```
DISPATCHER (DISPAT,104) 10/2/73  JGC/BPC/JBL

/CHAN 16 BREAK
DISPAT,   LIF"U"SCF"U"CLL
          DIO DSP1      /SAVE FLAGS
          RCL 2S        /TOP OF IO CLEAR
          EEM
          SAD ([DDTS6+3]"T"4)        /IS IDDT "EXECUTING" INSTR?
          JMP DSP3      /YES, GO ADJUST PC FOR CALLING SEQUENCES
DSP4,     RTB
          DIO TRPBUF
          CLA"U"SWP
          SMA           /AN IOT?
          JMP ELGIOT    /NO
          RAL 5S        /YES, TEST I BIT
          SPA
          JMP DSP16     /YES, CORE 16 IOT
          RAL 1S
          DCH (JMP 140000 DSP2)      /REGULAR DISPATCH
          RCL 6S
          LFI
DSP2,     JMP I DSPTB+0

DSP3,     LAW I 1       /DDT PC ADJUST
          ADD I (DDTS6+4)
          DAP 71
          JMP DSP4

DSP16,    RAL 1S        /CORE 16 DISPATCH
          DCH (JMP 140000 DSP5)
          RCL 6S        /GET REDISPATCH BITS INTO IO
          LFI
          LAC 70        /MOVE AC,PC,IO
          DAC I (C16AC)
          LAC 71
          DAC I (C16PC)
          LAC 72
          DAC I (C16IO)
          LAC DSP1      /FLAGS, TOO
          DAC I (C16FLA)
          LAC I (BITS)
          AND (-40000)  /RESTART MODE DEBREAK LEGAL BIT
          DAC I (BITS)
DSP5,     LAC C16TB+0   /GET DEBREAK DISPATCH
DSP12,    DAC 71        /DEBREAK, DISPATCH
          JMP I 71

DSP1,     0             /FLAGS
TRPBUF,   0
```

```
ILGIOT,   EEM
ELGIOT,   LIO I (BITS)    /ILLEGAL INSTR.
          LAI
          AND (=500000)   /IDDT AND RESTART BITS
          DAC I (BITS)
          SPI I           /IS GUY UNDER IDDT
          JMP DSP8        /NO
          LAC C16BKP      /BREAKPOINT, GET DDT
DSP9,     LIO 71          /SET UP CRASH AC,PC,IO,C16 TEMP STORAGE
          DAC 71
          DIO I (HH16PC)
          JSP C16TSV
          LIO 70
          DIO I (HH16AC)
          LIO 72
          DIO I (HH16IO)
          LIO DSP1
          DIO I (HH16FG)
          LIO TRPBUF
          JMP I 71

DSP8,     RIL 1S
          SPI
          JMP XDDTBK      /HELD BY XDDT + CRASHED
          LAC TRPBUF
          SAS (100400)    /HLT?
          JMP DSP10
          RIL 3S
          SPI
          JMP REALHALT
          LAC (20000)     /REALHALT LEGAL BIT
          IOR I (BITS)
          DAC I (BITS)
          LAC C16HLT
          JMP DSP12

DSP10,    LAC RCORE       /REMEMBER PHYSICAL CORE...
          DAP TRPBUF      /...FOR HH TYPEOUT ETC
          LAC C16HH       /HALT HORRIBLE
          JMP DSP9
```

```
/HELD BY XDDT + CRASHED; TYPE ON SOROBAN
XDDTBK,   LAW I STAT
          ADD RSTAT
          RCR 9S
          LAW I 3
          LSM
          JDA 14SOCT
          LAW 77
          AND I (TTNO)
          RCR 6S
          LAW I 2
          JDA 14SOCT
          LAC (DCH XDDTBT)
          JDA 14STXT
          LAC (CORHNG)
          DIP I ERSTAT
HANG1E,   ESM
          JMP HANG1

XDDTBT,   276464
          237756          /XDDT[CR][EOM]

REALHALT, LEM
          LAC (UNUSED)
          DAC I RSTAT
          LAW WHERE-STAT
          ADD RSTAT
          DAP REALH1
          LAW 300
REALH1,   DAC .
          DZM I RCORE
REALH3,   LAW I 1
          LSM
          ADD WTOP
          DAP REALH2
          LIA
          LAW 300
REALH2,   SAS .
          JMP HANG1E
          DIO WTOP
          ESM
          JMP REALH3

/DEBREAK FROM CORE 16 THRU HH16
C16RH,    LAW 77
          AND I (BILLTT)
          JDA TTNUM
          LAW C16RH1
          DAP TTCKSX
          JMP TTCKS1+2
```

```
C16RH1,   SAS (2)
          JMP C16RH2
          LAC C16BKK
          DAC 71
          JMP R0

C16RH2,   LAC (400000)
          IOR I (BITS)
          DAC I (BITS)
          LIO I (HH16AC)
          DIO 70
          LIO I (HH16PC)
          DIO 71
          LIO I (HH16IO)
          DIO 72
          LIO I (HH16FG)
          JMP R0+1

HANG,     RCR 6S         /HANG GUY WITH STATUS IN AC (12-17)
HANG+1,   JSP HANGS      /SUBROUTINE IS IN TT ROUTINES
HANG1,    ISB 1700
          DZM HOTFLG     /TELL SWAPPER
          JMP R0

.RCK,     RCK            /REAL RCK
          JMP DPEEK1

FF8,      SZF I 5
          JMP FF88
          SZF 6
          IOT+743        /LIGHT UP THE SLEEPY OPERATOR
          SZF I 6
          IOT+343
          JMP R1
FF88,     LAC 70         / 8 FLIP-FLOPS
          DCH (ADD DCH .+1)
          IOT+70         /0X-CLEAR ALL,  1X-SET X,  2X-CLEAR X
          JMP R1


DELAY,    IDX 71         /HANG FOR SECONDS (ALSO CALLED FROM CORE 15)
          LAW 70
DELAY2,   DAP DELAY3     /SEE DRPA,DPPA ALSO
          LAC I (BILLTT)
          SCR 9S
          SZA I          /SKIP IF A QUEUE ALREADY SAVED UP
          LAC I ERSTAT
          RCL 9S
          DAC I (BILLTT)
          LAW 7777
DELAY3,   SUB .
          DAP I ERSTAT
          LAW CLKHNG"T"100
          JMP HANG
```

```
/RESTART MODE CONROL IOT
RSMC,     SZF I 5
          JMP RSMC1       /DON'T DEBREAK
          LAC (40000)     /DEBREAK LEGAL BIT
          AND I (BITS)
          SZA I
          JMP ELGIOT
          LAW I 1
          ADD I (RESTPC)
          DAC 71
          LAC (170000
          AND I (RESTPC
          LIA
          SAD (160000
          CLA
          SZA
          JMP ELGIOT
          JSP C16TUS      /UNSAVE CORE 16 IF NECESSARY

RSMC1,    LAC I (BITS)
          AND (-140000)   /RESTART MODE AND DEBREAK LEGAL BITS
          SZF 6
          IOR (100000)    /RESTART MODE BIT
          DAC I (BITS)
          JMP R1

/DISPATCH CLEAR THE READER
DCLR,     JSP RDINIT
          JMP R1          /OWNED BY ANOTHER USER
          JMP R2          /OK

/DISPATCHER RPA
DRPA,     LAW (1)
          SZS 60
          JMP DELAY2
          JSP RDA
          JMP ELGIOT      /UNOWNED BY USER
          JMP . 3
          DIO 72
          JMP R1          /RETURN TO USER WITH CHAR IN IO
          LAW RPAHNG"T"100
          JMP HANG

/DISPATCHER RELEASE THE READER
DRLSRD,   JSP RDRLS
          JMP R1
```

```
/GET READER ROUTINE
XRDIN,    LIF"U"SCF
RDINIT,   DAC RX
          LAC RDWHO
          SPA            /OR SAD (-0)
          LAC RSTAT
          DAC RDWHO
          SAS RSTAT
          JMP RDIN1
          SZF 1
          JMP RDIN2
          LAC RBO
          DAC RBI
          LAC CRB1
          DAC RB1
RDIN2,    IDX RX
RDIN1,    LFI
          JMP I RX

/GET A CHARACTER FROM THE READER BUFFER
/R1=NOT YOURS, R2=EMPTY, R3=OK, CHAR IN IO
RDA,      DAC RX
          LAC RSTAT
          SAS RDWHO
          JMP I RX
          IDX RX
          LAC RB1
          SAD RB2
          JMP R4         /READER RUNNING
          LAC RBI
          SUB RBO
          RAL 1S
          SPA
          ADD (RDLEN RDLEN)
          SUB (20)
          SMA            /START READER WHEN 20 CHARS IN BUFFER
          JMP R4
          LAC RB2
          DAC RB1
RB2,      RPA
          RCK
          DIO RBK
R4,       LAC RBO
          SAD RBI
          JMP I RX       /EMPTY
          LIO I RBO
          ADD (400000)
          SAD RBE
          SUB (RDLEN)
          DAC RBO
          SPA
          RIR 9S
          RCR 8S
          CLI
          RCL 8S         / IO BITS 10-17
          IDX RX
          JMP I RX
```

```
RDRLS,     DAC RX          /RELEASE THE READER
           CLI"U"CMI
           LAC RSTAT
           SAD RDWHO
           DIO RDWHO
           JMP I RX

RX,        0

/DISPATCHER GET THE PUNCH
DGETPU,    LAC PUNWHO
           SPA             /OR SAD (-0)
           LAC RSTAT
           DAC PUNWHO
           SAS RSTAT
           JMP R1
           JMP R2

/DISPATCHER RELEASE THE PUNCH
DRLSPU,    CLI"U"CMI
           LAC RSTAT
           SAD PUNWHO
           DIO PUNWHO
           JMP R1

/DISPATCHER PPA
DPPA,      LAC RSTAT
           SAS PUNWHO
           JMP ELGIOT
           LAW (1)
           SZS 60
           JMP DELAY2
           LAC PUP
           IDA
           SAD PEND
           SUB (PUNLEN)
           LIO (PPAHNG
           SAD PSP
           JMP HANG+1
           LIO 72
           DIO I PUP
           DAC PUP
           CLA
           SAS PRUN
           ISB 1200
           JMP R1
```

```
/IOT TO START A USER
PSUC,     ESM
PSU,      LEM
          LAW WHERE-1
          DAP PSUA
PSUD,     IDX PSUA
          SAD (SAS WHERE+100)
          JMP HANG1
          LAW 300
PSUA,     SAS .
          JMP PSUD
          LIO (500)
          LSM
          SAS I PSUA
          JMP PSUC
          DIO I PSUA
          LAW 7777
          AND PSUA
          SAD WTOP
          IDX WTOP
          ESM
          LAW I WHERE-STAT
          ADD PSUA
          DAP PSUB
          LAW 1
PSUB,     DAC .
          DZM HOTFLG
          JMP R1
```

```
/WRITE P POINTER
DWPP,     LAC (-JMP)
          AND 70
          SUB (11)
          SAS (-10)      /OK TO CHANGE JOB NUMBER
          SZS 50
          JMP DWPP1
          SPA
          JMP R1
          SUB (I-11)
          SAD (PRIORITY-I)            /CHANGING HIS PRIORITY?
          JMP DWPP2      /YES
          SMA
          JMP R1
DWPP1,    LAC 72
          DAC I 70
          JMP R1

DWPP2,    LAW I 7777     /SET NEW PRIORITY
          AND 72
          LIA
          DCH (LAC PRIORITY)
          SPI
          JMP R1         /NEG. PRIORITY CANNOT BE THE HIGHEST REACHED
          SUB I (BITS)   /COMPARE WITH PREVIOUS HIGH
          XOR I (BITS)
          RAR 7S
          SWP
          SPI I
          DCH (JMP BITS) /SAVE NEW HIGHEST PRIORITY
          JMP R1

/READ P-POINTER
DPEEK,    LIO I 70
          SZF 1
          LIO I 72
DPEEK1,   SZF 2
          DIO 72
          SZF I 2
          DIO 70
          JMP R1
```

```
/SUPER-PEEK AND SUPER-WPP.  EXAMINE OR CHANGE OTHER USER CORES.
SPP,      LAC SPOWN
          SZA              /LOGIC ALREADY IN USE?
          JMP SP2          /YES
          LAW SPHANG
          DAP SPX          /SET SWITCH TO HANG OWNER
          LAC 70           /USER AND CAD BEING EXAMINED
          DAP SPCAD
          AND (770000
          RAL 6S
          ADD (STAT
          DAC SPUSER       /STAT PTR TO USER TO BE EXAMINED
          SAD BDSTAT       /UNHANG HIM
          LAW FSTAT
          DAP SP1
          LAW I 7777
          LEM
          LSM
SP1,      AND .
          SAD (UNUSED
          JMP SP3          /USER DOES NOT EXIST
          AND (300000
          CLI"U"SWP
          SNI I
          DIP I SP1
          LAW 777
          AND I SP1        /MASK QUEUE IN CASE CLKHNG
          DAP I SP1
          ESM
          EEM
          LAW 7777
          AND I NETHND
          SAD RSTAT
          JMP SP4          /NETHANDLER DOESN'T NEED SS5
          SZS I 50
          CLF 1
SP4,      DZM SPFLAG       /SET READ-WRITE FLAG.  ZERO IF READING.
          SZF 1
          IDX SPFLAG
          LAW I 1
          DAC SPCNT
          LAC 72           /CONTENTS TO BE WRITTEN
          DAC SPWORD
          SZF 2            /ONE WORD OR MANY WORDS ?
          JMP SP5
SPHANG,   LAC RSTAT
          DAC SPOWN
          LIO (SPPHNG
          SAD SPUSER
          JMP HANG1        /LOOKING AT SELF.  DON'T HANG.
          JMP HANG+1
```

```
SP2,      SAD RSTAT
SPX,      JMP .          /SWITCH.  SPHANG OR SPDONE.

          LAW 7777       /TOO BAD. LOGIC IS BUSY.
          AND I NETHND
          SAD RSTAT      /IS THE "NCP" TRYING TO GET THE LOGIC ?
          JMP SP6
          LAC SPOWN
SP3,      ESM
          DAC 70         /ERROR CODE.  STAT PTR OR "UNUSED" STATUS.
          JMP R1         /ERROR RETURN

SP6,      LAC SPOWN      /TOO BAD FOR NORMAL USER.
          SAD BDSTAT     /THE "NCP" IS USURPING THE LOGIC.
          LAW FSTAT
          IOR (DCH)
          DAC T1
          LAC (300000)
          LSM
          AND I T1
          CLI"U"SWP
          SNI I
          DIP I T1       /UNHANG FORMER OWNER
          LAW 777
          AND I T1
          DAP I T1
          ESM
          DZM SPOWN
          DZM SPUSER
          JMP SPP

SP5,      DZM T1
          DAP T1
          RAL 6S
          CMA
          IOR (777740)
          DAC T3
          DAC SPCNT
          SZF I 1
          JMP SPHANG
          LAW I 40
          ADD SPCAD
          SPA
          JMP ILGIOT
          LAW SPWORD
          DAP .+2
          LAC I T1
          DAC .
          IDX .-1
          IDX T1
          ISP T3
          JMP .-5
          JMP SPHANG
```

```
SPDONE,   DZM SPOWN      /RELEASE SPP LOGIC
          SZF 1
          JMP R2         /GOOD RETURN AFTER WRITING INTO OTHER USER
          SZF 2
          JMP .+4
          LAC SPWORD     /CURRENT CONTENTS
          DAC 7Ø
          JMP R2         /GOOD RETURN, ONE WORD READ

          LAW 7777
          AND 72
          DAC T2
          SUB (4Ø)
          SPA
          JMP ILGIOT
          LAW SPWORD
          DAP .+1
          LAC .
          DAC I T2
          IDX .-2
          IDX T2
          ISP SPCNT
          JMP .-5
          JMP R2         /GOOD RETURN, MANY WORD READ

SPOWN,    Ø              /Ø OR STAT PTR TO OWNER
SPUSER,   Ø              /STAT PTR TO USER BEING EXAMINED
SPCAD,    Ø              /CAD WITHIN CORE OF SPUSER
SPWORD,   .+4Ø/          /CONTENTS
SPFLAG,   Ø              /Ø FOR "READ", NON-ZERO FOR "WRITE".
SPCNT,    Ø              /NUMBER OF WORDS TO TRANSFER

T1,       Ø              /THREE TEMPORARIES FOR DISPATCHER OR SWAPPER
T2,       Ø
T3,       Ø
```

```
/DISPATCHER TT ROUTINES

/SET UP PTRS USED BY DISPATCHER TT ROUTINES
TTSET,    DAP TTSETX
          LAW 37          /ONLY 32. TTYS THESE DAYS
          AND I (TTNO
          JDA TTNUM
TTSETX,   JMP .

TTNUM,    0               /JDA WITH TT NUMBER IN AC
          DAP TTNUMX
          LAW TTP"T"200000
          ADD TTNUM
          SAL 2S          /GET PLACE IN TTP TABLE
          DAP TTFP
          IDA
          DAP TTSP
          IDA
          DAP TTUP
          DAP TTDCHU
          DAP TTLCHU
          IDA
          DAP TTPP
TTNUMX,   JMP .

TTFP,     140000+.        /FLAGS
TTSP,     140000+.        /SERVICE PTR
TTUP,     140000+.        /USER PTR
TTPP,     140000+.        /PROGRAM


/CHECK TT STATUS IOT
TTCKS,    JSP TTCKS1
          SZA I
          JMP TTRETN
          DAC 70          /PUT ERROR CODE IN AC AND ERROR CODE WORD
          JMP TTCKS2      /CLEAR OUT BREAK IF ANY


/SUBROUTINE TO CHECK OWNERSHIP AND BREAK
TTCKS1,   DAP TTCKSX
          JSP TTSET       /TT NUMBER IS IN USER CORE
TTCKS1+2, LAW 377
          AND I TTPP
          LIO (1
          SAS RSTAT
          JMP TTCKSY      /NOT HIS.  ERROR CODE 1.
          LAW I 7767      /770010 TO AC
          AND I TTFP
          RAR 4S
          RIL 1S
          SPQ             /BREAK?
          CLI             /NO
TTCKSY,   LAI
TTCKSX,   JMP .
```

```
/SUBROUTINE NORMALLY USED BY TT IOT'S.  CHECKS OWNERSHIP
/AND DETECTS "BREAK" STATUS AND CLEARS IT.  GIVES TRAP (OR R1)
/UNLESS EVERYTHING OK.
TTOK,     DAP TTOKX
          JSP TTCKS1
          SZA I
TTOKX,    JMP .
TTCKS2,   SAS (2
          JMP TTERR       /NOT HIS TT
DHANGX,   LAC I ERSTAT    /BREAK. GET USER'S STATUS
          RAL 3S
          SPA             /"BREAK" BIT SET?
          JMP RØ          /BREAK OCCURRED SINCE CH 16 BREAK BEGAN
          LAW 1Ø          /CLEAR OUT BREAK STATUS
          LSM
          AND I TTFP
          SZA I
          DIP I TTFP      /CLEAR NULL COUNT UNLESS BEING INTERRUPTED
          ESM
          LAW 2           /ERROR CODE FOR BREAK
TTERR,    DAC I (ERCODE)  /SAVE ERROR CODE
          LIO 71          /SAVE ADDRESS OF ERROR IN TRAPPC
          DIO I (TRAPPC)
          SZF 6
          JMP R1
          LAW TTTSU
          SPI
          IOR (4ØØØØØ)    /SET OVERFLOW IF PREVIOUSLY ON
          DAC 71
          JMP RØ

/IOT TYI.  TYPE IN CHAR TO TOP 6 BITS OF AC.
TYI=.     JSP TTOK
          JSP TTU         /GET CHAR OR HANG
          DAC 7Ø          /STORE CHAR
          JMP TTRETN

/IOT TYO.  TYPE CHAR IN TOP 6 BITS OF AC.
TYO=.     JSP TTOK
          LAW I 7777
          AND 7Ø
          JDA TTS         /TYPE CHAR OR HANG
TTRETN,   SZF 6           /TEST WHETHER 1- OR 2-RETURN IOT

R2,       IDX 71          /NORMAL RETURN 2
R1,       IDX 71          /NORMAL RETURN 1
RØ,       LIO DSP1        /NORMAL RETURN Ø
RØ+1,     LFI             /RESTORE FLAGS
          LAC 7Ø
          LIO 72
          JMP I 71
```

```
/IOT TIS.  TYPE IN STRING TERMINATED BY 74.  AC IS PTR.
TIS,      JSP TTOK
          LAC I (TISMAX
          IDC
          DAC DTEM1
TIS1,     LAC 70          /LOOP.  TEST FOR VALID PTR.
          IDC"U"SCI
          SAD DTEM1
          JMP TIS2        /TISMAX EQUALLED.  WILL BE EXCEEDED.
          AND (177740
          RCL 6S
          SNI"U"SZA I
          JMP TIS3        /TOO LOW OR TOO HIGH
          JSP TTU         /GET CHAR OR HANG
          DCH I 70
          SAD (74
          JMP TTRETN      /TERMINATOR SEEN
          JMP TIS1

TIS2,     LAW 3           /TISMAX ERROR CODE
          JMP TTERR

TIS3,     LAW 4           /ILLEGAL REGION ERROR CODE
          JMP TTERR

/IOT TOS.  TYPE STRING TERMINATED BY 74.  AC IS PTR.
TOS,      JSP TTOK
TOS1,     LIO 70
          LCH I 70        /GET CHAR
          SAD (740000
          JMP TTRETN      /RETURN, LEAVING AC STEPPED.
          DIO 70          /UNSTEP IN CASE OF HANG
          JDA TTS         /TYPE CHAR OR HANG
          LCH I 70        /STEP AC
          JMP TOS1

/SUBROUTINE TO TAKE 6-BIT CHAR OUT OF BUFFER.  HANG USER IF EMPTY.
TTU,      DAP TTSX        /EXIT THROUGH TTS
          ERG
          LAW I 2
          DSC 600
          AND I TTFP
          SAS I TTFP
          JMP TTUFUL      /PF 5 SET.  BUFFER FULL WITH PTRS EQUAL.
          RCR 6S          /SAVE PF 1 IN I.O.
          LAC I TTUP
          SPI I           /TYPEACTIVE?
          SAD I TTSP      /EMPTY?
          JMP TIHANG      /TYPEACTIVE OR BUFFER EMPTY
TTU1,     IDC             /STEP USER PTR
          DAC I TTUP
          JMP TTS5

TTUFUL,   DAC I TTFP      /CLEVERLY CLEARS PF 5
          LAC I TTUP
          JMP TTU1
```

```
/SUBROUTINE TO TYPE 6 BITS IN TOP OF AC.  HANG USER IF BUFFER FULL.
TTS,        Ø
            DAP TTSX
            LAW I 7777
            SAD TTS
            JMP TTS7        /WARNING CHAR.  GOBBLE IT UP.
            ERG
            LAW 4Ø
            LIO I TTUP
            DSC 6ØØ
            IOR I TTFP      /STF 1
            SAS I TTFP      /ALREADY SET?
            JMP TTSBEG      /NOT TYPEACTIVE.  START HIM UP.
TTS1,       LAI
            IDC
            SAD I TTSP
            JMP TOHANG      /BUFFER FULL
            LIO I TTPP
            RIL 8S
            SPI I
            JMP TTS2        /77 NOT SAVED UP
            IDC
            SAD I TTSP
            JMP TOHANG      /NO ROOM FOR 2-BYTE CHAR
            CLC
            XCT TTDCHU      /STORE 77
TTS2,       LAC TTS
TTDCHU,     DCH I .         /STORE CHAR
TTS3,       LAW I 1ØØØ
            AND I TTPP
TTS4,       DAC I TTPP      /SET OR CLEAR "SAVED 77" STATUS
TTS5,       JSP ASC6        /RE-ACTIVATE CH 6
TTLCHU,     LCH .           /GET CHAR FOR TTU RETURN
            LRG
TTSX,       JMP .

TTSBEG,     DIO I TTSP      /SET PTRS EQUAL
            AND (-2         /CLF 5
            DAC I TTFP
            AND (211        /KEEP LINK, PF 3, AND PF 6
            SAS (1
            JMP TTS1        /EXPECTING A BREAK: DON'T TCB
            LIO TTNUM
            SSB
            LAW TTTBL"T"1ØØØØ           /CALCULATE PLACE IN TBL
            IOR TTS
            RAL 6S
            LIO I TTPP
            RIL 8S
            SPI             /"SAVED 77" KEPT IN "1ØØØ" BIT
            ADD (1ØØ        /77 SAVED UP
          DAP . 1
          LIO .          /GET CODE
          TCB            /SEND IT
          SAS (TTTBL+115
          SAD (TTTBL+100
          JMP TTS6       /BREAK OR CR-NO-LF.  SET LINK.
          JMP TTS3

TTS6,     LAW 200        /SET LINK
          IOR I TTFP
          DAC I TTFP
          JMP TTS3

TTS7,     LAW 1000       /SET "SAVED 77" STATUS
          IOR I TTPP
          JMP TTS4

/ROUTINES TO HANG USER, ETC.
TIHANG,   LIO (TYIHNG
          JMP TTHANG

TOHANG,   LIO (TYOHNG
TTHANG,   LRG
          IDX TTSX       /IN CASE XDDT
          SZL
          JMP TTSX       /XDDT.  GIVE HIM R2.
GTYBSX,   SZF 5
          JMP TTHNG1     /A "DON'T HANG ME" IOT
          JSP HANGS      /HANG USER
          JSP ASC6       /REACTIVATE CHANNEL
          JMP HANG1

/SUBROUTINE TO HANG USER.  HUNG STATUS IN I.O.
HANGS,    DAP HANGSX
          LAW I 7777     /LOOK AT TOP 6 BITS OF...
          LSM
          AND I ERSTAT   /...GUY'S STATUS.
          SWP
          SNI
          DIP I ERSTAT   /NO SPECIAL BITS SET; HANG HIM.
          ESM
HANGSX,   JMP .

/SUBROUTINE TO RE-ACTIVATE CH 6 AND ISB IF SCANNER STOPPED.
ASC6,     DAP ASC6X
          ASC 600
          CKS
          RIR 2S
          SPI
          ISB 600        /SCANNER STOPPED
ASC6X,    JMP .
```

```
/IOT'S TO LEAVE, ENTER, AND SAVE UP 8-BIT MODE AND CONTROL MODE.
TTMODE,   JSP TTCKS1
          SAD (1
          JMP TTERR       /NOT HIS
          LAC I TTFP
          SZF 3
          DAC 72          /RETURN OLD STATUS IN I.O.
          LAW 4
          SZF I 1         /8-BIT IOT?
          JMP TTMOD1      /NO
          LAC 7Ø          /YES.  SET NEW ALARM CHAR.
          XOR I TTPP
          AND (776ØØØ     /ALARM CHAR IN TOP 8 BITS
          XOR I TTPP
          LIO I TTPP
          DAC I TTPP
          SZF 3
          DIO 7Ø          /PUT OLD ALARM CHAR IN AC
          LAW 2Ø
TTMOD1,   DAC DTEM1       /STORE FLAG BIT FOR MODE
          CMA
          LSM
          AND I TTFP
          SZF 2           /ENTER MODE?
          IOR DTEM1       /YES
          DAC I TTFP
TTMODX,   ESM
          JMP TTRETN


/IOT "GET TELETYPE"
GTY,      JSP TTSET
          LIO RSTAT
          LAW 377
          LSM
          AND I TTPP
          SZA I
          DIO I TTPP      /IF NO ONE'S: ASSIGN TO HIM
          ESM
          SZA
          SAD RSTAT
          JMP TTRETN      /NORMAL RETURN
TTHNG1,   CLC             /"DON'T HANG ME" CODING
          DAC 72          /-Ø IN I.O. TO INDICATE HANG CONDITION
          JSP ASC6        /REACTIVATE CHANNEL 6
          JMP TTRETN      /GIVE HIM A GOOD RETURN
```

```
/IOT RELEASE TT
RTY,      JSP TTCKS1
          SAD (1)          /NOT YOUR TT?
          JMP TTERR
          DZM HOTFLG
          LAW 7741
          LSM
          AND I TTFP
          DAC I TTFP
          DZM I TTPP
          ESM
          JMP TTMODX

RTY1,     DCH .

/IOT TO HANG USER UNTIL BREAK ON TT IN TTNO
DHANG,    DSC 600
          JSP TTCKS1
          LIO (EOTHNG)
          SAS (2)          /BREAK?
          JMP TTHANG       /NO, HANG HIM
          JSP ASC6
          JMP DHANGX       /IN TTOK, CLEAR OUT BREAK AND UNHANG
```

```
/EXEC DDT TYO AND TYI
XDDTYO,    JDA XDDTX        /CALLED FROM CORE 10
           CLA
           RCR 6S
           JDA TTS          /TYPE FROM BOTTOM OF IO
           JMP XDDTXR
XDDTXY,    LAI
           LIO DDTFLG
           LFI
           LIA
           JSP HNGDDT
XDDTX1,    CLL"U"CML        /XDDT FLAG FOR TT ROUTINES
           LAC EXECTT
           JDA TTNUM        /SETUP POINTERS
           LIO XDDTEM
XDDTXX,    JMP .

XDDTX,     0                /EXIT ACROSS CORE
           DAP XDDTXX
           DIO XDDTEM
           LIF"U"SCF
           DIO DDTFLG
           JMP XDDTX1

XDDTXR,    LIO DDTFLG       /RETURN ACROSS CORE
           LFI
           LIO XDDTEM
           JMP I XDDTX

XDDTYI,    JDA XDDTX        /CALLED FROM CORE 10
           JSP TTU          /TYPE INTO TOP OF AC
           JMP XDDTXR
           DZM DDTGUY
           JMP XDDTXY

XDDTEM,    0
EXECTT,    0
DTEM1,     0
```

```
/ROUTINE FOR DISPATCHER TO HANG XDDT
HNGDDT,   DAC HDDTX
          LAW I 7777
          LSM
          AND STAT Ø     /XDDT IS USER Ø
          SWP
          SNI
          DIP STAT Ø
          ESM
          JSP ASC6       /RE-ACTIVATE CH 6 AFTER HANGING DDT
HNGDD2,   LIF
          DIO DDTFLG
          JMP SWORG      /ON CH 17 BREAK - CALLED FROM XDDT

/ROUTINE TO START UP XDDT WHEN IT COMES INTO CORE
RUNDDT,   LAW I 7777
          LSM
          AND STAT Ø
          SZA
          JMP DDTBRK     /BREAK KEY ON EXEC TT
RUNDD1,   ESM
          LAC RCORE
          DAC DCORE
          SAR 2S
          IOR (2ØØØØØ)   /XDDT RUNS IN CORE 1Ø (RENAMED)
          DCH (ADD .+1)
          RNM
          LAC DDTGUY
          SZA            /DID HE HAVE ANYBODY
          JMP DDTWT1     /YES, GET HIM INTO CORE AGAIN
RUNDD2,   EEM
          LIO DDTFLG
          LFI
          JMP I HDDTX    /NO, GO BACK TO DDT'S CORE

HDDTX,    1ØØØØØ
DDTGUY,   Ø
DDTSU,    1ØØØØØ
DDTNUS,   1ØØØØ1
DDTFLG,   Ø

DDTBRK,   LAW 1
          DAC STAT Ø
          LAC DDTSU
          DAC HDDTX
          DZM DDTGUY
          JMP RUNDD1
```

```
/ROUTINE FOR XDDT TO CALL TO GET A GUY INTO CORE
DDTWNT,   DAC HDDTX
          LEM
          LAW STAT
          AAI
          DAC DDTGUY
DDTWT1,   SAD BDSTAT
          LAW FSTAT
          DAP DDTWT3
          LAW WHERE-STAT
          ADD DDTGUY
          DAP DDTWT2
          LAW 777
          LSM
DDTWT2,   AND .
          SAD (3ØØ        /IS THERE SUCH A GUY
          JMP DDTHLT      /NO
          LAC (3ØØØØØ
DDTWT3,   AND .
          CLI"U"SWP
          SNI
          LAC I DDTWT3
          IOR (1ØØØØ)
          DIP I DDTWT3    /SET BIT
          LAW 777         /MASK QUEUE IN CASE GUY WAS CLKHNG
          AND I DDTWT3
          DAP I DDTWT3
          ESM
          LAW I 2
          DAC I DCORE     /HOLD DDT'S CORE
          JMP HNGDD2

/ROUTINE TO START UP XDDT WHEN HIS USER COMES INTO CORE
DDTWS,    LAC (-1ØØØØ)    /REMOVE XDDT WANTS BIT
          LSM
          AND I RSTAT
          DIP I RSTAT
          ESM
          LAC RSTAT       /IS THIS GUY DDT CURRENTLY WANTS
          SAS DDTGUY
          JMP SWORG       /NOT GUY; FORGET IT
          SAD SPOWN
          DZM SPOWN       /IN CASE DDT CHANGES HIS PC
          LAW STAT Ø      /IS GUY; SET DDT RUNNING
          DAC I DCORE
          DAC RSTAT
          DAP ERSTAT
          JMP RUNDD2

DDTHLT,   ESM
          LAC DDTNUS      /TELL DDT THAT THERE'S NO USER
          DAC HDDTX
          JMP RUNDD2
```

```
/XDDT RPA
DDTRPA,   DAC DDTRPX
DDTRP1,   JSP RDA
          XX
          JMP DDTRDH
          JMP I DDTRPX
DDTRPX,   Ø

DDTRDH,   LIO (RPAHNG)
          JSP HNGDDT
          JMP DDTRP1

START
```