```
// LOG 1403
// FORMS LINES-66
*
*** RUN THE ASSEMBLER
*
// LOAD $CGDRV,R2
*/ SWITCH 10000000
*/ COMPILE OBJECT-R1
// FILE NAME-$SOURCE,PACK-F2F2F2,UNIT-F2,RETAIN-S,TRACKS-210
// FILE NAME-$WORK,PACK-F2F2F2,UNIT-F2,RETAIN-S,TRACKS-80
// FILE NAME-$WORK2,PACK-F2F2F2,UNIT-F2,RETAIN-S,TRACKS-80
// RUN
```

EXTERNAL SYMBOL LIST

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```
$INIT2   MODULE
IMAIN    ENTRY
```

```
                                  2 ****************************************************************
                                  3 *                                                              *
                                  4 *  TITLE:  '$INIT2' INITIALIZE DISK MAINLINE FOR 5444          *
                                  5 *                                                              *
                                  6 *  STATUS: CHANGE LEVEL 04    DATE 09/04/75                @05*
                                  7 *                                                              *
                                  8 *  FUNCTION:  THE INITIALIZE DISK MAINLINE PHASE PERFORMS THE  *
                                  9 *        FUNCTIONS:                                            *
                                 10 *           - LOCATES UNIT TO BE PROCESSED                     *
                                 11 *           - DETERMINES STATUS OF UNIT TO BE PROCESSED        *
                                 12 *           - DETERMINES VALIDITY OF SPECIFIED PARAMETERS      *
                                 13 *           - KEEP RECORD OF NEXT TRACK TO BE PROCESSED        *
                                 14 *           - PASSES INFORMATION TO SURFACE ANALYSIS FOR EACH TRACK *
                                 15 *           - CHECKS RETURN INFORMATION FOR EACH TRACK         *
                                 16 *           - SEEKS TO EACH TRACK TO DETERMINE CORRECTIONS OF ID'S *
                                 17 *           - WRITES VOLUME LABEL ON COMPLETELY PROCESSED PACK *
                                 18 *           - FORMATS VTOC SECTORS ON PROCESSED PACK           *
                                 19 *                                                              *
                                 20 *  ENTRY POINTS: IMAIN                                         *
                                 21 *        ALL FUNCTIONS LISTED ABOVE ARE PERFORMED              *
                                 22 *                                                              *
                                 23 *  INPUT: THE MAINLINE PHASE RECIVES ALL INFORMATION REQUIRED TO *
                                 24 *        OPERATE FROM A TABLE BUILT BY THE INITIALIZATION PHASE OF *
                                 25 *        THIS PROGRAM.  THE TABLE IS OF THE FOLLOWING FORMAT:  *
                                 26 *                                                              *
                                 27 *        IBVR   DS   1   NUMBER OF VERIFICATIONS REQUESTED     *
                                 28 *        IBTY   DS   1   TYPE OF INITIALIZATION - P, S, C, Y OR R  @05*
                                 29 *        IERASE DS   1   ERASE OPTION - Y OR N                 *
                                 30 *        ICAP   DS   1   CAPACITY OPTION - F, H, OR 00         *
                                 31 *        IUNIT1 DS   1   *  Q CODES FOR UNITS TO BE PROCESSED  *
                                 32 *        IUNIT2 DS   1   *  X'FF' INDICATES NO PROCESSING REQUESTED *
                                 33 *        IUNIT3 DS   1   *  OR PROCESSING COMPLETE              *
                                 34 *        IUNIT4 DS   1   *                                     *
                                 35 *        IUNIT5 DS   1   *                                     *
                                 36 *        IUNIT6 DS   1   *                                     *
                                 37 *        IUNIT7 DS   1   *                                     *
                                 38 *        IVOLE1 DS   23  PACK, ID, OLDPACK, FILES KEYWORDS     *
                                 39 *                                                              *
                                 40 *  OUTPUT: INITIALIZED PACK                                    *
                                 41 *        TABLE OF MESSAGES (ISMGT) TO PRINT PHASE ($INMSG)     *
                                 42 *        IOB, ALTIN, AND TBLE CONTAINING INFO FOR SURFACE ANALYSIS *
                                 43 *                                                              *
                                 44 *  EXTERNAL ROUTINES:                                          *
                                 45 *        SURFACE ANALYSIS- 'SURFAR' PERFORMS SURFACE ANALYSIS ON *
                                 46 *                                   TRACK INDICATED BY MAINLINE AND *
                                 47 *                                   ASSIGNS AN ALTERNATE TRACK IF *
                                 48 *                                   CIRCUMSTANCES REQUIRE IT.  *
                                 49 *                                                              *
                                 50 *  EXITS-NORMAL: TO SURFACE ANALYSIS--THE RETURN CODE IS INITIALIZED *
                                 51 *        TO X'00' TO INDICATE THAT INITIALIZE DISK IS THE CALLING *
                                 52 *        PROGRAM.  SURFACE ANALYSIS RETURNS CONTROL TO INITIALIZE *
                                 53 *        DISK AT THE POINT LABELLED ERCHK.                     *
                                 54 *        AT THIS POINT THE RETURN CODE IS SET TO INDICATE ACTIONS *
                                 55 *        TAKEN:                                                *
                                 56 *            X'00' - NO ERROR                                  *
                                 57 *            X'01' - UNUSABLE PACK                             *
```

```
      $INIT2 INITIALIZE DISK MAINLINE FOR 5444

ERR LOC  OBJECT CODE      ADDR STMT SOURCE STATEMENT          S/3 ASSEMBLER  10/07/07  PAGE   3

                                58 *            X'02' - ALTERNATE TRACK DEFECT                                  *
                                59 *            X'04' - BAD READ ID, RE-INITIALIZE                              *
                                60 *            X'08' - ALTERNATE TRACK ASSIGNED                                *
                                61 *                                                                            *
                                62 *        -ERROR: HALTS ARE DISPLAYED ON THE LOGGING DEVICE                   *
                                63 *            UI3YIS  PROBLEM WITH SECONDARY INIT 0,3   OPTIONS               *
                                64 *            UI31AF  ACTICE FILES ON PACK        0,3   OPTIONS               *
                                65 *            UI33PU  LABEL ERROR WITH OLDPACK OR                        @05*
                                66 *                    WITH TYPE-RENAME            0,3   OPTIONS        @05*
                                67 *            UI36CE  DEFECTIVE CE TRACK ON F1    0,3   OPTIONS               *
                                68 *            UI31WP  OLDPACK ERROR               0,1,3 OPTIONS               *
                                69 *            UIHEXX  HARDWARE ERROR              3     OPTION                *
                                70 *            UI31BD  COPYPACK PACK               0,3   OPTIONS        @05*
                                71 *                                                                            *
                                72 *  TABLES/WORK AREAS:                                                        *
                                73 *        $ALTIN - A 12 BYTE TABLE WHICH CONTAINS TWO BYTES                   *
                                74 *                 CORRESPONDING TO EACH ALTERNATE TRACK.  THE TWO            *
                                75 *                 BYTES CONTAIN 00XX TO INDICATE AVAILABLE                   *
                                76 *                               FFXX TO INDICATE DEFECTIVE                   *
                                77 *                               NNNN TO INDICATE ADDRESS OF DEFECTIVE        *
                                78 *                                    TRACK TO WHICH IT IS ASSIGNED           *
                                79 *        $TBLE  - A 12 BYTE TABLE INDICATING THE ADDRESS OF THE              *
                                80 *                 SIX ALTERNATE TRACKS                                       *
                                81 *                                                                            *
                                82 *  ATTIBUTES: N/A.                                                           *
                                83 *                                                                            *
                                84 *  CHARACTER CODE DEPENDENCY: TRANSLATOR DEPENDENT                           *
                                85 *                                                                            *
                                86 *  NOTES: N/A.                                                               *
                                87 *                                                                            *
                                88 *  CHANGE ACTIVITY:  $INIT2                                                  *
                                89 *    RELEASE 02                                                              *
                                90 *    @01-INCR/ES239  - EXPAND ERROR LOGGING SECTORS ON F1 TO INCLUDE         *
                                91 *                      SECTORS 24-28 IN ADDITION TO 3-8                 @01*
                                92 *    @02-INCR/ES240  - ELIMINATE THE NEED FOR RELOC THIS MODULE       @02*
                                93 *    RELEASE 03                                                       @03*
                                94 *    @03-INCR/ES312  - PROVIDE FOR OLDPACK AND FILES PARAMETERS       @03*
                                95 *    @04-INCR/ES304  - ADDED 3340 SUPPORT, TYPE-FORCE FOR 3340 ONLY@04*
                                96 *    RELEASE 04                                                       @05*
                                97 *    @05-INCR/ES414  - ADDED TYPE-CYL0 AND TYPE-RENAME                @05*
                                98 *                                                                      *
                                99 ************************************************************************
```

```
    4600                       101 $INIT2 START X'4600'                    START AT LOCATION 4600      @02
                         4687  102        ENTRY IMAIN
                               103 ************************************************************************
                               104 *      DISK INPUT/OUTPUT BLOCK (IOB)                                   *
                               105 ************************************************************************
                               106 * THIS SECTION MUST BE CONTIGIOUS FOR SURFACE ANALYSIS.
                         4600  107 IOB    EQU   *                          DISK IOB
    4600 00              4600  108        DC    XL1'00'                    WAIT/POST BYTE - 1ST OF 3 BYTES
    4601 00              4601  109        DC    XL1'00'                    COMP. CODE - 2ND BYTE OF ECB
    4602 40              4602  110        DC    XL1'40'                    COMP. CODE - 3ND BYTE OF ECB
    4603 00000000        4606  111        DC    XL4'00000000'              IOB CHAIN POINTER.
    4607 FF              4607  112        DC    AL1(X'FF')                 Q BYTE
    4608 00              4608  113        DC    AL1(X'00')                 R BYTE
    4609 00              4609  114        DC    XL1'00'                    ERP MODULE DISPL. BYTE
    460A 5418            460B  115        DC    AL2(IOADDR)                DATA (LOGICAL) ADDRESS
    460C 0000            460D  116        DC    XL2'0000'                  SENSE STATUS AREA
    460E 00              460E  117        DC    AL1(0+0+0+0+0)             FLAG BYTE
    460F 00              460F  118        DC    XL1'00'                    IOS ERP ERROR COUNTER
    4610 0000            4611  119        DC    XL2'0000'                  RESERVED
    4612 00              4612  120        DC    XL1'00'                    IOS PARTIAL COMPLETION CODE
    4613 00              4613  121        DC    AL1(X'00')                 5445 SECOND FLAG BYTE
    4614 00              4614  122        DC    XL1'00'                    RESERVED
    4615 FF              4615  123        DC    AL1(X'FF')                 5444 CYLINDER
    4616 FF              4616  124        DC    AL1(X'FF')                 5444 SECTOR
    4617 00              4617  125        DC    AL1(X'01'-1)               5444 NUMBER OF SECTORS - 1
    4618 461E            4619  126        DC    AL2(DC001)                 POINTER TO 5445 10 BYTE ADDR.
    461A FFFF            461B  127        DC    AL2(X'FFFF')               DATA MGMT CHAIN POINTER
    461C FFFF            461D  128        DC    AL2(X'FFFF')               ADDRESS OF ASSOCIATED DTF

                         461E  130 DC001  EQU   *
    461E 48E9            461F  131 IRTRN  DC    AL2(IERCHK)                POINT OF RETURN FROM SURFACE
                               132 *                                       ANALYSIS TO MAINLINE
    4620 00              4620  133 IRCDE  DC    XL1'00'                    RETURN CODE
                               134 *
    4621 000000          4623  135 OROP   DC    XL3'000000'                ORIGINAL OPERATIVE TRACK
    4624 020000          4626  136 IORDEF DC    XL3'020000'                ORIGINAL DEFECTIVE TRACK
    4627 010000          4629  137 IALTAS DC    XL3'010000'                ALTERNATE TRACK OPERATIVE
    462A 030000          462C  138 IATDEF DC    XL3'030000'                ALTERNATE TRACK DEFECTIVE
    462D                 462D  139 INMSB  DS    CL1                        NR OF SECTORS IN DATA BUFFER
    462E                 462F  140 IBFAD  DS    CL2                        ADDRESS OF DATA BUFFER
                         4630  141 ALTIN  EQU   *                          ALTERNATE TRACK INFORMATION
                               142 *                                       * 00XX - AVAILABLE
                               143 *                                       * FFXX - DEFECTIVE ALTERNATE
                               144 *                                       * NNNN - ASSIGNED ALTERNATE
    4630 0000            4631  145        DC    XL2'0000'
    4632 0000            4633  146        DC    XL2'0000'
    4634 0000            4635  147        DC    XL2'0000'
    4636 0000            4637  148        DC    XL2'0000'
    4638 0000            4639  149        DC    XL2'0000'
    463A 0000            463B  150        DC    XL2'0000'

                         463C  152 TBLE   EQU   *                          ADDRESS OF ALTERNATE TRACKS
    463C 0100            463D  153        DC    XL2'0100'
    463E 0100            463F  154        DC    XL2'0100'
    4640 0200            4641  155        DC    XL2'0200'
    4642 0200            4643  156        DC    XL2'0200'
```

```
      $INIT2 INITIALIZE DISK MAINLINE FOR 5444

ERR LOC  OBJECT CODE      ADDR STMT SOURCE STATEMENT          S/3 ASSEMBLER  10/07/07  PAGE   5

    4644 0300             4645  157        DC    XL2'0300'
    4646 0300             4647  158        DC    XL2'0300'
    4648 01               4648  159 IBVR   DC    XL1'01'                  VERIFY OPTION
    4649 D7               4649  160 IBTY   DC    XL1'D7'                  TYPE OPTION
    464A E8               464A  161 IERASE DC    XL1'E8'                  ERASE OPTION
    464B 00               464B  162 ICAP   DC    XL1'00'                  CAPACITY OPTION
    464C A0               464C  163 IUNIT1 DC    XL1'A0'                  @ CODE FOR UNIT SPECIFIED
    464D 000000000000     4652  164        DC    XL6'00'                  @ CODE FOR OTHER UNITS
                          4653  165 IVOL1  EQU   *
    4653                  4669  166 IVOLE1 DS    CL23                     VOL & OWNER ID, OLDPACK, FILE@03
    466A 00               466A  167 IRTSW  DC    XL1'00'                  RETRY SWITCH

                                169 ************************************************************************
                                170 *      MAINLINE BEGINS HERE...                                         *
                                171 ************************************************************************
                                172 *      LEVEL 05
    466B D5C9E3F2         466E  173        DC    CL4'NIT2'                4 BYTES
    466F 05               466F  174        DC    XL1'05'                  RELEASE 05
    4670 15               4670  175        DC    XL1'15'                  PROGRAMMERS MOD NR
                                176 *
                                177 *      DTF EQU'S OMITTED...
                                178 *
    4671 7B 0F 07               179 IOSSET SBF   IOBQB(,XR1),RSQ          RESET Q BYTE
    4674 7A 00 07               180 IOSTQB SBN   IOBQB(,XR1),#            SET Q BYTE FOR READ OR WRITE
    4677 34 08 4686             181 IORDWT ST    IORTRN+3,ARR             SAVE RETURN ADDR
    467B F4 10 00               182        SVC   0                        EXECUTE I/O
    467E 02               467E  183        DC    XL1'02'                  EXECUTE I/O RIB
    467F F4 10 00               184        SVC   0                        WAIT
    4682 03               4682  185        DC    XL1'03'                  WAIT RIB
    4683 C0 87 0000             186 IORTRN B     #                        RETURN TO NSI


                                188 ************************************************************************
                                189 *      MOVE CONTROL TABLE FROM ROOT PHASE TO THIS PHASE                *
                                190 ************************************************************************
                          4687  191 IMAIN  EQU   *
    4687 34 08 505D             192        ST    IPRET+3,ARR              SAVE ARR FOR RETURN
    468B 34 01 5056             193        ST    IPACK+3,XR1              SAVE XR1
    468F 1C 21 4669 21          194        MVC   IBVR+33(34),33(,XR1)     PICK UP CONSTANTS            @03
    4694 3D C6 4649             195        CLI   IBTY,TYPFOR              TYPE-FORCE ?                 @04
    4698 F2 01 04               196        JNE   SAVBUF                   NO - CONTINUE                @04
    469B 3C C3 4649             197        MVI   IBTY,TYPCLR              SAME AS TYPE-CLEAR FOR 5444  @04
    469F 1C 02 462F AE          198 SAVBUF MVC   IBFAD(3),174(,XR1)       SAVE BUFFER @ & # OF SECTORS @04
    46A4 C2 01 4600             199        LA    IOB,XR1                  POINT XR1 TO IOB             @03
    46A8 7D A0 4C               200        CLI   IUN1(,XR1),R1Q           IS UNIT R1 ?                 @03
    46AB F2 01 09               201        JNE   IPM2                     NO - JUMP                    @03
    46AE 0C 01 5209 5201        202        MVC   UNIT(UNITL),R1C          MOVE 'R1' TO SAVE AREA       @03
    46B4 F2 87 24               203        J     IMAIN2                   JUMP TO CONTINUE             @03
    46B7 7D B0 4C               204 IPM2   CLI   IUN1(,XR1),R2Q           IS UNIT R2 ?                 @03
    46BA F2 01 09               205        JNE   IPM3                     NO - JUMP                    @03
    46BD 0C 01 5209 5203        206        MVC   UNIT(UNITL),R2C          MOVE 'R2' TO SAVE AREA       @03
    46C3 F2 87 15               207        J     IMAIN2                   JUMP TO CONTINUE             @03
    46C6 7D A8 4C               208 IPM3   CLI   IUN1(,XR1),F1Q           IS UNIT F1 ?                 @03
    46C9 F2 01 09               209        JNE   IPM4                     NO - JUMP                    @03
    46CC 0C 01 5209 5205        210        MVC   UNIT(UNITL),F1C          MOVE 'F1' TO SAVE AREA       @03
    46D2 F2 87 06               211        J     IMAIN2                   JUMP TO CONTINUE             @03
```

```
    46D5 0C 01 5209 5207         212 IPM4   MVC   UNIT(UNITL),F2C           MOVE 'F2' TO SAVE AREA       @03

                                 214 ************************************************************************
                                 215 *      DETERMINE UPPER AND LOWER LIMITS FROM REQUEST AND SENSE INFO    *
                                 216 ************************************************************************
                           46DB  217 IMAIN2 EQU   *
    46DB 3C 00 521B              218        MVI   ISWVL,CLEARC              RESET VOL LABEL SAVED SWITCH
    46DF 3B FF 515B              219        SBF   ILSW,RESET                RESET TERMINATED SWITCH
    46E3 3B FF 50CD              220        SBF   IATC,RESET                RESET FUNCTION SWITCH
    46E7 C2 01 4600              221        LA    IOB,XR1                   POINT XR1 TO IOB
    46EB 5C 00 07 4C             222        MVC   IOBQB(1,XR1),IUN1(,XR1)   INDICATE Q CODE FOR FIRST UNIT
    46EF 3C 00 5154              223        MVI   ILLIM,CLEARC              SET LOWER CYLINDER LIMIT
    46F3 7C 00 3B                224        MVI   IALTN(,XR1),CLEARC        MOVE IN CLEAR CHARACTER
    46F6 5C 0A 3A 3B             225        MVC   IALTN-1(11,XR1),IALTN(,XR1)  CLEAR TABLE
    46FA 7B 07 07                226        SBF   IOBQB(,XR1),RQ            RESET Q CODE
    46FD 7A 01 07                227        SBN   IOBQB(,XR1),RDQ           SET Q CODE FOR READ
    4700 7C 00 08                228        MVI   IOBRB(,XR1),CLEARC        RESET R BYTE
    4703 4C 01 16 5157           229        MVC   IOBSB(2,XR1),CYLSEC       SET TO READ CYL/SEC 0008
    4708 7C 20 0E                230        MVI   IOBFLG(,XR1),HANDER       SET FLAG TO HANDLE ERRORS

                                 232 ************************************************************************
                                 233 *      READ VOL LABEL AND CHECK IF OLDPACK PARAMETER USED              *
                                 234 ************************************************************************
    470B F4 10 00                235        SVC   0                         EXECUTE I/O
    470E 02                470E  236        DC    XL1'02'                   RIB
                                 237 *      MVI   IOBERR(,XR1),X'00'
    470F 7C E0 0F                238        MVI   IOBERR(,XR1),ERRCNT       SET ERROR COUNT
    4712 F4 10 00                239        SVC   0                         WAIT
    4715 03                4715  240        DC    XL1'03'                   RIB
    4716 7D 40 02                241        CLI   IOBCMP(,XR1),GOODC        SUCCESSFUL COMPLETION ?
    4719 F2 81 2C                242        JE    IF5CHK                    YES - JUMP TO CHECK LABELS

                                 244 ************************************************************************
                                 245 *      VOL LABEL IS BAD.  ISSUE ERROR HALT IF OLDPACK USED OR IF       *
                                 246 *      TYPE-RENAME.  IF TYPE-CYL0 AND VOL LABEL IS BAD, FORCE          *
                                 247 *      TYPE-CLEAR AND ERASE-YES.                                       *
                                 248 ************************************************************************
    471C 3D 40 4663              249 CKOP   CLI   OPFLD-5,BLANK             OLDPACK USED ?                @05
    4720 F2 01 12                250        JNE   BLHLT                     YES - ISSUE UI31BL HALT       @05
    4723 7D E8 49                251        CLI   ITYP(,XR1),TYPCY0         TYPE-CYL0 ?                   @05
    4726 F2 01 06                252        JNE   CKRNM                     NO - CHECK IF TYPE-RENAME     @05
    4729 7C C3 49                253        MVI   ITYP(,XR1),TYPCLR         FORCE TYPE-CLEAR              @05
    472C F2 81 B4                254        JE    ISETY                     FORCE ERASE-YES               @05
    472F 7D D9 49                255 CKRNM  CLI   ITYP(,XR1),TYPRNM         TYPE-RENAME ?                 @05
    4732 F2 01 AE                256        JNE   ISETY                     NO - FORCE ERASE-YES          @05
                           4735  257 BLHLT  EQU   *
    4735 C2 02 50F7              258        LA    HLELST,XR2                POINT TO SYSLOG PARM LIST
    4739 F4 10 00                259        SVC   0                         EXIT TO
    473C 85                473C  260        DC    XL1'85'                   *      CURRENT SYSLOG TRANSIENT
    473D C0 87 5053              261        B     IPACK                     GO PROCESS NEXT UNIT          @03
    4741 3C 80 4837              262 RSETBR MVI   IRTFPP+1,NOOP             RESET BRANCH
    4745 F2 87 9B                263        J     ISETY                     JUMP TO FORCE ERASE-YES
    4748 0D 02 541A 515A         264 IF5CHK CLC   IOADDR+2(3),VOLLAB        IS THIS A VOLUME LABEL ?
    474E C0 01 471C              265        BNE   CKOP                      NO - CK IF OLDPACK USED       @03
    4752 C0 87 4763              266        B     OLDPK                     CK FOR OLDPACK USAGE, IF USED@03
                                 267 *                                      RETURN HERE IF LABEL CHECKS   @03
```

```
    4756 7D C3 49               268         CLI   ITYP(,XR1),TYPCLR         TYPE-CLEAR ?
    4759 F2 01 9B               269         JNE   IVOLOK                    CHECK ERASE PARAMETER
    475C 3C 00 4837             270         MVI   IRTFPP+1,BRANCH           SET TO BRANCH
    4760 F2 87 9F               271         J     IVOLEY                    JUMP TO SAVE VOL LABEL INFO

                                273 ***************************************************************
                                274 *      SUBR TO TEST FOR OLDPACK AND ISSUE UI31WP HALT IF MECESSARY    *
                                275 ***************************************************************
    4763 34 08 47E2             276 OLDPK  ST    EXIT+3,ARR                SAVE RETURN ADDRESS          @03
    4767 3D 40 4663             277         CLI   OPFLD-5,BLANK             OLDPACK USED ?               @03
    476B F2 81 71               278         JE    EXIT                      NO - RETURN                  @03
    476E 3D 6B 541C             279         CLI   IOADDR+4,COPYPK           COPYPACK PACK ?              @05
    4772 C0 81 481A             280         BE    BDHALT                    YES - ISSUE A UI31BD HALT    @05
    4776 0D 05 4668 5420        281         CLC   OPFLD(PACKL),IOADDR+8     LABEL EQUAL OLPACK PARM ?    @03
    477C F2 81 60               282         JE    EXIT                      YES - RETURN                 @03
                                283 ***************************************************************
                                284 *  WPACK CHECKS SIMULATION CONSIDERATIONS TO SEE IF A PACK DISMOUNT   *
                                285 *  REQUEST IS FEASIBLE AT THIS TIME.  OPTIONALLY (IF CHECK-ALL) THE   *
                                286 *  PACK CAN BE CHECKED FOR ANY ACTIVITY (IF THIS HAS NOT ALREADY      *
                                287 *  BEEN DONE).  PARAMETERS ARE:                                       *
                                288 *                                                                     *
                                289 *  UILST-@ OF U/I CHECK LIST DEFINED BY THE UILST MACRO.              *
                                290 *      IF UILST IS NOT SPECIFIED, XR2 MUST POINT TO IT UPON           *
                                291 *      ENTRY.  THIS LIST WILL DEFINE ALL CHECKS TO BE MADE AND        *
                                292 *      THE PACK TO BE CHECKED (ONLY ONE).                             *
                                293 *                                                                     *
                                294 *  WPLST-@ OF MOUNT THE CORRECT PACK HALT.  IF THE PACK CAN'T         *
                                295 *      BE DISMOUNTED NOW THE 1 OPTION IS REMOVED FROM THE             *
                                296 *      WRONG PACK SYSLOG LIST.                                        *
                                297 *                                                                     *
                                298 *  CHECK-ALL  MAKE ALL CHECKS FOR ACTIVE PACK STATUS, THE             *
                                299 *      UTILITY INTERLOCK (W/O SHARE) WILL OBTAINED IF POSSIBLE.       *
                                300 *      IF NOT, THE 1 OPTION OF THE WRONG PACK HALT WILL BE REMOVED.   *
                                301 *                                                                     *
                                302 *  CHECK-SIM  PERFORM ONLY THE SIMULATION CHECKS, U/I IS LEFT ALONE.  *
                                303 *                                                                     *
                                304 *  REF - (1)  SEQUENTIAL REFERENCE                                    *
                                305 *        (2)  NUMBER FOR UNIQUE                                       *
                                306 *        (3)  LABEL GENERATION                                        *
                                307 *                                                                     *
                                308 *  EQUATES ARE REFERENCED IN THE FOLLOWING MACRO'S:                   *
                                309 *      LOGD, SUPCM, VILST                                             *
                                310 *                                                                     *
                                311 ***************************************************************
    477F 34 01 47B9             312         ST    #WPEX+3,XR1               SAVE INDEX REG 1
    4783 35 01 0011             313         L     NCSYS@,XR1                XR1 --> SYSTEM COMMON
    4787 C2 02 4647             314         LA    PUILST,XR2                XR2 --> U/I CHECK LIST
    478B 3A 04 5106             315         SBN   LOGDO+H31LST,LOGOP1       SET ON OPTION 1
    478F B8 A8 05               316         TBN   UIPACK(,XR2),X'A8'        IS THIS PACK F1 OR F2 ?
    4792 B9 40 05               317         TBF   UIPACK(,XR2),X'40'        *
    4795 F2 10 1A               318         JT    #WPRM                     YES - REMOVE OPTION 1
    4798 78 80 2F               319         TBN   NCCONF(,XR1),X'80'        IS 3340 CONFIGURED ?
    479B F2 90 18               320         JF    #WPEX                     NO - PACK CAN BE DISMOUNTED
    479E 3C C8 47AD             321         MVI   #WPQ+1,X'C8'              SET CHECK FOR D1 5444 PACKS
    47A2 78 40 2F               322         TBN   NCCONF(,XR1),X'40'        IS SIMULATION ON D2 ?
    47A5 F2 90 04               323         JF    #WPQ                      NO - CHECK IF R1, R2 OR D1.
```

```
    47A8 3C D0 47AD             324        MVI   #WPQ+1,X'D0'              YES - CHECK FOR R1,R2,D1 OR D2
    47AC BD 00 05               325 #WPQ   CLI   UIPACK(,XR2),*-*          CAN PACK BE DISMOUNTED NOW ?
    47AF F2 02 04               326        JNL   #WPEX                     YES - LEAVE WP HALT ALONE.
                                327 *
                                328 ***    PACK CAN'T BE DISMOUNTED.  REMOVE OPTION 1 TO WP HALT.
                                329 *
    47B2 3B 04 5106             330 #WPRM  SBF   LOGDO+H31LST,LOGOP1       REMOVE OPTION 1.
    47B6 C2 01 0000             331 #WPEX  LA    *-*,XR1                   RETORE XR1.
    47BA 0C 05 5116 4668        332        MVC   PNEED(6),OPFLD            PACK NAME NEEDED              @03
    47C0 0C 05 5126 5420        333        MVC   PMOUNT(6),IOADDR+8        PACK NAME MOUNTED             @03
    47C6 0C 01 512A 5209        334        MVC   L31A(UNITL),UNIT          UNIT REQUESTED                @03
    47CC C2 02 5100             335        LA    H31LST,XR2                POINT TO SYSLOG PARAMETER LIST.
    47D0 F4 10 00               336        SVC   0                         EXIT TO
    47D3 85                47D3 337        DC    XL1'85'                   *       CURRENT SYSLOG TRANSIENT
    47D4 B8 80 06               338        TBN   LOGDO(,XR2),LOGDE0        OPTION 0 TAKEN ?              @03
    47D7 C0 10 5053             339        BT    IPACK                     YES - DO NEXT UNIT.           @03
    47DB C0 87 46DB             340        B     IMAIN2                    NO - TRY PACK AGAIN           @03
    47DF C0 87 0000             341 EXIT   B     #                         RETURN TO CALLER              @03

                                343 ************************************************************************
                                344 *      ERASE-YES AND/OR VOL LABEL IS BAD PROCESSING                    *
                                345 ************************************************************************
    47E3 7C E8 4A               346 ISETY  MVI   IERAS(,XR1),ERASY         FORCE ERASE-YES
    47E6 3C FF 521B             347        MVI   ISWVL,VSAVSW              SET VOL LABEL SW FOR NOT SAVED
    47EA 7D E2 49               348        CLI   ITYP(,XR1),TYPSEC         TYPE-SECONDAIRY ?
    47ED C0 81 4EC3             349        BE    IHLT04                    YES - BRANCH TO HALT
    47F1 7A 10 0E               350        SBN   IOBFLG(,XR1),SPECFL       SET SPECIAL FLAG
    47F4 F2 87 3F               351        J     IRTFPP                    JUMP TO BYPASS SAVING VOL LABEL.
    47F7 7D E8 4A               352 IVOLOK CLI   IERAS(,XR1),ERASY         ERASE-YES ?
    47FA F2 81 05               353        JE    IVOLEY                    JUMP IF YES
    47FD 4C 0B 3B 548D          354        MVC   IALTN(12,XR1),IVOLIN      SAVE ALTERNATE TRACK INFO.
    4802 0C FF 5417 5517        355 IVOLEY MVC   IOSV1(256),IOADR1         SAVE VOLUME LABEL
    4808 C0 87 4F11             356        B     ISAVPP                    BRANCH TO SAVE OBR/SDR SECTORS

                                358 ************************************************************** @05
                                359 *      IF THIS IS TYPE-RENAME OR TYPE-CYL0, THE INITIALIZATION    * @05
                                360 *      OF THE MAIN DATA AREA IS SKIPPED.                          * @05
                                361 ************************************************************** @05
    480C 7D D9 49               362 CKTYPE CLI   ITYP(,XR1),TYPRNM         TYPE-RENAME ?                 @05
    480F F2 01 14               363        JNE   TSTCY0                    NO - CHECK IF TYPE-CYL0       @05
    4812 3D 6B 541C             364        CLI   IOADDR+4,COPYPK           COPYPACK PACK ?               @05
    4816 C0 01 5090             365        BNE   RENMPK                    NO - SKIP RENAME PACK         @05
                           481A 366 BDHALT EQU   *
    481A C2 02 5141             367        LA    HBDLST,XR2                POINT TO SYSLOG PARAMETER LIST.
    481E F4 10 00               368        SVC   0                         EXIT TO
    4821 85                4821 369        DC    XL1'85'                   *       CURRENT SYSLOG TRANSIENT
    4822 C0 87 5053             370        B     IPACK                     OPTION 0 TAKEN--DO NEXT UNIT  @05
    4826 7D E8 49               371 TSTCY0 CLI   ITYP(,XR1),TYPCY0         TYPE-CYL0 ?                   @05
    4829 F2 01 0A               372        JNE   IRTFPP                    NO - CONTINUE                 @05
    482C 3C 00 5155             373        MVI   IULIM,CY0CAP              YES - SET UPPER LIMIT TO CYL 0
                                374 *                                      SO ONLY CYL0 WILL HAVE        @05
                                375 *                                      SURFACE ANALYSIS PERFORMED ON IT
    4830 7B FF 20               376        SBF   ICODE(,XR1),INITA         INDICATE INITIALIZATION TO SA@05
    4833 F2 87 78               377        J     ISA1                      BYPASS ACTIVE FILE TEST       @05
    4836 C0 80 4741             378 IRTFPP BC    RSETBR,NOOP               BRANCH FIRST TIME
    483A 7D 40 4B               379        CLI   ICAPS(,XR1),BLANK         CAP REQUESTED ?
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    483D F2 81 0D              380        JE    ISNMCP                    JUMP IF NOT
    4840 7D C6 4B              381        CLI   ICAPS(,XR1),CAPF          CAP-FULL ?
    4843 F2 81 37              382        JE    IAFCHK                    YES - CHECK FOR ACTIVE FILES
    4846 3C 67 5155            383        MVI   IULIM,IHCP                SET UPPER LIMIT
    484A F2 87 23              384        J     ISTP67                    JUMP TO CONTINUE
                               385 ***************************************************************
                               386 *      MUST BE FULL CAP. SYSTEM FOR MODEL 15.                   *
                               387 ***************************************************************
    484D 3C CB 5155            388 ISNMCP MVI   IULIM,IFCAP               SET UPPER LIMIT              @04
    4851 7D E2 49              389        CLI   ITYP(,XR1),TYPSEC          SECONDAIRY REQUEST ?
    4854 F2 81 0A              390        JE    ISECRQ                    JUMP IF YES
    4857 3D 67 5374            391        CLI   ICAPL,IHCP                PREVIOUS HALF INIT ?
    485B F2 81 12              392        JE    ISTP67                    JUMP IF YES
    485E F2 87 1C              393        J     IAFCHK                    JUMP TO CHECK ACTIVE FILES
    4861 3D 67 5374            394 ISECRQ CLI   ICAPL,IHCP                HALF CAPACITY ALREADY ?
    4865 C0 01 4EC3            395        BNE   IHLT04                    BRANCH IF NOT TO HALT
    4869 3C 67 5154            396        MVI   ILLIM,IHCP                SET LOWER LIMIT
    486D F2 87 31              397        J     ISA                       BYPASS SPACE CHECK
    4870 0C 03 5261 5286       398 ISTP67 MVC   INTDTF+DTFNAM-1(4),INDTFH INITIALIZE SPACE REQUEST
    4876 7D E2 49              399        CLI   ITYP(,XR1),TYPSEC          TYPE-SECONDAIRY ?
    4879 C0 81 4EC3            400        BE    IHLT04                    YES - GO TO HALT
                               401 ***************************************************************
                               402 *      CHECK FOR ACTIVE FILES BY REQUESTING SPACE FOR FULL DEVICE CAP.*
                               403 *      IF MINIMUM SPACE OF 1 TRACK IS MET, PACK HAS ACTIVE FILES.     *
                               404 ***************************************************************
                         487D  405 IAFCHK EQU   *
    487D 3D FF 521B            406        CLI   ISWVL,VSAVSW              VOLUME LABEL INFO SAVED ?
    4881 F2 81 1D              407        JE    ISA                       JUMP IF NOT
    4884 3D 6B 541C            408        CLI   IOADDR+4,COPYPK           COPYPACK PACK
    4888 F2 81 16              409        JE    ISA                       JUMP IF YES
    488B C2 02 523A            410        LA    INTDTF,XR2                POINT XR2 AT TABLE
    488F 9C 00 00 07           411        MVC   0(1,XR2),IOBQB(,XR1)      MOVE Q BYTE TO TABLE
    4893 BB 07 00              412        SBF   0(,XR2),RQ                RESET Q CODE
    4896 F4 10 00              413        SVC   0                         LOAD
    4899 8B                4899  414        DC    AL1(X'8B')                LOAD RIB
    489A BD 02 01              415        CLI   1(,XR2),MAXSPC            DID WE MEET MAX. SPACE ?
    489D C0 01 4ED2            416        BNE   IHLT05                    BRANCH IF NOT
                               417 ***************************************************************
                               418 *      NO ACTIVE FILES, CONTINUE                                *
                               419 ***************************************************************
    48A1 7B FF 20              420 ISA    SBF   ICODE(,XR1),INITA         INDICATE INITIALIZATION TO SA
    48A4 0D 00 5154 5155       421        CLC   ILLIM(1),IULIM            INVALID SECUNDAIRY REQUEST ?
    48AA C0 81 4EC3            422        BE    IHLT04                    BRANCH IF YES
    48AE 4C 00 22 5154         423 ISA1   MVC   IOROP-1(1,XR1),ILLIM      INITIALIZE TRACK POINTER     @05
    48B3 5C 02 1A 23           424 IUPD   MVC   WRIDSB(3,XR1),IOROP(,XR1) INITIALIZE IOB TO PROCESS PACK
                         48B7  425 IUPD1  EQU   *
    48B7 38 80 515B            426        TBN   ILSW,LOADSA               SURFACE ANALYSIS LOADED ?
    48BB F2 10 1B              427        JT    ILSBY                     JUMP IF YES
    48BE 0C 09 4DCE 5153       428        MVC   IWKTBE(10),ISUTAB+9       MOVE PARM TO WORK AREA
    48C4 3A 80 515B            429        SBN   ILSW,LOADSA               SET LOADED SWITCH
    48C8 3B 40 515B            430        SBF   ILSW,LOADPT               RESET PRINT PHASE LOAD SW
    48CC C2 02 4DC5            431        LA    IWKTAB,XR2                POINT TO PARM LIST
    48D0 F4 10 00              432        SVC   0                         LOAD
    48D3 49                48D3  433        DC    AL1(ILDRIB)               LOAD RIB
    48D4 2C 01 48E8 07         434        MVC   ISAN+3(2),SCA(,XR2)       MOVE SCA TO BRANCH INST
    48D9 C2 02 5418            435 ILSBY  LA    IOADDR,XR2                POINT TO I/O AREA
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    48DD C2 01 4600             436        LA    IOB,XR1                     POINT TO IOB AND BUCKET
    48E1 5C 01 16 23            437        MVC   IOBSB(2,XR1),IOROP(,XR1)    SET UP C/S
    48E5 C0 87 0000             438 ISAN   B     #                           BRANCH TO SURFACE ANALYSIS
    48E9 78 10 20               439 IERCHK TBN   ICODE(,XR1),CETBAD          BAD CE TRACK ?
    48EC F2 10 6F               440        JT    CEBAD                       YES - JUMP
    48EF 79 01 20               441        TBF   ICODE(,XR1),CYL0ER          UNUSABLE PACK DUE TO
                                442 *                                        CYLINDER 0 IN ERROR -OR-
                                443 *                                        MORE THEN SIX DEFECTIVE TRACKS ?
    48F2 C0 90 4EB4             444        BF    IHLT03                      BRANCH IF YES
    48F6 78 04 20               445        TBN   ICODE(,XR1),BADID           ID OF A DEFECT. TRK CAN'T READ ?
    48F9 C0 10 4D07             446        BT    IRTI                        BRANCH IF YES.                @05
    48FD 79 02 20               447        TBF   ICODE(,XR1),DEFALT          DEFECTIVE ALTERNATE TRACK ?
    4900 F2 90 CD               448        JF    IDATF                       JUMP IF YES
    4903 4E 01 23 520B          449 MTKCHK ALC   IOROP(2,XR1),IT80           INCREMENT TRACK NUMBER
    4908 4D 00 22 5155          450        CLC   IOROP-1(1,XR1),IULIM        MORE TRACKS TO DO ?
    490D C0 84 4AF6             451        BH    IEJPRO                      BRANCH IF NOT
    4911 3C 0B 491B             452        MVI   TBLSCH+2,TABEND             INITIALIZE POINTER TO
                                453 *                                        HIGHEST ALT TRACK ADDR.
    4915 C2 02 463C             454        LA    TBLE,XR2                    POINT TO ALT TRACK TABLE
    4919 9D 01 00 23            455 TBLSCH CLC   0(2,XR2),IOROP(,XR1)        IS THIS TRACK AN ALTERNATE ?
    491D F2 82 15               456        JL    NALTK                       JUMP IF NOT
    4920 F2 81 68               457        JE    IATKAR                      JUMP IF YES
    4923 3D 01 491B             458        CLI   TBLSCH+2,TABSTR             LAST ALT TRACK ADDRESS ?
    4927 C0 81 48B3             459        BE    IUPD                        BRANCH IF YES
    492B 0F 00 491B 5169        460        SLC   TBLSCH+2(1),TWO             NO - DECREMENT POINTER
    4931 C0 87 4919             461        B     TBLSCH                      BRANCH TO CHECK NEXT ALT TRK
    4935 7D E8 4A               462 NALTK  CLI   IERAS(,XR1),ERASY           ERASE-YES ?
    4938 C0 81 48B3             463        BE    IUPD                        YES - PERFORM SURFACE ANALYSIS
    493C C2 02 4630             464        LA    ALTIN,XR2                   POINT XR2 AT ALT TRACK TABLE
                                465 *                                        POINT TO HIGHEST ENTRY IN
                                466 *                                        ALTERNATE TRACK INFO TABLE
    4940 3C 0B 4946             467        MVI   FAA+2,TABEND                SET DISP FOR END OF TABLE
    4944 9D 01 00 23            468 FAA    CLC   0(2,XR2),IOROP(,XR1)        THIS TRACK ASSIGNED TO ALT ?
    4948 C0 81 4903             469        BE    MTKCHK                      BRANCH IF YES
    494C 3D 01 4946             470        CLI   FAA+2,TABSTR                MORE ALT TRACK INFO TO CHECK ?
    4950 C0 81 48B3             471        BE    IUPD                        BRANCH IF NOT
    4954 0F 00 4946 5169        472        SLC   FAA+2(1),TWO                UPDATE POINTER TO NEXT ALT TRACK
    495A C0 87 4944             473        B     FAA                         BRANCH TO CHECK NEXT ALT TRACK

    495E 78 80 23               475 CEBAD  TBN   IOROP(,XR1),X'80'           TRACK CB80 ?
    4961 F2 10 07               476        JT    CEBAD1                      YES - JUMP
    4964 3A 0F 5175             477        SBN   IVDCE,X'0F'                 SET TO BAD TRACK IN DEV CON
    4968 F2 87 04               478        J     CEBAD2                      JUMP TO CONTINUE
    496B 3A F0 5175             479 CEBAD1 SBN   IVDCE,X'F0'                 SET TO BAD TRACK IN DEV CON
    496F 35 02 0011             480 CEBAD2 L     NCSYS@,XR2                  POINT TO SYSTEM COMM REGION
    4973 B8 04 2F               481        TBN   NCCONF(,XR2),TAPE           TAPE USER ?
    4976 F2 90 0E               482        JF    NOHALT                      NO - SKIP HALT FOR BAD CE TRACK
    4979 7D A8 07               483        CLI   IOBQB(,XR1),F1Q             IS F1 BEING INITIALIZED ?
    497C F2 01 08               484        JNE   NOHALT                      NO - SKIP HALT FOR BAD CE TRACK
    497F C2 02 5138             485        LA    BADLST,XR2                  POINT TO SYSLOG PARAMETER LIST.
    4983 F4 10 00               486        SVC   0                           EXIT TO
    4986 85              4986   487        DC    XL1'85'                     *       CURRENT SYSLOG TRANSIENT
    4987 C0 87 4903             488 NOHALT B     MTKCHK                      CONTINUE INIT
    498B 7D E8 4A               489 IATKAR CLI   IERAS(,XR1),ERASY           ERASE-YES ?
    498E F2 81 34               490        JE    STFLG                       JUMP IF YES
    4991 0C 00 49A3 491B        491        MVC   USEALT+2(1),TBLSCH+2        MOVE DISP OF ALT TRACK TO INST
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      $INIT2 INITIALIZE DISK MAINLINE FOR 5444

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    4997 0F 00 49A3 516B        492        SLC   USEALT+2(1),ONE           ADJUST TO LEFT BYTE
    499D C2 02 4630             493        LA    ALTIN,XR2                 POINT XR2 AT ALT TRACK TABLE
    49A1 BD 00 00               494 USEALT CLI   0(,XR2),USED              IS THIS ALT TRACK IN USE ?
    49A4 F2 81 1E               495        JE    STFLG                     JUMP IF NOT
    49A7 0C 00 49AF 49A3        496        MVC   DALTU+2(1),USEALT+2       MOVE DISP TO INST
    49AD BD FF 00               497 DALTU  CLI   0(,XR2),DEFECT            IS THIS A DEFECTIVE ALT TRACK ?
    49B0 C0 81 4903             498        BE    MTKCHK                    BRANCH IF YES
    49B4 C2 02 4630             499        LA    ALTIN,XR2                 POINT XR2 AT ALT TRACK TABLE
                                500 *      INDICATE PROPER ADDR TO BE WRITTEN IN ID FIELDS OF ALT TRACK.
    49B8 0C 00 49C1 491B        501        MVC   IFCSST+3(1),TBLSCH+2      MOVE DISP OF ALT TRACK ENTRY
    49BE 6C 01 1A 00            502 IFCSST MVC   WRIDSB(2,XR1),0(,XR2)     MOVE ADDR OF ASSIGNED ALT TRACK
    49C2 F2 87 04               503        J     STFLG1                    JUMP TO SET FLAG
    49C5 5C 01 1A 23            504 STFLG  MVC   WRIDSB(2,XR1),IOROP(,XR1) SET ADDR OF ID FOR UNUSED ALT
    49C9 7C 01 18               505 STFLG1 MVI   WRIDSB-2(,XR1),X'01'      SET FLAG BYTE FOR ALT TRACK
    49CC C0 87 48B7             506        B     IUPD1                     BRANCH TO LOAD SURFACE ANALYSIS
    49D0 5D 01 23 1A            507 IDATF  CLC   IOROP(2,XR1),WRIDSB(,XR1) ALT TRACK ASSIGNED & ERASE-YES ?
    49D4 F2 81 09               508        JE    SETAD                     JUMP IF YES
    49D7 0C 01 4A42 515F        509        MVC   VBNCH+3(2),IAAF1          MOVE ADDR OF ROUTINE TO BRANCH
    49DD F2 87 06               510        J     ALTFF                     JUMP TO WRITE ID
    49E0 0C 01 4A42 4AF5        511 SETAD  MVC   VBNCH+3(2),IBTRN+3        MOVE ADDR OF BYPASS ASSIGN
                                512 *      SAVE FCS INFO IN CASE ANOTHER ALT IS ASSIGNED AND WRITE ID
                                513 *      FOR DEFECTIVE ALTERNATE TRACK.
    49E6 1C 02 5162 1A          514 ALTFF  MVC   SAVFCS(3),WRIDSB(,XR1)    SAVE PRIMARY TRACK ADDRESS
    49EB 5C 01 1A 16            515        MVC   WRIDSB(2,XR1),IOBSB(,XR1) MOVE ADDR OF ALT TO FCS
    49EF 7C 03 18               516        MVI   WRIDSB-2(,XR1),DALTTK     SET FLAG FOR DEFECTIVE ALT TRACK
    49F2 3C 00 5418             517        MVI   IOADDR,CLEARC             CLEAR I/O AREA.
    49F6 D0 87 77               518        B     IOS(,XR1)                 BRANCH TO IOS TO WRITE ID
    49F9 7B 07 07               519        SBF   IOBQB(,XR1),RQ            RESET Q CODE
    49FC 7A 01 07               520        SBN   IOBQB(,XR1),RDQ           SET Q CODE TO READ ID
    49FF D0 87 77               521        B     IOS(,XR1)                 BRANCH TO IOS TO READ ID
    4A02 7B 07 07               522        SBF   IOBQB(,XR1),RQ            RESET Q CODE
    4A05 7A 02 07               523        SBN   IOBQB(,XR1),WTQ           SET Q CODE TO WRITE
    4A08 7B 7F 1D               524        SBF   RDIDSB(,XR1),RSTSEC       SET OFF SECTOR NUMBER
    4A0B 5D 02 1A 1D            525        CLC   WRIDSB(3,XR1),RDIDSB(,XR1)  ID CORRECT ?
    4A0F C0 01 4B2E             526        BNE   RTI                       BRANCH IF NOT
    4A13 C2 02 463C             527        LA    TBLE,XR2                  POINT XR2 AT TABLE
    4A17 3C 01 4A1D             528        MVI   SCAN+2,DISP01             RESET DISPLACEMENT
    4A1B 9D 01 00 16            529 SCAN   CLC   0(2,XR2),IOBSB(,XR1)      THIS THE ALT TRACK ?
    4A1F F2 81 0A               530        JE    IFND                      JUMP IF YES
    4A22 0E 00 4A1D 5169        531        ALC   SCAN+2(1),TWO             UPDATE DISPLACEMENT
    4A28 C0 87 4A1B             532        B     SCAN                      BRANCH TO CHECK NEXT ALT TRACK
    4A2C C2 02 4630             533 IFND   LA    ALTIN,XR2                 POINT XR2 AT ALT TRACK TABLE
    4A30 0C 00 4A3E 4A1D        534        MVC   IND+2(1),SCAN+2           MOVE DISPLACEMENT
    4A36 0F 00 4A3E 516B        535        SLC   IND+2(1),ONE              CORRECT DISP. TO CYL BYTE
    4A3C BC FF 00               536 IND    MVI   0(,XR2),DEFECT            SET TO INDICATE DEFECTIVE
    4A3F C0 87 0000             537 VBNCH  B     #                         ## BRANCH TO ASSIGN ANOTHER
                                538 *                                      ## ALTERNATE IF NECESSARY
                                539 *                                      ## OTHERWISE -- CONTINE
    4A43 4C 02 1A 5162          540 IAAF12 MVC   WRIDSB(3,XR1),SAVFCS      RESTORE FCS INFORMATION
                                541 *                                      INDICATING ID TO BE WRITTEN ON
                                542 *                                      ALTERNATE TRACK
                                543 *      LOCATE NEXT AVAILABLE ALTERNATE TRACK
    4A48 C2 02 4630             544        LA    ALTIN,XR2                 POINT XR2 AT ALT TRACK TABLE
    4A4C 3C 00 4A52             545        MVI   IAAF+2,DISP00             RESET DISPLACEMENT
    4A50 BD 00 00               546 IAAF   CLI   0(,XR2),USED              UNUSED ALT TRACK ?
    4A53 F2 81 12               547        JE    IASCAL                    JUMP IF YES
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      $INIT2 INITIALIZE DISK MAINLINE FOR 5444

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    4A56 0E 00 4A52 5169        548        ALC   IAAF+2(1),TWO             UPDATE DISPLACEMENT
    4A5C 3D 0B 4A52             549        CLI   IAAF+2,TABEND            END OF ALT TRACK TABLE ?
    4A60 C0 84 4EB4             550        BH    IHLT03                    YES - BRANCH TO HALT
    4A64 C0 87 4A50             551        B     IAAF                      BRANCH TO CHECK NEXT ALT TRACK

    4A68 0C 00 4A77 4A52        553 IASCAL MVC   STIOBS+3(1),IAAF+2        MOVE DISPLACEMENT
    4A6E 0E 00 4A77 5163        554        ALC   STIOBS+3(1),THRTN         POINT AT ADDR OF ALT TRACK
    4A74 6C 01 16 00            555 STIOBS MVC   IOBSB(2,XR1),0(,XR2)      MOVE ADDR OF ALT TRACK TO IOB
    4A78 3C 00 5418             556        MVI   IOADDR,CLEARC             CLEAR I/O AREA
    4A7C D0 87 77               557        B     IOS(,XR1)                 BRANCH TO IOS TO WRITE ID ON ALT
    4A7F 7D 40 02               558        CLI   IOBCMP(,XR1),GOODC        GOOD COMPLETION ?
    4A82 C0 01 49D0             559        BNE   IDATF                     NO - FIND ANOTHER ALT TRACK
    4A86 0C 00 4A92 4A52        560        MVC   IMOD+2(1),IAAF+2          MOVE DISP TO UPD ALT TRACK TABLE
    4A8C C2 02 4630             561        LA    ALTIN,XR2                 POINT XR2 AT ALT TRACK TABLE
    4A90 9C 01 00 1A            562 IMOD   MVC   0(2,XR2),WRIDSB(,XR1)     MOVE ADDR OF DEF. TRACK TO TABLE
    4A94 5C 01 26 16            563        MVC   IORDF(2,XR1),IOBSB(,XR1)  SAVE ADDR OF ALT TRACK
    4A98 5C 01 16 1A            564        MVC   IOBSB(2,XR1),WRIDSB(,XR1) MOVE ADDR OF DEF. TRACK
    4A9C 5C 02 1A 26            565        MVC   WRIDSB(3,XR1),IORDF(,XR1) MOVE ADDR OF ALT TRACK
    4AA0 3C 00 5418             566        MVI   IOADDR,CLEARC             CLEAR I/O AREA
    4AA4 D0 87 77               567        B     IOS(,XR1)                 BRANCH TO WRITE ID ON DEF TRACK
    4AA7 7B 02 07               568        SBF   IOBQB(,XR1),WTQ           RESET WRITE Q CODE
    4AAA 7A 01 07               569        SBN   IOBQB(,XR1),RDQ           SET Q CODE FOR READ
    4AAD D0 87 77               570        B     IOS(,XR1)                 BRANCH TO IOS TO READ ID
    4AB0 7D 40 02               571        CLI   IOBCMP(,XR1),GOODC        GOOD COMPLETION ?
    4AB3 F2 81 03               572        JE    ISKALT                    JUMP IF YES TO CONTINUE
    4AB6 F2 87 75               573        J     RTI                       JUMP TO RE-INITIALIZE
    4AB9 7B 7F 1D               574 ISKALT SBF   RDIDSB(,XR1),RSTSEC       SET OFF SECTOR NUM.
    4ABC 5D 02 1A 1D            575        CLC   WRIDSB(3,XR1),RDIDSB(,XR1)  ID CORRECT ?
    4AC0 F2 01 6B               576        JNE   RTI                       JUMP IF NOT
    4AC3 1C 01 515D 16          577        MVC   IOBSX(2),IOBSB(,XR1)      MOVE ADDR OF DEF TRACK
    4AC8 5C 01 16 1A            578        MVC   IOBSB(2,XR1),WRIDSB(,XR1) MOVE ADDR OF ALT TRACK
    4ACC 4C 01 1A 515D          579        MVC   WRIDSB(2,XR1),IOBSX       MOVE ADDR OF DEF TRACK
    4AD1 7C 01 18               580        MVI   WRIDSB-2(,XR1),ALTFLG     DEF FLAG IN ID TO OPER ALT TRK
    4AD4 D0 87 77               581        B     IOS(,XR1)                 BRANCH TO IOS TO READ ID OF ALT
    4AD7 7B 01 07               582        SBF   IOBQB(,XR1),RDQ           RESET READ Q BYTE
    4ADA 7A 02 07               583        SBN   IOBQB(,XR1),WTQ           SET Q BYTE FOR WRITE
    4ADD 7D 40 02               584        CLI   IOBCMP(,XR1),GOODC        GOOD COMPLETION ?
    4AE0 F2 81 04               585        JE    ICOMID                    JUMP IF YES
    4AE3 C0 87 49E6             586        B     ALTFF                     BR TO SET DEF AND FIND ANOTHER
    4AE7 7B 7F 1D               587 ICOMID SBF   RDIDSB(,XR1),RSTSEC       SET SECTOR NUMBER OFF
    4AEA 5D 02 1A 1D            588        CLC   WRIDSB(3,XR1),RDIDSB(,XR1)  CHK ID OF ALTERNATE ASSIGNED
    4AEE C0 01 49E6             589        BNE   ALTFF                     BRANCH IF NOT CORRECT ID
    4AF2 C0 87 4903             590 IBTRN  B     MTKCHK                    BRANCH TO CONTINUE
    4AF6 7C 00 23               591 IEJPRO MVI   IOROP(,XR1),CLEARC       RESET SECTOR
    4AF9 4C 00 22 5154          592        MVC   IOROP-1(1,XR1),ILLIM      INITIALIZE PTR LOWER LIMITS
    4AFE 5C 01 16 23            593        MVC   IOBSB(2,XR1),IOROP(,XR1)  MOVE IN C/S
    4B02 7A 01 07               594        SBN   IOBQB(,XR1),RDQ           SET Q BYTE TO READ DATA
    4B05 7B 02 07               595        SBF   IOBQB(,XR1),WTQ           RESET WRITE Q CODE
    4B08 7C 00 08               596        MVI   IOBRB(,XR1),RRB           RESET R BYTE CODE
    4B0B 7B 90 0E               597        SBF   IOBFLG(,XR1),ERRFLG       RESET ERROR FLAG
    4B0E D0 87 77               598        B     IOS(,XR1)                 BRANCH TO READ
    4B11 7C 01 08               599        MVI   IOBRB(,XR1),RRB1          RESTORE R BYTE
                          4B14  600 ICID   EQU   *
    4B14 5C 01 16 23            601        MVC   IOBSB(2,XR1),IOROP(,XR1)  UPDATE IOB CYL TRK ADDR
    4B18 D0 87 77               602        B     IOS(,XR1)                 BRANCH TO READ
    4B1B 7D 40 02               603        CLI   IOBCMP(,XR1),GOODC        GOOD COMPLETION ?
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      $INIT2 INITIALIZE DISK MAINLINE FOR 5444

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    4B1E F2 81 34              604        JE    IDCM                        JUMP IF YES TO CHECK ID
    4B21 78 01 6A              605 RTIA   TBN   IRTYSW(,XR1),SECOND        SECOND TIME THROUGH ?
    4B24 F2 10 07              606        JT    RTI                         JUMP IF YES
    4B27 7A 01 6A              607        SBN   IRTYSW(,XR1),SECOND        SET SECOND TIME SWITCH ON
    4B2A C0 87 4AF6            608        B     IEJPRO                      BRANCH TO RECALIBRATE, RE-READ
                               609 *                                        BEGINNING CYLINDER 0.
    4B2E C2 01 4600            610 RTI    LA    IOB,XR1                     XR1 POINTS TO IOB
    4B32 1E 00 5165 27         611        ALC   CTR(1),IALAS-2(,XR1)        UPDATE RETRY COUNTER BY ONE
    4B37 7C 00 1A              612        MVI   WRIDSB(,XR1),CLEARC         MOVE IN CLEAR CHARACTER
    4B3A 5C 00 19 1A           613        MVC   WRIDSB-1(,XR1),WRIDSB(,XR1)  CLEAR FCS FIELD
    4B3E 3D 0A 5165            614        CLI   CTR,RTRY10                  TEN RETRIES ?
    4B42 C0 02 4EB4            615        BNL   IHLT03                      BRANCH IF YES TO HALT
    4B46 C0 87 4D90            616        B     IPRTM                       BRANCH TO LOAD PRINT PHASE
    4B4A C0 87 5518            617        B     IMEND                       BRANCH TO PRINT PHASE
    4B4E 04              4B4E  618        DC    XL1'04'                     MESSAGE NUMBER
    4B4F 5176            4B50  619        DC    AL2(IMSGT)                  MESSAGE TABLE ADDRESS
    4B51 C0 87 46DB            620        B     IMAIN2                      RETRY INITIALIZATION
                         4B55  621 IDCM   EQU   *
    4B55 7D 00 15              622        CLI   IOBCB(,XR1),CYL0            CYL 0 ?
    4B58 F2 81 1D              623        JE    IDCCMC                      JUMP IF YES
    4B5B C2 02 4630            624        LA    ALTIN,XR2                   POINT TO ALTERNATE TRACK INFO
    4B5F 3C 01 4B65            625        MVI   ICCM+2,DISP01               RESET DISPLACEMENT
    4B63 9D 01 00 23           626 ICCM   CLC   0(2,XR2),IOROP(,XR1)        ADDRESS FOUND IN ALT TRK INFO ?
    4B67 F2 81 2A              627        JE    ISFA                        JUMP IF YES
    4B6A 0E 00 4B65 5169       628        ALC   ICCM+2(1),TWO               UPDATE DISPLACEMENT
    4B70 3D 17 4B65            629        CLI   ICCM+2,DISP17               MOVE ALT TRK INFO TO CHECK ?
    4B74 C0 04 4B63            630        BNH   ICCM                        BRANCH IF YES
    4B78 7B 7F 1D              631 IDCCMC SBF   RDIDSB(,XR1),RESSEC         SET SECTOR NUM. OFF
    4B7B 5D 02 1D 23           632        CLC   RDIDSB(3,XR1),IOROP(,XR1)   COMPARE ID OF PRIMARY OPERATIVE
    4B7F C0 01 4B21            633        BNE   RTIA                        BRANCH IF BAD TO RETRY
    4B83 4E 01 23 520D         634 UPDPTR ALC   IOROP(2,XR1),IC100          UPDATE CYL TRK ADDR TO POINT
                               635 *                                        TO NEXT TRACK
    4B88 4D 00 22 5154         636        CLC   IOROP-1(1,XR1),ILLIM        MORE TRACKS TO CHECK ?
    4B8D F2 84 87              637        JH    INVOL                       JUMP IF NOT
    4B90 C0 87 4B14            638        B     ICID                        BRANCH TO CONTINUE CHECKING
    4B94 3D 0B 4B65            639 ISFA   CLI   ICCM+2,TABEND                PRIMARY TRACK DEFECTIVE ?
    4B98 F2 84 1F              640        JH    IALTC                       JUMP IF NOT
    4B9B 0C 00 4BAA 4B65       641        MVC   IODT+3(1),ICCM+2            SET ADDR OF ALT AND FLAG X'10'
                               642 *                                        FOR COMPARE
    4BA1 0E 00 4BAA 5164       643        ALC   IODT+3(1),TWLV              ADD 12 TO DISPLACEMENT
    4BA7 6C 01 26 00           644 IODT   MVC   IORDF(2,XR1),0(,XR2)        SAVE TRACK ADDRESS
    4BAB 7B 7F 1D              645        SBF   RDIDSB(,XR1),RESSEC         SET OFF SECTOR NUMBER
    4BAE 5D 02 1D 26           646        CLC   RDIDSB(3,XR1),IORDF(,XR1)   ID CORRECT ?
    4BB2 C0 81 4B83            647        BE    UPDPTR                      BRANCH IF YES TO CONTINUE
    4BB6 C0 87 4B2E            648        B     RTI                         BRANCH TO INITIALIZE
    4BBA 0C 00 4BC8 4B65       649 IALTC  MVC   AAUD+2(1),ICCM+2            MOVE DISP IN ALT TRK ADDR TABLE
    4BC0 0F 00 4BC8 5163       650        SLC   AAUD+2(1),THRTN             SUBT '0D' TO GET TO ALT TRK TABL
    4BC6 BD FF 00              651 AAUD   CLI   0(,XR2),DFALTT               THIS ALT TRK DEFECTIVE ?
    4BC9 F2 01 19              652        JNE   IC0                         JUMP IF NOT
    4BCC 0C 00 4BD5 4B65       653        MVC   IADFM+3(1),ICCM+2           MOVE DISP IN ALT TRK ADDR TABLE
    4BD2 6C 01 2C 00           654 IADFM  MVC   IALTDF(2,XR1),0(,XR2)       MOVE ADDR OF ALT TRACK
    4BD6 7B 7F 1D              655        SBF   RDIDSB(,XR1),RESSEC         SET SECTOR NUMBER OFF
    4BD9 5D 02 1D 2C           656        CLC   RDIDSB(3,XR1),IALTDF(,XR1)  ID CORRECT ?
    4BDD C0 81 4B83            657        BE    UPDPTR                      BRANCH IF YES
    4BE1 C0 87 4B2E            658        B     RTI                         BRANCH TO RE-INITIALIZE
    4BE5 0C 00 4BED 4BC8       659 IC0    MVC   IC0A+2(1),AAUD+2            MOVE DISP IN ALT TRACK TABLE
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    4BEB BD 00 00               660 IC0A   CLI   0(,XR2),UNUSED            ALTERNATE UNUSED ?
    4BEE F2 01 07               661        JNE   IAC                       JUMP IF NOT UNUSED
    4BF1 5C 01 29 23            662        MVC   IALAS(2,XR1),IOROP(,XR1)  MOVE ORIG TRK ADDR TO COMPARE
    4BF5 F2 87 10               663        J     ICAAC                     JUMP TO COMPARE ID
    4BF8 0C 00 4C07 4BED        664 IAC    MVC   IMAC+3(1),IC0A+2          MOVE DISP IN  ALT TRK TABLE
    4BFE 0E 00 4C07 516B        665        ALC   IMAC+3(1),ONE             UPDATE DISPLACEMENT
    4C04 6C 01 29 00            666 IMAC   MVC   IALAS(2,XR1),0(,XR2)      MOVE ADDR OF PRI TRK TO COMPARE
    4C08 7B 7F 1D               667 ICAAC  SBF   RDIDSB(,XR1),RESSEC       SET SECTOR NUMBER OFF
    4C0B 5D 02 1D 29            668        CLC   RDIDSB(3,XR1),IALAS(,XR1)   ID'S COMPARE EQUAL ?
    4C0F C0 81 4B83             669        BE    UPDPTR                    BRANCH IF YES TO CONTINUE
    4C13 C0 87 4B2E             670        B     RTI                       BRANCH TO RE-INITIALIZE
                          5518  671        USING VOLS,XR2
    4C17 C2 02 5518             672 INVOL  LA    VOLS,XR2                  LOAD XR2
    4C1B BC 00 FF               673        MVI   VOLE(,XR2),CLEARC         MOVE IN CLEAR CHARACTER
    4C1E AC FE FE FF            674        MVC   VOLE-1(255,XR2),VOLE(,XR2)  CLEAR VOL LABEL AREA
    4C22 7D E2 49               675        CLI   ITYP(,XR1),TYPSEC         TYPE-SECONDARY ?
    4C25 F2 01 08               676        JNE   NEXTCK                    JUMP IF NOT
    4C28 8C FF FF 5417          677        MVC   VOLE(256,XR2),IOSV1       RESTORE OLD VOL LABEL
    4C2D F2 87 54               678        J     IUGHF5                    JUMP TO SET F5 INFO
    4C30 8C 02 02 515A          679 NEXTCK MVC   VOLSLB(3,XR2),VOLLAB      SUPPLY STANDARD VOL SER #
    4C35 8C 05 08 4658          680        MVC   VOLSID(6,XR2),VOLID       SUPPLY VOLUME ID
    4C3A 8C 01 0A 5167          681        MVC   VOLVPT(2,XR2),VTOCPT      SUPPLY VTOC POINTER
    4C3F BC FF 0B               682        MVI   VOLDPS(,XR2),PNTR         SOURCE DIRECTORY POINTER
    4C42 BC FF 25               683        MVI   VOLDPO(,XR2),PNTR         OBJECT DIRECTORY POINTER
    4C45 BC FF EF               684        MVI   VDTKIN(,XR2),PNTR         INITIALIZE ALT TRK
    4C48 AC 16 EE EF            685        MVC   VDTKIN-1(23,XR2),VDTKIN(,XR2)  CONDITIONAL REQUEST INFO
    4C4C 0C 09 5573 4662        686        MVC   VOLOID(10),IDFLD          SUPPLY OWNER ID              @03
    4C52 8C 0D 69 5175          687        MVC   IVOLDC(14,XR2),IVDCE      SUPPLY DEVICE CONSTANTS
    4C57 3D E8 4649             688        CLI   IBTY,TYPCY0               TYPE-CYL0 ?                  @05
    4C5B F2 01 12               689        JNE   CKCAP                     NO - CONTINUE                @05
    4C5E 8C 00 5C 5374          690        MVC   IVOLDC-13(1,XR2),ICAPL    MOVE IN PACK CAPACITY        @05
    4C63 3D CB 5374             691        CLI   ICAPL,IFCAP               FULL CAPACITY DISK ?         @05
    4C67 F2 82 0D               692        JL    HCAPPK                    NO - MUST BE HALF CAP PACK   @05
    4C6A BC CB 5C               693        MVI   IVOLDC-13(,XR2),IFCAP     ASSURE A FULL CAP PACK IN    @05
                                694 *                                      CASE IT WAS COPYPACK PACK    @05
    4C6D F2 87 1E               695        J     FCF5                      GO FORMAT FULL CAP VOL LABEL @05
    4C70 3D CB 5155             696 CKCAP  CLI   IULIM,IFCAP               FULL CAPACITY DISK ?         @05
    4C74 F2 81 17               697        JE    FCF5                      JUMP IF YES
    4C77 BC C0 8F               698 HCAPPK MVI   VOLAAT+25(,XR2),F5CODE    MOVE IN HALF CAPACITY DISK   @05
    4C7A BC FF 8E               699        MVI   VOLAAT+24(,XR2),F5USED    INDICATE UNUSED TRACKS
    4C7D AC 17 8D 8E            700        MVC   VOLAAT+23(24,XR2),VOLAAT+24(,XR2)
    4C81 F2 87 0D               701        J     IF5END                    JUMP TO SET REST OF F5'S
    4C84 BB C0 8F               702 IUGHF5 SBF   VOLAAT+25(,XR2),F5CODE    SET FULL CAPACITY DISK
    4C87 BC 00 8E               703        MVI   VOLAAT+24(,XR2),CLEARC    INDICATE USABLE TRACKS
    4C8A AC 17 8D 8E            704        MVC   VOLAAT+23(24,XR2),VOLAAT+24(,XR2)
                          4C8E  705 FCF5   EQU   *
    4C8E BC C0 76               706        MVI   VOLAAT(,XR2),F5CODE       SET 1ST BYTE OF F5 LABEL
    4C91 BC FF A8               707 IF5END MVI   VOLATE(,XR2),F5USED       SET LAST BYTE OF F5 LABEL
    4C94 3D E8 4649             708        CLI   IBTY,TYPCY0               TYPE-CYL0 ?                  @05
    4C98 F2 81 05               709        JE    SKIPMV                    YES, DO NOT MOVE IN PACK CAP @05
    4C9B 8C 00 5C 5155          710        MVC   IVOLDC-13(1,XR2),IULIM    MOVE IN UPPER LIMIT
    4CA0 8C 00 69 5175          711 SKIPMV MVC   IVOLDC(1,XR2),IVDCE       MOVE IN CE TRACK INFO        @05
    4CA5 3C 00 5175             712        MVI   IVDCE,CLEARC              RESET CE TRACK INFO
    4CA9 9C 0B 75 3B            713        MVC   VOLATI(12,XR2),IALTN(,XR1)  SUPPLY ALT TRACK INFO
                          0002  714        DROP  XR2
    4CAD C2 01 521C             715        LA    IOBV,XR1                  LOAD XR1
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    4CB1 C2 02 4600             716        LA    IOB,XR2                    LOAD XR2
    4CB5 6C 00 07 07            717        MVC   IOBQB(1,XR1),IOBQB(,XR2)  SET UP Q BYTE
    4CB9 7B 01 07               718        SBF   IOBQB(,XR1),RDQ            RESET READ Q BYTE
    4CBC 7A 02 07               719        SBN   IOBQB(,XR1),WTQ            SET Q CODE FOR WRITE
    4CBF E0 87 77               720        B     IOS(,XR2)                  BRANCH TO WRITE VOLUME LABEL
    4CC2 7D 40 02               721        CLI   IOBCMP(,XR1),GOODC         GOOD COMPLETION ?
    4CC5 F2 01 3F               722        JNE   IRTI                       BRANCH IF NOT TO RE-INIT     @05
    4CC8 3D E2 4649             723        CLI   IBTY,TYPSEC                TYPE-SECONDARY ?
    4CCC F2 81 48               724        JE    IPMT                       JUMP IF YES TO BYPASS FORMAT
                                725 *                                       OF SECTOR 0 AND SECTOR 7
    4CCF 7C 1C 16               726        MVI   IOBSB(,XR1),SECT07         SET TO SECTOR 001C
    4CD2 3C 00 5618             727        MVI   VOLS+256,CLEARC            MOVE IN CLEAR CHARACTER
    4CD6 0C FE 5616 5617        728        MVC   VOLS+254(255),VOLS+255     CLEAR I/O AREA
    4CDC 7B 07 07               729        SBF   IOBQB(,XR1),RQ             RESET Q BYTE
    4CDF 7A 02 07               730        SBN   IOBQB(,XR1),WTQ            SET Q CODE FOR WRITE
    4CE2 0C 03 551B 5211        731        MVC   VOLS+3(4),IERP             MOVE IN CONSTANT
    4CE8 E0 87 77               732        B     IOS(,XR2)                  BRANCH TO IOS TO WRITE
    4CEB 7D 40 02               733        CLI   IOBCMP(,XR1),GOODC         GOOD COMPLETION ?
    4CEE F2 81 03               734        JE    IMIPL                      JUMP IF YES TO CONTINUE
    4CF1 F2 87 13               735        J     IRTI                       JUMP TO RE-INITIALIZE
    4CF4 7C 00 16               736 IMIPL  MVI   IOBSB(,XR1),SECT00         SET TO SECTOR 0000
    4CF7 0C 08 5520 521A        737        MVC   VOLS+8(9),IPLHPL           MOVE IN IPL HALT
    4CFD E0 87 77               738        B     IOS(,XR2)                  BRANCH TO IOS TO WRITE
    4D00 7D 40 02               739        CLI   IOBCMP(,XR1),GOODC         GOOD COMPLETION ?
    4D03 C0 81 4DCF             740        BE    IFMATV                     BRANCH IF YES TO FORMAT VTOC
                                741 ************************************************************* @05
                                742 *      IF THIS IS TYPE-CYL0, AND AN ERROR CONDITION HAS BEEN      * @05
                                743 *      FOUND TO WARRANT A RE-INITIALIZATION, FORCE TYPE-CLEAR.    * @05
                                744 ************************************************************* @05
    4D07 3D E8 4649             745 IRTI   CLI   IBTY,TYPCY0               TYPE-CYL0 ?                  @05
    4D0B C0 01 4B2E             746        BNE   RTI                        NO - GO RE-INITIALIZE PACK   @05
    4D0F 3C C3 4649             747        MVI   IBTY,TYPCLR                YES - FORCE TYPE-CLEAR       @05
    4D13 C0 87 4B2E             748        B     RTI                        BRANCH TO RE-INITIALIZE PACK @05
    4D17 0C 01 518B 5209        749 IPMT   MVC   IMSG1+19(2),UNIT           MOVE UNIT TO PRINT MESSAGE   @03
                          4D1D  750 IPRINT EQU   *
    4D1D 3B 01 466A             751        SBF   IRTSW,RTRYSW               RESET RETRY SWITCH
    4D21 38 01 515B             752        TBN   ILSW,ERRSW                 CALLED BY ERROR ROUTINE ?
    4D25 C0 10 4EE6             753        BT    IERRT                      BRANCH IF YES
    4D29 C0 87 4D90             754        B     IPRTM                      BRANCH TO LOAD PRINT PHASE
    4D2D C0 87 5518             755        B     IMEND                      BRANCH TO PRINT PHASE
    4D31 01               4D31  756        DC    XL1'01'                    MESSAGE NUMBER
    4D32 5176             4D33  757        DC    AL2(IMSGT)                 ADDR OF MESSAGE TABLE
    4D34 3D E8 4649             758        CLI   IBTY,TYPCY0                TYPE-CYL0 ?                  @05
    4D38 C0 81 5053             759        BE    IPACK                      YES - SKIP WR ALT TRK MSG    @05
    4D3C 3D D9 4649             760        CLI   IBTY,TYPRNM                TYPE-RENAME ?                @05
    4D40 C0 81 5053             761        BE    IPACK                      YES - GO EXIT ROUTINE        @05

                                763 ************************************************************************
                                764 *      IF A PACK HAS BEEN SO FAR SUCCESSFULLY INITIALIZED,             *
                                765 *      THE ALTERNATE TRACK INFORMATION IS LOGGED,                      *
                                766 *      OTHERWISE NO ADDITIONAL LOGGING IS DONE.                        *
                                767 ************************************************************************
    4D44 C2 01 4630             768        LA    ALTIN,XR1                  LOCATE ANY ALT TRACKS WHICH
                                769 *                                       HAVE BEEN ASSIGNED & LOG INFO
    4D48 7D FF 00               770 ICAS   CLI   0(,XR1),DFALTT             THIS ALT TRACK USABLE ?
    4D4B F2 81 2D               771        JE    IUPCA                      JUMP IF UNUSABLE
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    4D4E 7D 00 00              772        CLI   0(,XR1),UNUSED            THIS ALT TRACK UNUSED ?
    4D51 F2 81 27              773        JE    IUPCA                     JUMP IF UNUSED
    4D54 1C 01 4DB6 01         774        MVC   ICSPTB(2),1(,XR1)         MOVE PRIMAIRY TRACK ADDR
    4D59 1C 01 4DB8 0D         775        MVC   ICSSTB(2),13(,XR1)        MOVE ALT TRACK ADDR
    4D5E 38 10 515B            776        TBN   ILSW,PRTED                MESSAGE ALREADY PRINTED ?
    4D62 F2 10 0F              777        JT    IPTAA                     JUMP IF YES
    4D65 3A 10 515B            778        SBN   ILSW,PRTED                SET ON
    4D69 C0 87 4D90            779        B     IPRTM                     BRANCH TO LOAD PRINT PHASE
    4D6D C0 87 5518            780        B     IMEND                     BRANCH TO PRINT INFO
    4D71 03              4D71  781        DC    XL1'03'                   MESSAGE NUMBER
    4D72 5176            4D73  782        DC    AL2(IMSGT)                ADDR OF MESSAGE TABLE
    4D74 C0 87 5518            783 IPTAA  B     IMEND                     BRANCH TO PRINT PHASE
    4D78 FF              4D78  784        DC    XL1'FF'                   OPERATION CODE
    4D79 4DB6            4D7A  785        DC    AL2(ICSPTB)               ADDR OF TABLE
    4D7B D2 01 02              786 IUPCA  LA    2(,XR1),XR1               UPDATE XR1
    4D7E 3D 05 50CD            787        CLI   IATC,ATC05                END OF ALT TRACK TABLE ?
    4D82 C0 81 5053            788        BE    IPACK                     BRANCH IF YES
    4D86 0E 00 50CD 516B       789        ALC   IATC(1),ONE               UPDATE
    4D8C C0 87 4D48            790        B     ICAS                      BRANCH TO CHECK NEXT ALT TRACK

                               792 ********************************************************************
                               793 *      PRINT ROUTINE LOGIC AND CONSTANTS                           *
                               794 ********************************************************************
                         4D90  795 IPRTM  EQU   *
    4D90 34 08 4DB4            796        ST    IPARR+3,ARR               SAVE ARR FOR RETURN
    4D94 38 40 515B            797        TBN   ILSW,LOADPT               PRINT PHASE PREVIOUSLY LOADED ?
    4D98 F2 10 16              798        JT    IPARR                     YES - JUMP
    4D9B 3A 40 515B            799        SBN   ILSW,LOADPT               SET ON PREVIOUSLY LOAD SWITCH
    4D9F 3B 80 515B            800        SBF   ILSW,LOADSA               RESET SURFACE ANAL. LOAD SWITCH
    4DA3 0C 09 4DCE 4DC4       801        MVC   IWKTBE(10),IPTAB+9        MOVE LOAD PARM TO WORK AREA
    4DA9 C2 02 4DC5            802        LA    IWKTAB,XR2                POINT TO PARM LIST
    4DAD F4 10 00              803        SVC   0                         LOAD
    4DB0 49              4DB0  804        DC    AL1(ILDRIB)               LOAD RIB
    4DB1 C0 87 0000            805 IPARR  B     #                         RETURN VIA ARR
    4DB5 0000            4DB6  806 ICSPTB DC    XL2'0000'                 TABLE OF CYLINDERS
    4DB7 0000            4DB8  807 ICSSTB DC    XL2'0000'                 *
    4DB9 A0FE            4DBA  808        DC    XL2'A0FE'                 Q CODE AND CODE BYTE
                         4DBB  809 IPTAB  EQU   *                         TABLE OF LOAD #INMSG
    4DBB D65BC9D5D4E2C7  4DC1  810        DC    CL7'O$INMSG'              NAME OF PROG
    4DC2 00              4DC2  811        DC    XL1'00'
    4DC3 5518            4DC4  812        DC    AL2(IMEND)                ADDR TO LOAD PRINT PHASE AT
                         4DC5  813 IWKTAB EQU   *                         WORK TABLE
    4DC5 0000000000000000 4DCE 814 IWKTBE DC    XL10'00'
    4DCD 0000                  814

                               816 ********************************************************************
                               817 *      LOGIC TO FORMAT VTOC SECTORS 9-23                           *
                               818 ********************************************************************
    4DCF 3C 32 4E73            819 IFMATV MVI   IVOTLP+1,TOTF1           INITIALIZE SERIAL COUNTER
    4DD3 0C 01 50E1 50DD       820        MVC   IVTCTR(2),IVCTRS          MOVE 1ST F1 SEC/DISP TO VTOC IND
    4DD9 C2 01 4600            821        LA    IOB,XR1                   POINT XR1 AT IOB
    4DDD C2 02 5418            822        LA    IOADDR,XR2                POINT XR2 AT I/O AREA
    4DE1 7C 20 0E              823        MVI   IOBFLG(,XR1),HANDER       SET UP FLAG IN IOB
    4DE4 7B FF 08              824        SBF   IOBRB(,XR1),RBRSET        RESET R BYTE IN IOB
    4DE7 7B 07 07              825        SBF   IOBQB(,XR1),RQ            RESET Q BYTE IN IOB
    4DEA 7A 02 07              826        SBN   IOBQB(,XR1),WTQ           SET Q CODE TO WRITE
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      $INIT2 INITIALIZE DISK MAINLINE FOR 5444

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    4DED 7C 00 17              827        MVI   IOBNB(,XR1),NUM1          SET TO WRITE 1 SECTOR
    4DF0 4C 01 16 50E3         828        MVC   IOBSB(2,XR1),IVTSEC       SET TO WRITE SECTOR ?
    4DF5 BC 00 FF              829        MVI   255(,XR2),CLEARC          MOVE IN CLEAR CHAR
    4DF8 AC FE FE FF           830        MVC   254(255,XR2),255(,XR2)    CLEAR BUFFER
    4DFC E2 02 05              831        LA    5(,XR2),XR2               UPDATE XR2
    4DFF E2 02 0A              832 ILOOPU LA    10(,XR2),XR2              UPDATE XR2
    4E02 8C 01 00 50E1         833 IVTMVC MVC   0(2,XR2),IVTCTR           MOVE F1 SEC/DISP
    4E07 0D 01 50E1 50DF       834        CLC   IVTCTR(2),IV447F          LAST OF SECTOR 9 ?
    4E0D F2 81 23              835        JE    IVTWRT                    JUMP IF YES
    4E10 0D 01 50E1 50E5       836        CLC   IVTCTR(2),IV2C3F          LAST SECTOR OF 10 ?
    4E16 F2 81 47              837        JE    IVTCNT                    JUMP IF YES
    4E19 3D 3F 50E1            838        CLI   IVTCTR,DISP3F             DISP IN SEC/DISP = 3F ?
    4E1D F2 81 09              839        JE    IVA340                    JUMP IF YES
    4E20 0F 01 50E1 50E7       840        SLC   IVTCTR(2),IVT040          SUBTRACT '0040' FROM SEC/DISP
    4E26 F2 87 06              841        J     ILORTN                    JUMP TO CONTINUE
    4E29 0F 01 50E1 50E9       842 IVA340 SLC   IVTCTR(2),IVT340          SUBTRACT '0340' FROM SEC/DISP
    4E2F C0 87 4DFF            843 ILORTN B     ILOOPU                    BRANCH TO MOVE NEXT SEC/DISP
    4E33 4E 00 16 50EC         844 IVTWRT ALC   IOBSB(1,XR1),IFOUR        ADD 1 TO SECTOR ADDR
    4E38 D0 87 77              845 IVWRTC B     IOS(,XR1)                 BRANCH TO IOS TO WRITE
    4E3B 7D 40 02              846        CLI   IOBCMP(,XR1),GOODC        GOOD COMPLETION ?
    4E3E C0 01 4D07            847        BNE   IRTI                      BRANCH IF NOT TO RE-INITIALIZ@05
    4E42 7D 28 16              848        CLI   IOBSB(,XR1),SECT10        WRITTEN SECTOR 10 ?
    4E45 F2 81 1F              849        JE    IWVTOC                    JUMP IF YES
    4E48 C2 02 5418            850        LA    IOADDR,XR2                POINT XR2 AT I/O AREA
    4E4C BC 00 FF              851        MVI   255(,XR2),CLEARC          MOVE IN CLEAR CHAR
    4E4F AC FE FE FF           852        MVC   254(255,XR2),255(,XR2)    CLEAR I/O BUFFER
    4E53 E2 02 09              853        LA    9(,XR2),XR2               UPDATE XR2
    4E56 0F 01 50E1 50E7       854        SLC   IVTCTR(2),IVT040          SUBTRACT '0040' FROM SEC/DISP
    4E5C C0 87 4E02            855        B     IVTMVC                    BRANCH TO UPDATE NEXT SECTOR
    4E60 BC 32 06              856 IVTCNT MVI   6(,XR2),TOTF1             MOVE IN TOTAL # OF F1'S
    4E63 C0 87 4E33            857        B     IVTWRT                    BRANCH TO WRITE SECTOR 10
                         4E67  858 IWVTOC EQU   *
    4E67 C2 02 5418            859        LA    IOADDR,XR2                POINT XR2 AT I/O AREA
    4E6B BC 00 FF              860 IVOTCL MVI   255(,XR2),CLEARC          MOVE IN CLEAR CHAR
    4E6E AC FE FE FF           861        MVC   254(255,XR2),255(,XR2)    CLEAR I/O BUFFER
    4E72 BC 32 00              862 IVOTLP MVI   0(,XR2),TOTF1             MOVE IN TOTAL # OF F1'S
    4E75 E2 02 40              863        LA    64(,XR2),XR2              UPDATE XR2
    4E78 3D 01 4E73            864        CLI   IVOTLP+1,LSTF1            LAST SERIAL NUMBER ?
    4E7C F2 81 17              865        JE    IVOTWT                    JUMP IF YES
    4E7F 0F 00 4E73 50EA       866        SLC   IVOTLP+1(1),IVT001        SUBTRACT 1 FROM # OF F1'S
    4E85 0E 00 50EB 50EA       867        ALC   IVTINC(1),IVT001          INCREMENT SERIAL FOUR COUNTER
    4E8B 3D 04 50EB            868        CLI   IVTINC,SER4               LAST SERIAL # OF SECTOR ?
    4E8F F2 81 04              869        JE    IVOTWT                    JUMP IF YES
    4E92 C0 87 4E72            870        B     IVOTLP                    BRANCH TO CONTINUE
    4E96 4E 00 16 50EC         871 IVOTWT ALC   IOBSB(1,XR1),IFOUR        INCREMENT SECTOR NUMBER
    4E9B 3C 00 50EB            872        MVI   IVTINC,CLEARC             RESET SERIAL FOUR COUNTER
    4E9F D0 87 77              873        B     IOS(,XR1)                 BRANCH TO IOS TO WRITE
    4EA2 7D 40 02              874        CLI   IOBCMP(,XR1),GOODC        GOOD COMPLETION ?
    4EA5 C0 01 4D07            875        BNE   IRTI                      BRANCH IF NOT TO RE-INIT     @05
    4EA9 7D 5C 16              876        CLI   IOBSB(,XR1),SECT23        WRITTEN TO SECTOR 23 ?
    4EAC C0 81 4FB4            877        BE    IRSTPP                    BRANCH IF YES
    4EB0 C0 87 4E67            878        B     IWVTOC                    BRANCH TO UPDATE FOR NEXT SECTOR

                               880 ************************************************************
                               881 *      HALT/SYSLOG ROUTINES                                *
                               882 ************************************************************
```

```
                          4EB4  883 IHLT03 EQU   *                        PACK UN-USABLE HALT
    4EB4 3C D7 5136             884        MVI   ISUBM-1,HLTM1P           MOVE 'P' TO SUB MESSAGE
    4EB8 3C E4 5137             885        MVI   ISUBM,HLTM2U             MOVE 'U' TO SUB MESSAGE
    4EBC 3C F3 5135             886        MVI   IHTSTX,HLTL23            MOVE '3' TO HALT CODE
    4EC0 F2 87 1B               887        J     IERR                     JUMP TO ISSUE HALT
                          4EC3  888 IHLT04 EQU   *                        INVALID SECONDARY REQUEST HALT
    4EC3 3C C9 5136             889        MVI   ISUBM-1,HLTM1I           MOVE 'I' TO SUB MESSAGE
    4EC7 3C E2 5137             890        MVI   ISUBM,HLTM2S             MOVE 'S' TO SUB MESSAGE
    4ECB 3C E8 5135             891        MVI   IHTSTX,HLTL2Y            MOVE 'Y' TO HALT CODE
    4ECF F2 87 0C               892        J     IERR                     JUMP TO ISSUE HALT
                          4ED2  893 IHLT05 EQU   *                        ACTIVE FILES ON PACK HALT
    4ED2 3C C1 5136             894        MVI   ISUBM-1,HLTM1A           MOVE 'A' TO SUB MESSAGE
    4ED6 3C C6 5137             895        MVI   ISUBM,HLTM2F             MOVE 'F' TO SUB MESSAGE
    4EDA 3C F1 5135             896        MVI   IHTSTX,HLTL21            MOVE '1' TO HALT CODE
                          4EDE  897 IERR   EQU   *                        CALL HALT TRANSIENT
    4EDE 3A 01 515B             898        SBN   ILSW,ERRSW               SET ON CALLED BY ERROR
    4EE2 C0 87 4D17             899        B     IPMT                     BRANCH TO GET UNIT WITH ERROR
    4EE6 3B 01 515B             900 IERRT  SBF   ILSW,ERRSW               SET OFF ERROR SWITCH
    4EEA 0C 01 51AA 518B        901        MVC   IMSG2+19(2),IMSG1+19     MOVE UNIT TO MESSAGE 2
    4EF0 C0 87 4D90             902        B     IPRTM                    BRANCH TO LOAD PRINT PHASE
    4EF4 C0 87 5518             903        B     IMEND                    BRANCH TO PRINT PHASE
    4EF8 02               4EF8  904        DC    XL1'02'                  MESSAGE NUMBER
    4EF9 5176             4EFA  905        DC    AL2(IMSGT)               ADDR OF MESSAGE TABLE
    4EFB C2 02 50EE             906        LA    IERLST,XR2               POINTER TO PARM LIST
    4EFF 8C 01 05 5135          907        MVC   LOGHH(2,XR2),IHTSTX      HALT CODE
    4F04 8C 01 08 5137          908        MVC   LOGII(2,XR2),ISUBM       SUBHALT CODE
    4F09 F4 10 00               909        SVC   0                        EXIT TO
    4F0C 85               4F0C  910        DC    XL1'85'                  CURRENT SYSLOG TRANSIENT
    4F0D C0 87 5053             911        B     IPACK                    BRANCH TO CONTINUE TO NEXT PACK

                                913 ************************************************************************
                                914 *      LOGIC TO SAVE AND RESTORE OBR-SDR SECTORS ON F1.  THE OBR-SDR  *
                                915 *      SECTORS ARE SAVED ON R1 ON CYL-0 SECTORS 3-8 AND 20-24       @01
                                916 ************************************************************************
                          4F11  917 ISAVPP EQU   *
    4F11 78 08 07               918        TBN   IOBQB(,XR1),FIXED        FIXED DRIVE ?
    4F14 79 10 07               919        TBF   IOBQB(,XR1),DRIVE1       DRIVE 1 ?
    4F17 F2 90 93               920        JF    IRTBRP                   JUMP IF NOT F1
    4F1A 3A 0F 50ED             921        SBN   IPPSW,SECSAV             INDICATE SECTORS SAVED
    4F1E 7C 00 17               922        MVI   IOBNB(,XR1),NUM1         SET READ TO 1 SECTOR
    4F21 7C 0C 16               923        MVI   IOBSB(,XR1),SECT03       SET TO READ VOL. STAT.
    4F24 7C 01 75               924        MVI   IOSQB(,XR1),RDQ          SET Q BYTE TO READ R1
    4F27 D0 87 71               925        B     IOSETQ(,XR1)             BRANCH TO IOS TO READ R1
    4F2A 7D 40 02               926        CLI   IOBCMP(,XR1),GOODC       GOOD COMPLETION ?
    4F2D F2 81 04               927        JE    VOLSAV                   JUMP IF YES
    4F30 C0 87 4F59             928        B     OBNOSV                   BRANCH TO FORCE ERASE-YES
    4F34 0C 0B 50DB 5423        929 VOLSAV MVC   VOLR1(12),IOADDR+11       SAVE VOL STAT. FROM R1
    4F3A 7C 05 17               930        MVI   IOBNB(,XR1),NUM6         SET TO READ 6 SECTORS
    4F3D 7C 09 75               931        MVI   IOSQB(,XR1),RDF1         SET TO READ F1
    4F40 D0 87 71               932        B     IOSETQ(,XR1)             BRANCH TO IOS TO READ F1
    4F43 7D 40 02               933        CLI   IOBCMP(,XR1),GOODC       GOOD COMPLETION ?
    4F46 F2 01 10               934        JNE   OBNOSV                   JUMP IF NO
    4F49 0D 01 581B 5211        935        CLC   OBRSEC(2),IERP           IS IT REALLY THE OBR SECTOR ?
    4F4F F2 01 07               936        JNE   OBNOSV                   JUMP IF NO
    4F52 3D 15 5444             937        CLI   IOADDR+X15OFF,MOD15      THIS IS A MODEL 15 DISK ?
    4F56 F2 81 14               938        JE    OBRSAV                   YES - SAVE OBR/SDR SECTORS
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                                939 ************************************************************** @05
                                940 *      IF AN ERROR CONDITION OCCURS WHERE ERASE-YES              * @05
                                941 *      IS TO BE FORCED, CHANGE TYPE-CYL0 TO TYPE-CLEAR.          * @05
                                942 ************************************************************** @05
    4F59 3B 0F 50ED             943 OBNOSV SBF   IPPSW,SECSAV              SET SAVED SWITCH OFF
    4F5D 3D E8 4649             944        CLI   IBTY,TYPCY0               TYPE-CYL0 ?                 @05
    4F61 C0 01 47E3             945        BNE   ISETY                     NO - FORCE ERASE-YES        @05
    4F65 3C C3 4649             946        MVI   IBTY,TYPCLR               FORCE TYPE-CLEAR            @05
    4F69 C0 87 47E3             947        B     ISETY                     BRANCH TO FORCE ERASE-YES
    4F6D 0C 01 5723 50CF        948 OBRSAV MVC   TVES(2),ZERO              CLEAR OUT TAPE VOL ERR STATS
    4F73 7C 02 75               949        MVI   IOSQB(,XR1),WTQ           SET TO WRITE R1
    4F76 D0 87 71               950        B     IOSETQ(,XR1)              BRANCH TO IOS TO WRITE ON R1
    4F79 7D 40 02               951        CLI   IOBCMP(,XR1),GOODC        GOOD COMPLETION ?
    4F7C F2 01 1F               952        JNE   IHPLPP                    JUMP IF NO                  @01
    4F7F 7C 04 17               953        MVI   IOBNB(,XR1),NUM5          SET TO READ 5 SECTORS       @01
    4F82 7C 80 16               954        MVI   IOBSB(,XR1),SECT24        SET TO READ SECTOR 80       @01
    4F85 7C 09 75               955        MVI   IOSQB(,XR1),RDF1          SET TO READ FROM F1         @01
    4F88 D0 87 71               956        B     IOSETQ(,XR1)              BRANCH TO IOS TO READ F1    @01
    4F8B 7D 40 02               957        CLI   IOBCMP(,XR1),GOODC        GOOD COMPLETION ?           @01
    4F8E C0 01 4F59             958        BNE   OBNOSV                    JUMP IF NO                  @01
    4F92 7C 02 75               959        MVI   IOSQB(,XR1),WTQ           SET TO WRITE R1             @01
    4F95 D0 87 71               960        B     IOSETQ(,XR1)              BRANCH TO IOS TO WRITE ON R1 @01
    4F98 7D 40 02               961        CLI   IOBCMP(,XR1),GOODC        GOOD COMPLETION ?           @01
    4F9B F2 81 0C               962        JE    IRTF1N                    JUMP IF YES
                          4F9E  963 IHPLPP EQU   *
    4F9E C2 02 512B             964        LA    HELST,XR2                 POINT TO HALT/SYSLOG PARM LIST
    4FA2 9C 00 08 07            965        MVC   LOGII(1,XR2),IOBQB(,XR1)  MOVE Q CODE TO HALT
    4FA6 F4 10 00               966        SVC   0                         EXIT TO
    4FA9 85                4FA9 967        DC    XL1'85'                   CURRENT SYSLOG TRANSIENT
    4FAA 7A 08 07               968 IRTF1N SBN   IOBQB(,XR1),FIXED         RESTORE F1 Q CODE
    4FAD 7A 10 0E               969 IRTBRP SBN   IOBFLG(,XR1),SPECFL       RESTORE FLAG BYTE
    4FB0 C0 87 480C             970        B     CKTYPE                    BRANCH TO RETURN

    4FB4 38 0F 50ED             972 IRSTPP TBN   IPPSW,SECSAV              OBR-SDR SECTORS SAVED ?
    4FB8 F2 90 A3               973        JF    CF415                     NO - SEE IF THIS IS F1
    4FBB 3B 0F 50ED             974        SBF   IPPSW,SECSAV              RESET SAVED SWITCH
    4FBF 7C 05 17               975        MVI   IOBNB(,XR1),NUM6          SET TO READ 6 SECTORS
    4FC2 7C 0C 16               976        MVI   IOBSB(,XR1),SECT03        SET TO READ SECTOR 3
    4FC5 7C 01 75               977        MVI   IOSQB(,XR1),RDQ           SET Q BYTE TO READ R1
    4FC8 D0 87 71               978        B     IOSETQ(,XR1)              BRANCH TO IOS TO READ R1
    4FCB 7D 40 02               979        CLI   IOBCMP(,XR1),GOODC        GOOD COMPLETION ?
    4FCE C0 01 4F9E             980        BNE   IHPLPP                    BRANCH IF NOT
    4FD2 7C 0A 75               981        MVI   IOSQB(,XR1),WRF1          SET Q CODE TO WRITE F1
    4FD5 D0 87 71               982        B     IOSETQ(,XR1)              BRANCH TO IOS TO WRITE F1
    4FD8 7D 40 02               983        CLI   IOBCMP(,XR1),GOODC        GOOD COMPLETION ?
    4FDB C0 01 4D07             984        BNE   IRTI                      BRANCH IF NOT                   @05
    4FDF 7C 04 17               985        MVI   IOBNB(,XR1),NUM5          SET TO READ 5 SECTORS       @01
    4FE2 7C 80 16               986        MVI   IOBSB(,XR1),SECT24        SET TO READ SECTOR 24       @01
    4FE5 7C 01 75               987        MVI   IOSQB(,XR1),RDQ           SET Q BYTE TO READ R1       @01
    4FE8 D0 87 71               988        B     IOSETQ(,XR1)              BRANCH TO IOS TO READ R1    @01
    4FEB 7D 40 02               989        CLI   IOBCMP(,XR1),GOODC        GOOD COMPLETION ?           @01
    4FEE C0 01 4F9E             990        BNE   IHPLPP                    BRANCH IF NOT               @01
    4FF2 7C 0A 75               991        MVI   IOSQB(,XR1),WRF1          SET Q BYTE TO WRITE F1      @01
    4FF5 D0 87 71               992        B     IOSETQ(,XR1)              BRANCH TO IOS TO WRITE F1   @01
    4FF8 7D 40 02               993        CLI   IOBCMP(,XR1),GOODC        GOOD COMPLETION ?           @01
    4FFB C0 01 4D07             994        BNE   IRTI                      BRANCH IF NOT               @05
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    4FFF 0F FF 5517 5517        995        SLC   IOADDR+255(256),IOADDR+255   CLEAR I/O BUFFER
    5005 0F FF 5617 5617        996        SLC   IOADDR+511(256),IOADDR+511     ,,        ,,
    500B 0F FF 5717 5717        997        SLC   IOADDR+767(256),IOADDR+767     ,,        ,,
    5011 0F FF 5817 5817        998        SLC   IOADDR+1023(256),IOADDR+1023   ,,        ,,
    5017 0F FF 5917 5917        999        SLC   IOADDR+1279(256),IOADDR+1279   ,,        ,,
    501D 0F FF 5A17 5A17       1000        SLC   IOADDR+1535(256),IOADDR+1535   ,,        ,,
    5023 7C 02 75              1001        MVI   IOSQB(,XR1),WTQ              SET Q CODE TO WRITE R1       @01
    5026 D0 87 71              1002        B     IOSETQ(,XR1)                 ZERO OUT SECTORS 24-28 ON R1 @01
    5029 7D 40 02              1003        CLI   IOBCMP(,XR1),GOODC           GOOD COMPLETION ?            @01
    502C C0 01 4F9E            1004        BNE   IHPLPP                       BRANCH IF NOT                @01
    5030 0C 0B 5423 50DB       1005        MVC   IOADDR+11(12),VOLR1          MOVE SAVED VOL STAT.
    5036 7C 05 17              1006        MVI   IOBNB(,XR1),NUM6             SET TO WRITE 6 SECTORS       @01
    5039 7C 0C 16              1007        MVI   IOBSB(,XR1),SECT03           START AT SECTOR 3            @01
    503C D0 87 71              1008        B     IOSETQ(,XR1)                 ZERO OUT SECTORS 3-8 ON R1   @01
                               1009 *                                         EXCEPT FOR VOLUME STATISTICS @01
    503F 7D 40 02              1010        CLI   IOBCMP(,XR1),GOODC           GOOD COMPLETION ?
    5042 C0 01 4F9E            1011        BNE   IHPLPP                       BRANCH IF NOT
    5046 7A 08 07              1012        SBN   IOBQB(,XR1),FIXED            RESET Q CODE TO F1
    5049 7C 00 17              1013 IRSTBR MVI   IOBNB(,XR1),NUM1             SET TO ONE SECTOR
    504C 7C 08 16              1014        MVI   IOBSB(,XR1),SECT02           RESTORE SECTOR BYTE
    504F C0 87 4D17            1015        B     IPMT                         BRANCH TO RETURN
    5053 C2 01 0000            1016 IPACK  LA    #,XR1                        RESTORE XR1
    5057 7C FF 04              1017        MVI   UNIT1(,XR1),PROCES           REMOVE UNIT FROM LIST
    505A C0 87 0000            1018 IPRET  B     #                            RETURN TO ROOT PHASE
    505E 78 08 07              1019 CF415  TBN   IOBQB(,XR1),FIXED            FIXED DRIVE ?
    5061 79 10 07              1020        TBF   IOBQB(,XR1),DRIVE1           DRIVE 1 ?
    5064 C0 90 5049            1021        BF    IRSTBR                       NO - WRITE END MESSAGES
    5068 7C 00 17              1022        MVI   IOBNB(,XR1),NUM1             SET TO WRITE 1 SECTORS
    506B 7C 0C 16              1023        MVI   IOBSB(,XR1),SECT03           READ CYL/SECT 000C
    506E 7C 09 75              1024        MVI   IOSQB(,XR1),RDF1             SET Q BYTE TO READ F1
    5071 D0 87 71              1025        B     IOSETQ(,XR1)                 BRANCH TO IOS TO READ F1
    5074 7D 40 02              1026        CLI   IOBCMP(,XR1),GOODC           GOOD COMPLETION ?
    5077 C0 01 4B2E            1027        BNE   RTI                          NO - RETRY
    507B 3C 15 5444            1028        MVI   IOADDR+X15OFF,MOD15          SET X'15' IN 000C
    507F 7C 0A 75              1029        MVI   IOSQB(,XR1),WRF1             SET Q BYTE TO WRITE F1
    5082 D0 87 71              1030        B     IOSETQ(,XR1)                 BRANCH TO IOS TO WRITE F1
    5085 7D 40 02              1031        CLI   IOBCMP(,XR1),GOODC           GOOD COMPLETION ?
    5088 C0 01 4B2E            1032        BNE   RTI                          NO - RETRY
    508C C0 87 5049            1033        B     IRSTBR                       WRITE END MESSAGES

                               1035 ************************************************************* @05
                               1036 *      THIS SUBROUTINE PERFORMS THE RENAME OPERATION.           * @05
                               1037 *      THE VOL LABEL ON CYLINDER 0 / SECTOR 08 IS READ,         * @05
                               1038 *      AND THE SPECIFIED PACK- AND ID- PARMS ARE REPLACED.      * @05
                               1039 ************************************************************* @05
    5090 C2 01 521C            1040 RENMPK LA    IOBV,XR1                     POINT XR1 AT VOL LABEL IOB   @05
    5094 C2 02 4600            1041        LA    IOB,XR2                      POINT XR2 AT IOB             @05
    5098 6C 00 07 4C           1042        MVC   IOBQB(1,XR1),IUN1(,XR2)      SET Q CODE TO PROPER UNIT    @05
    509C 7A 01 07              1043        SBN   IOBQB(,XR1),RDQ              SET Q CODE TO READ            @05
    509F C0 87 4677            1044        B     IORDWT                       BRANCH TO READ AND WAIT      @05
    50A3 7D 40 02              1045        CLI   IOBCMP(,XR1),GOODC           GOOD COMPLETION ?            @05
    50A6 C0 01 4EB4            1046        BNE   IHLT03                       BRANCH TO ISSUE UI33PU HALT  @05
    50AA C2 02 5518            1047        LA    VOLS,XR2                     POINT XR2 AT IOB BUFFER      @05
    50AE 8C 05 08 4658         1048        MVC   IDDISP(6,XR2),VOLID          MOVE IN VOLUME ID            @05
    50B3 8C 09 5B 4662         1049        MVC   OIDDSP(10,XR2),IDFLD         MOVE IN OWNER ID             @05
    50B8 7B 01 07              1050        SBF   IOBQB(,XR1),RDQ              RESET READ Q CODE            @05
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ERR LOC  OBJECT CODE      ADDR STMT SOURCE STATEMENT          S/3 ASSEMBLER  10/07/07  PAGE  21

    50BB 7A 02 07             1051        SBN   IOBQB(,XR1),WTQ          SET Q CODE TO WRITE          @05
    50BE C0 87 4677           1052        B     IORDWT                   BRANCH TO READ AND WAIT      @05
    50C2 7D 40 02             1053        CLI   IOBCMP(,XR1),GOODC       GOOD COMPLETION ?            @05
    50C5 C0 01 4EB4           1054        BNE   IHLT03                   BRANCH TO ISSUE UI33PU HALT  @05
    50C9 C0 87 4D17           1055        B     IPMT                     JOB DONE - PRT COMPLETION MSG@05
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                           1057 ************************************************************************
                           1058 *      CONSTANTS                                                       *
                           1059 ************************************************************************
    50CD 00                50CD 1060 IATC   DC    XL1'00'                    ALT TRK FUNCTION SWITCH
    50CE 0000              50CF 1061 ZERO   DC    XL2'0000'                  ZERO OUT TAPE VOL ERR STATS
    50D0 00000000000000000 50DB 1062 VOLR1  DC    XL12'00'                   R1 VOL. STST. SAVE AREA
    50D8 00000000                1062
    50DC 5C7F              50DD 1063 IVCTRS DC    XL2'5C7F'                  SECTOR/DISP OF 1ST F1
    50DE 447F              50DF 1064 IV447F DC    XL2'447F'                  LAST F1 SECTOR/DISP FOR SECTOR 9
    50E0 5C7F              50E1 1065 IVTCTR DC    XL2'5C7F'                  F1 SECTOR/DISP
    50E2 0020              50E3 1066 IVTSEC DC    XL2'0020'                  ADDRESS OF SECTOR 8
    50E4 2C3F              50E5 1067 IV2C3F DC    XL2'2C3F'                  LAST F1 SECT/DISP FOR SECTOR 10
    50E6 0040              50E7 1068 IVT040 DC    XL2'0040'                  CONSTANT FOR DIFF. IN DISP OF F1
    50E8 0340              50E9 1069 IVT340 DC    XL2'0340'                  CONSTANT FOR DIFF. IN @ OF F1
    50EA 01                50EA 1070 IVT001 DC    XL1'01'                    HEX CONSTANT 01
    50EB 00                50EB 1071 IVTINC DC    XL1'00'                    # OF F1'S PER SECT WORK AREA
    50EC 04                50EC 1072 IFOUR  DC    XL1'04'                    CONSTANT OF 04 TO UPDATE SECTOR
    50ED 00                50ED 1073 IPPSW  DC    XL1'00'                    PROGRAM PROTECTION SWITCH
                           50EE 1074 IERLST EQU   *                          SYSLOG PARAMETER LIST.
    50EE DF                50EE 1075         DC    BL1'11011111'              TYPE AND FORMAT OF REQUEST
    50EF 03                50EF 1076         DC    BL1'00000011'              DEFAULT OPTIONS+SEVIRITY
    50F0 E4C9              50F1 1077         DC    CL2'UI'                    COMPONENT ID.
    50F2 F3F3              50F3 1078         DC    CL2'33'                    MESSAGE ID - '33' - PART1
    50F4 09                50F4 1079         DC    BL1'00001001'              ALLOWABLE OPTIONS
    50F5 4040              50F6 1080         DC    CL2'  '                    MESSAGE ID - '  ' - PART2
                           50F7 1081 HLELST EQU   *                          SYSLOG PARAMETER LIST.
    50F7 DF                50F7 1082         DC    BL1'11011111'              TYPE AND FORMAT OF REQUEST
    50F8 03                50F8 1083         DC    BL1'00000011'              DEFAULT OPTIONS+SEVIRITY
    50F9 E4C9              50FA 1084         DC    CL2'UI'                    COMPONENT ID.
    50FB F3F1              50FC 1085         DC    CL2'31'                    MESSAGE ID - '31' - PART1
    50FD 09                50FD 1086         DC    BL1'00001001'              ALLOWABLE OPTIONS
    50FE C2D3              50FF 1087         DC    CL2'BL'                    MESSAGE ID - 'BL' - PART2
                           5100 1088 H31LST EQU   *                          SYSLOG PARAMETER LIST.
    5100 FF                5100 1089         DC    BL1'11111111'              TYPE AND FORMAT OF REQUEST
    5101 12                5101 1090         DC    BL1'00010010'              DEFAULT OPTIONS+SEVIRITY
    5102 E4C9              5103 1091         DC    CL2'UI'                    COMPONENT ID.
    5104 F3F1              5105 1092         DC    CL2'31'                    MESSAGE ID - '31' - PART1
    5106 0D                5106 1093         DC    BL1'00001101'              ALLOWABLE OPTIONS
    5107 E6D7              5108 1094         DC    CL2'WP'                    MESSAGE ID - 'WP' - PART2
    5109 1F                5109 1095         DC    AL1(31)                    TEXT LENGTH
    510A 510C              510B 1096         DC    AL2(H31A)                  ADDRESS OF TEXT
                           510C 1097 H31A   EQU   *                                                  @03
    510C D9C5D84B60404040  512A 1098 L31A   DC    CL31'REQ.-      , MOUNTED-      , XX'              @03
    5114 4040406B40D4D6E4        1098
    511C D5E3C5C460404040        1098
    5124 4040406B40E7E7          1098
                           512B 1099 HELST  EQU   *                          SYSLOG PARAMETER LIST.
    512B DF                512B 1100         DC    BL1'11011111'              TYPE AND FORMAT OF REQUEST
    512C 03                512C 1101         DC    BL1'00000011'              DEFAULT OPTIONS+SEVIRITY
    512D E4C9              512E 1102         DC    CL2'UI'                    COMPONENT ID.
    512F C8C5              5130 1103         DC    CL2'HE'                    MESSAGE ID - 'HE' - PART1
    5131 01                5131 1104         DC    BL1'00000001'              ALLOWABLE OPTIONS
    5132 4040              5133 1105         DC    CL2'  '                    MESSAGE ID - '  ' - PART2
    5134 F3F3              5135 1106 IHTSTX DC    CL2'33'                    HALT DISPLAY LIGHTS
    5136 4040              5137 1107 ISUBM  DC    CL2'  '                    SUB MESSAGE AREA
                           5138 1108 BADLST EQU   *                          SYSLOG PARAMETER LIST.
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    5138 DF              5138 1109        DC    BL1'11011111'             TYPE AND FORMAT OF REQUEST
    5139 03              5139 1110        DC    BL1'00000011'             DEFAULT OPTIONS+SEVIRITY
    513A E4C9            513B 1111        DC    CL2'UI'                   COMPONENT ID.
    513C F3F6            513D 1112        DC    CL2'36'                   MESSAGE ID - '36' - PART1
    513E 09              513E 1113        DC    BL1'00001001'             ALLOWABLE OPTIONS
    513F C3C5            5140 1114        DC    CL2'CE'                   MESSAGE ID - 'CE' - PART2
                         5141 1115 HBDLST EQU   *                         SYSLOG PARAMETER LIST.
    5141 DF              5141 1116        DC    BL1'11011111'             TYPE AND FORMAT OF REQUEST
    5142 03              5142 1117        DC    BL1'00000011'             DEFAULT OPTIONS+SEVIRITY
    5143 E4C9            5144 1118        DC    CL2'UI'                   COMPONENT ID.
    5145 F3F1            5146 1119        DC    CL2'31'                   MESSAGE ID - '31' - PART1
    5147 09              5147 1120        DC    BL1'00001001'             ALLOWABLE OPTIONS
    5148 C2C4            5149 1121        DC    CL2'BD'                   MESSAGE ID - 'BD' - PART2
                         514A 1122 ISUTAB EQU   *                         LOADER TABLE TO LOAD SURF ANAL
    514A D65BC9D5E2E4D9  5150 1123        DC    CL7'O$INSUR'              LIBRARY & MODULE NAME
    5151 00              5151 1124        DC    XL1'00'                   FILLER
    5152 5518            5153 1125        DC    AL2(IMEND)                LOAD ADDRESS
    5154 00              5154 1126 ILLIM  DC    XL1'00'                   FIRST TRACK TO BE INITIALIZED
    5155 CB              5155 1127 IULIM  DC    XL1'CB'                   LAST TRACK TO BE INITIALIZED
    5156 0008            5157 1128 CYLSEC DC    XL2'0008'                 POINTER TO CYL 0 TRACK 0 SEC 2
    5158 E5D6D3          515A 1129 VOLLAB DC    CL3'VOL'                  VOLUME LABEL IDENTIFIER
    515B 00              515B 1130 ILSW   DC    XL1'00'                   TERMINATION SWITCH
    515C                 515D 1131 IOBSX  DS    CL2                       SAVE AREA FOR ADDRESS OF DEF TRK
    515E 4A43            515F 1132 IAAF1  DC    AL2(IAAF12)               ADDRESS OF ROUTINE TO ASSIGN A
                              1133 *                                       NEW ALT IN CASE ERASE-NO AND
                              1134 *                                       ALT FOUND DEFECTIVE
    5160 000000          5162 1135 SAVFCS DC    XL3'000000'               SAVE AREA FOR FCS
    5163 0D              5163 1136 THRTN  DC    XL1'0D'                   CONSTANT USED FOR UPDATING
    5164 0C              5164 1137 TWLV   DC    XL1'0C'                   CONSTANT USED FOR UPDATING
    5165 00              5165 1138 CTR    DC    XL1'00'                   RETRY COUNTER
    5166 0024            5167 1139 VTOCPT DC    XL2'0024'                 POINTER TO VTOC

                         5168 1141 IVDC   EQU   *                         CONSTANS FOR VOLUME LABEL    @03
    5168 00              5168 1142        DC    XL1'00'                   NUMBER OF CYLINDERS
    5169 02              5169 1143 TWO    DC    XL1'02'                   NUMBER OF TRACKS PER CYLINDER
    516A 18              516A 1144        DC    XL1'18'                   NUMBER OF SECTORS PER TRACK
    516B 01              516B 1145 ONE    DC    XL1'01'                   NUMBER OF BYTES PER SECTOR
    516C 00000000000000005175 1146 IVDCE  DC    XL10'00000000000000000000'  UNUSED AREA
    5174 0000                 1146
                         5176 1147 IMSGT  EQU   *                         MESSAGE TABLE
    5176 001D            5177 1148        DC    XL2'001D'                 LENGTH OF MESSAGE
                         5178 1149 IMSG1  EQU   *
    5178 C9D5C9E3C9C1D3C9 5194 1150       DC    CL29'INITIALIZATION ON .. COMPLETE'
    5180 E9C1E3C9D6D540D6      1150
    5188 D5404B4B40C3D6D4      1150
    5190 D7D3C5E3C5            1150
    5195 001F            5196 1151        DC    XL2'001F'                 LENGTH OF MESSAGE
                         5197 1152 IMSG2  EQU   *
    5197 C9D5C9E3C9C1D3C9 51B5 1153       DC    CL31'INITIALIZATION ON .. TERMINATED'
    519F E9C1E3C9D6D540D6      1153
    51A7 D5404B4B40E3C5D9      1153
    51AF D4C9D5C1E3C5C4        1153
    51B6 001D            51B7 1154        DC    XL2'001D'                 LENGTH OF MESSAGE
                         51B8 1155 IMSG3  EQU   *
    51B8 5C5CC1D3E3C5D9D5 51D4 1156       DC    CL29'**ALTERNATE TRACLS ASSIGNED**'
    51C0 C1E3C540E3D9C1C3      1156
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    51C8 D3E240C1E2E2C9C7      1156
    51D0 D5C5C45C5C            1156
    51D5 0029             51D6 1157        DC    XL2'0029'                 LENGTH OF MESSAGE
                          51D7 1158 IMSG4  EQU   *
    51D7 E4D5D9C5C3D6E5C5 51FF 1159        DC    CL41'UNRECOVERABLE ERROR; RE-INITIALIZING PACK'
    51DF D9C1C2D3C540C5D9      1159
    51E7 D9D6D95E40D9C560      1159
    51EF C9D5C9E3C9C1D3C9      1159
    51F7 E9C9D5C740D7C1C3      1159
    51FF D2                    1159
                               1160 *
    5200 D9F1             5201 1161 R1C    DC    CL2'R1'                   R1 CODE FOR MESSAGES
    5202 D9F2             5203 1162 R2C    DC    CL2'R2'                   R2 CODE FOR MESSAGES
    5204 C6F1             5205 1163 F1C    DC    CL2'F1'                   F1 CODE FOR MESSAGES
    5206 C6F2             5207 1164 F2C    DC    CL2'F2'                   F2 CODE FOR MESSAGES
    5208 4040             5209 1165 UNIT   DC    CL2'  '                   SAVE UNIT FOR MESSAGES
                          0002 1166 UNITL  EQU   2                         LENGTH OF UNIT
    520A 0080             520B 1167 IT80   DC    XL2'0080'                 TRACK UPDATE CONSTANT
    520C 0100             520D 1168 IC100  DC    XL2'0100'                 CYLINDER UPDATE CONSTANT
    520E 01FF01FF         5211 1169 IERP   DC    XL4'01FF01FF'             CONSTANT TO WRITE ON SECTOR 7
    5212 38FF0001F0006FC0 521A 1170 IPLHPL DC    XL9'38FF0001F0006FC087'   CONSTANT TO WRITE ON SECTOR 0
    521A 87                    1170
    521B 00               521B 1171 ISWVL  DC    XL1'00'                   VOLUME LABEL SAVED SWITCH

                               1173 ********************************************************************
                               1174 *      IOB USED TO WRITE VOLUME LABEL                              *
                               1175 ********************************************************************
                          521C 1176 IOBV   EQU   *
    521C 00               521C 1177        DC    XL1'00'                   WAIT POST BYTE - 1ST OF 3 BYTES
    521D 00               521D 1178        DC    XL1'00'                   COMP. CODE - 2ND BYTE OF ECB
    521E 40               521E 1179        DC    XL1'40'                   COMP. CODE - 3ND BYTE OF ECB
    521F 00000000         5222 1180        DC    XL4'00000000'             IOB CHAIN POINTER.
    5223 FF               5223 1181        DC    AL1(X'FF')                Q BYTE
    5224 00               5224 1182        DC    AL1(X'00')                R BYTE
    5225 00               5225 1183        DC    XL1'00'                   ERP MODULE DISPL. BYTE
    5226 5518             5227 1184        DC    AL2(VOLS)                 DATA (LOGICAL) ADDRESS
    5228 0000             5229 1185        DC    XL2'0000'                 SENSE STATUS AREA
    522A 00               522A 1186        DC    AL1(0+0+0+0+0)            FLAG BYTE
    522B 00               522B 1187        DC    XL1'00'                   IOS ERP ERROR COUNTER
    522C 0000             522D 1188        DC    XL2'0000'                 RESERVED
    522E 00               522E 1189        DC    XL1'00'                   IOS PARTIAL COMPLETION CODE
    522F 00               522F 1190        DC    AL1(X'00')                5445 SECOND FLAG BYTE
    5230 00               5230 1191        DC    XL1'00'                   RESERVED
    5231 00               5231 1192        DC    AL1(X'00')                5444 CYLINDER
    5232 08               5232 1193        DC    AL1(X'08')                5444 SECTOR
    5233 00               5233 1194        DC    AL1(X'01'-1)              5444 NUMBER OF SECTORS - 1
    5234 523A             5235 1195        DC    AL2(DC024)                POINTER TO 5445 10 BYTE ADDR.
    5236 FFFF             5237 1196        DC    AL2(X'FFFF')              DATA MGMT CHAIN POINTER
    5238 FFFF             5239 1197        DC    AL2(X'FFFF')              ADDRESS OF ASSOCIATED DTF
                          523A 1198 DC024  EQU   *

                               1200 ********************************************************************
                               1201 *      CONSTANTS NEEDED TO CHECK FOR ACTIVE FILES                  *
                               1202 ********************************************************************
                          523A 1203 INTDTF EQU   *
    523A C0               523A 1204        DC    AL1(X'C0')                DEVICE
```

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    523B 00                523B 1205        DC    BL1'0'                    UPSI SWITCHES
    523C 4400              523D 1206        DC    AL2(X'4400'+0+0)          ATTRIBUTES
    523E 0000              523F 1207        DC    XL2'0000'
    5240 FFFF              5241 1208        DC    AL2(X'FFFF')              FORWARD CHAIN
    5242 00000000          5245 1209        DC    XL4'00'                   REGISTER SAVE AREA
    5246 5518              5247 1210        DC    AL2(IPHONY)               ADDR OF LOGICAL RECORD
    5248 0000              5249 1211        DC    XL2'0000'
    524A 5518              524B 1212        DC    AL2(IPHONY)               ADDR OF I/O AREA
    524C 0000              524D 1213        DC    XL2'0000'
    524E 0100              524F 1214        DC    AL2(256)                  BLOCK LENGTH
    5250 0100              5251 1215        DC    AL2(256)                  RECORD LENGTH
    5252 0000              5253 1216        DC    XL2'0000'
    5254 000000000000      5259 1217        DC    XL6'00'
    525A 00                525A 1218        DC    XL1'00'
                                1219 *###    DC    CL8'ACKFILE '             FILE NAME
    525B FF0000018EFFFF    5261 1220        DC    XL7'FF0000018EFFFF'       MIN AND MAX SAME - 398 TRACKS
    5262 40                5262 1221        DC    CL1' '                    ### FILLER ###
    5263 0000              5264 1222        DC    AL2(0+0)                  ATTRIBUTES
    5265 00000000000000000 5282 1223        DC    XL30'00'
    526D 00000000000000000      1223
    5275 00000000000000000      1223
    527D 000000000000           1223
                                1224 *###    ORG   INTDTF+DTFNAM-7
                                1225 *###    ORG
    5283 00C6FFFF          5286 1226 INDTFH DC    XL4'00C6FFFF'             HALF CAP PACK - 198 TRACKS
    5287 00000000000000000 5317 1227 MAINTA DC    XL145'0'                  MAINT AREA
    528F 00000000000000000      1227
    5297 00000000000000000      1227
    529F 00000000000000000      1227
    52A7 00000000000000000      1227
    52AF 00000000000000000      1227
    52B7 00000000000000000      1227
    52BF 00000000000000000      1227
    52C7 00000000000000000      1227
    52CF 00000000000000000      1227
    52D7 00000000000000000      1227
    52DF 00000000000000000      1227
    52E7 00000000000000000      1227
    52EF 00000000000000000      1227
    52F7 00000000000000000      1227
    52FF 00000000000000000      1227
    5307 00000000000000000      1227
    530F 00000000000000000      1227
    5317 00                     1227

                                1229 ************************************************************************
                                1230 *      I/O AREAS                                                       *
                                1231 ************************************************************************
                         5318 1232 IOSV   EQU   *
                         5417 1233 IOSV1  EQU   *+255                     VOL SAVE AREA
    5418                        1234       ORG   *+256
                         5418 1235 IOADDR EQU   *                         I/O AREA
                         5517 1236 IOADR1 EQU   IOADDR+255
    5518                        1237       ORG   *+256
                         5518 1238 VOLS   EQU   *                         BUFFER USED TO WRITE VOL LABEL
                         5617 1239 VOLE   EQU   VOLS+255                  END OF VOL LABEL
```

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                          1241 ************************************************************************
                          1242 *      EQUATES FOR DISPLACEMENT FROM LABEL 'IOB'                       *
                          1243 ************************************************************************
                     0020 1244 ICODE  EQU   IRCDE-IOB                 DISP OF IRCDE
                     0023 1245 IOROP  EQU   OROP-IOB                  DISP OF OROP
                     0026 1246 IORDF  EQU   IORDEF-IOB                DISP OF IORDEF
                     0029 1247 IALAS  EQU   IALTAS-IOB                DISP OF IALTAS
                     002C 1248 IALTDF EQU   IATDEF-IOB                DISP OF IATDEF
                     0049 1249 ITYP   EQU   IBTY-IOB                  DISP OF IBTY
                     004A 1250 IERAS  EQU   IERASE-IOB                DISP OF IERASE
                     003B 1251 IALTN  EQU   ALTIN+11-IOB              DISP OF END OF ALTIN
                     004B 1252 ICAPS  EQU   ICAP-IOB                  DISP OF ICAP
                     004C 1253 IUN1   EQU   IUNIT1-IOB                DISP OF IUNIT1
                     006A 1254 IRTYSW EQU   IRTSW-IOB                 DISP OF IRTSM
                     0077 1255 IOS    EQU   IORDWT-IOB                DISP OF IOS ROUTINE
                     0083 1256 IOSRT  EQU   IORTRN-IOB                DISP OF IOS RETURN
                     0071 1257 IOSETQ EQU   IOSSET-IOB                DISP OF IOS WITH SET Q BYTE
                     0075 1258 IOSQB  EQU   IOSTQB+1-IOB              DISP OF SET Q BYTE

                          1260 ************************************************************************
                          1261 *      EQUATES FOR DISPLACEMENT IN THE VOLUME LABEL                    *
                          1262 ************************************************************************
                     551A 1263 VOLSLB EQU   VOLS+2                    RIGHTMOST BYTE OF VOL STANDARD
                          1264 *                                       IDENTIFIER IN VOL LABEL
                     4658 1265 VOLID  EQU   IVOL1+5                   LOCATION OF VOLUME NAME
                          1266 *                                       TO BE ASSIGNED              @03
                     4662 1267 IDFLD  EQU   IVOL1+15                  LOCATION OF VOLUME ID       @03
                     4668 1268 OPFLD  EQU   IVOL1+21                  LOCATION OF OLDPACK         @03
                     5520 1269 VOLSID EQU   VOLS+8                    RIGHTMOST BYTE OF VOLUME
                          1270 *                                       NAME IN VOL LABEL
                     5522 1271 VOLVPT EQU   VOLS+10                   RIGHTMOST BYTE OF VTOC POINTER
                          1272 *                                       IN VOLUME LABEL
                     5523 1273 VOLDPS EQU   VOLS+11                   SOURCE DIRECTORY POINTER
                     553D 1274 VOLDPO EQU   VOLS+37                   OBJECT DIRECTORY POINTER
                     558E 1275 VOLAAT EQU   VOLS+118                  FIRST BYTE OF F5
                     55C0 1276 VOLATE EQU   VOLS+168                  LAST BYTE OF F5
                     5581 1277 IVOLDC EQU   VOLS+105                  DEVICE CONSTANTS
                     5374 1278 ICAPL  EQU   IOSV+92                   LOCATION OF DEVICE CAPACITY
                     558D 1279 VOLATI EQU   VOLS+117                  ALTERNATE TRACK INFORMATION
                     5573 1280 VOLOID EQU   VOLS+91                   OWNER ID
                     5607 1281 VDTKIN EQU   VOLS+239                  ALT TRACK DEFECTIVE TRACK INFO
                     548D 1282 IVOLIN EQU   IOADDR+117                ALT TRACK ASSIGNMENT
                     581B 1283 OBRSEC EQU   IOADDR+1027               DISP 3 INTO OBR SECTOR 001C
                          1284 *                                       MUST BE '01FF' IF IT REALLY IS
                          1285 *                                       THE OBR SECTOR
                     5723 1286 TVES   EQU   IOADDR+779                DISP OF TAPE VOL ERR STATUS 0010
                     0004 1287 TAPE   EQU   X'04'                     MASK TO TEST CONFIG FOR TAPE USE

                          1289 ************************************************************************
                          1290 *   EQUATES USED BY THIS PHASE FOR HALT CODES                          *
                          1291 *      HLTL1X - HALT STIC LIGHT POSITION 1                             *
                          1292 *      HLTL2X - HALT STIC LIGHT POSITION 2                             *
                          1293 *      HLTM1X - HALT SUB MESSAGE POSITION 1                            *
                          1294 *      HLTM2X - HALT SUB MESSAGE POSITION 2                            *
                          1295 *   IN ALL CASES THE X REPRESENTS THE CHARACTER PUT IN THE HALT         *
                          1296 ************************************************************************
```

```
                      007C 1297 HPLE   EQU   X'7C'                    HPL CHARACTER E
                      003B 1298 HPLH   EQU   X'3B'                    HPL CHARACTER H
                      0057 1299 HPL3   EQU   X'57'                    HPL CHARACTER 3
                      00F1 1300 HLTL21 EQU   C'1'                     HALT CHARACTER 1
                      00F3 1301 HLTL23 EQU   C'3'                     HALT CHARACTER 3
                      00E8 1302 HLTL2Y EQU   C'Y'                     HALT CHARACTER Y
                      00C1 1303 HLTM1A EQU   C'A'                     HALT CHARACTER A
                      00C9 1304 HLTM1I EQU   C'I'                     HALT CHARACTER I
                      00D7 1305 HLTM1P EQU   C'P'                     HALT CHARACTER P
                      00C6 1306 HLTM2F EQU   C'F'                     HALT CHARACTER F
                      00E2 1307 HLTM2S EQU   C'S'                     HALT CHARACTER S
                      00E4 1308 HLTM2U EQU   C'U'                     HALT CHARACTER U
                           1309 *      SYSLOG OFFSETS
                      0000 1310 LOGFUN EQU   0                        FUNCTIONAL CODE
                      0001 1311 LOGDS  EQU   1                        DEFAULT/SEVERITY
                      0003 1312 LOGCC  EQU   3                        COMPONENT IDENTIFIER
                      0005 1313 LOGHH  EQU   5                        MESSAGE IDENTIFIER - PART 1
                      0006 1314 LOGDO  EQU   6                        RESPONSE + VALID OPTIONS
                           1315 *
                      0080 1316 LOGDE0 EQU   X'80'                    DEFAULT OPTION OR RESPONSE OF 0
                      0040 1317 LOGDE1 EQU   X'40'                    *                             1
                      0020 1318 LOGDE2 EQU   X'20'                    *                             2
                      0010 1319 LOGDE3 EQU   X'10'                    *                             3
                      0008 1320 LOGOP0 EQU   X'08'                    ALLOWABLE OPTION 0
                      0004 1321 LOGOP1 EQU   X'04'                    *                1
                      0002 1322 LOGOP2 EQU   X'02'                    *                2
                      0001 1323 LOGOP3 EQU   X'01'                    *                3
                           1324 *
                      0008 1325 LOGII  EQU   8                        MESSAGE IDENTIFIER - PART 2

                           1327 ********************************************************************
                           1328 *      IOB COMMON EQUATES FOR ALL DEVICES                          *
                           1329 ********************************************************************
                      0000 1330 IOBECB EQU   0                        WAIT/POST BYTE - 1ST BYTE ECB
                      0001 1331 IOBCOM EQU   1                        COMPLETION CODE - 2ND BYTE
                      0002 1332 IOBCMP EQU   2                        COMPLETION CODE - 3TH BYTE
                      0006 1333 IOBCHN EQU   6                        IOB CHAIN POINTER
                      0007 1334 IOBQB  EQU   7                        Q BYTE
                      0008 1335 IOBRB  EQU   8                        R BYTE
                      0009 1336 IOBEID EQU   9                        ERP MODULE DISPLACEMENT ID
                      000B 1337 IOBDAT EQU   11                       DATA ADDR
                      000D 1338 IOBSNS EQU   13                       SENSE
                      000E 1339 IOBFLG EQU   14                       FLAG
                      000F 1340 IOBERR EQU   15                       ERROR COUNTS
                      0011 1341 IOBTCB EQU   17                       ADDRESS OF TCB
                           1342 *      EQUATES FOR DISK (5444 & 5445)
                      0012 1343 IOBWRK EQU   18                       IOS PARTIAL COMPLETION CODE
                      0013 1344 IOBFL2 EQU   19                       5445 SECOND FLAG BYTE
                      0014 1345 IOBCC  EQU   20                       5445 CYLINDER; 5444 NOT USED
                      0015 1346 IOBHH  EQU   21                       5445 HEAD
                      0016 1347 IOBR   EQU   22                       5445 RECORD
                      0017 1348 IOBN   EQU   23                       5445 NUMBER OF RECORDS-1
                      0019 1349 IOBDCH EQU   25                       DATA MGMT CHAIN POINTER
                      001B 1350 IOBDTF EQU   27                       ADDR OF ASSOCIATED DTF
                           1351 *      OPERATED UPON
                      0015 1352 IOBCB  EQU   21                       5444 CYLINDER
```

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      $INIT2 INITIALIZE DISK MAINLINE FOR 5444
ERR LOC  OBJECT CODE      ADDR STMT SOURCE STATEMENT           S/3 ASSEMBLER  10/07/07  PAGE  28
                          0016 1353 IOBSB  EQU   22                        5444 SECTOR
                          0017 1354 IOBNB  EQU   23                        5444 NUMBER OF RECORDS-1
                          0018 1355 WRIDFB EQU   24
                          0019 1356 WRIDCB EQU   25
                          001A 1357 WRIDSB EQU   26
                          001B 1358 RDIDFB EQU   27
                          001C 1359 RDIDCB EQU   28
                          001D 1360 RDIDSB EQU   29

                               1362 ********************************************************************
                               1363 *      EQUATES NEEDED FOR CLEAN ASSEMBLY                           *
                               1364 ********************************************************************
                          5518 1365 IPHONY EQU   *                         ADDR OF LOGICAL RECORD FOR DTF
                          5518 1366 IMEND  EQU   *                         ADDR TO LOAD PHASES AT
                          0000 1367 #      EQU   0                         FILL ADDRESS
                          0001 1368 XR1    EQU   1                         INDEX REG 1
                          0002 1369 XR2    EQU   2                         INDEX REG 2
                          0008 1370 ARR    EQU   8                         ADDR RECALL REG
                          002C 1371 X15OFF EQU   X'2C'                     OFFSET INTO 000C FOR M15 BYTE
                          0067 1372 IHCP   EQU   X'67'                     HALF CAPACITY (100)
                          00CB 1373 IFCAP  EQU   X'CB'                     FULL CAPACITY (200)
                          00A0 1374 R1Q    EQU   X'A0'                     Q CODE FOR R1
                          00A8 1375 F1Q    EQU   X'A8'                     Q CODE FOR F1
                          00B0 1376 R2Q    EQU   X'B0'                     Q CODE FOR R2
                          00B8 1377 F2Q    EQU   X'B8'                     Q CODE FOR F2
                          0007 1378 RQ     EQU   X'07'                     RESET Q CODE
                          000F 1379 RSQ    EQU   X'0F'                     RESET Q CODE
                          0001 1380 RDQ    EQU   X'01'                     READ Q CODE
                          0002 1381 WTQ    EQU   X'02'                     WRITE Q CODE
                          0080 1382 NOOP   EQU   X'80'                     NOOP OPCODE
                          0000 1383 BRANCH EQU   X'00'                     UNCONDITIONAL BRANCH
                          00FF 1384 DFALTT EQU   X'FF'                     DEFECTIVE ALT TRACK CODE
                          0040 1385 GOODC  EQU   X'40'                     GOOD I/O COMPLETION
                          0000 1386 CLEARC EQU   X'00'                     CLEAR CHARACTER
                          00C3 1387 TYPCLR EQU   C'C'                      TYPE-CLEAR CODE
                          00C6 1388 TYPFOR EQU   C'F'                      TYPE-FORCE CODE              @04
                          00E8 1389 TYPCY0 EQU   C'Y'                      TYPE-CYL0 CODE               @05
                          00D9 1390 TYPRNM EQU   C'R'                      TYPE-RENAME CODE             @05
                          00E8 1391 ERASY  EQU   C'Y'                      ERASE-YES CODE
                          00C6 1392 CAPF   EQU   C'F'                      CAPACITY-FULL CODE
                          00E2 1393 TYPSEC EQU   C'S'                      TYPE-SECONDARY CODE
                          0004 1394 UNIT1  EQU   4                         OFFSET FOR CURRENT UNIT IN #INIT
                          0020 1395 HANDER EQU   X'20'                     HANDLE ERROR FLAG            @04
                          0000 1396 USED   EQU   X'00'                     USED ALT TRACK CODE
                          0000 1397 CYL0   EQU   X'00'                     CYLINDER 0 ADDR
                          00E0 1398 ERRCNT EQU   X'E0'                     ERROR COUNT
                          0000 1399 NUM1   EQU   0                         1 SECTOR READ OR WRITE
                          0002 1400 NUM3   EQU   2                         3 SECTOR READ OR WRITE
                          0004 1401 NUM5   EQU   4                         5 SECTOR READ OR WRITE       @01
                          0005 1402 NUM6   EQU   5                         6 SECTOR READ OR WRITE
                          0000 1403 SECT00 EQU   X'00'                     ADDR OF SECTOR 0
                          0004 1404 SECT01 EQU   X'04'                     ADDR OF SECTOR 1
                          0008 1405 SECT02 EQU   X'08'                     ADDR OF SECTOR 2
                          000C 1406 SECT03 EQU   X'0C'                     ADDR OF SECTOR 3
                          001C 1407 SECT07 EQU   X'1C'                     ADDR OF SECTOR 7
                          0028 1408 SECT10 EQU   X'28'                     ADDR OF SECTOR 10
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      $INIT2 INITIALIZE DISK MAINLINE FOR 5444

ERR LOC  OBJECT CODE      ADDR STMT SOURCE STATEMENT          S/3 ASSEMBLER  10/07/07  PAGE  29

                          005C 1409 SECT23 EQU   X'5C'                  ADDR OF SECTOR 23
                          0080 1410 SECT24 EQU   X'80'                  ADDR OF SECTOR 24
                          0000 1411 DISP00 EQU   X'00'                  DISPLACEMENT OF 00
                          0001 1412 DISP01 EQU   X'01'                  DISPLACEMENT OF 01
                          0017 1413 DISP17 EQU   X'17'                  DISPLACEMENT OF 17
                          003F 1414 DISP3F EQU   X'3F'                  DISPLACEMENT OF 3F
                          0010 1415 DRIVE1 EQU   X'10'                  DRIVE 1 Q CODE BIT
                          0028 1416 DTFNAM EQU   40                     FILE NAME
                          0001 1417 ALTFLG EQU   X'01'                  FLAG FOR AN ALT TRK
                          0005 1418 ATC05  EQU   X'05'                  ALT TRACK ENTRY COUNT OF 5
                          0004 1419 BADID  EQU   X'04'                  BAD ID RETURN CODE
                          0040 1420 BLANK  EQU   C' '                   BLANK SPACE
                          0010 1421 CETBAD EQU   X'10'                  BAD CE TRACK
                          006B 1422 COPYPK EQU   C','                   COPYPACK VOL INFO
                          0001 1423 CYL0ER EQU   X'01'                  CYLINDER 0 IN ERROR RETURN CODE
                          0000 1424 CY0CAP EQU   X'00'                  UPPER LIMIT FOR TYPE-CYL0
                          0002 1425 DEFALT EQU   X'02'                  DEFECTIVE ALT TRACK RETURN CODE
                          0003 1426 DALTTK EQU   X'03'                  DEFECTIVE ALT TRACK FLAG
                          00FF 1427 DEFECT EQU   X'FF'                  DEFECTIVE ALT TRACK CODE
                          0090 1428 ERRFLG EQU   X'90'                  ERROR FLAG CODE
                          0008 1429 FIXED  EQU   X'08'                  FIXED DRIVE Q CODE BIT
                          00C0 1430 F5CODE EQU   X'C0'                  F5 TRK CODE FOR LAST TRACKS
                          00FF 1431 F5USED EQU   X'FF'                  USED TRACKS CODE FOR F5
                          0008 1432 IDDISP EQU   8                      DISP TO VOL SERIAL IN VOL LABEL
                          005B 1433 OIDDSP EQU   91                     DISP TO OWNER ID IN VOL LABEL
                          0049 1434 ILDRIB EQU   X'49'                  LOAD/FIND RIB PROG IOB
                          00FF 1435 INITA  EQU   X'FF'                  INITIALIZE DISK INDENTIFIER
                          0001 1436 ERRSW  EQU   X'01'                  CALLED BY ERROR SWITCH
                          0010 1437 PRTED  EQU   X'10'                  MESSAGE PRINTED SWITCH
                          0040 1438 LOADPT EQU   X'40'                  PRINT PHASE LOADED SWITCH
                          0080 1439 LOADSA EQU   X'80'                  SURFACE ANALYSIS LOADED SWITCH
                          00FF 1440 RESET  EQU   X'FF'                  SWITCH RESET CODE
                          0001 1441 LSTF1  EQU   X'01'                  LAST F1 NUMBER
                          0002 1442 MAXSPC EQU   X'02'                  MAXIMUM SPACE RETURN CODE
                          0015 1443 MOD15  EQU   X'15'                  INITIALIZATION BYTE FOR 000C
                          002F 1444 NCCONF EQU   47                     5445, 3340, TAPE CONFIG
                          0011 1445 NCSYS@ EQU   X'0011'                ADDR SYSTEM COMMUNICATION AREA
                          0006 1446 PACKL  EQU   6                      LENGTH OF PACK PARAMETER     @03
                          5116 1447 PNEED  EQU   H31A+10                DISP FOR PACK REQUEST        @03
                          5126 1448 PMOUNT EQU   H31A+26                DISP FOR PACK MOUNTED        @03
                          4647 1449 PUILST EQU   IUNIT1-5               NEEDED FOR WPACK MACRO       @03
                          0005 1450 UIPACK EQU   5                      DISP FROM IUNIT1             @03
                          00FF 1451 PNTR   EQU   X'FF'                  POINTER FOR VOL LABEL ENTRIES
                          00FF 1452 PROCES EQU   X'FF'                  THIS UNIT PROCEED CODE
                          00FF 1453 RBRSET EQU   X'FF'                  RESET CODE FOR R BYTE
                          0009 1454 RDF1   EQU   X'09'                  READ Q CODE FOR F1
                          007F 1455 RESSEC EQU   X'7F'                  RESET SECTOR NUMBER CODE
                          0000 1456 RRB    EQU   X'00'                  RESET FOR R BYTE
                          0001 1457 RRB1   EQU   X'01'                  R BYTE 01 CODE
                          007F 1458 RSTSEC EQU   X'7F'                  RESET PORTION OF SECTOR @
                          0001 1459 RTRYSW EQU   X'01'                  RESET FOR RETRY SWITCH
                          000A 1460 RTRY10 EQU   10                     TEN RETRIES CODE
                          0007 1461 SCA    EQU   X'07'                  DISP OF START CONTROL ADDRESS
                          0001 1462 SECOND EQU   X'01'                  SECOND TIME SWITCH CODE
                          000F 1463 SECSAV EQU   X'0F'                  SECTOR SAVED SWITCH CODE
                          0004 1464 SER4   EQU   X'04'                  NR OF F1 ENTRIES PER SECTOR
```

```
                         0010 1465 SPECFL EQU   X'10'                    SPECIAL FLAG
                         0001 1466 TABSTR EQU   X'01'                    START OF ALT TRK TABLE
                         000B 1467 TABEND EQU   X'0B'                    END OF ALT TRK TABLE
                         0032 1468 TOTF1  EQU   X'32'                    TOTAL NUMBER OF F1 ENTRIES
                         0000 1469 UNUSED EQU   X'00'                    UNUSED ALT TRK ENTRY
                         00FF 1470 VSAVSW EQU   X'FF'                    VOL LABEL SAVED CODE
                         000A 1471 WRF1   EQU   X'0A'                    Q CODE FOR WRITE ON F1

                              1473 *
                         FFFF 1474        END
```

CROSS REFERENCE


```
$INIT2  001  4600 0101
#       001  0000 1367   0180  0186  0341  0438  0537  0805  1016  1018
#WPEX   004  47B6 0331   0312* 0320  0326
#WPQ    003  47AC 0325   0321* 0323  0324*
#WPRM   004  47B2 0330   0318
AAUD    003  4BC6 0651   0649* 0650* 0659
ALTFF   005  49E6 0514   0510  0586  0589
ALTFLG  001  0001 1417   0580
ALTIN   001  4630 0141   0464  0493  0499  0533  0544  0561  0624  0768  1251
ARR     001  0008 1370   0181  0192  0276  0796
ATC05   001  0005 1418   0787
BADID   001  0004 1419   0445
BADLST  001  5138 1108   0485
BDHALT  001  481A 0366   0280
BLANK   001  0040 1420   0249  0277  0379
BLHLT   001  4735 0257   0250
BRANCH  001  0000 1383   0270
CAPF    001  00C6 1392   0381
CEBAD   003  495E 0475   0440
CEBAD1  004  496B 0479   0476
CEBAD2  004  496F 0480   0478
CETBAD  001  0010 1421   0439
CF415   003  505E 1019   0973
CKCAP   004  4C70 0696   0689
CKOP    004  471C 0249   0265
CKRNM   003  472F 0255   0252
CKTYPE  003  480C 0362   0970
CLEARC  001  0000 1386   0218  0223  0224  0228  0517  0556  0566  0591  0612  0673  0703  0712
                         0727  0829  0851  0860  0872
COPYPK  001  006B 1422   0279  0364  0408
CTR     001  5165 1138   0611* 0614
CYLSEC  002  5157 1128   0229
CYL0    001  0000 1397   0622
CYL0ER  001  0001 1423   0441
CY0CAP  001  0000 1424   0373
DALTTK  001  0003 1426   0516
DALTU   003  49AD 0497   0496*
DC001   001  461E 0130   0126
DC024   001  523A 1198   1195
DEFALT  001  0002 1425   0447
DEFECT  001  00FF 1427   0497  0536
DFALTT  001  00FF 1384   0651  0770
DISP00  001  0000 1411   0545
DISP01  001  0001 1412   0528  0625
DISP17  001  0017 1413   0629
DISP3F  001  003F 1414   0838
DRIVE1  001  0010 1415   0919  1020
DTFNAM  001  0028 1416   0398*
ERASY   001  00E8 1391   0346  0352  0462  0489
ERRCNT  001  00E0 1398   0238
ERRFLG  001  0090 1428   0597
ERRSW   001  0001 1436   0752  0898  0900
EXIT    004  47DF 0341   0276* 0278  0282
FAA     004  4944 0468   0467* 0470  0472* 0473
FCF5    001  4C8E 0705   0695  0697
FIXED   001  0008 1429   0918  0968  1012  1019
```

CROSS REFERENCE

SYMBOL	LEN	VALUE	DEFN	REFERENCES
F1C	002	5205	1163	0210
F1Q	001	00A8	1375	0208 0483
F2C	002	5207	1164	0212
F2Q	001	00B8	1377	
F5CODE	001	00C0	1430	0698 0702 0706
F5USED	001	00FF	1431	0699 0707
GOODC	001	0040	1385	0241 0558 0571 0584 0603 0721 0733 0739 0846 0874 0926 0933 0951 0957 0961 0979 0983 0989 0993 1003 1010 1026 1031 1045 1053
HANDER	001	0020	1395	0230 0823
HBDLST	001	5141	1115	0367
HCAPPK	003	4C77	0698	0692
HELST	001	512B	1099	0964
HLELST	001	50F7	1081	0258
HLTL2Y	001	00E8	1302	0891
HLTL21	001	00F1	1300	0896
HLTL23	001	00F3	1301	0886
HLTM1A	001	00C1	1303	0894
HLTM1I	001	00C9	1304	0889
HLTM1P	001	00D7	1305	0884
HLTM2F	001	00C6	1306	0895
HLTM2S	001	00E2	1307	0890
HLTM2U	001	00E4	1308	0885
HPLE	001	007C	1297	
HPLH	001	003B	1298	
HPL3	001	0057	1299	
H31A	001	510C	1097	1096 1447 1448
H31LST	001	5100	1088	0315* 0330* 0335
IAAF	003	4A50	0546	0545* 0548* 0549 0551 0553 0560
IAAF1	002	515F	1132	0509
IAAF12	005	4A43	0540	1132
IAC	006	4BF8	0664	0661
IADFM	004	4BD2	0654	0653*
IAFCHK	001	487D	0405	0382 0393
IALAS	003	0029	1247	0611 0662* 0666* 0668
IALTAS	003	4629	0137	1247
IALTC	006	4BBA	0649	0640
IALTDF	003	002C	1248	0654* 0656
IALTN	001	003B	1251	0224* 0225 0225* 0354* 0713
IASCAL	006	4A68	0553	0547
IATC	001	50CD	1060	0220* 0787 0789*
IATDEF	003	462C	0138	1248
IATKAR	003	498B	0489	0457
IBFAD	002	462F	0140	0198*
IBTRN	004	4AF2	0590	0511
IBTY	001	4649	0160	0195 0197* 0688 0708 0723 0745 0747* 0758 0760 0944 0946* 1249
IBVR	001	4648	0159	0194*
ICAAC	003	4C08	0667	0663
ICAP	001	464B	0162	1252
ICAPL	001	5374	1278	0391 0394 0690 0691
ICAPS	001	004B	1252	0379 0381
ICAS	003	4D48	0770	0790
ICCM	004	4B63	0626	0625* 0628* 0629 0630 0639 0641 0649 0653
ICID	001	4B14	0600	0638
ICODE	001	0020	1244	0376* 0420* 0439 0441 0445 0447
ICOMID	003	4AE7	0587	0585

CROSS REFERENCE

SYMBOL	LEN	VALUE	DEFN	REFERENCES
ICSPTB	002	4DB6	0806	0774* 0785
ICSSTB	002	4DB8	0807	0775*
IC0	006	4BE5	0659	0652
IC0A	003	4BEB	0660	0659* 0664
IC100	002	520D	1168	0634
IDATF	004	49D0	0507	0448 0559
IDCCMC	003	4B78	0631	0623
IDCM	001	4B55	0621	0604
IDDISP	001	0008	1432	1048*
IDFLD	001	4662	1267	0686 1049
IEJPRO	003	4AF6	0591	0451 0608
IERAS	001	004A	1250	0346* 0352 0462 0489
IERASE	001	464A	0161	1250
IERCHK	003	48E9	0439	0131
IERLST	001	50EE	1074	0906
IERP	004	5211	1169	0731 0935
IERR	001	4EDE	0897	0887 0892
IERRT	004	4EE6	0900	0753
IFCAP	001	00CB	1373	0388 0691 0693 0696
IFCSST	004	49BE	0502	0501*
IFMATV	004	4DCF	0819	0740
IFND	004	4A2C	0533	0530
IFOUR	001	50EC	1072	0844 0871
IF5CHK	006	4748	0264	0242
IF5END	003	4C91	0707	0701
IHCP	001	0067	1372	0383 0391 0394 0396
IHLT03	001	4EB4	0883	0444 0550 0615 1046 1054
IHLT04	001	4EC3	0888	0349 0395 0400 0422
IHLT05	001	4ED2	0893	0416
IHPLPP	001	4F9E	0963	0952 0980 0990 1004 1011
IHTSTX	002	5135	1106	0886* 0891* 0896* 0907
ILDRIB	001	0049	1434	0433 0804
ILLIM	001	5154	1126	0223* 0396* 0421 0423 0592 0636
ILOOPU	003	4DFF	0832	0843
ILORTN	004	4E2F	0843	0841
ILSBY	004	48D9	0435	0427
ILSW	001	515B	1130	0219* 0426 0429* 0430* 0752 0776 0778* 0797 0799* 0800* 0898* 0900*
IMAC	004	4C04	0666	0664* 0665*
IMAIN	001	4687	0191	0102
IMAIN2	001	46DB	0217	0203 0207 0211 0340 0620
IMEND	001	5518	1366	0617 0755 0780 0783 0812 0903 1125
IMIPL	003	4CF4	0736	0734
IMOD	004	4A90	0562	0560*
IMSGT	001	5176	1147	0619 0757 0782 0905
IMSG1	001	5178	1149	0749* 0901
IMSG2	001	5197	1152	0901*
IMSG3	001	51B8	1155	
IMSG4	001	51D7	1158	
IND	003	4A3C	0536	0534* 0535*
INDTFH	004	5286	1226	0398
INITA	001	00FF	1435	0376 0420
INMSB	001	462D	0139	
INTDTF	001	523A	1203	0398* 0410
INVOL	004	4C17	0672	0637
IOADDR	001	5418	1235	0115 0264 0279 0281 0333 0364 0408 0435 0517* 0556* 0566* 0822 0850 0859 0929 0937 0995 0995* 0996 0996* 0997 0997* 0998 0998*

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                        0999  0999* 1000  1000* 1005* 1028* 1236  1282  1283  1286
IOADR1  001  5517 1236  0355
IOB     001  4600 0107  0199  0221  0436  0610  0716  0821  1041  1244  1245  1246  1247  1248
                        1249  1250  1251  1252  1253  1254  1255  1256  1257  1258
IOBCB   001  0015 1352  0622
IOBCC   001  0014 1345
IOBCHN  001  0006 1333
IOBCMP  001  0002 1332  0241  0558  0571  0584  0603  0721  0733  0739  0846  0874  0926  0933
                        0951  0957  0961  0979  0983  0989  0993  1003  1010  1026  1031  1045
                        1053
IOBCOM  001  0001 1331
IOBDAT  001  000B 1337
IOBDCH  001  0019 1349
IOBDTF  001  001B 1350
IOBECB  001  0000 1330
IOBEID  001  0009 1336
IOBERR  001  000F 1340  0238*
IOBFLG  001  000E 1339  0230* 0350* 0597* 0823* 0969*
IOBFL2  001  0013 1344
IOBHH   001  0015 1346
IOBN    001  0017 1348
IOBNB   001  0017 1354  0827* 0922* 0930* 0953* 0975* 0985* 1006* 1013* 1022*
IOBQB   001  0007 1334  0179* 0180* 0222* 0226* 0227* 0411  0483  0519* 0520* 0522* 0523* 0568*
                        0569* 0582* 0583* 0594* 0595* 0717  0717* 0718* 0719* 0729* 0730* 0825*
                        0826* 0918  0919  0965  0968* 1012* 1019  1020  1042* 1043* 1050* 1051*
IOBR    001  0016 1347
IOBRB   001  0008 1335  0228* 0596* 0599* 0824*
IOBSB   001  0016 1353  0229* 0437* 0515  0529  0555* 0563  0564* 0577  0578* 0593* 0601* 0726*
                        0736* 0828* 0844* 0848  0871* 0876  0923* 0954* 0976* 0986* 1007* 1014*
                        1023*
IOBSNS  001  000D 1338
IOBSX   002  515D 1131  0577* 0579
IOBTCB  001  0011 1341
IOBV    001  521C 1176  0715  1040
IOBWRK  001  0012 1343
IODT    004  4BA7 0644  0641* 0643*
IORDEF  003  4626 0136  1246
IORDF   003  0026 1246  0563* 0565  0644* 0646
IORDWT  004  4677 0181  1044  1052  1255
IOROP   003  0023 1245  0423* 0424  0437  0449* 0450  0455  0468  0475  0504  0507  0591* 0592*
                        0593  0601  0626  0632  0634* 0636  0662
IORTRN  004  4683 0186  0181* 1256
IOS     004  0077 1255  0518  0521  0557  0567  0570  0581  0598  0602  0720  0732  0738  0845
                        0873
IOSETQ  003  0071 1257  0925  0932  0950  0956  0960  0978  0982  0988  0992  1002  1008  1025
                        1030
IOSQB   003  0075 1258  0924* 0931* 0949* 0955* 0959* 0977* 0981* 0987* 0991* 1001* 1024* 1029*
IOSRT   004  0083 1256
IOSSET  003  4671 0179  1257
IOSTQB  003  4674 0180  1258
IOSV    001  5318 1232  1278
IOSV1   001  5417 1233  0355* 0677
IPACK   004  5053 1016  0193* 0261  0339  0370  0759  0761  0788  0911
IPARR   004  4DB1 0805  0796* 0798
IPHONY  001  5518 1365  1210  1212
IPLHPL  009  521A 1170  0737
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IPMT    006  4D17 0749   0724  0899  1015  1055
IPM2    003  46B7 0204   0201
IPM3    003  46C6 0208   0205
IPM4    006  46D5 0212   0209
IPPSW   001  50ED 1073   0921* 0943* 0972  0974*
IPRET   004  505A 1018   0192*
IPRINT  001  4D1D 0750
IPRTM   001  4D90 0795   0616  0754  0779  0902
IPTAA   004  4D74 0783   0777
IPTAB   001  4DBB 0809   0801
IRCDE   001  4620 0133   1244
IRSTBR  003  5049 1013   1021  1033
IRSTPP  004  4FB4 0972   0877
IRTBRP  003  4FAD 0969   0920
IRTFPP  004  4836 0378   0262* 0270* 0351  0372
IRTF1N  003  4FAA 0968   0962
IRTI    004  4D07 0745   0446  0722  0735  0847  0875  0984  0994
IRTRN   002  461F 0131
IRTSW   001  466A 0167   0751* 1254
IRTYSW  001  006A 1254   0605  0607*
ISA     003  48A1 0420   0397  0407  0409
ISAN    004  48E5 0438   0434*
ISAVPP  001  4F11 0917   0356
ISA1    005  48AE 0423   0377
ISECRQ  004  4861 0394   0390
ISETY   003  47E3 0346   0254  0256  0263  0945  0947
ISFA    004  4B94 0639   0627
ISKALT  003  4AB9 0574   0572
ISNMCP  004  484D 0388   0380
ISTP67  006  4870 0398   0384  0392
ISUBM   002  5137 1107   0884* 0885* 0889* 0890* 0894* 0895* 0908
ISUTAB  001  514A 1122   0428
ISWVL   001  521B 1171   0218* 0347* 0406
ITYP    001  0049 1249   0251  0253* 0255  0268  0348  0362  0371  0389  0399  0675
IT80    002  520B 1167   0449
IUGHF5  003  4C84 0702   0678
IULIM   001  5155 1127   0373* 0383* 0388* 0421  0450  0696  0710
IUNIT1  001  464C 0163   1253  1449
IUN1    001  004C 1253   0200  0204  0208  0222  1042
IUPCA   003  4D7B 0786   0771  0773
IUPD    004  48B3 0424   0459  0463  0471
IUPD1   001  48B7 0425   0506
IVA340  006  4E29 0842   0839
IVCTRS  002  50DD 1063   0820
IVDC    001  5168 1141
IVDCE   010  5175 1146   0477* 0479* 0687  0711  0712*
IVOLDC  001  5581 1277   0687* 0690* 0693* 0710* 0711*
IVOLEY  006  4802 0355   0271  0353
IVOLE1  023  4669 0166
IVOLIN  001  548D 1282   0354
IVOLOK  003  47F7 0352   0269
IVOL1   001  4653 0165   1265  1267  1268
IVOTCL  003  4E6B 0860
IVOTLP  003  4E72 0862   0819* 0864  0866* 0870
IVOTWT  005  4E96 0871   0865  0869
IVTCNT  003  4E60 0856   0837
```

CROSS REFERENCE

SYMBOL	LEN	VALUE	DEFN	REFERENCES
IVTCTR	002	50E1	1065	0820* 0833 0834 0836 0838 0840* 0842* 0854*
IVTINC	001	50EB	1071	0867* 0868 0872*
IVTMVC	005	4E02	0833	0855
IVTSEC	002	50E3	1066	0828
IVTWRT	005	4E33	0844	0835 0857
IVT001	001	50EA	1070	0866 0867
IVT040	002	50E7	1068	0840 0854
IVT340	002	50E9	1069	0842
IVWRTC	003	4E38	0845	
IV2C3F	002	50E5	1067	0836
IV447F	002	50DF	1064	0834
IWKTAB	001	4DC5	0813	0431 0802
IWKTBE	010	4DCE	0814	0428* 0801*
IWVTOC	001	4E67	0858	0849 0878
LOADPT	001	0040	1438	0430 0797 0799
LOADSA	001	0080	1439	0426 0429 0800
LOGCC	001	0003	1312	
LOGDE0	001	0080	1316	0338
LOGDE1	001	0040	1317	
LOGDE2	001	0020	1318	
LOGDE3	001	0010	1319	
LOGDO	001	0006	1314	0315* 0330* 0338
LOGDS	001	0001	1311	
LOGFUN	001	0000	1310	
LOGHH	001	0005	1313	0907*
LOGII	001	0008	1325	0908* 0965*
LOGOP0	001	0008	1320	
LOGOP1	001	0004	1321	0315 0330
LOGOP2	001	0002	1322	
LOGOP3	001	0001	1323	
LSTF1	001	0001	1441	0864
L31A	031	512A	1098	0334*
MAINTA	145	5317	1227	
MAXSPC	001	0002	1442	0415
MOD15	001	0015	1443	0937 1028
MTKCHK	005	4903	0449	0469 0488 0498 0590
NALTK	003	4935	0462	0456
NCCONF	001	002F	1444	0319 0322 0481
NCSYS@	001	0011	1445	0313 0480
NEXTCK	005	4C30	0679	0676
NOHALT	004	4987	0488	0482 0484
NOOP	001	0080	1382	0262 0378
NUM1	001	0000	1399	0827 0922 1013 1022
NUM3	001	0002	1400	
NUM5	001	0004	1401	0953 0985
NUM6	001	0005	1402	0930 0975 1006
OBNOSV	004	4F59	0943	0928 0934 0936 0958
OBRSAV	006	4F6D	0948	0938
OBRSEC	001	581B	1283	0935
OIDDSP	001	005B	1433	1049*
OLDPK	004	4763	0276	0266
ONE	001	516B	1145	0492 0535 0665 0789
OPFLD	001	4668	1268	0249 0277 0281 0332
OROP	003	4623	0135	1245
PACKL	001	0006	1446	0281
PMOUNT	001	5126	1448	0333*

CROSS REFERENCE

SYMBOL	LEN	VALUE	DEFN	REFERENCES
PNEED	001	5116	1447	0332*
PNTR	001	00FF	1451	0682 0683 0684
PROCES	001	00FF	1452	1017
PRTED	001	0010	1437	0776 0778
PUILST	001	4647	1449	0314
RBRSET	001	00FF	1453	0824
RDF1	001	0009	1454	0931 0955 1024
RDIDCB	001	001C	1359	
RDIDFB	001	001B	1358	
RDIDSB	001	001D	1360	0524* 0525 0574* 0575 0587* 0588 0631* 0632 0645* 0646 0655* 0656 0667* 0668
RDQ	001	0001	1380	0227 0520 0569 0582 0594 0718 0924 0977 0987 1043 1050
RENMPK	004	5090	1040	0365
RESET	001	00FF	1440	0219 0220
RESSEC	001	007F	1455	0631 0645 0655 0667
RQ	001	0007	1378	0226 0412 0519 0522 0729 0825
RRB	001	0000	1456	0596
RRB1	001	0001	1457	0599
RSETBR	004	4741	0262	0378
RSQ	001	000F	1379	0179
RSTSEC	001	007F	1458	0524 0574 0587
RTI	004	4B2E	0610	0526 0573 0576 0606 0648 0658 0670 0746 0748 1027 1032
RTIA	003	4B21	0605	0633
RTRYSW	001	0001	1459	0751
RTRY10	001	000A	1460	0614
R1C	002	5201	1161	0202
R1Q	001	00A0	1374	0200
R2C	002	5203	1162	0206
R2Q	001	00B0	1376	0204
SAVBUF	005	469F	0198	0196
SAVFCS	003	5162	1135	0514* 0540
SCA	001	0007	1461	0434
SCAN	004	4A1B	0529	0528* 0531* 0532 0534
SECOND	001	0001	1462	0605 0607
SECSAV	001	000F	1463	0921 0943 0972 0974
SECT00	001	0000	1403	0736
SECT01	001	0004	1404	
SECT02	001	0008	1405	1014
SECT03	001	000C	1406	0923 0976 1007 1023
SECT07	001	001C	1407	0726
SECT10	001	0028	1408	0848
SECT23	001	005C	1409	0876
SECT24	001	0080	1410	0954 0986
SER4	001	0004	1464	0868
SETAD	006	49E0	0511	0508
SKIPMV	005	4CA0	0711	0709
SPECFL	001	0010	1465	0350 0969
STFLG	004	49C5	0504	0490 0495
STFLG1	003	49C9	0505	0503
STIOBS	004	4A74	0555	0553* 0554*
TABEND	001	000B	1467	0452 0467 0549 0639
TABSTR	001	0001	1466	0458 0470
TAPE	001	0004	1287	0481
TBLE	001	463C	0152	0454 0527
TBLSCH	004	4919	0455	0452* 0458 0460* 0461 0491 0501
THRTN	001	5163	1136	0554 0650

```
TOTF1   001  0032 1468   0819  0856  0862
TSTCY0  003  4826 0371   0363
TVES    001  5723 1286   0948*
TWLV    001  5164 1137   0643
TWO     001  5169 1143   0460  0472  0531  0548  0628
TYPCLR  001  00C3 1387   0197  0253  0268  0747  0946
TYPCY0  001  00E8 1389   0251  0371  0688  0708  0745  0758  0944
TYPFOR  001  00C6 1388   0195
TYPRNM  001  00D9 1390   0255  0362  0760
TYPSEC  001  00E2 1393   0348  0389  0399  0675  0723
UIPACK  001  0005 1450   0316  0317  0325
UNIT    002  5209 1165   0202* 0206* 0210* 0212* 0334  0749
UNITL   001  0002 1166   0202  0206  0210  0212  0334
UNIT1   001  0004 1394   1017*
UNUSED  001  0000 1469   0660  0772
UPDPTR  005  4B83 0634   0647  0657  0669
USEALT  003  49A1 0494   0491* 0492* 0496
USED    001  0000 1396   0494  0546
VBNCH   004  4A3F 0537   0509* 0511*
VDTKIN  001  5607 1281   0684* 0685  0685*
VOLAAT  001  558E 1275   0698* 0699* 0700  0700* 0702* 0703* 0704  0704* 0706*
VOLATE  001  55C0 1276   0707*
VOLATI  001  558D 1279   0713*
VOLDPO  001  553D 1274   0683*
VOLDPS  001  5523 1273   0682*
VOLE    001  5617 1239   0673* 0674  0674* 0677*
VOLID   001  4658 1265   0680  1048
VOLLAB  003  515A 1129   0264  0679
VOLOID  001  5573 1280   0686*
VOLR1   012  50DB 1062   0929* 1005
VOLS    001  5518 1238   0671  0672  0727* 0728  0728* 0731* 0737* 1047  1184  1239  1263  1269
                         1271  1273  1274  1275  1276  1277  1279  1280  1281
VOLSAV  006  4F34 0929   0927
VOLSID  001  5520 1269   0680*
VOLSLB  001  551A 1263   0679*
VOLVPT  001  5522 1271   0681*
VSAVSW  001  00FF 1470   0347  0406
VTOCPT  002  5167 1139   0681
WRF1    001  000A 1471   0981  0991  1029
WRIDCB  001  0019 1356
WRIDFB  001  0018 1355
WRIDSB  001  001A 1357   0424* 0502* 0504* 0505* 0507  0514  0515* 0516* 0525  0540* 0562  0564
                         0565* 0575  0578  0579* 0580* 0588  0612* 0613  0613*
WTQ     001  0002 1381   0523  0568  0583  0595  0719  0730  0826  0949  0959  1001  1051
XR1     001  0001 1368   0179  0180  0193  0194  0198  0199* 0200  0204  0208  0221* 0222  0222
                         0224  0225  0225  0226  0227  0228  0229  0230  0238  0241  0251  0253
                         0255  0268  0312  0313* 0319  0322  0331* 0346  0348  0350  0352  0354
                         0362  0371  0376  0379  0381  0389  0399  0411  0420  0423  0424  0424
                         0436* 0437  0437  0439  0441  0445  0447  0449  0450  0455  0462  0468
                         0475  0483  0489  0502  0504  0504  0505  0507  0507  0514  0515  0515
                         0516  0518  0519  0520  0521  0522  0523  0524  0525  0525  0529  0540
                         0555  0557  0558  0562  0563  0563  0564  0564  0565  0565  0567  0568
                         0569  0570  0571  0574  0575  0575  0577  0578  0578  0579  0580  0581
                         0582  0583  0584  0587  0588  0588  0591  0592  0593  0593  0594  0595
                         0596  0597  0598  0599  0601  0601  0602  0603  0605  0607  0610* 0611
                         0612  0613  0613  0622  0626  0631  0632  0632  0634  0636  0644  0645
```

CROSS REFERENCE


```
                        0646  0646  0654  0655  0656  0656  0662  0662  0666  0667  0668  0668
                        0675  0713  0715* 0717  0718  0719  0721  0726  0729  0730  0733  0736
                        0739  0768* 0770  0772  0774  0775  0786  0786* 0821* 0823  0824  0825
                        0826  0827  0828  0844  0845  0846  0848  0871  0873  0874  0876  0918
                        0919  0922  0923  0924  0925  0926  0930  0931  0932  0933  0949  0950
                        0951  0953  0954  0955  0956  0957  0959  0960  0961  0965  0968  0969
                        0975  0976  0977  0978  0979  0981  0982  0983  0985  0986  0987  0988
                        0989  0991  0992  0993  1001  1002  1003  1006  1007  1008  1010  1012
                        1013  1014  1016* 1017  1019  1020  1022  1023  1024  1025  1026  1029
                        1030  1031  1040* 1042  1043  1045  1050  1051  1053
XR2     001  0002 1369   0258* 0314* 0316  0317  0325  0335* 0338  0367* 0410* 0411  0412  0415
                        0431* 0434  0435* 0454* 0455  0464* 0468  0480* 0481  0485* 0493* 0494
                        0497  0499* 0502  0527* 0529  0533* 0536  0544* 0546  0555  0561* 0562
                        0624* 0626  0644  0651  0654  0660  0666  0671  0672* 0673  0674  0674
                        0677  0679  0680  0681  0682  0683  0684  0685  0685  0687  0690  0693
                        0698  0699  0700  0700  0702  0703  0704  0704  0706  0707  0710  0711
                        0713  0714  0716* 0717  0720  0732  0738  0802* 0822* 0829  0830  0830
                        0831  0831* 0832  0832* 0833  0850* 0851  0852  0852  0853  0853* 0856
                        0859* 0860  0861  0861  0862  0863  0863* 0906* 0907  0908  0964* 0965
                        1041* 1042  1047* 1048  1049
X15OFF  001  002C 1371   0937  1028*
ZERO    002  50CF 1061   0948

TOTAL STATEMENTS IN ERROR IN THIS ASSEMBLY---      0

OL103 I  TOTAL NUMBER OF LIBRARY SECTORS REQUIRED IS   17
         NAME-$INIT2,PACK-R2R2R2,UNIT-R2,RETAIN-P,LIBRARY-R,CATEGORY-000
OL105 I  THE CODE LENGTH OF $INIT2 IS  3864 DECIMAL.
```

```
 @1 CT@EJ    I               $CGDRV01
PROGRAM END
```

```
*
*** LINK THE $INIT2 FOR A MODEL 15A WITH IBM 5444 DRIVES.
*
// LOAD $OLINK,F1
// RUN
//     PHASE NAME-$INIT2,UNIT-R1,LINKADD-X'4600',RETAIN-R,RLD-NO
//     OPTIONS MAP-XREF,LEVEL-8,ENTRY-IMAIN
//     INCLUDE NAME-'$INIT2',UNIT-R2
// END
```

OVERLAY LINKAGE EDITOR CORE USAGE MAP AND CROSS REFERENCE LIST 10/07/07

START ADDRESS	CATEGORY	NAME AND ENTRY	CODE LENGTH HEXADECIMAL	CODE LENGTH DECIMAL	REFERENCED BY
4600	0	$INIT2	0F18	3864	
4687		IMAIN			

OL100 I THE TOTAL CORE USED BY $INIT2 IS 3864 DECIMAL.
OL101 I THE START CONTROL ADDRESS OF THIS MODULE IS 4687.
OL104 I TOTAL NUMBER OF LIBRARY SECTORS REQUIRED IS   16
         NAME-$INIT2,PACK-PID001,UNIT-R1,RETAIN-P,LIBRARY-O

```
 @1 CT@EJ    I               $OLINK01
PROGRAM END
```

```
 @1 CR@75    D 0 23          STEP
0@1 CR@75    D 0 23          STEP
```