XDDT PART 1 3/15/73 JBL (XDDTA,16)

```
ASC=720051
CAC=720053
CBS=720056
CKS=720033
DSC=720050
EEM=724074
ESM=720055
IOH=730000                  /IN-OUT HALT
ISB=720052
LAT=762200
LEM=720074
LSM=720054
PPA=720005
PPB=720006
RPA=720001
RPB=720002
RRB=720030
SFT=660000
SZS=640000
TYI=720004
TYO=720003

DBA=722061
DCL=720063
DIA=720061
DRA=722062
DWC=720062
ERM=720065
LRM=720064
RCC=723022
RCH=722022
RCK=720032
RNM=720066
RRC=722122
RRI=720037
RRO=720017
RSC=721122
RSM=720067
RTB=720035
SSB=724122
TCB=724022
TCC=725022

HALT=760400
TYIHNG=IOT 100
NETM1U=IOT 643
NETM1D=IOT 143
SUPPC=40  /PLACE TO PLANT INSTRUCTION
PC=35
DDTCOR=100000
L=0       R=1
DDM=(DDTCOR)
EIC=(DDTCOR+SGP)
EVC=(DDTCOR+EST)
```

```
C20=(20)
C77=(77)
CI=(I)
CJ=(JMP)
C4=(400000)

DEFINE     DISP LC,UC
           Z=LC-LSE 44
           Z"T"1000 UC-LSE 44
TERMINATE DISP

DEFINE     LETTER A,B
           DISP A+LSE-44,B
TERMINATE LETTER

DEFINE     SQOZE A,B,C
           A"T"1600.+B"T"40.+C
TERMINATE SQOZE

DDTCOR/    JMP RLSE
           JMP USERR
STAT,      0
DWANT,     0
DDTO,      0
DDTI,      0
DDTRPA,    0
DDTCLR,    0
DDTRRD,    DDTCOR LSE
IOPDNE,    0               /CORE 17 LINK INTO CORE 10
12,        0               /UNUSED
DCONT,     0
14,        0               /UNUSED
WTOP,      0
WHERE,     0
NETHND,    0
20,        CLA             /HALT PROCEDURE
           LSM
           SAS I DCONT
           JMP ER5         /IOP BUSY
           JSP I IOPDNE
           NETM1D
26,        HLT             /MAY PUSH CONTINUE
27,        JMP SYSUP       /ENTRY FROM RESTART PROCEDURE

30,        LIO (700000     /UNHANG THE DATA CHANNEL
           RRO 500
            HLT
           JMP T+1
SYSUP,     LAC I NETHND
           SZA
           NETM1U          /NET BACK UP IF A NET USER EXISTS
           JMP T+1
```

```
LOWLIM=40
DDTCOR+4200/

LOW,        0                   -0          /INITIAL SYMBOL TABLE
            0                   DDTCORE
            SQOZE  0, 27, 46    MSK
            SQOZE  0, 36, 46    EST
            SQOZE  0, 15, 46    MEM
            0                   400000

/OPERATE GROUP (IN EVENT TIME ORDER)

            SQOZE 15, 15, 23    CCI
            SQOZE 26, 13, 32    LAP
            SQOZE 26, 13, 36    LAT
            SQOZE 15, 26, 15    CLC
            SQOZE 15, 26, 13    CLA
            SQOZE 15, 26, 23    CLI
            SQOZE 26, 13, 32    OPR 100    /LAP=CLA OPR
            SQOZE 26, 13, 36    OPR 2000   /LAT=CLA OPR
            SQOZE 15, 27, 13    CMA
            SQOZE 15, 27, 23    CMI
            SQOZE 22, 26, 36    HLT
            SQOZE 35, 41, 32    SWP
            SQOZE 26, 13, 23    LAI
            SQOZE 26, 23, 13    LIA
            SQOZE 35, 36, 20    STF
            SQOZE 15, 26, 20    CLF
NOPCOD,     SQOZE 30, 31, 32    NOP
            SQOZE 31, 32, 34    OPR

/SPECIAL OPERATE GROUP (IN EVENT TIME ORDER)

            SQOZE 26, 20, 23    LFI
            SQOZE 26, 23, 20    LIF
            SQOZE 35, 44, 26    SZL
            SQOZE 35, 15, 23    SCI
            SQOZE 35, 15, 20    SCF
            SQOZE 15, 26, 26    CLL
            SQOZE 23, 20, 23    IFI
            SQOZE 23, 23, 20    IIF
            SQOZE 35, 15, 27    SCM
            SQOZE 15, 27, 26    CML
            SQOZE 23, 16, 13    IDA
            SQOZE 23, 16, 15    IDC
            SQOZE 13, 13, 23    AAI
            SQOZE 23, 13, 23    IAI
            SQOZE 42, 13, 23    XAI
            SQOZE 35, 32, 31    SPO
```

/SKIP GROUP

```
          SQOZE 15, 26, 31          CLO
          SQOZE 35, 32, 33          SPQ
          SQOZE 35, 44, 27          SZM
          SQOZE 35, 30, 23          SNI
          SQOZE 35, 32, 23          SPI
          SQOZE 35, 44, 31          SZO
          SQOZE 35, 27, 13          SMA
          SQOZE 35, 32, 13          SPA
          SQOZE 35, 44, 13          SZA
          SQOZE 35, 44, 20          SZF
          SQOZE 35, 44, 35          SZS
          SQOZE 35, 25, 32          SKP
```

/STANDARD INSTRUCTIONS

```
          SQOZE  0,  0, 23          I
          SQOZE 13, 16, 16          ADD
          SQOZE 13, 30, 16          AND
          SQOZE 13, 35, 15          ASC
          SQOZE 15, 13, 15          CAC
          SQOZE 15, 13, 26          CAL
          SQOZE 15, 14, 35          CBS
          SQOZE 15, 25, 35          CKS
          SQOZE 16, 13, 15          DAC
          SQOZE 16, 13, 32          DAP
          SQOZE 16, 14, 13          DBA
          SQOZE 16, 15, 22          DCH
          SQOZE 16, 15, 26          DCL
          SQOZE 16, 23, 13          DIA
          SQOZE 16, 23, 31          DIO
          SQOZE 16, 23, 32          DIP
          SQOZE 16, 23, 40          DIV
          SQOZE 16, 34, 13          DRA
          SQOZE 16, 35, 15          DSC
          SQOZE 16, 41, 15          DWC
          SQOZE 16, 44, 27          DZM
          SQOZE 17, 17, 27          EEM
          SQOZE 17, 34, 27          ERM
          SQOZE 17, 35, 27          ESM
          SQOZE 23, 16, 42          IDX
          SQOZE 23, 31, 22          IOH
          SQOZE 23, 31, 34          IOR
          SQOZE 23, 31, 36          IOT
          SQOZE 23, 35, 14          ISB
          SQOZE 23, 35, 32          ISP
          SQOZE 24, 16, 13          JDA
          SQOZE 24, 27, 32          JMP
          SQOZE 24, 35, 32          JSP
          SQOZE 26, 13, 15          LAC
          SQOZE 26, 13, 41          LAW
          SQOZE 26, 15, 22          LCH
          SQOZE 26, 17, 27          LEM
          SQOZE 26, 23, 31          LIO
          SQOZE 26, 34, 27          LRM
```

```
                SQOZE 26, 35, 27        LSM
                SQOZE 27, 37, 26        MUL
                SQOZE 32, 32, 13        PPA
                SQOZE 32, 32, 14        PPB
                SQOZE 34, 13, 26        RAL
                SQOZE 34, 13, 34        RAR
                SQOZE 34, 15, 15        RCC
                SQOZE 34, 15, 22        RCH
                SQOZE 34, 15, 25        RCK
                SQOZE 34, 15, 26        RCL
                SQOZE 34, 15, 34        RCR
                SQOZE 34, 23, 26        RIL
                SQOZE 34, 23, 34        RIR
                SQOZE 34, 30, 27        RNM
                SQOZE 34, 32, 13        RPA
                SQOZE 34, 32, 14        RPB
                SQOZE 34, 34, 14        RRB
                SQOZE 34, 34, 15        RRC
                SQOZE 34, 34, 23        RRI
                SQOZE 34, 34, 31        RRO
                SQOZE 34, 35, 15        RSC
                SQOZE 34, 35, 27        RSM
                SQOZE 34, 36, 14        RTB
                SQOZE 35, 13, 16        SAD
                SQOZE 35, 13, 26        SAL
                SQOZE 35, 13, 34        SAR
                SQOZE 35, 13, 35        SAS
                SQOZE 35, 15, 26        SCL
                SQOZE 35, 15, 34        SCR
                SQOZE 35, 20, 36        SFT
                SQOZE 35, 23, 26        SIL
                SQOZE 35, 23, 34        SIR
                SQOZE 35, 35, 14        SSB
                SQOZE 35, 37, 14        SUB
                SQOZE 36, 13, 16        TAD
                SQOZE 36, 15, 14        TCB
                SQOZE 36, 15, 15        TCC
                SQOZE 36, 43, 23        TYI
                SQOZE 36, 43, 31        TYO
                SQOZE 42, 15, 36        XCT
                SQOZE 42, 31, 34        XOR
SGP,            SQOZE  0, 42, 42        XX
                SQOZE  0,  2, 35        1S
                SQOZE  0,  3, 35        2S
                SQOZE  0,  4, 35        3S
                SQOZE  0,  5, 35        4S
                SQOZE  0,  6, 35        5S
                SQOZE  0,  7, 35        6S
                SQOZE  0, 10, 35        7S
                SQOZE  0, 11, 35        8S
                SQOZE  0, 12, 35        9S

EST,            DDTCORE LOW
```

```
RLSE,     JSP I DDTRRD
LSE,      JSP LCC          /LISTEN LOOP
LSE+1,    CLC"U"CLF 7
          DAC SP2
          DAC OPN
LSS,      CLC
          DAC CHI
          DAC SP1
LSP,      DZM WRD
SSN-1,    LAC CUN          /(IOR)
SSN,      DIP SGN
BSLASH,   DZM DNM
          DZM SYL
N2,       DZM SYM L        /LOOP FOR NEXT SYLLABLE
          DZM SYM R
          DZM FSM
          CLC"U"CLF 4
          DAC LET
          DAC CC
LSR,      LIO SK1          /LOOP PER CHAR, CHEAP PLACE...
          DIO WEA          /...TO DO INITIALIZATION,
          LAW VF5+1
          DAP VF5
          LAW LWT
          DAP BAX
          JSP I DDTI       / TYPE-IN, HANG IF NO CHARS
          RAL 6S
          DAC CH
CDB,      LAW DTB          /USED AS DTB
          DAC FL1          /NON-ZERO
CAD,      ADD CH           /USED AS ADD
          DAP .+1
LSL,      LIO .
          ISP CAS
          JMP UPPER
LSU,      SZF I 4          /"QUOTE" MODE?
          JMP NOTQM        /NO
          IDX CC
          SAS (4
          JMP LN4
QUOTE2,   LAC FSM
          JMP N1
```

```
/NO-EVAL ROUTINES

ULC,        LAW I 2          /77 SEEN
            DAC CAS
            JMP LSR

EOT,        CLC              /EOT SEEN. RESET EVERYTHING FOR LARRY
            DAC MSK
            DAP UL
            DZM LL
            LAC (DCH
            DAC MEM
            DAC TAS
            LAW 8.
            DAC RADIX
            DZM USER
            DZM NUM
            LAW PI
            DAP PNS
            LAW PEV
            DAP PA1
            JMP LSE+1

CHH,        LIO LET          /NUMBER-SIGN LOOKUP
            LAC CHI
            SPI"U"SMA
            JMP SHALL
            LAW CHTBL
SEEK,       DAP .+1
/AND
YE,         LAC .
/SHALL      SZA
/FIND       JMP CHH1
ERR,        LAW CHARAC R?    /PRINT Q-MARK.  IGNORE LAST CHAR.
            JDA TYS
            JMP LSR

XCL,        LAW XCTBL        /EXCLAMATION MARK
            JMP SEEK

DOT,        LIO CC           /PERIOD
            LAC LOC
            SPI I
            LAC DNM
            DAC SYL
            DAC DNM
            LAW 44
            DAC T2
            JMP LN1

QUO,        LAC FSM          /" MEANS TAKE AS INTERNAL
            SZA
            JMP N1
            STF 4
            JMP LSR
```

```
Q,          LAC LWT         /"Q" IS LAST QUANTITY TYPED
            JMP N1

DAQ,        LAW 7777        /<DEFINES SYM AS ADDRESS OF Q
            AND LWT
            JMP COM+1

COM,        LAC LOC         /COMMA DEFINES SYM AS LOC
COM+1,      DAC DF1
            DZM FL1
DEF,        LAC LET         /DEFINE SYMBOL
SK1,        SZA
            JMP ERR
            JSP DE
            JMP PN2

DEL,        LAW 3           /#,DELETE
            JDA TYS
DEL1,       JMP PN2         / END OF NO EVAL ROUTINES

/SET OUTPUT RADIX

RADX,       SNI"U"SZM       /SET RADIX
            SAD (1
            JMP ERR
            DAC RADIX
            JMP LSE

/ARITHMETIC FUNCTIONS

PLS,        LAC CAD         /PLUS SIGN
            JMP SSN

MIN,        SPI             /MINUS SIGN
            DIO WRD
            LAC CSU         /(SUB)
            JMP SSN

ISC,        LAC CAN         /(AND)  LOGICAL "AND".
            JMP SSN

UNI,        JMP SSN-1       /LOGICAL "OR"
```

```
/PRINT "Q" IN FORM SPECIFIED

EQL,    DAC LWT         /PRINT INTEGER IN CURRENT RADIX
        JSP LCT
        JDA OPT
PN2,    JSP LCT
        JMP LSS

DEC,    DAC LWT         /PRINT AS DECIMAL INTEGER
        LAC RADIX
        DAC T
        LAW 10.
        DAC RADIX
        JSP LCT
        JDA OPT
        LAC T
        DAC RADIX
        JMP PN2

ARW,    DAC LWT         /PRINT AS INSTRUCTION
        JSP LCT
        DAC PI          /JDA PI, BUT DON'T SET FLAG 2
        LAW PN2
        STF 3           /FORCE SYMBOLIC PRINTOUT
        JMP PI+2

PBX,    DAC LWT         /PRINT AS INTERNAL
        JSP LCT
        JDA TYSA
        JMP PN2

SQP,    DAC LWT         /PRINT AS SQOZE CODE
        JSP LCT
        DAC SYM R
        DZM SYM L
        LAW PN2
        DAP SPX
        JMP SPTLIM

/SET CURRENT CORE

CORE,   SNI I
        JMP ERR
        RAR 6S
        AND (170000
        DIP MEM
        DIP TAS         /YES,VIRGINIA, IT'S NECESSARY
        JMP LSE
```

```
/REGISTER EXAMINATION AND CHANGE

VBR,        AND (177777     / :
            DIP TAS
            SPI
            JMP VBR1
            DIP MEM
            JMP TA5

VBR1,       AND (170000
            SZA
            BRING1          /CALL BRING WITHOUT CHANGING MEM
            JMP VBR1X

BAC,        LAW OPT         /OPEN BRACKET (BAR=CONSTANT)
            JMP BAS+1

BAI,        LAW TYSA        /CONTROL "I"  (BAR-INTERNAL)
            JMP BAS+1

BAS,        LAW PI          /CLOSED BRACKET (BAR-SYMBOLIC)
BAS+1,      DAP BAX
VBR1X,      LAC OPT
BAR,        SPI
            JMP TA6
            LIO SP1
            DIO SP2
            SPI
            JMP TA5
            AND (177777)
TR3,        DAC SP2
SP5,        JSP LCT
            LAC I SP2
            JMP TA7

CR,         DAC LWT         /LINE FEED
            JDA MRF
            LAW 7715
            JDA TYS
            JMP LSE+1

UC8,        JDA MRF         /> MEANS MAKE CORR. AND OPEN REGISTER
            JMP TA6
```

```
BS,         JDA MRF         /BACKSPACE
            LIO SP2
            SPI I
            JMP BS2
            IDX LOC
BS+5,       DAC LWT
            JMP TA3+2

FS,         JDA MRF         /ARROW UP (FORWARD SPACE)
            JSP LCC
            LAW I 1
            LIO SP2
            SPI I
            JMP FS1
            ADD LOC
            JMP BS+5

TAB,        JDA MRF         /MEMORY FIELD SWITCH
TA3,        DAC LWT
            JSP LCC
TA3+2,      JDA PAD
            LAW CHARAC R/
            JDA TYS
TA5,        DZM LOC
            DAP LOC
            LIO MEM
            DIO TAS
TA6,        LIO C4
            DIO SP2
            DAP TAS
            JSP LCT
            BRING
            LAC I TAS
TA7,        DAC LWT
BAX,        JDA .           /PI, OPT OR LWT
            DZM OPN
            JMP PN2
```

```
/SYMBOL ROUTINES

VAL,    DAC DF1         /OPEN PAREN, SETS UP VALUE FOR DEFINITION
        JMP LSS

TBL,    JSP I DDTCLR    /READ SYMBOL PUNCH
        JMP RDNY
        DZM FL1
        JSP SOI
MR1,    JSP GWD
        DAC SYM L
        JSP GWD
        AND (177777
        DAC SYM R
        IOR SYM L
        SZA
        JMP TBL1
TBN,    JSP LCT
        LAC EST
        JDA OPT
TBM,    JSP RBK         /SKIPS REST OF TAPE
        JMP TBM

KIL,    SPI             /KILL SYMBOL(S)
        JMP KI3
KI2,    LIO LET
        SPI
        JMP ERR
KI1,    LAC I EV2       /USED AS LAC I
        IOR KI1
        DIP I EV2
        JMP LSE
```

```
/ZERO CORE

PUL,    SPI             /LOWER LIMIT SETUP
        JMP ERR
        DAC FA
        JMP LSS

ZRO,    JSP OK          /ZERO CORE TO CONTENTS OF M#+3
        LAW 7777
        SPI
        DAC WRD
        DIP WRD
        AND FA
        SPI
        CLA
        IOR MEM
        DAC T
        LIO NUM
        BRING
ZR2,    SUB MEM
        SUB WRD
        SZM
        JMP LSE
        DIO I T
        IDX T
        JMP ZR2
```

```
/SEARCHES

EAS,        LAW EA1         /EFFECTIVE ADDRESS SEARCH
            JMP WS

NWS,        LAC SK2         /NOT WORD SEARCH
            DAC WEA
WDS,        LAW WS1         /WORD SEARCH
WS,         SPI
            JMP ERR
            DAP WS2
            JSP LCC
            LAC USER
            DAC MWSU
            DZM MWSXU
MWSNU,      DZM MWSFTI
            SZA I
            SAS MEM
            JMP NOTMWS
            LIO MWSXU       /MOBY WORD SEARCH:  IF USER=MEM=0, SEARCH...
            IDX USER        /...ALL USERS FOR WRD.
            SAD (100
            JMP LOOK1       /RESTORE USER; EXIT TO LSE.
            ADD STAT
            DAC EAS1
            LAW I 7777
            AND I EAS1
            SAD (760000
            JMP WS3+5
NOTMWS,     BRING
            LAC LL
            IOR MEM
            DAC T
            DIP T2
WS4,        DZM SYM
            DAP T2
            LAC I T2
WS2,        JMP .           /EA1 OR WS1
```

```
/ROUTINES CONCERNED WITH TIME SHARING

LOOK,     SPI             /SET USER BEING EXAMINED
          JMP CREATE      /GO CREATE NEW USER
          LIA
          SUB (100)
          SMA
          JMP ERR
          LAC STAT
          AAI
          DAC T
          LAW I 7777
          AND I T
          SAD (760000
          JMP USERR
LOOK1,    DIO USER
          JMP LSE

HOLD,     SPI I
          JMP HALT1       /HALT USER
          LAW (IOR (LAC))          /PREVENT USER FROM HALTING
          JMP HOLD1

FREE,     LAW (AND (-LAC))         /ALLOW USER TO HALT
HOLD1,    DAP HOLD2       /SET OR CLEAR HELD BY XDDT BIT
          JSP NOTU0
          SPI I
          JMP ERR         /WORKS FOR CURRENT USER ONLY
          BRING1
          LAC I C4        /(400000)
HOLD2,    XCT .
          DAC I C4
          JMP LSE
```

```
SETPTR,   SPI I           /FREE TT PTRS
          SPA
          JMP ERR
          SAL 2S
          ADD (141000
          DAC T
          SUB (141000+40"T"4)       /40 TT'S
          SMA
          JMP ERR
          LAW 101
          LSM
          DAC I T
          IDX T
          LIO I T         /HAD BETTER BE CORRECT
          IDX T
          DIO I T
          IDX T
          LAC I T
          DZM I T
          ESM
          JDA OPT
          JMP LSE
```

```
BGN,    BRING1          /START USER
        SPI
        JMP BGN3        /NO ARG
        AND (170000
        SZA I
        JMP BGN1        /CORE 0
        SZS I 60
        JMP ER4
BGN1,   JSP NOTU0
        LIO OPT
BGN2,   DIO I (PC       /ENTRY FROM "STRTUP"
BGN3,   LAC STAT
        ADD USER
        DAC T
        LAW 1
        DAP I T         /HIGH QUEUE
        JMP LSE

XEC,    SNI I 60        /EXECUTE ARG
        JMP ER4         /SS6 NOT UP
        DAC .+1
T,      0
        NOP
        JMP LSE

/READ OR VERIFY PAPER TAPE

SVFY,   LAW VF2         /SPECIAL VERIFY
        DAP VF5
VFY,    SPI I           /VERIFY CORE AGAINST BINARY TAPE
        JMP ERR
        JSP I DDTCLR
        JMP RDNY
        JSP LCC
        LAC RB2         /(SAD I)
        JMP RD1
```

```
REPEAT (IF VP .-LSE+44-1000, PRINT ,MYSTIC 1000 EXCEEDED,

RD,     SPI I           /READ BINARY TAPE INTO CORE
        JMP ERR
        JSP OK
        JSP I DDTCLR
        JMP RDNY
        LAC BS1         /(DAC I)
RD1,    DIP VF4
        JSP SOI
        BRING
VF1,    LAC MEM
        DIP T
        LAC T
        SUB LL
        SUB MEM
        SPA
        JMP VF2
        ADD LL
        SUB UL
        SZM
        JMP VF2
        LAC  I LA
VF4,    T               /DAC I OR SAD I
        JMP VF2
        SAS (XX)
        SAD NUM         /SPECIAL VERIFY IGNORES PGM MODIFICATION
        JMP VF5
        LAW I 7777
        AND I T
        ADD T
        SUB MEM
        SAD I LA        /IGNORE "," IN ADR IF SPECIAL VFY
VF5,    JMP .           /JMP .+1  OR  JMP VF2
        JSP PAC
        JSP LCT
        LAC I LA
        JDA LWT
        JSP LCC
VF2,    IDX T
        IDX LA
        SAD RB1
        JSP RBK
        JMP VF1
```

```
/BRANCHES.  PLACED HERE TO SAVE ROOM IN DISPATCH AREA.

/REST OF LISTEN LOOP

NOTQM,      CLA
            RCL 9S
            DAC T2
            SUB (44
            SPA
            JMP LN
            ADD TLS          /(JMP LSE)
            DAP LSX
            SUB (JMP DEL1    /LAST NO-EVAL ROUTINE
            SPQ
            JMP LSX
            LAW SYL
            LIO LET
            SPI I            /SKIP IF LETTER NOT SEEN
            JSP EVL
            JMP EV4
            LAW CHARAC RU    /IGNORE INPUT AND START OVER
ER2,        JDA TYS
            JMP LSS

EV4,        DAP SGN
            LAC WRD
SGN,        XX               /OPERATOR AND SYLLABLE ADDR.
            DAC WRD
            LIO CHI
            SPI
            LAC LWT
            DAC OPT
LSX,        JMP .            /I, O. MINUS IF NO ARG.  ARG IN AC.

UPPER,      JSP TYPOUT
            XCT LSL
            RIL 9S
            JMP LSU

LN,         ADD (44-12       /LETTER-NUMBER LOGIC
            SPA
            JMP N
            DZM LET
LN1,        DZM CHI
            IDX T2
            IDX CC
            SAS (4
            JMP LN3
            LIO SYM R
            DIO SYM L
            DZM SYM R
```

```
LN3,    SUB (6
        SZM
        JMP LSR
        LAC SYM R
        RAL 2S
        ADD SYM R
        RAL 3S
        ADD T2
        DAC SYM R
        LAW I 4
        ADD CC
        SMA
        JMP LSR
LN4,    LAC FSM         /ENTRY FROM QUOTE
        RAL 6S
        ADD CH
        DAC FSM
        LAW 77
        SAD CH
        JMP ULC
        LAW 3
        SZF 4
        SAS CC
        JMP LSR
        JMP QUOTE2

N,      LAC SYL
        RAL 3S
CUN,    IOR T2          /USED AS IOR
        DAC SYL
        LAC DNM
        RAL 2S
        ADD DNM
        RAL 1S
        ADD T2
        DAC DNM
        JMP LN1
```

```
/REST OF NUMBER-SIGN LOOKUP

SHALL,      LAC SYL
            SPA
            JMP ERR
            SAL 2S
            SUB (100"T"4)
            SMA
            JMP ERR
            ADD (100"T"4+141000
            JMP DDS

CHH1,       SAD SYM R
            JMP FIND
            IDX YE
            IDX YE
            JMP YE

FIND,       IDX YE
            DAP .+1
            JMP .

STATUS,     LAC STAT
            ADD USER
            JMP DDS
C,          LAW MEM
            JMP F+1

M,          LAW MSK
            JMP F+1

F,          LAW EST
F+1,        IOR DDM
DDS,        DAC SP1
N1,         DZM CHI
            DAC SYL
            DAC DNM
            JMP N2

/MODE CHANGING ROUTINES

LOT,        LAW TYSA
            JMP CNS+1

SMB,        LAW PI
            JMP CNS+1

CNS,        LAW OPT         /SYMBOLIC-CONSTANT-FLEXO SWITCH SETUP
CNS+1,      DAP PNS
            JMP LSE

OAD,        LAW PVL
            JMP RAD+1

RAD,        LAW PEV         /OCTAL-RELATIVE SWITCH SETUP
RAD+1,      DAP PA1
TLS,        JMP LSE         /USED AS LSE
```

```
/REST OF BS

BS2,        IDX SP2
SP3,        DAC LWT
            DIP MEM
            JDA PAD
            LAW CHARAC R/
            JDA TYS
            LAC TAS
            DIP MEM
            JMP SP5

/REST OF FS

FS1,        ADD SP2
            DAP SP2
            JMP SP3

/REST OF KIL

KI3,        LAC (DDTCOR LOW
            DAC EST
            JMP LSE

/REST OF TBL

TBL1,       JSP GWD
            DAC DF1
            LAC SYM L
            LIO SYM L
            RIL 1S
            SMA"U"SPI
            JMP MR1
            AND (177777
            DAC SYM L
            JSP DE
            JMP MR1

/REST OF EFFECTIVE ADDRESS SEARCH

EA1,        DAC EAS1        /SAVE INSTRUCTION
            LIA
            AND (770000
            SAD (CAL
            JMP EA4
            SAD (JDA
            JMP EA6
            SAD (LAW I
            JMP WS3
            AND (760000
            SAS (OPR        /FLUSH THESE
            SAD (SPO
            JMP WS3
```

```
            SAS (SKP
            SAD (SFT
            JMP WS3
            SAD (IOT
            JMP WS3
            SAS (DCH
            SAD (LCH
            JMP EA2
            LAI
EA3.,       AND CI          /IS THERE AN I BIT
SK1.,       SZA
            JMP EA2         /YES
            LAC EAS1
            AND (760000
            SAD (XCT)
            JMP EA11
            SAS (LCH
            SAD (DCH
            JMP EA5
WS8,        LAW 7777        /NO, AND OFF INSTRUCTION PART OF FIRST WORD
            AND I T2

WS1,        XOR WRD         /COMPARE
CAN,        AND MSK         /USED AS AND
WEA,        XX              /SZA OR SZA I
            JMP WS3         /SETUP NEXT WORD

WS6,        LAC MWSU
            SAD MEM
            SAS MWSFTI
            JMP NOTMW1
            IDX MWSFTI
            JSP LCC
            LAC USER
            DAC MWSXU
            JDA OPT
            LAC (FLEXO "L"
            JDA TYS
            JSP LCC
NOTMW1,     LAW LCC

PAC,        DAP PAX         /HIT, PRINT OUT
            LAC T
            DAP LOC
            JDA PAD
            LAW CHARAC R/
            JDA TYS
            JSP LCT
            LAC I T
            JDA LWT
PAX,        JSP .
```

```
WS3,        IDX T           /INDEX
            SUB MEM
            SUB UL
            SPQ
            JMP WSNW
WS3+5,      LAC MWSU
            SAS MEM
            JMP LSE
            JMP MWSNU

WSNW,       LAC T
            JMP WS4

EA4,        LAC WRD         /CAL FINDS 100,101, AND ITS ADDRESS
            SAS (100
            SAD (101
            JMP WS6
            JMP WS8         /CHECK ADDRESS

EA6,        JSP EAS1+1      /JDA,CHECK THING ADDRESSED
            IDX EAS1        /CHECK ADDRESS+1
EA7,        AND (7777
            JMP WS1

EA2,        LAW EA3.        /GET REG. REFERENCED FOR I,LCH,DCH
            JMP EA12

EA11,       LAW EA1
EA12,       DAP EA13
            LAI
            JDA EAS1
            IDX SYM
            SAD (10.
            JMP WS3
            LAI
            DAP T2
            LAC I T2
            LIA
EA13,       JMP .

EA5,        LAI             /LCH,DCH PTR
            LIO EAS1        /INSTR.
            RIL 5S
            SPI
            IDC
            JDA EAS1        /CHECK LOC. REFERENCED BY POINTER
            LAC T2
            JMP EA7         /CHECK LOC OF POINTER

EAS1,       0               /SPECIAL COMPARE
EAS1+1,     DAP EAS2
            LAW 7777
            AND EAS1
            XOR WRD
            AND MSK
            SZA
EAS2,       JMP .           /MISS,RETURN
```

```
JMP WS6          /HIT, PRINT AND QUIT
```

```
/REST OF "LOOK"; CREATE NEW USER.

CREATE,   LIO (500
          LAC (140000
          LSM
          IOR I WTOP
          DAC T
          SUB WHERE
          DAC OPT
          SUB (100)
          SMA
          JMP ER5
          IDX I WTOP
          DIO I T
          ESM
          LAC OPT
          DAC USER
          JDA OPT
          BRING1
          LAW 11
          DAC T
          LIO NUM
STRTU1,   DIO I T
          IDX T
          SAS CI
          JMP STRTU1
          LAC (TYIHNG
STRTUP,   BRING1
          DAC I (SUPPC
          CLA
          DIP I C4        /CLEAR "BITS" IN CASE HALTING
          LIO (SUPPC
          JMP BGN2

/REST OF "HOLD"; HALT CURRENT USER.

HALT1,    SAS (1
          JMP ERR
          JSP NOTU0
          LAC (HALT
          JMP STRTUP


START
```