU      1
00009                           HIO     EQU      0
00010                           DSKAD   EQU      /3E
00011                           *
00012                           *       IPLD IS A SELF RELOCATABLE PROGRAM, RUNNING IN INHIBIT MODE
00013                           *       AND USED TO LOAD THE SUPERVISOR FROM THE DISK
00014                           *       IT IS LOADED BY A BOOTSTRAP LOADER AND GETS THE CONTROL AFTER
00015                           *       LOADING (FROM PTR,IT READS THE CHECKSUM AND STOPS THE READER)
00016                           *
00017                           ******  INPUT PARAMETERS:
00018                           *               LOCATION /3E IS INITIALIZED AS FOLLOWS:
00019                           *               BIT 8=1 IF IPLD WAS LOADED FROM PTR,IN THIS CASE, LOC
00020                           *                       2 AND 4 CONTAIN CIO START AND INR INST FOR
00021                           *                       THE INPUT DEVICE
00022                           *               BIT 8=0 IF IPLD WAS LOADED FROM ANY DEVICE CONNECTED
00023                           *                       THRU A MULTIPLEX SUBCHANNEL (OR SIMPLEX)
00024                           *               BITS 11 TO 15 (5 BITS ONLY) CONTAIN THE DISK UNIT ADDR
00025                           *                       FROM WHICH THE MONITOR IS LOADED
00026                           *
00027                           ******  USED REGISTERS :
00028                           *       A1 CHECKSUM FROM PTR
00029                           *          ACCUMULATOR
00030                           *          TEMPORARY
00031                           *       A2 ACCUMULATOR
00032                           *          BOU LINES FOR PTR
00033                           *          TEMPORARY
00034                           *       A3 CURRENT LOAD ADDR ,INITIALIZED TO ZERO
00035                           *       A4 INR INSTRUCTION
00036                           *       A4 NUMBER OF SECTORS TO BE READ
00037                           *
00038                           *       A5 BOU LINES FOR DISK COMMANDS
00039                           *          CONTAINS STATUS OF THE CURRENT OPERATION
00040                           *          DURING THE MOVE,IT CONTAINS THE CURRENT LOCATION OF DSK BUFF
00041                           *
00042                           *       A6 CURRENT SECTOR TO BE READ (LOGICAL NUMBER ,INTERLACED)
00043                           *       A7 BASE OF PROGRAM,USED AS BAGE REGISTER
00044                           *
00045                           *       A8 DISK ADDR
00046                           *       A8 CONTROLLER ADDR
00047                           *
00048                           *       A9 PHYSICAL SECTOR NUMBER
```

```
00049                  *
00050                  *       A10 NOT USED
00051                  *
00052                  *
00053                  *       A11 BEGINNING ADDR OF BUFFER +4 = 1ST CODE WORDS
00054                  *
00055                  *       A12 START ADDRESS OF THE LOADED PROGRAM
00056                  *
00057                  *       A13 NOT USED
00058                  *
00059                  *       A14 STACK
00060                  *
00061                  *       A15 NOT USED
00062                  *
00063                  *
00064                  *
00065                  *
00066                  *
00067                  *
00068                  *
00069                  *
00070                  *
00071                  *
00072                  *
00073                  *
00074                  *
00075                  *
00076                  *
00077                  *
00078                  *
```

```
00079                                  EJECT
00080                          *
00081                          IPLD    EQU     *           1ST INST TO BE EXECUTED,STARTED BY BOOTSTR
00082                          *
00083                          BASE    EQU     *           A14=A7=BASE
00084  0008  8680                     LDR     A14,P          A14= STACK POINTER
00085  000A  9EA0                     SUK,L   A14,2
       000C  0002
00086  000E  871A                     LDR     A7,A14      SET BASE ADDR OF FLAGS,A7  USED AS INDEX
00087  0010  20BF                     INH                 AGAIN,MAY BE USEFUL WITH MLX OR SIMPLEX
00088  0012  8540                     LD      A5,DSKAD    GET LOCATION /3E
       0014  003E
00089  0016  3048                     SLL     A5,8        CHECK IF IPLD WAS LOADED FROM IO BUS
00090  0018  5600  F                  RF(6)   MLX         POSITIVE OR NULL,MULTIPLEX
00091                          *                          IPLD LOADED FROM IO BUS,READ NEXT TWO CHAR
00092                          *                          AND CHECK THE SUM
00093  001A  8440                     LD      A4,4        INR INST
       001C  0004
00094  001E  A420                     ANK,L   A4,/3F      DEVICE ADDR
       0020  003F
00095  0022  945D                     ADS     A4,INR-BASE,A7
       0024  0000  F
00096  0026  945D                     ADS     A4,INR1-BASE,A7
       0028  0000  F
00097                          INR     EQU     *
00098  002A  4A00                     INR     A2,0,0      INSTRUCTION TO BE MODIFIED
00099  002C  5C04                     RB(4)   INR         TRY AGAIN IF NOT ACCEPTED
00100  002E  E508                     ECR     A5,A2
00101                          INR1    EQU     *
00102  0030  4A00                     INR     A2,0,0
00103  0032  5C04                     RB(4)   INR1
00104  0034  9214                     ADR     A2,A5       A2 CONTAINS THE LAST WORD = CHECKSUM
00105  0036  B108                     XRR     A1,A2
00106  0038  5000  F                  RF(0)   CKOK        CHECKSUM OK
00107  003A  207F                     HLT                 NOT OK
00108                          *
00109                          CKOK    EQU     *
00110                          *                          INR+/C0=SST
00111  003C  945D                     ADS     A4,SST-BASE,A7
       003E  0000  F
00112                          *
00113                          *                          INR=780=HALTIO
00114  0040  945D                     ADS     A4,HLTIO-BASE,A7
       0042  0000  F
00115                          HLTIO   EQU     *
00116  0044  4280                     CIO     A2,HIO,0    HALT IO
00117                          SST     EQU     *
00118  0046  4AC0                     SST     A2,0        SST
00119  0048  5C04                     RB(4)   SST         TRY AGAIN
00120                          *
```

```
00121                        MLX     EQU     *           IPL WAS LOADED FROM A MULTIPLEX OR SIMPLEX
00122                        *                           SUBCHANNEL
00123  004A  8540                    LD       A5,DSKAD   DEVICE ADDR IN A5 REGISTER
       004C  003E
00124  004E  253F                    ANK     A5,/3F
00125  0050  8094                    LDR     A8,A5       SAVE DEVICE IN A8 REGISTER
00126                        *
00127                        *                           INITIALIZE DISK COMMANDS
00128  0052  90DD                    ADS     A8,SEEKZO-BASE,A7
       0054  0000  F
00129  0056  90DD                    ADS     A8,DKSST0-BASE,A7
       0058  0000  F
00130  005A  90DD                    ADS     A8,SEEKCD-BASE,A7
       005C  0000  F
00131  005E  90DD                    ADS     A8,READCD-BASE,A7
       0060  0000  F
00132                        *
00133                        *
00134                        *                           INITIALIZE MLX DBLE WORDS
00135  0062  839C                    LDR     A11,A7
00136  0064  93A0                    ADK,L   A11,414     A11=BEGINNING ADDR OF BUFF+4
       0066  019E
00137  0068  93DD                    ADS     A11,MXCC2-BASE,A7
       006A  0000  F
00138  006C  3D4C                    SLL     A5,12       CONTROLLER ADDR
00139  006E  3D6A                    SRL     A5,10
00140  0070  5400  F                 RF(4)   MLX10
00141  0072  207F                    HLT                 CONTROLLER ADDR=0
00142                        *
00143                        MLX10   EQU     *           SET ADDR OF MLX DBLEWORD
00144  0074  955D                    ADS     A5,MXAD-BASE,A7
       0076  0000  F
00145                        *                           INITIALIZE A3 AND A6
00146                        *
00147  0078  0612                    LDK     A6,/12      1ST SECTOR TO BE READ
00148  007A  0300                    LDK     A3,0        1ST LOCATION TO BE LOADED
00149                        *                           EXECUTE SEEK TO ZERO COMMAND
00150  007C  1700  F                 ADK     A7,SEEKZ-BASE
00151  007E  F69D                    CFR     A14,A7      A7=ADDR OF SEEK TO ZERO
00152                        *
00153  0080  8240                    LD      A2,DSKAD    CHECK IF LOAD BOOT
       0082  003E
00154  0084  3A69                    SRL     A2,9
00155  0086  1A7F                    SUK     A2,/7F
00156  0088  5000  F                 RF(0)   LDBOOT      YES,LOAD BOOT
00157                        *
00158                        NEXTSC  EQU     *           READ NEXT SECTOR(LOGICAL # IN A6)
00159  008A  8218                    LDR     A2,A6       LOAD A2 WITH THE SECTOR NUMBER
00160  008C  3A48                    SLL     A2,11       SHIFT LEFT 11,SECTOR # MODULO 32
00161  008E  1200                    ADK     A2,0        A2=0,SEEK
```

```
00162  0090  5400  F          RF(4)    READ00      NO SEEK
00163                   *                         CALL SEERCY ,MOVE ONE CYLINDER
00164  0092  9720              ADK,L    A7,SEEKCY-BASE
       0094  0000  F
00165  0096  F69D              CFR      A14,A7
00166                   *
00167                   READ00   EQU      *         READ ONE SECTOR
00168                   *
00169  0098  3841              DLL      1         A1 CONTAINS HEAD NUMBER
00170  009A  8188              LDR      A9,A2     A9=SECTOR # FROM 0 TO 15
00171  009C  3A41              SLL      A2,1
00172  009E  9206              ADR      A2,A9     PHYSICAL SECTOR NUMBER FROM 0 TO 15
00173  00A0  3861              DRL      1         PHYSICAL SECTOR NUMBER FROM 0 TO 31
00174  00A2  3A69              SRL      A2,9
00175  00A4  8188              LDR      A9,A2
00176                   *
00177                   READ01   EQU      *         ISSUE A READ COMMAND
00178  00A6  B95C              ML       2,MXCC-BASE,A7
       00A8  0000  F
00179  00AA  B97D              MS*      2,MXAD-BASE,A7
       00AC  0000  F
00180                   *                         MULTIPLEX DBLEWORD LOADED,NOW LOAD BOU
00181                   *                         LINES AND READ ONE SECTOR
00182                   *
00183  00AE  8506              LDR      A5,A9     BOU LINES
00184                   READCD   EQU      *         READ COMMAND TO BE INITIALIZED
00185  00B0  45C0              CIO      A5,SIO,0
00186  00B2  5C04              RB(4)    READCD    LOOP UNTIL ACCEPTED
00187                   *                         THEN WAIT UNTIL COMPLETION
00188  00B4  1700  F           ADK      A7,DKSST-BASE
00189  00B6  F69D              CFR      A14,A7    SST
00190                   *                         STATUS IN A5 REGISTER
00191  00B8  1500              ADK      A5,0      STATUS =0 ?
00192  00BA  5C16              RB(4)    READ01    TRY TO READ AGAIN
00193                   *                         CHECK REMAINING LENGTH IN MULTIPLEX WORD
00194  00BC  817C              LD*      A1,MXAD-BASE,A7
       00BE  0000  F
00195  00C0  A120              ANK,L    A1,/FFF   CHECK IF LENGTH = 0 ?
       00C2  0FFF
00196  00C4  5000  F           RF(0)    READ03    OK
00197  00C6  207F              HLT                NO,NOT EQUAL TO ZERO
00198  00C8  5F24              RB(7)    READ01    TRY AGAIN
00199                   *
00200                   READ03   EQU      *         A SECTOR IS READ
00201                   *
00202  00CA  850E              LDR      A5,A11    INITIALIZE  A5 = BEGINNING ADDR +4
00203  00CC  02BC              LDK      A2,188    188 CODE WORDS
00204                   *                         A3=LOAD ADDR,ALREADY SET
00205                   *
00206  00CE  1E12              SUK      A6,/12    IS IT THE 1ST SECTOR ?
```

```
00207  00D0  5400  F          RF(4)    READ04      NO
00208                  *                           YES,1ST SECTOR ,INITIALIZE A12 AND A4 REG
00209  00D2  8484              LDR*     A12,A5      SAVE START ADDR IN A12 REGISTER
00210  00D4  1502              ADK      A5,2
00211  00D6  8434              LDR*     A4,A5       NUMBER OF SECTORS IN A4
00212                  READ04   EQU      *
00213  00D8  1613              ADK      A6,/13      RESTORE A6 REGISTER AND INCREMENT 1
00214  00DA  850E              LDR      A5,A11      1ST WORD TO BE MOVE ONTO A3
00215                  MOVE     EQU      *
00216  00DC  8134              LDR*     A1,A5       MOVE 188 WORDS FROM (A5) TO (A3)
00217  00DE  812D              STR      A1,A3
00218  00E0  1502              ADK      A5,2        UPDATE POINTERS
00219  00E2  1302              ADK      A3,2
00220  00E4  1A01              SUK      A2,1        COUNT DONE ?
00221  00E6  590C              RB(1)    MOVE        NOT YET
00222                  *
00223                  *
00224                  *                           MOVE COMPLETED,
00225                  *
00226  00E8  1C01              SUK      A4,1        ALL THE SECTORS ARE LOADED ?
00227  00EA  5962              RB(1)    NEXTSC      NEXT SECTOR,
00228                  *
00229                  *                           PROGRAM IS LOADED
00230                  *                           SEEK TO CYLINDER ZERO
00231  00EC  1700  F           ADK      A7,SEEKZ-BASE
00232  00EE  F69D              CFR      A14,A7
00233                  *
00234                  *
00235                  *
00236  00F0  2840              ENB
00237  00F2  8F12              ABR(7)   A12         START THE LOADED PROG
00238                  *
00239                  *
00240                  *
```

```
00241                                EJECT
00242                          *                                  A7=SEEKZ
00243                          SEEKZ   EQU     *                  SEEK TO ZERO SUBROUTINE
00244  00F4  0503                     LDK     A5,3               BOU FOR SEEK TO ZERO
00245  00F6  45C0              SEEKZO  CIO     A5,SIO,0           INSTRUCTION TO BE MODIFIED
00246  00F8  5C04                     RB(4)   SEEKZO             COMMAND NOT ACCEPTED
00247  00FA  1700  F                  ADK     A7,DKSST-SEEKZ
00248  00FC  F69D                     CFR     A14,A7             SST ON DISK
00249  00FE  F03A                     RTN     A14                RETURN
00250                          *
00251                          *
00252                          *                                  SST SUBROUTINE
00253                          DKSST   EQU     *                  A7=DKSST
00254  0100  1FF8                     SUK     A7,DKSST-BASE
00255                          DKSST0  EQU     *
00256  0102  4DC0                     SST     A5,0
00257  0104  5C04                     RB(4)   DKSST0             WAIT LOOP UNTIL COMMAND ACCEPTED
00258  0106  A520                     ANK,L   A5,/001F           STATUS IN A5 REGISTER
       0108  001F
00259  010A  F03A                     RTN     A14
00260                          *
00261                          *
00262                          *
00263                          *
00264                          SEEKCY  EQU     *                  SEEK ONE CYLINDER
00265                          *                                  A7=SEEKCY
00266                          *
00267  010C  050E                     LDK     A5,/E
00268                          SEEKCD  EQU     *
00269  010E  45C0                     CIO     A5,SIO,0           SEEK COMMAND
00270  0110  5C04                     RB(4)   SEEKCD
00271                          *
00272  0112  9720                     ADK,L   A7,DKSST-SEEKCY
       0114  FFF4
00273  0116  F69D                     CFR     A14,A7             SST
00274  0118  F03A                     RTN     A14
00275                          *
00276                          *
00277                          *
00278                          *
00279  011A  0080              MXAD    DATA    /80                1ST LOCATION FOR MULTIPLEX
00280                          MXCC    EQU     *
00281  011C  4E66                     DATA    /4E66
00282  011E  0194              MXCC2   DATA    404                PROG LENGTH+BUFF LENGTH=820 CHARACTERS
```

```
00283                                   EJECT
00284                           *
00285                           *
00286                           *
00287                           *
00288                           *
00289                           *
00290                           *
00291                           LDBOOT  EQU     *
00292  0120  8240                      LD      A2,DSKAD
       0122  003E
00293  0124  9882                      SUR     A8,A8
00294  0126  207F                      HLT
00295  0128  3A47                      SLL     A2,7
00296  012A  5600  F                   RF(6)   BOOT
00297  012C  0120                      LDK     A1,32
00298  012E  0280                      LDK     A2,/80          LOAD ADDR
00299  0130  9720                      ADK,L   A7,BOOT-BASE
       0132  0000  F
00300                           LDBT1   EQU     *
00301  0134  833C                      LDR*    A3,A7
00302  0136  8329                      STR     A3,A2           MOVE BOOT
00303  0138  1702                      ADK     A7,2
00304  013A  1202                      ADK     A2,2
00305  013C  1901                      SUK     A1,1
00306  013E  590C                      RB(1)   LDBT1
00307  0140  0F80                      AB      /80
00308                           **
00309                           **
```

```
00310                           EJECT
00311                   BOOT    EQU     *
00312                   ********************************************************************************
00313                   *       IDENT   BOOT88                  VER#2  REL#2
00314                   * THIS BOOTSTRAP PERFORMS LOADING IN CORE OF BINARY TAPE IN 8+8 FORMAT
00315                   * FROM HIGH SPEED PUNCHED TAPE READER WITH PHYSICAL HEXADECIMAL
00316                   * ADDRESS /20 ON P855 OR P860 COMPUTERS
00317                   *
00318                   *
00319                   * THE BINARY CODE READ FROM PAPER TAPE IS LOADED AT ADDRESS FOUND IN
00320                   * SECOND USEFUL WORD OF THE TAPE ADDED WITH THE CONTENT OF LOCATION
00321                   * /3C IN THE BOOTSTRAP,
00322                   * THIS ALLOWS PARAMETERISATION OF LOADING ADDRESS OF BINARY PROGRAMS
00323                   * ON PAPERTAPE, (DEPENDING ON MEMORY SIZE)
00324                   *
00325                   * CAUTION :
00326                   ***********
00327                   *           IF BINARY LOADED PROGRAM CONTAINS MEMORY DIRECT REFERENCES,
00328                   *           LOCATION /3C MUST CONTAIN /0000
00329                   *
00330                   *
00331                   * ON LOADING COMPLETION, THE BOOTSTRAP PERFORMS A BRANCH TO THE FIRST
00332                   * LOADED LOCATION, AT THIS STAGE, A1 CONTAINS THE 1 WORD COMPUTED
00333                   * CHECKSUM FROM PAPERTAPE AND THE PAPERTAPE READER IS STILL ACTIVE,
00334                   * CONSEQUENTLY, THE LOADED PROGRAM HAS OPPORTUNITY BY ISSUING TWO
00335                   * OTR FOLLOWED BY CIO HALT AND SST TO COMPARE PUNCHED AND
00336                   * COMPUTED CHECKSUM
00337                   * IF THIS IS NOT THE CASE, THE PUNCHED TAPE READER CONTROLLER WILL
00338                   * AUTOMATICALLY SWITCH INTO SST STATE, CONSEQUENTLY IT IS THEN
00339                   * NECESSARY TO DEPRESS 'MASTER CLEAR' BUTTON IN ORDER TO RESET THE
00340                   * PTR CONTROLLER
00341                   *
00342                   ********************************************************************************
```

```
00343                                   EJECT
00344                          CODE     EQU     *+/2E
00345                          PR       EQU     /20
00346                          S        EQU     1
00347  0142  20BF                       INH
00348  0144  41E0                       CIO     A1,S,PR
00349  0146  4A20              SEARCH   INR     A2,0,PR
00350  0148  5C04                       RB(4)   *-2
00351  014A  227F                       ANK     A2,/7F
00352  014C  5808                       RB(0)   SEARCH
00353  014E  0704                       LDK     A7,4
00354  0150  0540                       LDK     A5,/40
00355                          INPUT    EQU     *
00356  0152  4A20                       INR     A2,0,PR
00357  0154  5C04                       RB(4)   *-2
00358  0156  E235                       SCR     A2,A5
00359  0158  1501                       ADK     A5,1
00360  015A  1F01                       SUK     A7,1
00361  015C  590C                       RB(1)   INPUT
00362  015E  5210                       RF(2)   CODE
00363  0160  BAC0                       ML      5,/3A
       0162  003A
00364  0164  1502                       ADK     A5,2
00365  0166  9502                       ADR     A5,A8
00366  0168  3C41                       SLL     A4,1
00367  016A  8614                       LDR     A6,A5
00368  016C  0100                       LDK     A1,0
00369  016E  5F1E                       RB      INPUT
00370                          * CODE LABEL
00371  0170  E104                       ECR     A1,A1
00372  0172  B108                       XRR     A1,A2
00373  0174  1C01                       SUK     A4,1
00374  0176  5C26                       RB(4)   INPUT
00375  0178  8F18                       ABR     A6
00376  017A  0000                       DATA    0               UNUSED
00377  017C  0000                       DATA    0               UNUSED
00378  017E  0000                       DATA    0               MUST CONTAIN BASE ADDRESS
00379  0180  0000                       DATA    0               UNUSED
00380                          *        END
00381                          ********************************************************************************
00382  0182  2020                       DATA    '       '
       0184  2020
       0186  2020
       0188  2020
       018A  2020
00383  018C  2020                       DATA    '       '
       018E  2020
       0190  2020
       0192  2020
       0194  2020
```

```
00384  0196  2020                DATA    '        '
       0198  2020
       019A  2020
       019C  2020  -> last word on IPL sector
       019E  2020
00385  01A0  2020                DATA    '        '
       01A2  2020
       01A4  2020
       01A6  2020
       01A8  2020
00386  01AA  2020      BUF       DATA    '  '
       01AC  2020
00387  01AE  494E      MESS0     DATA    'INITIALISATION OF PREMRK'
       01B0  4954
       01B2  4941
       01B4  4C49
       01B6  5341
       01B8  5449
       01BA  4F4E
       01BC  204F
       01BE  4620
       01C0  5052
       01C2  454D
       01C4  524B
00388  01C6  2028                DATA    ' (01)'
       01C8  3031
       01CA  2920
00389  01CC  0D0A                DATA    X'0D0A'
00390  01CE  4E42      MESS2     DATA    'NBR. OF CYLINDERS = '
       01D0  522E
       01D2  204F
       01D4  4620
       01D6  4359
       01D8  4C49
       01DA  4E44
       01DC  4552
       01DE  5320
       01E0  3D20
00391  01E2  0000      CYLMAX    DATA    0
00392  01E4  4E42      MESS3     DATA    'NBR. OF TRACKS = '
       01E6  522E
       01E8  204F
       01EA  4620
       01EC  5452
       01EE  4143
       01F0  4B53
       01F2  203D
       01F4  2020
00393  01F6  0000      TRKMAX    DATA    0
00394  01F8  4E42      MESS4     DATA    'NBR. OF SECTORS/TRACK = '
```

```
                01FA  522E
                01FC  204F
                01FE  4620
                0200  5345
                0202  4354
                0204  4F52
                0206  532F
                0208  5452
                020A  4143
                020C  4B20
                020E  3D20
00395           0210  0000      SECMAX   DATA    0
00396           0212  4449      MESS10   DATA    'DISK UNIT PHYSICAL ADDRESS = '
                0214  5348
                0216  2055
                0218  4E49
                021A  5420
                021C  5048
                021E  5953
                0220  4943
                0222  414C
                0224  2041
                0226  4444
                0228  5245
                022A  5353
                022C  203D
                022E  2020
00397           0230  0000      DUPAD    DATA    0
00398           0232  2D57      MESS15   DATA    '-WRITING THE IDENTIFIERS'
                0234  5249
                0236  5449
                0238  4E47
                023A  2054
                023C  4845
                023E  2049
                0240  4445
                0242  4E54
                0244  4946
                0246  4945
                0248  5253
00399           024A  0D0A              DATA    X'0D0A'
00400           024C  2D43      MESS17   DATA    '-CHECKING THE IDENTIFIERS'
                024E  4845
                0250  4348
                0252  494E
                0254  4720
                0256  5448
                0258  4520
                025A  4944
                025C  454E
```

```
                025E  5449
                0260  4649
                0262  4552
                0264  5320
00401           0266  0D0A            DATA    X'0D0A'
00402           0268  2D45    MESS19  DATA    '-END OF CHECK'
                026A  4E44
                026C  204F
                026E  4620
                0270  4348
                0272  4543
                0274  4B20
00403           0276  0D0A            DATA    X'0D0A'
00404           0278  2D44    MESS25  DATA    '-DEVICE ADDRESS UNKNOWN'
                027A  4556
                027C  4943
                027E  4520
                0280  4144
                0282  4452
                0284  4553
                0286  5320
                0288  554E
                028A  4B4E
                028C  4F57
                028E  4E20
00405           0290  0D0A            DATA    X'0D0A'
00406           0292  2D49    MESS26  DATA    '-I/O ERROR           '
                0294  2F4F
                0296  2045
                0298  5252
                029A  4F52
                029C  2020
                029E  2020
                02A0  2020
                02A2  2020
                02A4  2020
                02A6  2020
00407           02A8  0D0A            DATA    X'0D0A'
00408           02AA  2D4E    MESS22  DATA    '-NBR. OF BAD TRACKS = '
                02AC  4252
                02AE  2E20
                02B0  4F46
                02B2  2042
                02B4  4144
                02B6  2054
                02B8  5241
                02BA  434B
                02BC  5320
                02BE  3D20
00409           02C0  2020    MESS23  DATA    '   '
```

```
                02C2  2020
00410           02C4  0D0A              DATA    X'0D0A'
00411           02C6  5255      MESS30  DATA    'RUN AGAIN ? : '
                02C8  4E20
                02CA  4147
                02CC  4149
                02CE  4E20
                02D0  3F20
                02D2  3A20
00412           02D4  2020      REP     DATA    '  '
00413           02D6  454E      MESS20  DATA    'END OF PREMRK'
                02D8  4420
                02DA  4F46
                02DC  2050
                02DE  5245
                02E0  4D52
                02E2  4B20
00414           02E4  0D0A              DATA    X'0D0A'
00415                         BUFDSK  EQU     *               *  *  *  *
00416           02E6  0000      IDENT   DATA    0                         *
00417           02E8  0190              DATA    400
00418           02EA  2020              DATA    '   '                     *
                02EC  2020
00419           02EE  4C41      MESS12  DATA    'LABEL = '                *
                02F0  4245
                02F2  4C20
                02F4  3D20
00420           02F6  2020      LABEL   DATA    '        '                *
                02F8  2020
                02FA  2020
                02FC  2020
00421           02FE  2020              DATA    '          '              *
                0300  2020
                0302  2020
                0304  2020
                0306  2020
00422           0308  4441      MESS13  DATA    'DATE = '                 *
                030A  5445
                030C  203D
                030E  2020
00423           0310  2020      DATE    DATA    '      '                  *
                0312  2020
                0314  2020
00424           0316  2020              DATA    '          '              *
                0318  2020
                031A  2020
                031C  2020
                031E  2020
00425           0320  5041      MESS14  DATA    'PACK NBR = '             *   BUFFER DISK TO OUTPUT
                0322  4348
```

```
                0324  204E
                0326  4252
                0328  203D
                032A  2020
00426           032C  2020    PACNBR  DATA    '  '                *
                032E  2020
00427           0330  2020            DATA    '     '             *
                0332  2020
                0334  2020
                0336  2020
                0338  2020
00428           033A  0066    BILENG  DATA    102                  *
00429           033C          BITAB   RES     51                   *
00430           03A2  0000    NBRSEC  DATA    0
00431           03A4  2020            DATA    '     '             *
                03A6  2020
                03A8  2020
                03AA  2020
                03AC  2020
00432           03AE  2020    ENDTAB  DATA    '     '             *
                03B0  2020
                03B2  2020
                03B4  2020
                03B6  2020
00433           03B8  2020            DATA    '     '             *
                03BA  2020
                03BC  2020
                03BE  2020
                03C0  2020
00434           03C2  2020            DATA    '     '             *
                03C4  2020
                03C6  2020
                03C8  2020
                03CA  2020
00435           03CC  2020            DATA    '     '             *
                03CE  2020
                03D0  2020
                03D2  2020
                03D4  2020
00436           03D6  2020            DATA    '     '             *
                03D8  2020
                03DA  2020
                03DC  2020
                03DE  2020
00437           03E0  2020            DATA    '     '             *
                03E2  2020
                03E4  2020
                03E6  2020
                03E8  2020
00438           03EA  2020            DATA    '     '             *
```

```
                03EC  2020
                03EE  2020
                03F0  2020
                03F2  2020
00439           03F4  2020                DATA    '       '       *
                03F6  2020
                03F8  2020
                03FA  2020
                03FC  2020
00440           03FE  2020                DATA    '       '       *
                0400  2020
                0402  2020
                0404  2020
                0406  2020
00441           0408  2020                DATA    '       '       *
                040A  2020
                040C  2020
                040E  2020
                0410  2020
00442           0412  2020                DATA    '       '       *
                0414  2020
                0416  2020
                0418  2020
                041A  2020
00443           041C  2020                DATA    '       '       *
                041E  2020
                0420  2020
                0422  2020
                0424  2020
00444           0426  2020                DATA    '       '       *
                0428  2020
                042A  2020
                042C  2020
                042E  2020
00445           0430  2020      ENDBUF    DATA    '       '  *  *  *  *
                0432  2020
                0434  2020
                0436  2020
                0438  2020
                043A  2020
00446           043C  2020                DATA    '       '
                043E  2020
                0440  2020
                0442  2020
                0444  2020
00447           0446  2020                DATA    '       '
                0448  2020
                044A  2020
                044C  2020
                044E  2020
```

```
00448  0450  2020                DATA    '          '
       0452  2020
       0454  2020
       0456  2020
       0458  2020
00449  045A  2020                DATA    '          '
       045C  2020
       045E  2020
       0460  2020
       0462  2020
00450  0464  2020                DATA    '          '
       0466  2020
       0468  2020
       046A  2020
       046C  2020
00451  046E  2020                DATA    '          '
       0470  2020
       0472  2020
       0474  2020
       0476  2020
00452  0478  2020                DATA    '          '
       047A  2020
       047C  2020      end of BUF DSR
       047E  2020
       0480  2020
00453  0482  0000      SEC2      DATA    0
00454  0484  0012                DATA    /12
00455  0486  4341                DATA    'CATALOG '
       0488  5441
       048A  4C4F
       048C  4720
00456  048E  0000                DATA    0
00457  0490  0000                DATA    0
00458  0492  0000                DATA    0
00459  0494  0000                DATA    0
00460  0496  FFFF                DATA    X'FFFF'
00461  0498  2020                DATA    '          '
       049A  2020
       049C  2020
       049E  2020
       04A0  2020
       04A2  2020
       04A4  2020
       04A6  2020
       04A8  2020
       04AA  2020
       04AC  2020
       04AE  2020
       04B0  2020
       04B2  2020
```

```
                04B4  2020
00462           04B6  2020          DATA    !                       !
                04B8  2020
                04BA  2020
                04BC  2020
                04BE  2020
                04C0  2020
                04C2  2020
                04C4  2020
                04C6  2020
                04C8  2020
                04CA  2020
                04CC  2020
                04CE  2020
                04D0  2020
                04D2  2020
00463           04D4  2020          DATA    !                       !
                04D6  2020
                04D8  2020
                04DA  2020
                04DC  2020
                04DE  2020
                04E0  2020
                04E2  2020
                04E4  2020
                04E6  2020
                04E8  2020
                04EA  2020
                04EC  2020
                04EE  2020
                04F0  2020
00464           04F2  2020          DATA    !                       !
                04F4  2020
                04F6  2020
                04F8  2020
                04FA  2020
                04FC  2020
                04FE  2020
                0500  2020
                0502  2020
                0504  2020
                0506  2020
                0508  2020
                050A  2020
                050C  2020
                050E  2020
00465           0510  2020          DATA    !                       !
                0512  2020
                0514  2020
                0516  2020
```

```
                0518  2020
                051A  2020
                051C  2020
                051E  2020
                0520  2020
                0522  2020
                0524  2020
                0526  2020
                0528  2020
                052A  2020
                052C  2020
00466           052E  2020          DATA     '                    '
                0530  2020
                0532  2020
                0534  2020
                0536  2020
                0538  2020
                053A  2020
                053C  2020
                053E  2020
                0540  2020
                0542  2020
                0544  2020
                0546  2020
                0548  2020
                054A  2020
00467           054C  2020          DATA     '                    '
                054E  2020
                0550  2020
                0552  2020
                0554  2020
                0556  2020
                0558  2020
                055A  2020
                055C  2020
                055E  2020
                0560  2020
                0562  2020
                0564  2020
                0566  2020
                0568  2020
00468           056A  2020          DATA     '                    '
                056C  2020
                056E  2020
                0570  2020
                0572  2020
                0574  2020
                0576  2020
                0578  2020
                057A  2020
```

```
                057C  2020
                057E  2020
                0580  2020
                0582  2020
                0584  2020
                0586  2020
00469           0588  2020                DATA     '                    '
                058A  2020
                058C  2020
                058E  2020
                0590  2020
                0592  2020
                0594  2020
                0596  2020
                0598  2020
                059A  2020
                059C  2020
                059E  2020
                05A0  2020
                05A2  2020
                05A4  2020
00470           05A6  2020                DATA     '                    '
                05A8  2020
                05AA  2020
                05AC  2020
                05AE  2020
                05B0  2020
                05B2  2020
                05B4  2020
                05B6  2020
                05B8  2020
                05BA  2020
                05BC  2020
                05BE  2020
                05C0  2020
                05C2  2020
00471           05C4  2020                DATA     '                    '
                05C6  2020
                05C8  2020
                05CA  2020
                05CC  2020
                05CE  2020
                05D0  2020
                05D2  2020
                05D4  2020
                05D6  2020
                05D8  2020
                05DA  2020
                05DC  2020
                05DE  2020
```

```
                05E0  2020
00472           05E2  2020                DATA    '                '
                05E4  2020
                05E6  2020
                05E8  2020
                05EA  2020
                05EC  2020
                05EE  2020
                05F0  2020
                05F2  2020
                05F4  2020
                05F6  2020
                05F8  2020
                05FA  2020
                05FC  2020
                05FE  2020
00473           0600  2020                DATA    '                '
                0602  2020
                0604  2020
                0606  2020
                0608  2020
                060A  2020
                060C  2020
                060E  2020
                0610  2020
                0612  2020
                0614  2020
                0616  2020
                0618  2020
                061A  2020  end of SEC2
                061C  2020
00474           061E              MXONE   RES     1       ADDRESS OF FIRST WORD OF THE MULTIPLEX
00475           0620  0000        NBRCYL  DATA    0
00476           0622  0000        NBRTRK  DATA    0
00477           0624  0000        NBRGRN  DATA    0
00478           0626  0000        NBDTRK  DATA    0
00479           0628              BUFRD   RES     205
00480           07C2  019A        LENGTH  DATA    410
00481           07C4              W#SAV1  RES     20
00482                             DSK     EQU     0
00483                             *
```

```
00484                                  EJECT
00485                          *           INITIALISATION OF PREMRK
00486                          *
00487                          PREMRK  EQU     *
00488  07EC  8720                      LDK,L   A7,MESS0     WRITTING
       07EE  01AE  R
00489  07F0  8620                      LDK,L   A6,32
       07F2  0020
00490  07F4  208F                      INH
00491  07F6  86A0                      LDK,L   A14,W:SAV1+10
       07F8  07CE  R
00492  07FA  F6A1                      CF      A14,ASROUT  'INITIALISATION OF PREMRK'
       07FC  0000  F
00493  07FE  85A0                      LDK,L   A13,0
       0800  0000
00494  0802  8720              MES2    LDK,L   A7,MESS2
       0804  01CE  R
00495  0806  8620                      LDK,L   A6,20
       0808  0014
00496  080A  F6A1                      CF      A14,ASROUT  'NBR. OF CYLINDERS'
       080C  0000  F
00497  080E  8120                      LDK,L   A1,/2020
       0810  2020
00498  0812  8141                      ST      A1,BUF
       0814  01AA  R
00499  0816  8141                      ST      A1,BUF+2
       0818  01AC  R
00500  081A  8720                      LDK,L   A7,BUF
       081C  01AA  R
00501  081E  0604                      LDK     A6,4
00502  0820  F6A1                      CF      A14,ASRIN
       0822  0000  F
00503  0824  8140                      LD      A1,BUF
       0826  01AA  R
00504  0828  8240                      LD      A2,BUF+2
       082A  01AC  R
00505  082C  8420                      LDK,L   A4,RET
       082E  0000  F
00506  0830  8F20                      AB,L    I:DEBI
       0832  0000  F
00507  0834  5F34              RET     RB(7)   MES2
00508  0836  8141                      ST      A1,CYLMAX
       0838  01E2  R
00509  083A  8720              MES3    LDK,L   A7,MESS3
       083C  01E4  R
00510  083E  8620                      LDK,L   A6,17
       0840  0011
00511  0842  F6A1                      CF      A14,ASROUT  'NBR. OF TRACKS '
       0844  0000  F
00512  0846  8120                      LDK,L   A1,/2020
```

```
                0848  2020
00513           084A  8141              ST      A1,BUF
                084C  01AA  R
00514           084E  8141              ST      A1,BUF+2
                0850  01AC  R
00515           0852  8720              LDK,L   A7,BUF
                0854  01AA  R
00516           0856  8620              LDK,L   A6,4
                0858  0004
00517           085A  F6A1              CF      A14,ASRIN
                085C  0000  F
00518           085E  8140              LD      A1,BUF
                0860  01AA  R
00519           0862  8240              LD      A2,BUF+2
                0864  01AC  R
00520           0866  8420              LDK,L   A4,RET2
                0868  0000  F
00521           086A  8F20              AB,L    I:DEBI
                086C  0000  F
00522           086E  5F36      RET2    RB(7)   MES3
00523           0870  8141              ST      A1,TRKMAX
                0872  01F6  R
00524           0874  8720      MES4    LDK,L   A7,MESS4
                0876  01F8  R
00525           0878  8620              LDK,L   A6,24
                087A  0018
00526           087C  F6A1              CF      A14,ASROUT  'NBR, OF SECTORS/TRACK'
                087E  0000  F
00527           0880  8120              LDK,L   A1,/2020
                0882  2020
00528           0884  8141              ST      A1,BUF
                0886  01AA  R
00529           0888  8141              ST      A1,BUF+2
                088A  01AC  R
00530           088C  8720              LDK,L   A7,BUF
                088E  01AA  R
00531           0890  8620              LDK,L   A6,4
                0892  0004
00532           0894  F6A1              CF      A14,ASRIN
                0896  0000  F
00533           0898  8140              LD      A1,BUF
                089A  01AA  R
00534           089C  8240              LD      A2,BUF+2
                089E  01AC  R
00535           08A0  8420              LDK,L   A4,RET3
                08A2  0000  F
00536           08A4  8F20              AB,L    I:DEBI
                08A6  0000  F
00537           08A8  5F36      RET3    RB(7)   MES4
00538           08AA  8141              ST      A1,SECMAX
```

```
        08AC  0210  R
00539   08AE  8720        MES10   LDK,L   A7,MESS10
        08B0  0212  R
00540   08B2  8620                LDK,L   A6,29
        08B4  001D
00541   08B6  F6A1                CF      A14,ASROUT  'DISK UNIT PHYSICAL ADDRESS'
        08B8  0000  F
00542   08BA  8120                LDK,L   A1,/2020
        08BC  2020
00543   08BE  8141                ST      A1,BUF
        08C0  01AA  R
00544   08C2  8141                ST      A1,BUF+2
        08C4  01AC  R
00545   08C6  8720                LDK,L   A7,BUF
        08C8  01AA  R
00546   08CA  8620                LDK,L   A6,2
        08CC  0002
00547   08CE  F6A1                CF      A14,ASRIN
        08D0  0000  F
00548   08D2  8120                LDK,L   A1,/3030
        08D4  3030
00549   08D6  8240                LD      A2,BUF
        08D8  01AA  R
00550   08DA  8420                LDK,L   A4,RET4
        08DC  0000  F
00551   08DE  8F20                AB,L    I:HXBI
        08E0  0000  F
00552   08E2  5F36        RET4    RB(7)   MES10
00553   08E4  8141                ST      A1,DUPAD
        08E6  0230  R
00554   08E8  9141                ADS     A1,SEEK
        08EA  0000  F
00555   08EC  9141                ADS     A1,CIO5
        08EE  0000  F
00556   08F0  9141                ADS     A1,CIO2
        08F2  0000  F
00557   08F4  9141                ADS     A1,SEEK0
        08F6  0000  F
00558   08F8  9141                ADS     A1,CIO4
        08FA  0000  F
00559   08FC  9141                ADS     A1,CIO3
        08FE  0000  F
00560   0900  9141                ADS     A1,VAL
        0902  0000  F
00561   0904  9141                ADS     A1,CIO33
        0906  0000  F
00562   0908  9141                ADS     A1,SSTVAL
        090A  0000  F
00563   090C  9141                ADS     A1,SST1
        090E  0000  F
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00564  0910  9141          ADS     A1,CIOSEK
       0912  0000  F
00565  0914  9141          ADS     A1,CIO6
       0916  0000  F
00566  0918  9141          ADS     A1,WRTE
       091A  0000  F
00567  091C  9141          ADS     A1,CIO7
       091E  0000  F
00568  0920  9141          ADS     A1,READ
       0922  0000  F
00569  0924  9141          ADS     A1,CIO8
       0926  0000  F
00570  0928  9141          ADS     A1,CIO9
       092A  0000  F
00571  092C  9141          ADS     A1,CIO10
       092E  0000  F
00572  0930  9141          ADS     A1,IOER
       0932  0000  F
00573  0934  8720          LDK,L   A7,MESS12   **************
       0936  02EE  R
00574  0938  8620          LDK,L   A6,8                     *
       093A  0008
00575  093C  F6A1          CF      A14,ASROUT  'LABEL'      *
       093E  0000  F
00576  0940  8720          LDK,L   A7,LABEL                 *
       0942  02F6  R
00577  0944  8620          LDK,L   A6,8                     *
       0946  0008
00578  0948  F6A1          CF      A14,ASRIN                *
       094A  0000  F
00579  094C  8720          LDK,L   A7,MESS13                *
       094E  0308  R
00580  0950  8620          LDK,L   A6,7                     * INITIALISATION OF
       0952  0007
00581  0954  F6A1          CF      A14,ASROUT  'DATE'       * THE VOLUME LABEL
       0956  0000  F
00582  0958  8720          LDK,L   A7,DATE                  *
       095A  0310  R
00583  095C  8620          LDK,L   A6,8                     *
       095E  0008
00584  0960  F6A1          CF      A14,ASRIN                *
       0962  0000  F
00585  0964  8720          LDK,L   A7,MESS14                *
       0966  0320  R
00586  0968  8620          LDK,L   A6,11                    *
       096A  000B
00587  096C  F6A1          CF      A14,ASROUT  'PACK NBR,'  *
       096E  0000  F
00588  0970  8720          LDK,L   A7,PACNBR                *
       0972  032C  R
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00589  0974  8620          LDK,L   A6,3                    *
       0976  0003
00590  0978  F6A1          CF      A14,ASRIN   ***************
       097A  0000  F
00591                  *
00592  097C  8140          LD      A1,DUPAD    ***
       097E  0230  R
00593  0980  210F          ANK     A1,/F        COMPUTING OF THE
00594  0982  3942          SLL     A1,2
00595  0984  9120          ADK,L   A1,128       MULTIPLEX ADDRESS
       0986  0080
00596  0988  8141          ST      A1,MXONE    ***
       098A  061E  R
00597  098C  85C1          ST      A13,W:SAV1
       098E  07C4  R
00598  0990  85C1          ST      A13,W:SAV1+2
       0992  07C6  R
00599  0994  83A0          LDK,L   A11,0
       0996  0000
00600  0998  83C1          ST      A11,NBRCYL
       099A  0620  R
00601  099C  83C1          ST      A11,NBRTRK
       099E  0622  R
00602  09A0  83C1          ST      A11,NBRSEC
       09A2  03A2  R
00603  09A4  83C1          ST      A11,NBRGRN
       09A6  0624  R
00604  09A8  83C1          ST      A11,NBDTRK
       09AA  0626  R
00605  09AC  8720          LDK,L   A7,MESS15
       09AE  0232  R
00606  09B0  8620          LDK,L   A6,26
       09B2  001A
00607  09B4  F6A1          CF      A14,ASROUT
       09B6  0000  F
00608  09B8  0501          LDK     A5,1        ****
00609  09BA  8420          LDK,L   A4,/4981
       09BC  4981
00610  09BE  8441          ST      A4,TST
       09C0  0000  F
00611  09C2  8420          LDK,L   A4,/4181
       09C4  4181
00612  09C6  8441          ST      A4,CIOHLT
       09C8  0000  F
00613  09CA  8420          LDK,L   A4,/49C1
       09CC  49C1
00614  09CE  8441          ST      A4,SST2
       09D0  0000  F
00615  09D2  4980    TST   TST     A1,0        THIS
00616  09D4  2101          ANK     A1,1
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00617  09D6  5000  F          RF(0)     IMCIO      SEQUENCE
00618  09D8  4180       CIOHLT CIO       A1,0,0
00619  09DA  5300  F          RF(3)     IMCIO      RESETS
00620  09DC  5C06               RB(4)     CIOHLT
00621  09DE  49C0       SST2   SST       A1,0       INTERUPT LINES
00622  09E0  5C04                RB(4)     *+2
00623  09E2  9041       IMCIO  IM        TST
       09E4  09D2  R
00624  09E6  9041               IM        CIOHLT
       09E8  09D8  R
00625  09EA  9041               IM        SST2
       09EC  09DE  R
00626  09EE  1501               ADK       A5,1
00627  09F0  ED20               CWK       A5,/3F
       09F2  003F
00628  09F4  5C24               RB(4)     TST        ****
00629  09F6  F6A1               CF        A14,SEEK0
       09F8  0000  F
00630
00631  09FA  80C0       TSTRED  LD        A8,NBRCYL
       09FC  0620  R
00632  09FE  E8C0               CW        A8,CYLMAX
       0A00  01E2  R
00633  0A02  8820               A8,L(0)   CHECK      END OF WRITING
       0A04  0000  F
00634  0A06  80C0       TSTTRK  LD        A8,NBRTRK
       0A08  0622  R
00635  0A0A  E8C0               CW        A8,TRKMAX
       0A0C  01F6  R
00636  0A0E  5400  F            RF(4)     TSTSEC
00637  0A10  80A0               LDK,L     A8,0
       0A12  0000
00638  0A14  80C1               ST        A8,NBRTRK
       0A16  0622  R
00639  0A18  80C1               ST        A8,NBRSEC
       0A1A  03A2  R
00640  0A1C  F6A1               CF        A14,SEEK
       0A1E  0000  F
00641  0A20  9041               IM        NBRCYL     FOR A NEW CYLINDER
       0A22  0620  R
00642  0A24  9041               IM        IDENT
       0A26  02E6  R
00643  0A28  5F30               RB(7)     TSTRED
00644  0A2A  80C0       TSTSEC  LD        A8,NBRSEC
       0A2C  03A2  R
00645  0A2E  E8C0               CW        A8,SECMAX
       0A30  0210  R
00646  0A32  5000  F            RF(0)     IMTRK1
00647  0A34  8102               LDR       A1,A8
00648  0A36  3961               SRL       A1,1
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00649  0A38  E940          CW      A1,SECMAX
       0A3A  0210  R
00650  0A3C  5400  F       RF(4)    INIA12
00651  0A3E  9041          IM      NBRTRK
       0A40  0622  R
00652  0A42  5F4A          RB(7)   TSTRED
00653                IMTRK1 EQU     *
00654  0A44  9041          IM      NBRTRK      FOR A NEW TRACK
       0A46  0622  R
00655  0A48  84A0    INIA12 LDK,L   A12,5
       0A4A  0005
00656  0A4C  F6A1    WRITE  CF      A14,WRTE    CALL WRITE SUBROUTINE
       0A4E  0000  F
00657  0A50  49C0    SSTVAL SST     A1,DSK
00658  0A52  5C04           RB(4)   SSTVAL
00659  0A54  A120           ANK,L   A1,/1F
       0A56  001F
00660  0A58  5400  F        RF(4)   REWRTE      FOR A NEW TRY
00661  0A5A  9041           IM      NBRSEC
       0A5C  03A2  R
00662  0A5E  8140           LD      A1,NBRSEC
       0A60  03A2  R
00663  0A62  E920           CWK     A1,8        WRITING IS
       0A64  0008
00664  0A66  5000  F        RF(0)   BITALG
00665  0A68  E920           CWK     A1,16
       0A6A  0010
00666  0A6C  5000  F        RF(0)   BITALG      PERFORMED CORRECTLY
00667  0A6E  E920           CWK     A1,24
       0A70  0018
00668  0A72  5000  F        RF(0)   BITALG
00669  0A74  E920           CWK     A1,32
       0A76  0020
00670  0A78  5000  F        RF(0)   BITALG
00671  0A7A  5F82           RB(7)   TSTRED
00672  0A7C  9CA0    REWRTE SUK,L   A12,1       TEST 5 TRIES
       0A7E  0001
00673  0A80  5C36           RB(4)   WRITE
00674  0A82  8140           LD      A1,NBRSEC
       0A84  03A2  R
00675  0A86  E920           CWK     A1,24
       0A88  0018
00676  0A8A  5100  F        RF(1)   IMNOT
00677  0A8C  E920           CWK     A1,16
       0A8E  0010
00678  0A90  5100  F        RF(1)   IMYES
00679  0A92  E920           CWK     A1,8
       0A94  0008
00680  0A96  5100  F        RF(1)   IMNOT
00681  0A98  9041    IMYES  IM      NBRGRN
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       0A9A  0624  R
00682  0A9C  5700  F            RF(7)     LDKA12
00683  0A9E  B940       IMNOT   ML        2,W:SAV1
       0AA0  07C4  R
00684  0AA2  3961               SRL       A1,1
00685  0AA4  B941               MS        2,W:SAV1
       0AA6  07C4  R
00686  0AA8  84A0       LDKA12  LDK,L     A12,16
       0AAA  0010
00687  0AAC  ECC0               CW        A12,NBRSEC  THIS SEQUENCE
       0AAE  03A2  R
00688  0AB0  5200  F            RF(2)     RAZ         POINT NBRSEC ON THE
00689  0AB2  84C1               ST        A12,NBRSEC  BEGINING OF THE BAD TRACK
       0AB4  03A2  R
00690  0AB6  5700  F            RF(7)     IDPOST
00691  0AB8  85C1       RAZ     ST        A13,NBRSEC
       0ABA  03A2  R
00692  0ABC  8120       IDPOST  LDK,L     A1,/8000
       0ABE  8000
00693  0AC0  A941               ORS       A1,IDENT    BAD TRACK BIT IN THE IDENT,
       0AC2  02E6  R
00694  0AC4  F6A1       WRIT1   CF        A14,WRTE
       0AC6  0000  F
00695  0AC8  49C0       CIO10   SST       A1,DSK
00696  0ACA  5C04               RB(4)     *-2
00697  0ACC  9041               IM        NBRSEC
       0ACE  03A2  R
00698  0AD0  9CA0               SUK,L     A12,1
       0AD2  0001
00699  0AD4  5C12               RB(4)     WRIT1
00700  0AD6  B940       BITAL2  ML        2,W:SAV1
       0AD8  07C4  R
00701  0ADA  3961               SRL       A1,1
00702  0ADC  3842               DLL       2           2 BAD GRN, IN THE BITAB
00703  0ADE  B941               MS        2,W:SAV1
       0AE0  07C4  R
00704  0AE2  8120               LDK,L     A1,/7FFF
       0AE4  7FFF
00705  0AE6  A141               ANS       A1,IDENT
       0AE8  02E6  R
00706  0AEA  9041               IM        NBDTRK      CPTR, OF BAD TRACKS
       0AEC  0626  R
00707  0AEE  B940                ML       2,W:SAV1
       0AF0  07C4  R
00708  0AF2  5700  F            RF(7)     TSTA3
00709  0AF4  B940       BITALG  ML        2,W:SAV1
       0AF6  07C4  R
00710  0AF8  1101               ADK       A1,1
00711  0AFA  8340       TSTA3   LD        A3,NBRGRN
       0AFC  0624  R
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00712  0AFE  E820            CWK       A3,15
       0B00  000F
00713  0B02  5000  F         RF(0)     NEWTAB
00714  0B04  3841            DLL       1
00715  0B06  B941            MS        2,W:SAV1
       0B08  07C4  R
00716  0B0A  9041            IM        NBRGRN
       0B0C  0624  R
00717  0B0E  8F20            AB.L(7)   TSTRED
       0B10  09FA  R
00718  0B12  814F     NEWTAB ST        A1,BITAB,A11
       0B14  033C  R
00719  0B16  93A0             ADK.L    A11,2
       0B18  0002
00720  0B1A  85C1            ST        A13,NBRGRN
       0B1C  0624  R
00721  0B1E  85C1            ST        A13,W:SAV1
       0B20  07C4  R
00722  0B22  85C1            ST        A13,W:SAV1+2
       0B24  07C6  R
00723  0B26  8F20            AB.L(7)   TSTRED
       0B28  09FA  R
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00724                                  EJECT
00725                          CHECK   EQU     *
00726  0B2A  8140                      LD      A1,W:SAV1
       0B2C  07C4  R
00727  0B2E  3943                      SLL     A1,3
00728  0B30  814F                      ST      A1,BITAB,A11
       0B32  033C  R
00729  0B34  8620                      LDK,L   A6,28
       0B36  001C
00730  0B38  F6A1                      CF      A14,ASROUT  'CHECKING THE IDENTIFIERS'
       0B3A  0000  F
00731  0B3C  F6A1                      CF      A14,SEEK0
       0B3E  0000  F
00732  0B40  85C1                      ST      A13,NBRCYL
       0B42  0620  R
00733  0B44  85C1                      ST      A13,NBRTRK
       0B46  0622  R
00734  0B48  85C1                      ST      A13,NBRSEC
       0B4A  03A2  R
00735  0B4C  85C1                      ST      A13,NBRGRN
       0B4E  0624  R
00736  0B50  85C1                      ST      A13,IDENT
       0B52  02E6  R
00737  0B54  83A0                      LDK,L   A11,0
       0B56  0000
00738  0B58  83C1                      ST      A11,W:SAV1
       0B5A  07C4  R
00739                          LDBITA  EQU     *
00740  0B5C  814E                      LD      A1,BITAB,A11
       0B5E  033C  R
00741  0B60  8141                      ST      A1,W:SAV1+2
       0B62  07C6  R
00742  0B64  8140              TSTCYL  LD      A1,NBRCYL
       0B66  0620  R
00743  0B68  E940                      CW      A1,CYLMAX
       0B6A  01E2  R
00744  0B6C  8820                      AB,L(0) ENDCHK      FOR END OF CHECK
       0B6E  0000  F
00745  0B70  8140                      LD      A1,NBRTRK
       0B72  0622  R
00746  0B74  E940                      CW      A1,TRKMAX
       0B76  01F6  R
00747  0B78  5400  F                   RF(4)   SEC
00748  0B7A  85C1                      ST      A13,NBRTRK
       0B7C  0622  R
00749  0B7E  85C1                      ST      A13,NBRSEC
       0B80  03A2  R
00750  0B82  F6A1                      CF      A14,SEEK
       0B84  0000  F
00751  0B86  9041                      IM      NBRCYL      FOR ANEW CYLINDER
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       0B88  0620  R
00752  0B8A  9041                IM        IDENT
       0B8C  02E6  R
00753  0B8E  5F2C                RB(7)     TSTCYL
00754  0B90  8140          SEC   LD        A1,NBRSEC
       0B92  03A2  R
00755  0B94  E940                CW        A1,SECMAX
       0B96  0210  R
00756  0B98  5000  F             RF(0)     IMYRK2
00757  0B9A  3961                SRL       A1,1
00758  0B9C  E940                CW        A1,SECMAX
       0B9E  0210  R
00759  0BA0  5400  F             RF(4)     TESTBI
00760  0BA2  9041          IMTRK3 IM        NBRTRK      FOR A NEW TRACK
       0BA4  0622  R
00761  0BA6  5F44                RB(7)     TSTCYL
00762                      IMYRK2 EQU       *
00763  0BA8  9041                IM        NBRTRK
       0BAA  0622  R
00764                      TESTBI EQU       *
00765  0BAC  8340                LD        A3,NBRSEC
       0BAE  03A2  R
00766  0BB0  2307                ANK       A3,7
00767  0BB2  5400  F             RF(4)     A12EG5
00768  0BB4  8140                LD        A1,W:SAV1
       0BB6  07C4  R
00769  0BB8  8240                LD        A2,W:SAV1+2
       0BBA  07C6  R
00770  0BBC  3841                DLL       1
00771  0BBE  B941                MS        2,W:SAV1
       0BC0  07C4  R
00772  0BC2  2101                ANK       A1,1
00773  0BC4  5400  F             RF(4)     A12EG5
00774  0BC6  9041                IM        NBRGRN
       0BC8  0624  R
00775  0BCA  8140                LD        A1,NBRGRN
       0BCC  0624  R
00776  0BCE  E920                CWK       A1,15
       0BD0  000F
00777  0BD2  5400  F             RF(4)     LDA3
00778  0BD4  85C1                ST        A13,NBRGRN
       0BD6  0624  R
00779  0BD8  8140                LD        A1,W:SAV1
       0BDA  07C4  R
00780  0BDC  814F                ST        A1,BITAB,A11
       0BDE  033C  R
00781  0BE0  93A0                ADK,L     A11,2
       0BE2  0002
00782  0BE4  85C1                ST        A13,W:SAV1
       0BE6  07C4  R
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00783  0BE8  824E          LD      A2,BITAB,A11
       0BEA  033C  R
00784  0BEC  8241          ST      A2,W:SAV1+2
       0BEE  07C6  R
00785  0BF0  8340    LDA3  LD      A3,NBRSEC
       0BF2  03A2  R
00786  0BF4  1310          ADK     A3,16
00787  0BF6  2310          ANK     A3,16
00788  0BF8  8341          ST      A3,NBRSEC
       0BFA  03A2  R
00789  0BFC  EB20          CWK     A3,16
       0BFE  0010
00790  0C00  5C60          RB(4)   IMTRK3
00791  0C02  5F5C          RB(7)   IMYRK2
00792  0C04  84A0    A12EG5 LDK.L  A12,5
       0C06  0005
00793  0C08  F6A1    READ1 CF      A14,READ
       0C0A  0000  F
00794  0C0C  49C0    SST1  SST     A1,DSK
00795  0C0E  5C04          RB(4)   SST1
00796  0C10  A120          ANK.L   A1,/1F
       0C12  001F
00797  0C14  5400  F       RF(4)   REREAD
00798  0C16  8140          LD      A1,BUFRD
       0C18  0628  R
00799  0C1A  E940          CW      A1,NBRCYL   CHECKING THE IDENT.
       0C1C  0620  R
00800  0C1E  5400  F       RF(4)   REREAD
00801  0C20  9041    INCSEC IM     NBRSEC
       0C22  03A2  R
00802  0C24  8140          LD      A1,NBRSEC
       0C26  03A2  R
00803  0C28  E920          CWK     A1,8
       0C2A  0008
00804  0C2C  5000  F       RF(0)   BITAL3      *
00805  0C2E  E920          CWK     A1,16
       0C30  0010
00806  0C32  5000  F       RF(0)   BITAL3      * TEST END OF GRANULE
00807  0C34  E920          CWK     A1,24
       0C36  0018
00808  0C38  5000  F       RF(0)   BITAL3
00809  0C3A  E920          CWK     A1,32
       0C3C  0020
00810  0C3E  5000  F       RF(0)   BITAL3
00811  0C40  5FDE          RB(7)   TSTCYL
00812                BITAL3 EQU    *
00813  0C42  8140          LD      A1,NBRGRN
       0C44  0624  R
00814  0C46  E920          CWK     A1,15
       0C48  000F
```

```
00815  0C4A  5400  F            RF(4)     INCNGR
00816  0C4C  8140               LD        A1,W:SAV1
       0C4E  07C4  R
00817  0C50  814F               ST        A1,BITAB,A11
       0C52  033C  R
00818  0C54  93A0                ADK.L     A11,2
       0C56  0002
00819  0C58  85C1               ST        A13,NBRGRN
       0C5A  0624  R
00820  0C5C  85C1               ST        A13,W:SAV1
       0C5E  07C4  R
00821  0C60  8F20               AB,L(7)   LDBITA
       0C62  085C  R
00822  0C64  9041     INCNGR    IM        NBRGRN
       0C66  0624  R
00823  0C68  8F20               AB,L(7)   TSTCYL
       0C6A  0864  R
00824  0C6C  9CA0     REREAD    SUK,L     A12,1
       0C6E  0001
00825  0C70  5C6A               RB(4)     READ1       FOR A NEW TRY
00826  0C72  84A0               LDK,L     A12,16
       0C74  0010
00827  0C76  8140               LD        A1,NBRSEC
       0C78  03A2  R
00828  0C7A  E920               CWK       A1,24
       0C7C  0018
00829  0C7E  5100  F            RF(1)     IM
00830  0C80  E920               CWK       A1,16
       0C82  0010
00831  0C84  5100  F            RF(1)     CW16
00832  0C86  E920               CWK       A1,8
       0C88  0008
00833  0C8A  5100  F            RF(1)     IM
00834  0C8C  5700  F            RF(7)     CW16
00835  0C8E  9041     IM        IM        NBRGRN
       0C90  0624  R
00836  0C92  B940               ML        2,W:SAV1
       0C94  07C4  R
00837  0C96  3841               DLL       1
00838  0C98  B941               MS        2,W:SAV1
       0C9A  07C4  R
00839  0C9C  8140     CW16      LD        A1,NBRSEC
       0C9E  03A2  R
00840  0CA0  E920               CWK       A1,16
       0CA2  0010
00841  0CA4  5600  F            RF(6)     ZER1A
00842  0CA6  0110               LDK       A1,16
00843  0CA8  8141               ST        A1,NBRSEC   BEGINING OF TRACK 1
       0CAA  03A2  R
00844  0CAC  5700  F            RF(7)     ID
```

```
00845  0CAE  85C1      ZER1A   ST      A13,NBRSEC  BEGINING OF TRACK 0
       0CB0  03A2  R
00846  0CB2  8120      ID      LDK,L   A1,/8000
       0CB4  8000
00847  0CB6  A941              ORS     A1,IDENT
       0CB8  02E6  R
00848  0CBA  F6A1      WRT2    CF      A14,WRTE    FOR A BAD TRACK
       0CBC  0000  F
00849  0CBE  49C0      CIO9    SST     A1,DSK
00850  0CC0  5C04              RB(4)   *-2
00851  0CC2  9041              IM      NBRSEC
       0CC4  03A2  R
00852  0CC6  9CA0              SUK,L   A12,1
       0CC8  0001
00853  0CCA  5C12              RB(4)   WRT2
00854  0CCC  B940      BITAL4  ML      2,W:SAV1
       0CCE  07C4  R
00855  0CD0  A120              ANK,L   A1,/FFFC    DELETE 2 GRANULES
       0CD2  FFFC
00856  0CD4  B941              MS      2,W:SAV1    IN THE BITAB
       0CD6  07C4  R
00857  0CD8  9041              IM      NBDTRK
       0CDA  0626  R
00858  0CDC  8F20              AB,L(7) BITAL3
       0CDE  0C42  R
```

```
00859                                   EJECT
00860  0CE0  8720        ENDCHK  LDK,L   A7,MESS19
       0CE2  0268  R
00861  0CE4  8620                LDK,L   A6,16
       0CE6  0010
00862  0CE8  F6A1                CF      A14,ASROUT
       0CEA  0000  F
00863  0CEC  F6A1                CF      A14,SEEK0
       0CEE  0000  F
00864  0CF0  85C1                ST      A13,NBRTRK
       0CF2  0622  R
00865  0CF4  85C1                ST      A13,NBRSEC
       0CF6  03A2  R
00866  0CF8  85C1                ST      A13,IDENT
       0CFA  02E6  R
00867  0CFC  8120                LDK,L   A1,/7FFF
       0CFE  7FFF
00868  0D00  A141                AN,S    A1,BITAB
       0D02  033C  R
00869  0D04  F6A1        WRT3    CF      A14,WRTE    INITIALISATION OF GRAN, ZERO
       0D06  0000  F
00870  0D08  49C0        CIO3    SST     A1,DSK
00871  0D0A  5C04                RB(4)   CIO3
00872  0D0C  0603                LDK     A6,3        ***
00873  0D0E  8641                ST      A6,NBRSEC
       0D10  03A2  R
00874  0D12  8620                LDK,L   A6,IPLDD
       0D14  0004  R
00875  0D16  8641                ST      A6,LDBDSK+2 WRITING IPL
       0D18  0000  F
00876  0D1A  F6A1                CF      A14,WRTE
       0D1C  0000  F
00877  0D1E  49C0        VAL     SST     A1,DSK
00878  0D20  5C04                RB(4)   *-2         ***
00879  0D22  0606                LDK     A6,6
00880  0D24  8641                ST      A6,NBRSEC
       0D26  03A2  R
00881  0D28  8620                LDK,L   A6,SEC2
       0D2A  0482  R
00882  0D2C  8641                ST      A6,LDBDSK+2
       0D2E  0000  F
00883  0D30  F6A1                CF      A14,WRTE
       0D32  0000  F
00884  0D34  49C0        CIO33   SST     A1,DSK
00885  0D36  5C04                RB(4)   CIO33
00886  0D38  8620                LDK,L   A6,BUFDSK
       0D3A  02E6  R
00887  0D3C  8641                ST      A6,LDBDSK+2
       0D3E  0000  F
00888  0D40  8340                LD      A3,NBDTRK
```

```
                0D42  0626  R
00889           0D44  F6A1                CF        A14,I:BIDE
                0D46  0000  F
00890           0D48  8941                MS        2,MESS23
                0D4A  02C0  R
00891           0D4C  8720                LDK,L     A7,MESS22
                0D4E  02AA  R
00892           0D50  8620                LDK,L     A6,28
                0D52  001C
00893           0D54  F6A1                CF        A14,ASROUT  NBR. OF BAD TAACKS
                0D56  0000  F
00894                               ANS   EQU       *
00895           0D58  8120                LDK,L     A1,/FFC0
                0D5A  FFC0
00896           0D5C  A141                ANS       A1,SEEK
                0D5E  0000  F
00897           0D60  A141                ANS       A1,CIO5
                0D62  0000  F
00898           0D64  A141                ANS       A1,CIO2
                0D66  0000  F
00899           0D68  A141                ANS       A1,SEEK0
                0D6A  0000  F
00900           0D6C  A141                ANS       A1,CIO4
                0D6E  0000  F
00901           0D70  A141                ANS       A1,CIO3
                0D72  0D08  R
00902           0D74  A141                ANS       A1,VAL
                0D76  0D1E  R
00903           0D78  A141                ANS       A1,CIO33
                0D7A  0D34  R
00904           0D7C  A141                ANS       A1,SSTVAL
                0D7E  0A50  R
00905           0D80  A141                ANS       A1,SST1
                0D82  0C0C  R
00906           0D84  A141                ANS       A1,CIOSEK
                0D86  0000  F
00907           0D88  A141                ANS       A1,CIO6
                0D8A  0000  F
00908           0D8C  A141                ANS       A1,WRTE
                0D8E  0000  F
00909           0D90  A141                ANS       A1,CIO7
                0D92  0000  F
00910           0D94  A141                ANS       A1,READ
                0D96  0000  F
00911           0D98  A141                ANS       A1,CIO8
                0D9A  0000  F
00912           0D9C  A141                ANS       A1,CIO9
                0D9E  0CBE  R
00913           0DA0  A141                ANS       A1,CIO10
                0DA2  0AC8  R
```

```
00914  0DA4  A141            ANS     A1,IOER
       0DA6  0000  F
00915                 MES30   EQU     *
00916  0DA8  8720            LDK,L   A7,MESS30
       0DAA  02C6  R
00917  0DAC  8620            LDK,L   A6,14
       0DAE  000E
00918  0DB0  F6A1            CF      A14,ASROUT
       0DB2  0000  F
00919  0DB4  8720            LDK,L   A7,REP
       0DB6  02D4  R
00920  0DB8  8620            LDK,L   A6,2
       0DBA  0002
00921  0DBC  F6A1            CF      A14,ASRIN
       0DBE  0000  F
00922  0DC0  8120            LDK,L   A1,/4E4F    'NO'
       0DC2  4E4F
00923  0DC4  E940            CW      A1,REP
       0DC6  02D4  R
00924  0DC8  5000  F         RF(0)   CIO4
00925  0DCA  8120            LDK,L   A1,/4F4B    'OK'
       0DCC  4F4B
00926  0DCE  E940            CW      A1,REP
       0DD0  02D4  R
00927  0DD2  5C2C            RB(4)   MES30
00928  0DD4  8F20            ABL(7)  PREMRK
       0DD6  07EC  R
00929  0DD8  4180      CIO4  CIO     A1,0,DSK    STOP ANY TRANSFERT
00930  0DDA  5300  F         RF(3)   UKNODA
00931  0DDC  8720            LDK,L   A7,MESS20
       0DDE  02D6  R
00932  0DE0  8620            LDK,L   A6,16
       0DE2  0010
00933  0DE4  F6A1            CF      A14,ASROUT  END OF PREMRK
       0DE6  0000  F
00934  0DE8  207F            HLT
```

```
00935                                  EJECT
00936  0DEA  4980        SEEK0         TST       A1,DSK
00937  0DEC  2101                      ANK       A1,1
00938  0DEE  5C06                      RB(4)     SEEK0
00939  0DF0  0103                      LDK       A1,3          C,U, READY
00940  0DF2  41C0        CIO5          CIO       A1,1,DSK
00941  0DF4  5300  F                   RF(3)     UKNODA
00942  0DF6  5906                      RB(1)     CIO5
00943  0DF8  49C0        CIO2          SST       A1,DSK
00944  0DFA  5C04                      RB(4)      *+2
00945  0DFC  8204                      LDR       A2,A1
00946  0DFE  221F                      ANK       A2,/1F
00947  0E00  8C20                      AB,L(4)   IOER
       0E02  0000  F
00948  0E04  A120                      ANK,L     A1,/0600
       0E06  0600
00949  0E08  E920                      CWK       A1,/0400
       0E0A  0400
00950  0E0C  5C24                      RB(4)     SEEK0         FOR ANEW TRY
00951  0E0E  F03A                      RTN       A14
```

```
00952                                  EJECT
00953  0E10  4980          SEEK       TST       A1,DSK
00954  0E12  2101                     ANK       A1,1
00955  0E14  5C06                     RB(4)     SEEK
00956  0E16  8120                     LDK,L     A1,/E
       0E18  000E
00957  0E1A  41C0          CIOSEK     CIO       A1,1,DSK
00958  0E1C  5300  F                  RF(3)     UKNODA
00959  0E1E  5906                     RB(1)     CIOSEK
00960  0E20  49C0          CIO6       SST       A1,DSK
00961  0E22  5C04                     RB(4)      *+2
00962  0E24  8204                     LDR       A2,A1
00963  0E26  221F                     ANK       A2,/1F
00964  0E28  8C20                     AB,L(4)   IOER
       0E2A  0000  F
00965  0E2C  A120                     ANK,L     A1,/0600
       0E2E  0600
00966  0E30  E920                     CWK       A1,/0400
       0E32  0400
00967  0E34  5400  F                  RF(4)     BADSEK
00968  0E36  F03A                     RTN       A14
00969  0E38  F6A1          BADSEK     CF        A14,SEEK0
       0E3A  0DEA  R
00970  0E3C  8140                     LD        A1,NBRCYL
       0E3E  0620  R
00971  0E40  3943                     SLL       A1,3
00972  0E42  1106                     ADK       A1,6
00973  0E44  5F2C                     RB(7)     CIOSEK
```

```
00974                                  EJECT
00975  0E46  4980        WRTE     TST      A1,DSK
00976  0E48  2101                 ANK      A1,1
00977  0E4A  5C06                 RB(4)    WRTE
00978  0E4C  8140                 LD       A1,LENGTH     FIRST MULTIPLEX WORD
       0E4E  07C2  R
00979  0E50  F904                 C1R      A1,A1
00980  0E52  1101                 ADK      A1,1
00981  0E54  A120                 ANK,L    A1,/FFF
       0E56  0FFF
00982  0E58  8220        LDBDSK   LDK,L    A2,BUFDSK     dynamically modified!
       0E5A  02E6  R
00983  0E5C  9240                 AD       A2,LENGTH     SECOND MULTIPLEX WORD
       0E5E  07C2  R
00984  0E60  1A02                 SUK      A2,2
00985  0E62  B961                 MS*      2,MXONE
       0E64  061E  R
00986  0E66  8140                 LD       A1,NBRSEC
       0E68  03A2  R
00987  0E6A  3942                 SLL      A1,2
00988  0E6C  1101                 ADK      A1,1
00989  0E6E  41C0        CIO7     CIO      A1,1,DSK
00990  0E70  5300  F              RF(3)    UKNODA
00991  0E72  5906                 RB(1)    CIO7
00992  0E74  F03A                 RTN      A14           RETURN OK
```

```
00993                                  EJECT
00994  0E76  4980          READ        TST       A1,DSK
00995  0E78  2101                      ANK       A1,1
00996  0E7A  5C06                      RB(4)     READ
00997  0E7C  8140                      LD        A1,LENGTH
       0E7E  07C2  R
00998  0E80  F904                      C1R       A1,A1
00999  0E82  1101                      ADK       A1,1
01000  0E84  A120                      ANK,L     A1,/FFF
       0E86  0FFF
01001  0E88  A920                      ORK,L     A1,/4000
       0E8A  4000
01002  0E8C  8220                      LDK,L     A2,BUFRD
       0E8E  0628  R
01003  0E90  9240                      AD        A2,LENGTH
       0E92  07C2  R
01004  0E94  1A02                      SUK       A2,2
01005  0E96  B961                      MS*       2,MXONE     INIT. OF MULTIPLEX
       0E98  061E  R
01006  0E9A  8140                      LD        A1,NBRSEC
       0E9C  03A2  R
01007  0E9E  3942                      SLL       A1,2
01008  0EA0  41C0          CIO8        CIO       A1,1,DSK
01009  0EA2  5300  F                   RF(3)     UKNODA
01010  0EA4  5906                      RB(1)     CIO8
01011  0EA6  F03A                      RTN       A14
```

```
01012                                  EJECT
01013  0EA8  8720        UKNODA  LDK,L   A7,MESS25
       0EAA  0278  R
01014  0EAC  8620                LDK,L   A6,26
       0EAE  001A
01015  0EB0  F6A1                CF      A14,ASROUT
       0EB2  0000  F
01016  0EB4  207F                HLT
01017                      IOER  EQU     *
01018  0EB6  8141                ST      A1,BUF
       0EB8  01AA  R
01019  0EBA  813A                LDR*    A1,A14  -> faut -> LD A1,4,A14
01020  0EBC  F6A1                CF      A14,I:BIHX
       0EBE  0000  F
01021  0EC0  B941                MS      2,MESS26+12 CALLING ADDRESS + 2
       0EC2  029E  R
01022  0EC4  8140                LD      A1,BUF
       0EC6  01AA  R
01023  0EC8  F6A1                CF      A14,I:BIHX
       0ECA  0000  F
01024  0ECC  B941                MS      2,MESS26+18
       0ECE  02A4  R
01025  0ED0  8720                LDK,L   A7,MESS26
       0ED2  0292  R
01026  0ED4  8620                LDK,L   A6,22
       0ED6  0016
01027  0ED8  F6A1                CF      A14,ASROUT
       0EDA  0000  F
01028  0EDC  207F                HLT
```

```
01029                                  EJECT
01030                          *       THIS MODULE CONVERT BINARY VALUE IN
01031                          *       HEXADECIMAL ASCII CHARACTERS
01032                          *                                  INPUT  : A1
01033                          *                                  OUTPUT : A1,A2
01034                          *
01035  0EDE  BAD7      I:BIHX  MS      5,W:SAV1+10,A13
       0EE0  07CE  R
01036  0EE2  0404              LDK     A4,4
01037  0EE4  8204              LDR     A2,A1
01038  0EE6  0500      ZER5    LDK     A5,0
01039  0EE8  0100      ZER1    LDK     A1,0
01040  0EEA  3844              DLL     4                  A1 = CURRENT CHARACTER
01041  0EEC  E920              CWK     A1,/A
       0EEE  000A
01042  0EF0  5200  F           RF(2)   TRENT1             A1 < A
01043  0EF2  1107              ADK     A1,7
01044  0EF4  1130      TRENT1  ADK     A1,/30
01045  0EF6  9114              ADR     A1,A5
01046  0EF8  1C01              SUK     A4,1               A4 = CPTR OF CHARACTERS
01047  0EFA  5000  F           RF(0)   RTN
01048  0EFC  EC20              CWK     A4,2
       0EFE  0002
01049  0F00  5000  F           RF(0)   STOC1
01050  0F02  3948              SLL     A1,8
01051  0F04  8504              LDR     A5,A1
01052  0F06  5F20              RB(7)   ZER1               RUN BACK FOR CARRVING A NEW CH,
01053  0F08  8157      STOC1   ST      A1,W:SAV1+10,A13   N:SAV1+10 = 2 FIRST ASCII CHAR,
       0F0A  07CE  R
01054  0F0C  5F28              RB(7)   ZER5
01055  0F0E  8157      RTN     ST      A1,W:SAV1+12,A13   ***
       0F10  07D0  R
01056  0F12  BAD6              ML      5,W:SAV1+10,A13    RETURN SEQUENCE
       0F14  07CE  R
01057  0F16  F03A              RTN     A14                ***                          B
```

```
01058                                  EJECT
01059                          *       THIS MODULE ASSUME CONVERSION FROM
01060                          *       HEXADECIMAL TO BINARY VALUE
01061                          *
01062                          *            INPUT   A1,A2  = 4 HEXADECIMAL CHARACTERS
01063                          *            OUTPUT  A1     = BINARY VALUE
01064                          *                  CALLING  SEQUENCE :  LDK,L   A4,RETURN
01065                          *                                       ABI     C:HXBI,A12
01066                          *                                  RETURN + 0  IF ERROR
01067                          *                                  RETURN + 2  IF OK
01068                          *
01069  0F18  BAD7      I:HXBI  MS      5,W:SAV1+10,A13
       0F1A  07CE  R
01070  0F1C  0500              LDK     A5,0
01071  0F1E  0204              LDK     A2,4
01072  0F20  8320              LDK,L    A3,W:SAV1+10
       0F22  07CE  R
01073  0F24  9316              ADR     A3,A13
01074  0F26  0100      ELIM0   LDK      A1,0                  ***
01075  0F28  E14C              LC       A1,0,A3
       0F2A  0000
01076  0F2C  E920              CWK     A1,/20                THIS SEQUENCE
       0F2E  0020
01077  0F30  5400  F            RF(4)   TSTHX                 ELIMINATE
01078  0F32  1301              ADK      A3,1                  ALL THE NON SIGNIFICANT
01079  0F34  1A01              SUK     A2,1                  BLANCK CHARACTERS
01080  0F36  5000  F           RF(0)   ERCOM
01081  0F38  5F14              RB(7)    ELIM0                ***
01082  0F3A  0100      ZERA1   LDK      A1,0
01083  0F3C  E14C              LC       A1,0,A3               A1 = CHARACTER TO CONVERT
       0F3E  0000
01084  0F40  8420      TSTHX   LDK,L   A4,RETHX
       0F42  0000  F
01085  0F44  8F20              AB,L     TSTNUM
       0F46  0000  F
01086  0F48  5700  F  RETHX    RF(7)    ERCOM
01087  0F4A  E920              CWK     A1,/40
       0F4C  0040
01088  0F4E  5200  F           RF(2)   TRENT
01089  0F50  1907              SUK      A1,7
01090  0F52  1930      TRENT   SUK      A1,/30                A1 = BINARY VALUE OF THE CHAR.
01091  0F54  9114              ADR      A1,A5                 A1 = CURRENT BINARY VALUE
01092  0F56  1301              ADK      A3,1
01093  0F58  1A01              SUK     A2,1
01094  0F5A  5000  F           RF(0)   COMBAC                END OF DECODING
01095  0F5C  3944              SLL      A1,4
01096  0F5E  8504              LDR      A5,A1
01097  0F60  5F28              RB(7)    ZERA1
01098  0F62  8157      COMBAC  ST       A1,W:SAV1+10,A13
       0F64  07CE  R
```

```
01099  0F66  BAD6          ML      5,W;SAV1+10,A13
       0F68  07CE  R
01100  0F6A  1402          ADK     A4,2
01101  0F6C  8F10          ABR     A4                  RETURN A1 = PARAM, BINARY VALUE
01102  0F6E  BAD6    ERCOM ML      5,W;SAV1+10,A13
       0F70  07CE  R
01103  0F72  8F10          ABR     A4                  ERROR RETURN
```

```
01104                                  EJECT
01105                          *       THIS MODULE ASSUME THE CONVERSION OF
01106                          *       DECIMAL ASCIL VALUE TO BINARY VALUE
01107                          *
01108                          *                 INPUT  : A1,A2
01109                          *                 OUTPUT : A1
01110                          *
01111                          *                 RETURN + 0 IF ERROR
01112                          *                 RETURN + 2 IF OK
01113  0F74  BAD7       I:DEBI MS      5,W:SAV1+10,A13
       0F76  07CE  R
01114  0F78  0500             LDK     A5,0
01115  0F7A  0204             LDK     A2,4
01116  0F7C  8320             LDK,L   A3,W:SAV1+10
       0F7E  07CE  R
01117  0F80  9316             ADR     A3,A13
01118  0F82  0100       LDOA1 LDK     A1,0                    ***
01119  0F84  E14C             LC      A1,0,A3
       0F86  0000
01120  0F88  E920             CWK     A1,/20                  THIS  SEQUENCE
       0F8A  0020
01121  0F8C  5400  F          RF(4)   SUIT                    ELIMINATE
01122  0F8E  1301             ADK     A3,1                    THE BLANK CHARACTERS
01123  0F90  1A01             SUK     A2,1                    NOT SIGNIFICANT
01124  0F92  5000  F          RF(0)   ERDEC
01125  0F94  5F14             RB(7)   LDOA1                   ***
01126  0F96  E920       SUIT  CWK     A1,/30                  ***
       0F98  0030
01127  0F9A  5200  F          RF(2)   ERDEC                   THIS SEQUENCE CONTROL
01128  0F9C  E920             CWK     A1,/39                  IF THE CHARACTER IS DECIMAL
       0F9E  0039
01129  0FA0  5100  F          RF(1)   ERDEC                   ***
01130  0FA2  1930             SUK     A1,/30                  A1 = CHARACTER BINARY VALUE
01131  0FA4  9114             ADR     A1,A5                   A1 = CURRENT BINARY VALUE
01132  0FA6  1A01             SUK     A2,1                    ***
01133  0FA8  5000  F          RF(0)   ENDEC                   TEST OF END OF DECODING
01134  0FAA  8504             LDR     A5,A1                   ***
01135  0FAC  3943             SLL     A1,3                    THIS SEQUENCE
01136  0FAE  9114             ADR     A1,A5                   ASSUME THE
01137  0FB0  9114             ADR     A1,A5                   MULTIPLICATION BY 10
01138  0FB2  8504             LDR     A5,A1                   ***
01139  0FB4  0100             LDK     A1,0
01140  0FB6  1301             ADK     A3,1
01141  0FB8  E14C             LC      A1,0,A3
       0FBA  0000
01142  0FBC  5F28             RB(7)   SUIT                    FOR  A NEW CHARACTER
01143  0FBE  BAD6       ERDEC ML      5,W:SAV1+10,A13
       0FC0  07CE  R
01144  0FC2  8F10             ABR     A4                      ERROR RETURN
01145  0FC4  8157       ENDEC ST      A1,W:SAV1+10,A13
```

```
        0FC6  07CE  R
01146   0FC8  BAD6              ML      5,W:3AV1+10,A13
        0FCA  07CE  R
01147   0FCC  1402              ADK     A4,2
01148   0FCE  8F10              ABR     A4                  RETURN IF OK
```

```
01149                                   EJECT
01150                           *               THIS MODULE PERFORM CONVERSION
01151                           *               OF BINARY WORD INTO FOUR DECIMAL
01152                           *               ASCII CHARACTERS
01153                           *                       INPUT  : A3
01154                           *                       OUTPUT : A1,A2
01155                           *
01156  0FD0  0230       I:BIDE  LDK     A2,/30
01157  0FD2  9820       MIL     SUK,L   A3,1000         ***
       0FD4  03E8
01158  0FD6  5200  F            RF(2)   CENT            THIS SEQUENCE COMPUTE
01159  0FD8  1201               ADK     A2,1            THE THOUSAND DIGIT
01160  0FDA  5F0A               RB(7)   MIL             ***
01161  0FDC  3848       CENT    DLL     8               ***
01162  0FDE  1230               ADK     A2,/30
01163  0FE0  9320               ADK,L   A3,1000         THIS SEQUENCE COMPUTE
       0FE2  03E8
01164  0FE4  1B64       CENT1   SUK     A3,100
01165  0FE6  5200  F            RF(2)   DIX             THE HUNDED DIGIT
01166  0FE8  1201               ADK     A2,1
01167  0FEA  5F08               RB(7)   CENT1           ***
01168  0FEC  3848       DIX     DLL     8               ***
01169  0FEE  1230               ADK     A2,/30
01170  0FF0  1364               ADK     A3,100          THIS SEQUENCE COMPUTE
01171  0FF2  1B0A       DIX1    SUK     A3,10
01172  0FF4  5200  F            RF(2)   UNIT            THE TENTH DIGIT
01173  0FF6  1201               ADK     A2,1
01174  0FF8  5F08               RB(7)   DIX1            ***
01175  0FFA  3848       UNIT    DLL     8               ***
01176  0FFC  133A               ADK     A3,/3A          UNIT DIGIT COMPUTINE
01177  0FFE  920C               ADR     A2,A3           AND RETURN
01178  1000  F03A               RTN     A14             ***
```

```
01179                                  EJECT
01180                          *       THIS MODULE VERIFIES IF THE CHARACTER GIVEN
01181                          *       IN A1 REGISTER IS A NUMERIC CHARACTER
01182                          *
01183                          *                    CALLING SEQUENCE :   LDK,L   A4,RETN
01184                          *                                         AB,L    TSTNUM
01185                          *                                   RETN  AB,L    NOTNUM
01186                          *                                         AB,L    NUMCAR
01187                          *
01188  1002  E920        TSTNUM  CWK     A1,/30
       1004  0030
01189  1006  5200  F             RF(2)   RETB                  < 0
01190  1008  E920              CWK     A1,/3A
       100A  003A
01191  100C  5200  F             RF(2)   RETA                  0 < A1 < 9
01192  100E  E920              CWK     A1,/41
       1010  0041
01193  1012  5200  F           RF(2)   RETB                  = 0
01194  1014  E920              CWK     A1,/47
       1016  0047
01195  1018  5600  F           RF(6)   RETB                  A < A1 < F
01196  101A  1402        RETA  ADK     A4,2
01197  101C  8F10        RETB  ABR     A4
```

```
01198                                   EJECT
01199                           *
01200                           *               THIS SEQUENCE PERFORMS OUTPUTS ON THE ASR
01201                           *
01202                           *               INPUT       A6 = REQUESTED LENGTH
01203                           *                           A7 = BUFFER ADDRESS
01204                           *
01205                           *               CALLING SEQUENCE      CF  A14,ASROUT
01206                           *
01207                           ASR     EQU     16
01208                           ST      EQU     1
01209                           H       EQU     0
01210                           *
01211                           *
01212                           ASROUT  EQU     *
01213  101E  0100               ASROUT  LDK     A1,0
01214  1020  41D0               ASROUT  CIO     A1,ST,ASR
01215  1022  5C04               ASROUT  RB(4)   *-2
01216  1024  8120               ASROUT  LDK,L   A1,/0020
       1026  0020
01217  1028  1F01               ASROUT  SUK     A7,1
01218  102A  5700  F            ASROUT  RF(7)   OUTCAR
01219  102C  0100               CONTIN  LDK     A1,0
01220  102E  E13C               CONTIN  LCR     A1,A7
01221  1030  4110               OUTCAR  OTR     A1,0,ASR
01222  1032  5C04               OUTCAR  RB(4)   OUTCAR
01223  1034  1701               OUTCAR  ADK     A7,1
01224  1036  1E01               OUTCAR  SUK     A6,1
01225  1038  5E0E               OUTCAR  RB(6)   CONTIN
01226  103A  4190               OUTCAR  CIO     A1,H,ASR
01227  103C  5C04               OUTCAR  RB(4)   *-2
01228  103E  49D0               ENDO    SST     A1,ASR
01229  1040  5C04               ENDO    RB(4)   *-2
01230  1042  F03A               ENDO    RTN     A14           RETURN
01231
```

```
01232                                   EJECT
01233                          *                THIS MODULE PERFORMS INPUT FROM ASR
01234                          *
01235                          *                INPUT       A6 = REQUESTED LENGTH
01236                          *                            A7 = BUFFER ADDRESS
01237                          *
01238                          *                CALLING SEQUENCE  CF A14,ASRIN
01239                          ASRIN     EQU    *
01240  1044  0101               *        LDK    A1,1
01241  1046  41D0               *        CIO    A1,ST,ASR
01242  1048  5C04               *        RB(4)  *+2
01243  104A  4910               NEWLEC   INR    A1,0,ASR
01244  104C  5C04               *        RB(4)  NEWLEC
01245  104E  217F               *        ANK    A1,/7F
01246  1050  E920               *        CWK    A1,/0A      LF
       1052  000A
01247  1054  580C               *        RB(0)  NEWLEC
01248  1056  E920               *        CWK    A1,/0D      CR
       1058  000D
01249  105A  5000  F            *        RF(0)  ENDI
01250  105C  E920               *        CWK    A1,/5E
       105E  005E
01251  1060  5400  F            *        RF(4)  SUKVAL
01252  1062  4190               *        CIO    A1,H,ASR
01253  1064  5C04               *        RB(4)  *+2
01254  1066  49D0               *        SST    A1,ASR
01255  1068  5C04               *        RB(4)  *+2
01256  106A  8F20               *        AB,L   ANS
       106C  0D58  R
01257                          SUKVAL    EQU    *
01258  106E  1E01               *        SUK    A6,1
01259  1070  5A28               *        RB(2)  NEWLEC
01260  1072  E13D               *        SCR    A1,A7
01261  1074  1701               *        ADK    A7,1
01262  1076  5F2E               *        RB(7)  NEWLEC
01263  1078  4190               ENDI     CIO    A1,H,ASR    HALT
01264  107A  5C04               *        RB(4)  *+2
01265  107C  49D0               *        SST    A1,ASR
01266  107E  5C04               *        RB(4)  *+2
01267  1080  F03A               *        RTN    A14          RETURN
01268  1082  8F20               *        AB,L    PREMRK
       1084  07EC  R
01269  1086  5F06               *        RB      *+4
01270                                   END    PREMRK
```

SYMBOL TABLE

PREMRK	07EC	R	IPLDD	0004	R	SIO	0001	A	HIO	0000	A			
DSKAD	003E	A	IPLD	0008	R	BASE	0008	R	MLX	004A	R			
INR	002A	R	INR1	0030	R	CKOK	003C	R	SST	0046	R			
HLTIO	0044	R	SEEKZO	00F6	R	DKSST0	0102	R	SEEKCD	010E	R			
READCD	00B0	R	MXCC2	011E	R	MLX10	0074	R	MXAD	011A	R			
SEEKZ	00F4	R	LDBOOT	0120	R	NEXTSC	008A	R	READ00	0098	R			
SEEKCY	010C	R	READ01	00A6	R	MXCC	011C	R	DKSST	0100	R			
READ03	00CA	R	READ04	00D6	R	MOVE	00DC	R	BOOT	0142	R			
LDBT1	0134	R	CODE	0170	R	PR	0020	A	S	0001	A			
SEARCH	0146	R	INPUT	0152	R	BUF	01AA	R	MESS0	01AE	R			
MESS2	01CE	R	CYLMAX	01E2	R	MESS3	01E4	R	TRKMAX	01F6	R			
MESS4	01F8	R	SECMAX	0210	R	MESS10	0212	R	DUPAD	0230	R			
MESS15	0232	R	MESS17	024C	R	MESS19	0268	R	MESS25	0278	R			
MESS26	0292	R	MESS22	02AA	R	MESS23	02C0	R	MESS30	02C6	R			
REP	02D4	R	MESS20	02D6	R	BUFDSK	02E6	R	IDENT	02E6	R			
MESS12	02EE	R	LABEL	02F6	R	MESS13	0308	R	DATE	0310	R			
MESS14	0320	R	PACNBR	032C	R	BILENG	033A	R	BITAB	033C	R			
NBRSEC	03A2	R	ENDTAB	03AE	R	ENDBUF	0430	R	SEC2	0482	R			
MXONE	061E	R	NBRCYL	0620	R	NBRTRK	0622	R	NBRGRN	0624	R			
NBOTRK	0626	R	BUFRD	0628	R	LENGTH	07C2	R	W:SAV1	07C4	R			
DSK	0000	A	ASROUT	101E	R	MES2	0802	R	ASRIN	1044	R			
RET	0834	R	I:DEBI	0F74	R	MES3	083A	R	RET2	086E	R			
MES4	0874	R	RET3	08A8	R	MES10	08AE	R	RET4	08E2	R			
I:HXBI	0F18	R	SEEK	0E10	R	CIO5	0DF2	R	CIO2	0DF8	R			
SEEK0	0DEA	R	CIO4	0DD8	R	CIO3	0D08	R	VAL	0D1E	R			
CIO33	0D34	R	SSTVAL	0A50	R	SST1	0C0C	R	CIOSEK	0E1A	R			
CIO6	0E20	R	WRTE	0E46	R	CIO7	0E6E	R	READ	0E76	R			
CIO8	0EA0	R	CIO9	0CBE	R	CIO10	0AC8	R	IOER	0EB6	R			
TST	09D2	R	CIOHLT	09D8	R	SST2	09DE	R	IMCIO	09E2	R			
TSTRED	09FA	R	CHECK	0B2A	R	TSTTRK	0A06	R	TSTSEC	0A2A	R			
IMTRK1	0A44	R	INIA12	0A48	R	WRITE	0A4C	R	REWRTE	0A7C	R			
BITALG	0AF4	R	IMNOT	0A9E	R	IMYES	0A98	R	LDKA12	0AA8	R			
RAZ	0AB8	R	IDPOST	0ABC	R	WRIT1	0AC4	R	BITAL2	0AD6	R			
TSTA3	0AFA	R	NEWTAB	0B12	R	LDBITA	0B5C	R	TSTCYL	0B64	R			
ENDCHK	0CE0	R	SEC	0B90	R	IMYRK2	0BA8	R	TESTBI	0BAC	R			
IMTRK3	0BA2	R	A12EG5	0C04	R	LDA3	0BF0	R	READ1	0C08	R			
REREAD	0C6C	R	INCSEC	0C20	R	BITAL3	0C42	R	INCNGR	0C64	R			
IM	0C8E	R	CW16	0C9C	R	ZER1A	0CAE	R	ID	0CB2	R			
WRT2	0CBA	R	BITAL4	0CCC	R	WRT3	0D04	R	LDBDSK	0E58	R			
I:BIDE	0FD0	R	ANS	0D58	R	MES30	0DA8	R	UKNODA	0EA8	R			
BADSEK	0E38	R	I:BIMX	0EDE	R	ZER5	0EE6	R	ZER1	0EE8	R			
TRENT1	0EF4	R	RTN	0F0E	R	STOC1	0F08	R	ELIM0	0F26	R			
TSTHX	0F40	R	ERCOM	0F6E	R	ZERA1	0F3A	R	RETHX	0F48	R			
TSTNUM	1002	R	TRENT	0F52	R	COMBAC	0F62	R	LD0A1	0F82	R			
SUIT	0F96	R	ERDEC	0FBE	R	ENDEC	0FC4	R	MIL	0FD2	R			
CENT	0FDC	R	CENT1	0FE4	R	DIX	0FEC	R	DIX1	0FF2	R			
UNIT	0FFA	R	RETB	101C	R	RETA	101A	R	ASR	0010	A			
ST	0001	A	H	0000	A	OUTCAR	1030	R	CONTIN	102C	R			

```
ENDO    103E  R   NEWLEC  104A  R   ENDI    1078  R   SUKVAL  106E  R

        ASS.ERR.    00000
```

```
PPPPPPPPPPP    AAAAAAAA   PPPPPPPPPPP  EEEEEEEEEEEE RRRRRRRRRRR
PPPPPPPPPPPP  AAAAAAAAAA  PPPPPPPPPPPP EEEEEEEEEEEE RRRRRRRRRRRR
PPPP      PP AAAAA  AAAAA PPPP      PP EEEE         RRRR     RRR
PPPPPPPPPPPP AAAA    AAAA PPPPPPPPPPPP EEEEEEEEE    RRRRRRRRRRR
PPPPPPPPPPP  AAAAAAAAAAAA PPPPPPPPPPP  EEEEEEEEE    RRRRRRRRRRR
PPPP         AAAAAAAAAAAA PPPP         EEEE         RRRR  RRRR
PPPP         AAAA    AAAA PPPP         EEEEEEEEEEEE RRRR   RRRR
PPPP         AAAA    AAAA PPPP         EEEEEEEEEEEE RRRR    RRRR

          TTTTTTTTTTTT   AAAAAAAA   PPPPPPPPPPP  EEEEEEEEEEEE
          TTTTTTTTTTTT  AAAAAAAAAA  PPPPPPPPPPPP EEEEEEEEEEEE
             TTTT      AAAAA  AAAAA PPPP      PP EEEE
             TTTT      AAAA    AAAA PPPPPPPPPPPP EEEEEEEEE
             TTTT      AAAAAAAAAAAA PPPPPPPPPPP  EEEEEEEEE
             TTTT      AAAAAAAAAAAA PPPP         EEEE
             TTTT      AAAA    AAAA PPPP         EEEEEEEEEEEE
             TTTT      AAAA    AAAA PPPP         EEEEEEEEEEEE

BBBBBBBBBB    0000000000   0000000000  TTTTTTTTTTTT   SSSSSSSS   TTTTTTTTTTTT RRRRRRRRRRR    AAAAAAAA   PPPPPPPPPPP
BBBBBBBBBBB  00000000000 00000000000 TTTTTTTTTTTT  SSSSSSSSSS  TTTTTTTTTTTT RRRRRRRRRRRR  AAAAAAAAAA  PPPPPPPPPPPP
BBBB   BBBB  0000     0000 0000     0000     TTTT     SSS            TTTT     RRRR     RRR AAAAA  AAAAA PPPP      PP
BBBBBBBBBB   0000     0000 0000     0000     TTTT     SSSSSSSSSS     TTTT     RRRRRRRRRRR AAAA    AAAA PPPPPPPPPPP
BBBBBBBBBB   0000     0000 0000     0000     TTTT      SSSSSSSSSS    TTTT     RRRRRRRRRR  AAAAAAAAAAAA PPPPPPPPPP
BBBB    BBBB 0000     0000 0000     0000     TTTT           SSS      TTTT     RRRR  RRRR  AAAAAAAAAAAA PPPP
BBBBBBBBBBB 00000000000 00000000000     TTTT      SSSSSSSSS     TTTT     RRRR   RRRR  AAAA    AAAA PPPP
BBBBBBBBBB   0000000000   0000000000     TTTT       SSSSSSS      TTTT     RRRR    RRRR AAAA    AAAA PPPP
```

```
00000                    IDENT    BOOT86                VER#2  REL#2
00001                  * THIS BOOTSTRAP PERFORMS LOADING IN CORE OF BINARY TAPE IN 8+8 FORMAT
00002                  * FROM HIGH SPEED PUNCHED TAPE READER WITH PHYSICAL HEXADECIMAL
00003                  * ADDRESS /20 ON P855 OR P860 COMPUTERS
00004                  *
00005                  *
00006                  * THE BINARY CODE READ FROM PAPER TAPE IS LOADED AT ADDRESS FOUND IN
00007                  * SECOND USEFUL WORD OF THE TAPE ADDED WITH THE CONTENT OF LOCATION
00008                  * /3C IN THE BOOTSTRAP,
00009                  * THIS ALLOWS PARAMETERISATION OF LOADING ADDRESS OF BINARY PROGRAMS
00010                  * ON PAPERTAPE, (DEPENDING ON MEMORY SIZE)
00011                  *
00012                  * CAUTION :
00013                  ***********
00014                  *           IF BINARY LOADED PROGRAM CONTAINS MEMORY DIRECT REFERENCES,
00015                  *           LOCATION /3C MUST CONTAIN /0000
00016                  *
00017                  *
00018                  * ON LOADING COMPLETION, THE BOOTSTRAP PERFORMS A BRANCH TO THE FIRST
00019                  * LOADED LOCATION, AT THIS STAGE, A1 CONTAINS THE 1 WORD COMPUTED
00020                  * CHECKSUM FROM PAPERTAPE AND THE PAPERTAPE READER IS STILL ACTIVE,
00021                  * CONSEQUENTLY, THE LOADED PROGRAM HAS OPPORTUNITY BY ISSUING TWO
00022                  * OTR FOLLOWED BY CIO HALT AND SST TO COMPARE PUNCHED AND
00023                  * COMPUTED CHECKSUM
00024                  * IF THIS IS NOT THE CASE, THE PUNCHED TAPE READER CONTROLLER WILL
00025                  * AUTOMATICALLY SWITCH INTO SST STATE, CONSEQUENTLY IT IS THEN
00026                  * NECESSARY TO DEPRESS 'MASTER CLEAR' BUTTON IN ORDER TO RESET THE
00027                  * PTR CONTROLLER
00028                  *
00029                  ********************************************************************************
```

```
00030                                EJECT
00031                       CODE     EQU     *+/2E
00032                       PR       EQU     /20
00033                       S        EQU     1
00034  0000  20BF                    INH
00035  0002  41E0                    CIO     A1,S,PR
00036  0004  4A20          SEARCH    INR     A2,0,PR
00037  0006  5C04                    RB(4)   *-2
00038  0008  227F                    ANK     A2,/7F
00039  000A  5808                    RB(0)   SEARCH
00040  000C  0704                    LDK     A7,4
00041  000E  0540                    LDK     A5,/40
00042                       INPUT    EQU     *
00043  0010  4A20                    INR     A2,0,PR
00044  0012  5C04                    RB(4)   *-2
00045  0014  E235                    SCR     A2,A5
00046  0016  1501                    ADK     A5,1
00047  0018  1F01                    SUK     A7,1
00048  001A  590C                    RB(1)   INPUT
00049  001C  5210                    RF(2)   CODE
00050  001E  BAC0                    ML      5,/3A
       0020  003A
00051  0022  1502                    ADK     A5,2
00052  0024  9508                    ADR     A5,A2
00053  0026  3C41                    SLL     A4,1
00054  0028  8614                    LDR     A6,A5
00055  002A  0100                    LDK     A1,0
00056  002C  5F1E                    RB      INPUT
00057                       * CODE LABEL
00058  002E  E104                    ECR     A1,A1
00059  0030  8108                    XRR     A1,A2
00060  0032  1C01                    SUK     A4,1
00061  0034  5C26                    RB(4)   INPUT
00062  0036  8F18                    ABR     A6
00063  0038  0000                    DATA    0       UNUSED
00064  003A  0000                    DATA    0       UNUSED
00065  003C  0000                    DATA    0       MUST CONTAIN BASE ADDRESS
00066  003E  0000                    DATA    0       UNUSED
00067                                END
```

```
                SYMBOL TABLE

CODE    002E  R   PR      0020  A   S       0001  A   SEARCH  0004  R
INPUT   0010  R

                ASS,ERR,    00000
```

```
PPPPPPPPPPP    AAAAAAAA   PPPPPPPPPPP  EEEEEEEEEEEE RRRRRRRRRRR
PPPPPPPPPPPP  AAAAAAAAAA  PPPPPPPPPPPP EEEEEEEEEEEE RRRRRRRRRRRR
PPPP      PP AAAAA  AAAAA PPPP      PP EEEE         RRRR     RRR
PPPPPPPPPPPP AAAA    AAAA PPPPPPPPPPPP EEEEEEEEE    RRRRRRRRRRR
PPPPPPPPPPP  AAAAAAAAAAAA PPPPPPPPPPP  EEEEEEEEE    RRRRRRRRRR
PPPP         AAAAAAAAAAAA PPPP         EEEE         RRRR  RRRR
PPPP         AAAA    AAAA PPPP         EEEEEEEEEEEE RRRR   RRRR
PPPP         AAAA    AAAA PPPP         EEEEEEEEEEEE RRRR    RRRR

TTTTTTTTTTTT   AAAAAAAA   PPPPPPPPPPP  EEEEEEEEEEEE
TTTTTTTTTTTT  AAAAAAAAAA  PPPPPPPPPPPP EEEEEEEEEEEE
    TTTT     AAAAA  AAAAA PPPP      PP EEEE
    TTTT     AAAA    AAAA PPPPPPPPPPPP EEEEEEEEE
    TTTT     AAAAAAAAAAAA PPPPPPPPPPP  EEEEEEEEE
    TTTT     AAAAAAAAAAAA PPPP         EEEE
    TTTT     AAAA    AAAA PPPP         EEEEEEEEEEEE
    TTTT     AAAA    AAAA PPPP         EEEEEEEEEEEE

IIIIIIIIII  PPPPPPPPPPP  LLLL
   IIII     PPPPPPPPPPPP LLLL
   IIII     PPPP      PP LLLL
   IIII     PPPPPPPPPPPP LLLL
   IIII     PPPPPPPPPPP  LLLL
   IIII     PPPP         LLLL
   IIII     PPPP         LLLLLLLLLLLL
IIIIIIIIII  PPPP         LLLLLLLLLLLL
```

```
00000                          IDENT   IPLCD
00001                  PTR     EQU     /20
00002                  ASR     EQU     /10
00003                  S       EQU     1
00004                  H       EQU     0
00005  0000  8380     START   LDR     A11,P
00006                  BASE    EQU     *
00007  0002  85A0             LDK,L   A13,OUTMSG-BASE
       0004  0000  F
00008  0006  958E             ADR     A13,A11
00009  0008  0602             LDK     A6,2
00010  000A  4A20     INR     INR     A2,0,PTR
00011  000C  5C04             RB(4)   *-2             INPUT CKSUM
00012  000E  22FF             ANK     A2,/FF
00013  0010  3D48             SLL     A5,8
00014  0012  9508             ADR     A5,A2
00015  0014  1E01             SUK     A6,1
00016  0016  5C0E             RB(4)   INR
00017  0018  42A0             CIO     A2,H,PTR
00018  001A  4AE0             SST     A2,PTR
00019  001C  5C04             RB(4)   *-2
00020  001E  86A0             LDK,L   A14,CFZON-BASE
       0020  0000  F
00021  0022  968E             ADR     A14,A11
00022  0024  B114             XRR     A1,A5
00023  0026  5000  F          RF(0)   CKOK            TEST IF CKSUM  OK
00024  0028  8120     ERCKSM  LDK,L   A1,CKERMG-BASE
       002A  0000  F
00025  002C  910E             ADR     A1,A11
00026  002E  020C             LDK     A2,12
00027  0030  F697             CFR     A14,A13
00028  0032  207F             HLT                     YOU BETTER RELOAD BY BOOTSTRAP
00029  0034  424F     CKERMG  DATA    'BOOT CK ER'
       0036  4F54
       0038  2043
       003A  4B20
       003C  4552
00030  003E  0D0A             DATA    /0D0A
00031  0040  4F42     SYSMSG  DATA    'OBJCT TAPE ON RE'
       0042  4A43
       0044  5420
       0046  5441
       0048  5045
       004A  204F
       004C  4E20
       004E  5245
00032  0050  4144             DATA    'ADER, THINK OF B'
       0052  4552
       0054  2E20
       0056  5448
```

```
                0058  494E
                005A  4B20
                005C  4F46
                005E  2042
00033           0060  4153              DATA    'ASE !'
                0062  4520
                0064  2120
00034           0066  0D0A              DATA    /0D0A
00035                       STAD        EQU     *
00036           0068  4543  ECMSG       DATA    'EC'
00037           006A  0D0A              DATA    X'0D0A'
00038           006C  4F56  OFLMSG      DATA    'OVFR'
                006E  4652
00039           0070  0D0A              DATA    /0D0A
00040           0072                    RES     4
00041                       CFZON       EQU     *-2
00042           007A  0300  OUTMSG      LDK     A3,0
00043           007C  43D0              CIO     A3,S,ASR
00044           007E  E324              LCR     A3,A1
00045           0080  4310  OTR         OTR     A3,0,ASR
00046           0082  5C04              RB(4)   *-2
00047           0084  1101              ADK     A1,1
00048           0086  1A01              SUK     A2,1
00049           0088  5C0C              RB(4)   OTR-2
00050           008A  4390              CIO     A3,H,ASR
00051           008C  4BD0              SST     A3,ASR
00052           008E  5C04              RB(4)   *-2
00053           0090  F03A              RTN     A14
00054           0092  013E  CKOK        LDK     A1,SYSMSG-BASE
00055           0094  910E              ADR     A1,A11
00056           0096  0228            LDK     A2,/28
00057           0098  F697              CFR     A14,A13
00058           009A  81A0              LDK,L   A9,/40
                009C  0040
00059           009E  207F              HLT
00060           00A0  84A0              LDK,L   A12,MNLD-BASE
                00A2  0000  F
00061           00A4  948E              ADR     A12,A11
00062           00A6  F693              CFR     A14,A12
00063           00A8  814E              LD      A1,COREND-BASE,A11
                00AA  0000  F
00064           00AC  8C04              ABR(4)  A1          EOS  OR EOF HAS BEEN READ
00065           00AE  207F              HLT                  NO START ADDRESS
00066           00B0  0000  BADDR       DATA    0
00067           00B2  0300  RAFL        LDK     A3,0
00068           00B4  0700              LDK     A7,0
00069           00B6  8520              LDK,L   A5,BUFF-BASE
                00B8  0000  F
00070           00BA  950E              ADR     A5,A11
00071           00BC  0600              LDK     A6,0
```

```
00072  00BE  46E0          CIO     A6,S,PTR      AVAILABLE ON THE PAPER READER
00073  00C0  4A20   INP2   INR     A2,0,PTR
00074  00C2  5C04          RB(4)   *=2
00075  00C4  5700  F       RF(7)   SWITCH
00076  00C6  EF04   OBJINP CWR     A7,A1
00077  00C8  5000  F       RF(0)   END2
00078  00CA  E235          SCR     A2,A5
00079  00CC  B408          XRR     A4,A2
00080  00CE  1501          ADK     A5,1
00081  00D0  EF20          CWK     A7,1
       00D2  0001
00082  00D4  5400  F       RF(4)   OBJIN1
00083  00D6  0400          LDK     A4,0
00084  00D8  8108          LDR     A1,A2
00085  00DA  9108          ADR     A1,A2
00086  00DC  1103          ADK     A1,3
00087  00DE  1701   OBJIN1 ADK     A7,1
00088  00E0  5F22          RB(7)   INP2
00089  00E2  220F   FIRST  ANK     A2,/F
00090  00E4  0150          LDK     A1,80
00091  00E6  5F22          RB(7)   OBJINP
00092  00E8  42A0   END2   CIO     A2,H,PTR
00093  00EA  49E0          SST     A1,PTR
00094  00EC  5C04          RB(4)   *=2
00095  00EE  24FF          ANK     A4,/FF
00096  00F0  5000  F       RF(0)   PROLO1+2
00097  00F2  0166          LDK     A1,ECMSG-BASE
00098  00F4  910E          ADR     A1,A11
00099  00F6  0204          LDK     A2,4
00100  00F8  84A0          LDK,L   A12,OUTMSG-BASE
       00FA  0078
00101  00FC  948E          ADR     A12,A11
00102  00FE  F693          CFR     A14,A12
00103  0100  207F   STOP   HLT
00104  0102  5F52          RB(7)   RAFL
00105  0104  EA20   ASCINP CWK     A2,/0D
       0106  000D
00106  0108  5000  F       RF(0)   END1
00107  010A  EF20          CWK     A7,68
       010C  0044
00108  010E  5850          RB(0)   INP2
00109  0110  E235          SCR     A2,A5
00110  0112  1501          ADK     A5,1
00111  0114  1701          ADK     A7,1
00112  0116  5F58          RB(7)   INP2
00113  0118  42A0   END1   CIO     A2,H,PTR
00114  011A  4AE0          SST     A2,PTR
00115  011C  5C04          RB(4)   *=2
00116  011E  8120          LDK,L   A1,BUFF-BASE
       0120  0000  F
```

```
00117  0122  910E                ADR       A1,A11
00118  0124  821C                LDR       A2,A7
00119  0126  0320                LDK       A3,/20
00120  0128  E335                SCR       A3,A5
00121  012A  1501                ADK       A5,1
00122  012C  8320                LDK,L     A3,/0D0A
       012E  0D0A
00123  0130  8335                STR       A3,A5
00124  0132  1203                ADK       A2,3
00125  0134  3A61                SRL       A2,1
00126  0136  3A41                SLL       A2,1
00127  0138  F697                CFR       A14,A13
00128  013A  8220                LDK,L     A2,BUFF-BASE
       013C  0000  F
00129  013E  920E                ADR       A2,A11
00130  0140  8328                LDR*      A3,A2
00131  0142  EB20                CWK       A3,/3A45            * 1E
       0144  3A45
00132  0146  5C96                RB(4)     RAFL
00133  0148  F03A                RTN       A14                 *EOF OR EOS READ
00134  014A  1300          SWITCH ADK      A3,0
00135  014C  5988                RB(1)     OBJINP
00136  014E  227F                ANK       A2,/7F
00137  0150  5892                RB(0)     INP2
00138  0152  EA20                CWK       A2,/7F
       0154  007F
00139  0156  5898                RB(0)     INP2
00140  0158  1300                ADK       A3,0
00141  015A  5A58                RB(2)     ASCINP
00142  015C  EA20                CWK       A2,/18
       015E  0018
00143  0160  5100  F             RF(1)     ASCII
00144  0162  EA20                CWK       A2,/14
       0164  0014
00145  0166  5100  F             RF(1)     OBJEC
00146  0168  EA20                CWK       A2,5
       016A  0005
00147  016C  5200  F             RF(2)     OBJEC
00148  016E  EA20                CWK       A2,/10
       0170  0010
00149  0172  5CB4                RB(4)     INP2
00150  0174  1301          OBJEC ADK       A3,1
00151  0176  5F96                RB(7)     FIRST
00152  0178  1801          ASCII SUK       A3,1
00153  017A  5F78                RB(7)     ASCINP
00154                      *
00155                      *
00156                      *
00157                      * PROCESS LOADING : THIS  MODULE READ A  CLUSTER
00158                      *          AND  BRANCH ACCORDING TO THE CLUSTER TYPE
```

```
00159                          *          ON EXIT   A1 = BUFF  ADDRESS +1
00160                          *                    A2 = WORD  COUNT
00161                          *                    A3 = TYPE
00162                          *          THE TYPE MUST BE    3,4,7   IF NOT THIS :HALT
00163  017C  82A0             PROLO     LDK,L     A10,STAD-BASE      END ADDRESS
       017E  0066
00164  0180  928E                       ADR       A10,A11
00165  0182  85A0                       LDK,L     A13,OUTMSG-BASE
       0184  0078
00166  0186  958E                       ADR       A13,A11
00167                          ABA       EQU       0
00168  0188  81CF                       ST        A9,BADDR-BASE,A11       BADDR =BASE ADDRESS
       018A  00AE
00169  018C  20BF             PROGLD    INH
00170  018E  5FDE             PROLO1    RB(7)     RAFL            READ A CLUSTER
00171  0190  8120                       LDK,L     A1,BUFF-BASE
       0192  0000  F
00172  0194  910E                       ADR       A1,A11
00173  0196  0401                       LDK       A4,1
00174  0198  0300                       LDK       A3,0
00175  019A  E324                       LCR       A3,A1           A3 = TYPE
00176  019C  1101                       ADK       A1,1
00177  019E  E224                       LCR       A2,A1           A2 = WORD COUNT
00178  01A0  1101                       ADK       A1,1
00179  01A2  EB20                       CWK       A3,3
       01A4  0003
00180  01A6  5000  F                    RF(0)     CLCODE          BRANCH  ON CLUSTER CODE
00181  01A8  EB20                       CWK       A3,4
       01AA  0004
00182  01AC  5000  F                    RF(0)     CLIMOD          INTERNAL MODIFICATION
00183  01AE  EB20                       CWK       A3,7
       01B0  0007
00184  01B2  5000  F                    RF(0)     CLEND           END/START
00185  01B4  5F28                       RB(7)     PROLO1
00186  01B6  5FC2             CLCO1     RB(7)     STOP-10
00187                          ************************************
00188                          * CLUSTER CODE  TYPE 3
00189                          *          UPON ENTRY: A1=ADDRESS OF BUFF+1 (RBK
00190                          *                      A2=WORD COUNT
00191                          *                      A9=BADDRESS
00192                          *                      A10=ENDADDRESS
00193                          ********************************************
00194  01B8  834E             CLCODE    LD        A3,BUFF+6-BASE,A11
       01BA  0000  F
00195  01BC  5C30                       RB(4)     PROLO1        EMBK SET SKIP THE CLUSTER
00196  01BE  834E             CLCO1A    LD        A3,BUFF+4-BASE,A11
       01C0  0000  F
00197  01C2  A311                       TM        A3,A4         IS IT  RELOCATABLE SECTION
00198  01C4  5000  F                    RF(0)     CLCO4
00199  01C6  3301                       XRK       A3,1
```

```
00200  01C8  9306          ADR     A3,A9
00201  01CA  8524  CLC04   LDR*    A5,A1          A5=(RBK)
00202  01CC  1106          ADK     A1,6           A1= ADDRESS OF ST CODE WORD IN BUFF
00203  01CE  1A03          SUK     A2,3           A2= NUMBER OF CODE WORD
00204                *                            A3= STORAGE ADDRESS
00205                *                            A4= MASK FOR RBK
00206                *                            A6= CODE WORD
00207  01D0  3CE1  CLC05   SRC     A4,1
00208  01D2  8624          LDR*    A6,A1
00209  01D4  EB0A          CWR     A3,A10         COMPARE LOAD ADDRESS WITH AD OF IPL
00210  01D6  5822          RB(0)   CLC01
00211  01D8  A511          TM      A5,A4
00212  01DA  5000  F       RF(0)   CLC07
00213  01DC  9606          ADR     A6,A9
00214  01DE  862D  CLC07   STR     A6,A3          STORE CODE W=RDS
00215  01E0  1102          ADK     A1,2
00216  01E2  1302          ADK     A3,2
00217  01E4  1A01          SUK     A2,1
00218  01E6  5C18          RB(4)   CLC05
00219  01E8  5F6E          RB(7)   PROLO
00220                *
00221                ************************************************************
00222                * INTERNAL MODIFICATION CLUSTER
00223                ********************************************
00224  01EA  0701  CLIMOD  LDK     A7,1           A7= MASK FOR ADDRESS
00225  01EC  8524          LDR*    A5,A1          A5=(RBK)
00226  01EE  1A01          SUK     A2,1
00227  01F0  3CE1  CLIM1   SRC     A4,1
00228  01F2  1102          ADK     A1,2
00229  01F4  8324          LDR*    A3,A1           A3=ADDRESS
00230  01F6  A31D          TM      A3,A7          IS IT RELOCATABLE
00231  01F8  5000  F       RF(0)   CLIM2          NO
00232  01FA  3301          XRK     A3,1
00233  01FC  9306          ADR     A3,A9          YES AD BASE
00234  01FE  EB0A          CWR     A3,A10         ADDRESS OK
00235  0200  584C          RB(0)   CLC01
00236  0202  1102  CLIM2   ADK     A1,2
00237  0204  8624          LDR*    A6,A1         TAKE CODE WORD
00238  0206  A511          TM      A5,A4         IS IT RELOCATABLE
00239  0208  5000  F       RF(0)   CLIM3
00240  020A  9606          ADR     A6,A9          AD BASE
00241  020C  862D  CLIM3   STR     A6,A3          STORE CODE WORD
00242  020E  1A02          SUK     A2,2
00243  0210  5C22          RB(4)   CLIM1
00244  0212  5F98          RB(7)   PROLO
00245                ****************************************
00246                *  CLUSTER  END/START
00247                ****************************************
00248  0214  8324  CLEND   LDR*    A3,A1
00249  0216  5000  F       RF(0)   CLEN3A        FINISH WO START
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```
00250  0218  A311          TM      A3,A4
00251  021A  5000  F       RF(0)   CLEN1
00252  021C  9306          ADR     A3,A9
00253                *
00254                *
00255  021E  A320    CLEN1 ANK,L   A3,/FFFE
       0220  FFFE
00256  0222  834F          ST      A3,COREND-BASE,A11
       0224  0000  F
00257  0226  814E    CLEN3A LD     A1,BUFF+6-BASE,A11     UPDATE BASE ADDRESS
       0228  0000  F
00258  022A  914F          AD,S    A1,BADDR-BASE,A11
       022C  00AE
00259  022E  9184          ADR     A9,A1
00260  0230  5FB6          RB      PROLO
00261                *
00262                *
00263  0232    BUFF  RES   35
00264  0278  FFFF          DATA    /FFFF
00265  027A  0000    COREND DATA   0
00266                MNLD  EQU     PROLO
00267                      END     START
```

SYMBOL TABLE

PTR	0020	A	ASR	0010	A	S	0001	A	H	0000	A
START	0000	R	BASE	0002	R	OUTMSG	007A	R	INR	000A	R
CFZON	0078	R	CKOK	0092	R	ERCKSM	0028	R	CKERMG	0034	R
SYSMSG	0040	R	STAD	0068	R	ECMSG	0068	R	OFLMSG	006C	R
OTR	0080	R	MNLD	017C	R	COREND	027A	R	BADDR	00B0	R
RAFL	0082	R	BUFF	0232	R	INP2	00C0	R	SWITCH	014A	R
OBJINP	00C6	R	END2	00E8	R	OBJIN1	00DE	R	FIRST	00E2	R
PROLO1	018E	R	STOP	0100	R	ASCINP	0104	R	END1	0118	R
ASCII	0178	R	OBJEC	0174	R	PROLO	017C	R	ABA	0000	A
PROGLD	018C	R	CLCODE	01B8	R	CLIMOD	01EA	R	CLEND	0214	R
CLCO1	01B6	R	CLCO1A	01BE	R	CLCO4	01CA	R	CLCO5	01D0	R
CLCO7	01DE	R	CLIM1	01F0	R	CLIM2	0202	R	CLIM3	020C	R
CLEN3A	0226	R	CLEN1	021E	R						

ASS,ERR, 00000