DEPRX

SENSE SWITCH INTERROGATION AND DIAGNOSTIC PRINT SUBROUTINE

A. PURPOSE OF THIS SUBROUTINE

This subroutine under control of the SENSE SWITCHES will:

1. Print out the status of the machine at the time of error. The printout will provide information which is useful when running diagnostic programs.

2. Check for a TAPE REDUNDANCY on all CHANNELS.

3. Provide for looping in any section of the main program.

B. METHOD OF TEST

This subroutine may be used only with programs which have provided the basic linkage to the subroutine.

1. Insert a BCD word of SHARE MNEMONICS OPERATION CODE at the beginning of each section of a program to indicate what operation is being tested.

   Immediately folloowing this BCD word will be the first instruction of the section being tested. This instrcutipn is in location X referred to in the entries.

   Example:

```
            BCD     1CLA
      X     CLA      AAA
```

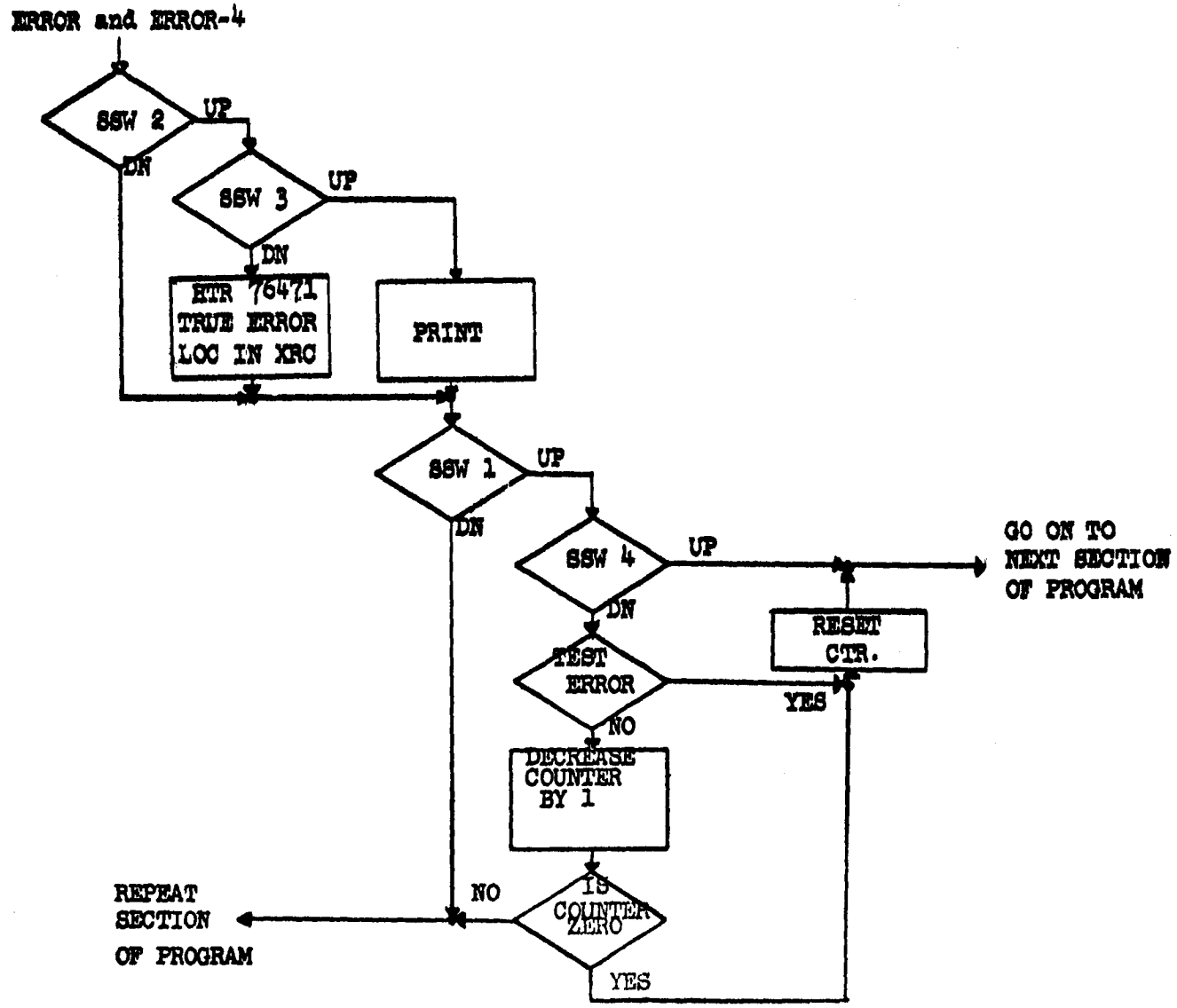
2. The basic linkage to the subroutine will depend on what type of printout or checking is desired.

3. 6 Entries are available to this subroutine. Purpose and Linkage to each entry are described on subsequent pages of this write-up.

a.
```
TSX  ERROR,4
TSX  OK,4
TRA  X
```

This ENTRY causes a FOUR LINE MAIN FRAME printout as shown on page 1.008. Return is made to 2 instructions following TRA X. If SENSE SWITCH 1 is DOWN, return is made to TRA X which will cause a repeat of the section being tested. Entry to TSX OK,4 will allow for checking SENSE SWITCHES to determine whether to repeat the section of program or continue with the next section.

If SENSE SWITCH 4 is DOWN, the tested section will be repeated the number of times stored in KONST+2. Initially this is 40 DECIMAL but can be changed by storing the desired constant in KONST+1 & KONST+2.



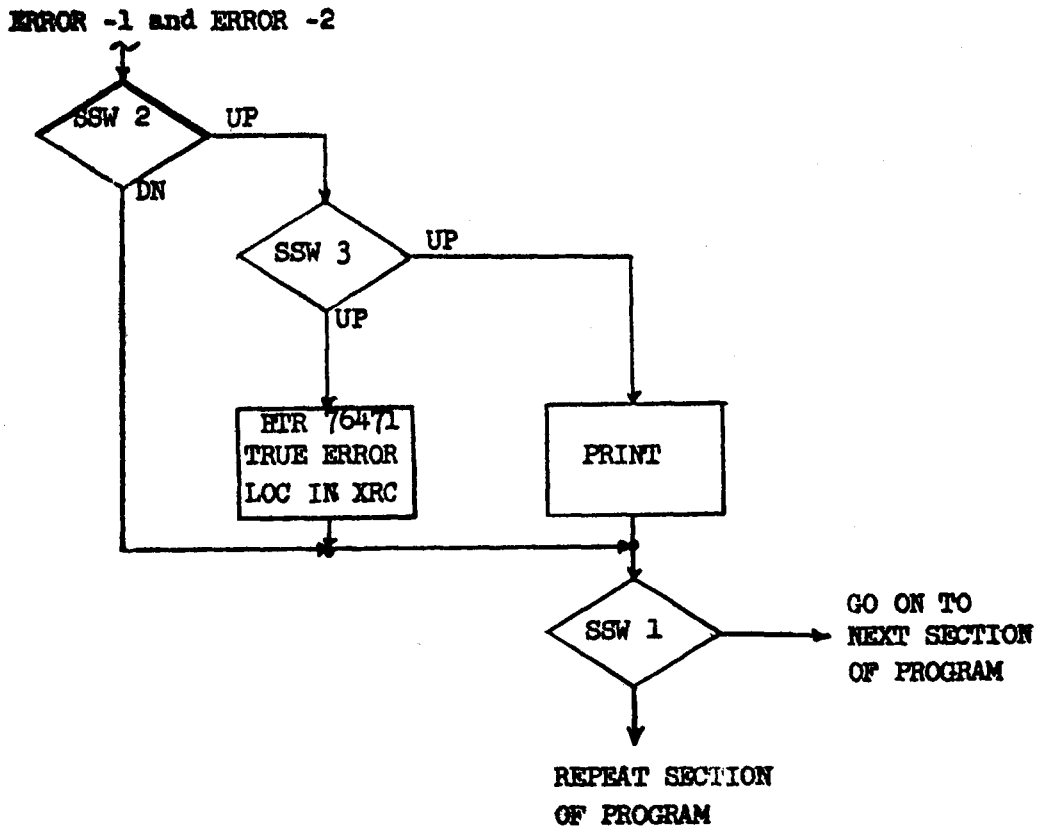
b.
```
TSX   ERROR-1,4
TRA   X
```

This ENTRY causes a FOUR LINE MAIN FRAME printout as shown on page 1.008.

Return is made to 1 instruction: following TRA X.

If SENSE SWITCH 1 is DOWN, return is made to TRA X which will cause a repeat of the section being tested.

SENSE SWITCH 4 is not interrogated.

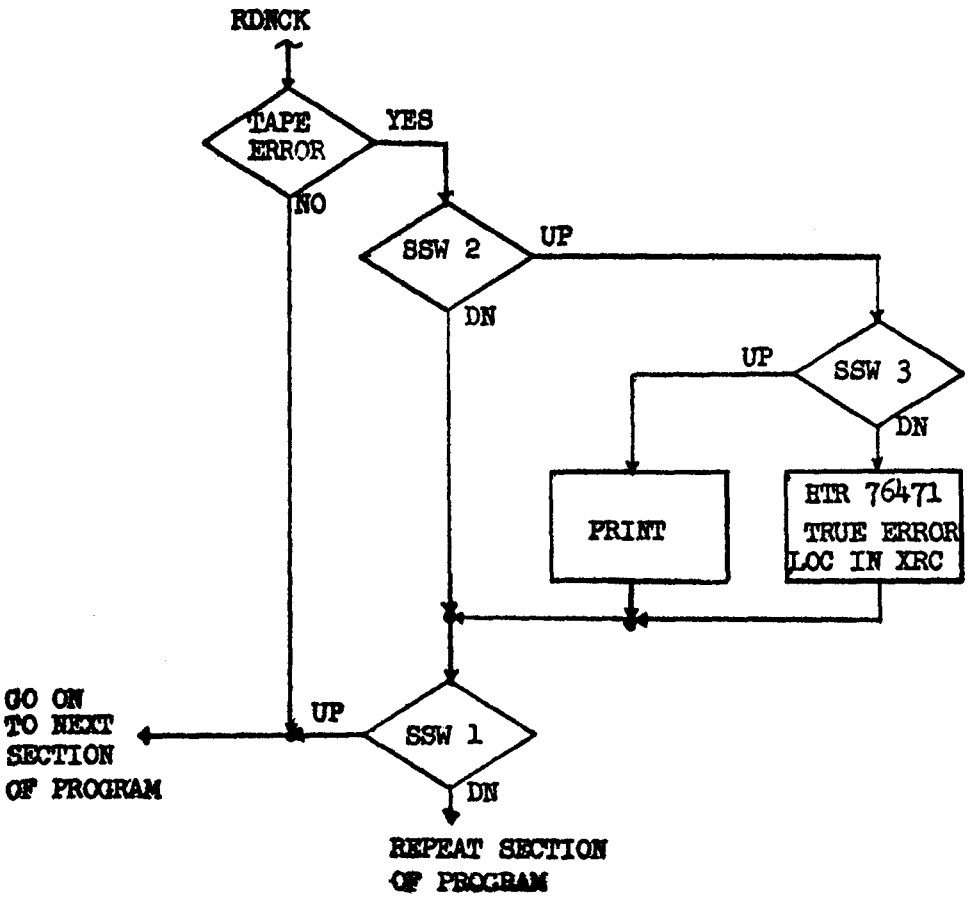


c. TSX RDNCK,4
TRA X

This ENTRY will interrogate the TAPE INDICATORS for all CHANNELS. If any tape indicator is on a TWO LINE printout will occur as shown on Page 1.009.

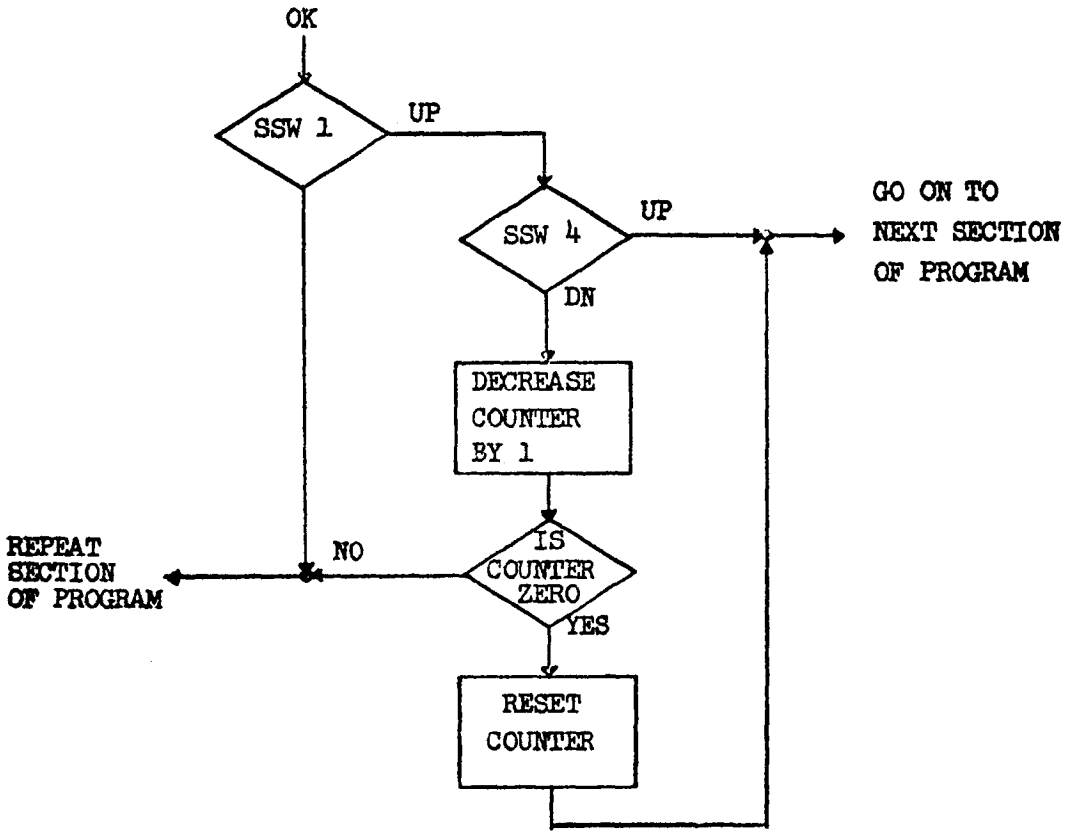
Return will be to the instruction following TRA X.

If SENSE SWITCHES 1 and 2 are DOWN no printout will occur and return will be made to TRA X, which will cause a repeat of the section begin tested. With only SENSE SWITCH 1 DOWN, a printout will occur and the section will be repeated.



d.
```
TSX OK,4
TRA X
```

This entry will provide for looping in a program section any number of times. With SENSE SWITCH 1 DOWN, the section will be repeated until SENSE SWITCH 1 is RAISED. With SENSE SWITCH 1 UP and SENSE SWITCH 4 DOWN, the program section will loop the number of times specified in KONST+2. This is 40 DECIMAL times initially but can be changed by storing desired constant in KONST+1 & KONST+2. SENSE SWITCHES 1 and 4 UP, the program section will not be repeated.



e.
```
TSX ERROR-4,4
TSX OK
TRA X
```

This entry and it's returns are the same as TSX ERROR,4. The printout however is a 4 line I/O printout as shown on Page 1.009.

f.
```
TSX ERROR-2,4
TRA  X
```

This entry and it's returns are the same as TSX ERROR-1,4. The printout however is a 4 line I/O printout as shown on Page 1.009.

4. TRA X OR TXL X

In TRA X, the X denotes the starting instruction of the section being tested.

If the TRA X is changed to TXL X only one line will be printed when an error occurs. See Page 1.009

5. TXL X,4

If TXL X is given a Tag of 4, the instruction will be treated as a NOP.

6. ETT

An error track identification has been incorporated into this sub-routine. A typical printout is shown on Page 1.009.

This routine will provide identification for tracks on which errors have occurred. This routine is called in by using the basic I/O linkage and inserting a 1 in the DECREMENT of the TSX instruction.

Example:

```
TSX  ERROR-2,4,1
TRA  X
```

The printout provided is useful on tape comparison errors but is meaningless when called in on card machine comparison errors.

7. When writing an I/O test, prior to entering this subroutine:

   Store the WORD COUNT of each RECORD in INDEX REGISTER A.
   Store the RECORD COUNT in INDEX REGISTER B.
   Store the TOTAL WORD COUNT +1 in "WDNO"
   Store the TOTAL RECORD COUNT +1 in "RECNO"

8. If a section of the program uses the TRAPPING MODE, the BCD word at the start of the section should be followed by a hyphen.

   Example:

   BCD 1CLA-

C. PROGRAM CONTROL

1. Deck

001-032	Place Binary Deck just before TRA card of assemble program to be tested.

2. 716 Printer Control Board

Standard Diagnostic Board.

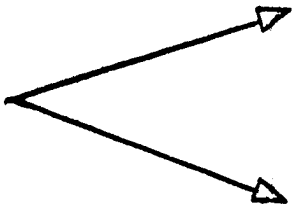
3. Sense Switch Control

SSW 1	UP	Test Sense SW4
	DOWN	Repeat test loop
SSW 2	UP	Indicate errors-test SSW 3 to Print or Halt
	DOWN	Bypass error indicators-test SSW 1
SSW 3	UP	Print on error if SSW 2 is up then test SSW 1
	DOWN	Stop on error if SSW 2 is up then test SSW 1
SSW 4	UP	Proceed to next test
	DOWN	Repeat section N times but if error occurred go to next section.
SSW 5		No used
SSW 6	UP	End test-call in next program.
	DOWN	Repeat entire program

D. ERROR STOPS

A HTR will occur here if entry is from ERROR or ERROR-4 and SENSE SWITCH 3 is down. The address of the ERROR LOCATION is in INDEX REGISTER C.

76471



A HTR will occur here if entry is from ERROR-1 ERROR-2 or RDNCK and SENSE SWITCH 3 is down, The Address of the ERROR LOCATION is INDEX REGISTER C.

E. STORAGE AREA USED FOR TEST

76400-77710

F. PRINTOUTS

There are four types of Print-Outs, as follows

1. MAIN FRAME PRINT - OUT

```
TEST LOC 00031, OPN STP    ,ERROR LOC 00052, 0 LOC 40200000031, SW 000000
LITE 0000, MQ 00001010101, XRA 00001, XRB 00001, XRC 07726, TRAP TGR  0
ACC &,Q 0,P 0, 30001010101, DIV CK 0, ACC OVFL 0,
INDS 00000000000, KEYS 00200000030
```

a. Test Loc 00031 — Indicates the start of the section of the program in error.

b. Opn STP — Indicates the OPERATION being tested. Test instruction is STORE PREFIX.

c. Error Loc 00052 — Indicates the location where the error was detected. Error in program occurred at Location 00052.

d. PSE SW 00000, — Indicates the status of the 6 SENSE SWITCHES. A 0 indicates that the SWITCH is UP and a 1 indicates that the SWITCH is DOWN. SENSE SWITCHES and SENSE LIGHTS are read sequentially from LEFT TO RIGHT.

e. Lite 0000 — Refers to 4 SENSE LITES. A binary 1 indicates that a LIGHT is ON and a binary 0 indicates that a LIGHT is OFF.

2. I/O PRINT - OUT

```
TEST LOC 00202, OPN RTBA 1 ,ERROR LOC 00230, 0 LOC 000000100001, SW 000000
MSE 0000, COMP ERROR, WORD GENERATED 010 000 101 100 001 001 100 111 011 011
REC 00001, WORD 00002, WROD READ.    100 000 101 000 001 001 100 010 011 001
INDS 00000000000, KEYS 000000000     BA          8               4 1      2
```

a. OPN RTBA 1 — Indicates that the error occurred as a result of READING TAPE 1 in BINARY on CHANNEL A.

b. Word Generated — Refers to the WORD WRITTEN or GENERATED in storage that is being compared to the WORD READ from TAPE UNIT 1.

c. Word Read — Indicates the WORD of the RECORD that was read into storage in ERROR from TAPE 1.

d. MSE 0000 — Indicates the status of the 4 SENSE LIGHTS.

e. ETI — ERROR TRACK IDENTIFICATION just below word read provides a quick identification of the FAILING TRACK. This identification will occur only if it is called in by the TSX instruction.

When SENSE SWITCH 3 is DOWN the MQ will contain the CORRECT WORD and the ACC will contain the WORD READ.

3. TAPE REDUNDANCY PRINT - OUT

```
TEST LOC 01204, OPN RTBA , ERROR LOC 01230, 0 LOC 000026007650, SW 000001
INDS 0000000000, KEYS 002000001151 TAPE CK-CHN A0, B1, C0, D0, E0, F0, G0, H0
```

a. Tape CK-CHAN — Identifies channel in which a Redundancy Error Occurred. A one denotes an ERROR on this channel. A zero denotes NO ERROR on this channel.

4. ONE LINE PRINT - OUT

```
TEST LOC 01224, OPN TCOA , ERROR LOC 01226, 0 LOC 000026007650, SW 000001
```

File Attachments: Source Cards

DEPRX

```
* SENSE SWITCHES INTERROGATION AND DIAGNOSTIC
*              PRINT SUBROUTINE

                 76400         ORG 32000

76400  0020 00 0 76444         TRA ERROR-4
76401  0000 00 0 77661         HTR PR         ILLEGAL ENTRY.
76402  0020 00 0 76446         TRA ERROR-2
76403  0020 00 0 76447         TRA ERROR-1
76404  0020 00 0 76450         TRA ERROR
76405  0020 00 0 76461         TRA OK
76406  0020 00 0 76523         TRA RDNCK

76407 +000000000000     WDNO   OCT
76410 +000000000000     RECNO  OCT

76411 +000000000001     KONST  OCT 1
76412 +000000000050            OCT 50
76413 +000000000050            OCT 50         COUNT CONSTANT
76414 +000000000001            OCT 1
76415 +000000000001            OCT 1
76416  0020 00 0 76460         TRA OK-1       EXIT FROM PRINT PROG
76417  0020 00 0 76520         TRA OK2        EXIT FROM PRINT WHEN
                                              ENTRY IS TO ERROR-1
76420 +000000000001            OCT 1

76421  0766 00 0 01361  CH14   WRS 753        PRINTER
76422  0760 00 0 01363         SPRA 3         DOUBLE SPACE
76423  0074 00 1 76430         TSX WPRA+1,1   PRINT FIRST LINE
76424  0500 00 0 76436         CLA LOC        IS THIS A 1 LINE PR OUT
76425 -0120 00 0 77231         TMI CH35-7
76426  0020 00 0 77023         TRA CH18       NO

76427  0766 00 0 01361  WPRA   WPRA
76430  0540 00 0 77615         RCHA CTWD      IOCD PR,0,24
76431  0060 00 0 76431         TCOA *
76432  0020 00 1 00001         TRA 1,1        EXIT

76433  0766 00 0 01361  WPR    WPRA
76434  0760 00 0 01364         SPRA 4         OCT SPACE
76435  0020 00 0 76430         TRA WPRA+1


76436 +000000000000     LOC    OCT 0           TEST LOC + ERROR ADDR
76437 +000000000000            OCT 0           DECREMENT CONTAINS 2,5
                                               COMP OF LAST ROUTINE
76440 +000000000000            OCT 0           +0
76441 +000000000000            OCT 0           TRAP ROUTINE INDICATOR
76442 -000000000000            OCT -0
76443 +000000000007            OCT 7
```

```
76444  0600 00 0 76414         STZ KONST+3   INDICATE I/O TYPE PRINT
                                             OUT
76445  0020 00 0 76450         TRA ERROR
76446  0600 00 0 76414         STZ KONST+3   SET  STORAGE TO ZEROS
                                             MODIFY INSTRUCTIONS FOR
                                             RETURN ADDR TO MAIN PROG
76447  0020 00 0 76507         TRA MOD

76450  0600 00 0 76411  ERROR  STZ KONST     DO NOT REPEAT SECTION
76451  0600 00 0 76412         STZ KONST+1   IF SENSE SW 4 IS DOWN

76452 -0634 00 0 77525         SXD STOR+6    SAVE XRC
76453  0774 00 4 76416         AXT KONST+5,4 CORRECT ADDRESS
76454  0634 00 4 76473         SXA RELY-1,4  TO EXIT INSTRUCTION
76455 -0534 00 4 77525         LXD STOR+6,4  RESTORE SAVED XRC

76456  0760 00 0 00162         PSE 114       SSW 2
76457  0020 00 0 76465         TRA SSW3      UP-INDICATE ERRORS
76460  2 00001 4 76461         TIX OK,4,1

76461 -0634 00 4 76437  OK     SXD LOC+1,4   2'S COMPL OF PROGRAM
                                             LOCATION LAST PREFORMED

76462  0760 00 0 00161         PSE 113       IF SENSE SW 1 IS UP THEN
76463  0020 00 0 76474         TRA RELY      CHECK SS 4
76464  0020 00 4 00001         TRA 1,4       IF DOWN REPEAR SECTION
                                             OF PROG

76465  0760 00 0 00163  SSW3   PSE 115       IF SENSE SW 3 IS UP
76466  0020 00 0 76577         TRA PRINT     PRINT ON ERROR
                                             IF SS 3 IS DOWN STOP ON
76467 -0634 00 4 77525         SXD STOR+6,4  ERROR
76470 -0535 00 4 77525         LDC STOR+6,4
76471  0000 00 0 76470         HTR *-1       TRUE ERROR LOC IS IN XRC

76472 -0534 00 4 77525         LXD STOR+6,4  RESTOER SAVED XRC
76473  0020 00 0 00000         TRA           EXIT INSTRUCTION



76474  0760 00 0 00164  RELY   PSE 116       IF SENSE SWITCH 5 IS UP
76475  0020 00 4 00003         TRA 3,4       GO TO NEXT SECTION OF
                                   THE PROGRAM. IF DOWN REPEAT SECTION
                                   OF THE PROGRAM N TIMES OR THE NUMEBR
                                   OF TIMES INSERTED IN LOC KONST+2

76476  0500 00 0 76412         CLA KONST+1   COUNTER
76477  0402 00 0 76411         SUB KONST     L+1 REDUCE COUNT BY 1
76500  0601 00 0 76412         STO KONST+1
76501 -0100 00 0 76464         TNZ OK+3
76502  0500 00 0 76413         CLA KONST+2   L+50 COUNT CONSTANT
76503  0601 00 0 76412         STO KONST+1
76504  0500 00 0 77526         CLA STOR+7    L+1
76505  0601 00 0 76411         STO KONST
76506  0020 00 4 00003         TRA 3,4
```

```
76507 -0634 00 4 77525  MOD    SXD STOR+6,4  SAVE XRC
76510  0774 00 4 76417         AXT KONST+6,4 CORRECT ADDRESS
76511  0634 00 4 76473         SXA RELY-1,4  TO EXIT ROUTINE
76512 -0534 00 4 77525         LXD STOR+6,4  RESTORE SAVED XRC
76513  0600 00 0 76415         STZ KONST+4   SET STORAGE TO ZEROS
76514  0600 00 0 76412         STZ KONST+1
76515  0600 00 0 76411         STZ KONST
76516  0760 00 0 00162  ERR    PSE 114       SSW 2
76517  0020 00 0 76465         TRA SSW3      INDICATES ERRORS

76520  0760 00 0 00161  OK2    PSE 113       SSW1
76521  0020 00 4 00002         TRA 2,4       UP-GO TO NEXT ROUTINE
76522  0020 00 4 00001         TRA 1,4       REPEAT TEST
                                             PUT DSC REDUNDANCY
                                             CHECKS IN PRINT RECORD
76523  0601 00 0 77517  RDNCK  STO STOR      ACC CONTENTS
76524  0771 00 0 00043         ARS 35
76525  0602 00 0 77525         SLW STOR+6    OVFL BITS P + Q
76526 -0600 00 0 77521         STQ STOR+2    MQ CONTENTS
76527 -0634 00 1 77523         SXD STOR+4,1  PLACE XRA IN DECR.

76530 -0500 00 0 77564         CAL MASK+9    RESET RECORD IMAGE
76531  0320 00 0 77514         ANS REC4R+9   INDICATIONS
76532 -0500 00 0 77552         CAL BIT2+3
76533  0602 00 0 77513         SLW REC4R+8   FOR REDUNDANCY TAPE CK
76534  0602 00 0 76420         SLW KONST+7   PUT A BIT IN WORD

76535  0060 00 0 76535         TCOA *        CHECK CHAN IN OPERATION
76536  0061 00 0 76536         TCOB *
76537  0062 00 0 76537         TCOC *
76540  0063 00 0 76540         TCOD *
76541  0064 00 0 76541         TCOE *
76542  0065 00 0 76542         TCOF *
76543  0066 00 0 76543         TCOG *
76544  0067 00 0 76544         TCOH *

*      CHECK CHANNELS A-B-C-D-E-F-G-H- FOR REDUNDANCY CHECK.

76545  0500 00 0 77544         CLA  IDE+7    INITIALIZE IDE
76546  0601 00 0 77535         STO IDE

76547  0774 00 1 00010         AXT 8,1
76550 -0500 00 0 77535         CAL IDE       GET CURSOR

76551  0022 00 0 77350  TRC    TRCA YES      AN ERROR ON THIS CHAN.
76552 -0602 00 0 77514         ORS REC4R+9   NO ERROR ON THIS CHAN.
76553 -0765 00 0 00003         LGR 3         SHIFT CURSOR TO
76554  0601 00 0 77535         STO IDE       NEXT CHAN. LOC.

76555  0500 00 0 76551         CLA TRC       GET INST.
76556  0120 00 0 76560         TPL *+2       IS IT PLUS
76557  0400 00 1 77527         ADD STOR+8,1  NO- CHANGE INST.
76560  0760 00 0 00002         CHS           YES- CHANGE SGN.
76561  0601 00 0 76551         STO TRC       STO NEW INST.
76562  2 00001 1 76550         TIX TRC-1,1,1 BACK FOR NEXT INST.
```

```
                                                    WAS THERE A REDUNDANCY
76563  0500 00 0 77513         CLA REC4R+8   TAPE CHECK ON ANY CHAN
76564  0402 00 0 77552         SUB BIT2+3    IF NOT-RETURN TO MAIN
76565  0100 00 0 76567         TZE CONT      PROGRAM-OK
76566  0600 00 0 76420         STZ KONST+7

76567  0500 00 0 77525  CONT   CLA STOR+6    RESET REGISTERS
76570  0560 00 0 77517         LDQ STOR
76571  0763 00 0 00043         LLS 35
76572  0560 00 0 77521         LDQ STOR+2
76573 -0534 00 1 77523         LXD STOR+4,1  RESTORE SAVED XRA

76574  0520 00 0 76420         ZET KONST+7   TAPE CHK REDUNDANCY
76575  0020 00 4 00002         TRA 2,4       NO-CONTINUE PROG
76576  0020 00 0 76446         TRA ERROR-2   YES-INTERROGATE SENSE SWS

*       PRINT ROUTINE

76577  0601 00 0 77517  PRINT  STO STOR      ACC CONTENTS
76600  0771 00 0 00043         ARS 35
76601  0602 00 0 77525         SLW STOR+6    OV FL BITS
76602  0754 00 2 00002         PXA 2,2
76603  0621 00 0 77523         STA STOR+4    XRB
76604 -0634 00 1 77523         SXD STOR+4,1  PLACE XRA INTO DECR
76605 -0634 00 4 77525         SXD STOR+6,4  PLACE XRC INTO DECR
76606 -0600 00 0 77521         STQ STOR+2    MQ CONTENTS
76607  0604 00 0 77356         STI INDS      SAVE INDICATORS

76610  0500 00 0 77530  CHK1   CLA STOR+9    L 100000
76611  0760 00 0 00012         DCT           DIV CK TEST
76612  0020 00 0 77345         TRA DVPLO     DCT LITE IS ON
76613  0771 00 0 00003         ARS 3

76614 -0140 00 0 76623         TNO CHK4-3    ACC OV FL-YES
76615 -0602 00 0 77525         ORS STOR+6    NO
76616  0500 00 0 77552         CLA BIT2+3
76617  0767 00 0 00007         ALS 7         TO TURN OVFL BACK ON

76620  0500 00 0 77354         CLA NOP0      TO INSURE OVFL LITE
76621  0601 00 0 77245         STO EXIT-1    IS ON BEFORE EXITING
76622  0020 00 0 76625         TRA CHK4-1

76623  0500 00 0 77355         CLA OFF       TO INSURE OVFL LINE
76624  0601 00 0 77245         STO EXIT-1    IS OFF BEFORE EXITING
76625  0760 00 0 00000         CLM           CLEAR ACC.

76626  0774 00 1 00004  CHK4   AXT 4,1       L +4 SENSE LITES
76627  0767 00 0 00003         ALS 3
76630 -0760 00 1 00145         MSE 101,1
76631  0020 00 0 76634         TRA *+3
76632  0400 00 0 77531         ADD STOR+10   L +1 - WAS ON
76633  0760 00 1 00145         PSE 101,1     RESET LITES
76634  2 00001 1 76627         TIX CHK4+1,1,1
```

```
76635  0774 00 1 00006  CHK3   AXT 6,1       L +6 SENSE SWITCHES
76636  0767 00 0 00003         ALS 3
76637  0760 00 1 00167         PSE 119,1     IS SSW UP
76640  0020 00 0 76642         TRA CHK3+5    WAS UP
76641  0400 00 0 77531         ADD STOR+10   L +1 - WAS DOWN
76642  2 00001 1 76636         TIX CHK3+1,1,1

76643  0602 00 0 77527         SLW STOR+8    STO PSE + MSE INDICATIONS

*      CHECK IF ERROR TRACK IDENTIFICATION WAS CALLED FOR

76644  0560 00 0 77352         LDQ TRPRI     PUT TRA IN MQ
76645  0441 00 4 00000         LDI 0,4       GET TSX INSTR.
76646 -0054 00  000001         LFT 1         IS THIS A TAPE TEST
76647 -0600 00 0 77227         STQ MUNGN     YES-SET UP FOR ETI

*      CHECK IF ENTRY TO SUB ROUTINE WAS AT ERROR -1

76650  0500 00 0 76415  CHK3A  CLA KONST+4   ERROR-1 IND.
76651  0100 00 0 76657         TZE CHK3A+7   YES
76652  0500 00 0 76602         CLA PRINT+3   NO
76653  0621 00 0 76665         STA CHK5+1    RESET ADDR TO 2
76654  0500 00 0 76416         CLA KONST+5   SET UP FOR
76655  0601 00 0 77246         STO EXIT      RETURN TO OK-1
76656  0020 00 0 76664         TRA CHK5

76657  0500 00 0 77531         CLA STOR+10   L+1
76660  0601 00 0 76415         STO KONST+4
76661  0621 00 0 76665         STA CHK5+1    RESET ADDR TO 1
76662  0500 00 0 76417         CLA KONST+6   SET UP FOR
76663  0601 00 0 77246         STO EXIT      RETURN TO OK2

*      OBTAIN TEST LOC AND ERROR ADDRESS

76664 -0534 00 4 77525  CHK5   LXD STOR+6,4  XRC
76665 -0754 00 4 00002         PXD 2,4
76666  0760 00 0 00006         COM
76667  0400 00 0 77551         ADD BIT2+2    +1 TO DECREMENT
76670  0622 00 0 76436         STD LOC       ERROR ADDR INTO DECR
76671  0771 00 0 00022         ARS 18
76672  0402 00 0 76665         SUB CHK5+1    L +2
76673  0621 00 0 76674         STA CHK6

76674 -0500 00 0 00000  CHK6   CAL 0         PLACE
76675  0621 00 0 76436         STA LOC       TEST LOC INTO ADDR
76676  0630 00 0 76436         STP LOC

*     OBTAIN BCD OPERATION

76677  0402 00 0 77531         SUB STOR+10   L +1
76700  0621 00 0 76701         STA *+1
76701  0560 00 0 00000         LDQ 0         BCD OPERATION
```

```
76702  0774 00 1 00006  CHK7   AXT 6,1
76703  0760 00 0 00000         CLM
76704 -0763 00 0 00002         LGL 2
76705  0734 00 4 00000         PAX 0,4       ZONE BIT
76706 -0763 00 0 00004         LGL 4
76707  0340 00 0 77534         CAS BIT+2     CHECK FOR BLANK L +60
76710  0020 00 0 76712         TRA *+2
76711  0020 00 0 76725         TRA CHK7A     YES
76712  0340 00 0 77543         CAS BIT+9     CHECK FOR HYPHEN
76713  0020 00 0 76715         TRA *+2
76714  0020 00 0 77343         TRA TRAP      YES- INDICATES A TRAP
                                             ROUTINE
76715 -0320 00 0 77545         ANA BIT+11    MASK FOR NUMERIC
76716  0734 00 2 00000         PAX 0,2
76717  3 00012 2 76725         TXH CHK7A,2,10 IGNORE SPECIAL CHARS
76720  0500 00 0 77533         CLA BIT+1     COL INDICATOR
76721  0771 00 1 00006         ARS 6,1
76722 -0602 00 2 77370         ORS REC1L+9,2
76723 -3 00000 4 76725         TXL *+2,4
76724 -0602 00 4 77373         ORS REC1L+12,4
76725  2 00001 1 76703  CHK7A  TIX CHK7+1,1,1

76726  0560 00 0 00000  CHK8   LDQ 0
76727  0774 00 1 00014         AXT 12,1
76730  0074 00 2 77337         TSX CH22,2
76731 -0500 00 0 77544         CAL BIT+10    COL IND
76732  0771 00 1 00014         ARS 12,1
76733 -0602 00 4 77404         ORS REC1R+9,4
76734  2 00001 1 76730         TIX *-4,1,1

76735 -0500 00 0 76436  CH1    CAL LOC       PUT TEST LOC INTO IMAGE
76736  0765 00 0 00017         LRS 15
76737  0774 00 1 00005         AXT 5,1
76740  0074 00 2 77333         TSX CH21,2

76741 -0500 00 0 77532         CAL BIT       BIT COLUMN 10
76742  0771 00 1 00005         ARS 5,1
76743 -0602 00 4 77370         ORS REC1L+9,4
76744  2 00001 1 76740         TIX CH1+3,1,1

                                             PUT ERROR ADDR INTO IMAGE

76745 -0534 00 4 76436  CH5    LXD LOC,4
76746 -0754 00 4 00000         PXD 0,4
76747  0765 00 0 00041         LRS 33
76750  0774 00 1 00005         AXT 5,1
76751  0074 00 2 77333         TSX CH21,2
76752 -0500 00 0 76442         CAL LOC+4     -0
76753  0771 00 1 00006         ARS 6,1
76754 -0602 00 4 77404         ORS REC1R+9,4
76755  2 00001 1 76751         TIX CH5+4,1,1



                                             PUT PSE SW INTO
```

```
76756 -0500 00 0 77527  CH7    CAL STOR+8    IMAGE
76757  0765 00 0 00022         LRS 18
76760  0774 00 1 00006         AXT 6,1
76761  0074 00 2 77333         TSX CH21,2
76762 -0500 00 0 77543         CAL BIT+9
76763  0771 00 1 00006         ARS 6,1
76764 -0602 00 4 77404         ORS REC1R+9,4
76765  2 00001 1 76761         TIX CH7+3,1,1

76766  0774 00 4 00014  CH10   AXT 12,4      PUT 1ST REC IN PR IMAGE
76767  0774 00 1 00030         AXT 24,1
76770 -0500 00 4 77373         CAL REC1L+12,4 LEFT HALF IMAGE
76771  0602 00 1 77711         SLW PR+24,1
76772 -0500 00 4 77407         CAL REC1R+12,4
76773  0602 00 1 77712         SLW PR+25,1
76774  2 00001 4 76775         TIX CH10+7,4,1
76775  2 00002 1 76770         TIX CH10+2,1,2

*     RESET IMAGES BY MASKING

76776  0774 00 4 00014  CH11   AXT 12,4
76777 -0500 00 0 77553         CAL MASK
77000  0320 00 4 77373         ANS REC1L+12,4   RESET REC1L

77001 -0500 00 0 77554         CAL MASK+1
77002  0320 00 4 77407         ANS REC1R+12,4   RESET REC1R

77003 -0500 00 0 77555         CAL MASK+2
77004  0320 00 4 77423         ANS REC2L+12,4   RESET REC2L

77005 -0500 00 0 77556         CAL MASK+3
77006  0320 00 4 77437         ANS REC2R+12,4   RESET REC2R

77007 -0500 00 0 77557         CAL MASK+4
77010  0320 00 4 77453         ANS REC3L+12,4   RESET REC3L

77011 -0500 00 0 77560         CAL MASK+5
77012  0320 00 4 77467         ANS REC3R+12,4   RESET REC3R

77013 -0500 00 0 77563         CAL MASK+8
77014  0320 00 4 77503         ANS REC4L+12,4   RESET REC4L

77015 -0500 00 0 77561         CAL MASK+6
77016  0320 00 4 77601         ANS P92+1,4      RESET I/O IMAGE 2L

77017 -0500 00 0 77562         CAL MASK+7
77020  0320 00 4 77615         ANS P95+1,4      RESET I/O IMAGE 3L
77021  2 00001 4 76777         TIX CH11+1,4,1
77022  0020 00 0 76421         TRA CH14
```

```
77023  0500 00 0 77527  CH18   CLA STOR+8    PUT MSE LITES INTO IMAGE
77024  0765 00 0 00036         LRS 30
77025  0774 00 1 00004         AXT 4,1
77026  0074 00 2 77333         TSX CH21,2
77027 -0500 00 0 77546         CAL BIT+12    BIT COL 6
77030  0771 00 1 00004         ARS 4,1
77031 -0602 00 4 77420         ORS REC2L+9,4
77032 -0500 00 0 77540         CAL BIT+6     BIT COL 5
77033  0771 00 1 00004         ARS 4,1
77034 -0602 00 4 77576         ORS P92-2,4
77035  2 00001 1 77026         TIX CH18+3,1,1

77036  0500 00 0 76414         CLA KONST+3   IS THIS A MAIN FRAME
77037  0100 00 0 77247         TZE CH41      PRINT OUT -NO

                                             FORM CARD IMAGE FOR 2ND REC

77040  0500 00 0 77523  CH15   CLA STOR+4
77041  0765 00 0 00041         LRS 33
77042  0774 00 1 00004         AXT 4,1
77043  0074 00 2 77333         TSX CH21,2
77044 -0500 00 0 77537         CAL BIT+5     BIT COLUMN
77045  0771 00 1 00004         ARS 4,1
77046 -0602 00 4 77420         ORS REC2L+9,4
77047  2 00001 1 77043         TIX CH15+3,1,1
77050  0074 00 2 77333         TSX CH21,2
77051 -0500 00 0 76442         CAL LOC+4     L-0
77052 -0602 00 4 77434         ORS REC2R+9,4

77053  0074 00 2 77333  CH16   TSX CH21,2
77054  0774 00 1 00005         AXT 5,1
77055  0074 00 2 77333         TSX CH21,2
77056 -0500 00 0 77547         CAL BIT2      BIT COL 8
77057  0771 00 1 00005         ARS 5,1
77060 -0602 00 4 77434         ORS REC2R+9,4  BIT IN IMAGE
77061  2 00001 1 77055         TIX CH16+2,1,1

77062  0500 00 0 77525  CH17   CLA STOR+6    PUT XRC INTO IMAGE
77063  0765 00 0 00041         LRS 33
77064  0774 00 1 00005         AXT 5,1
77065  0074 00 2 77333         TSX CH21,2
77066 -0500 00 0 77550         CAL BIT2+1    BIT IN COL 19
77067  0771 00 1 00005         ARS 5,1
77070 -0602 00 4 77434         ORS REC2R+9,4 BIT IN IMAGE
77071  2 00001 1 77065         TIX CH17+3,1,1

77072  0560 00 0 77521  CH27   LDQ STOR+2    CONTENTS OF MQ
77073  0774 00 1 00014         AXT 12,1
77074  0074 00 2 77337         TSX CH22,2
77075 -0500 00 0 77544         CAL BIT+10    BIT COL 15
77076  0771 00 1 00014         ARS 12,1
77077 -0602 00 4 77420         ORS REC2L+9,4
77100  2 00001 1 77074         TIX CH27+2,1,1
```

```
77101 -0500 00 0 76441         CAL LOC+3     WAS ROUTINE USING TRAP
77102  0402 00 0 77543         SUB BIT+9
77103 -0100 00 0 77107         TNZ *+4       NO
77104 -0500 00 0 77531         CAL STOR+10   L +1
77105 -0602 00 0 77433         ORS REC2R+8
77106  0020 00 0 77111         TRA *+3

77107 -0500 00 0 77526         CAL STOR+7    L +1
77110 -0602 00 0 77434         ORS REC2R+9

77111  0600 00 0 76441         STZ LOC+3

77112  0774 00 4 00014  CH23   AXT 12,4
77113  0774 00 1 00030         AXT 24,1
77114 -0500 00 4 77423         CAL REC2L+12,4 LEFT HALF
77115  0602 00 1 77711         SLW PR+24,1
77116 -0500 00 4 77437         CAL REC2R+12,4 RIGHT HALF IMAGE
77117  0602 00 1 77712         SLW PR+25,1
77120  2 00001 4 77121         TIX CH23+7,4,1
77121  2 00002 1 77114         TIX CH23+2,1,2

77122  0074 00 1 76427         TSX WPRA,1    PRINT 2ND LINE

77123 -0500 00 0 77525  CH20   CAL STOR+6    PUT TRGS INTO
77124  0765 00 0 00022         LRS 18        IMAGE
77125  0074 00 2 77333         TSX CH21,2
77126 -0500 00 0 77531         CAL STOR+10   BIT IN 35
77127 -0602 00 4 77450         ORS REC3L+9,4  INDICATE DIV CK
77130  0074 00 2 77333         TSX CH21,2
77131 -0500 00 0 77536         CAL BIT+4     BIT COL 12
77132  0771 00 0 00001         ARS 1
77133 -0602 00 4 77464         ORS REC3R+9,4 ACC OVFL

77134  0760 00 0 00000  CH24   CLM           PUT Q + P BITS
77135  0763 00 0 00013         LLS 11        INTO IMAGE
77136  0734 00 4 00000         PAX 0,4
77137 -0500 00 0 77536         CAL BIT+4     BIT IN COL 4
77140  0767 00 0 00002         ALS 2
77141 -0602 00 4 77450         ORS REC3L+9,4 Q BIT

77142  0760 00 0 00000         CLM           GET P BIT
77143  0763 00 0 00001         LLS 1
77144  0734 00 4 00000         PAX 0,4
77145 -0500 00 0 77536         CAL BIT+4
77146  0771 00 0 00002         ARS 2         BIT IN COL 13
77147 -0602 00 4 77450         ORS REC3L+9,4

77150  0560 00 0 77517  CH25   LDQ STOR
77151 -0500 00 0 77540         CAL BIT+6     PUT + SIGN OF
77152  0162 00 0 77155         TQP CH25+5    ACC IN IMAGE
77153 -0602 00 0 77451         ORS REC3L+10  MINUS SIGN OF ACC IN IMAGE
77154  0020 00 0 77156         TRA CH26

77155 -0602 00 0 77452         ORS REC3L+11  INTO IMAGE
```

```
77156  0774 00 1 00014  CH26   AXT 12,1
77157  0074 00 2 77337         TSX CH22,2
77160 -0500 00 0 77544         CAL BIT+10    BIT COL 15
77161  0771 00 1 00014         ARS 12,1
77162 -0602 00 4 77450         ORS REC3L+9,4
77163  2 00001 1 77157         TIX CH26+1,1,1

77164  0774 00 4 00014  CH30   AXT 12,4   PUT 3RD REC INTO
77165  0774 00 1 00030         AXT 24,1   PRINT IMAGE
77166 -0500 00 4 77453         CAL REC3L+12,4 LEFT HALF
77167  0602 00 1 77711         SLW PR+24,1
77170 -0500 00 4 77467         CAL REC3R+12,4 RIGHT HALF
77171  0602 00 1 77712         SLW PR+25,1
77172  2 00001 4 77173         TIX CH30+7,4,1
77173  2 00002 1 77166         TIX CH30+2,1,2

77174  0074 00 1 76427         TSX WPRA,1    PRINT 3RD LINE

77175  0500 00 0 77356  CH32   CLA INDS      PUT INDICATORS IN ACC.
77176  0601 00 0 77661         STO PR        PUT INDS. IN PR. IMAGE
77177  0560 00 0 77661         LDQ PR        INDICATOR FROM STORAGE
77200  0774 00 1 00014         AXT 12,1
77201  0074 00 2 77337         TSX CH22,2
77202 -0500 00 0 77540         CAL BIT+6
77203  0771 00 1 00015         ARS 13,1
77204 -0602 00 4 77500         ORS REC4L+9,4 INDICATORS INTO
77205  2 00001 1 77200         TIX CH32+3,1,1 PRINT RECORD

                                             PUT CONTENT OF KEYS IN

77206  0760 00 0 00004  CH33   ENK           PRINT RECORD
77207  0774 00 1 00014         AXT 12,1
77210  0074 00 2 77337         TSX CH22,2
77211 -0500 00 0 77533         CAL BIT+1
77212  0771 00 1 00020         ARS 16,1
77213 -0602 00 4 77500         ORS REC4L+9,4 KEYS CONTENTS INTO
77214  2 00001 1 77210         TIX CH33+2,1,1 PRINT REC

77215  0774 00 4 00014  CH34   AXT 12,4      PUT 4TH REC
                                             INTO PRINT IMAGE
77216  0774 00 1 00030         AXT 24,1
77217 -0500 00 4 77503         CAL REC4L+12,4
77220  0602 00 1 77711         SLW PR+24,1
77221 -0500 00 4 77517         CAL REC4R+12,4 TAPE CHECK INDICATORS
77222  0602 00 1 77712         SLW PR+25,1
77223  0520 00 0 76420         ZET KONST+7    IS THERE A TAPE CHK
77224  0600 00 1 77712         STZ PR+25,1    NO-  CLEAR RIGHT IMAGE
77225  2 00001 4 77226         TIX *+1,4,1    YES- KEEP RIGHT IMAGE
77226  2 00002 1 77217         TIX CH34+2,1,2

77227  0074 00 1 76427  MUNGN  TSX WPRA,1    PRINT CONTENTS OF INDS
                                             OR SET UP ETI

77230  0500 00 0 77531         CLA STOR+10    L+1
77231  0601 00 0 76414         STO KONST+3
```

```
                                          RESET ACC + MQ CONTENTS

77232  0601 00 0 76420         STO KONST+7
77233  0500 00 0 77525         CLA STOR+6    OVFL BITS
77234  0560 00 0 77517         LDQ STOR      ACC CONTENTS
77235  0763 00 0 00043         LLS 35
77236  0560 00 0 77521         LDQ STOR+2
77237  0441 00 0 77356         LDI INDS

77240  0534 00 2 77523  CH35   LXA STOR+4,2  XRB
77241 -0534 00 1 77523         LXD STOR+4,1  XRA
77242 -0534 00 4 77525         LXD STOR+6,4  XRC

77243  0500 00 0 77353         CLA ORIG      GET-TSX WPRA,1
77244  0601 00 0 77227         STO MUNGN

77245  0140 00 0 77246         TOV EXIT
77246  0020 00 0 76460  EXIT   TRA OK-1

77247  0500 00 0 76420  CH41   CLA KONST+7   IS THIS A REDUNDANCY
                                             TAPE CK PRINT-OUT
77250  0100 00 0 77175         TZE CH32      YES
77251  0774 00 1 00030         AXT 24,1      CLEAR RECORD IMAGE
77252  0600 00 1 77711         STZ PR+24,1
77253  2 00001 1 77252         TIX *-1,1,1

77254 -0500 00 0 77521         CAL STOR+2    WORD GENERATED
77255  0602 00 0 77702  CH43   SLW PR+17
77256  0760 00 0 00006         COM
77257  0602 00 0 77704         SLW PR+19     PRINT IMAGE
77260  0774 00 1 00014         AXT 12,1
77261  0774 00 1 00030         AXT 24,1
77262 -0500 00 1 77601         CAL P92+1,1
77263  0602 00 2 77711         SLW PR+24,2
77264  2 00001 1 77265         TIX CH43+8,1,1
77265  2 00002 2 77262         TIX CH43+5,2,2

77266  0074 00 1 76433         TSX WPR,1     PRINT WORD GENERATED

77267  0500 00 0 77523  CH45   CLA STOR+4
77270  0771 00 0 00022         ARS 18
77271  0402 00 0 76407         SUB WDNO      WORD NUMBER
77272  0765 00 0 00017         LRS 15
77273  0774 00 1 00005         AXT 5,1

77274  0074 00 2 77333  CH46   TSX CH21,2
77275 -0500 00 0 77541         CAL BIT+7     BIT COL 17
77276  0771 00 1 00005         ARS 5,1
77277 -0602 00 4 77612         ORS P93,4     WORD NUMBER INTO
77300  2 00001 1 77274         TIX CH46,1,1  IMAGE
```

```
77301  0534 00 2 77523  CH47   LXA STOR+4,2  XRB
77302  0760 00 0 00000         CLM
77303  0754 00 2 00000         PXA 0,2
77304  0402 00 0 76410         SUB RECNO     RECORD NUMBER
77305  0765 00 0 00017         LRS 15
77306  0774 00 1 00005         AXT 5,1

77307  0074 00 2 77333  CH48   TSX CH21,2
77310 -0500 00 0 77540         CAL BIT+6     BIT COL 5
77311  0771 00 1 00005         ARS 5,1
77312 -0602 00 4 77612         ORS P93,4
77313  2 00001 1 77307         TIX CH48,1,1

77314  0774 00 1 00030  CH49   AXT 24,1      CLEAR RECORD IMAGE
77315  0600 00 1 77711         STZ PR+24,1   LOCATION
77316  2 00001 1 77315         TIX *-1,1,1

77317 -0500 00 0 77517         CAL STOR      WORD READ
77320  0602 00 0 77702  CH50   SLW PR+17
77321  0760 00 0 00006         COM
77322  0602 00 0 77704         SLW PR+19

77323  0774 00 1 00014  CH51   AXT 12,1
77324  0774 00 2 00030         AXT 24,2
77325 -0500 00 1 77615         CAL P95+1,1
77326  0602 00 2 77711         SLW PR+24,2
77327  2 00001 1 77330         TIX CH51+5,1,1
77330  2 00002 2 77325         TIX CH51+2,2,2

77331  0074 00 1 76433         TSX WPR,1     PRINT WORD WRITTEN

77332  0020 00 0 77175         TRA CH32      PRINT INDICATORS AND KEYS

77333  0760 00 0 00000  CH21   CLM
77334  0763 00 0 00003         LLS 3
77335  0734 00 4 00000         PAX 0,4
77336  0020 00 2 00001         TRA 1,2

77337  0760 00 0 00000  CH22   CLM
77340 -0763 00 0 00003         LGL 3
77341  0734 00 4 00000         PAX 0,4
77342  0020 00 2 00001         TRA 1,2

77343  0601 00 0 76441  TRAP   STO LOC+3
77344  0020 00 0 76725         TRA CHK7A

77345 -0602 00 0 77525  DVPLO  ORS STOR+6    OCT 100000
77346  0221 00 0 77531         DVP STOR+10   OCT 1-GET DIV-CHK TO
77347  0020 00 0 76613         TRA CHK1+3    TURN ON DCT LITE
```

```
77350 -0501 00 0 77513  YES    ORA REC4R+8
77351  0020 00 0 76553         TRA TRC+2

77352  0020 00 0 77646  TRPRI  TRA PRI

77353  0074 00 1 76427  ORIG   TSX WPRA,1

77354  0761 00 0 00000  NOP0   NOP

77355  0140 00 0 77246  OFF    TOV EXIT

77356 +000000000000     INDS   OCT 0         STORAGE FOR INDS.


77357 +000000000320     REC1L  OCT 320,10001000,1000000
77360 +000010001000
77361 +000001000000
77362 +004002000042            OCT 4002000042,200000400400
77363 +200000400400
77364 +000000000000            OCT 0,452010001005
77365 -052010001005
77366 +100000000000            OCT 100000000000,0,540010001000
77367 +000000000000
77370 -140010001000
77371 +014003400366            OCT 14003400366,202000000401
77372 +202000000401

77373 +000000000000     REC1R  OCT 0,4000001000,0,100000200
77374 +004000001000
77375 +000000000000
77376 +000100000200
77377 +000000000000            OCT 0,0,4240001000,400,0
77400 +000000000000
77401 +004240001000
77402 +000000000400
77403 +000000000000
77404 +005000001600            OCT 5000001600,000300000000
77405 +000300000000
77406 +000040000000            OCT 40000000

77407 +200000000100     REC2L  OCT 200000000100,440001000
77410 +000440001000
77411 +000000000200            OCT 200,0,40000000000
77412 +000000000000
77413 +040000000000
77414 +000100000000            OCT 100000000
77415 -100400001000            OCT -500400001000,0,40
77416 +000000000000
77417 +000000000040
77420 +100400001200            OCT 100400001200
77421 -000140000100            OCT -400140000100
77422 +240000000040            OCT 240000000040
```

```
77423 +020004000404     REC2R  OCT 20004000404
77424 +200040010000            OCT 200040010000
77425 +040010000110            OCT 40010000110,0,0,0
77426 +000000000000
77427 +000000000000
77430 +000000000000
77431 +200042011020            OCT 200042011020
77432 +010000000000            OCT 10000000000,200
77433 +000000000200
77434 +240050011020            OCT 240050011020
77435 +020004000504            OCT 20004000504,10002000210
77436 +010002000210
77437 +000000000100     REC3L  OCT 100,14420001000
77440 +014420001000
77441 +000200000000            OCT 200000000,0,40,200
77442 +000000000000
77443 +000000000040
77444 +000000000200
77445 +310420001010            OCT 310420001010,4,-0
77446 +000000000004
77447 -000000000000
77450 +010420001040            OCT 10420001040,4200000004
77451 +004200000004
77452 -300000000310            OCT -700000000310

77453 +000000000000     REC3R  OCT 0,-400040000000,0
77454 -000040000000
77455 +000000000000
77456 +005000000000            OCT 5000000000,2000000000,0
77457 +002000000000
77460 +000000000000
77461 -060440000000            OCT -460440000000,0
77462 +000000000000
77463  1 00000 0 00000         PON
77464 -002040000000            OCT -402040000000
77465 +004400000000            OCT 4400000000,161000000000
77466 +161000000000

77467 -000000000000     REC4L  OCT -0,100000,0,0
77470 +000000100000
77471 +000000000000
77472 +000000000000
77473 +200000200000            OCT 200000200000
77474 +100000000000            OCT 100000000000
77475 +000000000000            OCT 0,40000440000
77476 +040000440000
77477 +000000000000            OCT 0,40000140000
77500 +040000140000
77501 +200000400000            OCT 200000400000
77502 -100000200000            OCT -500000200000
```

```
77503 +000000000000     REC4R  OCT 0,-400204444446
77504 -000204444446
77505 +040000000020            OCT 040000000020,000000000200
77506 +000000000200
77507 +020100002000            OCT 020100002000,000000020000
77510 +000000020000
77511 -204404644444            OCT -604404644444,002002000000
77512 +002002000000
77513 +100020000000            OCT 100020000000,-600004444444
77514 -200004444444
77515 +043100000000            OCT 043100000000,124622222222
77516 +124622222222


77517 +000000000000     STOR   OCT 0         ACC CONTENTS
77520 -000200000000            OCT -200000000   22 TO 24
77521 +000000000000            OCT 0         MQ CONTENTS
77522 -000200000000            OCT -200000000   24 TO 26
77523 +000000000000            OCT 0         XRA AND XRB
77524 -000100000000            OCT -100000000   26 TO 27
77525 +000000000000            OCT 0         XRC, OVRL TRGS, TAPE CK
77526 -000500000000            OCT -500000000   27 TO 22
77527 +000000000000            OCT 0         PSE + MSE VALUES
77530 +000000100000            OCT 100000
77531 -000000000001            OCT -1

77532 +000400000000     BIT    OCT 400000000 BIT COL 10
77533 +000000100000            OCT 100000    BIT COL 21
77534 +000000000060            OCT 60
77535 +000010000000     IDE    OCT 10000000
77536 +000200000000            OCT 200000000 BIT COL 11
77537 +000000000010            OCT 10        BIT COL 33
77540 +020000000000            OCT 020000000000 BIT COL 5
77541 +000002000000            OCT 2000000   BIT COL 17
77542 +000000001000            OCT 1000      BIT COL 27
77543 +000000000040            OCT 40        BIT COL 31
77544 +000010000000            OCT 10000000  BIT COL 15
77545 +000000000017            OCT 17
77546 +010000000000            OCT 010000000000

77547 +002000000000     BIT2   OCT 002000000000 BIT COL 8
77550 +000000400000            OCT 400000    BIT COL 19
77551 +000001000000            OCT 1000000
77552 +100020000000            OCT 100020000000

77553 -377017601777     MASK   OCT 777017601777  REC1L
77554 -007760001700            OCT 407760001700  REC1R
77555 -360760001760            OCT -760760001760 REC2L
77556 +374077017776            OCT 374077017776  REC2R
77557 -356720001776            OCT -756720001776 REC3L
77560 -377670000000            OCT -777670000000 REC3R
77561 -341777777777            OCT -741777777777 P92
77562 -340774077777            OCT -740774077777 P95
77563 -360001760000            OCT -760001760000 REC4L
77564 -377776666666            OCT -777776666666 REC4R+9
```

```
*      IMAGE FOR MSE- COMP ERROR- WORD GENERATED

77565 +000003210040           OCT 3210040,1000000000
77566 +001000000000
77567 +000020001000           OCT 20001000,100460000
77570 +000100460000
77571 +100004000704           OCT 100004000704
77572 -000040004002           OCT -000040004002
77573 +001200000010           OCT 1200000010
77574 +200000000000           OCT 200000000000,20
77575 +000000000020
77576 +201000040010           OCT 201000040010
77577 -000163630240           OCT -000163630240
77600 +100204005526     P92   OCT 100204005526


*      IMAGE FOR REC - WORD- WORD READ

77601 -000020000220           OCT -400020000220,400040000
77602 +000400040000
77603 +000000000000           OCT 0,140001400
77604 +000140001400
77605 +200000000010           OCT 200000000010,10000102
77606 +000010000102
77607 +100400040000           OCT 100400040000,0,4
77610 +000000000000
77611 +000000000004
77612 +000500041000     P93   OCT 500041000
77613 -000060000620           OCT -400060000620
77614 +300010000116     P95   OCT 300010000116
```

```
77615  0000 30 0 77661  CTWD   HTR PR,0,24    CTRL WORD FOR PRINTING

77616 +000000000000     IMA    OCT 0,0,0      MASKS FOR ERROR TRACKS
77617 +000000000000
77620 +000000000000
77621 +101010101010            OCT 101010101010 8 BIT
77622 +000000000000            OCT 0,0,0,0,0,0,0
77623 +000000000000
77624 +000000000000
77625 +000000000000
77626 +000000000000
77627 +000000000000
77630 +000000000000
77631 +040404040404            OCT 040404040404 4 BIT
77632 +000000000000            OCT 0,0,0
77633 +000000000000
77634 +000000000000
77635 -024242424242            OCT 424242424242 2 + B BIT
77636 +000000000000            OCT 0
77637 +212121212121            OCT 212121212121 1 + A BIT
77640 +000000000000            OCT 0,0,0,0,0
77641 +000000000000
77642 +000000000000
77643 +000000000000
77644 +000000000000
77645 -206060606060            OCT 606060606060 B + A BITS



77646  0500 00 0 76420  PRI    CLA KONST+7    ERROR INDICATORS
77647  0100 00 0 77657         TZE OUT        NO ERROR-
77650 -0500 00 0 77521         CAL STOR+2     ERROR-GET BAD WORD
77651  0322 00 0 77517         ERA STOR       PUT ONES IN ERROR BITS

77652  0774 00 1 00027         AXT 23,1
77653  0560 00 1 77567  MVE    LDQ IMA-23,1   PUT MASK IN PRINT
77654 -0600 00 1 77631         STQ PR-24,1    IMAGE AND MODIFY
77655  0320 00 1 77631         ANS PR-24,1    WITH ERROR BITS
77656  2 00002 1 77653         TIX MVE,1,2

77657  0074 00 1 76433  OUT    TSX WPR,1      PRINT LINE FOUR
77660  0020 00 0 77230         TRA MUNGN+1    CONTIUNE 9DEPRX



77661 +000000000000     PR     OCT            PRINT IMAGE



                  00000         END
```

EOF*