IDENTIFICATION

Product Code:	DEC-12-UR2A-D
Product Name:	AIPOS Job Control Processor Internal Description
Date Created:	15 May 1971
Maintainer:	Software Services

DEC-12-UR2A-D
May, 1971

Copyright (c) 1971 by Digital Equipment Corporation

The material in this manual is for information purposes and is subject to change without notice.

The following are registered trademarks of Digital Equipment Corporation, Maynard, Massachusetts

DEC	PDP
FLIP CHIP	FOCAL
DIGITAL	COMPUTER LAB
OMNIBUS	UNIBUS

For additional copies, order No. DEC-12-UR2A-D from Program Library, Digital Equipment Corporation, Maynard, Massachusetts 01754
Price $5.00

CONTENTS

		Page
1.0	OVERVIEW	1
2.0	THE ROUTINES	1
3.0	CORE MAP	3
4.0	FLOWCHARTS AND LISTINGS	4

The Job Control Processor is the combination (via Add Binary) of three separate assemblies, the sources for which are JLnn, CMnn, XSAnn, and XSBnn. (nn is the current version number for each source.)

1.0 OVERVIEW

JL contains most of the code in Job Control which references things within the Monitor. It contains a LODSYM statement, which obtains the Monitor symbol table from the last assembly of the Monitor. Note: JL must be reassembled whenever the Monitor is modified. It is, however, the only Job Control module which refers to Monitor locations outside page Ø. Included in JL are the end-of-job cleanup routines, which restore various Monitor flags and pointers to their "normal" values; the code which loads field 1 sections of Job Control; and the binary loader, which is actually not read into core until Job Control processing is complete.

2.0 THE ROUTINES

CM contains the command interpreter and command display routine. It is entered at CMINIT with the internal code of the system unit in the AC. This is stored as the initial default device and preferred load unit. Control transfers to CMPMOV, which moves a number of constants and initial values of variables into page Ø, then returns to CMIØØØ, the start of the command interpreter. After initializing pointers and state values, a read is issued to the Teletype[1], and the index is read from the system unit.

At CMI1ØØ, the value of MAJOR is used to set the appropriate help frame, and control flows into the main display loop at CMI11Ø. The pointers LSTCHR and NEWCHR are maintained pointing to the last character typed in the buffer and the next available buffer location, respectively. When the location pointed to by LSTCHR becomes zero, a character has been rubbed out. If it was a delimiter, (LSTDEL points to the last delimiter), the command string is rescanned to determine the current state of the command. When the location pointed to by NEWCHR becomes non-zero, a new character has been typed. The code at CMI2ØØ performs nominal validity checking, and if the character is a delimiter, calls the appropriate delimiter handler, as indicated by the control table at DELS.

---

[1] Teletype is a registered trademark of the Teletype Corporation.

If a line terminator (carriage return, line feed or ALT MODE) is struck, CMI9ØØ is called. This routine attempts to complete scanning of the input string. If an error is found, the user will not be able to correct it because the Teletype read has been closed. Control therefore returns to CMIØØØ, where the buffer is cleared, and a new command accepted. Then, if no errors are found and the terminator was carriage return, final setup on page 37 is performed, and the loader called to read in the desired function.

The index service routines, XSnn, are invoked in the following circumstances:

1) At end-of-job, when a function has been completed successfully and taken a normal exit, EJS, the end-of-job file saving routines, are invoked by the Job Cleanup routine, EOJ, in module JL.

2) During interpretation of a command, whenever a file is named, it is either looked up or a working area is allocated to contain it, by calling XS.

3) Whenever the special command DX is used, the index display routines in XS are called.

EJS is non-reusable, and is overlaid by the DX buffers whenever DX is called. When EJS is called, it scans the file descriptor blocks in page 37, and allocates index entries for any permanent output files on mass storage devices named there. For each file to be saved, EJS checks the validity of the specified name, and requests a new name from the user if it is invalid.

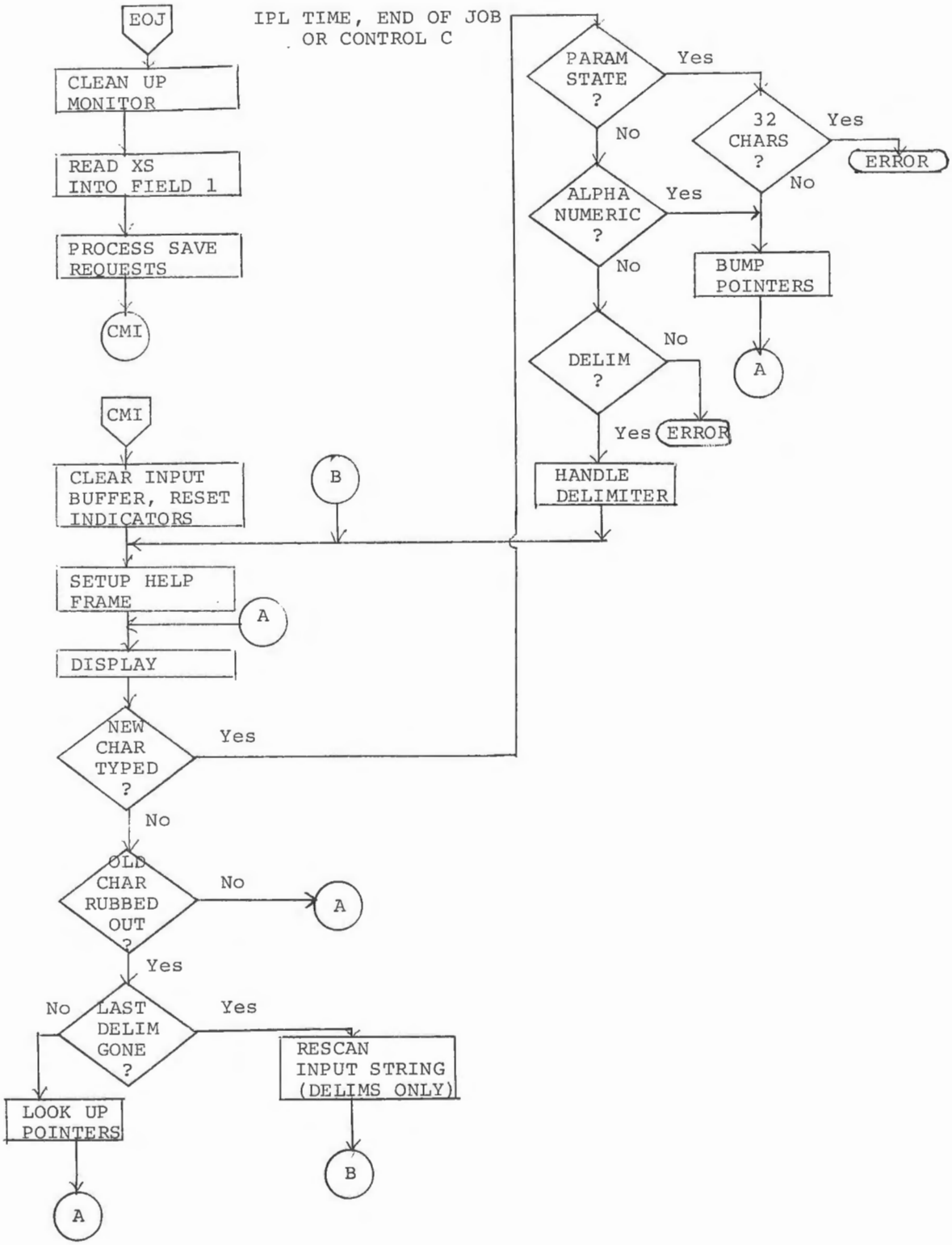
DX is serially reusable. The index to be displayed must be at location 4ØØØ in field 1. While it is displayed, the user may DELETE, ALIAS, or RENAME any file (by typing the initial character of each function); print the index (by typing P); move forward or backward in the index by typing F or B to move by pages; or type line feed or ALTMODE to move by lines, or L to locate a file entry.

Typing carriage return at this time will return the user to the Job Control display and make permanent any changes entered. If the user makes changes in the index, but decides he does not want the changes, he may type CTRL/C to return to Job Control without making the changes permanent.

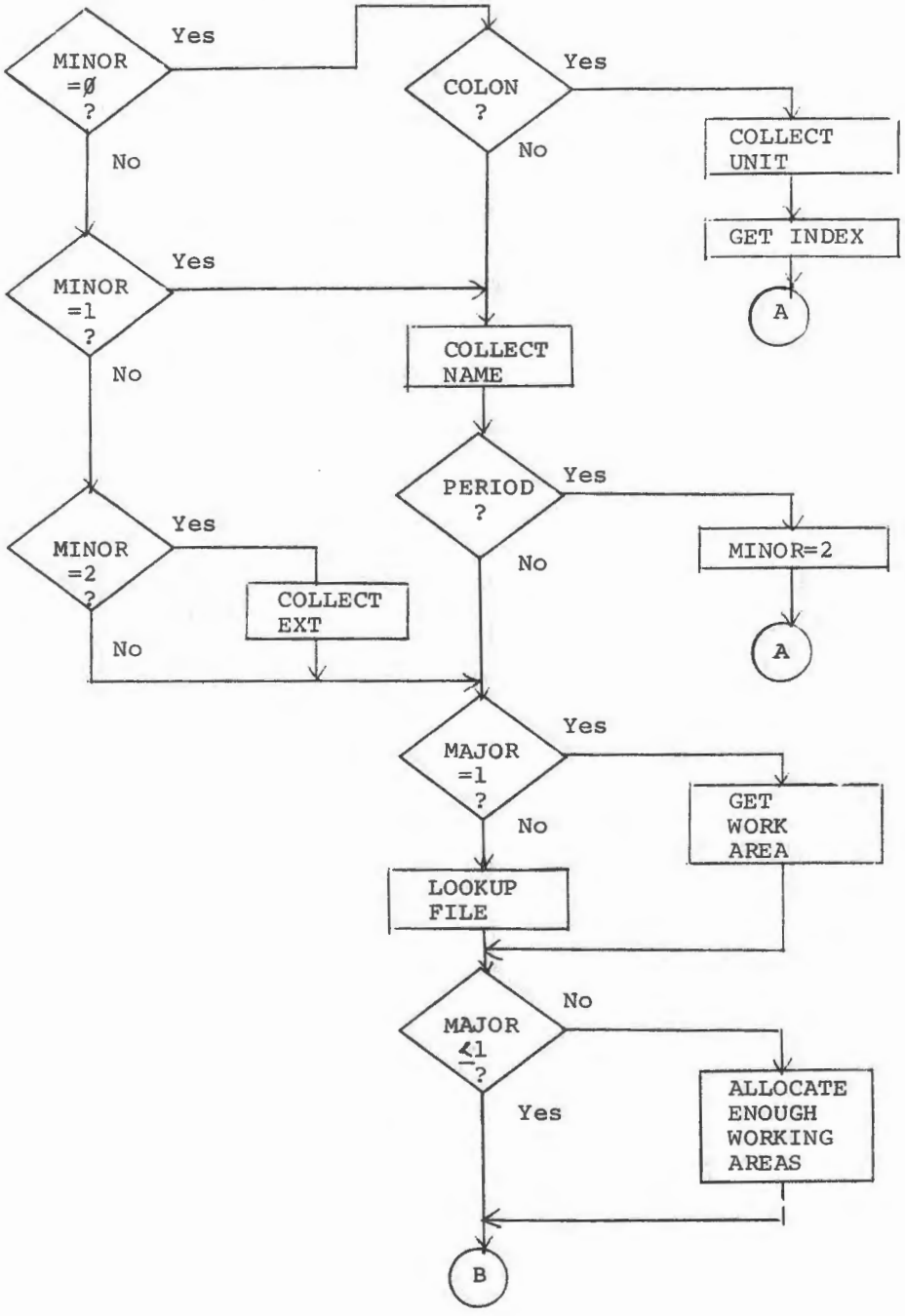
3.0 CORE MAP

Field Ø:	ØØØØ-ØØ43	Reserved for Monitor
	ØØ44-Ø137	Command Interpreter page Ø (loaded by CMINIT)
	Ø14Ø-2577	Monitor
	26ØØ-3377	Unused
	34ØØ-3777	JL: EOJ, control D, Loader loader
	4ØØØ-6777	Command Interpreter
	76ØØ-7777	Page 37: information passed to program
Field 1:	ØØØØ-Ø177	XS page Ø
	Ø2ØØ-1577	General purpose index service routines
	16ØØ-34xx	Display index with option handlers
	34xx-3777	DX buffer (EOJ file saving until DX called)
	4ØØØ-4177	EOJ page 37 analysis, overlaid by index
	4ØØØ-7777	Current default unit index
	7ØØØ-7777	Loader, when called

4.0 FLOWCHARTS AND LISTINGS



DELIMITER HANDLING



JL02

```
0000                    *20
0001                    /       LDP SYSTEM JOB CONTROL
0002                    /       END-OF-JOB PROCESSING
0003                    /
0004                    /COPYRIGHT 1970, DIGITAL EQUIPMENT CORP.
0005                    /                MAYNARD, MASS. 01754
0006                    /
0007                    /       VERSION 0: DECEMBER 1, 1970
0010                    /               JUD LEONARD
0011                    /
0012                    /       THE LOADER IS ASSEMBLED WITH EOJ
0013                    /       BECAUSE IT ALSO NEEDS ACCESS TO
0014                    /       MONITOR SYMBOLS.  THE TWO BINARIES
0015                    /       ARE LOADED SEPARATELY.
0016                    /
0017                            LODSYM          /GET MONITOR SYMBOLS
0020                    /
0021                    ERRADD= 0               /1 TO TYPE ERROR EXIT ADDR
0022                    /
0023                    /       SOME OTHER SYMBOLS
0024                    /
0025                            AX0=10
0026                            AX1=11
0027                            AX2=12
0030                    /
0031                    /
0032                            CMINIT=4000
0033                            CMBLKS=10       /NO OF FIELD 0 BLOCKS IN JCL
0034                            XSLEN=4400
0035                            XSBLKS=11       /NO OF F1 BLOCKS
0036                                            /EXCLUDING LOADER
0037                            PMODE
0040                    /
0041                            *3400
0042                    /
0043                    /       ENTRY POINTS
0044                    /
0045    3400    5202            JMP     EOJ
0046    3401    5755            JMP I   PLOLD
0047                    /
0050                    /
0051                            EJECT
=
```

```
0052                    /
0053                    /       REVIRGINIZE THE MONITOR
0054                    /
0055    3402    6002    EOJ,    IOF             /SELF PROTECTION
0056    3403    7300            CLA CLL
0057    3404    6141            LINC
0060    3405    0004            0004            /ESF TO CLEAR ALL FUNCTIONS
0061    3406    0002            0002            /BACK TO PDP
0062    3407    6201            CDF     0
0063                    /
0064                    /       RESET VARIOUS FLAGS AND POINTERS
0065                    /       IN THE MONITOR.
0066                    /
0067    3410    1352            TAD     CLLIST  /LIST OF THINGS TO CLEAR
0070    3411    3010            DCA     AX0
0071    3412    1410    EOJ005, TAD I   AX0
0072    3413    7450            SNA
0073    3414    5220            JMP     EOJ006
0074    3415    3002            DCA     TMP1
0075    3416    3402            DCA I   TMP1
0076    3417    5212            JMP     EOJ005
0077                    /
0100    3420    7240    EOJ006, MONE
0101    3421    3756            DCA I   PTFLAG  /TTY IS IDLE
0102    3422    7240            MONE
0103    3423    3757            DCA I   PTCSW   /ALLOW CONTROL C
0104                    /
0105    3424    1360            TAD     RISTP   /RESET INT STACK
0106    3425    3016            DCA     ISTP
0107    3426    1361            TAD     RMSTP   /RESET MON STACK
0110    3427    3017            DCA     MSTP
0111                    /
0112                    EJECT
*
```

```
0113                    /
0114                    /       CLEAR THE INTERRUPT SCAN CHAIN
0115                    /
0116    3430    1160    INTCLR, TAD     KNOP
0117    3431    3753            DCA I   PNTSCN
0120    3432    7307            FOUR
0121    3433    1353            TAD     PNTSCN
0122    3434    3353            DCA     PNTSCN
0123    3435    2354            ISZ     MNTMAX
0124    3436    5230            JMP     INTCLR
0125                    /
0126                    /       SETUP CONTROL CHAR TRAP
0127                    /
0130    3437    1363            TAD     PCNTRL
0131    3440    3177            DCA     TTPCTL
0132    3441    6001            ION                     /MON IS RESTORED
0133                                                    /HOPEFULLY
0134                    /
0135                    /       NORMAL OR ERROR EXIT?
0136                    /
0137                            ASMIFZ  ERRADD
0140                            ASMSKP  24
0141                    /
0142                            TAD I   EXIT
0143                            SNA CLA                 /ERROR EXIT?
0144                            JMP     EOJ020
0145                    EOJ010, TAD I   EXIT    /CONVERT
0146                            RTL             /EXIT
0147                            RAL             /ADDRESS
0150                            DCA I   EXIT    /TO
0151                            TAD I   EXIT    /OCTAL
0152                            RAL
0153                            AND     P7
0154                            TAD     CZERO
0155                            DCA I   PEXMES  /CHAR
0156                            ISZ     PEXMES
0157                            ISZ     DIGCNT  /COUNT DIGITS
0160                            JMP     EOJ010
0161                            MONE
0162                            DCA I   EXIT
0163                            JMS I   WRITE   /PRINT THE EXIT ADDRESS
0164                            EXSTUF
0165                    /
0166                            EJECT
```

```
0167                    /
0170                    /       CALCULATE START OF INDEX
0171                    /       SERVICES, AND READ INTO FIELD 1
0172                    /
0173    3442    1751    EOJ020, TAD I   PJCST
0174    3443    1347            TAD     PCMBLK  /PLUS OFFSET
0175    3444    3332            DCA     XSTUFF+4
0176    3445    1750            TAD I   PJCDEV  /JCL DEVICE
0177    3446    3326            DCA     XSTUFF
0200    3447    4421            JMS I   READ
0201    3450    3526            XSTUFF
0202                    /
0203                    /       NEW LINE ON THE TTY
0204                    /
0205    3451    4422            JMS I   WRITE
0206    3452    3564            NEWLIN
0207                    /
0210                    /       CALCULATE HIGHEST AVAILABLE CDF
0211                    /
0212    3453    6221    EOJ030, CDF     20
0213    3454    7346            MTHREE
0214    3455    3743            DCA I   P0      /ATTEMPT TO SET CONSTANT
0215    3456    7325            THREE
0216    3457    1743            TAD I   P0      /DID IT STORE?
0217    3460    7640            SZA CLA
0220    3461    5267            JMP     EOJ040  /NOPE
0221    3462    1253            TAD     EOJ030
0222    3463    1337            TAD     PTEN
0223    3464    3253            DCA     EOJ030  /TRY NEXT FIELD
0224    3465    2345            ISZ     FCNTR   /UNLESS 32 K
0225    3466    5253            JMP     EOJ030
0226    3467    1340    EOJ040, TAD     MTEN
0227    3470    1253            TAD     EOJ030
0230    3471    6201            CDF     0
0231    3472    3744            DCA I   P7744   /SET PG 37 VALUE
0232                    /
0233                    EJECT
```

```
0234                        /
0235                        /       WAIT FOR INDEX SERVICES
0236                        /
0237    3473  4423          JMS I   WAIT
0240    3474  3526          XSTUFF
0241                        /
0242                        /       SETUP MONITOR CALL ADDRESSES
0243                        /       IN FIELD 1
0244                        /
0245    3475  1341          TAD     SVNTEN
0246    3476  3010          DCA     AX0
0247    3477  1341          TAD     SVNTEN
0250    3500  3011          DCA     AX1
0251    3501  1336          TAD     M7
0252    3502  3002          DCA     TMP1
0253    3503  1410  EOJ050, TAD I   AX0
0254    3504  6211          CDF     10
0255    3505  3411          DCA I   AX1
0256    3506  6201          CDF     0
0257    3507  2002          ISZ     TMP1
0260    3510  5303          JMP     EOJ050
0261                        /
0262                        /       INTERPRET SAVE REQUESTS
0263                        /
0264    3511  1425          TAD I   EXIT    /TEST FOR ERR
0265    3512  7640          SZA CLA         /ERROR EXIT?
0266    3513  5321          JMP     EOJ060  /YES, NO SAVE
0267    3514  6211          CDF     10
0270    3515  1743          TAD I   P0      /GET ADDR
0271    3516  3002          DCA     TMP1
0272    3517  6212          CIF     10
0273    3520  4402          JMS I   TMP1    /DO THE SAVE
0274                        /
0275                        /       CALL THE COMMAND INTERPRETER
0276                        /
0277    3521  3425  EOJ060, DCA I   EXIT    /CLEAR EXIT
0300    3522  1326          TAD     XSTUFF  /PASS LOAD UNIT
0301    3523  0154          AND     P77
0302    3524  5725          JMP I   .+1
0303    3525  4000          CMINIT          /COMMAND INTERPRETER
0304                        /
0305                        /
0306    3526  0020  XSTUFF, 20              /SYSTEM UNIT
0307    3527  6211          CDF     10      /FIELD 1
0310    3530  0000          0               /LOCATION 0
0311    3531  4400          XSLEN           /LENGTH OF XS, ETC
0312    3532  0000          .-.             /FIRST BLOCK OF XS
0313    3533  0000          0
0314    3534  0000          0
0315                        /
0316    3535  0007  P7,     7
0317    3536  7771  M7,     -7
0320    3537  0010  PTEN,   10
0321    3540  7770  MTEN,   -10
0322    3541  0017  SVNTEN, 17
0323    3542  7600  P7600,  7600
0324    3543  0000  P0,     0
0325    3544  7744  P7744,  7744
0326    3545  7772  FCNTR,  -6
0327    3546  7774  DIGCNT, -4
0330                        /
0331                        EJECT
```

```
0332                        /
0333    3547  0010  PCMBLK, CMBLKS          /XS DISPLACEMENT
0334    3550  0553  PJCDEV, JOBCTL
0335    3551  0557  PJCST,  JOBCTL+4
0336    3552  3574  CLLIST, CLEARP-1
0337    3553  0400  PNTSCN, INTSCN
0340    3554  7770  MNTMAX, -INTMAX
0341    3555  3603  PLDLD,  LOADLD
0342    3556  1427  PTFLAG, TTOFLG
0343    3557  1771  PTCSW,  CTLCSW
0344    3560  0467  RISTP,  ISTACK
0345    3561  0510  RMSTP,  MSTACK
0346    3562  3605  PEXMES, EXMESS+12
0347    3563  3633  PCNTRL, CONTRL
0350                        /
0351                        ASMIFZ  ERRADD
0352                        ASMSKP  10
0353                        /
0354                EXSTUF, 40
0355                        CDF     0
0356                        EXMESS
0357                        16
0360                        0
0361                        0
0362                        0
0363                        /
0364    3564  0040  NEWLIN, 40
0365    3565  6201          CDF     0
0366    3566  3573          EXMESS
0367    3567  0002          2               /JUST CRLF
0370    3570  0000          0
0371    3571  0000          0
0372    3572  0000          0
0373                        /
0374    3573  0215  EXMESS, 215
0375    3574  0212          212
0376                        ASMIFZ  ERRADD
0377                        ASMSKP  14
0400                        212
0401                        305     /E
0402                        330     /X
0403                        311     /I
0404                        324     /T
0405                        240
0406                        300     /AT
0407                        240
0410                        260     /0
0411                        260     /0
0412                        260     /0
0413                        260     /0
0414                        /
0415    3575  1611  CLEARP, TTIQP           /LOCATIONS
0416    3576  1421          TTOQP           /TO
0417    3577  1531          TTECNT          /CLEAR
0420    3600  1214          LTPQP
0421                        ASMIFN  RK08
0422    3601  2413          DKQP
0423                        ASMIFN  RF08
0424                        DRQP
0425    3602  0000          0               /END OF LIST
0426                        /
0427                        EJECT
```

```
0430                    /
0431                            ASMIFM  .-3600
0432                            PAGE
0433                    /
0434                    /       CALCULATE THE LOADER BLOCK
0435                    /       LOAD IT, AND START LOADING
0436                    /
0437    3603    1620    LOADLD, TAD I   PSYS
0440    3604    3224            DCA     LDLDP
0441    3605    1621            TAD I   PJBLK
0442    3606    1222            TAD     LDDISP  /ADD DISPLACEMENT
0443    3607    3230            DCA     LDLDP+4
0444    3610    4421            JMS I   READ
0445    3611    3624            LDLDP
0446    3612    4423            JMS I   WAIT
0447    3613    3624            LDLDP
0450    3614    1223            TAD     RSTCTL  /RESTORE CONTROL
0451    3615    3177            DCA     TTPCTL  /CHAR HANDLER
0452    3616    6212            CIF     10
0453    3617    5626            JMP I   LDLDP+2
0454                    /
0455    3620    0553    PSYS,   JOBCTL
0456    3621    0557    PJBLK,  JOBCTL+4
0457    3622    0021    LDDISP, CMBLKS+XSBLKS   /LOADER RELATIVE BLOCK NO
0460    3623    1637    RSTCTL, TTINRM=1
0461                    /
0462    3624    0020    LDLDP,  20
0463    3625    6211            CDF     10
0464    3626    7000            BINLOD
0465    3627    0400            400
0466    3630    0000            .-.
0467    3631    0000            0
0470    3632    0000            0
0471                    /
0472                            EJECT
*
```

```
0473                    /
0474                    /       CONTROL CHARACTER TRAP
0475                    /
0476    3633    0000    CONTRL, 0
0477    3634    1633            TAD I   CONTRL  /GET CHAR
0500    3635    1313            TAD     MCTLD   /IS IT CTL D?
0501    3636    2233            ISZ     CONTRL
0502    3637    7640            SZA CLA
0503    3640    5633            JMP I   CONTRL  /IGNORE
0504                    /
0505                    /       CONTROL D TYPED. GET DIAL-MS
0506                    /
0507    3641    1620            TAD I   PSYS
0510    3642    0153            AND     P70     /GET DIAL SYS UNIT
0511    3643    3320            DCA     DIALB
0512    3644    6141            LINC
0513                            LMODE
0514    1645    1020            LDA I
0515    1646    0020            20
0516    1647    0004            ESF             /IO PRESET
0517    1650    0011            CLR
0520    1651    0001            AXO             /STOP TAPE
0521    1652    0002            PDP
0522                            PMODE
0523                            ASMIFN  RK08
0524    3653    3714            DCA I   PDKQP   /CLEAR DISK OPS
0525                            ASMIFN  RF08
0526                            DCA I   PDRQP   /BOTH DISKS
0527    3654    3715            DCA I   PLTQP   /ALSO TAPE
0530    3655    1716            TAD I   PLTNO   /**NO PHONY
0531    3656    3717            DCA I   PLINC   /**TAPE INTS
0532    3657    4421            JMS I   READ
0533    3660    3720            DIALB           /GET MS I/O
0534    3661    4423            JMS I   WAIT
0535    3662    3720            DIALB
0536    3663    1312            TAD     MS
0537    3664    3010            DCA     AX0
0540    3665    6211            CDF     10      /CHECK VALIDITY
0541    3666    1410            TAD I   AX0
0542    3667    7640            SZA CLA
0543    3670    5425            JMP I   EXIT    /BAD NEWS
0544    3671    1410            TAD I   AX0
0545    3672    7640            SZA CLA
0546    3673    5425            JMP I   EXIT    /NOT DIAL
0547    3674    1410            TAD I   AX0
0550    3675    1310            TAD     DMST1
0551    3676    7640            SZA CLA
0552    3677    5425            JMP I   EXIT
0553    3700    1410            TAD I   AX0
0554    3701    1311            TAD     DMST2
0555    3702    7640            SZA CLA
0556    3703    5425            JMP I   EXIT
0557                    /
0560                            EJECT
*
```

```
0561                    /
0562                    /       IT LOOKS LIKE DIAL
0563                    /
0564    3704    6002            IOF             /DIAL CANT TAKE INTERRUPTS
0565    3705    6212            CIF     10
0566    3706    5707            JMP I   .+1
0567    3707    7777            7777            /BOOTSTRAP
0570                    /
0571    3710    2006    DMST1,  -5772
0572    3711    2005    DMST2,  -5773
0573    3712    7773    M5,     -5
0574    3713    7574    MCTLD,  -204
0575                            ASMIFN  RK08
0576    3714    2413    PDKQP,  DKQP
0577                            ASMIFN  RF08
0600                    PDRQP,  DRQP
0601    3715    1214    PLTQP,  LTPQP
0602    3716    0454    PLTNO,  LTNONE
0603    3717    0450    PLINC,  LTLINC
0604                    /
0605    3720    0020    DIALB,  20              /DIAL UNIT
0606    3721    6211            CDF     10
0607    3722    7000            7000
0610    3723    1000            1000
0611    3724    0322            322
0612    3725    0000            0
0613    3726    0000            0
0614                    /
0615                    /
0616                            ASMIFM  CMINIT-.
0617                    ERROR           /CONFLICT!!!
0620                    /
0621                    /
0622                            EJECT
*
```

```
0623                    /
0624                            PMODE
0625                            FIELD   1
0626                            *7000
0627                    /
0630                    /       BINARY LOADER
0631                    /
0632                    /       READ INTO THE INDEX AREA WHEN AN APPLICATION
0633                    /       PROGRAM IS TO BE LOADED. FILE DESCRIPTOR
0634                    /       FOR PROGRAM FILE IS AT LOCATION 7612, FIELD 0.
0635                    /
0636    7000    6201    BINLOD, CDF     0
0637    7001    1667            TAD I   PLFD0   /LOAD UNIT
0640    7002    6211    KCDF10, CDF     10
0641    7003    0272            AND     SIXBIT
0642    7004    3614            DCA I   PLDP0
0643    7005    6201            CDF     0
0644    7006    1670            TAD I   PLFD10  /START BLOCK
0645    7007    6211            CDF     10
0646    7010    3677            DCA I   PLDP4
0647    7011    1351            TAD     P10     /THIS FIELD
0650    7012    6202            CIF     0
0651    7013    4421            JMS I   READ    /READ HEADER
0652    7014    7315    PLDP0,  LDPARM
0653    7015    1271            TAD     SIEBEN
0654    7016    6201            CDF     0
0655    7017    3010            DCA     AX0     /SET FIELD 1 AUTO INDEX
0656    7020    3410            DCA I   AX0
0657    7021    3410            DCA I   AX0     /CLEAR
0660    7022    3410            DCA I   AX0     /SIX
0661    7023    3410            DCA I   AX0     /FIELD 0
0662    7024    3410            DCA I   AX0     /AUTO-INDEX
0663    7025    3410            DCA I   AX0     /REGISTERS
0664                    /
0665                    /       NOW THERES NOTHING WE CAN DO UNTIL HEADER IS IN
0666                    /
0667    7026    6211            CDF     10
0670    7027    1614            TAD I   PLDP0
0671    7030    7710            SPA CLA         /WAIT FOR CLEAR BIT
0672    7031    5227            JMP     .-2
0673                    /
0674                    /       MOVE STARTING INFORMATION TO MONITOR
0675                    /
0676    7032    4356            JMS     LDMOV
0677    7033    7753            HEAD+384-1      /FROM HEADER
0700    7034    1374            LDSTRT-1        /TO FINAL LOADER
0701    7035    7775            -3
0702                    /
0703    7036    6211            CDF     10
0704    7037    1674            TAD I   PBCNT   /GET BLOCK COUNT
0705    7040    7041            CIA
0706    7041    3002            DCA     TMP1
0707    7042    1273            TAD     M16     /BLOCKS IN FIELD 0
0710    7043    3004            DCA     TMP3    /BEFORE PAGE 37
0711                    /
0712                            EJECT
-
```

```
0713                    /
0714                    /       IS THERE BINARY FOR PAGE 0, FIELD 0?
0715                    /
0716    7044    4753            JMS I   PGBIT   /GET THE BIT
0717    7045    5300            JMP     LDF0    /NOT USED
0720    7046    1352            TAD     P400
0721    7047    3676            DCA I   PLDP2   /READ TO 400, FIELD 1
0722    7050    2677            ISZ I   PLDP4   /FIRST BINARY BLOCK
0723    7051    1351            TAD     P10     /THIS FIELD
0724    7052    6202            CIF     0
0725    7053    4421            JMS I   READ    /FIRST BINARY BLOCK
0726    7054    7315            LDPARM
0727    7055    1614            TAD I   PLDP0
0730    7056    7710            SPA CLA         /WAIT
0731    7057    5255            JMP     .-2
0732    7060    4356            JMS     LDMOV   /MOVE CERTAIN LOCATIONS
0733    7061    0443            444-1           /FROM THIS FIELD, PAGE 2
0734    7062    0043            44-1            /TO FIELD 0, PAGE 0
0735    7063    7704            -74
0736    7064    2002            ISZ     TMP1    /LAST BLOCK?
0737    7065    5300            JMP     LDF0    /NO - OK
0740    7066    5750            JMP I   PLDGO   /YES
0741                    /
0742    7067    7612    PLFD0,  7612            /LOAD UNIT
0743    7070    7622    PLFD10, 7622            /START BLOCK
0744    7071    0007    SIEBEN, 7
0745    7072    0077    SIXBIT, 77
0746    7073    7762    M16,    -16
0747    7074    7757    PBCNT,  HEAD+357
0750    7075    7316    PLDP1,  LDPARM+1
0751    7076    7317    PLDP2,  LDPARM+2
0752    7077    7321    PLDP4,  LDPARM+4
0753                    /
0754                    EJECT
-
```

```
0755                    /
0756                    /       READ WHATEVER LOADS BELOW 7400, FIELD 0
0757                    /
0760    7100    4753    LDF0,   JMS I   PGBIT   /GET NEXT BLOCK CONTROL
0761    7101    5316            JMP     NLB     /EMPTY BLOCK
0762    7102    1614            TAD I   PLDP0
0763    7103    7710            SPA CLA         /IS LAST READ DONE?
0764    7104    5302            JMP     .-2     /WAIT FOR IT
0765    7105    4754            JMS I   PGCBA   /GET ADDR OF THIS
0766    7106    2677            ISZ I   PLDP4   /BUMP BLOCK NO.
0767    7107    1351            TAD     P10
0770    7110    6202            CIF     0
0771    7111    4421            JMS I   READ    /READ THIS
0772    7112    7315            LDPARM
0773    7113    2002            ISZ     TMP1
0774    7114    7410            SKP
0775    7115    5750            JMP I   PLDGO
0776    7116    2004    NLB,    ISZ     TMP3    /BUMP CORE COUNTER
0777    7117    5300            JMP     LDF0
1000                    /
1001                    /       LAST BLOCK OF FIELD 0
1002                    /
1003    7120    4753            JMS I   PGBIT   /LOAD IT?
1004    7121    5755            JMP I   PMVLD   /NO
1005    7122    1614            TAD I   PLDP0
1006    7123    7710            SPA CLA
1007    7124    5322            JMP     .-2
1010    7125    1202            TAD     KCDF10
1011    7126    3675            DCA I   PLDP1   /READ TO FIELD 1
1012    7127    1352            TAD     P400    /LOCATION 400
1013    7130    3676            DCA I   PLDP2
1014    7131    2677            ISZ I   PLDP4   /BUMP BLOCK NO
1015    7132    1351            TAD     P10
1016    7133    6002            CIF     0
1017    7134    4421            JMS I   READ    /GET LAST BLOCK OF FIELD 0
1020    7135    7315            LDPARM
1021    7136    1735            TAD I   .+1
1022    7137    7710            SPA CLA         /DONE?
1023    7140    5336            JMP     .-2     /NO = WAIT
1024    7141    4356            JMS     LDMOV   /COPY PAGE 36
1025    7142    0377            400-1
1026    7143    7377            7400-1
1027    7144    7600            -200
1030    7145    2002            ISZ     TMP1    /LAST BLOCK OF BINARY?
1031    7146    5755            JMP I   PMVLD   /NO = MUST LOAD UPPER FIELDS
1032    7147    5750            JMP I   .+1     /YES = START IMMEDIATELY
1033    7150    7225    PLDGO,  LDGO
1034                    /
1035    7151    0010    P10,    10
1036    7152    0400    P400,   400
1037    7153    7244    PGBIT,  GETBIT
1040    7154    7266    PGCBA,  GETCBA
1041    7155    7324    PMVLD,  MOVLOD
1042                    /
1043                            EJECT
-
```

```
1044                    /
1045                    /
1046                    /       LDMOV = COPY FROM FIELD 1 TO 0
1047                    /
1050    7156    0000    LDMOV,  0
1051    7157    1756            TAD I   LDMOV   /FROM
1052    7160    3011            DCA     AX1
1053    7161    2356            ISZ     LDMOV
1054    7162    1756            TAD I   LDMOV   /TO
1055    7163    3012            DCA     AX2
1056    7164    2356            ISZ     LDMOV
1057    7165    1756            TAD I   LDMOV   /LENGTH
1060    7166    3003            DCA     TMP2
1061    7167    2356            ISZ     LDMOV
1062    7170    1411    LDMV,   TAD I   AX1
1063    7171    6201    LDMCDF, CDF     0
1064    7172    3412            DCA I   AX2
1065    7173    6211            CDF     10
1066    7174    2003            ISZ     TMP2
1067    7175    5370            JMP     LDMV
1070    7176    5756            JMP I   LDMOV
1071                    /
1072                    EJECT
*
```

```
1073                    /
1074                            PAGE
1075                    /
1076                    /
1077                    /       SECOND SECTION OF THE LOADER
1100                    /
1101                    /       WHEN WE GET HERE, FIELD 0 HAS BEEN LOADED.
1102                    /       THIS CODE HAS BEEN MOVED TO 7600 IN THE HIGHEST
1103                    /       FIELD IN THIS MACHINE.  THE BIT MAP HAS BEEN
1104                    /       MOVED TO 7760 OF THIS FIELD, AND LDLIST IN THE
1105                    /       MONITOR IS SET UP TO LOAD THE LAST BLOCK
1106                    /       INTO THIS LOCATION.
1107                    /
1110    7200    4244    LD2,    JMS     GETBIT  /NEXT BIT USED?
1111    7201    5200            JMP     .-1     /NO
1112    7202    1315            TAD     LDPARM  /LAST ONE DONE?
1113    7203    7710            SPA CLA
1114    7204    5202            JMP     .-2     /NO - WAIT FOR IT
1115    7205    2321            ISZ     LDPARM+4/BUMP BLOCK NO
1116    7206    4266            JMS     GETCBA  /CALCULATE BLOCK ADDR
1117    7207    1242            TAD     MHICDF
1120    7210    1316            TAD     LDPARM+1/COMPARE CDFS
1121    7211    7640            SZA CLA
1122    7212    5217            JMP     LDNXT
1123    7213    1320            TAD     M7400
1124    7214    1317            TAD     LDPARM+2/COMPARE ADDRESSES
1125    7215    7650            SNA CLA
1126    7216    5233            JMP     GOLOAD
1127    7217    6224    LDNXT,  RIF
1130    7220    6202            CIF     0
1131    7221    4710            JMS I   PREAD
1132    7222    7715            LDPARM17400
1133    7223    2241            ISZ     REMAIN
1134    7224    5200            JMP     LD2
1135    7225    1315    LDGO,   TAD     LDPARM
1136    7226    7710            SPA CLA
1137    7227    5225            JMP     LDGO
1140    7230    6203            CIF CDF 0
1141    7231    5632            JMP I   .+1
1142    7232    1375            LDSTRT
1143                    /
1144                    /       LAST BLOCK OVERLAYS THIS
1145                    /
1146    7233    6201    GOLOAD, CDF     0
1147    7234    1321            TAD     LDPARM+4/LAST BLOCK NO
1150    7235    3643            DCA I   LSTBLK
1151    7236    6202            CIF     0       /GO TO MON
1152    7237    5640            JMP I   .+1
1153    7240    1371            LDLAST
1154                    /
1155    7241    0000    REMAIN, 0
1156    7242    0000    MHICDF, 0
1157    7243    0565    LSTBLK, LDLIST+4
1160                    /
1161                            EJECT
=
```

```
1162                    /
1163                    /       GET NEXT BIT FROM BLOCK MAP
1164                    /       SKIP IF BIT IS SET
1165                    /
1166    7244    0000    GETBIT, 0
1167    7245    7300            CLA CLL
1170    7246    2263            ISZ     GBBC    /TEST BIT COUNTER
1171    7247    5255            JMP     GNB
1172    7250    2264            ISZ     GBWD
1173    7251    1664            TAD I   GBWD    /GET NEXT WORD
1174    7252    3265            DCA     GBCWD   /SET CURRENT WORD
1175    7253    1311            TAD     M10     /GET 8 BITS FROM THIS WORD
1176    7254    3263            DCA     GBBC
1177    7255    1265    GNB,    TAD     GBCWD   /CURRENT WORD
1200    7256    7004            RAL             /NEXT BIT TO LINK
1201    7257    3265            DCA     GBCWD
1202    7260    7430            SZL             /IS BLOCK USED?
1203    7261    2244            ISZ     GETBIT  /YES
1204    7262    5644            JMP I   GETBIT
1205                    /
1206    7263    7777    GBBC,   -1              /BIT COUNTER
1207    7264    7757    GBWD,   HEAD+360-1      /ADDR OF TABLE
1210    7265    0000    GBCWD,  0               /CURRENT WORD
1211                    /
1212                    /
1213                    /       GET ADDRESS OF CURRENT BLOCK
1214                    /
1215    7266    0000    GETCBA, 0
1216    7267    1264            TAD     GBWD    /CURRENT BLOCK WORD
1217    7270    7006            RTL
1220    7271    0313            AND     L70     /FIELD IN 6-8
1221    7272    1314            TAD     LCDF
1222    7273    3316            DCA     LDPARM+1/SET I/O FIELD
1223    7274    1263            TAD     GBBC    /GET BIT COUNTER
1224    7275    0312            AND     SEVEN
1225    7276    7112            CLL RTR
1226    7277    7012            RTR
1227    7300    3317            DCA     LDPARM+2/ADDRESS SHIFTED LEFT 1
1230    7301    1264            TAD     GBWD
1231    7302    7010            RAR             /HALF=FIELD TO LINK
1232    7303    7200            CLA
1233    7304    1317            TAD     LDPARM+2
1234    7305    7010            RAR
1235    7306    3317            DCA     LDPARM+2/FULL ADDRESS
1236    7307    5666            JMP I   GETCBA
1237                    /
1240    7310    0000    PREAD,  0               /ADDR OF READ ROUTINE IN MON
1241    7311    7770    M10,    -10
1242    7312    0007    SEVEN,  7
1243    7313    0070    L70,    70
1244    7314    6201    LCDF,   CDF
1245                    HEAD=   7400            /HEADER LOC
1246                    /
1247                    EJECT
=
```

```
1250                    /
1251                    /       I/O CONTROL LIST
1252                    /
1253    7315  0020  LDPARM, 20
1254    7316  6211          CDF     10
1255    7317  7400          HEAD
1256    7320  0400  M7400,  400
1257    7321  0000          0
1260    7322  0000          0
1261    7323  0000          0
1262                    /
1263                    LDEND=  .
1264                    /
1265                            ASMIFM  7360-LDEND
1266                    ERROR           /INSUFFICIENT SPACE FOR BIT MAP
1267                    /
1270                            EJECT
```

```
1271                    /
1272                    /       THERE IS CODE TO BE LOADED ABOVE FIELD 0.
1273                    /       MOVE PART OF LOADER TO TOP OF CORE
1274                    /
1275    7324    6201    MOVLOD, CDF     0
1276    7325    1767            TAD I   PHICDF
1277    7326    6211            CDF     10
1300    7327    3372            DCA     LSTCDF
1301    7330    1372            TAD     LSTCDF
1302    7331    3773            DCA I   PMVCDF
1303    7332    1372            TAD     LSTCDF
1304    7333    7041            CIA
1305    7334    3242            DCA     MHICDF
1306    7335    1021            TAD     READ
1307    7336    3310            DCA     PREAD   /MON CALL ADDR
1310    7337    1002            TAD     TMP1
1311    7340    3241            DCA     REMAIN
1312    7341    1315            TAD     LDPARM
1313    7342    7710            SPA CLA
1314    7343    5341            JMP     .-2
1315    7344    4774            JMS I   PLDMOV
1316    7345    7177            LD2-1           /FROM HERE
1317    7346    7577            LD2|7400-1      /TO LAST BLOCK
1320    7347    7654            LD2-LDEND
1321    7350    4774            JMS I   PLDMOV  /MOVE HEADER STUFF
1322    7351    7757            HEAD+360-1
1323    7352    7757            HEAD+360-1
1324    7353    7760            -20
1325    7354    1372            TAD     LSTCDF
1326    7355    6201            CDF     0
1327    7356    3771            DCA I   PLDL1
1330    7357    1315            TAD     LDPARM
1331    7360    3770            DCA I   PLDL0
1332    7361    7305            TWO
1333    7362    1372            TAD     LSTCDF  /CDF CIF
1334    7363    3364            DCA     .+1
1335    7364    6203            CIF CDF
1336    7365    5766            JMP I   .+1     /GO TO LD2 IN TOP
1337    7366    7600            LD2|7400        /OF HIGHEST FIELD
1340                    /
1341    7367    7744    PHICDF, 7744
1342    7370    0561    PLDL0,  LDLIST
1343    7371    0562    PLDL1,  LDLIST+1
1344    7372    0000    LSTCDF, 0
1345    7373    7171    PMVCDF, LDMCDF
1346    7374    7156    PLDMOV, LDMOV
1347                    /
1350                    /
1351                    /
1352                            ASMIFN  CREF
1353                            LISTAPE CREF
1354                    /
1355                    /       JL02
```

```
NO ERRORS
ABORT   0026
ALLINT  0372
AX0     0010
AX1     0011
AX2     0012
BACKSL  1750
BINLOD  7000
CARRET  1751
CLEARP  3575
CLLIST  3552
CMBLKS  0010
CMINIT  4000
CONTRL  3633
CREF    0014
CR12    0000
CTLCSW  1771
CZERO   0161
DCLA    6751
DCLS    6742
DEQ     1103
DFLNK   0316
DIAL    0000
DIALB   3720
DIASCI  2320
DIBMCR  2371
DICDF   2227
DIC43   2304
DIC45   2306
DIC47   2342
DIDCHR  2262
DIOV    2365
DIGCNT  3546
DIGP    2002
DIMCHK  2300
DILEFT  2240
DILEND  2315
DIM20   2347
DIM240  2367
DIM40   2231
DIM47   2372
DIM750  2204
DIPH    2364
DIP11   2276
DIP2    2277
DIP3    2370
DIP400  2366
DISPLY  0001
DISTAB  2353
DISTRP  2246
DITABS  2356
DITBLP  2344
DKCLR   2471
DKCTU   2441
DKERR   2551
DKFAT   2563
DKLEN   2564
DKMORE  2565
DKNXT   2457
DKOP    2546
DKQED   2421
DKQP    2413
DKREAD  2562
DKRTRY  2566
=

DKSTAT  2567
DKWC    2542
DLCA    6755
DLDC    6732
DLDR    6733
DLDW    6735
DLWC    6753
DMST1   3710
DMST2   3711
DOLLAR  1753
DQCDF   1117
DQUEUE  0146
DRDS    6741
DSKD    6746
DSKDO   2501
DSKE    6747
DSKINT  2423
ENQ     1030
EOJ     3402
EOJ005  3412
EOJ006  3420
EOJ020  3442
EOJ030  3453
EOJ040  3467
EOJ050  3503
EOJ060  3521
ERRADD  0000
ESCAPE  1754
EXIT    0025
EXMESS  3573
FCNTR   3545
FOUR    7307
GBBC    7263
GBCWD   7265
GBWD    7264
GETBIT  7244
GETCBA  7266
GNB     7255
GOLOAD  7233
GRIDS   0000
HEAD    7400
HORZ    2001
IADDR   6151
IBOOT   6113
IDNEXT  6105
IJCBP   6136
IJCBP4  6137
IJLEN   6146
IJST    6145
ILMDSK  6070
IMLEN   6144
IMLOOP  6163
IMOVE   6152
IMST    6143
IMVLN   6172
IM400   6150
INFO    6013
INTADD  0467
INTCLR  3430
INTEX   0267
INTLEN  0676
INTMAX  0010
INTMX4  0040
=

INTPOP  0030
INTPSH  0027
INTSCN  0400
INTSTK  0004
INTST4  0020
IOCOM   1010
IODISK  2400
IODISP  2201
IOHLT   1026
IOLTP   1200
IOTFND  0672
IOTSCN  0653
IOTSLP  0660
IOTTY   1400
IPERR1  0234
IPERR2  0233
IPG37P  6140
IPLDSK  6142
IPOPR   0236
IPPOP   6141
IPUSHR  0212
ISERR   0651
ISETR   0600
ISTACK  0467
ISTLIM  0265
ISTP    0016
ISVAC   0333
ISVFLD  0346
ISVLNK  0345
ISXIT   0647
ITBLK   6041
ITBUMP  6057
ITLCHK  6054
ITLDF   6037
ITLOOP  6036
IX0     0010
IX1     0011
IX2     0012
IX3     0013
I1001   6067
I16     6064
I400    6147
I4000   6066
I4015   6065
I6000   6171
JCBOOT  1335
JOBCTL  0553
JOBENT  3400
KCDF    0157
KCDF10  7002
KCIF    0352
KLDF    0351
KLIF    0350
KNOP    0160
```

```
KP12    0000
LCDF    7314
LDDISP 3622
LDEND   7324
LDF0    7100
LDGO    7225
LDLAST 1371
LDLDP   3624
LDLIST 0561
=


LDMCDF 7171
LDMOV   7156
LDMV    7170
LDNXT   7217
LDPARM 7315
LDSTRT 1375
LD2     7200
LINFED 1752
LINT    0366
LIOF    6002
LION    6001
LOADLD 3603
LP08    0000
LRIB    6234
LSTBLK 7243
LSTCDF 7372
LTBLEN 1334
LTBLK   1272
LTEXIT 1333
LTICLR 1321
LTLINC 0450
LTNONE 0454
LTOP    1271
LTPCDF 1310
LTPDO   1233
LTPINT 1275
LTPNXT 1315
LTPQP   1214
LTPXOB 1330
LTQED   1212
LTRDE   1332
LT1     1331
LXIF    0334
LXJMP   0340
L70     7313
MCTLD   3713
MEND    2577
MENTER 0147
MERR    0677
MERROR 0152
MHALT   0031
MHICDF 7242
MISTAK 0266
MNOP    0033
MNTMAX 3554
MNTR    0725
MONE    7240
MONSTK 0004
MOVLOD 7324
MQUEST 0713
MSCDEV 0000
MSTACK 0510
MSTP    0017
MTEMP   0002
MTEN    3540
MTHREE 7346
MTWO    7344
MUDF    0746
MWAIT   0024
MXOF    0772
MXIF    0776
MXIT    0752
MXSKP   0150
=


MX1     0751
M10     7311
M16     7073
M20     2561
M4      0156
M5      3712
M7      3536
M7400   7320
NEWLIN 3564
NL8     7116
NQCDF   1047
NQCHN   1072
NQFRST 1065
NQSRCH 1042
NQUEUE 0145
NQXIT   1055
NTR     0200
ONE     7201
PBCNT   7074
PCMBLK 3547
PCNTRL 3563
PC12    0000
PDKQP   3714
PDPIF   0310
PECHO   0714
PEXMES 3562
PGBIT   7153
PGCBA   7154
PHICDF 7367
PINT    0360
PINTAD 0674
PINTSC 0675
PJBLK   3621
PJCDEV 3550
PJCST   3551
PLDGO   7150
PLDLD   3555
PLDL0   7370
PLDL1   7371
PLDMOV 7374
PLDP0   7014
PLOP1   7075
PLOP2   7076
PLDP4   7077
PLFD0   7067
PLFD10 7070
PLINC   3717
PLTNO   3716
PLTQP   3715
PMUDF1 1176
PMVCDF 7373
PMVLD   7155
PNTSCN 3553
PQP     1361
PREAD   7310
PSETRW 2422
PSYS    3620
PTCSW   3557
PTEN    3537
PTFLAG 3556
PULIST 1026
PXIF    0341
P0      3543
=


P10     7151
P17     2557
P20     2560
P37     0347
P400    7152
P5      0155
P6076   2556
P7      3535
P70     0153
P7600   3542
P77     0154
P7744   3544
P8INT   0144
QERR    1152
QMLOOP 1162
QMOVE   1155
QT1     0162
QT2     0163
QT3     0164
QT4     0165
RCCP    1362
READ    0021
READR   1000
REMAIN 7241
RF08    0000
RISTP   3560
RK08    0001
RMSTP   3561
RSTCTL 3523
RWSW    0007
SETINT 0020
SETRW   1222
SETUDF 0151
SEVEN   7312
SIXBEN 7071
SIX     7327
```

```
SIXBIT 7072
SPCHAR 0525
SVNTEN 3541
TC58   0000
THREE  7325
TMP1   0002
TMP2   0003
TMP3   0004
TMP4   0005
TMP5   0006
TMP6   0007
TTALT  1741
TTBLEN 0004
TTCLUG 1415
TTCRLF 1731
TTCTLC 1766
TTEBFF 1540
TTEBLN 1534
TTEBOP 1532
TTEBUF 1533
TTECHO 1500
TTECHR 0163
TTECNT 1531
TTECP  1747
TTECTL 1755
TTEOUT 1464
TTEQ   1515
```

```
TTETMP 0162
TTIACT 1703
TTICDF 1705
TTICHR 1632
TTIFSP 1700
TTIINT 1616
TTINRM 1640
TTINXT 1662
TTIQ   1600
TTIQER 1430
TTIQP  1611
TTISCN 1642
TTISPC 1677
TTITMP 1703
TTIXIT 1672
TTMBLN 7774
TTM140 1707
TTM240 1676
TTM40  1650
TTOCDF 1432
TTOCLR 1460
TTOFLG 1427
TTOINT 1437
TTONXT 1456
TTOPUT 1431
TTOQ   1402
TTOQP  1421
TTPCTL 0177
```

```
TTRLIM 1746
TTRUB  1712
TTSXIT 1737
TT100  1765
TT177  1674
TT200  1675
TWO    7305
ULIST  0543
UPARRW 1764
WAIT   0023
WAITR  0715
WRITE  0022
WRITR  1003
XITDF  0230
XITIF  0231
XSBLKS 0011
XSLEN  4400
XSTUFF 3526
```

```
0000                    *20
0001                    /
0002                    /       LDP SYSTEM JOB CONTROL                          CM02
0003                    /       COMMAND INTERPRETER
0004                    /
0005                    /COPYRIGHT 1970; DIGITAL EQUIPMENT CORP.
0006                    /                MAYNARD, MASS. 01754
0007                    /
0010                    /       VERSION 0: DECEMBER 1, 1970
0011                    /               JUD LEONARD
0012                    /
0013                    /       THE HEART OF JOB CONTROL (THROB)
0014                    /
0015                    /       ENTER HERE WHEN END-OF-JOB PROCESSING
0016                    /       IS COMPLETE, OR AT END OF DX.
0017                    /
0020                    /       THERE ARE SEVERAL "CURRENT STATE" INDICATORS,
0021                    /       WHOSE MEANINGS ARE AS FOLLOWS:
0022                    /
0023                    /       MAJOR   0=FUNCTION FILE IS BEING ENTERED
0024                    /               1=OUTPUT FILES ARE BEING ENTERED
0025                    /               2=INPUT FILES ARE BEING ENTERED
0026                    /               3=PARAMETER STRING
0027                    /
0030                    /       FILCNT  HAS MEANING ONLY IN MAJOR STATES 1 AND 2,
0031                    /               WHERE IT COUNTS THE NUMBER OF FILES THAT
0032                    /               HAVE BEEN SPECIFIED
0033                    /
0034                    /       MINOR   0=UNIT OR FILENAME IS BEING ENTERED
0035                    /               1=FILENAME IS BEING ENTERED
0036                    /               2=EXTENSION IS BEING ENTERED
0037                    /               3=UNIT IS SEQUENTIAL; NO FILENAME
0040                    /                 OR EXTENSION IS ALLOWED.
0041                    /
0042                    /       CMPARM  CONTAINS THE UNIT NUMBER OF THE LAST MASS
0043                    /               STORAGE DEVICE SPECIFIED IN THE COMMAND;
0044                    /               IE, THE DEFAULT UNIT.
0045                    /
0046                    /       NEWCHR  CONTAINS A POINTER TO THE BUFFER
0047                    /               LOCATION WHERE A NEW CHARACTER
0050                    /               IS EXPECTED WHEN TYPED.
0051                    /       LSTCHR  IS ONE LESS THAN NEWCHR, POINTS TO THE
0052                    /               LOCATION THAT WILL BECOME ZERO
0053                    /               IF A RUBOUT IS TYPED.
0054                    /       LSTDEL  POINTS TO THE LAST (RIGHTMOST) DELIMITER
0055                    /               TYPED. IF THE DELIMITER IS RUBBED OUT,
0056                    /               A BACKSCAN WILL BE NECESSARY
0057                    /               TO RESET THE STATE INDICATORS.
0060                    /
0061                            CREF=14         /LISTAPE UNIT
0062                            PMODE
0063                            *4000
0064                    /
0065                            EJECT
```

```
0066                    /
0067                    /       PAGE 0 THINGS
0070                    /       MUST USE EQUATES ONLY, SINCE
0071                    /       PAGE 0 WONT BE LOADED WITH JCL.
0072                    /       CONSTANTS MUST BE INSERTED VIA
0073                    /       CMPMOV ROUTINE.
0074                    /
0075                            TMP1=2
0076                            TMP2=3
0077                            TMP3=4
0100                            TMP4=5
0101                            TMP5=6
0102                            TMP6=7
0103                            AX0=10
0104                            AX1=11
0105                            AX2=12
0106                            AX3=13
0107                            AX4=14
0110                            AX5=15
0111                    /
0112                    /       MONITOR CALL ADDRESSES
0113                    /
0114                            SETINT=20
0115                            READ=21
0116                            WRITE=22
0117                            WAIT=23
0120                            EXIT=25
0121                    /
0122                    /
0123                            PREFLU=44       /SYSTEM LOAD UNIT
0124                            HOLDU=45
0125                            WATRY=46
0126                            P0LOC=47        /ADDR USED BY CMPMOV FOR
0127                                            /LOADING PAGE 0 CONSTANTS
0130                    /
0131                    /       FIELD 1 THINGS
0132                    /
0133                    MODSW=  40              /INDEX MODIFIED SWITCH
0134                    DX=     200             /DISPLAY INDEX ENTRY POINT
0135                    XSERV=  210             /ENTRY POINT OF INDEX SERVICES
0136                    /
0137                    /       MICROPROGRAMMED AC CONSTANTS
0140                    /
0141                    ONE=    CLA IAC
0142                    TWO=    ONE CLL RAL
0143                    THREE=  TWO STL
0144                    FOUR=   TWO RTL
0145                    SIX=    THREE RTL
0146                    MONE=   CLA CMA
0147                    MTWO=   MONE CLL RAL
0150                    MTHREE= MTWO RTL
0151                    /
0152                            DISK=0          /DO NOT USE DISK WORK AREAS
0153                    /
0154                            EJECT
=
```

```
0155                    /
0156                    /       ENTRY POINT FROM JLNN.
0157                    /       AC CONTAINS SYSTEM UNIT CODE.
0160                    /
0161    4000    3044    CMINIT, DCA     PREFLU  /SAVE IPL UNIT
0162    4001    5602            JMP I   .+1     /LOAD PAGE ZERO
0163    4002    7000            CMPMOV
0164                    /
0165                    /       HERE STARTS THE COMMAND INTERPRETER
0166                    /
0167    4003    7200    CMI000, CLA
0170    4004    4311            JMS     CMI020  /RESET ALL POINTERS
0171    4005    1333            TAD     MLCMND  /COMMAND LENGTH
0172    4006    3002            DCA     TMP1
0173    4007    3410            DCA I   AX0     /CLEAR TTY BUFFER
0174    4010    2002            ISZ     TMP1
0175    4011    5207            JMP     .-2
0176    4012    1331            TAD     P215    /CR AT END OF BUFFER
0177    4013    3410            DCA I   AX0
0200                    /
0201                    /       START THE COMMAND READ
0202                    /
0203    4014    4421            JMS I   READ    /START TTY INPUT
0204    4015    0114            CMREAD
0205    4016    4462    CMI050, JMS I   CMG     /GET INDEX FROM
0206    4017    0052            UNIT            /PREFERED LOAD UNIT
0207                    /
0210                    /       HELP FRAME HAS BEEN REPLACED BY AN
0211                    /       ERROR MESSAGE, OR MAJOR STATE HAS CHANGED
0212                    /       INSERT APPROPRIATE HELP TEXT
0213                    /
0214    4020    1047    CMI100, TAD     MAJOR   /MAJOR STATE
0215    4021    1334            TAD     PSTH    /PLUS POINTER TO STATE HELPS
0216    4022    3002            DCA     TMP1
0217    4023    1402            TAD I   TMP1    /GET APPROPRIATE HELP ADDR
0220    4024    3226            DCA     .+2
0221    4025    4464            JMS I   HLP     /INSERT HELP
0222    4026    0000            0
0223    4027    4473    CMI110, JMS I   DSP     /REFRESH DISPLAY
0224    4030    1453            TAD I   NEWCHR  /IS THERE A NEW CHAR?
0225    4031    7440            SZA
0226    4032    5461            JMP I   DOCHR   /YES - DO THAT THING
0227    4033    1454            TAD I   LSTCHR  /WAS THE LAST CHAR ERASED?
0230    4034    7640            SZA CLA
0231    4035    5227            JMP     CMI110  /NO  - RECYCLE
0232                    /
0233                    EJECT
*
```

```
0234                            /
0235                            /       THE LAST CHARACTER WAS RUBBED OUT
0236                            /
0237    4036    1054            TAD     LSTCHR
0240    4037    3053            DCA     NEWCHR  /BACK UP THE POINTERS
0241    4040    7240            MONE
0242    4041    1054            TAD     LSTCHR
0243    4042    3054            DCA     LSTCHR
0244    4043    1455            TAD I   LSTDEL  /DID HE RUB A DELIMITER?
0245    4044    7640            SZA CLA
0246    4045    5227            JMP     CMI110  /WHEW! NO
0247                            /
0250                            /       AT THIS POINT, HOPEFULLY, WE CAN ASSUME
0251                            /       THAT EVERYTHING IN THE BUFFER IS VALID,
0252                            /       THEREFORE, ALL WE HAVE TO DO IS SCAN FOR
0253                            /       DELIMITERS TO DETERMINE THE STATE VALUES.
0254                            /
0255    4046    4311            JMS     CMI020  /RESET
0256    4047    1044            TAD     PREFLU
0257    4050    3006            DCA     TMP5
0260    4051    1335    CMI120, TAD     PDLST
0261    4052    3011            DCA     AX1
0262    4053    1410            TAD I   AX0     /FETCH NEXT CHAR
0263    4054    7450            SNA
0264    4055    5274            JMP     CMI142  /SCAN COMPLETE
0265    4056    3003            DCA     TMP2    /HOLD IT
0266    4057    2054            ISZ     LSTCHR
0267    4060    2053            ISZ     NEWCHR  /BUMP POINTERS
0270    4061    1411    CMI130, TAD I   AX1     /GET LIST
0271    4062    7450            SNA
0272    4063    5251            JMP     CMI120  /END OF LIST
0273    4064    1003            TAD     TMP2    /COMPARE CHAR
0274    4065    7650            SNA CLA
0275    4066    5271            JMP     CMI140  /MATCH=GO TO IT
0276    4067    2011            ISZ     AX1     /ELSE BUMP POINTER
0277    4070    5261            JMP     CMI130
0300                            /
0301                            /
0302    4071    1411    CMI140, TAD I   AX1
0303    4072    3002            DCA     TMP1
0304    4073    5402            JMP I   TMP1
0305                            /
0306                            /       BACKSCAN COMPLETE
0307                            /
0310                            /
0311    4074    7240    CMI142, MONE
0312    4075    1047            TAD MAJOR
0313    4076    7640            SZA CLA
0314    4077    5306            JMP CMI145
0315    4100    7346            MTHREE
0316    4101    1050            TAD MINOR
0317    4102    7650            SNA CLA
0320    4103    5306            JMP CMI145
0321    4104    4470            JMS I NXTOU
0322    4105    5216            JMP CMI050
0323                            /
0324                            /
0325    4106    4462    CMI145, JMS I   CMG
0326    4107    0006            TMP5
0327    4110    5220            JMP     CMI100
0330                            /
0331                            EJECT
```

```
0332                    /
0333                    /       INITIALIZE VARIOUS THINGS
0334                    /
0335    4111    0000    CMI020, 0
0336    4112    3047            DCA     MAJOR   /FUNCTION INPUT
0337    4113    3050            DCA     MINOR   /DEVICE CODE
0340    4114    3051            DCA     FILCNT  /FIRST FILE
0341    4115    1044            TAD     PREFLU  /DEFAULT DEV
0342    4116    3052            DCA     UNIT
0343    4117    1332            TAD     PCMND   /INPUT STRING-1
0344    4120    3054            DCA     LSTCHR  /PREVIOUS CHAR
0345    4121    1332            TAD     PCMND
0346    4122    3055            DCA     LSTDEL  /LAST DELIMITER
0347    4123    7201            ONE
0350    4124    1332            TAD     PCMND
0351    4125    3053            DCA     NEWCHR  /NEXT CHARACTER
0352    4126    1332            TAD     PCMND
0353    4127    3010            DCA     AX0     /BUFFER POINTER
0354    4130    5711            JMP I   CMI020
0355                    /
0356                    /
0357    4131    0215    P215,   215
0360    4132    6751    PCMND,  CMND-1
0361    4133    7500    MLCMND, -300
0362    4134    6066    PSTH,   STATEH
0363    4135    6050    PDLST,  DLIST-1
0364                    /
0365                            EJECT
*
```

```
0366                            PAGE
0367                    /
0370                    /       DELIMITER HANDLERS
0371                    /
0372    4200    7325    CMI150, THREE           /SEMICOLON
0373    4201    7410            SKP
0374                    /
0375    4202    7305    CMI152, TWO             /EQUALS
0376    4203    3047            DCA     MAJOR
0377    4204    3050            DCA     MINOR
0400    4205    7240            MONE
0401    4206    1010            TAD     AX0     /CHECK LAST CHAR
0402    4207    3002            DCA     TMP1
0403    4210    1402            TAD I   TMP1
0404    4211    1110            TAD     MCOMMA  /WAS LAST COMMA?
0405    4212    7640            SZA CLA
0406    4213    2051            ISZ     FILCNT  /BUMP COUNT IF NOT
0407    4214    1511            TAD I   PLFAUX
0410    4215    0077            AND     P7
0411    4216    7040            CMA
0412    4217    1051            TAD     FILCNT
0413    4220    7700            SMA CLA         /ENOUGH OUTPUT FILES?
0414    4221    5244            JMP     CMI180  /YES
0415    4222    1511            TAD I   PLFAUX
0416    4223    0077            AND     P7
0417    4224    7001            IAC
0420    4225    7001            IAC             /INCLUDE LOAD FILE
0421    4226    3051            DCA     FILCNT  /INCLUDE WORKING AREAS
0422    4227    5244            JMP     CMI180
0423                    /
0424    4230    7201    CMI154, ONE             /SPACE
0425    4231    3047            DCA     MAJOR
0426                    /
0427    4232    3050    CMI156, DCA     MINOR   /COMMA
0430    4233    2051            ISZ     FILCNT
0431    4234    5244            JMP     CMI180
0432                    /
0433    4235    7305    CMI158, TWO             /PERIOD
0434    4236    3050            DCA     MINOR
0435    4237    5244            JMP     CMI180
0436                    /
0437    4240    4475    CMI160, JMS I   GDEV    /DECODE UNIT
0440    4241    5244            JMP     CMI180
0441    4242    1052            TAD     UNIT
0442    4243    3006            DCA     TMP5    /HOLD LATEST UNIT
0443                    /
0444    4244    1010    CMI180, TAD     AX0
0445    4245    3055            DCA     LSTDEL  /UPDATE LAST-DELIMITER
0446    4246    5647            JMP I   .+1
0447    4247    4051            CMI120
0450                    /
0451                            EJECT
```

```
0452                    /
0453                            PAGE
0454                    /
0455                    /       AC CONTAINS NEW INPUT CHAR
0456                    /
0457    4400    1315    CMI200, TAD     MTAB    /COMPARE TAB
0460    4401    7640            SZA CLA
0461    4402    5205            JMP     CMI210  /NOT TAB
0462    4403    1316            TAD     P240    /GET BLANK
0463    4404    3453            DCA I   NEWCHR  /CONVERT TO BLANK
0464    4405    1114    CMI210, TAD     CMREAD  /TEST TTY PARAM LIST
0465    4406    7700            SMA CLA         /WAS IT A TERMINATOR?
0466    4407    5723            JMP I   TERM    /YES
0467    4410    7346    CMI215, MTHREE
0470    4411    1047            TAD     MAJOR   /PARAM STATE?
0471    4412    7650            SNA CLA
0472    4413    5246            JMP     CMI218  /YES = ACCEPT ANYTHING
0473    4414    7346            MTHREE
0474    4415    1050            TAD     MINOR
0475    4416    7650            SNA CLA         /ALPHA=NUM ALLOWED?
0476    4417    5264            JMP     CMI230  /NO
0477    4420    1453            TAD I   NEWCHR
0500    4421    1317            TAD     MCZ     /COMPARE Z
0501    4422    7540            SMA SZA
0502    4423    5264            JMP     CMI230  /TOO HIGH
0503    4424    1320            TAD     CZMCA   /COMPARE A
0504    4425    7500            SMA
0505    4426    5257            JMP     CMI220  /OK = ACCEPT
0506    4427    1321            TAD     CAMC9   /COMPARE 9
0507    4430    7540            SMA SZA
0510    4431    5264            JMP     CMI230  /TOO HIGH
0511    4432    1322            TAD     C9MC0   /COMPARE 0
0512    4433    7710            SPA CLA
0513    4434    5264            JMP     CMI230
0514                    /
0515                    /       NUMERIC - IS IT VALID AT THIS TIME?
0516                    /
0517    4435    7344            MTWO
0520    4436    1050            TAD     MINOR   /ARE WE IN EXT SCAN?
0521    4437    7650            SNA CLA
0522    4440    5257            JMP     CMI220  /YES - NUM IS VALID
0523    4441    1054            TAD     LSTCHR
0524    4442    7041            CIA
0525    4443    1055            TAD     LSTDEL  /IS LAST CHAR A DELIM?
0526    4444    7650            SNA CLA
0527    4445    5300            JMP     CMI250  /YES = CANNOT ACCEPT
0530                    /
0531                    /       PARAM STATE -- TOO MANY CHARS?
0532                    /
0533    4446    1055    CMI218, TAD     LSTDEL
0534    4447    1101            TAD     P40
0535    4450    7141            CIA CLL
0536    4451    1054            TAD     LSTCHR  /CHAR COUNT -40
0537    4452    7620            SNL CLA
0540    4453    5257            JMP     CMI220  /OK
0541    4454    4464            JMS I   HLP
0542    4455    6451            LNGH            /TOO LONG
0543    4456    5302            JMP     CMI260
0544                    /
0545                            EJECT
-
```

```
0546                    /
0547                    /       CHAR IS ACCEPTABLE ALPHA=NUMERIC
0550                    /       (OR ANYTHING IF IN PARAMETER STATE)
0551                    /
0552    4457    7200    CMI220, CLA
0553    4460    2053            ISZ     NEWCHR  /BUMP POINTERS
0554    4461    2054            ISZ     LSTCHR
0555    4462    5663            JMP I   .+1     /REFRESH
0556    4463    0157            CMI 110
0557                    /
0560                    /       MINOR STATE IS 3 (ALPHA NOT ALLOWED), OR
0561                    /       CHAR IS NOT ALPHA=NUMERIC, NOT A TERMINATOR,
0562                    /       AND WE ARE NOT IN PARAMETER STATE.
0563                    /
0564    4464    7200    CMI230, CLA
0565    4465    1324            TAD     MDELL   /TABLE LENGTH
0566    4466    3002            DCA     TMP1
0567    4467    1325            TAD     PDELS   /POINTER TO DELIMITER LIST
0570    4470    3010            DCA     AX0
0571    4471    1453    CMI240, TAD I   NEWCHR
0572    4472    1410            TAD I   AX0
0573    4473    7650            SNA CLA         /MATCH?
0574    4474    5312            JMP     CMI300  /YES
0575    4475    2010            ISZ     AX0     /NO = BUMP POINTER
0576    4476    2002            ISZ     TMP1
0577    4477    5271            JMP     CMI240
0600                    /
0601                    /       CHAR IS INVALID
0602                    /
0603    4500    4464    CMI250, JMS I   HLP     /INSERT HELP TEXT
0604    4501    6412            INVH
0605    4502    1453    CMI260, TAD I   NEWCHR  /HAS HE DELETED THE CHAR?
0606    4503    7650            SNA CLA
0607    4504    5460            JMP I   NEWH    /YES = RESUME NORMAL
0610    4505    1114            TAD     CMREAD  /HAS HE TERMINATED?
0611    4506    7700            SMA CLA
0612    4507    5457            JMP I   CMI     /YES = START FROM SCRATCH
0613    4510    4473            JMS I   DSP     /REFRESH DISPLAY
0614    4511    5302            JMP     CMI260
0615                    /
0616                    /       CHAR IS VALID DELIMITER
0617                    /
0620    4512    1410    CMI300, TAD I   AX0     /HANDLER ADDR
0621    4513    3002            DCA     TMP1
0622    4514    5402            JMP I   TMP1
0623                    /
0624    4515    7567    MTAB,   -211
0625    4516    0240    P240,   240
0626    4517    7446    MCZ,    -332
0627    4520    0031    CZMCA,  332-301
0630    4521    0010    CAMC9,  301-271
0631    4522    0011    C9MC0,  271-260
0632    4523    4000    TERM,   CMI000
0633                    /
0634                    /       EJECT
=
```

```
0635                    /
0636                    /       TRANSFER TABLE FOR DELIMITER CHARACTERS
0637                    /
0640    4524    7772    MDELL,  -6
0641    4525    4525    PDELS,  DELS-1
0642    4526    7540    DELS,   -240            /SPACE
0643    4527    5010            CMD100
0644    4530    7503            -275            /EQUALS
0645    4531    5017            CMD200
0646    4532    7505            -273            /SEMICOLON
0647    4533    5125            CMD300
0650    4534    7524            -254            /COMMA
0651    4535    5131            CMD400
0652    4536    7506            -272            /COLON
0653    4537    5200            CMD500
0654    4540    7522            -256            /PERIOD
0655    4541    5351            CMD600
0656                    /
0657                    /       FIND THE NEXT USABLE OUTPUT UNIT
0660                    /
0661    4542    0000    NXU000, 0
0662    4543    2052    NXU010, ISZ     UNIT    /GO TO NEXT
0663    4544    1052            TAD     UNIT
0664    4545    1361            TAD     MDSKS   /CHECK FOR TOO BIG
0665    4546    7700            SMA CLA
0666    4547    3052            DCA     UNIT
0667    4550    1052            TAD     UNIT
0670    4551    1104            TAD     M20     /CHECK FOR TOO SMALL
0671    4552    7700            SMA CLA
0672    4553    5356            JMP     NXU020  /TRY IT NOW
0673    4554    1362            TAD     P20
0674    4555    3052            DCA     UNIT
0675    4556    4467    NXU020, JMS I   UOK     /HOWS THIS?
0676    4557    5742            JMP I   NXU000  /FINE
0677    4560    5343            JMP     NXU010  /NOPE, TRY NEXT
0700                    /
0701    4561    7750    MDSKS,  -30-DISK
0702    4562    0020    P20,    20
0703                    /
0704                    /
0705                    PAGE
0706                    /
0707                    /       LINE TERMINATOR STRUCK
0710                    /
0711    4600    1453    CMI900, TAD I   NEWCHR
0712    4601    1107            TAD     M215    /COMPARE CR
0713    4602    7650            SNA CLA
0714    4603    5211            JMP     CMI905  /EQUAL!
0715    4604    7346            MTHREE
0716    4605    1047            TAD     MAJOR   /CHECK STATE
0717    4606    7640            SZA CLA         /PARAM SCAN?
0720    4607    5713            JMP I   SCNCTU  /NOPE
0721    4610    5457            JMP I   CMI     /YUP, MUST RESTART
0722                    /
0723                    EJECT
```

```
0724                    /
0725                    /       CARRIAGE RETURN
0726                    /
0727    4611    1050    CMI905, TAD     MINOR
0730    4612    7640            SZA CLA
0731    4613    7201            ONE
0732    4614    1051            TAD     FILCNT
0733    4615    7104            CLL RAL             /MUL BY 12
0734    4616    3002            DCA     TMP1
0735    4617    1002            TAD     TMP1
0736    4620    7006            RTL
0737    4621    1002            TAD     TMP1
0740    4622    1316            TAD     P7612
0741    4623    3002            DCA     TMP1
0742    4624    3402            DCA I   TMP1        /CLEAR TO END OF PAGE 37
0743    4625    2002            ISZ     TMP1
0744    4626    5224            JMP     .-2
0745    4627    7346            MTHREE
0746    4630    1047            TAD     MAJOR       /PARAM STATE?
0747    4631    7440            SZA
0750    4632    5301            JMP     CMI970      /NO-FINISH OTHER PROCESSING
0751    4633    1054            TAD     LSTCHR      /YES-COLLECT PARAM STRING
0752    4634    7041            CIA
0753    4635    1055            TAD     LSTDEL      /MINUS PARAM LENGTH
0754    4636    7450            SNA
0755    4637    5275            JMP     CMI950      /LENGTH IS ZERO
0756    4640    3002            DCA     TMP1
0757    4641    1101            TAD     P40         /MAX LENGTH
0760    4642    1002            TAD     TMP1
0761    4643    7700            SMA CLA             /TOO LONG?
0762    4644    5247            JMP     CMI910      /NO
0763    4645    1314            TAD     M40         /YES-TRUNCATE TO 40 CHARS
0764    4646    3002            DCA     TMP1
0765    4647    1002    CMI910, TAD     TMP1
0766    4650    3715            DCA I   P7757       /SET PARAM STRING LENGTH
0767    4651    1315            TAD     P7757
0770    4652    3011            DCA     AX1         /TO ADDR
0771    4653    1055            TAD     LSTDEL
0772    4654    3010            DCA     AX0         /FROM ADDR
0773    4655    1410    CMI920, TAD I   AX0         /BEGIN PACK
0774    4656    0100            AND     P77         /STRIP TO 6BIT
0775    4657    7106            CLL RTL
0776    4660    7006            RTL                 /SHIFT 6 LEFT
0777    4661    7006            RTL
1000    4662    2002            ISZ     TMP1        /CHECK COUNT
1001    4663    5266            JMP     CMI930      /CONTINUE
1002    4664    3411            DCA I   AX1
1003    4665    5275            JMP     CMI950
1004    4666    3003    CMI930, DCA     TMP2
1005    4667    1410            TAD I   AX0         /GET NEXT
1006    4670    0100            AND     P77         /STRIP IT
1007    4671    1003            TAD     TMP2        /COMBINE
1010    4672    3411            DCA I   AX1         /STORE
1011    4673    2002            ISZ     TMP1
1012    4674    5255            JMP     CMI920
1013                    /
1014                    EJECT
```

```
1015                    /
1016                    /       EVERYTHING IS SET UP-FETCH THE LOADER
1017                    /
1020    4675    4472    CMI950, JMS I   WTX     /WAIT FOR I/O COMPLETION
1021    4676    1113            TAD     LSTCDF  /GET HIGH CDF
1022    4677    3512            DCA I   PHICDF  /TO PAGE 37
1023    4700    5717            JMP I   PLDLD   /GO TO LOADER LOADER
1024                    /
1025                    /       NOT IN PARAM STATE
1026                    /
1027    4701    7001    CMI970, IAC
1030    4702    7640            SZA CLA         /INPUT STATE?
1031    4703    5310            JMP     CMI980  /NO
1032    4704    1055            TAD     LSTDEL
1033    4705    7041            CIA
1034    4706    1054            TAD     LSTCHR
1035    4707    7640            SZA CLA         /LAST CHAR A DELIMITER?
1036    4710    4712    CMI980, JMS I   DOEQ    /NO - DO EQUALS PROCESSING
1037    4711    5275            JMP     CMI950  /AND GO
1040                    /
1041    4712    5025    DOEQ,   CMD205
1042    4713    4410    SCNCTU, CMI215
1043    4714    7740    M40,    -40
1044    4715    7757    P7757,  7757
1045    4716    7612    P7612,  7612
1046                    /
1047    4717    3401    PLDLD,  3401            /ROUTINE TO LOAD THE LOADER
1050                    /
1051                    EJECT
```

```
1052                    /
1053                    /       COMMON PROCESSING FOR SPACE, COMMA,
1054                    /       EQUALS, AND SEMICOLON
1055                    /
1056    4720    0000    CMD010, 0
1057    4721    7346            MTHREE
1060    4722    1050            TAD     MINOR
1061    4723    7450            SNA                     /MINOR STATE 3?
1062    4724    5363            JMP     CMD050          /YES, THERE IS NO NAME
1063    4725    7001            IAC
1064    4726    7650            SNA CLA                 /MINOR STATE 2 (EXT)?
1065    4727    7325            THREE                   /YES = MAX LENGTH 3 CHARS
1066    4730    1361            TAD     M6              /ELSE 6 ALLOWED
1067    4731    1054            TAD     LSTCHR
1070    4732    7041            CIA
1071    4733    1055            TAD     LSTDEL          /TOO MANY CHARACTERS
1072    4734    7710            SPA CLA                 /SINCE LAST DELIM?
1073    4735    5465            JMP I   INV             /YES = ERROR
1074    4736    1054            TAD     LSTCHR
1075    4737    7041            CIA
1076    4740    1055            TAD     LSTDEL
1077    4741    7650            SNA CLA                 /ZERO CHARS?
1100    4742    5465            JMP I   INV             /YES = ERROR
1101    4743    4471            JMS I   MVC             /MOVE NAME INTO FILE DESCRIPTOR
1102    4744    3356            DCA     CMD030          /STORE FILE DESC ADDR
1103    4745    4472            JMS I   WTX             /WAIT FOR INDEX READY
1104    4746    7240            MONE
1105    4747    1047            TAD     MAJOR
1106    4750    7510            SPA                     /FUNCTION?
1107    4751    5762            JMP I   SPFC            /YES = CHECK FOR SPECIALS
1110    4752    7650            SNA CLA                 /OUTPUT?
1111    4753    7325            THREE                   /YES = GET WA
1112    4754    6212    CMD020, CIF     10              /ELSE LOOKUP
1113    4755    4476            JMS I   PXSERV
1114    4756    0000    CMD030, 0                       /FILE DESCRIPTOR ADDR
1115    4757    5000            CMD070                  /ERROR RETURN
1116    4760    5365            JMP     CMD060          /GO UPDATE POINTERS
1117                    /
1120    4761    7772    M6,     -6
1121    4762    6000    SPFC,   SPF000                  /SPECIAL FUNCTION CHECK
1122                    /
1123                    EJECT
=
```

```
1124                    /
1125                    /       MINOR STATE IS THREE
1126                    /
1127    4763    4471    CMD050, JMS I   MVC     /SETUP FDB
1130    4764    7200            CLA
1131    4765    2051    CMD060, ISZ     FILCNT  /BUMP FILE COUNT
1132    4766    3050            DCA     MINOR   /CLEAR MINOR STATE
1133    4767    2054            ISZ     LSTCHR
1134    4770    2053            ISZ     NEWCHR
1135    4771    1054            TAD     LSTCHR
1136    4772    3055            DCA     LSTDEL
1137    4773    1122            TAD     CMPARM  /RESET DEFAULT UNIT
1140    4774    0100            AND     P77
1141    4775    3052            DCA     UNIT
1142    4776    5720            JMP I   CMD010
1143                    /
1144                    /
1145                    /
1146                    PAGE
1147                    /
1150                    /
1151                    /       COME HERE IF INDEX SERVICES DETECT AN ERROR
1152                    /       CODE 0 TO 4 IS IN AC.
1153                    /
1154    5000    1207    CMD070, TAD     ERLST   /SELECT MESSAGE
1155    5001    3003            DCA     TMP2
1156    5002    1403            TAD I   TMP2
1157    5003    3205            DCA     .+2
1160    5004    4464            JMS I   HLP     /INSERT APPROPRIATELY
1161    5005    0000            0
1162    5006    5466            JMP I   DSPEH   /THE PAUSE THAT REFRESHES
1163                    /
1164    5007    6072    ERLST,  ERRORH
1165                    /
1166                    /       DELIMITER IS SPACE
1167                    /
1170    5010    1047    CMD100, TAD     MAJOR
1171    5011    7640            SZA CLA         /STATE 0?
1172    5012    5465            JMP I   INV     /NO, BLANK IS INVALID
1173    5013    4474            JMS I   MJSC    /DO PROCESSING FOR STATE CHANGE
1174    5014    7201            ONE
1175    5015    3047            DCA     MAJOR   /OUTPUT STATE
1176    5016    5460            JMP I   NEWH
1177                    /
1200                    EJECT
```

```
1201                    /
1202                    /
1203                    /       CHAR IS EQUAL SIGN
1204                    /
1205        5017  7344  CMD200, MTWO
1206        5020  4343          JMS     CMD410  /CHECK STATE VALIDITY
1207        5021  4225          JMS     CMD205
1210        5022  7305          TWO
1211        5023  3047          DCA     MAJOR
1212        5024  5460          JMP I   NEWH
1213                    /
1214                    /
1215        5025  0000  CMD205, 0
1216        5026  1454          TAD I   LSTCHR  /GET PREVIOUS CHAR
1217        5027  1106          TAD     MSPACE  /WAS IT SPACE?
1220        5030  7450          SNA
1221        5031  5242          JMP     CMD210  /YES
1222        5032  1323          TAD     SPMCOM  /WAS IT COMMA?
1223        5033  7450          SNA
1224        5034  5242          JMP     CMD210  /YES
1225        5035  1324          TAD     COMMEQ  /WAS IT EQUALS?
1226        5036  7650          SNA CLA
1227        5037  5242          JMP     CMD210  /YES
1230        5040  4474          JMS I   MJSC    /NO - PROCESS AS FILE CHANGE
1231        5041  5247          JMP     CMD212  /POINTERS ARE UPDATED
1232        5042  1053  CMD210, TAD     NEWCHR
1233        5043  3055          DCA     LSTDEL  /SET LAST DELIM
1234        5044  3050          DCA     MINOR
1235        5045  2053          ISZ     NEWCHR
1236        5046  2054          ISZ     LSTCHR
1237                    /
1240                    EJECT
```

```
1241                    /
1242                    /       GUARANTEE REQUESTED NUMBER
1243                    /       OF OUTPUT FILES, AS INDICATED
1244                    /       BY LOAD FILE AUX WORD
1245                    /
1246    5047  1122  CMD212, TAD     CMPARM  /SAVE CURRENT DEFAULT
1247    5050  0100          AND     P77
1250    5051  3045          DCA     HOLDU   /FOR LATER RESTORATION
1251    5052  1044          TAD     PREFLU  /START WA SEARCH
1252    5053  3052          DCA     UNIT    /AT SYSTEM UNIT
1253    5054  7201          ONE
1254    5055  3047          DCA     MAJOR   /FORCE OUTPUT STATE
1255    5056  1511          TAD I   PLFAUX  /SETUP RETRY COUNT
1256    5057  0077          AND     P7
1257    5060  7001          IAC             /ALLOW TWO RETRIES
1260    5061  7040          CMA             /ON WA ALLOCATION FAILURES
1261    5062  3046          DCA     WATRY   /SET TRY COUNTER
1262    5063  1511  CMD214, TAD I   PLFAUX  /GET LOAD FILE WA REQUIREMENT
1263    5064  0077          AND     P7      /BITS 9-11 ONLY
1264    5065  7040          CMA
1265    5066  1051          TAD     FILCNT  /ENOUGH OUTPUT FILES?
1266    5067  7700          SMA CLA
1267    5070  5316          JMP     CMD240  /YES - DONT ALLOCATE WORK AREAS
1270                    /
1271                    /       ALLOCATE A WORK AREA
1272                    /
1273    5071  4467          JMS I   UOK     /IS THIS UNIT OK?
1274    5072  7410          SKP             /YES
1275    5073  4470          JMS I   NXTOU
1276    5074  4462          JMS I   CMG
1277    5075  0052          UNIT
1300    5076  4471          JMS I   MVC     /MOVE IN UNIT, NULL NAME
1301    5077  3304          DCA     CMD220  /STORE FILE DESCRIPTOR ADDR
1302    5100  4472          JMS I   WTX
1303    5101  7325          THREE           /ALLOCATE WA
1304    5102  6212          CIF     10
1305    5103  4476          JMS I   PXSERV  /TO XS THINGS
1306    5104  0000  CMD220, 0               /ON THIS F.D.
1307    5105  5107          CMD230          /ERROR RETURNS
1310    5106  2051          ISZ     FILCNT  /BUMP COUNT
1311    5107  7200  CMD230, CLA
1312    5110  4470          JMS I   NXTOU
1313    5111  2046          ISZ     WATRY   /CHECK TRY COUNTER
1314    5112  5263          JMP     CMD214  /NOW CHECK FOR ENOUGH
1315    5113  4422          JMS I   WRITE
1316    5114  6545          NOWAP
1317    5115  5313          JMP     .-2
1320                    /
1321    5116  1045  CMD240, TAD     HOLDU   /RESTORE LAST UNIT
1322    5117  3052          DCA     UNIT
1323    5120  4462          JMS I   CMG
1324    5121  0052          UNIT
1325    5122  5625          JMP I   CMD205
1326                    /
1327    5123  7764  SPMCOM, 240-254
1330    5124  7757  COMMEQ, 254-275
1331                    /
1332                    EJECT
```

```
1333                    /
1334                    /       SEMICOLON
1335                    /
1336    5125    4225    CMD300, JMS     CMD205  /DO EQUALS STUFF
1337    5126    7325            THREE
1340    5127    3047            DCA     MAJOR
1341    5130    5460            JMP I   NEWH    /CHANGE HELP AND CONTINUE
1342                    /
1343                    /       COMMA
1344                    /
1345    5131    4343    CMD400, JMS     CMD410  /CHECK STATE VALIDITY
1346    5132    4474            JMS I   MJSC    /PROCESS NEXT FILE
1347    5133    7240            MONE
1350    5134    1047            TAD     MAJOR
1351    5135    7640            SZA CLA         /OUTPUT STATE?
1352    5136    5460            JMP I   NEWH    /NO
1353    5137    4470            JMS I   NXTOU   /GET NEXT OUTPUT UNIT
1354    5140    4462            JMS I   CMG     /GET ITS INDEX
1355    5141    0052            UNIT
1356    5142    5460            JMP I   NEWH    /REFRESH
1357                    /
1360                    /
1361    5143    0000    CMD410, 0
1362    5144    1047            TAD     MAJOR   /CHAR LEGAL IN THIS STATE?
1363    5145    7650            SNA CLA
1364    5146    5465            JMP I   INV     /NO
1365    5147    1103            TAD     M10
1366    5150    1051            TAD     FILCNT  /TOO MANY FILES?
1367    5151    7710            SPA CLA
1370    5152    5743            JMP I   CMD410  /NO, OK
1371    5153    4464            JMS I   HLP
1372    5154    6500            NOFH            /TELL HIM
1373    5155    5466            JMP I   DSPEH
1374                    /
1375                    EJECT
=
```

```
1376                    /
1377                            PAGE
1400                    /
1401                    /       COLON
1402                    /
1403    5200    1050    CMD500, TAD     MINOR
1404    5201    7640            SZA CLA
1405    5202    5465            JMP I   INV     /NO = ERROR
1406    5203    7346            MTHREE
1407    5204    1054            TAD     LSTCHR
1410    5205    7041            CIA
1411    5206    1055            TAD     LSTDEL  /IS DEV 3 CHARS?
1412    5207    7640            SZA CLA
1413    5210    5465            JMP I   INV     /NO = ERROR
1414    5211    4221            JMS     CMD505  /CONVERT UNIT
1415    5212    5215            JMP     .+3     /NON-INDEX DEVICE
1416    5213    4462            JMS I   CMG     /START INDEX READ
1417    5214    0052            UNIT
1420    5215    1053    CMD502, TAD     NEWCHR
1421    5216    3055            DCA     LSTDEL
1422    5217    5620            JMP I   .+1
1423    5220    4457            CMI220
1424                    /
1425                    /
1426    5221    0000    CMD505, 0
1427    5222    1055            TAD     LSTDEL
1430    5223    3011            DCA     AX1
1431    5224    1411            TAD I   AX1     /FIRST CHAR OF DEV
1432    5225    0100            AND     P77     /STRIPPED
1433    5226    7106            CLL RTL
1434    5227    7006            RTL
1435    5230    7006            RTL
1436    5231    1411            TAD I   AX1     /2ND CHAR
1437    5232    3003            DCA     TMP2
1440    5233    1411            TAD I   AX1     /3RD CHAR
1441    5234    3005            DCA     TMP4    /SAVE FOR LATER
1442    5235    1317            TAD     PDEVL   /DEVICE CODE LIST
1443    5236    3012            DCA     AX2
1444    5237    1412    CMD510, TAD I   AX2     /COMPARE ENTRIES
1445    5240    7450            SNA             /END OF LIST?
1446    5241    5465            JMP I   INV     /YES-TOO BAD
1447    5242    1003            TAD     TMP2    /NO-MATCH
1450    5243    7650            SNA CLA         /SAME?
1451    5244    5250            JMP     CMD530  /EQUAL
1452    5245    2012            ISZ     AX2     /UNEQUAL - BUMP POINTER
1453    5246    2012    CMD520, ISZ     AX2
1454    5247    5237            JMP     CMD510  /TRY NEXT
1455                    /
1456                    /       HIGH ORDER DEVICE CODE MATCHES
1457                    /
1460    5250    1412    CMD530, TAD I   AX2
1461    5251    7500            SMA             /MUST 3RD BE NUMERIC?
1462    5252    5257            JMP     CMD540  /YES
1463    5253    1005            TAD     TMP4    /NO - TEST FOR MATCH
1464    5254    7640            SZA CLA         /3RD EQUAL?
1465    5255    5246            JMP     CMD520  /NO - CONTINUE SEARCH
1466    5256    5266            JMP     CMD550  /GET CODE
1467                    /
1470                            EJECT
```

```
1471                    /
1472                    /       THIRD CHAR MUST BE NUMERIC
1473                    /
1474    5257    1005    CMD540, TAD     TMP4    /GET LAST CHAR OF CODE
1475    5260    1316            TAD     M270
1476    5261    7500            SMA
1477    5262    5465            JMP I   INV     /NO GOOD
1500    5263    1102            TAD     P10
1501    5264    7510            SPA
1502    5265    5465            JMP I   INV     /BAD
1503    5266    1412    CMD550, TAD I   AX2     /OK = COMBINE WITH UNIT CLASS
1504    5267    3052            DCA     UNIT    /HOLD UNIT
1505    5270    7240            MONE
1506    5271    1047            TAD     MAJOR
1507    5272    7650            SNA CLA         /OUTPUT STATE?
1510    5273    4320            JMS     UOK000  /YES, CHECK UNIT
1511    5274    7410            SKP
1512    5275    5313            JMP     CMD580  /UHOH, CONFLICT
1513    5276    1052            TAD     UNIT
1514    5277    1104            TAD     M20     /TEST FOR TAPE OR DISK
1515    5300    7510            SPA             /GE 20?
1516    5301    5311            JMP     CMD570  /NO
1517    5302    1104            TAD     M20
1520    5303    7700            SMA CLA         /LT 40?
1521    5304    5311            JMP     CMD570  /NO
1522    5305    2221            ISZ     CMD505  /YES, SKIP RETURN
1523    5306    7201            ONE             /INDEX = TYPE DEVICE
1524    5307    3050    CMD560, DCA     MINOR   /SET MINOR STATE
1525    5310    5621            JMP I   CMD505
1526                    /
1527                    /       NOT AN INDEX DEVICE
1530                    /
1531    5311    7325    CMD570, THREE
1532    5312    5307            JMP     CMD560
1533                    /
1534                    /       TRYING TO PUT TWO OUTPUT FILES
1535                    /       ON THE SAME UNIT
1536                    /
1537    5313    4464    CMD580, JMS I   HLP
1540    5314    6515            OFDH
1541    5315    5466            JMP I   DSPEH
1542                    /
1543    5316    7510    M270,   =270
1544    5317    6025    PDEVL,  DEVIL-1
1545                    /
1546                            EJECT
=
```

```
1547                    /
1550                    /       SKIP IF UNIT HAS ALREADY BEEN
1551                    /       USED AS AN OUTPUT DEVICE
1552                    /
1553    5320  0000  UOK000, 0
1554    5321  7240          MONE
1555    5322  1051          TAD     FILCNT
1556    5323  7450          SNA                     /ANY YET?
1557    5324  5720          JMP I   UOK000  /NOPE
1560    5325  7041          CIA
1561    5326  3003          DCA     TMP2
1562    5327  1350          TAD     P7624   /POINT TO OUTPUT LIST
1563    5330  3002          DCA     TMP1
1564    5331  1402  UOK010, TAD I   TMP1
1565    5332  0100          AND     P77     /STRIP TO UNIT ONLY
1566    5333  7041          CIA
1567    5334  1052          TAD     UNIT    /COMPARE UNIT
1570    5335  7650          SNA CLA
1571    5336  5345          JMP     UOK020  /EQUAL, TOO BAD
1572    5337  1347          TAD     P12
1573    5340  1002          TAD     TMP1    /POINT TO NEXT
1574    5341  3002          DCA     TMP1
1575    5342  2003          ISZ     TMP2    /THAT ALL?
1576    5343  5331          JMP     UOK010
1577    5344  7410          SKP                     /YUP
1600                    /
1601    5345  2320  UOK020, ISZ     UOK000
1602    5346  5720          JMP I   UOK000
1603                    /
1604    5347  0012  P12,    12
1605    5350  7624  P7624,  7624
1606                    /
1607                    /       PERIOD
1610                    /
1611    5351  7344  CMD600, MTWO
1612    5352  1050          TAD     MINOR
1613    5353  7700          SMA CLA                 /IS PERIOD LEGAL HERE?
1614    5354  5465          JMP I   INV     /NO
1615    5355  1047          TAD     MAJOR
1616    5356  7650          SNA CLA
1617    5357  5465          JMP I   INV     /NO (FUNCTION HAS EXT = .BIN)
1620    5360  1054          TAD     LSTCHR
1621    5361  7041          CIA
1622    5362  1055          TAD     LSTDEL  /WAS LAST CHAR A DELIMITER?
1623    5363  7650          SNA CLA
1624    5364  5465          JMP I   INV     /YES = ERROR
1625    5365  7327          SIX
1626    5366  1055          TAD     LSTDEL
1627    5367  7040          CMA
1630    5370  1054          TAD     LSTCHR
1631    5371  7630          SZL CLA                 /TOO MANY CHARS?
1632    5372  5465          JMP I   INV     /YES
1633    5373  4471          JMS I   MVC     /SEEMS OK
1634    5374  7305          TWO
1635    5375  3050          DCA     MINOR
1636    5376  5215          JMP     CMD502  /RESET POINTERS AND RETURN
1637                    /
1640                    EJECT
=
```

```
1641                    /
1642                            PAGE
1643                    /
1644                    /       MVC = SET UP FILE DESCRIPTOR
1645                    /
1646    5400    0000    MVC000, 0
1647    5401    7300            CLA CLL
1650    5402    1051            TAD     FILCNT  /FILE NUMBER
1651    5403    7004            RAL             /TIMES TWO
1652    5404    3003            DCA     TMP2    /HOLD
1653    5405    1003            TAD     TMP2
1654    5406    7104            CLL RAL         /TIMES 10 OCTAL
1655    5407    7104            CLL RAL         /CAREFULLY
1656    5410    1003            TAD     TMP2    /NOW TIMES 12 OCTAL
1657    5411    1314            TAD     P7611   /PLUS PAGE 37 POINTER
1660    5412    3010            DCA     AX0     /IS POINTER TO FILE DESCRIPTOR
1661    5413    1047            TAD     MAJOR   /GET CONTROL BITS
1662    5414    7112            CLL RTR
1663    5415    7010            RAR
1664    5416    1052            TAD     UNIT
1665    5417    3410            DCA I   AX0     /STORE UNIT IN FDB
1666    5420    7346            MTHREE
1667    5421    1050            TAD     MINOR
1670    5422    7450            SNA
1671    5423    5361            JMP     MVC200  /THERE IS NO FILE NAME
1672    5424    7001            IAC
1673    5425    7650            SNA CLA
1674    5426    5322            JMP     MVC100  /THIS IS EXTENSION
1675    5427    1316            TAD     P400
1676    5430    3410            DCA I   AX0     /BLOCK LENGTH
1677    5431    1054            TAD     LSTCHR
1700    5432    7041            CIA
1701    5433    1055            TAD     LSTDEL  /GET MOVE LENGTH
1702    5434    7450            SNA             /ZERO?
1703    5435    5262            JMP     MVC030  /YES = FILL WITH BLANKS
1704    5436    3004            DCA     TMP3
1705    5437    1055            TAD     LSTDEL
1706    5440    3011            DCA     AX1
1707    5441    1411    MVC010, TAD I   AX1     /GET CHAR
1710    5442    0100            AND     P77
1711    5443    7106            CLL RTL         /SHIFT
1712    5444    7006            RTL             /TO
1713    5445    7006            RTL             /HIGH = ORDER
1714    5446    2004            ISZ     TMP3    /END OF NAME?
1715    5447    5253            JMP     MVC020  /NO = CONTINUE LOOP
1716    5450    1101            TAD     P40     /FORCE BLANK
1717    5451    3410            DCA I   AX0
1720    5452    5262            JMP     MVC030  /FILL BLANKS
1721    5453    3005    MVC020, DCA     TMP4
1722    5454    1411            TAD I   AX1     /GET NEXT CHAR
1723    5455    0100            AND     P77
1724    5456    1005            TAD     TMP4    /COMBINE
1725    5457    3410            DCA I   AX0
1726    5460    2004            ISZ     TMP3
1727    5461    5241            JMP     MVC010
1730                    /
1731                            EJECT
```

```
1732                    /
1733                    /       NOW FILL REST OF NAME AND EXTENSION WITH BLANKS
1734                    /
1735    5462    1055    MVC030, TAD     LSTDEL
1736    5463    7041            CIA
1737    5464    1053            TAD     NEWCHR  /CALCULATE NAME LENGTH +1
1740    5465    7110            CLL RAR         /OVER TWO
1741    5466    1315    MVC035, TAD     M5      /FROM FULL LENGTH
1742    5467    3004            DCA     TMP3    /GIVES FILL LENGTH
1743    5470    1317    MVC040, TAD     HBLNKS
1744    5471    3410            DCA I   AX0     /FILL WITH BLANKS
1745    5472    2004            ISZ     TMP3
1746    5473    5270            JMP     MVC040
1747    5474    3410            DCA I   AX0     /CLEAR AUX
1750    5475    3410            DCA I   AX0     /CLEAR START
1751    5476    7240            MONE
1752    5477    3410            DCA I   AX0     /INFINITE LENGTH
1753    5500    3410            DCA I   AX0     /CLEAR NEXT UNIT
1754    5501    1047            TAD     MAJOR   /FUNCTION STATE?
1755    5502    7640            SZA CLA
1756    5503    5364            JMP     MVC300  /NO = RETURN
1757    5504    1313            TAD     P7616   /YES = POINT TO EXT
1760    5505    3010            DCA     AX0
1761    5506    1320            TAD     TPTB    /".B"
1762    5507    3410            DCA I   AX0
1763    5510    1321            TAD     TIN     /"IN"
1764    5511    3410            DCA I   AX0
1765    5512    5364            JMP     MVC300  /RETURN
1766                    /
1767    5513    7616    P7616,  7616
1770    5514    7611    P7611,  7611
1771    5515    7773    M5,     -5
1772    5516    0400    P400,   400
1773    5517    4040    HBLNKS, 4040
1774    5520    5602
1774                    TPTB,   TEXT    ".B"
1775    5521    1116
1775                    TIN,    TEXT    "IN"
1776                    /
1777                    EJECT
=
```

```
2000                    /
2001                    /       MOVE EXTENSION
2002                    /
2003    5522    1055    MVC100, TAD     LSTDEL
2004    5523    3011            DCA     AX1
2005    5524    7307            FOUR
2006    5525    1010            TAD     AX0     /BUMP PAST NAME
2007    5526    3010            DCA     AX0
2010    5527    1054            TAD     LSTCHR
2011    5530    7041            CIA
2012    5531    1055            TAD     LSTDEL  /EXT LENGTH
2013    5532    3004            DCA     TMP3
2014    5533    1411            TAD I   AX1     /FIRST CHAR
2015    5534    0100            AND     P77
2016    5535    1371            TAD     P5600   /WITH PERIOD
2017    5536    2004            ISZ     TMP3    /END OF EXT?
2020    5537    7410            SKP             /NO
2021    5540    5357            JMP     MVC120  /YES
2022    5541    3410            DCA I   AX0     /STORE THIS
2023    5542    1411            TAD I   AX1     /NEXT CHAR
2024    5543    0100            AND     P77
2025    5544    7106            CLL RTL
2026    5545    7006            RTL             /MOVE LEFT
2027    5546    7006            RTL
2030    5547    2004            ISZ     TMP3    /END?
2031    5550    5353            JMP     MVC110  /NO
2032    5551    1101            TAD     P40
2033    5552    5357            JMP     MVC120
2034    5553    3005    MVC110, DCA     TMP4
2035    5554    1411            TAD I   AX1     /LAST CHAR
2036    5555    0100            AND     P77
2037    5556    1005            TAD     TMP4
2040    5557    3410    MVC120, DCA I   AX0
2041    5560    5364            JMP     MVC300  /RETURN
2042                    /
2043                    /       THERE IS NO FILE NAME
2044                    /
2045    5561    7201    MVC200, ONE
2046    5562    3410            DCA I   AX0     /AND BLOCK LEN
2047    5563    5266            JMP     MVC035  /CLEAR REST
2050                    /
2051                    /       RETURN WITH FILE DESCRIPTOR ADDR IN AC
2052                    /
2053    5564    1003    MVC300, TAD     TMP2    /FILECOUNT *2
2054    5565    7106            CLL RTL
2055    5566    1003            TAD     TMP2    /* 12 OCTAL
2056    5567    1372            TAD     P7614
2057    5570    5600            JMP I   MVC000
2060                    /
2061    5571    5600    P5600,  5600
2062    5572    7614    P7614,  7614
2063                    /
2064                    EJECT
```

```
2065                            PAGE
2066                    /
2067                    /       GET AN INDEX
2070                    /
2071    5600    0000    CMG000, 0
2072    5601    1600            TAD I   CMG000  /ADDR OF UNIT
2073    5602    3232            DCA     CMGTMP
2074    5603    2200            ISZ     CMG000
2075    5604    1632            TAD I   CMGTMP
2076    5605    3232            DCA     CMGTMP  /UNIT TO GET
2077    5606    1122            TAD     CMPARM
2100    5607    0100            AND     P77     /LAST UNIT
2101    5610    7041            CIA
2102    5611    1232            TAD     CMGTMP  /COMPARE TO THIS
2103    5612    7650            SNA CLA
2104    5613    5600            JMP I   CMG000  /EQUAL = WEVE ALREADY GOT IT
2105    5614    7240            MONE
2106    5615    1132            TAD     DSPRM1+2/SAVE OLD HELP
2107    5616    3230            DCA     CMG010
2110    5617    4472            JMS I   WTX     /WAIT FOR LAST READ
2111    5620    1232            TAD     CMGTMP
2112    5621    3122            DCA     CMPARM  /SET NEW UNIT
2113    5622    1122            TAD     CMPARM
2114    5623    4275            JMS     CHRDEV  /DISPLAY NEW DEFAULT
2115    5624    6730            DEFDEV=1
2116    5625    4421            JMS I   READ
2117    5626    0122            CMPARM          /READ NEW INDEX
2120    5627    4464            JMS I   HLP     /RESTORE OLD HELP
2121    5630    0000    CMG010, 0
2122    5631    5600            JMP I   CMG000
2123                    /
2124    5632    0000    CMGTMP, 0
2125                    /
2126                    /       WRITE THE INDEX
2127                    /
2130    5633    0000    CMW000, 0
2131    5634    7200            CLA
2132    5635    4472            JMS I   WTX
2133    5636    6211            CDF     10
2134    5637    2653            ISZ I   PMODSW  /WAS INDEX MODIFIED?
2135    5640    5250            JMP     CMW010  /NO=RESET DF AND RETURN
2136    5641    1652            TAD I   PXLEN   /YES=GET X LEN IN BLOCKS
2137    5642    7112            CLL RTR
2140    5643    7012            RTR
2141    5644    7010            RAR
2142    5645    3125            DCA     CMPARM+3/STORE LENGTH
2143    5646    4422            JMS I   WRITE
2144    5647    0122            CMPARM
2145    5650    6201    CMW010, CDF     0
2146    5651    5633            JMP I   CMW000
2147                    /
2150    5652    4006    PXLEN,  4006
2151    5653    0040    PMODSW, MODSW           /FIELD 1 ADDR OF "MODIFIED" SW
2152                    /
2153                            EJECT
```

```
2154                    /
2155                    /       WAIT FOR INDEX
2156                    /
2157    5654    0000    WTX000, 0
2160    5655    1122            TAD     CMPARM
2161    5656    7700            SMA CLA
2162    5657    5654            JMP
2163    5660    1122            TAD     CMPA
2164    5661    4275            JMS     CHRDEV
2165    5662    6356            WTHUNI=1                /TO WAIT
2166    5663    4464            JMS I   HLP             /INSERT NEW HELP
2167    5664    6347            WTH
2170    5665    4473    WTX010, JMS I   DSP             /REFRESH DISPLAY
2171    5666    1454            TAD I   LSTCHR          /CHECK FOR RUBOUT
2172    5667    7650            SNA CLA
2173    5670    5460            JMP I   NEWH
2174    5671    1122            TAD     CMPARM          /IS I/O DONE?
2175    5672    7710            SPA CLA
2176    5673    5265            JMP     WTX010          /NO = REFRESH AGAIN
2177    5674    5654            JMP I   WTX000
2200                    /
2201                    /       CONVERT CMPARM TO CHARACTER FORM
2202                    /       DEVICE CODE
2203                    /
2204    5675    0000    CHRDEV, 0
2205    5676    3002            DCA     TMP1            /HOLD DEV CODE
2206    5677    1675            TAD I   CHRDEV          /WHERE TO
2207    5700    3013            DCA     AX3
2210    5701    2275            ISZ     CHRDEV
2211    5702    1002            TAD     TMP1
2212    5703    0102            AND     P10
2213    5704    7650            SNA CLA
2214    5705    1320            TAD     TLTMDK          /TAPE
2215    5706    1321            TAD     TDK             /DISK
2216    5707    3413            DCA I   AX3             /STORE IN BUFFER
2217    5710    1002            TAD     TMP1
2220    5711    0077            AND     P7
2221    5712    7106            CLL RTL
2222    5713    7006            RTL
2223    5714    7006            RTL
2224    5715    1322            TAD     P6043
2225    5716    3413            DCA I   AX3
2226    5717    5675            JMP I   CHRDEV          /ALL DONE
2227                    /
2230    5720    1011    TLTMDK, 1424-413
2231    5721    0413    TDK,    413
2232    5722    6043    P6043,  6043
2233                    /
2234                    EJECT
*
```

```
2235                    /
2236                    /       INSERT SPECIFIED HELP TEXT
2237                    /
2240    5723    0000    HLP000, 0
2241    5724    7300            CLA CLL
2242    5725    1723            TAD I   HLP000
2243    5726    3132            DCA     DSPRM1+2/HELP ADDRESS
2244    5727    2323            ISZ     HLP000
2245    5730    1532            TAD I   DSPRM1+2/GET HELP LENGTH
2246    5731    3133            DCA     DSPRM1+3/SET LENGTH
2247    5732    2132            ISZ     DSPRM1+2
2250    5733    1132            TAD     DSPRM1+2
2251    5734    1341            TAD     MPRMH   /COMPARE ADDRESSES
2252    5735    7620            SNL CLA         /DISPLAY DEFAULT UNIT?
2253    5736    7040            CMA             /YES
2254    5737    3056            DCA     DFUSW   /SET SWITCH
2255    5740    5723            JMP I   HLP000  /RETURN
2256                    /
2257    5741    1461    MPRMH,  -PRMH           /ALL HELPS BEFORE THIS POINT
2260                                            /GET DEFAULT UNIT DISPLAY
2261                    /
2262                    /       REFRESH THE DISPLAY
2263                    /
2264    5742    0000    DSP000, 0
2265    5743    4422            JMS I   WRITE   /REFRESH HELP TEXT
2266    5744    0130            DSPRM1
2267    5745    1053            TAD     NEWCHR
2270    5746    3011            DCA     AX1
2271    5747    1411            TAD I   AX1     /SCAN TO END OF INPUT
2272    5750    7640            SZA CLA
2273    5751    5347            JMP     .-2
2274    5752    1136            TAD     DSPRM2+2/START OF BUFFER
2275    5753    7041            CIA             /SUBTRACTED FROM
2276    5754    1011            TAD     AX1     /LAST CHAR ADDR
2277    5755    3137            DCA     DSPRM2+3/IS BUFFER LEN
2300    5756    4422            JMS I   WRITE   /REFRESH COMMAND
2301    5757    0134            DSPRM2
2302    5760    1056            TAD     DFUSW
2303    5761    7650            SNA CLA         /DISPLAY DEFAULT UNIT?
2304    5762    5742            JMP I   DSP000  /NO
2305    5763    4422            JMS I   WRITE
2306    5764    5766            DSPRM3
2307    5765    5742            JMP I   DSP000
2310                    /
2311                    /
2312    5766    0061    DSPRM3, 61
2313    5767    6201            CDF     0
2314    5770    6717            DSHLP
2315    5771    0014            14
2316                    /
2317                            EJECT
=
```

```
2320                    /
2321                            PAGE
2322                    /
2323                    /       CHECK FOR SPECIAL FUNCTION
2324                    /       COME HERE ONLY WHEN MAJOR = 0
2325                    /
2326    6000    7200    SPF000, CLA
2327    6001    1624            TAD I   PFNAME
2330    6002    1223            TAD     MDX
2331    6003    7640            SZA CLA
2332    6004    5621            JMP I   SPFRET  /NOT OURS
2333    6005    1625            TAD I   PFNAM1
2334    6006    1105            TAD     MBLNKS
2335    6007    7640            SZA CLA
2336    6010    5621            JMP I   SPFRET  /NOT DX
2337    6011    1453            TAD I   NEWCHR  /***************
2340    6012    1107            TAD     M215    /***************
2341    6013    7640            SZA CLA         /***************
2342    6014    5465            JMP I   INV     /***************
2343    6015    6212            CIF     10
2344    6016    4622            JMS I   PDX
2345    6017    4453            JMS I   CMW     /WRITE INDEX IF MODIFIED
2346    6020    5457            JMP I   CMI
2347                    /
2350    6021    4754    SPFRET, CMD020
2351    6022    0200    PDX,    DX
2352    6023    7350    MDX,    -430
2353    6024    7614    PFNAME, 7614
2354    6025    7615    PFNAM1, 7615
2355                    /
2356                            EJECT
=
```

```
2357                    /
2360                    /       TRANSLATION TABLE FROM MNEMONIC
2361                    /       DEVICE CODES TO INTERNAL REPRESENTATION
2362                    /
2363    6026  6054      DEVIL,  -1400-324       /FIRST TWO CHARS
2364    6027  0000              0               /3RD IS NUMERIC
2365    6030  0020              20              /LT CLASS
2366                    /
2367    6031  7065              -400-313
2370    6032  0000              0
2371    6033  0030              30              /DK CLASS
2372                    /
2373    6034  5054              -2400-324
2374    6035  7447              -331
2375    6036  0040              40              /TTY CODE
2376                    /
2377    6037  7055              -400-323
2400    6040  7460              -320
2401    6041  0060              60              /DISPLAY
2402                    /
2403    6042  7055              -400-323
2404    6043  7477              -301
2405    6044  0060              60              /ASCII DISPLAY CODE
2406                    /
2407    6045  7055              -400-323
2410    6046  7474              -304
2411    6047  0061              61              /DIAL DISPLAY CODE
2412                    /
2413    6050  0000              0               /END OF LIST
2414                    /
2415                    /       BACKSCAN DELIMITER CONTROL LIST
2416                    /
2417    6051  7540      DLIST,  -240            /SPACE
2420    6052  4230              CMI154
2421    6053  7503              -275            /EQUALS
2422    6054  4202              CMI152
2423    6055  7505              -273            /SEMICOLON
2424    6056  4200              CMI150
2425    6057  7524              -254            /COMMA
2426    6060  4232              CMI156
2427    6061  7506              -272            /COLON
2430    6062  4240              CMI160
2431    6063  7522              -256            /PERIOD
2432    6064  4235              CMI158
2433    6065  0000              0               /END OF LIST
2434                    /
2435                    /       MAJOR STATE HELP POINTERS
2436                    /
2437    6066  6077      STATEH, FUNH            /0:FUNCTION
2440    6067  6155              OUTH            /1:OUTPUT
2441    6070  6240              INH             /2:INPUT
2442    6071  6317              PRMH            /3:PARMS
2443                    /
2444                    /       INDEX ERROR HELP POINTERS
2445                    /
2446    6072  6607      ERRORH, EH0             /0:INVALID INDEX
2447    6073  6622              EH1             /1:NO FILE
2450    6074  6643              EH2             /2:DUPLICATE
2451    6075  6663              EH3             /3:TOO BIG
2452    6076  6706              EH4             /4:INDEX FULL
2453                    /
2454                            EJECT
```

```
2455                    /
2456                    /       HELP TEXT
2457                    /
2460    6077  0055      FUNH,   OUTH=.-1        /LENGTH
2461                    TEXT    "
2462    6100  4305
2462    6101  1624
2462    6102  0522
2462    6103  4006
2462    6104  2516
2462    6105  0324
2462    6106  1117
2462                    ENTER FUNCTION:
2463    6107  1672
2463
2464    6110  4347
2464    6111  4347
2464    6112  0405
2464    6113  2672
2464    6114  0625
2464    6115  1603
2464    6116  2411
2464    6117  1716
2464                            DEV:FUNCTION"
2465    6120  4345              4345
2466    6121  4545              4545
2467    6122  4724
2467    6123  1005
2467    6124  1640
2467    6125  2320
2467    6126  0103
2467    6127  0540
2467    6130  2417
2467    6131  4023
2467    6132  2005
2467    6133  0311
2467    6134  0631
2467    6135  4017
2467    6136  2524
2467    6137  2025
2467                    TEXT "  THEN SPACE TO SPECIFY OUTPUT,
2470    6140  2454
2470    6141  4347
2470    6142  1722
2470    6143  4075
2470    6144  4024
2470    6145  1740
2470    6146  2320
2470    6147  0503
2470    6150  1106
2470    6151  3140
2470    6152  1116
2470    6153  2025
2470    6154  2456
2470                            OR = TO SPECIFY INPUT."
2471                    /
2472                            EJECT
"
```

```
2473                            /
2474      6155  0062    OUTH,   INH=.-1
2475                            TEXT    "
2476      6156  4305
2476      6157  1624
2476      6160  0522
2476      6161  4017
2476      6162  2524
2476      6163  2025
2476                            ENTER OUTPUT:
2477      6164  2472
2477
2500      6165  4347
2500      6166  4347
2500      6167  0405
2500      6170  2672
2500      6171  0611
2500      6172  1416
2500      6173  0115
2500      6174  5605
2500      6175  3024
2500      6176  5400
2500                                    DEV:FILNAM.EXT,"
2501      6177  4345                    4345
2502      6200  4545                    4545
2503      6201  4727
2503      6202  1005
2503      6203  1640
2503      6204  0114
2503      6205  1440
2503      6206  1725
2503      6207  2420
2503      6210  2524
2503      6211  4010
2503      6212  0123
2503      6213  4002
2503      6214  0505
2503      6215  1640
2503      6216  2320
2503      6217  0503
2503      6220  1106
2503      6221  1105
2503                            TEXT "  WHEN ALL OUTPUT HAS BEEN SPECIFIED,
2504      6222  0454
2504      6223  4347
2504      6224  2431
2504      6225  2005
2504      6226  4075
2504      6227  4024
2504      6230  1740
2504      6231  2320
2504      6232  0503
2504      6233  1106
2504      6234  3140
2504      6235  1116
2504      6236  2025
2504      6237  2456
2504                                    TYPE # TO SPECIFY INPUT,"
2505                            /
2506                                    EJECT
```

```
2507                        /
2510    6240    0056        INH,    PRMH=.-1
2511                        TEXT    "
2512    6241    4305
2512    6242    1624
2512    6243    0522
2512    6244    4011
2512    6245    1620
2512    6246    2524
2512                        ENTER INPUT:
2513    6247    7243
2513
2514    6250    4743
2514    6251    4704
2514    6252    0526
2514    6253    7206
2514    6254    1114
2514    6255    1601
2514    6256    1556
2514    6257    0530
2514    6260    2454
2514                                DEV:FILNAM.EXT,"
2515    6261    4345                4345
2516    6262    4545                4545
2517    6263    4773
2517    6264    4002
2517    6265    0507
2517    6266    1116
2517    6267    2340
2517    6270    2001
2517    6271    2201
2517    6272    1505
2517    6273    2405
2517    6274    2240
2517    6275    1116
2517    6276    2025
2517                        TEXT "  ; BEGINS PARAMETER INPUT,
2520    6277    2454
2520    6300    4347
2520    6301    1722
2520    6302    4022
2520    6303    0524
2520    6304    2522
2520    6305    1640
2520    6306    0205
2520    6307    0711
2520    6310    1623
2520    6311    4005
2520    6312    3005
2520    6313    0325
2520    6314    2411
2520    6315    1716
2520    6316    5800
2520                                OR RETURN BEGINS EXECUTION."
2521                        /
2522                                EJECT
=
```

```
2523                            /
2524        6317    0027        PRMH,   WTH=.-1
2525                            TEXT    "
2526        6320    4305
2526        6321    1624
2526        6322    0522
2526        6323    4020
2526        6324    0122
2526        6325    0115
2526        6326    0524
2526        6327    0522
2526        6330    4023
2526        6331    2422
2526        6332    1116
2526                        ENTER PARAMETER STRING,
2527        6333    0754
2527        6334    4347
2527        6335    0516
2527        6336    0411
2527        6337    1607
2527        6340    4027
2527        6341    1124
2527        6342    1040
2527        6343    2205
2527        6344    2425
2527        6345    2216
2527        6346    5600
2527                            ENDING WITH RETURN."
2530                        /
2531                            EJECT
```

```
2532                        /
2533    6347  0042  WTH,    INVH=.-1
2534    6350  4547          4547
2535    6351  2701
2535    6352  1124
2535    6353  1116
2535    6354  0740
2535    6355  0617
2535    6356  2240
2535                  TEXT  "WAITING FOR "
2536    6357  1424
2536                  WTHUNI, TEXT  "LT0
2537    6360  6043
2537
2540    6361  4743
2540    6362  4720
2540    6363  1405
2540    6364  0123
2540    6365  0540
2540    6366  2205
2540    6367  0104
2540    6370  3140
2540    6371  1124
2540                        PLEASE READY IT,
2541    6372  5443
2541    6373  4717
2541    6374  2240
2541    6375  2431
2541    6376  2005
2541    6377  4003
2541    6400  1716
2541    6401  2422
2541    6402  1714
2541    6403  4003
2541    6404  4024
2541    6405  1740
2541    6406  2205
2541    6407  2324
2541    6410  0122
2541    6411  2456
2541                        OR TYPE CONTROL C TO RESTART."
2542                  /
2543                        EJECT
=
```

```
2544                        /
2545        6412    0036    INVH,   LNGH=.-1
2546        6413    4547            4547
2547        6414    1116
2547        6415    2601
2547        6416    1411
2547        6417    0440
2547        6420    0310
2547        6421    0122
2547        6422    0103
2547        6423    2405
2547                        TEXT    "INVALID CHARACTER,
2550        6424    2254
2550        6425    4347
2550        6426    1722
2550        6427    4011
2550        6430    1520
2550        6431    2217
2550        6432    2005
2550        6433    2240
2550        6434    2331
2550        6435    1624
2550        6436    0130
2550                            OR IMPROPER SYNTAX.
2551        6437    5643
2551
2552        6440    4743
2552        6441    4720
2552        6442    1405
2552        6443    0123
2552        6444    0540
2552        6445    0317
2552        6446    2222
2552        6447    0503
2552        6450    2456
2552                            PLEASE CORRECT."
2553                        /
2554                            EJECT
=
```

```
2555                        /
2556      6451  0026  LNGH,   NOFH=.-1
2557      6452  4547        4547
2560      6453  2417
2560      6454  1740
2560      6455  1501
2560      6456  1631
2560      6457  4003
2560      6460  1001
2560      6461  2201
2560      6462  0324
2560      6463  0522
2560                  TEXT    "TOO MANY CHARACTERS
2561      6464  2343
2561      6465  4711
2561      6466  1640
2561      6467  2001
2561      6470  2201
2561      6471  1505
2561      6472  2405
2561      6473  2240
2561      6474  2324
2561      6475  2211
2561      6476  1607
2561      6477  5600
2561                        IN PARAMETER STRING."
2562                        /
2563      6500  0014  NOFH,   OFDH=.-1
2564      6501  4547        4547
2565      6502  1617
2565      6503  4015
2565      6504  1722
2565      6505  0540
2565      6506  0611
2565      6507  1405
2565      6510  2340
2565      6511  0114
2565      6512  1417
2565      6513  2705
2565      6514  0456
2565                  TEXT    "NO MORE FILES ALLOWED."
2566                  /
2567                        EJECT
=
```

```
2570                        /
2571        6515  0027  OFDH,   NOWAP=.-1
2572        6516  4547        4547
2573        6517  1716
2573        6520  1431
2573        6521  4017
2573        6522  1605
2573        6523  4017
2573        6524  2524
2573        6525  2025
2573        6526  2440
2573        6527  0611
2573                    TEXT    "ONLY ONE OUTPUT FILE
2574        6530  1405
2574        6531  4347
2574        6532  0114
2574        6533  1417
2574        6534  2705
2574        6535  0440
2574        6536  1716
2574        6537  4001
2574        6540  1631
2574        6541  4004
2574        6542  0526
2574        6543  1103
2574        6544  0556
2574                        ALLOWED ON ANY DEVICE."
2575                    /
2576                        EJECT
```

```
2577                    /
2600                    /       SPECIAL MESSAGE
2601                    /
2602    6545    0061    NOWAP,  61
2603    6546    6201            CDF     0
2604    6547    6551            .+2
2605    6550    0036            EH0=.-1
2606    6551    4545            4545
2607    6552    4547            4547
2610    6553    2516
2610    6554    0102
2610    6555    1405
2610    6556    4024
2610    6557    1740
2610    6560    0114
2610    6561    1417
2610    6562    0301
2610    6563    2405
2610    6564    4027
2610    6565    1722
2610    6566    1311
2610    6567    1607
2610    6570    4001
2610    6571    2205
2610    6572    0123
2610                    TEXT    "UNABLE TO ALLOCATE WORKING AREAS.
2611    6573    5643
2611    6574    4703
2611    6575    1716
2611    6576    2422
2611    6577    1714
2611    6600    4003
2611    6601    4024
2611    6602    1740
2611    6603    2205
2611    6604    2324
2611    6605    0122
2611    6606    2456
2611                    CONTROL C TO RESTART."
2612                    /
2613                    EJECT
```

```
2614                                /
2615                                /       INDEX ERROR MESSAGES
2616                                /
2617    6607    6012    EH0,        EH1-.,-1
2620    6610    4647                4647
2621    6611    1617
2621    6612    2440
2621    6613    0116
2621    6614    4014
2621    6615    0420
2621    6616    4026
2621    6617    1714
2621    6620    2515
2621    6621    0556
2621                    TEXT        "NOT AN LDP VOLUME."
2622    6622    6620    EH1,        EH2-.,-1
2623    6623    4647                4647
2624    6624    2205
2624    6625    2125
2624    6626    0523
2624    6627    2405
2624    6630    0440
2624    6631    0511
2624    6632    1405
2624    6633    4004
2624    6634    1705
2624    6635    2040
2624    6636    1617
2624    6637    2440
2624    6640    0530
2624    6641    1123
2624    6642    2456
2624                    TEXT        "REQUESTED FILE DOES NOT EXIST."
2625                                /
2626                                .EJECT
```

```
2627                        /
2630      6643  0017  EH2,    EH3=.-1
2631      6644  4547          4547
2632      6645  1725
2632      6646  2420
2632      6647  2524
2632      6650  4006
2632      6651  1114
2632      6652  0540
2632      6653  0114
2632      6654  2205
2632      6655  0104
2632      6656  3140
2632      6657  0530
2632      6660  1123
2632      6661  2423
2632      6662  5600
2632                  TEXT    "OUTPUT FILE ALREADY EXISTS."
2633      6663  0022  EH3,    EH4=.-1
2634      6664  4547          4547
2635      6665  1116
2635      6666  2325
2635      6667  0606
2635      6670  1103
2635      6671  1105
2635      6672  1624
2635      6673  4023
2635      6674  2001
2635      6675  0305
2635      6676  4024
2635      6677  1740
2635      6700  0322
2635      6701  0501
2635      6702  2405
2635      6703  4006
2635      6704  1114
2635      6705  0556
2635                  TEXT    "INSUFFICIENT SPACE TO CREATE FILE."
2636      6706  0010  EH4,    EH5=.-1
2637      6707  4547          4547
2640      6710  1116
2640      6711  0405
2640      6712  3040
2640      6713  1123
2640      6714  4006
2640      6715  2514
2640      6716  1456
2640                  TEXT    "INDEX IS FULL."
2641                  EH5=    .
2642                  /
2643                          EJECT
=
```

```
2644                            /
2645                            /       DEFAULT UNIT
2646                            /
2647    6717    4545    DSNLP,  4545
2648    6720    4545            4545
2651    6721    4547            4547
2652    6722    0405
2652    6723    0601
2652    6724    2514
2652    6725    2440
2652    6726    0405
2652    6727    2649
2652    6730    7540
2652                    TEXT    "DEFAULT DEV = "
2653    6731    1424
2653    6732    6060
2653                    DEFDEV, TEXT    "LTC"
2654                            /
2655                            /
2656                            /       INPUT BUFFER (132 CHARACTERS)
2657                            /
2660    6733    0212    DSCMND, 212
2661    6734    0212            212
2662    6735    0212            212
2663    6736    0212            212
2664    6737    0212            212
2665    6740    0212            212
2666    6741    0212            212
2667    6742    0212            212             /THAT'S 8
2670    6743    0212            212
2671    6744    0212            212
2672    6745    0212            212
2673    6746    0212            212
2674    6747    0212            212
2675    6750    0212            212
2676    6751    0212            212             /THAT'S 15
2677    6752    0000    CMND,   0
2700                            /
2701                            ASMIFM  7600-300-CMND
2702                    ERROR           /BUFFER OVERLAPS PAGE 37
2703                            /
2704                            EJECT
```

```
2705                    /
2706                            PAGE
2707                    /
2710                    /       INITIALIZATION ROUTINE TO LOAD PAGE 0
2711                    /
2712    7000    1222    CMPMOV, TAD     PTHING
2713    7001    3010            DCA     AX0
2714    7002    1221            TAD     MTHING
2715    7003    3002            DCA     TMP1
2716    7004    1220            TAD     CMVADD
2717    7005    3011            DCA     AX1
2720    7006    6201            CDF     0
2721    7007    1410            TAD I   AX0
2722    7010    3411            DCA I   AX1
2723    7011    2002            ISZ     TMP1
2724    7012    5207            JMP     .-3
2725    7013    1512            TAD I   PHICDF   /GET HIGH CDF
2726    7014    3113            DCA     LSTCDF   /FOR THIS MACHINE
2727                    /
2730                    /       SETUP COMMAND INPUT FDB
2731                    /
2732    7015    4471            JMS I   MVC
2733    7016    7200            CLA             /FORGET FDB ADDR
2734    7017    5457            JMP I   CMI     /BEGIN IN ERNEST
2735                    /
2736                    /       THESE THINGS GO IN PAGE ZERO
2737                    /
2740    7020    0046    CMVADD, P0LOC=1
2741    7021    7705    MTHING, LTHING
2742    7022    7022    PTHING, .
2743                            ADJ=.-P0LOC
2744                    /
2745                    /       STATE INDICATORS
2746                    /
2747                    MAJOR=  .-ADJ
2750    7023    0004            4
2751                    MINOR=  .-ADJ
2752    7024    0003            3
2753                    FILCNT= .-ADJ
2754    7025    7777            -1
2755                    UNIT=   .-ADJ
2756    7026    0040            40              /TTY
2757                    NEWCHR= .-ADJ
2760    7027    6752            CMND
2761                    LSTCHR= .-ADJ
2762    7030    6751            CMND-1
2763                    LSTDEL= .-ADJ
2764    7031    6751            CMND-1
2765                    DFUSW=  .-ADJ
2766    7032    7777            -1              /ZERO TO SUPPRESS
2767                                            /DEFAULT UNIT DISPLAY
2770                    /
2771                            EJECT
-
```

```
2772                        /
2773                        /       IMPORTANT ROUTINE ADDRESSES AND CONSTANTS
2774                        /
2775                        CMI=    .=ADJ
2776    7033  4003                  CMI000
2777                        NEWH=   .=ADJ
3000    7034  4020                  CMI100
3001                        DOCHR=  .=ADJ
3002    7035  4400                  CMI200
3003                        CMG=    .=ADJ
3004    7036  5600                  CMG000
3005                        CMW=    .=ADJ
3006    7037  5533                  CMW000
3007                        HLP=    .=ADJ
3010    7040  5723                  HLP000
3011                        INV=    .=ADJ
3012    7041  4550                  CMI250
3013                        DSPEH=  .=ADJ
3014    7042  4552                  CMI260
3015                        UOK=    .=ADJ
3016    7043  5320                  UOK000
3017                        NXTOU=  .=ADJ
3020    7044  4542                  NXU000
3021                        MVC=    .=ADJ
3022    7045  5400                  MVC000
3023                        WTX=    .=ADJ
3024    7046  5654                  WTX000
3025                        DSP=    .=ADJ
3026    7047  5742                  DSP000
3027                        MJSC=   .=ADJ
3030    7050  4720                  CMD010
3031                        GDEV=   .=ADJ
3032    7051  5221                  CMD505
3033                        PXSERV= .=ADJ
3034    7052  0210                  XSERV
3035                        /
3036                        P7=     .=ADJ
3037    7053  0007                  7
3040                        P77=    .=ADJ
3041    7054  0077                  77
3042                        P40=    .=ADJ
3043    7055  0040                  40
3044                        P10=    .=ADJ
3045    7056  0010                  10
3046                        M10=    .=ADJ
3047    7057  7770                  -10
3050                        M20=    .=ADJ
3051    7060  7760                  -20
3052                        MBLNKS= .=ADJ
3053    7061  3740                  -4040
3054                        MSPACE= .=ADJ
3055    7062  7540                  -240
3056                        M215=   .=ADJ
3057    7063  7563                  -215
3060                        MCOMMA= .=ADJ
3061    7064  7524                  -254
3062                        PLFAUX= .=ADJ
3063    7065  7621                  7621
3064                        PHICDF= .=ADJ
3065    7066  7744                  7744
3066                        LSTCDF= .=ADJ
3067    7067  6211                  CDF     10
```

```
3070                    /
=


3071                            EJECT
=
3072                    /
3073                    /       PARAMETER LISTS
3074                    /
3075                    CMREAD= .=ADJ
3076        7070  0040          40
3077        7071  6201          CDF     0
3100        7072  6752          CMND
3101        7073  0300          300
3102        7074  0000          0
3103        7075  0000          0
3104                    /       0                       /NEVER QUEUED
3105                    /
3106                    CMPARM= .=ADJ
3107        7076  0000          0                       /CURRENT UNIT
3110        7077  6211          CDF     10
3111        7100  4000          4000
3112        7101  4000          4000
3113        7102  0000          0
3114        7103  0000          0
3115                    /       0                       /NEVER QUEUED
3116                    /
3117                    DSPRM1= .=ADJ                   /HELP DISPLAY
3120        7104  0061          61
3121        7105  6201          CDF     0
3122        7106  6100          FUNH+1
3123        7107  0055          OUTH=FUNH=1
3124                    /
3125                    DSPRM2= .=ADJ                   /INPUT DISPLAY
3126        7110  0060          60
3127        7111  6201          CDF     0
3130        7112  6733          DSCMND
3131        7113  0305          305
3132                    /
3133                    LTHING= PTHING=.=1
3134                            ASMIFM  140=.=ADJ
3135                    ERROR           /TOO MUCH IN PAGE 0
3136                    /
3137                            ASMIFN  .87400=7000
3140                    WARNING         /NUMBER OF BLOCKS HAS CHANGED
3141                    /
3142                    /
3143                    /
3144                            ASMIFN  CREF
3145                            LISTAPE CREF
3146                    /
3147                    /
3150                    /       CM02
```

```
NO ERRORS
ADJ     6754
AX0     0010
AX1     0011
AX2     0012
AX3     0013
AX4     0014
AX5     0015
CAMC9   4521
CMRDEV  5675
CMD010  4720
CMD020  4754
CMD030  4756
CMD050  4763
CMD060  4765
CMD070  5000
CMD100  5010
CMD200  5017
CMD205  5025
CMD210  5042
CMD212  5047
CMD214  5063
CMD220  5104
CMD230  5107
CMD240  5116
CMD300  5125
CMD400  5131
CMD410  5143
CMD500  5200
CMD502  5215
CMD505  5221
CMD510  5237
CMD520  5246
CMD530  5250
CMD540  5257
CMD550  5266
CMD560  5307
CMD570  5311
CMD580  5313
CMD600  5351
CMG     0062
CMGTMP  5632
CMG000  5600
CMG010  5630
CMI     0057
CMINIT  4000
CMI000  4003
CMI020  4111
CMI050  4016
CMI100  4020
CMI110  4027
CMI120  4051
CMI130  4061
CMI140  4071
CMI142  4074
CMI145  4106
CMI150  4200
CMI152  4202
CMI154  4230
CMI156  4232
CMI158  4235
CMI160  4240
CMI180  4244
CMI200  4400
-

CMI210  4405
CMI215  4410
CMI218  4446
CMI220  4457
CMI230  4464
CMI240  4471
CMI250  4500
CMI260  4502
CMI300  4512
CMI900  4600
CMI905  4611
CMI910  4647
CMI920  4655
CMI930  4666
CMI950  4675
CMI970  4701
CMI980  4710
CMND    6752
CMPARM  0122
CMPMOV  7000
CMREAD  0114
CMVADD  7020
CMN     0063
CMN000  5633
CMN010  5650
COMMEQ  5124
CREF    0014
CZMCA   4520
CZMC0   4522
DEFDEV  6731
DELS    4526
DEVIL   6026
DFUSN   0056
DISK    0060
DLIST   6051
DOCMR   0061
DOEQ    4712
DSCMND  6733
DSHLP   6717
DSP     0073
DSPEM   0066
DSPRM1  0130
DSPRM2  0134
DSPRM3  5766
DSP000  5742
DX      0200
EM0     6607
EM1     6622
EM2     6643
EM3     6663
EM4     6706
EM5     6717
ERLST   5007
ERRORM  6072
EXIT    0025
FILCNT  0051
FOUR    7307
FUNM    6077
GDEV    0075
HBLNKS  5517
HLP     0064
HLP000  5723
HOLDU   0045
-

INM     6240
INV     0065
INVM    6412
LNGM    6451
LSTCDF  0113
LSTCHR  0054
LSTDEL  0055
LTHING  7705
MAJOR   0047
MBLNKS  0105
MCOMMA  0110
MCZ     4517
MDELL   4524
MDSKS   4561
MDX     6023
MINOR   0050
MJSC    0074
MLCMND  4133
MODSW   0040
MONE    7240
MPRMM   5741
MSPACE  0106
MTAB    4515
MTHING  7021
MTHREE  7346
MTWO    7344
MVC     0071
MVC000  5400
MVC010  5441
MVC020  5453
MVC030  5462
MVC035  5466
MVC040  5470
MVC100  5522
MVC110  5553
MVC120  5557
MVC200  5561
MVC300  5564
M10     0103
M20     0104
M215    0107
M270    5316
M40     4714
M5      5515
M6      4761
NEWCHR  0053
NEWM    0060
NOFM    6500
NOWAP   6545
NXTOU   0070
NXU000  4542
NXU010  4543
NXU020  4556
OFDM    6515
```

```
ONE     7201
OUTH    6155
PCMND   4132
PDELS   4525
PDEVL   5317
PDLST   4135
PDX     6022
PFNAME  6024
PFNAM1  6025
=


PHICDF  0112
PLDLD   4717
PLFAUX  0111
PMODSW  5653
PREFLU  0044
PRMH    6317
PSTH    4134
PTHING  7022
PXLEN   5652
PXSERV  0076
P0LOC   0047
P10     0102
P12     5347
P20     4562
P215    4131
P240    4516
P40     0101
P400    5516
P5600   5571
P6043   5722
P7      0077
P7611   5514
P7612   4716
P7614   5572
P7616   5513
P7624   5350
P77     0100
P7757   4715
READ    0021
SCNCTU  4713
SETINT  0020
SIX     7327
SPFC    4762
SPFRET  6021
SPF000  6000
SPMCOM  5123
STATEH  6066
TDK     5721
TERM    4523
THREE   7325
TIN     5521
TLTMDK  5720
TMP1    0002
TMP2    0003
TMP3    0004
TMP4    0005
TMP5    0006
TMP6    0007
TPTB    5520
TWO     7305
UNIT    0052
UOK     0067
UOK000  5320
UOK010  5331
UOK020  5345
WAIT    0023
WATRY   0046
WRITE   0022
WTH     6347
WTHUNI  6357
WTX     0072
WTX000  5654
WTX010  5665
=


XSERV   0210
=

=
```

```
0000            *20
0001            /
0002            /       LDP SYSTEM JOB CONTROL
0003            /       INDEX SERVICE ROUTINES
0004            /
0005            /COPYRIGHT 1970; DIGITAL EQUIPMENT CORP.
0006            /                MAYNARD, MASS. 01754
0007            /
0010            /       VERSION 01 DECEMBER 1, 1970
0011            /               JUD LEONARD
0012            /
0013            /       CALLING SEQUENCE:
0014            /
0015            /       TAD     FUNCTION        /SEE BELOW
0016            /       CDF                     /THIS FIELD
0017            /       CIF                     /XSERV FIELD
0020            /       JMS     XSERV
0021            /       LIST                    /ADDR OF NAME, ETC
0022            /       ERRTN                   /ERROR RETURN ADDRESS
0023            /
0024            /       FUNCTION IS DETERMINED BY AC BITS 9-11:
0025            /       0: LOOKUP
0026            /       1: CREATE
0027            /       2: DELETE
0030            /       3: GET HA
0031            /       4: RENAME       /NOT IMPLEMENTED
0032            /       5: TRUNCATE     /NOT IMPLEMENTED
0033            /       6: ALIAS        /NOT IMPLEMENTED
0034            /       7: IDENTIFY
0035            /
0036            /       LIST HAS THE FOLLOWING FORMAT:
0037            /
0040            /       FILNAM  (3 WORDS)
0041            /       .EXT    (2 WORDS)
0042            /       AUX
0043            /       START BLOCK
0044            /       LENGTH IN BLOCKS
0045            /
0046                    CREF=14         /LISTAPE UNIT
0047            /
0050                    PMODE
0051                    FIELD   1
0052                    *40
0053            /
0054                    XSF=10          /THIS FIELD
0055                    XLF=0           /LIST FIELD
0056                    XBF=10          /BUFFER FIELD
0057            /
0060                    TMP1=2
0061                    TMP2=3
0062                    TMP3=4
0063                    TMP4=5
0064                    TMP5=6
0065                    TMP6=7
0066                    AX0=10
0067                    AX1=11
0070                    AX2=12
0071            /
0072                    EJECT
```

```
0073                    /
0074                    /
0075                    /       PAGE 0 VARIABLES
0076                    /
0077                    /
0100                    DLIST=  7614    /DISPLAY LIST AREA IN FIELD 0
0101                    /
0102                    XT1=    TMP1            /MONITOR TEMPS
0103                    XT2=    TMP2
0104                    READ=   21
0105                    WRITE=  22
0106                    /
0107    0040    0000    MODSW,  0               /=1 IF INDEX MODIFIED
0110                    /               CMI MUST BE INFORMED IF
0111                    /               THIS IS NOT LOCATION 40
0112    0041    0000    XPOINT, 0               /THIS ENTRY
0113    0042    0000    XPREP,  0               /PRECEDING ENTRY
0114    0043    0000    XNXEP,  0               /NEXT ENTRY
0115    0044    0000    XECNT,  0               /ENTRY COUNTER
0116    0045    0000    XLEN,   0               /NO OF ENTRIES
0117    0046    0000    XERCOD, 0               /ERROR CODE
0120    0047    0000    XLIST,  0               /LIST ADDR
0121    0050    0000    XFLEN,  0               /MINUS LEN OF REQUEST
0122    0051    0000    XNWASW, 0
0123    0052    0003    DXFRST, 3
0124    0053    0000    DXLAST, 0
0125                    /
0126                    /
0127    0054    4040    HBLNKS, 4040            /HALFWORD BLANKS
0130    0055    3740    MBLNKS, =4040
0131    0056    4700    TABNUL, 4700
0132    0057    4345    TCRLF,  4345
0133    0060    6201    KCDF,   CDF
0134    0061    0005    P5,     5
0135    0062    0007    P7,     7
0136    0063    0010    P10,    10
0137    0064    7770    M10,    =10
0140    0065    0020    P20,    20
0141    0066    7760    M20,    =20
0142    0067    0030    P30,    30
0143    0070    7750    M30,    =30
0144    0071    7740    M40,    =40
0145    0072    0077    P77,    77
0146    0073    0100    P100,   100
0147    0074    0240    P240,   240
0150    0075    7774    M4,     =4
0151    0076    7773    M5,     =5
0152    0077    7772    M6,     =6
0153    0100    7400    M400,   =400
0154                    /
0155    0101    0215    CARRET, 215
0156    0102    0212    LINFED, 212
0157                    /
0160                    EJECT
=
```

```
0000            *80
0001            /
0002            /       LDP SYSTEM JOB CONTROL
0003            /       INDEX SERVICE ROUTINES
0004            /
0005            /COPYRIGHT 1970; DIGITAL EQUIPMENT CORP.
0006            /                MAYNARD, MASS. 01754
0007            /
0010            /       VERSION 01 DECEMBER 1, 1970
0011            /               JUD LEONARD
0012            /
0013            /       CALLING SEQUENCE:
0014            /
0015            /       TAD     FUNCTION        /SEE BELOW
0016            /       CDF                     /THIS FIELD
0017            /       CIF                     /XSERV FIELD
0020            /       JMS     XSERV
0021            /       LIST                    /ADDR OF NAME, ETC
0022            /       ERRTN                   /ERROR RETURN ADDRESS
0023            /
0024            /       FUNCTION IS DETERMINED BY AC BITS 9-11:
0025            /       0: LOOKUP
0026            /       1: CREATE
0027            /       2: DELETE
0030            /       3: GET WA
0031            /       4: RENAME       /NOT IMPLEMENTED
0032            /       5: TRUNCATE     /NOT IMPLEMENTED
0033            /       6: ALIAS        /NOT IMPLEMENTED
0034            /       7: IDENTIFY
0035            /
0036            /       LIST HAS THE FOLLOWING FORMAT:
0037            /
0040            /       FILNAM  (3 WORDS)
0041            /       .EXT    (2 WORDS)
0042            /       AUX
0043            /       START BLOCK
0044            /       LENGTH IN BLOCKS
0045            /
0046                    CREF=14         /LISTAPE UNIT
0047            /
0050                    PMODE
0051                    FIELD   1
0052                    *40
0053            /
0054                    XBF=10          /THIS FIELD
0055                    XLF=0           /LIST FIELD
0056                    XBF=10          /BUFFER FIELD
0057            /
0060                    TMP1=2
0061                    TMP2=3
0062                    TMP3=4
0063                    TMP4=5
0064                    TMP5=6
0065                    TMP6=7
0066                    AX0=10
0067                    AX1=11
0070                    AX2=12
0071            /
0072                    EJECT
```

```
0073                    /
0074                    /
0075                    /       PAGE 0 VARIABLES
0076                    /
0077                    /
0100                    DLIST=  7614    /DISPLAY LIST AREA IN FIELD 0
0101                    /
0102                    XT1=    TMP1            /MONITOR TEMPS
0103                    XT2=    TMP2
0104                    READ=   21
0105                    WRITE=  22
0106                    /
0107    0040    0000    MODSW,  0               /=1 IF INDEX MODIFIED
0110                    /               CMI MUST BE INFORMED IF
0111                    /               THIS IS NOT LOCATION 40
0112    0041    0000    XPOINT, 0               /THIS ENTRY
0113    0042    0000    XPREP,  0               /PRECEDING ENTRY
0114    0043    0000    XNXEP,  0               /NEXT ENTRY
0115    0044    0000    XECNT,  0               /ENTRY COUNTER
0116    0045    0000    XLEN,   0               /NO OF ENTRIES
0117    0046    0000    XERCOD, 0               /ERROR CODE
0120    0047    0000    XLIST,  0               /LIST ADDR
0121    0050    0000    XFLEN,  0               /MINUS LEN OF REQUEST
0122    0051    0000    XNWASW, 0
0123    0052    0003    DXFRST, 3
0124    0053    0000    DXLAST, 0
0125                    /
0126                    /
0127    0054    4040    HBLNKS, 4040            /HALFWORD BLANKS
0130    0055    3740    MBLNKS, =4040
0131    0056    4700    TABNUL, 4700
0132    0057    4345    TCRLF,  4345
0133    0060    6201    KCDF,   CDF
0134    0061    0005    P5,     5
0135    0062    0007    P7,     7
0136    0063    0010    P10,    10
0137    0064    7770    M10,    =10
0140    0065    0020    P20,    20
0141    0066    7760    M20,    =20
0142    0067    0030    P30,    30
0143    0070    7750    M30,    =30
0144    0071    7740    M40,    =40
0145    0072    0077    P77,    77
0146    0073    0100    P100,   100
0147    0074    0240    P240,   240
0150    0075    7774    M4,     =4
0151    0076    7773    M5,     =5
0152    0077    7772    M6,     =6
0153    0100    7400    M400,   =400
0154                    /
0155    0101    0215    CARRET, 215
0156    0102    0212    LINFED, 212
0157                    /
0160                    EJECT
=
```

```
0161                    /
0162                    /       ERROR RETURNS
0163                    /
0164    0103  2046  XERR7,  ISZ     XERCOD  /7:IDENTIFY NOT IN WA
0165    0104  2046  XERR6,  ISZ     XERCOD  /6:ATTEMPTED INFINITE REPLACE
0166    0105  2046  XERR5,  ISZ     XERCOD  /5:ATTEMPT TO TRUNCATE AN ALIAS
0167    0106  2046  XERR4,  ISZ     XERCOD  /4:INDEX FULL - CREATE,
0170                    /                       REPLACE, TRUNCATE, OR ALIAS
0171    0107  2046  XERR3,  ISZ     XERCOD  /3:INSUFFICIENT SPACE -
0172                    /                       CREATE OR REPLACE
0173    0110  2046  XERR2,  ISZ     XERCOD  /2:NAME DUPLICATION -
0174                    /                       CREATE OR ALIAS
0175    0111  2046  XERR1,  ISZ     XERCOD  /1:NO SUCH NAME - LOOKUP,
0176                    /                       TRUNCATE, RENAME, OR ALIAS
0177                    /
0200    0112  5513  XERR0,  JMP I   .+1      /0:INVALID INDEX
0201    0113  0250           XERRET
0202                    /
0203    0114  0256  SRET,   XSRET
0204    0115  0420  VALID,  XVALID
0205    0116  0261  FIND,   XFIND
0206    0117  0725  DZERO,  XDZERO
0207    0120  1307  MAKWA,  XMAKWA
0210    0121  1340  MCOPY,  XMCOPY
0211    0122  1017  PREB,   XPREB
0212    0123  1031  NXEB,   XNXEB
0213    0124  1061  PAND,   XPAND
0214    0125  0600  DELET,  XDELET
0215    0126  0737  PBLNK,  XPBLNK
0216    0127  1000  ALCHK,  XALCHK
0217    0130  0400  LIMIT,  XLIMIT
0220    0131  1400  LNCLC,  XLNCLC
0221    0132  1046  LSTCHK, XLCHK
0222    0133  0341  FULL,   XFULL
0223                    XBUFFR= 4000
0224    0134  4000  XBUF,   XBUFFR
0225                    PXBFR=  XBUF
0226                    /
0227    0135  3206  PRPLY,  DXRPLY-1
0230    0136  7614  PLIST,  DLIST            /DISPLAY LIST
0231                    /
0232                    /
0233                    /
0234                    /
0235                    /       MICRO-PROGRAMMED AC CONSTANTS
0236                    /
0237                    ONE=    CLA IAC
0240                    TWO=    CLA CLL IAC RAL
0241                    THREE=  CLA STL IAC RAL
0242                    FOUR=   CLA CLL IAC RTL
0243                    SIX=    CLA STL IAC RTL
0244                    MONE=   CLA CMA
0245                    MTWO=   CLA CLL CMA RAL
0246                    MTHREE= CLA CLL CMA RTL
0247                    AC4000= CLA STL RAR
0250                    AC2000= CLA STL RTR
0251                    AC6000= CLA STL IAC RTR
0252                    /
0253                            EJECT
```

```
0254                    /
0255                            PAGE
0256                    /
0257                    /       ENTRY POINT FOR DISPLAY INDEX
0260                    /
0261    0200    0000    DENT,   0
0262    0201    7305            TWO
0263    0202    6214            RDF                     /GET CALLERS FIELD
0264    0203    1060            TAD     KCDF            /MAKE CIF CDF
0265    0204    3257            DCA     XSRMF
0266    0205    1200            TAD     DENT
0267    0206    3210            DCA     XSERV
0270    0207    5643            JMP I   PDX             /GO DISP INDEX
0271                    /
0272                    /       GENERAL SERVICES ENTRY POINT
0273                    /
0274    0210    0000    XSERV,  0
0275    0211    3244            DCA     XFUN            /HOLD FUNCTION
0276    0212    3046            DCA     XERCOD          /CLEAR ERROR
0277    0213    6214            RDF                     /CALLERS FIELD
0300    0214    1060            TAD     KCDF            /BUILD CDF
0301    0215    3245            DCA     XSCDF+1
0302    0216    7305            TWO
0303    0217    1245            TAD     XSCDF+1 /BUILD CIF CDF
0304    0220    3257            DCA     XSRMF
0305    0221    1610            TAD I   XSERV           /LIST ADDR
0306    0222    3047            DCA     XLIST
0307    0223    2210            ISZ     XSERV
0310    0224    6211            CDF     XSF
0311    0225    1244            TAD     XFUN            /GET FUNCTION
0312    0226    0062            AND     P7              /BITS 9-11
0313    0227    1232            TAD     XSJMP           /MODIFY JUMP
0314    0230    3231            DCA     .+1
0315    0231    5400            JMP I                   /REPLACED FOR FUNCTION
0316    0232    5633    XSJMP,  JMP I   .+1
0317    0233    1113            XSLOOK
0320    0234    1132            XSCRET
0321    0235    1126            XSDELT
0322    0236    0535            XSGWA
0323    0237    0247            XSHALT
0324    0240    0247            XSHALT
0325    0241    0247            XSHALT
0326    0242    1423            XSIDEN
0327                    /
0330    0243    1600    PDX,    DX
0331                    /
0332                            EJECT
```

```
0333                    /
0334                    XFUN=   .
0335    0244    0000    XSCDF,  0
0336    0245    6201            CDF             /CALLERS FIELD
0337    0246    5644            JMP I   XSCDF
0340                    /
0341                    /       ERROR RETURNS
0342                    /
0343    0247    7402    XSHALT, HLT
0344    0250    7200    XERRET, CLA
0345    0251    4244            JMS     XSCDF   /GET CALLERS FIELD
0346    0252    1610            TAD I   XSERV   /ERROR RETURN ADDR
0347    0253    3210            DCA     XSERV
0350    0254    1046            TAD     XERCOD
0351    0255    7410            SKP
0352                    /
0353                    /       NORMAL RETURN
0354                    /
0355    0256    2210    XSRET,  ISZ     XSERV
0356    0257    6203    XSRMF,  CIF CDF         /RESTORE CALLERS FIELDS
0357    0260    5610            JMP I   XSERV
0360                    /
0361                    /
0362                            EJECT
```

```
0363                    /
0364                    /       FIND AN INDEX ENTRY BY NAME
0365                    /
0366    0261    0000    XFIND,  0
0367    0262    4515            JMS I   VALID   /CALCULATE NUMBER OF ENTRIES
0370    0263    0112            XERR0           /TAKE ERROR IF INDEX INVALID
0371    0264    7346            MTHREE          /OMIT FIRST THREE
0372    0265    1045            TAD     XLEN
0373    0266    7041            CIA
0374    0267    3044            DCA     XECNT   /INDEX ENTRY COUNT
0375    0270    1067            TAD     P30
0376    0271    1134            TAD     XBUF    /SKIP 1 ENTRY
0377    0272    3041            DCA     XPOINT  /INITIALIZE POINTER
0400    0273    6201            CDF     XLF     /LIST FIELD
0401    0274    1447            TAD I   XLIST   /PICK UP FIRST WORD
0402    0275    7041            CIA
0403    0276    3003            DCA     XT2
0404    0277    6211            CDF     XBF     /BUFFER FIELD
0405    0300    1003            TAD     XT2
0406    0301    1054            TAD     HBLNKS  /LOOKING FOR BLANKS?
0407    0302    7650            SNA CLA
0410    0303    5651            JMP I   XFIND   /YES = RETURN NO FIND
0411    0304    1441    XFLOOP, TAD I   XPOINT  /FIRST WORD OF THIS ENTRY
0412    0305    7450            SNA             /IS IT ZERO ENTRY?
0413    0306    5661            JMP I   XFIND   /YES= RETURN NO FIND
0414    0307    1003            TAD     XT2     /COMPARE SEARCH WORD
0415    0310    7650            SNA CLA         /EQUAL?
0416    0311    5320            JMP     XFREST  /YES= COMPARE REST
0417    0312    1063    XNFRST, TAD     P10     /NO= LOOK AT NEXT
0420    0313    1041            TAD     XPOINT
0421    0314    3041            DCA     XPOINT  /POINT TO NEXT
0422    0315    2044            ISZ     XECNT   /END OF INDEX?
0423    0316    5304            JMP     XFLOOP  /NO= CONTINUE SEARCH
0424    0317    5661            JMP I   XFIND   /YES= RETURN FAILURE
0425                    /
0426                    /       FIRST WORDS MATCH = COMPARE REST
0427                    /
0430    0320    1041    XFREST, TAD     XPOINT
0431    0321    3010            DCA     AX0
0432    0322    1047            TAD     XLIST
0433    0323    3011            DCA     AX1
0434    0324    1075            TAD     M4      /COMPARE 4 MORE
0435    0325    3002            DCA     XT1
0436    0326    6201    XFRLP,  CDF     XLF     /LIST FIELD
0437    0327    1411            TAD I   AX1     /NEXT FROM LIST
0440    0330    7041            CIA
0441    0331    6211            CDF     XBF     /BUFFER FIELD
0442    0332    1410            TAD I   AX0     /NEXT IN INDEX
0443    0333    7640            SZA CLA
0444    0334    5312            JMP     XNFRST  /NO MATCH
0445    0335    2002            ISZ     XT1     /CHECK COUNT
0446    0336    5326            JMP     XFRLP   /COMPARE NEXT
0447    0337    2261            ISZ     XFIND   /MATCH FOUND
0450    0340    5661            JMP I   XFIND
0451                    /
0452                    EJECT
=
```

```
0453                    /
0454                    /       TEST FOR INDEX FULL
0455                    /       RETURNS:
0456                    /               P+1     /SUPER FULL == NOT EVEN A WA
0457                    /               P+2     /WA IS LAST ENTRY
0460                    /               P+3     /WA IS NOT LAST ENTRY
0461                    /
0462    0341  0000  XFULL,  0
0463    0342  7200          CLA
0464    0343  1134          TAD     XBUF
0465    0344  1067          TAD     P30
0466    0345  3003          DCA     XT2     /SET POINTER
0467    0346  7346          MTHREE
0470    0347  1045          TAD     XLEN
0471    0350  7041          CIA
0472    0351  3002          DCA     XT1     /SET COUNTER
0473    0352  1403  XWLOOP, TAD I   XT2     /GET ENTRY
0474    0353  7650          SNA CLA         /IS IT WA?
0475    0354  5363          JMP     XWA     /YES
0476    0355  1063          TAD     P10     /NO
0477    0356  1003          TAD     XT2
0500    0357  3003          DCA     XT2     /BUMP POINTER
0501    0360  2002          ISZ     XT1     /LAST ENTRY?
0502    0361  5352          JMP     XWLOOP  /NO
0503    0362  5741          JMP I   XFULL   /FIRST RETURN
0504                    /
0505    0363  2002  XWA,    ISZ     XT1     /IS THIS LAST?
0506    0364  2341          ISZ     XFULL   /NO
0507    0365  2341          ISZ     XFULL
0510    0366  5741          JMP I   XFULL   /RETURN P+2 OR 3
0511                    /
0512                    /
0513                    /
0514                    PAGE
0515                    /
0516                    /       CHECK FOR AC WITHIN BOUNDS
0517                    /
0520    0400  0000  XLIMIT, 0
0521    0401  3217          DCA     XLIM    /HOLD AC
0522    0402  7100          CLL
0523    0403  1217          TAD     XLIM
0524    0404  1600          TAD I   XLIMIT  /COMPARE LOWER
0525    0405  2200          ISZ     XLIMIT
0526    0406  7620          SNL CLA         /SKIP IF GE
0527    0407  5214          JMP     .+5     /OUT OF BOUNDS
0530    0410  1217          TAD     XLIM
0531    0411  1600          TAD I   XLIMIT  /COMPARE UPPER
0532    0412  7670          SZL SNA CLA     /SKIP IF GT
0533    0413  2200          ISZ     XLIMIT  /IN BOUNDS
0534    0414  2200          ISZ     XLIMIT
0535    0415  1217          TAD     XLIM    /RESTORE AC
0536    0416  5600          JMP I   XLIMIT
0537                    /
0540    0417  0000  XLIM,   0
0541                    /
0542                    EJECT
```

```
0543                    /
0544                    /       VALIDITY CHECK ON INDEX
0545                    /
0546    0420    0000    XVALID, 0
0547    0421    1620            TAD I   XVALID  /ERROR RETURN ADDRESS
0550    0422    3332            DCA     XNO
0551    0423    2220            ISZ     XVALID
0552    0424    7307            FOUR
0553    0425    1134            TAD     XBUF
0554    0426    3010            DCA     AX0     /POINT TO FILE CONTROL
0555    0427    6211            CDF     XBF
0556    0430    1410            TAD I   AX0     /BLOCK LEN
0557    0431    1100            TAD     M400    /=400?
0560    0432    7640            SZA CLA
0561    0433    5330            JMP     XNVAL   /NO
0562    0434    1410            TAD I   AX0     /INDEX LEN
0563    0435    7650            SPA SNA         /POS, NON=ZERO?
0564    0436    5330            JMP     XNVAL   /NO
0565    0437    1064            TAD     M10
0566    0440    7740            SMA SZA CLA     /LE 10?
0567    0441    5330            JMP     XNVAL   /NO
0570                    /
0571                    /       VALIDATE VOLUME LEN
0572                    /
0573    0442    1410            TAD I   AX0     /GET VOL LEN
0574    0443    4530            JMS I   LIMIT
0575    0444    7000            =1000
0576    0445    6000            =2000           /TAPE LEN?
0577    0446    7410            SKP             /NO
0600    0447    5254            JMP     XVSCAN  /YES, OK
0601    0450    4530            JMS I   LIMIT
0602    0451    2000            =6000
0603    0452    1520            =6260           /DISK?
0604    0453    5330            JMP     XNVAL   /NO, ERROR
0605    0454    3362    XVSCAN, DCA     XMOV7   /SAVE VOL LEN
0606    0455    4531            JMS I   LNCLC   /CALCULATE LENGTH
0607    0456    7346            MTHREE
0610    0457    1045            TAD     XLEN
0611    0460    7041            CIA
0612    0461    3044            DCA     XECNT
0613    0462    1067            TAD     P30
0614    0463    1134            TAD     XBUF
0615    0464    3041            DCA     XPOINT
0616    0465    3003            DCA     XT2     /LAST START
0617    0466    3051            DCA     XNWASW  /CLEAR NO=WORKING=AREA SWITCH
0620                    /
0621                    EJECT
=
```

```
0622                    /
0623    0467    7327    XVLOOP, SIX
0624    0470    1041            TAD     XPOINT
0625    0471    3002            DCA     XT1
0626    0472    1402            TAD I   XT1     /FILE START
0627    0473    7450            SNA
0630    0474    5325            JMP     XMAYBE  /NOBODY STARTS AT ZERO
0631    0475    7161            CIA STL
0632    0476    1003            TAD     XT2     /COMPARE LAST START
0633    0477    7660            SNL SZA CLA     /IS THIS GREATER OR SAME?
0634    0500    5330            JMP     XNVAL
0635    0501    1402            TAD I   XT1
0636    0502    3003            DCA     XT2     /SAVE THIS START
0637    0503    2002            ISZ     XT1
0640    0504    1441            TAD I   XPOINT  /LAST ENTRY?
0641    0505    7650            SNA CLA
0642    0506    5333            JMP     XVOK    /YES=VOL OK
0643    0507    1362            TAD     XMOV7   /COMPARE VOL LEN
0644    0510    7140            CMA CLL
0645    0511    1003            TAD     XT2     /TO FILE START
0646    0512    1402            TAD I   XT1     /PLUS FILE LEN
0647    0513    7630            SZL CLA         /OK?
0650    0514    5330            JMP     XNVAL   /NO
0651    0515    7201            ONE
0652    0516    1002            TAD     XT1     /NEXT ENTRY
0653    0517    3041            DCA     XPOINT
0654    0520    2044            ISZ     XECNT
0655    0521    5267            JMP     XVLOOP
0656    0522    7240    XVNWA,  MONE
0657    0523    3051            DCA     XNWASW  /SET NO=WORK=AREA
0660    0524    5620            JMP I   XVALID
0661                    /
0662                    /       IT LOOKS FUNNY, BUT MAY BE OK
0663                    /
0664    0525    1441    XMAYBE, TAD I   XPOINT
0665    0526    7650            SNA CLA
0666    0527    5322            JMP     XVNWA   /ALL IS FINE
0667                    /
0670                    /       INDEX IS INVALID
0671                    /
0672    0530    7200    XNVAL,  CLA
0673    0531    5732            JMP I   XNO
0674    0532    0000    XNO,    0               /ERROR ADDR
0675                    /
0676    0533    4620    XVOK,   JMS I   MAKWA   /CLEAN UP WA
0677    0534    5620            JMP I   XVALID
0700                    /
0701                    EJECT
=
```

```
0702                    /
0703                    /       REQUEST TO GET WORKING AREA
0704                    /
0705    0535    4516    XSGWA,  JMS I   FIND    /DOES NAME EXIST?
0706    0536    7410            SKP             /NO, GOOD
0707    0537    5110            JMP     XERR2   /OOPS
0710    0540    2051            ISZ     XNWASW  /IS WA EMPTY?
0711    0541    4533            JMS I   FULL    /IS THERE A WA?
0712    0542    5106            JMP     XERR4   /NO, BOMB
0713    0543    7000            NOP             /CLOSE BUT OK
0714    0544    1061            TAD     P5
0715    0545    1003            TAD     XT2     /POINT TO WA START
0716    0546    3010            DCA     AX0
0717    0547    1061            TAD     P5
0720    0550    1047            TAD     XLIST
0721    0551    3011            DCA     AX1
0722    0552    1410            TAD I   AX0     /GET WA START
0723    0553    6201            CDF     XLF
0724    0554    3411            DCA I   AX1
0725    0555    6211            CDF     XBF
0726    0556    1410            TAD I   AX0     /GET WA LENGTH
0727    0557    6201            CDF     XLF
0730    0560    3411            DCA I   AX1
0731    0561    5514            JMP I   SRET    /ALL DONE
0732                    /
0733                    /       MOVE 7 WORDS
0734                    /
0735    0562    0000    XMOV7,  0
0736    0563    7327            SIX
0737    0564    7040            CMA             /-7 IN AC
0740    0565    3002            DCA     XT1
0741    0566    1410    XM7LP,  TAD I   AX0     /GET
0742    0567    3411            DCA I   AX1     /PUT
0743    0570    2002            ISZ     XT1
0744    0571    5366            JMP     XM7LP
0745    0572    5762            JMP I   XMOV7   /DONE
0746                    /
0747                    EJECT
=
```

```
0750                    /
0751                            PAGE
0752                    /
0753                    /       DELETE THE INDEX ENTRY INDICATED BY XPOINT
0754                    /
0755    0600    0000    XDELET, 0
0756    0601    7240            MONE
0757    0602    3040            DCA     MODSW
0760    0603    4532            JMS I   LSTCHK  /IS THIS LAST ENTRY?
0761    0604    5222            JMP     XDLAST  /YES = SPECIAL HANDLING
0762    0605    4523            JMS I   NXEB    /IS NEXT ZERO OR BLANK?
0763    0606    5222            JMP     XDLAST  /ZERO
0764    0607    5235            JMP     XDPCHK  /BLANK
0765    0610    1043            TAD     XNXEP
0766    0611    4527            JMS I   ALCHK   /IS NEXT AN ALIAS?
0767    0612    5237            JMP     XDALIS  /YES
0770    0613    4337            JMS     XPBLNK  /NO = BLANK THIS
0771    0614    4522            JMS I   PREB    /IS PRECEDING ENTRY BLANK?
0772    0615    5242            JMP     XDSQP   /YES = SQUEEZE
0773    0616    1041            TAD     XPOINT
0774    0617    4527            JMS I   ALCHK   /IS THIS AN ALIAS?
0775    0620    5237            JMP     XDALIS  /YES = SQUEEZE
0776    0621    5600            JMP I   XDELET
0777                    /
1000                    /       THIS IS LAST ENTRY
1001                    /
1002    0622    4522    XDLAST, JMS I   PREB    /IS PRECEDING ENTRY BLANK?
1003    0623    7410            SKP             /YES = ZERO BOTH
1004    0624    5233            JMP     XDLCLR  /NO = ZERO THIS ONLY
1005    0625    4525            JMS     XDZERO  /ZERO NAME AND AUX
1006    0626    3410            DCA I   AX0     /ZERO START
1007    0627    3410            DCA I   AX0     /AND LEN
1010    0630    1064            TAD     M10
1011    0631    1041            TAD     XPOINT
1012    0632    3041            DCA     XPOINT
1013    0633    4520    XDLCLR, JMS I   MAKWA   /BUILD A WA
1014    0634    5600            JMP I   XDELET
1015                    /
1016                    /       NEXT ENTRY IS BLANK
1017                    /
1020    0635    4522    XDPCHK, JMS I   PREB    /CHECK PRECEDING FOR BLANK
1021    0636    5244            JMP     XDSQZ   /YES = MOVE TO PRECEDING
1022    0637    1041    XDALIS, TAD     XPOINT  /NO = MOVE TO THIS
1023    0640    3042            DCA     XPREP
1024    0641    5244            JMP     XDSQZ   /BEGIN SQUEEZE
1025                    /
1026                    /       PRECEDING ENTRY IS BLANK, SQUEEZE IT
1027                    /
1030    0642    1041    XDSQP,  TAD     XPOINT  /MOVE CURRENT
1031    0643    3043            DCA     XNXEP   /DOWN ONE
1032                    /
1033                            EJECT
=
```

```
1034                    /
1035                    /       COME HERE TO DO ANY SQUEEZE
1036                    /       XNXEP IS "FROM" ADDR, XPREP IS "TO" ADDR
1037                    /
1040    0644    7240    XDSQZ,  MONE
1041    0645    1043            TAD     XNXEP
1042    0646    3010            DCA     AX0     /SETUP AUTO "FROM"
1043    0647    7240            MONE
1044    0650    1042            TAD     XPREP
1045    0651    3011            DCA     AX1     /SETUP AUTO "TO"
1046    0652    1134            TAD     XBUF    /X START
1047    0653    7041            CIA             /FROM
1050    0654    1043            TAD     XNXEP   /MOVE START ADDR
1051    0655    7110            CLL RAR         /IS MOVE LEN
1052    0656    7112            CLL RTR         /DIVIDED BY 8
1053    0657    7041            CIA             /FROM
1054    0660    1045            TAD     XLEN    /TOTAL
1055    0661    7041            CIA
1056    0662    3044            DCA     XECNT   /IS REMAINING
1057    0663    1410    XDSQLP, TAD I   AX0     /GET FIRST WORD
1060    0664    7450            SNA             /IS THIS LAST ENTRY?
1061    0665    5272            JMP     XDSQND  /YES
1062    0666    3411            DCA I   AX1     /NO - MOVE IT
1063    0667    4724            JMS I   PMOV7   /AND SEVEN MORE
1064    0670    2044            ISZ     XECNT   /CHECK ENTRY COUNTER
1065    0671    5263            JMP     XDSQLP  /CONTINUE SQUEEZE
1066    0672    7201    XDSQND, ONE
1067    0673    1011            TAD     AX1     /NEXT TO LOC
1070    0674    3041            DCA     XPOINT  /IS WA
1071    0675    4520            JMS I   MAKWA
1072    0676    1442            TAD I   XPREP   /IS THIS BLANK?
1073    0677    1055            TAD     MBLNKS
1074    0700    7640            SZA CLA
1075    0701    5600            JMP I   XDELET  /NO, ALL DONE
1076                    /
1077                    /       WE HAVE SQUEEZED BLANK ENTRIES
1100                    /       NOW WE MUST SET START AND LENGTH
1101                    /
1102    0702    7346            MTHREE
1103    0703    1042            TAD     XPREP
1104    0704    3010            DCA     AX0     /ADDR OF PREVIOUS START -1
1105    0705    7327            SIX
1106    0706    1042            TAD     XPREP
1107    0707    3002            DCA     XT1     /ADDR OF THIS START
1110    0710    1410            TAD I   AX0     /PREVIOUS START
1111    0711    1410            TAD I   AX0     /PLUS LEN
1112    0712    3402            DCA I   XT1     /IS THIS START
1113    0713    1062            TAD     P7
1114    0714    1002            TAD     XT1     /POINT TO NEXT START
1115    0715    3010            DCA     AX0
1116    0716    1402            TAD I   XT1     /THIS START
1117    0717    7041            CIA
1120    0720    1410            TAD I   AX0     /FROM NEXT
1121    0721    2002            ISZ     XT1
1122    0722    3402            DCA I   XT1     /IS THIS LEN
1123    0723    5600            JMP I   XDELET
1124                    /
1125    0724    0562    PMOV7,  XMOV7
1126                    /
1127                    EJECT
```

```
1130                    /
1131                    /       ZERO THE NAME AND AUX AT XPOINT
1132                    /
1133    0725    0000    XDZERO, 0
1134    0726    7240            MONE
1135    0727    1041            TAD     XPOINT
1136    0730    3010            DCA     AX0
1137    0731    1077            TAD     M6
1140    0732    3002            DCA     XT1
1141    0733    3410            DCA I   AX0     /CLEAR A WORD
1142    0734    2002            ISZ     XT1
1143    0735    5333            JMP     .-2
1144    0736    5725            JMP I   XDZERO
1145                    /
1146                    /       BLANK THE ENTRY AT XPOINT
1147                    /
1150    0737    0000    XPBLNK, 0
1151    0740    7240            MONE
1152    0741    3040            DCA     MODSW   /SET MODIFIED SW
1153    0742    7240            MONE
1154    0743    1041            TAD     XPOINT
1155    0744    3010            DCA     AX0     /SETUP AUTO INDEX
1156    0745    1076            TAD     M5
1157    0746    3002            DCA     XT1
1160    0747    1054            TAD     HBLNKS  /HALFWORD BLANKS
1161    0750    3410            DCA I   AX0
1162    0751    2002            ISZ     XT1     /CHECK COUNT
1163    0752    5347            JMP     .-3     /LOOP
1164    0753    3410            DCA I   AX0     /CLEAR AUX
1165    0754    5737            JMP I   XPBLNK
1166                    /
1167                    /
1170                            PAGE
1171                    /
1172                    /
1173                    /       CHECK ENTRY INDICATED BY AC FOR ALIAS
1174                    /
1175    1000    0000    XALCHK, 0
1176    1001    3002            DCA     XT1
1177    1002    7346            MTHREE
1200    1003    1002            TAD     XT1
1201    1004    3012            DCA     AX2     /PRECEDING START = 1
1202    1005    7327            SIX
1203    1006    1002            TAD     XT1
1204    1007    3002            DCA     XT1     /THIS START
1205    1010    1402            TAD I   XT1
1206    1011    7041            CIA
1207    1012    1412            TAD I   AX2     /COMPARE THIS START
1210    1013    1412            TAD I   AX2     /TO PRECEDING END
1211    1014    7750            SPA SNA CLA     /SKIP IF OVERLAP
1212    1015    2200            ISZ     XALCHK  /NOT ALIAS
1213    1016    5600            JMP I   XALCHK
1214                    /
1215                            EJECT
```

```
1216                    /
1217                    /       TEST PRECEDING ENTRY FOR BLANK
1220                    /       SKIP IF NOT
1221                    /
1222    1017  0000  XPREB,  0
1223    1020  1064          TAD     M10
1224    1021  1041          TAD     XPOINT
1225    1022  3042          DCA     XPREP   /PRECEDING ENTRY POINTER
1226    1023  6211          CDF     XBF     /BUFFER FIELD
1227    1024  1442          TAD I   XPREP
1230    1025  1055          TAD     MBLNKS  /COMPARE BLANKS
1231    1026  7640          SZA CLA
1232    1027  2217          ISZ     XPREB   /NOT = SKIP RETURN
1233    1030  5617          JMP I   XPREB   /RETURN
1234                    /
1235                    /       TEST NEXT ENTRY FOR ZERO OR BLANK
1236                    /       SKIP 1 IF BLANK, 2 IF NEITHER
1237                    /
1240    1031  0000  XNXEB,  0
1241    1032  1063          TAD     P10
1242    1033  1041          TAD     XPOINT
1243    1034  3043          DCA     XNXEP   /NEXT ENTRY POINTER
1244    1035  6211          CDF     XBF     /BUFFER FIELD
1245    1036  1443          TAD I   XNXEP   /NEXT ENTRY
1246    1037  7450          SNA             /IS IT ZERO?
1247    1040  5631          JMP I   XNXEB   /YES = FIRST RETURN
1250    1041  2231          ISZ     XNXEB
1251    1042  1055          TAD     MBLNKS  /COMPARE BLANKS
1252    1043  7640          SZA CLA         /EQUAL?
1253    1044  2231          ISZ     XNXEB   /NO = TAKE THIRD
1254    1045  5631          JMP I   XNXEB   /RETURN
1255                    /
1256                    /       SKIP IF XPOINT IS NOT LAST ENTRY
1257                    /
1260    1046  0000  XLCHK,  0
1261    1047  7240          MONE
1262    1050  1045          TAD     XLEN
1263    1051  7104          CLL RAL
1264    1052  7006          RTL
1265    1053  1134          TAD     XBUF    /ADDR OF LAST ENTRY
1266    1054  7141          CIA CLL
1267    1055  1041          TAD     XPOINT  /COMPARE
1270    1056  7620          SNL CLA         /SKIP IF XPOINT GT OR EQ
1271    1057  2246          ISZ     XLCHK   /ELSE TAKE SKIP RETURN
1272    1060  5646          JMP I   XLCHK
1273                    /
1274                    EJECT
=
```

```
1275                    /
1276                    /       MAKE A SLOT FOR AN ENTRY AFTER XPOINT
1277                    /
1300    1061  0000  XPAND,  0
1301    1062  4533          JMS I   FULL    /IS INDEX FULL?
1302    1063  5105          JMP     XERR4   /YES
1303    1064  7000          NOP
1304    1065  1041          TAD     XPOINT
1305    1066  7041          CIA
1306    1067  1003          TAD     XT2     /PUSH LENGTH
1307    1070  7110          CLL RAR
1310    1071  7112          CLL RTR         /BY ENTRIES
1311    1072  7040          CMA             /NEG, INCLUDING ENDS
1312    1073  3004          DCA     TMP3
1313    1074  1062  XPMVLP, TAD     P7
1314    1075  1003          TAD     XT2
1315    1076  3011          DCA     AX1     /ADDR OPEN SLOT
1316    1077  1003          TAD     XT2
1317    1100  3010          DCA     AX0     /SET "FROM" POINTER
1320    1101  1403          TAD I   XT2     /MOVE FIRST WORD
1321    1102  3411          DCA I   AX1
1322    1103  4712          JMS I   MOV7    /MOVE SEVEN MORE
1323    1104  1064          TAD     M10
1324    1105  1003          TAD     XT2     /PRECEDING ENTRY
1325    1106  3003          DCA     XT2
1326    1107  2004          ISZ     TMP3
1327    1110  5274          JMP     XPMVLP
1330    1111  5661          JMP I   XPAND   /SLOT IS AT XPOINT
1331                    /
1332    1112  0562  MOV7,   XMOV7
1333                    /
1334                    EJECT
-
```

```
1335                    /
1336                    /       FUNCTION IS LOOKUP
1337                    /
1340    1113    4516    XSLOOK, JMS I   FIND
1341    1114    5111            JMP     XERR1   /NAME DOESNT EXIST
1342    1115    7346            MTHREE
1343    1116    3002            DCA     XT1
1344    1117    6211    XLLP,   CDF     XBF
1345    1120    1410            TAD I   AX0     /WORD FROM ENTRY
1346    1121    6201            CDF     XLF
1347    1122    3411            DCA I   AX1     /INTO LIST
1350    1123    2002            ISZ     XT1
1351    1124    5317            JMP     XLLP
1352    1125    5514            JMP I   SRET
1353                    /
1354                    /       FUNCTION IS DELETE
1355                    /
1356    1126    4516    XSDELT, JMS I   FIND
1357    1127    5514            JMP I   SRET    /NO SUCH FILE
1360    1130    4525            JMS I   DELET   /DELETE IT
1361    1131    5514            JMP I   SRET    /ALL DONE
1362                    /
1363                    /       FUNCTION IS CREATE
1364                    /
1365    1132    4516    XSCRET, JMS I   FIND    /IS IT ALREADY HERE?
1366    1133    5335            JMP     XMAKE   /NO=GO
1367    1134    5110            JMP     XERR2   /YES=ERROR
1370                    /
1371                    /       MAKE A NEW ENTRY
1372                    /
1373    1135    7327    XMAKE,  SIX
1374    1136    1047            TAD     XLIST   /LIST ADDR
1375    1137    3010            DCA     AX0
1376    1140    6201            CDF     XLF     /LIST FIELD
1377    1141    1410            TAD I   AX0     /GET LEN REQUEST
1400    1142    7041            CIA
1401    1143    3050            DCA     XFLEN
1402    1144    7346            MTHREE
1403    1145    1045            TAD     XLEN    /INDEX LEN = 3
1404    1146    7041            CIA
1405    1147    3044            DCA     XECNT   /SET SEARCH COUNT
1406    1150    1065            TAD     P20
1407    1151    1134            TAD     XBUF    /START WITH 3RD INDEX ENTRY
1410    1152    3041            DCA     XPOINT
1411    1153    4231    XMSCAN, JMS     XNXEB   /IS NEXT BLANK OR ZERO?
1412    1154    5763            JMP I   MZERO   /ZERO
1413    1155    5764            JMP I   MBLNK   /BLANK
1414    1156    1043            TAD     XNXEP   /NEITHER=TRY NEXT
1415    1157    3041            DCA     XPOINT
1416    1160    2044            ISZ     XECNT   /CHECK COUNT
1417    1161    5353            JMP     XMSCAN
1420    1162    5106            JMP     XERR4   /NO SPACE FOR ENTRY
1421                    /
1422    1163    1250    MZERO,  XMZERO
1423    1164    1200    MBLNK,  XMBLNK
1424                    /
1425                    EJECT
```

```
1426                    /
1427                            PAGE
1428                    /
1429                    /       NEXT ENTRY IS BLANK - SEE IF REQUEST FITS
1430                    /
1431    1200  1043    XMBLNK, TAD     XNXER   /NEXT ENTRY POINTER
1432    1201  3041            DCA     XPOINT
1433    1202  2044            ISZ     XECNT   /THIS CANT SKIP
1434    1203  7327            SIX             /AC=6, LINK=0
1435    1204  7001            IAC
1436    1205  1041            TAD     XPOINT
1437    1206  3003            DCA     XT2
1438    1207  1403            TAD I   XT2     /GET LEN
1439    1210  1050            TAD     XPLEN   /COMPARE REQUEST
1440    1211  7620            SNL CLA         /DOES IT FIT?
1441    1212  5647            JMP I   MSCAN   /NO - KEEP SCANNING
1442    1213  4521            JMS I   MCOPY   /YES - MOVE IN ENTRY
1443    1214  1411            TAD I   AX1     /START
1444    1215  6201            CDF     XLF
1445    1216  3410            DCA I   AX0
1446    1217  6211            CDF     XBF     /BUFFER FIELD
1447    1220  1403            TAD I   XT2     /GET FREE LEN
1448    1221  1050            TAD     XPLEN   /COMPARE REQUEST
1449    1222  7450            SNA             /EXACT FIT?
1450    1223  5514            JMP I   SRET    /YES
1451    1224  3050            DCA     XPLEN   /NO - HOLD NEW FREE LEN
1452    1225  6201            CDF     XLF
1453    1226  1410            TAD I   AX0     /USER LEN POST
1454    1227  6211            CDF     XBF
1455    1230  3411            DCA I   AX1     /TO THIS ENTRY
1456    1231  4524            JMS I   RAND    /MAKE SPACE FOR FREE ENTRY
1457    1232  1063            TAD     P10
1458    1233  1041            TAD     XPOINT  /NEXT ENTRY
1459    1234  3041            DCA     XPOINT  /BECOMES CURRENT
1460    1235  4526            JMS I   PBLNK   /BLANK IT
1461    1236  7346            MTHREE
1462    1237  1041            TAD     XPOINT  /PRECEDING START ADDR
1463    1240  3011            DCA     AX1
1464    1241  1411            TAD I   AX1     /START
1465    1242  1411            TAD I   AX1     /PLUS LEN
1466    1243  3410            DCA I   AX0     /IS NEXT START
1467    1244  1050            TAD     XPLEN
1468    1245  3410            DCA I   AX0     /TO EMPTY ENTRY
1469    1246  5514            JMP I   SRET
1470                    /
1471    1247  1153    MSCAN,  XMSCAN
1472                    /
1473                            EJECT
```

```
1506                    /
1507                    /       NEXT ENTRY IS ZERO
1510                    /
1511    1250    1062    XMZERO, TAD     P7
1512    1251    1134            TAD     XBUF    /ADDR DEVICE LEN
1513    1252    3002            DCA     XT1
1514    1253    7346            MTHREE
1515    1254    1043            TAD     XNXEP
1516    1255    3010            DCA     AX0
1517    1256    1410            TAD I   AX0     /LAST ENTRY START
1520    1257    1410            TAD I   AX0     /PLUS LEN
1521    1260    3003            DCA     XT2
1522    1261    1003            TAD     XT2
1523    1262    7161            CIA STL
1524    1263    1402            TAD I   XT1     /FROM DEVICE LEN
1525    1264    7470            SZL SNA
1526    1265    5107            JMP     XERR3   /NO ROOM IN WA
1527    1266    1050            TAD     XFLEN   /COMPARE REQUEST
1530    1267    7620            SNL CLA         /IS THERE ROOM?
1531    1270    5107            JMP     XERR3   /NO!
1532    1271    4521            JMS I   MCOPY   /COPY NAME & AUX
1533    1272    1003            TAD     XT2     /GET START
1534    1273    3411            DCA I   AX1     /INTO ENTRY
1535    1274    6201            CDF     XLF
1536    1275    1003            TAD     XT2
1537    1276    3410            DCA I   AX0     /START TO USER
1540    1277    1410    XMZFIN, TAD I   AX0     /HIS LEN REQUEST
1541    1300    6211            CDF     XBF
1542    1301    3411            DCA I   AX1
1543    1302    1063            TAD     P10
1544    1303    1043            TAD     XNXEP
1545    1304    3041            DCA     XPOINT
1546    1305    4520            JMS I   MAKWA   /BUILD WA
1547    1306    5514            JMP I   SRET
1550                    /
1551                    EJECT
```

```
1552                    /
1553                    /       MAKE A WORKING AREA ENTRY AT XPOINT
1554                    /
1555    1307  0000  XMAKWA, 0
1556    1310  4817          JMS I   DZERO   /CLEAR AT XPOINT
1557    1311  7201          ONE
1560    1312  1818          TAD     AX0     /POINT TO START
1561    1313  3002          DCA     XT1
1562    1314  7346          MTHREE
1563    1315  1041          TAD     XPOINT  /LAST START
1564    1316  3010          DCA     AX0
1565    1317  1410          TAD I   AX0     /LAST START BLK
1566    1320  1410          TAD I   AX0     /PLUS LAST LEN
1567    1321  3402          DCA I   XT1     /IS WA START
1570    1322  1062          TAD     P7
1571    1323  1134          TAD     XBUF
1572    1324  3003          DCA     XT2     /POINT TO VOL LEN
1573    1325  1402          TAD I   XT1     /WA START
1574    1326  7161          CIA STL         /FROM
1575    1327  1403          TAD I   XT2     /VOL LENGTH
1576    1330  7460          SNL SZA         /POS WA LEN?
1577    1331  5335          JMP     MWALN   /YES
1600    1332  7240          MONE
1601    1333  3051          DCA     XNWASW  /SET NO WA
1602    1334  3402          DCA I   XT1     /CLEAR WA START
1603    1335  2002  MWALN,  ISZ     XT1     /POINT TO WA LEN
1604    1336  3402          DCA I   XT1     /SET LEN
1605    1337  5707          JMP I   XMAKWA
1606                    /
1607                    /       COPY NAME AND AUX INTO INDEX
1610                    /
1611    1340  0000  XMCOPY, 0
1612    1341  7240          MONE
1613    1342  3040          DCA     MODSW   /SET MODIFIED SW
1614    1343  7240          MONE
1615    1344  1043          TAD     XNXEP   /THIS ENTRY -1
1616    1345  3011          DCA     AX1
1617    1346  7240          MONE
1620    1347  1047          TAD     XLIST   /LIST -1
1621    1350  3010          DCA     AX0
1622    1351  1077          TAD     M6
1623    1352  3002          DCA     XT1     /SET COUNTER
1624    1353  6201  XMCPLP, CDF     XLF     /LIST FIELD
1625    1354  1410          TAD I   AX0
1626    1355  6211          CDF     XBF     /BUFFER FIELD
1627    1356  3411          DCA I   AX1
1630    1357  2002          ISZ     XT1     /CHECK COUNT
1631    1360  5353          JMP     XMCPLP
1632    1361  5740          JMP I   XMCOPY  /RETURN
1633                    /
1634                    EJECT
```

```
1635                    /
1636                            PAGE
1637                    /
1640                    /       CALCULATE THE LENGTH OF THE INDEX
1641                    /
1642    1400    0000    XLNCLC, 0
1643    1401    7307            FOUR
1644    1402    1134            TAD     XBUF    /INDEX START ADDR PLUS 4
1645    1403    3010            DCA     AX0     /HOLD IN AUTO INDEX
1646    1404    6211            CDF     XBF     /BUFFER FIELD
1647    1405    1410            TAD I   AX0     /GET BLOCK LEN
1650    1406    7110            CLL RAR         /DIVIDED
1651    1407    7112            CLL RTR         /BY 10,
1652    1410    3002            DCA     XT1     /IS ENTRIES PER BLOCK
1653    1411    1410            TAD I   AX0     /GET INDEX LEN IN BLOCKS
1654    1412    7041            CIA
1655    1413    3003            DCA     XT2
1656    1414    3045            DCA     XLEN    /CLEAR LENGTH
1657    1415    1002    XLNLP,  TAD     XT1     /MULTIPLY
1660    1416    1045            TAD     XLEN    /ENTRIES PER BLOCK
1661    1417    3045            DCA     XLEN    /BY NUMBER
1662    1420    2003            ISZ     XT2     /OF BLOCKS
1663    1421    5215            JMP     XLNLP
1664    1422    5600            JMP I   XLNCLC
1665                    /
1666                            EJECT
```

```
1667                    /
1670                    /       FUNCTION IS IDENTIFY
1671                    /       ASSIGN AN INDEX ENTRY TO A FIXED SPACE IN THE WA
1672                    /
1673    1423    4515    XSIDEN, JMS I   FIND    /DOES THE NAME EXIST?
1674    1424    7410            SKP             /NO
1675    1425    5110            JMP     XERR2   /YES = CANT DO IT
1676    1426    1044            TAD     XECNT
1677    1427    7650            SNA CLA         /IS INDEX FULL?
1700    1430    5106            JMP     XERR4   /YES
1701    1431    7327            SIX
1702    1432    1047            TAD     XLIST   /POINT TO START
1703    1433    3002            DCA     XT1
1704    1434    7346            MTHREE
1705    1435    1041            TAD     XPOINT
1706    1436    3010            DCA     AX0     /LAST ENTRY
1707    1437    1410            TAD I   AX0
1710    1440    1410            TAD I   AX0     /FIRST AVAILABLE BLOCK
1711    1441    3003            DCA     XT2
1712    1442    6201            CDF     XLF
1713    1443    1003            TAD     XT2     /COMPARE START OF WA
1714    1444    7141            CIA CLL
1715    1445    1402            TAD I   XT1     /TO START OF FILE
1716    1446    7420            SNL             /IS FILE IN WA?
1717    1447    5103            JMP     XERR7   /NO = TROUBLE
1720    1450    6211            CDF     XBF
1721    1451    7450            SNA             /BLANK SPACE BEFORE FILE?
1722    1452    5265            JMP     XINOB   /NO
1723    1453    2044            ISZ     XECNT   /ROOM FOR ANOTHER ENTRY?
1724    1454    7410            SKP             /YES
1725    1455    5110            JMP     XERR2   /NO
1726    1456    3050            DCA     XFLEN   /HOLD BLANK LEN
1727    1457    4526            JMS I   PBLNK   /CREATE BLANK ENTRY
1730    1460    1003            TAD     XT2
1731    1461    3410            DCA I   AX0     /START OF BLANK
1732    1462    1050            TAD     XFLEN   /LEN OF BLANK
1733    1463    3410            DCA I   AX0
1734    1464    1063            TAD     P10
1735    1465    1041    XINOB,  TAD     XPOINT
1736    1466    3043            DCA     XNXEP   /COPY = TO ADDR
1737    1467    4521            JMS I   HCOPY   /COPY FILE NAME, AUX
1740    1470    6201            CDF     XLF
1741    1471    1410            TAD I   AX0     /FILE START
1742    1472    6211            CDF     XBF
1743    1473    3411            DCA I   AX1
1744    1474    6201            CDF     XLF
1745    1475    5676            JMP I   .+1     /FINISH LIKE MAKE
1746    1476    1277            XMZFIN
1747                    /
1750                    ASMIFM  1600-.
1751                    WARNING         /ADJUST ORG IN XSB
1752                    /
1753                    /       XSA02
1754                    CHAIN   "XSB02"
```

```
0000                    *20
0001                    /       XSB: CONTAINS DX AND EJS
0002                    /
0003                            PMODE
0004                            *1600
0005                            AUX=0           /1 FOR DX DISPLAY OF AUX
0006                            XLINES=6        /NUMBER OF ENTRIES TO DISPLAY
0007                            EJECT
=
```

```
0010                    /
0011                    /       DISPLAY INDEX, WITH OPTIONS
0012                    /       INDEX IS IN CORE
0013                    /
0014    1600  3052  DX,  DCA     DXFRST  /CLEAR FIRST-ENTRY POINTER
0015    1601  6211       CDF     XSF
0016                    /
0017                    /       GET ENTRY NO OF LAST ENTRY
0020                    /
0021    1602  4515  DXWSCN, JMS I   VALID   /IS INDEX VALID?
0022    1603  0257       XSRMF           /NO = RETURN
0023    1604  1051       TAD     XNWASW  /IS THERE A WA?
0024    1605  7710       SPA CLA
0025    1606  1063       TAD     P10     /NO
0026    1607  1134       TAD     XBUF    /YES-CALCULATE
0027    1610  7041       CIA             /WA ENTRY NO
0030    1611  1041       TAD     XPOINT
0031    1612  7112       CLL RTR
0032    1613  7010       RAR
0033    1614  3053       DCA     DXLAST  /LAST DISPLAYABLE ENTRY
0034                    /
0035                    /       CHECK STARTING ENTRY NO
0036                    /
0037    1615  1052       TAD     DXFRST
0040    1616  1335       TAD     PDXL
0041    1617  7041       CIA
0042    1620  1053       TAD     DXLAST  /WILL IT FILL SCREEN?
0043    1621  7700       SMA CLA         /SKIP IF NOT
0044    1622  5227       JMP     DXFCHK
0045    1623  7201       ONE
0046    1624  1053       TAD     DXLAST
0047    1625  1336       TAD     MDXL    /BACK UP FROM LAST
0050    1626  3052       DCA     DXFRST  /SET FIRST
0051    1627  1052  DXFCHK, TAD     DXFRST  /CHECK FIRST
0052    1630  7710       SPA CLA         /NEG IS ILLEGAL
0053    1631  3052       DCA     DXFRST  /IF 80, FORCE 0
0054                    /
0055                    EJECT
```

```
0056                    /
0057                    /
0060                    /
0061                    /       INSERT SPECIAL ENTRY DATA
0062                    /
0063    1632    1331            TAD     PIMFLS
0064    1633    3011            DCA     AX1     /BUFFER ADDR
0065    1634    1336            TAD     MDXL    /LINES COUNT
0066    1635    3004            DCA     TMP3    /ENTRY COUNTER
0067    1636    1052            TAD     DXFRST
0070    1637    3005            DCA     TMP4    /NEXT ENTRY NO
0071                    /
0072    1640    1005            TAD     TMP4
0073    1641    7640            SZA CLA         /ID ENTRY?
0074    1642    5270            JMP     DXFMON  /NO=HOW ABOUT MONITOR?
0075    1643    4356            JMS     INSERT  /YES = BUILD FIRST LINE
0076    1644    7776            =2
0077    1645    3247            IMVID=1
0100    1646    4337            JMS     MVX     /GET NAME
0101    1647    7773            =5
0102    1650    3777            XBUFFR=1        /FROM INDEX
0103                            ASMIFZ  AUX
0104                            ASMSKP  6
0105                            TAD     TABNUL
0106                            DCA I   AX1     /TAB
0107                            CDF     XBF
0110                            TAD I   AX0     /BLOCK LEN
0111                            JMS I   PCVNUM
0112                            ASMSKP  1
0113    1651    2010            ISZ     AX0
0114                    /
0115                    /       INSERT NUMERIC ENTRIES
0116                    /
0117    1652    1056    DXFM2,  TAD     TABNUL
0120    1653    3411            DCA I   AX1
0121    1654    6211            CDF     XBF
0122    1655    1410            TAD I   AX0     /INDEX LEN
0123    1656    4730            JMS I   PCVNUM
0124    1657    1056            TAD     TABNUL
0125    1660    3411            DCA I   AX1
0126    1661    6211            CDF     XBF
0127    1662    1410            TAD I   AX0     /VOLUME LENGTH
0130    1663    4730            JMS I   PCVNUM
0131    1664    1057            TAD     TCRLF
0132    1665    3411            DCA I   AX1     /NEXT LINE
0133    1666    2004            ISZ     TMP3
0134    1667    2005            ISZ     TMP4    /BUMP ENTRY NOS
0135                    /
0136                            EJECT
*
```

```
0137                    /
0140                    /       INSERT MONITOR ENTRY IF APPROPRIATE
0141                    /
0142    1670  7240  DXFMON, MONE
0143    1671  1005          TAD     TMP4    /MON ENTRY?
0144    1672  7640          SZA CLA
0145    1673  5305          JMP     DXFJCL
0146    1674  4317          JMS     DXSYST  /IS THERE A SYSTEM?
0147    1675  4356          JMS     INSERT
0150                        ASMIFN  AUX
0151                        -5
0152                        ASMIFZ  AUX
0153    1676  7774          -4
0154    1677  3251          IMMON=1
0155                        ASMIFN  AUX
0156                        ASMSKP  2
0157    1700  1056          TAD     TABNUL
0160    1701  3411          DCA I   AX1
0161    1702  1332          TAD     PMONST
0162    1703  3010  DXFJ2,  DCA     AX0
0163    1704  5252          JMP     DXFM2
0164                    /
0165                    /       INSERT JOB CONTROL ENTRY
0166                    /       IF APPROPRIATE
0167                    /
0170    1705  7344  DXFJCL, MTWO
0171    1706  1005          TAD     TMP4
0172    1707  7640          SZA CLA
0173    1710  5727          JMP I   PDXFLP  /GO TO FILL LOOP
0174    1711  4317          JMS     DXSYST  /TEST FOR SYSTEM
0175    1712  4356          JMS     INSERT
0176                        ASMIFN  AUX
0177                        -7
0200                        ASMIFZ  AUX
0201    1713  7772          -6
0202    1714  3256          IMJCL=1
0203    1715  1333          TAD     PJCLST
0204    1716  5303          JMP     DXFJ2
0205                    /
0206                    /       DO NOT DISPLAY ENTRIES 1 AND 2
0207                    /       IF THERE IS NO SYSTEM
0210                    /
0211    1717  0000  DXSYST, 0
0212    1720  6211          CDF     XBF
0213    1721  1734          TAD I   PSYST   /JCL START
0214    1722  7640          SZA CLA         /IS THERE A SYSTEM?
0215    1723  5717          JMP I   DXSYST  /YES
0216    1724  7325          THREE           /NO
0217    1725  3005          DCA     TMP4    /GO TO 1ST FILE ENTRY
0220    1726  5727          JMP I   PDXFLP
0221                    /
0222    1727  2000  PDXFLP, DXFLP
0223    1730  2200  PCVNUM, CVNUM
0224    1731  3457  PIMFLS, IMFILS=1
0225    1732  4015  PMONST, XBUFFR+15
0226    1733  4025  PJCLST, XBUFFR+25
0227    1734  4026  PSYST,  XBUFFR+26
0230    1735  0006  PDXL,   XLINES
0231    1736  7772  MDXL,   -XLINES
0232                    /
0233                    EJECT
```

```
0234                    /
0235                    /       MOVE FROM INDEX TO THIS FIELD
0236                    /
0237    1737    0000    MVX,    0
0240    1740    6211            CDF     XSF
0241    1741    1737            TAD I   MVX     /GET WORD COUNT
0242    1742    3002            DCA     TMP1
0243    1743    2337            ISZ     MVX
0244    1744    1737            TAD I   MVX     /FROM ADDR-1
0245    1745    3010            DCA     AX0
0246    1746    2337            ISZ     MVX
0247    1747    6211    MVLP,   CDF     XBF
0250    1750    1410            TAD I   AX0     /GET WORD
0251    1751    6211            CDF     XSF
0252    1752    3411            DCA I   AX1     /STORE IT
0253    1753    2002            ISZ     TMP1
0254    1754    5347            JMP     MVLP    /LOOP
0255    1755    5737            JMP I   MVX     /RETURN
0256                    /
0257                    /       MOVE FROM THIS FIELD TO DISPLAY
0260                    /
0261    1756    0000    INSERT, 0
0262    1757    6211            CDF     XSF
0263    1760    1756            TAD I   INSERT  /COUNT
0264    1761    3002            DCA     TMP1
0265    1762    2356            ISZ     INSERT
0266    1763    1756            TAD I   INSERT  /FROM-1
0267    1764    3012            DCA     AX2
0270    1765    2356            ISZ     INSERT
0271    1766    1412            TAD I   AX2
0272    1767    3411            DCA I   AX1
0273    1770    2002            ISZ     TMP1
0274    1771    5366            JMP     .-3
0275    1772    5756            JMP I   INSERT
0276                    /
0277                            EJECT
-
```

```
0300                    /
0301                            PAGE
0302                    /
0303                    /       FILL IN THE FILE PORTION OF THE DISPLAY
0304                    /
0305    2000    1005    DXFLP,  TAD     TMP4    /GET ENTRY NO
0306    2001    4763            JMS I   PCVNMB  /DISPLAY IT
0307    2002    1056            TAD     TABNUL
0310    2003    3411            DCA I   AX1
0311    2004    1005            TAD     TMP4
0312    2005    7106            CLL RTL
0313    2006    7004            RAL
0314    2007    1134            TAD     PXBFR   /ADDRESS ENTRY
0315    2010    3225            DCA     DXFENT
0316                    /
0317                    /       CHECK FOR WA OR FREE ENTRY
0320                    /
0321    2011    6211            CDF     XBF
0322    2012    1625            TAD I   DXFENT
0323    2013    7450            SNA             /IS IT WA?
0324    2014    5350            JMP     DXWK    /YUP
0325    2015    1055            TAD     MBLNKS
0326    2016    7650            SNA CLA         /IS IT FREE?
0327    2017    5344            JMP     DXFR    /YUP
0330                    /
0331                    /       BORINGLY NORMAL
0332                    /
0333    2020    7240            MONE
0334    2021    1225            TAD     DXFENT
0335    2022    3225            DCA     DXFENT
0336    2023    4761            JMS I   PMVX    /MOVE FILE NAME
0337    2024    7773            -5
0340    2025    0000    DXFENT, 0               /FROM
0341                    /
0342                            EJECT
```

```
0343                    /
0344                    /       NAME IS IN THE BUFFER -- FILL IN THE BLANKS
0345                    /
0346    2026    1056    DXFNUM, TAD     TABNUL
0347    2027    3411            DCA I   AX1
0350                            ASMIFZ  AUX
0351                            ASMSKP  10
0352                            CDF     XBF
0353                            TAD I   AX0     /GET AUX
0354                            CDF     XSF
0355                            SZA             /DONT DISPLAY ZERO AUX
0356                            JMS I   PCVNMB  /ELSE CONVERT IT
0357                            TAD     TABNUL
0360                            DCA I   AX1
0361                            ASMSKP  1
0362    2030    2010            ISZ     AX0
0363    2031    6211            CDF     XBF
0364    2032    1410            TAD I   AX0     /GET START BLOCK
0365    2033    4763            JMS I   PCVNMB
0366    2034    1056            TAD     TABNUL
0367    2035    3411            DCA I   AX1
0370    2036    6211            CDF     XBF
0371    2037    1410            TAD I   AX0     /GET LENGTH
0372    2040    4763            JMS I   PCVNMB
0373    2041    2005            ISZ     TMP4    /BUMP CURRENT ENTRY
0374    2042    1005            TAD     TMP4
0375    2043    7041            CIA
0376    2044    1053            TAD     DXLAST  /COMPARE WA ENTRY NO
0377    2045    7710            SPA CLA         /PAST LAST?
0400    2046    5253            JMP     DXLSET  /YES - SET LEN
0401    2047    1057            TAD     TCRLF   /GO DOWN TWO LINES
0402    2050    3411            DCA I   AX1
0403    2051    2004            ISZ     TMP3    /END OF BUFFER?
0404    2052    5200            JMP     DXFLP   /NO-GET ANOTHER ENTRY
0405    2053    1364    DXLSET, TAD     MDXBUF
0406    2054    1011            TAD     AX1     /BUFFER LENGTH
0407    2055    3325            DCA     DXP1L
0410                    /
0411                            EJECT
=
```

```
0412                    /
0413                    /       THIS IS THE HEART OF IT ALL
0414                    /
0415    2056    6224    DXDISP, RIF
0416    2057    6202            CIF     0
0417    2060    4421            JMS I   READ
0420    2061    2126            DXPRM2
0421    2062    6224    DXDLP,  RIF
0422    2063    6202            CIF     0
0423    2064    4422            JMS I   WRITE
0424    2065    2122            DXPRM1          /DISPLAY IT ALL
0425    2066    1326            TAD     DXPRM2
0426    2067    7710            SPA CLA         /IS READ DONE?
0427    2070    5262            JMP     DXDLP   /NO=WAIT
0430                    /
0431                    /       HE TYPED SOMETHING!
0432                    /
0433    2071    1306            TAD     PCMLST
0434    2072    3010            DCA     AX0     /LIST ADDR
0435    2073    1410    CMLSCN, TAD I   AX0     /GET CHAR FROM LIST
0436    2074    7450            SNA
0437    2075    5256            JMP     DXDISP  /END OF LIST
0440    2076    1332            TAD     DXCOM   /COMPARE REPLY CHAR
0441    2077    7650            SNA CLA         /EQUAL?
0442    2100    5303            JMP     CMFND   /YES
0443    2101    2010            ISZ     AX0     /NO=BUMP PAST ADDR
0444    2102    5273            JMP     CMLSCN
0445                    /
0446    2103    1410    CMFND,  TAD I   AX0     /GET ROUTINE ADDR
0447    2104    3002            DCA     TMP1
0450    2105    5402            JMP I   TMP1    /GO
0451                    /
0452    2106    2351    PCMLST, COMLST-1        /COMMAND LIST
0453                    /
0454                    /
0455                    /
0456                    /
0457                    /       LOCATE A FILE
0460                    /
0461    2107    4721    DXLOC,  JMS I   PDXWT   /WHICH?
0462    2110    3266            DXHP2
0463    2111    1134            TAD     XBUF
0464    2112    7041            CIA
0465    2113    1041            TAD     XPOINT  /RELATIVE ENTRY ADDRESS
0466    2114    7112            CLL RTR
0467    2115    7010            RAR             /ENTRY NUMBER
0470    2116    3052            DCA     DXFRST  /STORE
0471    2117    5720            JMP I   .+1
0472    2120    1602            DXWSCN
0473                    /
0474    2121    2651    PDXWT,  DXWAIT
0475                    /
0476                            EJECT
```

```
0477                    /
0500    2122  0061  DXPRM1, 61                /INDEX IN DIAL CODES
0501    2123  6211          CDF     XSF
0502    2124  3445          DXBUF
0503    2125  0000  DXP1L,  0
0504                    /
0505    2126  0040  DXPRM2, 40                /READ FROM TTY
0506    2127  6211          CDF     XSF
0507    2130  2132          DXCOM
0510    2131  0001          1
0511    2132  0000  DXCOM,  0
0512    2133  0000          0
0513    2134  0000          0
0514                    /
0515    2135  0040  DXPRM4, 40
0516    2136  6211          CDF     XSF
0517    2137  3207          DXRPLY
0520    2140  0040          40
0521    2141  0000          0
0522    2142  0000          0
0523    2143  0000          0
0524                    /
0525                    /       INSERT " * FREE * " OR "WORK AREA"
0526                    /       IN DISPLAY BUFFER
0527                    /
0530    2144  4762  DXFR,   JMS I   PNSERT
0531    2145  7773          -5
0532    2146  2164          IMFREE-1
0533    2147  5355          JMP     DXFR2
0534                    /
0535                    /
0536    2150  4762  DXWK,   JMS I   PNSERT
0537    2151  7773          -5
0540    2152  2171          IMWORK-1
0541    2153  7240          MONE
0542    2154  3004          DCA     TMP3
0543    2155  7307  DXFR2,  FOUR
0544    2156  1225          TAD     DXFENT
0545    2157  3010          DCA     AX0     /SET "FROM" POINTER
0546    2160  5226          JMP     DXFNUM
0547                    /
0550    2161  1737  PMVX,   MVX
0551    2162  1756  PNSERT, INSERT
0552    2163  2200  PCVNMB, CVNUM
0553                    /
0554    2164  4334  MDXBUF, -DXBUF+1
0555                    /
0556    2165  4052
0556    2166  4006
0556    2167  2205
0556    2170  0540
0556    2171  5240
0556                    IMFREE, TEXT    " * FREE * "
0557    2172  2717
0557    2173  2213
0557    2174  4040
0557    2175  0122
0557    2176  0501
0557                    IMWORK, TEXT    "WORK  AREA"
0560                    /
0561                    EJECT
*
```

```
0562                    /
0563                            PAGE
0564                    /
0565                    /       CONVERT THE CONTENTS OF AC TO
0566                    /       TEXT FORMAT IN CORE
0567                    /
0570    2200    0000    CVNUM,  0
0571    2201    3002            DCA     TMP1
0572    2202    6211            CDF     XSF
0573    2203    7240            MONE
0574    2204    3251            DCA     CVZSW   /SUPPRESS LEADING ZEROS
0575    2205    4227            JMS     CVD
0576    2206    7106            CLL RTL
0577    2207    7006            RTL
0600    2210    7006            RTL             /HOLD IN HIGH DIGIT
0601    2211    3003            DCA     TMP2
0602    2212    4227            JMS     CVD
0603    2213    1003            TAD     TMP2    /COMBINE WITH LAST
0604    2214    3411            DCA I   AX1     /STORE
0605    2215    4227            JMS     CVD
0606    2216    7106            CLL RTL
0607    2217    7006            RTL
0610    2220    7006            RTL
0611    2221    3003            DCA     TMP2    /THIRD DIGIT
0612    2222    3251            DCA     CVZSW   /FORCE SIGNIFICANT DIGIT
0613    2223    4227            JMS     CVD
0614    2224    1003            TAD     TMP2    /COMBINE
0615    2225    3411            DCA I   AX1     /STORE
0616    2226    5600            JMP I   CVNUM   /RETURN
0617                    /
0620                    /       CONVERT A DIGIT TO TEXT FORMAT
0621                    /
0622    2227    0000    CVD,    0
0623    2230    1002            TAD     TMP1    /GET THE WORD
0624    2231    7004            RAL
0625    2232    7006            RTL             /SHIFT ONE DIGIT
0626    2233    3002            DCA     TMP1    /HOLD THAT
0627    2234    1002            TAD     TMP1
0630    2235    7004            RAL             /HO DIGIT IN 9-11
0631    2236    0062            AND     P7      /STRIP OTHERS
0632    2237    2251            ISZ     CVZSW   /PRECEDING ZERO?
0633    2240    5246            JMP     CVNZ    /NO - DO NOT BLK
0634    2241    7440            SZA             /IS THIS ZERO?
0635    2242    5246            JMP     CVNZ    /NO AGAIN
0636    2243    7240            MONE            /ELSE BLANK DIGIT
0637    2244    3251            DCA     CVZSW   /AND SET SWITCH
0640    2245    1066            TAD     M20     /0 BECOMES BLANK
0641    2246    1250    CVNZ,   TAD     CV60
0642    2247    5627            JMP I   CVD     /RETURN IT
0643                    /
0644    2250    0060    CV60,   60
0645    2251    0000    CVZSW,  0
0646                    /
0647                            EJECT
```

```
0650                    /
0651                    /       CONVERT A NUMB TO ASCII
0652                    /
0653    2252    0000    CVNA,   0
0654    2253    3002            DCA     TMP1
0655    2254    6211            CDF     XSF
0656    2255    7240            MONE
0657    2256    3251            DCA     CVZSW   /SUPPRESS LEADING ZEROS
0660    2257    7346            MTHREE
0661    2260    3003            DCA     TMP2    /COUNT DIGITS
0662    2261    4227    CVNALP, JMS     CVD     /CONVERT ONE DIGIT
0663    2262    1273            TAD     P200    /MAKE NUMERIC (OR BLANK)
0664    2263    3411            DCA I   AX1     /PUT IN BUFFER
0665    2264    2003            ISZ     TMP2
0666    2265    5261            JMP     CVNALP
0667    2266    3251            DCA     CVZSW   /FORCE LAST DIGIT
0670    2267    4227            JMS     CVD
0671    2270    1273            TAD     P200
0672    2271    3411            DCA I   AX1
0673    2272    5652            JMP I   CVNA
0674                    /
0675    2273    0200    P200,   200
0676                    /
0677                    /       CONVERT TEXT TO ASCII
0700                    /
0701    2274    0000    CVTA,   0
0702    2275    1674            TAD I   CVTA    /LENGTH
0703    2276    3002            DCA     TMP1
0704    2277    2274            ISZ     CVTA
0705    2300    1674            TAD I   CVTA
0706    2301    3003            DCA     TMP2
0707    2302    2274            ISZ     CVTA
0710    2303    1403    CVTALP, TAD I   TMP2    /GET TWO CHARS
0711    2304    7012            RTR
0712    2305    7012            RTR
0713    2306    7012            RTR             /FIRST IN 6-11
0714    2307    4316            JMS     CVC     /CONVERT IT
0715    2310    1403            TAD I   TMP2    /SECOND IN 6-11
0716    2311    4316            JMS     CVC     /CONVERT IT
0717    2312    2003            ISZ     TMP2    /BUMP ADDR
0720    2313    2002            ISZ     TMP1
0721    2314    5303            JMP     CVTALP
0722    2315    5674            JMP I   CVTA    /RETURN
0723                    /
0724                    /       CONVERT A CHARACTER TO ASCII
0725                    /
0726    2316    0000    CVC,    0
0727    2317    0072            AND     P77     /STRIP TO SIX
0730    2320    1071            TAD     M40     /TEST RANGE
0731    2321    7510            SPA
0732    2322    1073            TAD     P100    /ALPHA
0733    2323    1074            TAD     P240
0734    2324    3411            DCA I   AX1     /STORE ASCII
0735    2325    5716            JMP I   CVC
0736                    /
0737                    EJECT
```

```
0740                    /
0741                    /
0742                    /       COMMAND HANDLERS
0743                    /
0744                    /       MOVE DISPLAY FOREWARD
0745                    /
0746    2326    7201    DXFOR1, ONE             /BUMP BY ONE
0747    2327    7410            SKP
0750    2330    1350    DXFORE, TAD     PFRAME  /BUMP
0751    2331    1052            TAD     DXFRST  /TOP ENTRY
0752    2332    3052            DCA     DXFRST
0753    2333    5746            JMP I   PDSCAN
0754                    /
0755                    /       BACK UP
0756                    /
0757    2334    7240    DXBAK1, MONE            /BACK UP ONE
0760    2335    7410            SKP
0761    2336    1351    DXBACK, TAD     MFRAME
0762    2337    1052            TAD     DXFRST  /BACK UP FIRST ENTRY
0763    2340    3052            DCA     DXFRST
0764    2341    5746            JMP I   PDSCAN
0765                    /
0766                    /       DELETE
0767                    /
0770    2342    4747    DXDEL,  JMS I   PWAIT   /GET FILE
0771    2343    3266            DXHP2
0772    2344    4525            JMS I   DELET   /DELETE IT
0773    2345    5746            JMP I   PDSCAN
0774                    /
0775    2346    1602    PDSCAN, DXWSCN
0776    2347    2651    PWAIT,  DXWAIT
0777    2350    0006    PFRAME, XLINES
1000    2351    7772    MFRAME, -XLINES
1001                    /
1002                    /       DX COMMANDS, WITH HANDLER ADDRESSES
1003                    /
1004    2352    7563    COMLST, -215            /CR
1005    2353    0257            XSRMF
1006    2354    7472            -306            /F
1007    2355    2330            DXFORE
1010    2356    7476            -302            /B
1011    2357    2336            DXBACK
1012    2360    7566            -212            /LF
1013    2361    2326            DXFOR1
1014    2362    7645            -233            /ALT
1015    2363    2334            DXBAK1
1016    2364    7474            -304            /D
1017    2365    2342            DXDEL
1020    2366    7477            -301            /A
1021    2367    2601            DXALIS
1022    2370    7456            -322            /R
1023    2371    2605            DXREN
1024    2372    7460            -320            /P
1025    2373    2400            DXPRNT
1026    2374    7464            -314            /L
1027    2375    2107            DXLOC
1030    2376    0000            0               /END OF LIST
1031                    /
1032                            EJECT
*
```

```
1033                    /
1034                            PAGE
1035                    /
1036                    /       PRINT THE INDEX
1037                    /
1040    2400    6224    DXPRNT, RIF
1041    2401    6202            CIF     0
1042    2402    4421            JMS I   READ
1043    2403    2126    PPRM2,  DXPRM2
1044    2404    1135            TAD     PRPLY   /USE REPLY BUFFER
1045    2405    3011            DCA     AX1     /FOR OUTPUT
1046    2406    4331            JMS     LFLF
1047    2407    4721            JMS I   PCVTA   /CONVERT HEADING TO ASCII
1050    2410    7773            -5
1051    2411    3401            PXH1
1052    2412    4721            JMS I   PCVTA   /GET VOLID
1053    2413    7773            -5
1054    2414    4000            XBUFFR
1055    2415    4342            JMS     PXLINE
1056    2416    4721            JMS I   PCVTA
1057    2417    7771            -7
1060    2420    3406            PXH2
1061    2421    1716            TAD I   PXLEN   /GET INDEX LEN
1062    2422    4722            JMS I   PCVNA
1063    2423    4342            JMS     PXLINE
1064    2424    4721            JMS I   PCVTA
1065    2425    7770            -10
1066    2426    3415            PXH3
1067    2427    1717            TAD I   PVLEN   /GET VOLUME LEN
1070    2430    4722            JMS I   PCVNA
1071    2431    4342            JMS     PXLINE
1072    2432    1720            TAD I   PJST    /TEST JCL START
1073    2433    7640            SZA CLA         /SYSTEM?
1074    2434    5240            JMP     PXSYS   /YES
1075    2435    4721            JMS I   PCVTA   /NO
1076    2436    7776            -2
1077    2437    3425            PXH4
1100    2440    4721    PXSYS,  JMS I   PCVTA   /SYSTEM
1101    2441    7775            -3
1102    2442    3427            PXH5
1103    2443    1102            TAD     LINFED
1104    2444    3411            DCA I   AX1
1105    2445    4342            JMS     PXLINE
1106    2446    4721            JMS I   PCVTA   /DO HEADER
1107    2447    7765            -13
1110    2450    3432            PXH6
1111    2451    4342            JMS     PXLINE
1112    2452    1134            TAD     XBUF    /INITIALIZE
1113    2453    1065            TAD     P20     /ENTRY POINTER
1114    2454    3270            DCA     PXENT
1115                    /
1116                            EJECT
-
```

```
1117                    /
1120                    /       MAIN PX LOOP
1121                    /
1122    2455    1063    PXLOOP, TAD     P10
1123    2456    1270            TAD     PXENT   /NEXT ENTRY
1124    2457    3270            DCA     PXENT
1125    2460    1670            TAD I   PXENT
1126    2461    7450            SNA             /IS THIS WA?
1127    2462    5274            JMP     PXWA    /YES
1130    2463    1055            TAD     MBLNKS
1131    2464    7650            SNA CLA         /IS THIS FREE?
1132    2465    5255            JMP     PXLOOP  /YES = SKIP IT
1133    2466    4721            JMS I   PCVTA   /CONVERT ENTRY
1134    2467    7773            -5
1135    2470    0000    PXENT,  0
1136    2471    1003            TAD     TMP2    /GET POINTER
1137    2472    4304            JMS     PXSL    /DO THE THING
1140    2473    5255            JMP     PXLOOP  /GO TO NEXT
1141                    /
1142                    /       HERE IS WA
1143                    /
1144    2474    4721    PXWA,   JMS I   PCVTA   /WORK AREA
1145    2475    7773            -5
1146    2476    2172            IMWORK
1147    2477    1061            TAD     P5
1150    2500    1270            TAD     PXENT
1151    2501    4304            JMS     PXSL
1152    2502    4331            JMS     LFLF
1153    2503    5775            JMP I   PDXDLP
1154                    /
1155                    /       USEFUL SUBROUTINE
1156                    /
1157    2504    0000    PXSL,   0
1160    2505    3012            DCA     AX2     /SET POINTER
1161    2506    4323            JMS     PXBB    /SPACE TWO
1162    2507    1412            TAD I   AX2     /GET START BLOCK
1163    2510    4722            JMS I   PCVNA   /CONVERT THAT
1164    2511    4323            JMS     PXBB    /SPACE A LITTLE
1165    2512    1412            TAD I   AX2     /GET LENGTH
1166    2513    4722            JMS I   PCVNA   /CONVERT, AND
1167    2514    4342            JMS     PXLINE  /PRINT IT
1170    2515    5704            JMP I   PXSL
1171                    /
1172    2516    4006    PXLEN,  XBUFFR+6
1173    2517    4007    PVLEN,  XBUFFR+7
1174    2520    4026    PJST,   XBUFFR+26
1175                    /
1176    2521    2274    PCVTA,  CVTA
1177    2522    2252    PCVNA,  CVNA
1200                    /
1201                    EJECT
=
```

```
1202                    /
1203                    /       TWO BLANKS
1204                    /
1205    2523    0000    PXBB,   0
1206    2524    1074            TAD     P240
1207    2525    3411            DCA I   AX1
1210    2526    1074            TAD     P240
1211    2527    3411            DCA I   AX1
1212    2530    5723            JMP I   PXBB
1213                    /
1214                    /       SCOOT THE PAPER UP
1215                    /
1216    2531    0000    LFLF,   0
1217    2532    1376            TAD     M11
1220    2533    3002            DCA     TMP1
1221    2534    1102    LFLOOP, TAD     LINFED
1222    2535    3411            DCA I   AX1
1223    2536    2002            ISZ     TMP1
1224    2537    5334            JMP     LFLOOP
1225    2540    4342            JMS     PXLINE
1226    2541    5731            JMP I   LFLF
1227                    /
1230                    /       PRINT AN INDEX LINE
1231                    /
1232    2542    0000    PXLINE, 0
1233    2543    1101            TAD     CARRET
1234    2544    3411            DCA I   AX1
1235    2545    1102            TAD     LINFED
1236    2546    3411            DCA I   AX1
1237    2547    1135            TAD     PRPLY
1240    2550    7041            CIA
1241    2551    1011            TAD     AX1
1242    2552    3774            DCA I   PPRM4L
1243    2553    6024            RIF
1244    2554    6202            CIF     0
1245    2555    4422            JMS I   WRITE   /START OUTPUT
1246    2556    2135    PPRM4,  DXPRM4
1247    2557    1603    PXTEST, TAD I   PPRM2   /ANY CHAR TYPED?
1250    2560    7700            SMA CLA
1251    2561    5775            JMP I   PDXDLP  /YES = TAKE COMMAND
1252    2562    6224            RIF
1253    2563    6202            CIF     0
1254    2564    4422            JMS I   WRITE   /DISPLAY INDEX
1255    2565    2122            DXPRM1
1256    2566    1756            TAD I   PPRM4
1257    2567    7710            SPA CLA
1260    2570    5357            JMP     PXTEST  /LOOP UNTIL ONE
1261    2571    1135            TAD     PRPLY   /SETUP FOR NEXT LINE
1262    2572    3011            DCA     AX1
1263    2573    5742            JMP I   PXLINE  /RETURN
1264                    /
1265    2574    2140    PPRM4L, DXPRM4+3
1266    2575    2062    PDXDLP, DXDLP
1267    2576    7767    M11,    -11
1270                    /
1271                    EJECT
=
```

```
1272                    /
1273                            PAGE
1274                    /
1275    2600    0000    DXARSW, 0               /ALIAS OR RENAME CONTROL
1276                    /
1277                    /
1300    2601    4533    DXALIS, JMS I   FULL    /IS INDEX FULL?
1301    2602    7000            NOP             /YES
1302    2603    5226            JMP     DXAFUL  /REFUSE
1303    2604    7240            MONE            /NO, SET SW
1304    2605    3200    DXREN,  DCA     DXARSW  /SET ALIAS/RENAME SW
1305    2606    4251            JMS     DXWAIT  /GET OLD FILE
1306    2607    3266            DXHP3
1307    2610    1041            TAD     XPOINT
1310    2611    3043            DCA     XNXEP   /SAVE POINTER
1311    2612    1441            TAD I   XPOINT
1312    2613    1065            TAD     MBLNKS  /IF OLD IS FREE,
1313    2614    7650            SNA CLA         /ALIAS*RENAME
1314    2615    3200            DCA     DXARSW
1315    2616    1250    DXGNEW, TAD     PHP4
1316    2617    4772            JMS I   PWT2    /GET REPLY
1317    2620    5243            JMP     DXNBAD  /NUMERIC, TRY AGAIN
1320    2621    4516            JMS I   FIND    /DOES THIS NAME EXIST?
1321    2622    5231            JMP     DXARDO  /NO
1322    2623    4301            JMS     DXTELL
1323    2624    3320            DXEP1           /NAME EXISTS
1324    2625    5216            JMP     DXGNEW  /TRY AGAIN
1325                    /
1326    2626    4301    DXAFUL, JMS     DXTELL
1327    2627    3366            DXEP3
1330    2630    5773            JMP I   PDISP
1331                    /
1332                    /
1333    2631    2200    DXARDO, ISZ     DXARSW  /ALIAS OR RENAME?
1334    2632    5241            JMP     DXRNDO  /RENAME
1335    2633    1043            TAD     XNXEP   /SAVED XPOINT
1336    2634    3041            DCA     XPOINT
1337    2635    4524            JMS I   PAND    /MAKE NEW ENTRY
1340    2636    1063            TAD     P10
1341    2637    1041            TAD     XPOINT
1342    2640    3043            DCA     XNXEP   /BUMP POINTER
1343    2641    4521    DXRNDO, JMS I   MCOPY   /COPY IN NEW NAME
1344    2642    5647            JMP I   PDXSCN  /AND RESUME DISPLAY
1345                    /
1346                    /       NEW NAME NOT ALPHA
1347                    /
1350    2643    1371    DXNBAD, TAD     MCARET  /COMPARE CR
1351    2644    7650            SNA CLA
1352    2645    5647            JMP I   PDXSCN  /EQUAL, IGNORE REQUEST
1353    2646    5216            JMP     DXGNEW  /ELSE TRY AGAIN
1354                    /
1355    2647    1602    PDXSCN, DXWSCN
1356    2650    3304    PHP4,   DXHP4
1357                    /
1360                            EJECT
```

```
1361                    /
1362                    /       WAIT FOR REPLY
1363                    /
1364    2651    0000    DXWAIT, 0
1365    2652    1651            TAD I   DXWAIT  /GET HELP ADDR
1366    2653    4772            JMS I   PWT2    /GET REPLY
1367    2654    5263            JMP     DXWNUM  /NUMERIC ANSWER
1370    2655    4516            JMS I   FIND    /LOOK IT UP
1371    2656    7410            SKP             /NO FIND
1372    2657    5354            JMP     DXWXIT
1373    2660    4301    DXWBAD, JMS     DXTELL
1374    2661    3343            DXEP2
1375    2662    5052            JMP     DXWAIT+1
1376                    /
1377                    /       ANSWER WAS NOT ALPHA
1400                    /
1401    2663    7200    DXWNUM, CLA
1402    2664    1135            TAD     PRPLY
1403    2665    3010            DCA     AX0
1404    2666    3041    DXWNLP, DCA     XPOINT  /SET XPOINT
1405    2667    1410            TAD I   AX0
1406    2670    4530            JMS I   LIMIT   /CHECK NUMERIC
1407    2671    7520    DXM260, -260
1410    2672    7511            -267
1411    2673    5321            JMP     DXWND   /OUT OF RANGE
1412    2674    1271            TAD     DXM260
1413    2675    1041            TAD     XPOINT
1414    2676    7104            CLL RAL
1415    2677    7106            CLL RTL
1416    2700    5266            JMP     DXWNLP
1417                    /
1420                    /       ERROR DISPLAY
1421                    /
1422    2701    0000    DXTELL, 0
1423    2702    1701            TAD I   DXTELL
1424    2703    3314            DCA     DXTP
1425    2704    2301            ISZ     DXTELL
1426    2705    6224            RIF
1427    2706    6202            CIF     0
1430    2707    4421            JMS I   READ
1431    2710    2126            DXPRM2
1432    2711    6224    DXTLUP, RIF
1433    2712    6202            CIF     0
1434    2713    4422            JMS I   WRITE
1435    2714    0000    DXTP,   0
1436    2715    1710            TAD I   DXTLUP-1
1437    2716    7710            SPA CLA
1440    2717    5311            JMP     DXTLUP
1441    2720    5701            JMP I   DXTELL
1442                    /
1443                            EJECT
```

```
1444                    /
1445                    /       NUMERIC REPLY * 10, IF ANY, IS
1446                    /       IN XPOINT.
1447                    /
1450    2721    1371    DXWND,  TAD     MCARET  /CARRIAGE RETURN?
1451    2722    7640            SZA CLA
1452    2723    5260            JMP     DXWBAD  /NO=ERROR
1453    2724    1135            TAD     PRPLY
1454    2725    7040            CMA
1455    2726    1010            TAD     AX0
1456    2727    7650            SNA CLA         /WAS CR FIRST CHARACTER?
1457    2730    5773            JMP I   PDISP   /YES = IGNORE REQUEST
1460    2731    1041            TAD     XPOINT  /RELATIVE ENTRY POINTER
1461    2732    7110            CLL RAR
1462    2733    7012            RTR
1463    2734    7041            CIA
1464    2735    1053            TAD     DXLAST  /COMPARE TO LAST ENTRY
1465    2736    7710            SPA CLA
1466    2737    5260            JMP     DXWBAD  /NOPE = TOO BIG
1467    2740    1070            TAD     M30
1470    2741    1041            TAD     XPOINT  /COMPARE FIRST ENTRY
1471    2742    7710            SPA CLA
1472    2743    5260            JMP     DXWBAD  /NOPE
1473    2744    1041            TAD     XPOINT
1474    2745    1134            TAD     XBUF
1475    2746    3041            DCA     XPOINT  /POINTER WITHIN BUFFER
1476    2747    6211            CDF     XBF
1477    2750    1441            TAD I   XPOINT  /GET FIRST WORD
1500    2751    6211            CDF     XSF
1501    2752    7650            SNA CLA
1502    2753    5260            JMP     DXWBAD  /ZERO = BAD
1503                    /
1504                    /       MOVE AUX TO LIST AND RETURN
1505                    /
1506    2754    1041    DXWXIT, TAD     XPOINT
1507    2755    1061            TAD     P5
1510    2756    3002            DCA     TMP1
1511    2757    1136            TAD     PLIST
1512    2760    1061            TAD     P5
1513    2761    3003            DCA     TMP2
1514    2762    6211            CDF     XSF
1515    2763    1402            TAD I   TMP1    /GET INDEX AUX
1516    2764    6201            CDF     XLF
1517    2765    3403            DCA I   TMP2    /PUT IN LIST
1520    2766    6211            CDF     XSF
1521    2767    2251            ISZ     DXWAIT  /BUMP RETURN
1522    2770    5651            JMP I   DXWAIT  /AND GO HOME
1523                    /
1524    2771    7763    MCARET, -215
1525    2772    3000    PWT2,   DXWT2
1526    2773    2056    PDISP,  DXDISP
1527                    /
1530                    EJECT
```

```
1531                    /
1532                            PAGE
1533                    /
1534                    /       GET REPLY, RETURN TO P+1 IF NUMERIC
1535                    /       SKIP RETURN IF ALPHA WITH XLIST SET TO TEXT
1536                    /
1537    3000    0000    DXWT2,  0
1540    3001    3287            DCA     DXWHP   /HELP ADDRESS
1541    3002    1071    DXWERR, TAD     M40     /MINUS REPLY LENGTH
1542    3003    3002            DCA     TMP1
1543    3004    1135            TAD     PRPLY   /REPLY FIELD -1
1544    3005    3010            DCA     AX0
1545    3006    6211            CDF     XSF     /THIS FIELD
1546    3007    3410            DCA I   AX0
1547    3010    2002            ISZ     TMP1
1550    3011    5207            JMP     .-2     /CLEAR BUFFER
1551    3012    1371            TAD     P40
1552    3013    3737            DCA I   DXP4L   /SET LENGTH
1553    3014    6224            RIF
1554    3015    6202            CIF     0
1555    3016    4421            JMS I   READ
1556    3017    2135            DXPRM4
1557    3020    6224    DXWLP,  RIF
1560    3021    6202            CIF     0
1561    3022    4422            JMS I   WRITE   /DISPLAY INDEX
1562    3023    2122            DXPRM1
1563    3024    6224            RIF
1564    3025    6202            CIF     0
1565    3026    4422            JMS I   WRITE   /DISPLAY HELP
1566    3027    0000    DXWHP,  0
1567    3030    6224            RIF
1570    3031    6202            CIF     0
1571    3032    4422            JMS I   WRITE   /DISPLAY REPLY
1572    3033    3173            DXPRM3
1573    3034    1617            TAD I   DXWLP-1 /READ DONE?
1574    3035    7710            SPA CLA
1575    3036    5220            JMP     DXWLP   /NO - LOOP
1576    3037    1736    EJVENT, TAD I   PANSR
1577    3040    4530            JMS I   LIMIT   /CHECK FOR ALPHA
1600    3041    7477            -301
1601    3042    7446            -332
1602    3043    5600            JMP I   DXWT2   /NOT ALPHA, RETURN
1603    3044    7200            CLA
1604    3045    1136            TAD     PLIST
1605    3046    3011            DCA     AX1
1606    3047    1075            TAD     M4
1607    3050    3002            DCA     TMP1
1610    3051    6201            CDF     XLF
1611    3052    1054            TAD     HBLNKS
1612    3053    3411            DCA I   AX1
1613    3054    2002            ISZ     TMP1
1614    3055    5252            JMP     .-3
1615                    /
1616                            EJECT
```

```
1617                    /
1620    3056  7240      MONE
1621    3057  3003      DCA     TMP2    /SET ODD = EVEN CHAR SW
1622    3060  7240      MONE
1623    3061  3004      DCA     TMP3    /SET NAME = EXT SW
1624    3062  1135      TAD     PRPLY
1625    3063  3010      DCA     AX0
1626    3064  1136      TAD     PLIST
1627    3065  3047      DCA     XLIST
1630    3066  7346      MTHREE          /MAX FILE NAME LEN
1631    3067  3002      DCA     TMP1
1632                    /
1633    3070  6211  GETA, CDF     XSF
1634    3071  1410      TAD I   AX0     /GET A CHAR
1635    3072  4530      JMS I   LIMIT   /IS IT ALPHA?
1636    3073  7477      -301
1637    3074  7446      -332
1640    3075  7410      SKP             /NO
1641    3076  5303      JMP     PUTA    /YES = ACCEPTABLE
1642    3077  4530      JMS I   LIMIT   /NUMERIC?
1643    3100  7520      -260
1644    3101  7507      -271
1645    3102  5340      JMP     NOTAN   /NO
1646                    /
1647    3103  6201  PUTA, CDF     XLF
1650    3104  0072      AND     P77     /STRIP TO 6 BITS
1651    3105  2003      ISZ     TMP2    /ODD OR EVEN CHAR?
1652    3106  5314      JMP     PODD
1653    3107  7106      CLL RTL
1654    3110  7006      RTL
1655    3111  7006      RTL             /SHIFT TO LEFT
1656    3112  3447      DCA I   XLIST   /SAVE IT
1657    3113  5270      JMP     GETA
1660    3114  1447  PODD, TAD I   XLIST   /GET EVEN CHAR
1661    3115  3447      DCA I   XLIST
1662    3116  2047      ISZ     XLIST   /BUMP ADDR
1663    3117  7240      MONE
1664    3120  3003      DCA     TMP2    /RESET SWITCH
1665    3121  2002      ISZ     TMP1    /CHECK LIMIT
1666    3122  5270      JMP     GETA    /FINE, CONTINUE
1667    3123  2004  NXCHK, ISZ     TMP3    /NAME OR EXT SCAN?
1670    3124  5360      JMP     FINDCR  /EXT = GO AWAY
1671                    /
1672                    /
1673    3125  7344      MTWO            /NAME
1674    3126  3002      DCA     TMP1    /SET EXT COUNT
1675    3127  6211      CDF     XSF
1676    3130  1410      TAD I   AX0
1677    3131  4530      JMS I   LIMIT   /IS NEXT PERIOD?
1700    3132  7522      -256
1701    3133  7522      -256
1702    3134  5362      JMP     CRCHK   /NO, IS IT CR?
1703    3135  5303      JMP     PUTA    /YES = GET EXT
1704                    /
1705    3136  3207  PANSR, DXRPLY
1706    3137  2140  DXP4L, DXPRM4+3
1707                    /
1710                    EJECT
=
```

```
1711                    /
1712                    /       CHAR IS NOT ALPHA-NUMERIC
1713                    /
1714    3140    7240    NOTAN,  MONE
1715    3141    1010            TAD     AX0
1716    3142    3010            DCA     AX0     /BACK UP POINTER
1717    3143    2003            ISZ     TMP2    /ODD OR EVEN?
1720    3144    7410            SKP
1721    3145    5352            JMP     NOFILL  /EVEN
1722    3146    6201            CDF     XLF
1723    3147    1371            TAD     P40
1724    3150    1447            TAD I   XLIST
1725    3151    3447            DCA I   XLIST
1726    3152    7325    NOFILL, THREE
1727    3153    1136            TAD     PLIST
1730    3154    3047            DCA     XLIST   /POINT TO EXT
1731    3155    7240            MONE
1732    3156    3003            DCA     TMP2    /SET EVEN CHAR
1733    3157    5323            JMP     NXCHK   /CONTINUE
1734                    /
1735                    /       LOOK FOR CR
1736                    /
1737    3160    6211    FINDCR, CDF     XSF
1740    3161    1410            TAD I   AX0
1741    3162    1372    CRCHK,  TAD     M215    /COMPARE CR
1742    3163    7640            SZA CLA
1743    3164    5202            JMP     DXWERR  /OOPS
1744    3165    1136            TAD     PLIST
1745    3166    3047            DCA     XLIST
1746    3167    2200            ISZ     DXWT2
1747    3170    5600            JMP I   DXWT2   /RETURN ALPHA
1750                    /
1751    3171    0040    P40,    40
1752    3172    7563    M215,   -215
1753                    /
1754                    /
1755    3173    0060    DXPRM3, 60              /ASCII DISPLAY OF REPLY
1756    3174    6211            CDF     XSF
1757    3175    3177            DXRPY1
1760    3176    0050            50
1761                    /
1762                    /       "REPLY:" AT TOP OF SCREEN,
1763                    /       WITH SPACE FOR REPONSE IN ASCII
1764                    /
1765    3177    0212    DXRPY1, 212;
1765    3200    0212    212;
1765    3201    0322    322;
1765    3202    0305    305;
1765    3203    0320    320;
1765    3204    0314    314;
1765    3205    0331    331;
1765    3206    0272    272
1766    3207    0240    DXRPLY, 240
1767                    *.+37
1770    3247    0215            215             /GUARANTEED CR
1771                    /
1772                    EJECT
```

```
1773                    /
1774                    /       MESSAGES AND THINGS
1775                    /
1776    3250    4011
1776    3251    0447
1776                    IMVID,  TEXT    " ID    "
1777    3252    4715
1777    3253    1716
1777    3254    1124
1777    3255    1722
1777    3256    4747
1777                    IMMON,  TEXT    "       MONITOR         "
2000    3257    4712
2000    3260    1702
2000    3261    4003
2000    3262    1716
2000    3263    2422
2000    3264    1714
2000    3265    4700
2000                    IMJCL,  TEXT    "       JOB CONTROL     "
2001                    /
2002                    DXHP2=  .
2003    3266    0061    DXHP3,  61
2004    3267    6211            CDF     XSF
2005    3270    3272            .+2
2006    3271    0012            DXHP4=.-1
2007                    /
2010    3272    0045            45
2011    3273    0516
2011    3274    2422
2011    3275    3140
2011    3276    1722
2011    3277    4006
2011    3300    1114
2011    3301    0540
2011    3302    1601
2011    3303    1505
2011                    TEXT    "ENTRY OR FILE NAME"
2012                    /
2013    3304    0061    DXHP4,  61
2014    3305    6211            CDF     XSF
2015    3306    3310            .+2
2016    3307    0010            DXHP5=.-1
2017                    /
2020    3310    0045            45
2021    3311    1605
2021    3312    2740
2021    3313    0611
2021    3314    1405
2021    3315    4016
2021    3316    0115
2021    3317    0500
2021                    TEXT    "NEW FILE NAME"
2022                    /
2023                    DXHP5=  .
2024                    /
2025                    EJECT
=
```

```
2026                        /
2027      3320  0061  DXEP1,  61
2030      3321  6211        CDF     XSF
2031      3322  3324        .+2
2032      3323  0017        DXEP2=.-1
2033      3324  2317
2033      3325  2222
2033      3326  3154
2033      3327  4016
2033      3330  0527
2033      3331  4016
2033      3332  0115
2033      3333  0540
2033      3334  0114
2033      3335  2205
2033      3336  0104
2033      3337  3140
2033      3340  0530
2033      3341  1123
2033      3342  2423
2033                    TEXT    "SORRY, NEW NAME ALREADY EXISTS"
2034                        /
2035      3343  0061  DXEP2,  61
2036      3344  6211        CDF     XSF
2037      3345  3347        .+2
2040      3346  0017        DXEP3=.-1
2041      3347  2320
2041      3350  0503
2041      3351  1106
2041      3352  1105
2041      3353  0440
2041      3354  0611
2041      3355  1405
2041      3356  4004
2041      3357  1705
2041      3360  2340
2041      3361  1617
2041      3362  2440
2041      3363  0530
2041      3364  1123
2041      3365  2400
2041                    TEXT    "SPECIFIED FILE DOES NOT EXIST"
2042                        /
2043      3366  0061  DXEP3,  61
2044      3367  6211        CDF     XSF
2045      3370  3372        .+2
2046      3371  0007        PXH1=.-1
2047      3372  1116
2047      3373  0405
2047      3374  3040
2047      3375  1123
2047      3376  4006
2047      3377  2514
2047      3400  1400
2047                    TEXT    "INDEX IS FULL"
2050                        /
2051                        EJECT
=
```

```
2052                            /
2053                            /       PRINT INDEX FORMS
2054                            /
2055    3401    1116
2055    3402    0405
2055    3403    3040
2055    3404    1706
2055    3405    7240
2055                    PXH1,   TEXT    "INDEX OF: "
2056    3406    1116
2056    3407    0405
2056    3410    3040
2056    3411    1405
2056    3412    1607
2056    3413    2410
2056    3414    4075
2056                    PXH2,   TEXT    "INDEX LENGTH #"
2057    3415    2617
2057    3416    1425
2057    3417    1505
2057    3420    4014
2057    3421    0516
2057    3422    0724
2057    3423    1040
2057    3424    7540
2057                    PXH3,   TEXT    "VOLUME LENGTH # "
2060    3425    4016
2060    3426    1740
2060                    PXH4,   TEXT    " NO "
2061    3427    2331
2061    3430    2324
2061    3431    0515
2061                    PXH5,   TEXT    "SYSTEM"
2062    3432    0611
2062    3433    1416
2062    3434    0115
2062    3435    4005
2062    3436    3024
2062    3437    4040
2062    3440    2324
2062    3441    0122
2062    3442    2440
2062    3443    4014
2062    3444    0516
2062                    PXH6,   TEXT    "FILNAM EXT  START  LEN"
2063                    /
2064                    EJECT
```

```
2065                    /
2066                    /       SKELETON DISPLAY IMAGE
2067                    /
2070    3445    4545    DXBUF,  4545            /LINE FEEDS
2071    3446    4545            4545
2072    3447    0516
2072    3450    2422
2072    3451    3147
2072    3452    4747
2072                            TEXT    "ENTRY                  "
2073                            ASMIFN  AUX
2074                    TEXT    "AUX    "
2075    3453    2324
2075    3454    2224
2075    3455    4714
2075    3456    0516
2075                    TEXT    "STRT   LEN"
2076    3457    4345            4345
2077                    /
2100    3460    0000    IMFILS, 0               /FILE INFO HERE
2101                    /
2102                    /
2103                            EJECT
```

```
2104                    /
2105                    /       END-OF-JOB FILE SAVING
2106                    /
2107                    /       THIS CODE IS NON-REUSABLE, AND
2110                    /       IS DESTROYED BY DX.
2111                    /
2112                            FDBLST=7550     /CMI BUFFER IN FIELD 0
2113                                            /USED TO BUILD FDB LIST
2114                    /
2115                            *0
2116    0000    3460            EJS000          /PASS ENTRY POINT
2117                            *IMFILS
2120                    /
2121    3460    0000    EJS000, 0
2122    3461    5662            JMP I   .+1
2123    3462    4000            EJB000          /SORT THE FDBS
2124    3463    6201    EJS010, CDF     XLF
2125    3464    1755            TAD I   PPFILE  /GET FDB POINTER
2126    3465    3354    EJS020, DCA     PFILE
2127    3466    2355            ISZ     PPFILE  /BUMP TO UNIT
2130    3467    1364            TAD     EJPARM  /GET CURRENT UNIT
2131    3470    0362            AND     STRIP
2132    3471    7041            CIA
2133    3472    1755            TAD I   PPFILE  /COMPARE THIS UNIT
2134    3473    7650            SNA CLA
2135    3474    5303            JMP     EJS030  /IF SAME, DONT READ
2136    3475    1755            TAD I   PPFILE  /GET UNIT AGAIN
2137    3476    3364            DCA     EJPARM  /INTO PARAM LIST
2140    3477    6224            RIF
2141    3500    6202            CIF     0
2142    3501    4421            JMS I   READ    /READ INDEX
2143    3502    3564            EJPARM
2144    3503    1354    EJS030, TAD     PFILE   /PASS FDB ADDR
2145    3504    4756            JMS I   EJV     /VALIDATE NAME
2146    3505    5342            JMP     EJS160  /NO SAVE, PLEASE
2147    3506    1364            TAD     EJPARM
2150    3507    7710            SPA CLA
2151    3510    5306            JMP     .-2     /WAIT FOR INDEX
2152    3511    6211            CDF     XSF
2153    3512    1062    EJS100, TAD     P7
2154    3513    4760            JMS I   PXSERV  /IDENTIFY IT
2155    3514    7614            DLIST           /MOVED TO DLIST
2156    3515    3517            EJS110
2157    3516    5325            JMP     EJS150
2160                    /
2161                            EJECT
=
```

```
2162                    /
2163                    /       IDENTIFY FAILED
2164                    /
2165    3517    1363    EJS110, TAD     M2      /NAME MATCH?
2166    3520    7650            SNA CLA
2167    3521    5757            JMP I   EJN     /YES, GET NEW NAME
2170    3522    4761            JMS I   TELL    /CANT SAVE
2171    3523    3730            EJH2
2172    3524    5342            JMP     EJS160
2173                    /
2174                    /       OK=WRITE THE INDEX
2175                    /
2176    3525    1045    EJS150, TAD     XLEN
2177    3526    7104            CLL RAL
2200    3527    7106            CLL RTL         /XLEN IN WORDS
2201    3530    3367            DCA     EJPARM+3
2202    3531    6224            RIF
2203    3532    6202            CIF     0
2204    3533    4422            JMS I   WRITE   /WRITE INDEX
2205    3534    3564            EJPARM
2206    3535    1364            TAD     EJPARM  /WAIT FOR COMPLETION
2207    3536    7710            SPA CLA
2210    3537    5335            JMP     .-2
2211    3540    7330            AC4000
2212    3541    3367            DCA     EJPARM+3 /RESET LENGTH FOR NEXT
2213    3542    7200    EJS160, CLA
2214    3543    6201            CDF     XLF     /RESET FIELD
2215    3544    2355            ISZ     PPFILE
2216    3545    2355            ISZ     PPFILE  /BUMP TO NEXT ADDR
2217    3546    1755            TAD I   PPFILE  /GET NEXT FDB ADDR
2220    3547    7440            SZA             /DONE?
2221    3550    5265            JMP     EJS020  /NO, DO THIS
2222    3551    6203    EJS170, CIF CDF 0
2223    3552    3040            DCA     MODSW   /RESET MODIFICATION SW
2224    3553    5660            JMP I   EJS000
2225                    /
2226    3554    0000    PFILE,  0               /CURRENT FDB ADDR
2227    3555    7550    PPFILE, FDBLST          /FDB LIST POINTER
2230    3556    3600    EJV,    EJV000
2231    3557    3676    EJN,    EJN000
2232    3560    0210    PXSERV, XSERV
2233    3561    2701    TELL,   DXTELL
2234    3562    0077    STRIP,  77
2235    3563    7776    M2,     -2
2236                    /
2237    3564    0000    EJPARM, 0
2240    3565    6211            CDF     XBF
2241    3566    4000            4000            /INDEX TO 4000
2242    3567    4000            4000            /10 BLOCKS
2243    3570    0000            0               /STARTING AT 0
2244    3571    0000            0
2245    3572    0000            0
2246                    /
2247                    EJECT
*
```

```
2250                    /
2251                            PAGE
2252                    /
2253                    /       CHECK AND DECODE THE FILENAME
2254                    /
2255    3600    0000    EJV000, 0
2256    3601    7001            IAC             /AC POINTS TO FDB
2257    3602    3011            DCA     AX1     /GET TEXT FROM PAGE 37
2260    3603    1135            TAD     PRPLY
2261    3604    3010            DCA     AX0     /PUT IN DXRPLY BUFFER
2262    3605    1322            TAD     PHNAME
2263    3606    3012            DCA     AX2     /AND IN MESSAGE
2264    3607    1076            TAD     M5
2265    3610    3002            DCA     TMP1
2266    3611    6201    EJV010, CDF     XLF
2267    3612    1411            TAD I   AX1     /TWO CHARS
2270    3613    3003            DCA     TMP2
2271    3614    6211            CDF     XSF
2272    3615    1003            TAD     TMP2    /MOVE TO MESSAGE
2273    3616    3412            DCA I   AX2
2274    3617    1003            TAD     TMP2
2275    3620    7012            RTR
2276    3621    7012            RTR             /GET FIRST OF PAIR
2277    3622    7012            RTR
2300    3623    4304            JMS     TAS     /STORE IF NOT BLANK OR ZERO
2301    3624    1003            TAD     TMP2
2302    3625    4304            JMS     TAS     /LIKEWISE SECOND
2303    3626    2002            ISZ     TMP1
2304    3627    5211            JMP     EJV010
2305    3630    7346            MTHREE
2306    3631    3002            DCA     TMP1    /SET TO MOVE
2307    3632    1323            TAD     PDLAUX  /AUX, START AND LEN
2310    3633    3012            DCA     AX2
2311    3634    6201            CDF     XLF
2312    3635    1411    EJV020, TAD I   AX1
2313    3636    3412            DCA I   AX2
2314    3637    2002            ISZ     TMP1
2315    3640    5235            JMP     EJV020
2316    3641    6211            CDF     XSF
2317    3642    1010            TAD     AX0
2320    3643    7041            CIA
2321    3644    1135            TAD     PRPLY
2322    3645    7650            SNA CLA         /ANY CHARS STORED?
2323    3646    5266            JMP     EJV055  /NO-GET VALID NAME
2324    3647    1101            TAD     CARRET  /ASCII CARRIAGE RETURN
2325    3650    3410            DCA I   AX0
2326                    /
2327                            EJECT
```

```
2330                    /
2331                    /       FAKE A CALL TO DXWT2, TO HANDLE THE NAME
2332                    /
2333    3651    1262            TAD     EJVRET
2334    3652    3657            DCA I   PDXWT2
2335    3653    1260            TAD     EJVHLP
2336    3654    3661            DCA I   PDXWHP
2337    3655    5656            JMP I   .+1
2340    3656    3037            EJVENT
2341                    /
2342    3657    3000    PDXWT2, DXWT2
2343    3660    3724    EJVHLP, EJH1
2344    3661    3027    PDXWHP, DXWHP
2345    3662    3670    EJVRET, EJV060          /RETURN HERE
2346                    /
2347    3663    1321    EJV050, TAD     MCR     /WAS IT CR?
2350    3664    7650            SNA CLA
2351    3665    5600            JMP I   EJV000
2352    3666    1260    EJV055, TAD     EJVHLP
2353    3667    4657            JMS I   PDXWT2
2354    3670    5263    EJV060, JMP     EJV050
2355    3671    2200            ISZ     EJV000
2356    3672    5600            JMP I   EJV000
2357                    /
2360                    /       GET A NEW NAME
2361                    /
2362    3673    1321    EJN010, TAD     MCR
2363    3674    7650            SNA CLA
2364    3675    5703            JMP I   EJN020
2365    3676    1260    EJN000, TAD     EJVHLP
2366    3677    4657            JMS I   PDXWT2
2367    3700    5273            JMP     EJN010
2370    3701    5702            JMP I   .+1
2371    3702    3512            EJS100
2372    3703    3542    EJN020, EJS160
2373                    /
2374                    /       TEXT TO ASCII, EXCEPT BLANK AND ZERO
2375                    /
2376    3704    0000    TAS,    0
2377    3705    0320            AND     SIXBIT
2400    3706    7450            SNA
2401    3707    5704            JMP I   TAS
2402    3710    1071            TAD     M40
2403    3711    7450            SNA
2404    3712    5704            JMP I   TAS
2405    3713    7510            SPA
2406    3714    1073            TAD     P100
2407    3715    1074            TAD     P240
2410    3716    3410            DCA I   AX0
2411    3717    5704            JMP I   TAS
2412                    /
2413    3720    0077    SIXBIT, 77
2414    3721    7563    MCR,    =215
2415    3722    3744    PHNAME, HNAME=1
2416    3723    7620    PDLAUX, DLIST+4
2417                    /
2420                    EJECT
=
```

```
2421                    /
2422    3724    0061    EJH1,   61
2423    3725    6211            CDF     XSF
2424    3726    3745            HNAME
2425    3727    0033            EJH3-HNAME
2426                    /
2427    3730    0061    EJH2,   61
2430    3731    6211            CDF     XSF
2431    3732    3734            .+2
2432    3733    0016            HNAME=.+4
2433                    /
2434    3734    4547            4547
2435    3735    2516
2436    3736    0102
2435    3737    1405
2435    3740    4024
2435    3741    1740
2435    3742    2301
2435    3743    2605
2435    3744    4000
2435                            TEXT    "UNABLE TO SAVE "
2436    3745    4040    HNAME,  4040            /SAVE NAME GOES HERE
2437    3746    4040            4040
2440    3747    4040            4040
2441    3750    4040            4040
2442    3751    4040            4040
2443    3752    4011
2443    3753    2340
2443    3754    1116
2443    3755    2601
2443    3756    1411
2443    3757    0440
2443                            TEXT    " IS INVALID OR
2444    3760    1722
2444    3761    4304
2444    3762    2520
2444    3763    1411
2444    3764    0301
2444    3765    2405
2444    3766    4006
2444    3767    1114
2444    3770    0516
2444    3771    0115
2444    3772    0556
2444    3773    4023
2444    3774    0126
2444    3775    0540
2444    3776    0123
2444    3777    7700
2444                    DUPLICATE FILENAME, SAVE AS?"
2445                    /
2446                    EJH3=.
2447                    /
2450                            EJECT
```

```
2451                    /
2452                    /
2453                            PAGE
2454                    /
2455                    /       BUILD AN ORDERED LIST
2456                    /       OF FDBS FOR FILES TO BE SAVED.
2457                    /       THIS CODE IS DESTROYED BY THE
2460                    /       FIRST INDEX READ.
2461                    /
2462                    /
2463    4000    7240    EJB000, NOP
2464    4001    1333            TAD     FLIST   /POINT TO AREA
2465    4002    3010            DCA     AX0
2466    4003    6201            CDF     XLF     /LIST FIELD
2467    4004    1731    EJB010, TAD I   FPOINT  /GET UNIT CODE
2470    4005    7104            CLL RAL
2471    4006    7420            SNL             /PERMANENT?
2472    4007    5233            JMP     EJB030  /NO
2473    4010    7500            SMA             /OUTPUT?
2474    4011    5233            JMP     EJB030  /NO
2475    4012    7006            RTL
2476    4013    7006            RTL             /UNIT BIT 6 TO LINK
2477    4014    7006            RTL
2500    4015    7430            SZL             /WAS IT 1?
2501    4016    5233            JMP     EJB030  /YES, NOT MS
2502    4017    7700            SMA CLA         /WAS BIT 10 1?
2503    4020    5233            JMP     EJB030  /NO, NOT MS
2504                    /
2505                    /
2506                    /       UNIT IS MASS STORAGE, AND FILE
2507                    /       IS TO BE SAVED.  PUT IT IN THE
2510                    /       FAMOUS LIST.
2511                    /
2512    4021    1331            TAD     FPOINT  /FIRST THE FDB ADDRESS
2513    4022    3410            DCA I   AX0
2514    4023    1731            TAD I   FPOINT  /NEXT THE UNIT
2515    4024    0334            AND     HALF    /LOW 6 BITS
2516    4025    3410            DCA I   AX0
2517    4026    1063            TAD     P10
2520    4027    1331            TAD     FPOINT  /BUMP TO START
2521    4030    3002            DCA     TMP1
2522    4031    1402            TAD I   TMP1    /LAST START
2523    4032    3410            DCA I   AX0
2524    4033    7307    EJB030, FOUR            /CLEAR AC, AND
2525    4034    7005            IAC RAL         /FORCE 12
2526    4035    1331            TAD     FPOINT
2527    4036    3331            DCA     FPOINT  /BUMP TO NEXT FDB
2530    4037    2332            ISZ     FCOUNT  /CHECK COUNT
2531    4040    5204            JMP     EJB010  /GET NEXT
2532    4041    3410            DCA I   AX0     /SET END-OF-LIST INDICATOR
2533    4042    1010            TAD     AX0     /CHECK FOR NOTHING TO DO
2534    4043    7041            CIA
2535    4044    1333            TAD     FLIST   /ANYTHING
2536    4045    7650            SNA CLA         /IN LIST?
2537    4046    5735            JMP I   EJDONE  /NO, DONE
2540                    /
2541                            EJECT
=
```

```
2542                    /
2543                    /       BEGIN BUBBLE SORT
2544                    /
2545    4047    7240    EJB100, MONE
2546    4050    3002            DCA     TMP1    /SORT-DONE SWITCH
2547    4051    1333            TAD     FLIST
2550    4052    3003            DCA     TMP2
2551    4053    7325            THREE
2552    4054    1333            TAD     FLIST
2553    4055    3004            DCA     TMP3
2554                    /
2555                    /       TEST FOR SORT COMPLETION
2556                    /
2557    4056    1404    EJB110, TAD I   TMP3    /NEXT ADDRESS
2560    4057    7640            SZA CLA         /END OF LIST?
2561    4060    5265            JMP     EJB120  /NO
2562    4061    2002            ISZ     TMP1    /YES, SORTED?
2563    4062    5247            JMP     EJB100  /NO, TRY AGAIN
2564    4063    5664            JMP I   .+1
2565    4064    3463            EJS010          /YES, SAVE THEM
2566                    /
2567                    /       IS A SWAP NECESSARY?
2570                    /
2571    4065    1003    EJB120, TAD     TMP2    /COPY POINTERS
2572    4066    3010            DCA     AX0
2573    4067    1004            TAD     TMP3
2574    4070    3011            DCA     AX1     /FOR SORT TEST
2575    4071    1410            TAD I   AX0     /GET UNIT
2576    4072    7041            CIA             /COMPARE
2577    4073    1411            TAD I   AX1     /OTHER UNIT
2600    4074    7540            SMA SZA         /IF FIRST LOW,
2601    4075    5322            JMP     EJB150  /DO NOT SWAP
2602    4076    7640            SZA CLA         /IF FIRST HIGH,
2603    4077    5305            JMP     EJB130  /DO SWAP
2604    4100    1410            TAD I   AX0     /IF UNITS EQUAL,
2605    4101    7141            CIA CLL         /COMPARE
2606    4102    1411            TAD I   AX1     /STARTING BLOCKS
2607    4103    7630            SZL CLA         /IF FIRST LOW,
2610    4104    5322            JMP     EJB150  /DO NOT SWAP
2611                    /
2612                    /       SWAP TWO ENTRIES
2613                    /
2614    4105    7346    EJB130, MTHREE          /SET COUNT
2615    4106    3002            DCA     TMP1    /BLOWING SORT-DONE SWITCH
2616    4107    1403    EJB140, TAD I   TMP2
2617    4110    3005            DCA     TMP4    /HOLD THIS
2620    4111    1404            TAD I   TMP3    /MOVE THE OTHER
2621    4112    3403            DCA I   TMP2
2622    4113    1005            TAD     TMP4    /NOW MOVE THIS
2623    4114    3404            DCA I   TMP3
2624    4115    2003            ISZ     TMP2    /BUMP POINTERS
2625    4116    2004            ISZ     TMP3
2626    4117    2002            ISZ     TMP1    /CHECK COUNT
2627    4120    5307            JMP     EJB140  /DO MORE
2630    4121    5256            JMP     EJB110  /DO NEXT
2631                    /
2632                    EJECT
```

```
2633                    /
2634                    /
2635                    /       NO SWAP, JUST BUMP POINTERS
2636                    /
2637    4122    7200    EJB150, CLA
2640    4123    1004            TAD     TMP3
2641    4124    3003            DCA     TMP2    /BUMP POINTERS
2642    4125    7325            THREE
2643    4126    1004            TAD     TMP3
2644    4127    3004            DCA     TMP3
2645    4130    5256            JMP     EJB110
2646                    /
2647                    /
2650    4131    7624    FPOINT, 7624
2651    4132    7770    FCOUNT, -10
2652    4133    7550    FLIST,  FDBLST          /USE CMI BUFFER
2653    4134    0077    HALF,   77
2654    4135    3551    EJDONE, EJS170
2655                    /
2656                    /
2657                    /
2660                    /
2661                    /
2662                            ASMIFN  CREF
2663                            LISTAPE CREF
2664                    /
2665                    /
2666                    /       XSB02
```

```
NO ERRORS
AC2000 7332
AC4000 7330
AC6000 7333
ALCHK  0127
AUX    0000
AX0    0010
AX1    0011
AX2    0012
CARRET 0101
CMFND  2103
CMLSCN 2073
COMLST 2352
CRCHK  3102
CREF   0014
CVC    2316
CVD    2227
CVNA   2252
CVNALP 2261
CVNUM  2200
CVNZ   2246
CVTA   2274
CVTALP 2303
CVZSW  2251
CV60   2250
DELET  0125
DENT   0200
DLIST  7614
DX     1600
DXAFUL 2626
DXALIS 2601
DXARDD 2631
DXARSW 2600
DXBACK 2336
DXBAK1 2334
DXBUF  3445
DXCOM  2132
DXDEL  2342
DXDISP 2056
DXDLP  2002
DXEP1  3320
DXEP2  3343
DXEP3  3306
DXFCHK 1627
DXFENT 2025
DXFJCL 1705
DXFJ2  1703
DXFLP  2000
DXFMON 1670
DXFM2  1652
DXFNUM 2026
DXFORE 2330
DXFOR1 2326
DXFR   2144
DXFRST 0052
DXFR2  2155
DXGNEW 2616
DXMP2  3266
DXMP3  3266
DXMP4  3304
DXMP5  3320
DXLAST 0053
DXLDL  2107
DXLSET 2053
-

DXM260 2671
DXNBAD 2643
DXPRM1 2122
DXPRM2 2126
DXPRM3 3173
DXPRM4 2135
DXPRNT 2400
DXP1L  2125
DXP4L  3137
DXREN  2605
DXRNDO 2641
DXRPLY 3207
DXRPY1 3177
DXSYST 1717
DXTELL 2701
DXTLUP 2711
DXTP   2714
DXWAIT 2651
DXWBAD 2660
DXWERR 3002
DXWHP  3027
DXWK   2150
DXWLP  3020
DXWND  2721
DXWNLP 2666
DXWNUM 2663
DXWSCN 1602
DXWT2  3000
DXWXIT 2754
DZERO  0117
EJB000 4000
EJB010 4004
EJB030 4033
EJB100 4047
EJB110 4056
EJB120 4065
EJB130 4105
EJB140 4107
EJB150 4122
EJDONE 4135
EJH1   3724
EJH2   3730
EJH3   4000
EJN    3557
EJN000 3676
EJN010 3673
EJN020 3703
EJPARM 3564
EJS000 3460
EJS010 3463
EJS020 3465
EJS030 3503
EJS100 3512
EJS110 3517
EJS150 3525
EJS160 3542
EJS170 3551
EJV    3556

EJVENT 3037
EJVHLP 3660
EJVRET 3662
EJV000 3600
EJV010 3611
-

EJV020 3635
EJV050 3663
EJV055 3666
EJV060 3670
FCOUNT 4132
FDBLST 7550
FIND   0116
FINDCR 3160
FLIST  4133
FOUR   7307
FPOINT 4131
FULL   0133
GETA   3070
HALF   4134
HBLNKS 0054
HNAME  3745
IMFILS 3400
IMFREE 2165
IMJCL  3257
IMMON  3252
IMVID  3250
IMWORK 2172
INSERT 1756
KCOF   0060
LFLP   2631
LFLOOP 2534
LIMIT  0130
LINFED 0102
LNCLC  0131
LSTCHK 0132
MAKWA  0120
MBLNK  1164
MBLNKS 0055
MCARET 2771
MCOPY  0121
MCR    3721
MDXBUF 2164
MDXL   1736
MFRAME 2351
MODSW  0040
MONE   7240
MOV7   1112
MSCAN  1247
MTHREE 7346
MTWO   7344
MVLP   1747
MVX    1737
MWALN  1335
MZERO  1163
M10    0064
M11    2576
M2     3563
M20    0066
M215   3172
```

```
M30     0070
M4      0075
M40     0071
M400    0100
M5      0076
M6      0077
NOFILL  3152
NOTAN   3140
NXCHK   3123
=


NXEB    0123
ONE     7201
PAND    0124
PANSR   3136
PBLNK   0126
PCMLST  2106
PCVNA   2522
PCVNMB  2163
PCVNUM  1730
PCVTA   2521
PDISP   2773
PDLAUX  3723
PDSCAN  2346
PDX     0243
PDXDLP  2578
PDXFLP  1727
PDXL    1735
PDXSCN  2647
PDXWHP  3661
PDXWT   2121
PDXWT2  3657
PFILE   3554
PFRAME  2350
PHNAME  3722
PHP4    2650
PIMFLS  1731
PJCLST  1733
PJST    2520
PLIST   0136
PMUNST  1732
PMOV7   0724
PMVX    2161
PNSERT  2162
PODD    3114
PPFILE  3555
PPRM2   2403
PPRM4   2556
PPRM4L  2574
PREB    0122
PRPLY   0135
PSYST   1734
PUTA    3103
PVLEN   2517
PWAIT   2347
PWT2    2772
PXBB    2523
PXBFR   0134
PXENT   2470
PXH1    3401
PXH2    3406
PXH3    3415
PXH4    3425
PXH5    3427
PXH6    3432
PXLEN   2516
PXLINE  2542
PXLOOP  2455
PXSERV  3560
PXSL    2504
PXSYS   2440
PXTEST  2557
PXWA    2474
P10     0063
=


P100    0073
P20     0065
P200    2273
P240    0074
P30     0067
P40     3171
P5      0061
P7      0062
P77     0072
READ    0021
SIX     7327
SIXBIT  3720
SRET    0114
STRIP   3562
TABNUL  0056
TAS     3704
TCRLF   0057
TELL    3561
THREE   7326
TMP1    0002
TMP2    0003
TMP3    0004
TMP4    0005
TMP5    0006
TMP6    0007
TWO     7325
VALID   0115
WRITE   0022
XALCHK  1000
XBF     0010
XBUF    0134
XBUFFR  4000
XDALIS  0637
XDELET  0600
XDLAST  0622
XDLCLR  0633
XDPCHK  0635
XDSQLP  0603
XDSQNO  0672
XDSQP   0642
XDSQZ   0644
XDZERO  0725
XECNT   0044
XERCOD  0046
XERRET  0250
XERR0   0112
XERR1   0111
XERR2   0110
XERR3   0107
XERR4   0106
XERR5   0105
XERR6   0104
XERR7   0103
XFIND   0261
XFLEN   0050
XFLOOP  0304
XFREST  0320
XFRLP   0326
XFULL   0341
XFUN    0244
XINDB   1465
XLCHK   1046
XLEN    0045
=


XLF     0000
XLIM    0417
XLIMIT  0400
XLINES  0006
XLIST   0047
XLLP    1117
XLNCLC  1400
XLNLP   1415
XMAKE   1135
XMAKWA  1307
XMAYBE  0525
XMBLNK  1200
XMCOPY  1340
XMCPLP  1353
XMOV7   0562
XMSCAN  1153
XMZERO  1250
XMZFIN  1277
XMZLP   0566
XNFRST  0312
XNO     0532
XNVAL   0530
XNWASW  0051
XNXEB   1031
XNXEP   0043
XPAND   1051
XPBLNK  0737
XPMVLP  1074
XPOINT  0041
XPREB   1017
XPREF   0042
XSCDF   0244
XSCRET  1132
XSDELT  1126
XSERV   0210
XSF     0010
```

```
XSGWA   0535
XSHALT  0247
XSIDEN  1423
XSJMP   0232
XSLOOK  1113
XSRET   0256
XSRMF   0257
XT1     0002
XT2     0003
XVALID  0420
XVLOOP  0467
XVNWA   0522
XVOK    0533
XVSCAN  0454
XWA     0363
XWLOOP  0352
```