```
                        REM     &
```

IDENTIFICATION

PRODUCT CODE	AC-E127B-MC
PRODUCT NAME	CFFPCB0 11/34 FPP DIAG PRT3
PRODUCT DATE	15-FEBRUARY-1978
MAINTAINER.	DIAGNOSTIC ENGINEERING
AUTHOR	ANTHONY VEZZA
MODIFIED BY	BARRY SUSSMAN 15-FEB-78

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9 1 XXXXX

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10 1 XXXXX

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                        ---------

        THE THREE PROGRAMS

                DFFPA DFFPB CFFPC

        ARE DESIGN TO DETECT AND REPORT LOGIC FAULTS IN  THE
        PDP  11/34  FP11-A  FLOATING  POINT  PROCESSOR   THE
        DESIGN IS AN ATTEMPT TO REACH ALL ROM  STATES,  TAKE
        ALL  BRANCH  MICRO  TESTS (BUT'S) AND VARIFY ALL THE
        LOGIC.  THEY CONSIST OF 155 (OCT)  INDIVIDUAL  TESTS
        SEQUENCED  TO  DETECT AND ATTEMPT TO IDENTIFY FAULTS
        WITH A MINIMUM  HARDWARE  OR  SOFTWARE  LEVEL    THE
        TESTS  ARE PARTIONED INTO THREE STAND-ALONE PROGRAMS
        DESCRIBED BELOW

        NOTE THAT ERROR REPORTS IN THESE PROGRAMS ARE  BASED
        UPON THE KNOWLEDGE THAT ALL PREVIOUS TESTS HAVE BEEN
        RUN AND IN MOST CASE THAT THERE  IS  ONLY  A  SINGLE
        POINT FAULT IN THE FP11-A   IF THE PROGRAMS OR TESTS
        ARE NOT RUN IN ORDER THEN ERROR MESSAGES MAY NOT  BE
        ACCURATE.


        A       DFFPA

        DFFPA TESTS:

                LDFPS
                STFPS
                CFCC
                SETF, SETD, SETI AND SETL
                STST
                LDF AND LDD (ALL SOURCE MODES)
                STD (MODE 0 AND 1)
                ADDF, ADDD AND SUBD (MOST CONDITIONS)

        B       DFFPB

        DFFPB TESTS

                ADDF, ADDD  AND  SUBD  (ALL  CONDITIONS  NOT
                               TESTED IN DFFPA)
                CMPD AND CMPF
                DIVD AND DIVF
                MULD AND MULF
                MODD AND MODF

        C       CFFPC

        CFFPC TESTS:

                STF AND STD (ALL MODES)
                STCFD  AND   STCDF
                CLRD AND CLRF
                NEGF AND NEGD
```

ABSF AND ABSD
TSTF AND TSTD
NEGF, ABSF AND TSTF (ALL SOURCE MODES)
NEGF, ABSF AND TSTF (ALL SOURCE MODES)
LDFPS (ALL SOURCE MODES)
LDCIF AND LDCLF
LDCID AND LDCLD
LDEXP
STFPS (ALL DESTINATION MODES)
STCFL AND STCFI
STCDL AND STCDI
STEXP
STST

2 REQUIREMENTS

2 1 EQUIPMENT

A PDP 11/34 (WITH OR WITHOUT CONSOLE), LA30 (OR EQUIVALENT) AND AN FP11-A FLOATING POINT PROCESSOR NOTE THAT A SPECIAL INTERRUPTS TEST MODULE IS BEING DESIGNED FOR USE IN THE MANUFACTURING ENVIRONMENT WHEN THIS DEVICE IS PRESENT THE PROGRAM DFFPB WILL MAKE USE OF IT TO TEST THE FPP INTERRUPT ON BUS REQUEST FUNCTIONS

2 2 STORAGE

ALL THREE PROGRAM REQUIRE A MEMORY SYSTEM OF AT LEAST 16K TO LOAD AND RUN

2 3 PRELIMINARY PROGRAMS

THESE THREE DIAGNOSTICS WILL ASSUME THAT THE PDP 11/34 CENTRAL PROCESSOR IS FAULTLESS, THEREFORE WHEN IN DOUBT RUN THE PDP 11/34 PROCESSOR DIAGNOSTICS BEFORE THESE FP11-A DIAGNOSTICS

3 LOADING PROCEDURE

THE PROGRAMS WILL BE SUPPLIED ON THE 11/34 DIAGNOSTIC MEDIA REFER TO THE XXDP OPERATING MANUAL FOR FURTHER INFORMATION

4 STARTING PROCEDURE

4 1 CONTROL SWITCH SETTINGS

SEE SECTION 5 1

4 2 PROGRAM AND OPERATOR ACTION

```
                        1       LOAD PROGRAM INTO MEMORY
                        2       LOAD ADDRESS 200
                        3       SET CONSOLE SWITCHES (IF CONSOLE IS PRESENT)
                        4       PRESS START
                                ON FIRST PASS  THE  PROGRAM
                                WILL IDENTIFY ITSELF  NOTE THAT IF THERE IS
                                NO PHYSICAL CONSOLE THE PROGRAM WILL REQUEST
                                THE  OPERATOR  FOR  INITIAL  VALUE  FOR  THE
                                SOFTWARE SWITCH REGISTER (SEE SECTION  8.5)
                                IF RUNNING UNDER ACT, APT OR CHAIN THIS DOES
                                NOT APPLY.
                        5       THE PROGRAM WILL LOOP AND AN END OF PASS AND
                                ERROR  SUMMARY  WILL  BE TYPED AT THE END OF
                                EVERY PASS

5                               OPERATING PROCEDURE
                                ------------------

5 1     OPERATIONAL SWITCH SETTINGS

        THE SWITCH SETTING ARE

                                OCTAL
        SW(15)=1                100000      HALT ON ERROR
        SW(14)=1                 40000      LOOP ON CURRENT TEST
        SW(13)=1                 20000      INHIBIT ERROR TYPE OUTS
        SW(12)=1.                10000      INHIBIT T-BIT TRAPPING
        SW(11)=1                  4000      INHIBIT ITERATIONS
        SW(10)=1                  2000      RING TTY BELL ON ERROR
        SW(9)=1                   1000      LOOP ON ERROR
        SW(8)=1                    400      LOOP  ON  TEST  SPECIFIED  IN  SW(6)
                                            THROUGH SW(0)
        SW(7)=1                    200      PRINT   ERROR   SUMMARY   EVEN    IF
                                            SW(13)=1,   THIS   APPLIES  ONLY  TO
                                            PROGRAM DFFPA
        SW(7)=1                    200      DESELECT CORRECT INTERRUPT  TEST  IN
                                            PROGRAM  DFFPB   NOTE THAT THIS TEST
                                            WILL AUTOMATICALLY BE DESELECTED  BY
                                            THE  ABSENCE  OF  THE  SPECIAL  TEST
                                            EQUIPMENT DESIGNED TO  CONDUCT  THIS
                                            TEST    IF  THIS  EQUIPMENT  IS  NOT
                                            INSTALLED  THERE  IS  NO   NEED   TO
                                            DESELECT  THIS  TEST    THIS APPLIES
                                            ONLY TO PROGRAM DFFPB'


6                               ERRORS
                                ------

6 1     SUMMARIES

        IN PROGRAM DFFPA TESTS 1 AND 11 HAVE A SPECIAL ERROR
        SUMMARY  FEATURE    THESE  TWO  TEST  RUN  MANY TEST
        PATTERNS THROUGH  THE  LOGIC    AFTER  AN  ERROR  IS
        ENCOUNTERED, ONLY THE FIRST FIVE ERRORS ARE REPORTED
```

```
                        (TYPED ON THE TTY)  EVERY ERROR  THOUGH  IS  LOGGED
                        AND  AN  ERROR  SUMMARY  IS PRINTED WHEN THE TEST IS
                        COMPLETE   NOTE THAT IS SW(13)=1 THIS  SUMMARY  WILL
                        NOT  BE TYPED UNLESS SW(7)=1   IN OTHER WORDS TO GET
                        JUST AN ERROR SUMMARY FROM EITHER OF THESE TWO TESTS
                        1  AND  11  IN  PROGRAM DFFPA BOTH SWITCHES 13 AND 7
                        MUST = 1

                6 2     ERROR RECOVERY

                        SW(15 9)=0      MOST ERRORS WILL CAUSE EXECUTION  TO
                                        GO  TO  THE  START  OF THE NEXT TEST
                                        AFTER THE MESSAGE IS TYPED    A  FEW
                                        TESTS  ARE  IN  SECTIONS    IN THESE
                                        TESTS AN ERROR WILL CAUSE  EXECUTION
                                        TO  GO TO THE NEXT SECTION AFTER THE
                                        MESSAGE IS TYPED

                        SW(15)=1        THE PROGRAM WILL HALT  AFTER  TYPING
                                        THE  ERROR  MESSAGE    PRESSING  THE
                                        CONSOLE  CONTINUE  WILL  CAUSE   THE
                                        PROGRAM TO CONTINUE AS IF SW(15)=0

                7                       RESTRICTIONS
                                        ------------

                        NONE


                8                       MISCELLANEOUS
                                        -------------

                8 1     EXECUTION TIMES

                        LESS THAN 10 SECONDS FOR EACH PROGRAM ON ANY PASS

                8 2     STACK POINTER

                        THE STACK POINTER IS INITIALIZED TO 1100 IN EACH  OF
                        THE THREE PROGRAMS

                8 3     PASS COUNT

                        THE PROGRAM MAKES ONE PASS  FOR  EACH  END  OF  PASS
                        MESSAGE  TYPED.    THE  END OF PASS MESSAGE DESCRIBES
                        THE TOTAL NUMBER OF PASSES COMPLETED AND  THE  TOTAL
                        NUMBER OF ERRORS SINCE THE LAST END OF PASS MESSAGE

                8 4     T-BIT TRAPPING

                        IF SW(12)=0 EACH PROGRAM WILL RUN WITH  TRACE  TRAPS
                        ON  EVERY  OTHER  PASS    FIRST PASS WILL NOT ENABLE
                        TRACE TRAPS.  NOTE SW(12)=1 DISABLES T-BIT TRAPS

                8 5     SOFTWARE SWITCH REGISTER
```

EACH OF THE THREE PROGRAMS WILL RUN WITH OR WITHOUT A CONSOLE SWITCH REGISTER IF A PHYSICAL CONSOLE SWITCH REGISTER IS PRESENT ON THE SYSTEM, THEN THESE PROGRAMS WILL GO AHEAD AND USE IT FOR THE SWITCH FUNCTIONS DESCRIBED IN 5.1 ABOVE. IF HOWEVER THERE IS NO CONSOLE SWITCH REGISTER ON THE SYSTEM A SOFTWARE SWITCH REGISTER WILL BE USED THIS SOFTWARE SWITCH REGISTER CAN BE EXAMINED OR MODIFIED AT ANY TIME BY THE USER IF HE TYPES CONTROL G WHILE THE PROGRAM IS RUNNING. THIS CONTROL G WILL CAUSE THE CONTENTS OF THE SOFTWARE SWITCH REGISTER TO BE TYPED ON THE TTY AND ASK THE USER FOR A NEW VALUE WHEN THE USER TYPES A VALUE AND CARRIAGE RETURN THEN THE PROGRAM WILL RESUME TESTING AT THE SAME POINT AT WHICH IT LEFT OFF WHEN THE USER TYPED CONTROL G NOTE THAT WHEN NOT RUNNING UNDER ACT, APT OR CHAIN THE USER WILL BE ASKED FOR A SOFTWARE SWITCH REGISTER VALUE AFTER LOADING ADDRESS 200 AND STARTING THE PROGRAM THE FIRST TIME THE PROGRAM IS RUN AFTER LOADING (ONLY IF NO CONSOLE SWITCH REGISTER IS ON THE SYSTEM)

8.6 INTERRUPTS TEST

IN PROGRAM DFFPB THERE IS A SPECIAL TEST FOR CHECKING THE CORRECT FLOWS OF THE FPP THIS TEST CAN BE RUN ONLY IF A SPECIAL TEST MODULE IS IN THE SYSTEM. THIS MODULE WILL PROBABLY ONLY BE USED IN MANUFACTURING. IF THIS MODULE IS NOT IN THE SYSTEM THIS TEST WILL AUTOMATICALLY BE DESELECTED IF THIS TEST MODULE IS ON THE SYSTEM AND SW(7)=0 THIS TEST WILL BE RUN IF SW(7)=1 THIS TEST WILL BE DESELECTED.

8.7 ACT, APT AND XXDP COMPATIBILITY

THESE PROGRAMS ARE FULLY COMPATIBLE WITH
- APT
- ACT
- XXDP MONITOR AND CHAIN PROGRAMS

9 PROGRAM DESCRIPTION

```
383
384
385
386                             TEST 1          STF WITH ILLEGAL ACCUMULATOR TEST
387                             ------          ---------------------------------
388
389                                     THIS IS A TEST OF THE ST INSTRUCTION  USING  ILLEGAL
390                                     ACCUMULATOR 7, MODE 0.
391
392                             TEST 2          FDST MODE 1, FLOATING MODE, TEST
393                             ------          --------------------------------
394
395                                     THIS IS A TEST OF THE  STF  INSTRUCTION  USING  FDST
396                                     MODE 1.
397
398                             TEST 3          FDST MODE 2 TEST
399                             ------          ----------------
400
401                                     THIS IS A TEST OF BOTH STF AND STD WITH FDST MODE 2
402
403                             TEST 4          FDST MODE 2, WITH GR7, TEST
404                             ------          ---------------------------
405
406                                     THIS IS A TEST OF STF WITH GR7 MODE 2  OR  IMMEDIATE
407                                     MODE
408
409                             TEST 5          FDST MODE 4 TEST
410                             ------          ----------------
411
412                                     THIS IS A TEST OF STD WITH FDST MODE 4
413
414                             TEST 6          FDST MODE 3 TEST
415                             ------          ----------------
416
417                                     THIS IS A TEST OF FDST MODE 3 USING STD
418
419                             TEST 7          FDST MODE 5 TEST
420                             ------          ----------------
421
422                                     THIS IS A TEST OF FDST MODE 5 USING STD
423
424                             TEST 10         FDST MODE 6, INDEX MODE, TEST
425                             -------         -----------------------------
426
427                                     THIS IS A TEST OF FDST MODE  6,  INDEX  MODE,  USING
428                                     STD.
429
430                             TEST 11         FDST MODE 7, INDEX DEFERRED MODE, TEST
431                             -------         --------------------------------------
432
433                                     THIS IS A TEST OF FDST MODE 7, INDEX DEFERRED  MODE,
434                                     USING STD.
435
436                             TEST 12         STCFD TEST
437                             -------         ----------
438
```

```
                                THIS IS A TEST OF THE STCFD INSTRUCTION

                        TEST 13         STCDF TEST
                        -------         ----------

                                THIS IS A TEST OF THE STCDF INSTRUCTION

                        TEST 14         STCFD WITH ILLEGAL ACCUMULATOR TEST
                        -------         ----------------------------------

                                THIS TEST STCFD WITH ILLEGAL AC 6

                        TEST 15         CLRD TEST
                        -------         ---------

                                THIS IS A TEST OF THE CRLF AND CLRD INSTRUCTIONS

                        TEST 16         CLRD WITH ILLEGAL ACCUMULATOR TEST
                        -------         ---------------------------------

                                THIS IS A TEST OF CLRD WITH ILLEGAL AC7

                        TEST 17         NEGF, ABSF AND TSTF SOURCE MODE 0 WITH ILLEGAL AC7, TEST
                        -------         -------------------------------------------------------

                                THIS IS A TEST OF THE SPECIAL DEST FLOWS  USING  THE
                                NEGD INST WITH MODE ZERO AND ILLEGAL AC7

                        TEST 20         NEGF, ABSF AND TSTF SOURCE MODE 0 TEST
                        -------         --------------------------------------

                                THIS IS A TEST THE NEGF, ABSF AND TSTF SOURCE FLOWS
                                THE NEGD INSTRUCTION IS USED TO TEST MODE 0

                        TEST 21         NEGF, ABSF AND TSTF SOURCE MODE 1 TEST
                        -------         --------------------------------------

                                THIS IS A TEST THE NEGF, ABSF AND TSTF SOURCE FLOWS
                                THE NEGD INSTRUCTION IS USED TO TEST MODE 1

                        TEST 22         NEGF, ABSF AND TSTF SOURCE MODE 2 TEST
                        -------         --------------------------------------

                                THIS IS A TEST THE NEGF, ABSF AND TSTF SOURCE FLOWS
                                THE ABSD INSTRUCTION IS USED TO TEST MODE 2

                        TEST 23         NEGF, ABSF AND TSTF SOURCE MODE 4 TEST
                        -------         --------------------------------------

                                THIS IS A TEST THE NEGF, ABSF AND TSTF SOURCE FLOWS
                                THE ABSD INSTRUCTION IS USED TO TEST MODE 4

                        TEST 24         NEGF, ABSF AND TSTF SOURCE MODE 3 TEST
                        -------         --------------------------------------

                                THIS IS A TEST THE NEGF, ABSF AND TSTF SOURCE FLOWS
```

```
                                THE ABSD INSTRUCTION IS USED TO TEST MODE 3

TEST 25         NEGF, ABSF AND TSTF SOURCE MODE 5 TEST
-------         --------------------------------------

                THIS IS A TEST THE NEGF, ABSF AND TSTF SOURCE FLOWS
                THE NEGD INSTRUCTION IS USED TO TEST MODE 5

TEST 26         NEGF, ABSF AND TSTF SOURCE MODE 6 TEST
-------         --------------------------------------

                THIS IS A TEST THE NEGF, ABSF AND TSTF SOURCE FLOWS
                THE ABSD INSTRUCTION IS USED TO TEST MODE 6

TEST 27         NEGF, ABSF AND TSTF SOURCE MODE 7 TEST
-------         --------------------------------------

                THIS IS A TEST THE NEGF, ABSF AND TSTF SOURCE FLOWS
                THE ABSD INSTRUCTION IS USED TO TEST MODE 6

TEST 30         NEGF, ABSF AND TSTF SOURCE MODE 6, GR7, TEST
-------         --------------------------------------------

                THIS IS A TEST THE NEGF, ABSF AND TSTF SOURCE FLOWS
                THE NEGD INSTRUCTION IS USED TO TEST MODE 6

TEST 31         NEGF, ABSF AND TSTF SOURCE MODE 7, GR7, TEST
-------         --------------------------------------------

                THIS IS A TEST THE NEGF, ABSF AND TSTF SOURCE FLOWS
                THE ABSD INSTRUCTION IS USED TO TEST MODE 7

TEST 32         SPECIAL DEST, MODE 0, TEST
-------         --------------------------

                THIS IS A TEST OF THE NEGF ABSF AND TSTF DESTINATION
                FLOWS MODE 0 USING THE NEGD INSTR

TEST 33         SPECIAL DEST, MODE 1, TEST
-------         --------------------------

                THIS IS A TEST OF THE NEGF ABSF AND TSTF DESTINATION
                FLOWS MODE 1 USING THE NEGD INSTR

TEST 34         SPECIAL DEST, MODE 2, TEST
-------         --------------------------

                THIS IS A TEST OF THE NEGF ABSF AND TSTF DESTINATION
                FLOWS MODE 2 USING THE NEGD INSTR

TEST 35         SPECIAL DEST, MODE 4, TEST
-------         --------------------------

                THIS IS A TEST OF THE NEGF ABSF AND TSTF DESTINATION
                FLOWS MODE 4 USING THE NEGD INSTR
```

```
                        TEST 36         SPECIAL DEST, MODE 3, TEST
                        -------         --------------------------

                                THIS IS A TEST OF THE NEGF ABSF AND TSTF DESTINATION
                                FLOWS MODE 3 USING THE NEGD INSTR

                        TEST 37         SPECIAL DEST, MODE 5, TEST
                        -------         --------------------------

                                THIS IS A TEST OF THE NEGF ABSF AND TSTF DESTINATION
                                FLOWS MODE 5 USING THE NEGD INSTR

                        TEST 40         SPECIAL DEST, FLOATING MODE 2, TEST
                        -------         -----------------------------------

                                THIS IS A TEST OF THE NEGF ABSF AND TSTF DESTINATION
                                FLOWS MODE 2 USING THE NEGF INSTR

                        TEST 41         SPECIAL DEST, MODE2, GR7 (IMMEDIATE), TEST
                        -------         ------------------------------------------

                                THIS IS A TEST OF THE NEGF ABSF AND TSTF DESTINATION
                                FLOWS MODE 2(IMMEDIATE) USING THE NEGD INSTR

                        TEST 42         SPECIAL DEST, MODE 6, TEST
                        -------         --------------------------

                                THIS IS A TEST OF THE NEGF ABSF AND TSTF DESTINATION
                                FLOWS MODE 6 USING THE NEGD INSTR

                        TEST 43         SPECIAL DEST, MODE 7, TEST
                        -------         --------------------------

                                THIS IS A TEST OF THE NEGF ABSF AND TSTF DESTINATION
                                FLOWS MODE 7 USING THE NEGD INSTR

                        TEST 44         NEGD, ABSD AND TSTD TEST
                        -------         ------------------------

                                THIS IS A TEST OF THE NEGD ABSD AND TSTD
                                INSTRUCTIONS.

                        TEST 45         SOURCE MODES, MODE 1 (FL=0), TEST
                        -------         ---------------------------------

                                THIS IS A TEST OF SOURCE MODE 1 USING THE LDFPS
                                INSTR

                        TEST 46         SOURCE MODES, MODE 2 (FL=0), TEST
                        -------         ---------------------------------

                                THIS IS A TEST OF SOURCE MODE 2 USING THE LDFPS
                                INSTR

                        TEST 47         SOURCE MODES, MODE 4 (FL=0), TEST
                        -------         ---------------------------------
```

```
                                THIS IS A TEST OF SOURCE  MODE  4  USING  THE  LDFPS
                                INSTR

                        TEST 50         SOURCE MODES, MODE 3 (FL=0), TEST
                        -------         ---------------------------------

                                THIS IS A TEST OF SOURCE  MODE  3  USING  THE  LDFPS
                                INSTR

                        TEST 51         SOURCE MODES, MODE 5 (FL=0), TEST
                        -------         ---------------------------------

                                THIS IS A TEST OF SOURCE  MODE  5  USING  THE  LDFPS
                                INSTR

                        TEST 52         SOURCE MODES, MODE 6 (FL=0), TEST
                        -------         ---------------------------------

                                THIS IS A TEST OF SOURCE  MODE  6  USING  THE  LDFPS
                                INSTR

                        TEST 53         SOURCE MODES, MODE 7 (FL=0), TEST
                        -------         ---------------------------------

                                THIS IS A TEST OF SOURCE  MODE  7  USING  THE  LDFPS
                                'NSTR

                        TEST 54         SOURCE MODES, MODE 2 GR7 (FL=1), TEST
                        -------         ------------------------------------

                                THIS  IS  A  TEST  OF  THE  LDCLD  WITH  IMMEDIATE
                                ADDRESSING MODE

                        TEST 55         SOURCE MODES, MODE 2 (FL=1), TEST
                        -------         ---------------------------------
                                THIS IS A TEST OF THE LDCLD INSTR WITH MODE 2

                        TEST 56         LDCIF AND LDCLF TEST
                        -------         --------------------

                                THIS  IS  A  TEST  OF  THE  LDCIF  AND  THE  LDCLF
                                INSTRUCTIONS.

                        TEST 57         LDCID AND LDCLD TEST
                        -------         --------------------

                                THIS IS A TEST OF LDCID AND LDCLD

                        TEST 60         LDEXP TEST
                        -------         ----------

                                THIS IS A TEST OF THE LDEXP  INST  A  SUBROUTINE  IS
                                USED  TO SET UP OPERANDS, EXECUTE THE LDEXP INST AND
                                CHECK THE RESULTS
```

```
                                TEST 61         DESTINATION MODES, MODE 1 (FL=0), TEST
                                -------         --------------------------------------

                                        THIS IS A TEST OF DESTINATION MODE 1 USING THE STFPS
                                        INSTRUCTION

                                TEST 62         DESTINATION MODES, MODE 2 (FL=0), TEST
                                -------         --------------------------------------

                                        THIS IS A TEST OF DESTINATION MODE 2 USING THE STFPS
                                        INSTRUCTION

                                TEST 63         DESTINATION MODES, MODE 4 (FL=0), TEST
                                -------         --------------------------------------

                                        THIS IS A TEST OF DESTINATION MODE 4 USING THE STFPS
                                        INSTRUCTION

                                TEST 64         DESTINATION MODES, MODE 3 (FL=0), TEST
                                -------         --------------------------------------

                                        THIS IS A TEST OF DESTINATION MODE 3 USING THE STFPS
                                        INSTRUCTION

                                TEST 65         DESTINATION MODES, MODE 5 (FL=0), TEST
                                -------         --------------------------------------

                                        THIS IS A TEST OF DESTINATION MODE 5 USING THE STFPS
                                        INSTRUCTION

                                TEST 66         DESTINATION MODES, MODE 6 (FL=0), TEST
                                -------         --------------------------------------

                                        THIS IS A TEST OF DESTINATION MODE 6 USING THE STFPS
                                        INSTRUCTION

                                TEST 67         DESTINATION MODES, MODE 7 (FL=0), TEST
                                -------         --------------------------------------

                                        THIS IS A TEST OF DESTINATION MODE 7 USING THE STFPS
                                        INSTRUCTION

                                TEST 70         DESTINATION MODES, MODE 2 (FL=1), TEST
                                -------         --------------------------------------

                                        THIS IS A TEST OF DESTINATION  MODE  2  USING  STCOL
                                        WITH REGISTER 0

                                TEST 71         DESTINATION MODES, MODE 4 (FL=1), TEST
                                -------         --------------------------------------

                                        THIS IS A TEST OF DESTINATION  MODE  4  USING  STCDL
                                        WITH REGISTER 0

                                TEST 72         STCDI AND STCDL TEST
                                -------         --------------------
```

```
                                        THIS IS A TEST OF THE STCDI AND STCDL  INSTRUCTIONS
                                        NOTE  THAT  A  SUBROUTINE, STCSUB, IS USED TO SET UP
                                        THE OPERANDS, EXECUTE THE STC INSTRUCTION AND  CHECK
                                        THE RESULT.

                                TEST 73         STCFL AND STCFI TEST
                                -------         --------------------

                                        THIS IS A TEST OF STCFL AND STCFI   IT MAKES USE  OF
                                        THE  SAME SUBROUTINE, STCSUB, WHICH WAS USED TO TEST
                                        STCDL AND STCDI.

                                TEST 74         STEXP TEST
                                -------         ----------

                                        THIS IS A TEST OF THE STEXP INSTRUCTION

                                TEST 75         STST TEST
                                -------         ---------

                                        THIS IS A TEST OF THE STST  INSTRUCTION    FIRST  AN
                                        ILLEGAL  FPS  OP CODE (INSTRUCTION) IS USED TO ENTER
                                        AN ERROR CONDITION IN THE FEC AND FEA   THE STST  IS
                                        EXECUTED AND THE FEC AND FEA ARE CHECKED

                                10                      LISTING
                                --                      -------

                                &

000443                          MNUMBER=443
000003                          PROGNUM=3

                                        .LIST   ME
                                         NLIST  MD,MC,CND
```

```
775
776
777
778
779
780
781
782
783
784
785
786
787
788
789
790
```

```
                                    ENABL  ABS

                                TITLE  CFFPCBO 11/34 FPP DIAG PRT3
                               ,*COPYRIGHT (C) 1978
                               ,*DIGITAL EQUIPMENT CORP
                               ,*MAYNARD, MASS. 01754
                               ,*
                               ,*PROGRAM BY ANTHONY S  VEZZA
                               ,*
                               ,*THIS PROGRAM WAS ASSCMBLED USING THE PDP-11 MAINDEC SYSMAC
                               ,*PACKAGE (MAINDEC-11-DZQAC-C2), SEPT 14, 1976
                               ,*
        000001                 $TN=1
        160000                 $SWR=160000      ,,HALT ON ERROR, LOOP ON TEST, INHIBIT ERROR TYPOUT


        000244                 FPVECT=244
        177400                 $SWR=177400
        000200                 $SWRMSK=200
        000011                 TAB=11
        000015                 CRLF=15

                                SBTTL  BASIC DEFINITIONS

                                *INITIAL ADDRESS OF THE STACK POINTER *** 1100 ***
        001100                 STACK=  1100
                                EQUIV  EMT,ERROR        ,;BASIC DEFINITION OF ERROR CALL
                               .EQUIV  IOT,SCOPE        ,,BASIC DEFINITION OF SCOPE CALL

                               ;*MISCELLANEOUS DEFINITIONS
        000011                 HT=     11               ,,CODE FOR HORIZONTAL TAB
        000012                 LF=     12               ,;CODE FOR LINE FEED
        000015                 CR=     15               ,,CODE FOR CARRIAGE RETURN
        000200                 CRLF=   200              ,,CODE FOR CARRIAGE RETURN-LINE FEED
        177776                 PS=     177776           ,,PROCESSOR STATUS WORD
                               .EQUIV  PS,PSW
        177774                 STKLMT= 177774           ,,STACK LIMIT REGISTER
        177772                 PIRQ=   177772           ,,PROGRAM INTERRUPT REQUEST REGISTER
        177570                 DSWR=   177570           ,,HARDWARE SWITCH REGISTER
        177570                 DDISP=  177570           ,,HARDWARE DISPLAY REGISTER

                               ,*GENERAL PURPOSE REGISTER DEFINITIONS
        000000                 R0=     %0               ,,GENERAL REGISTER
        000001                 R1=     %1               ,,GENERAL REGISTER
        000002                 R2=     %2               ,,GENERAL REGISTER
        000003                 R3=     %3               ,,GENERAL REGISTER
        000004                 R4=     %4               ,,GENERAL REGISTER
```

```
000005                  R5=     %5              ;;GENERAL REGISTER
000006                  R6=     %6              ;;GENERAL REGISTER
000007                  R7=     %7              ;;GENERAL REGISTER
000006                  SP=     %6              ;;STACK POINTER
000007                  PC=     %7              ;;PROGRAM COUNTER

                        ;%PRIORITY LEVEL DEFINITIONS
000000                  PR0=    0               ;;PRIORITY LEVEL 0
000040                  PR1=    40              ;;PRIORITY LEVEL 1
000100                  PR2=    100             ;;PRIORITY LEVEL 2
000140                  PR3=    140             ;;PRIORITY LEVEL 3
000200                  PR4=    200             ;;PRIORITY LEVEL 4
000240                  PR5=    240             ;;PRIORITY LEVEL 5
000300                  PR6=    300             ;;PRIORITY LEVEL 6
000340                  PR7=    340             ;;PRIORITY LEVEL 7

                        ;%"SWITCH REGISTER' SWITCH DEFINITIONS
100000                  SW15=   100000
040000                  SW14=   40000
020000                  SW13=   20000
010000                  SW12=   10000
004000                  SW11=   4000
002000                  SW10=   2000
001000                  SW09=   1000
000400                  SW08=   400
000200                  SW07=   200
000100                  SW06=   100
000040                  SW05=   40
000020                  SW04=   20
000010                  SW03=   10
000004                  SW02=   4
000002                  SW01=   2
000001                  SW00=   1
                         EQUIV  SW09,SW9
                         EQUIV  SW08,SW8
                         EQUIV  SW07,SW7
                         EQUIV  SW06,SW6
                         EQUIV  SW05,SW5
                         EQUIV  SW04,SW4
                         EQUIV  SW03,SW3
                         EQUIV  SW02,SW2
                         EQUIV  SW01,SW1
                         EQUIV  SW00,SW0

                        ;%DATA BIT DEFINITIONS (BIT00 TO BIT15)
100000                  BIT15=  100000
040000                  BIT14=  40000
020000                  BIT13=  20000
010000                  BIT12=  10000
004000                  BIT11=  4000
002000                  BIT10=  2000
001000                  BIT09=  1000
000400                  BIT08=  400
000200                  BIT07=  200
000100                  BIT06=  100
000040                  BIT05=  40
```

```
                                BIT04=  20
                                BIT03=  10
                                BIT02=  4
                                BIT01=  2
                                BIT00=  1
                                 EQUIV  BIT09,BIT9
                                 EQUIV  BIT08,BIT8
                                 EQUIV  BIT07,BIT7
                                 EQUIV  BIT06,BIT6
                                 EQUIV  BIT05,BIT5
                                 EQUIV  BIT04,BIT4
                                 EQUIV  BIT03,BIT3
                                 EQUIV  BIT02,BIT2
                                 EQUIV  BIT01,BIT1
                                 EQUIV  BIT00,BIT0

                                ,*BASIC "CPU" TRAP VECTOR ADDRESSES
                                ERRVEC= 4               ,,TIME OUT AND OTHER ERRORS
                                RESVEC= 10              ,,RESERVED AND ILLEGAL INSTRUCTIONS
                                TBITVEC=14              ,,"T" BIT
                                TRTVEC= 14              ,,TRACE TRAP
                                BPTVEC= 14              ,,BREAKPOINT TRAP (BPT)
                                IOTVEC= 20              ,,INPUT/OUTPUT TRAP (IOT) **SCOPE**
                                PWRVEC= 24              ,,POWER FAIL
                                EMTVEC= 30              ,,EMULATOR TRAP (EMT) **ERROR**
                                TRAPVEC=34              ,,"TRAP" TRAP
                                TKVEC=  60              ,,TTY KEYBOARD VECTOR
                                TPVEC=  64              ,,TTY PRINTER VECTOR
                                PIRQVEC=240             ,,PROGRAM INTERRUPT REQUEST VECTOR
                                 SBTTL  FPP REGISTER DEFINITIONS
                                AC0     =%0
                                AC1     =%1
                                AC2     =%2
                                AC3     =%3
                                AC4     =%4
                                AC5     =%5
                                AC6     =%6
                                AC7     =%7

                                 SBTTL  TRAP CATCHER

                                        =0
                                ,*ALL UNUSED LOCATIONS FROM 4 - 776 CONTAIN A " +2,HALT"
                                ,*SEQUENCE TO CATCH ILLEGAL TRAPS AND INTERRUPTS
                                ,*LOCATION 0 CONTAINS 0 TO CATCH IMPROPERLY LOADED VECTORS
                                        =174
000174  000000                  DISPREG   WORD  0               ,,SOFTWARE DISPLAY REGISTER
000176  000000                  SWREG     WORD  0               ,,SOFTWARE SWITCH REGISTER
                                 SBTTL  STARTING ADDRESS(ES)
000200  000137  006106                  JMP     @#START ,,JUMP TO STARTING ADDRESS OF PROGRAM
```

```
                        SBTTL  COMMON TAGS

                        ;;*****************************************************************
                        ;*THIS TABLE CONTAINS VARIOUS COMMON STORAGE LOCATIONS
                        ;*USED IN THE PROGRAM

001100                          =1100
001100                  $CMTAG                  ;;START OF COMMON TAGS
001100  000000                  WORD    0
001102  000             $TSTNM  BYTE    0       ;;CONTAINS THE TEST NUMBER
001103  000             $ERFLG  BYTE    0       ;;CONTAINS ERROR FLAG
001104  000000          $ICNT   WORD    0       ;;CONTAINS SUBTEST ITERATION COUNT
001106  000000          $LPADR  WORD    0       ;;CONTAINS SCOPE LOOP ADDRESS
001110  000000          $LPERR  WORD    0       ;;CONTAINS SCOPE RETURN FOR ERRORS
001112  000000          $ERTTL  WORD    0       ;;CONTAINS TOTAL ERRORS DETECTED
001114  000             $ITEMB  BYTE    0       ;;CONTAINS ITEM CONTROL BYTE
001115  001             $ERMAX  BYTE    1       ;;CONTAINS MAX. ERRORS PER TEST
001116  000000          $ERRPC  WORD    0       ;;CONTAINS PC OF LAST ERROR INSTRUCTION
001120  000000          $GDADR  WORD    0       ;;CONTAINS ADDRESS OF 'GOOD' DATA
001122  000000          $BDADR  WORD    0       ;;CONTAINS ADDRESS OF 'BAD' DATA
001124  000000          $GDDAT  WORD    0       ;;CONTAINS 'GOOD' DATA
001126  000000          $BDDAT  WORD    0       ;;CONTAINS 'BAD' DATA
001130  000000                  WORD    0       ;;RESERVED--NOT TO BE USED
001132  000000                  WORD    0
001134  000             $AUTOB  BYTE    0       ;;AUTOMATIC MODE INDICATOR
001135  000             $INTAG  BYTE    0       ;;INTERRUPT MODE INDICATOR
001136  000000                  WORD    0
001140  177570          SWR     WORD    DSWR    ;;ADDRESS OF SWITCH REGISTER
001142  177570          DISPLAY WORD    DDISP   ;;ADDRESS OF DISPLAY REGISTER
001144  177560          $TKS    177560          ;;TTY KBD STATUS
001146  177562          $TKB    177562          ;;TTY KBD BUFFER
001150  177564          $TPS    177564          ;;TTY PRINTER STATUS REG. ADDRESS
001152  177566          $TPB    177566          ;;TTY PRINTER BUFFER REG. ADDRESS
001154  000             $NULL   BYTE    0       ;;CONTAINS NULL CHARACTER FOR FILLS
001155  002             $FILLS  BYTE    2       ;;CONTAINS # OF FILLER CHARACTERS REQUIRED
001156  012             $FILLC  BYTE    12      ;;INSERT FILL CHARS  AFTER A "LINE FEED"
001157  000             $TPFLG  BYTE    0       ;;"TERMINAL AVAILABLE" FLAG (BIT<07>=0=YES)
001160  000000          $REGAD  WORD    0       ;;CONTAINS THE ADDRESS FROM
                                                ;;WHICH  ($REG0) WAS OBTAINED
001162  000000          $REG0   WORD    0       ;;CONTAINS (($REGAD)+0)
001164  000000          $REG1   WORD    0       ;;CONTAINS (($REGAD)+2)
001166  000000          $REG2   WORD    0       ;;CONTAINS (($REGAD)+4)
001170  000000          $REG3   WORD    0       ;;CONTAINS (($REGAD)+6)
001172  000000          $REG4   WORD    0       ;;CONTAINS (($REGAD)+10)
001174  000000          $REG5   WORD    0       ;;CONTAINS (($REGAD)+12)
001176  000000          $REG6:  WORD    0       ;;CONTAINS (($REGAD)+14)
001200  000000          $REG7   WORD    0       ;;CONTAINS (($REGAD)+16)
001202  000000          $REG10  WORD    0       ;;CONTAINS (($REGAD)+20)
001204  000000          $REG11  WORD    0       ;;CONTAINS (($REGAD)+22)
001206  000000          $REG12  WORD    0       ;;CONTAINS (($REGAD)+24)
001210  000000          $REG13: WORD    0       ;;CONTAINS (($REGAD)+26)
001212  000000          $REG14  WORD    0       ;;CONTAINS (($REGAD)+30)
001214  000000          $REG15  WORD    0       ;;CONTAINS (($REGAD)+32)
001216  000000          $REG16  WORD    0       ;;CONTAINS (($REGAD)+34)
001220  000000          $REG17  WORD    0       ;;CONTAINS (($REGAD)+36)
001222  000000          $REG20  WORD    0       ;;CONTAINS (($REGAD)+40)
```

```
001224  000000                  $SREG21:  .WORD  0               ;;CONTAINS (($REGAD)+42)
001226  000000                  $SREG22:  .WORD  0               ;;CONTAINS (($REGAD)+44)
001230  000000                  $SREG23:  .WORD  0               ;;CONTAINS (($REGAD)+46)
001232  000000                  $TMP0:    .WORD  0               ;;USER DEFINED
001234  000000                  $TMP1:    .WORD  0               ;;USER DEFINED
001236  000000                  $TMP2:    .WORD  0               ;;USER DEFINED
001240  000000                  $TMP3:    .WORD  0               ;;USER DEFINED
001242  000000                  $TMP4:    .WORD  0               ;;USER DEFINED
001244  000000                  $TMP5:    .WORD  0               ;;USER DEFINED
001246  000000                  $TMP6:    .WORD  0               ;;USER DEFINED
001250  000000                  $TMP7:    .WORD  0               ;;USER DEFINED
001252  000000                  $TMP10:   .WORD  0               ;;USER DEFINED
001254  000000                  $TMP11:   .WORD  0               ;;USER DEFINED
001256  000000                  $TMP12:   .WORD  0               ;;USER DEFINED
001260  000000                  $TMP13:   .WORD  0               ;;USER DEFINED
001262  000000                  $TMP14:   .WORD  0               ;;USER DEFINED
001264  000000                  $TMP15:   .WORD  0               ;;USER DEFINED
001266  000000                  $TMP16:   .WORD  0               ;;USER DEFINED
001270  000000                  $TMP17:   .WORD  0               ;;USER DEFINED
001272  000000                  $TMP20:   .WORD  0               ;;USER DEFINED
001274  000000                  $TMP21:   .WORD  0               ;;USER DEFINED
001276  000000                  $TMP22:   .WORD  0               ;;USER DEFINED
001300  000000                  $TMP23:   .WORD  0               ;;USER DEFINED
001302  000000                  $TIMES:   0                      ;;MAX. NUMBER OF ITERATIONS
001304  000000                  $ESCAPE:  0                      ;;ESCAPE ON ERROR ADDRESS
001306  177607  000377          $BELL:    .ASCIZ  <207><377><377>  ;;CODE FOR BELL
001312     077                  $QUES:    .ASCII  /?/            ;;QUESTION MARK
001313     015                  $CRLF:    .ASCII  <15>           ;;CARRIAGE RETURN
001314  000012                  $LF:      .ASCIZ  <12>           ;;LINE FEED
                                ;;*****************************************************************
                                 .SBTTL  APT MAILBOX-ETABLE

                                ;;*****************************************************************
                                .EVEN
001316                          $MAIL:                           ;;APT MAILBOX
001316  000000                  $MSGTY:   .WORD  AMSGTY          ;;MESSAGE TYPE CODE
001320  000000                  $FATAL:   .WORD  AFATAL          ;;FATAL ERROR NUMBER
001322  000000                  $TESTN:   .WORD  ATESTN          ;;TEST NUMBER
001324  000000                  $PASS:    .WORD  APASS           ;;PASS COUNT
001326  000000                  $DEVCT:   .WORD  ADEVCT          ;;DEVICE COUNT
001330  000000                  $UNIT:    .WORD  AUNIT           ;;I/O UNIT NUMBER
001332  000000                  $MSGAD:   .WORD  AMSGAD          ;;MESSAGE ADDRESS
001334  000000                  $MSGLG:   .WORD  AMSGLG          ;;MESSAGE LENGTH
001336                          $ETABLE:                         ;;APT ENVIRONMENT TABLE
001336     000                  $ENV:     .BYTE  AENV            ;;ENVIRONMENT BYTE
001337     000                  $ENVM:    .BYTE  AENVM           ;;ENVIRONMENT MODE BITS
001340  000000                  $SWREG:   .WORD  ASWREG          ;;APT SWITCH REGISTER
001342  000000                  $USWR:    .WORD  AUSWR           ;;USER SWITCHES
001344  000000                  $CPUOP:   .WORD  ACPUOP          ;;CPU TYPE,OPTIONS
                                ;*                               BITS 15-11=CPU TYPE
                                ;*                                       11/04=01,11/05=02,11/20=03,11/40=04,11/45=05
                                ;*                                       11/70=06,PDQ=07,Q=10
                                ;*                               BIT 10=REAL TIME CLOCK
                                ;*                               BIT  9=FLOATING POINT PROCESSOR
                                ;*                               BIT  8=MEMORY MANAGEMENT
001346     000                  $MAMS1:   .BYTE  AMAMS1          ;;HIGH ADDRESS,M.S. BYTE
```

```
1065  001347  000                 $MTYP1   BYTE   AMTYP1  ,,MEM  TYPE,BLK#1
1066                              ,*                     MEM TYPE BYTE   --  (HIGH BYTE)
1067                              ,*                             900 NSEC CORE=001
1068                              ,*                             300 NSEC BIPOLAR=002
1069                              ,*                             500 NSEC MOS=003
1070  001350  000000              $MADR1   WORD   AMADR1  ,,HIGH ADDRESS,BLK#1
1071                              ,*                       MEM. LAST ADDR. =3 BYTES, THIS WORD AND LOW OF "TYPE" ABOVE
1072  001352  000                 $MAMS2   BYTE   AMAMS2  ,,HIGH ADDRESS,M.S  BYTE
1073  001353  000                 $MTYP2   BYTE   AMTYP2  ;;MEM. TYPE,BLK#2
1074  001354  000000              $MADR2.  WORD   AMADR2  ,;MEM. LAST ADDRESS,BLK#2
1075  001356  000                 $MAMS3   BYTE   AMAMS3  ;;HIGH ADDRESS,M.S. BYTE
1076  001357  000                 $MTYP3.  BYTE   AMTYP3  ;;MEM. TYPE,BLK#3
1077  001360  000000              $MADR3.  WORD   AMADR3  ,;MEM. LAST ADDRESS,BLK#3
1078  001362  000                 $MAMS4.  BYTE   AMAMS4  ;;HIGH ADDRESS,M.S. BYTE
1079  001363  000                 $MTYP4:  BYTE   AMTYP4  ;;MEM. TYPE,BLK#4
1080  001364  000000              $MADR4.  WORD   AMADR4  ;;MEM. LAST ADDRESS,BLK#4
1081  001366  000000              $VECT1   WORD   AVECT1  ;;INTERRUPT VECTOR#1,BUS PRIORITY#1
1082  001370  000000              $VECT2.  WORD   AVECT2  ;,INTERRUPT VECTOR#2BUS PRIORITY#2
1083  001372  000000              $BASE    WORD   ABASE   ,;BASE ADDRESS OF EQUIPMENT UNDER TEST
1084  001374  000000              $DEVM.   WORD   ADEVM   ;;DEVICE MAP
1085  001376  000000              $CDW1    WORD   ACDW1   ;;CONTROLLER DESCRIPTION WORD#1
1086  001400  000000              $CDW2.   WORD   ACDW2   ,,CONTROLLER DESCRIPTION WORD#2
1087  001402  000000              $DDW0.   WORD   ADDW0   ;,DEVICE DESCRIPTOR WORD#0
1088  001404  000000              $DDW1    WORD   ADDW1   ;;DEVICE DESCRIPTOR WORD#1
1089  001406  000000              $DDW2.   WORD   ADDW2   ;;DEVICE DESCRIPTOR WORD#2
1090  001410  000000              $DDW3.   WORD   ADDW3   ;,DEVICE DESCRIPTOR WORD#3
1091  001412  000000              $DDW4.   WORD   ADDW4   ,;DEVICE DESCRIPTOR WORD#4
1092  001414  000000              $DDW5.   WORD   ADDW5   ,;DEVICE DESCRIPTOR WORD#5
1093  001416  000000              $DDW6:   WORD   ADDW6   ;;DEVICE DESCRIPTOR WORD#6
1094  001420  000000              $DDW7    WORD   ADDW7   ;,DEVICE DESCRIPTOR WORD#7
1095  001422  000000              $DDW8.   WORD   ADDW8   ;,DEVICE DESCRIPTOR WORD#8
1096  001424  000000              $DDW9.   WORD   ADDW9   ,;DEVICE DESCRIPTOR WORD#9
1097  001426  000000              $DDW10   WORD   ADDW10  ;;DEVICE DESCRIPTOR WORD#10
1098  001430  000000              $DDW11.  WORD   ADDW11  ;;DEVICE DESCRIPTOR WORD#11
1099  001432  000000              $DDW12:  WORD   ADDW12  ,,DEVICE DESCRIPTOR WORD#12
1100  001434  000000              $DDW13   WORD   ADDW13  ,,DEVICE DESCRIPTOR WORD#13
1101  001436  000000              $DDW14   WORD   ADDW14  ,;DEVICE DESCRIPTOR WORD#14
1102  001440  000000              $DDW15   WORD   ADDW15  ,,DEVICE DESCRIPTOR WORD#15
1103
1104
1105  001442                      $ETEND
1106
```

```
                                        SBTTL  ERROR POINTER TABLE

                                        ;*THIS TABLE CONTAINS THE INFORMATION FOR EACH ERROR THAT CAN OCCUR
                                        ;*THE INFORMATION IS OBTAINED BY USING THE INDEX NUMBER FOUND IN
                                        ;*LOCATION $ITEMB  THIS NUMBER INDICATES WHICH ITEM IN THE TABLE IS PERTINENT
                                        ;*NOTE1          IF $ITEMB IS 0 THE ONLY PERTINENT DATA IS ($ERRPC)
                                        ;*NOTE2          EACH ITEM IN THE TABLE CONTAINS 4 POINTERS EXPLAINED AS FOLLOWS

                                        ;*      EM              ;;POINTS TO THE ERROR MESSAGE
                                        ;*      DH              ;;POINTS TO THE DATA HEADER
                                        ;*      DT              ;;POINTS TO THE DATA
                                        ;*      DF              ;;POINTS TO THE DATA FORMAT


001442                                  $ERRTB
                                        ;ITEM 1
001442  043122  067312  071016                  WORD   EM1,DH1,DT1,DF1
001450  070450
                                        ;ITEM 2
001452  043161  067365  071036                  WORD   EM2,DH2,DT2,DF2
001460  070457
                                        ;ITEM 3
001462  043214  067455  071060                  WORD   EM3,DH3,DT3,DF3
001470  070457
                                        ;ITEM 4
001472  043247  067545  071102                  WORD   EM4,DH4,DT4,DF4
001500  070457
                                        ;ITEM 5
001502  043307  067634  071124                  WORD   EM5,DH5,DT5,DF5
001510  070467
                                        ;ITEM 6
001512  043331  067634  071152                  WORD   EM6,DH6,DT6,DF6
001520  070501
                                        ;ITEM 7
001522  043435  067545  071102                  WORD   EM7,DH7,DT7,DF7
001530  070457
                                        ;ITEM 10
001532  043476  067634  071124                  WORD   EM10,DH10,DT10,DF10
001540  070467
                                        ;ITEM 11
001542  043521  067545  071102                  WORD   EM11,DH11,DT11,DF11
001550  070457
                                        ;ITEM 12
001552  043562  067634  071124                  WORD   EM12,DH12,DT12,DF12
001560  070505
                                        ;ITEM 13
001562  043605  067675  071152                  WORD   EM13,DH13,DT13,DF13
001570  070501
                                        ;ITEM 14
001572  043605  067675  071152                  WORD   EM14,DH14,DT14,DF14
001600  070501
                                        ;ITEM 15
001602  043641  067634  071124                  WORD   EM15,DH15,DT15,DF15
001610  070505
                                        ;ITEM 16
001612  043662  067735  071164                  WORD   EM16,DH16,DT16,DF16
```

```
1163  001620  070457
1164                                          ;ITEM 17
1165  001622  043711  067675  071152                  WORD   EM17,DH17,DT17,DF17
1166  001630  070501
1167                                          ;ITEM 20
1168  001632  043747  067545  071164                  WORD   EM20,DH20,DT20,DF20
1169  001640  070457
1170                                          ;ITEM 21
1171  001642  044010  067634  071124                  .WORD  EM21,DH21,DT21,DF21
1172  001650  070505
1173                                          ;ITEM 22
1174  001652  044010  067634  071124                  WORD   EM22,DH22,DT22,DF22
1175  001660  070505
1176                                          ;ITEM 23
1177  001662  044033  067675  071152                  WORD   EM23,DH23,DT23,DF23
1178  001670  070501
1179                                          ;ITEM 24
1180  001672  044072  067545  071164                  .WORD  EM24,DH24,DT24,DF24
1181  001700  070457
1182                                          ;ITEM 25
1183  001702  044134  067634  071124                  .WORD  EM25,DH25,DT25,DF25
1184  001710  070505
1185                                          ;ITEM 26
1186  001712  044160  067675  071152                  .WORD  EM26,DH26,DT26,DF26
1187  001720  070501
1188                                          ;ITEM 27
1189  001722  044217  067545  071164                  .WORD  EM27,DH27,DT27,DF27
1190  001730  070457
1191                                          ;ITEM 30
1192  001732  044261  067634  071124                  .WORD  EM30,DH30,DT30,DF30
1193  001740  070505
1194                                          ;ITEM 31
1195  001742  044305  067675  071152                  .WORD  EM31,DH31,DT31,DF31
1196  001750  070501
1197                                          ;ITEM 32
1198  001752  044343  067545  071164                  .WORD  EM32,DH32,DT32,DF32
1199  001760  070457
1200                                          ;ITEM 33
1201  001762  044404  067634  071124                  WORD   EM33,DH33,DT33,DF33
1202  001770  070505
1203                                          ;ITEM 34
1204  001772  044427  067675  071152                  .WORD  EM34,DH34,DT34,DF34
1205  002000  070501
1206                                          ;ITEM 35
1207  002002  044466  067545  071164                  .WORD  EM35,DH35,DT35,DF35
1208  002010  070457
1209                                          ;ITEM 36
1210  002012  044530  067634  071124                  .WORD  EM36,DH36,DT36,DF36
1211  002020  070505
1212                                          ;ITEM 37
1213  002022  044554  070024  071206                  WORD   EM37,DH37,DT37,DF37
1214  002030  070517
1215                                          ;ITEM 40
1216  002032  044600  070024  071206                  WORD   EM40,DH40,DT40,DF40
1217  002040  070517
1218                                          ,ITEM 41
```

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1219  002042  044626  070114  071252          WORD   EM41,DH41,DT41,DF41
1220  002050  070540
1221                                ,ITEM 42
1222  002052  044654  070024  071206          WORD   EM42,DH42,DT42,DF42
1223  002060  070517
1224                                ,ITEM 43
1225  002062  044733  070024  071206          WORD   EM43,DH43,DT43,DF43
1226  002070  070517
1227                                ,ITEM 44
1228  002072  045037  070024  071206          WORD   EM44,DH44,DT44,DF44
1229  002100  070517
1230                                ;ITEM 45
1231  002102  045137  070024  071206          .WORD  EM45,DH45,DT45,DF45
1232  002110  070517
1233                                ,ITEM 46
1234  002112  045215  070024  071206          .WORD  EM46,DH46,DT46,DF46
1235  002120  070517
1236                                ;ITEM 47
1237  002122  045321  070024  071206          WORD   EM47,DH47,DT47,DF47
1238  002130  070517
1239                                ;ITEM 50
1240  002132  045421  070024  071206          .WORD  EM50,DH50,DT50,DF50
1241  002140  070517
1242                                ,ITEM 51
1243  002142  045535  070024  071206          .WORD  EM51,DH51,DT51,DF51
1244  002150  070517
1245                                ;ITEM 52
1246  002152  045561  070024  071206          .WORD  EM52,DH52,DT52,DF52
1247  002160  070517
1248                                ;ITEM 53
1249  002162  045605  070114  071252          .WORD  EM53,DH53,DT53,DF53
1250  002170  070517
1251                                ;ITEM 54
1252  002172  045631  070024  071206          .WORD  EM54,DH54,DT54,DF54
1253  002200  070517
1254                                ;ITEM 55
1255  002202  045710  070024  071206          .WORD  EM55,DH55,DT55,DF55
1256  002210  070517
1257                                ;ITEM 56
1258  002212  046036  070024  071206          .WORD  EM56,DH56,DT56,DF56
1259  002220  070517
1260                                ;ITEM 57
1261  002222  046140  070024  071206          .WORD  EM57,DH57,DT57,DF57
1262  002230  070517
1263                                ;ITEM 60
1264  002232  046250  070024  071206          WORD   EM60,DH60,DT60,DF60
1265  002240  070517
1266                                ,ITEM 61
1267  002242  046360  070024  071206          WORD   EM61,DH61,DT61,DF61
1268  002250  070517
1269                                ;ITEM 62
1270  002252  046462  067365  071164          .WORD  EM62,DH62,DT62,DF62
1271  002260  070457
1272                                ;ITEM 63
1273  002262  046566  067455  071164          .WORD  EM63,DH63,DT63,DF63
1274  002270  070457
```

```
1275                                        ;ITEM 64
1276  002272  046614  067634  071124              .WORD   EM64,DH64,DT64,DF64
1277  002300  070467
1278                                        ;ITEM 65
1279  002302  046670  067365  071164              .WORD   EM65,DH65,DT65,DF65
1280  002310  070457
1281                                        ;ITEM 66
1282  002312  046713  067545  071102              WORD    EM66,DH66,DT66,DF66
1283  002320  070457
1284                                        ;ITEM 67
1285  002322  046752  067365  071102              WORD    EM67,DH67,DT67,DF67
1286  002330  070457
1287                                        ;ITEM 70
1288  002332  047053  067455  071102              .WORD   EM70,DH70,DT70,DF70
1289  002340  070457
1290                                        ;ITEM 71
1291  002342  047144  067634  071316              WORD    EM71,DH71,DT71,DF71
1292  002350  070561
1293                                        ;ITEM 72
1294  002352  047163  067365  071102              .WORD   EM72,DH72,DT72,DF72
1295  002360  070457
1296                                        ;ITEM 73
1297  002362  047244  067674  071352              .WORD   EM73,DH73,DT73,DF73
1298  002370  070561
1299                                        ;ITEM 74
1300  002372  047265  067545  071102              .WORD   EM74,DH74,DT74,DF74
1301  002400  070457
1302                                        ;ITEM 75
1303  002402  047307  067365  071036              .WORD   EM75,DH75,DT75,DF75
1304  002410  070457
1305                                        ;ITEM 76
1306  002412  047332  067675  071152              .WORD   EM76,DH76,DT76,DF76
1307  002420  070501
1308                                        ;ITEM 77
1309  002422  047373  067634  071352              .WORD   EM77,DH77,DT77,DF77
1310  002430  070561
1311                                        ;ITEM 100
1312  002432  047415  067545  071102              .WORD   EM100,DH100,DT100,DF100
1313  002440  070457
1314                                        ;ITEM 101
1315  002442  047440  067365  071036              .WORD   EM101,DH101,DT101,DF101
1316  002450  070457
1317                                        ;ITEM 102
1318  002452  047464  067675  071152              .WORD   EM102,DH102,DT102,DF102
1319  002460  070501
1320                                        ;ITEM 103
1321  002462  047525  067634  071352              .WORD   EM103,DH103,DT103,DF103
1322  002470  070561
1323                                        ;ITEM 104
1324  002472  047547  067545  071102              .WORD   EM104,DH104,DT104,DF104
1325  002500  070457
1326                                        ;ITEM 105
1327  002502  047572  067365  071036              .WORD   EM105,DH105,DT105,DF105
1328  002510  070457
1329                                        ;ITEM 106
1330  002512  047616  067675  071152              .WORD   EM106,DH106,DT106,DF106
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1331  002520  070501
1332                                    ;ITEM 107
1333  002522  047204  067675  071152            .WORD   EM107,DH107,DT107,DF107
1334  002530  070501
1335                                    ;ITEM 110
1336  002532  047660  067634  071352            .WORD   EM110,DH110,DT110,DF110
1337  002540  070561
1338                                    ;ITEM 111
1339  002542  047703  067545  071102            .WORD   EM111,DH111,DT111,DF111
1340  002550  070457
1341                                    ;ITEM 112
1342  002552  047727  067365  071036            .WORD   EM112,DH112,DT112,DF112
1343  002560  070457
1344                                    ;ITEM 113
1345  002562  047754  067675  071152            .WORD   EM113,DH113,DT113,DF113
1346  002570  070501
1347                                    ;ITEM 114
1348  002572  050016  067634  071352            .WORD   EM114,DH114,DT114,DF114
1349  002600  070561
1350                                    ;ITEM 115
1351  002602  050041  067545  071102            .WORD   EM115,DH115,DT115,DF115
1352  002610  070457
1353                                    ;ITEM 116
1354  002612  050065  067[illegible]5  071036            .WORD   EM116,DH116,DT116,DF116
1355  002620  070457
1356                                    ;ITEM 117
1357  002622  050112  067675  071152            .WORD   EM117,DH117,DT117,DF117
1358  002630  070501
1359                                    ;ITEM 120
1360  002632  050153  067634  071352            .WORD   EM120,DH120,DT120,DF120
1361  002640  070561
1362                                    ;ITEM 121
1363  002642  050175  067545  071102            .WORD   EM121,DH121,DT121,DF121
1364  002650  070457
1365                                    ;ITEM 122
1366  002652  050220  067365  071036            .WORD   EM122,DH122,DT122,DF122
1367  002660  070457
1368                                    ;ITEM 123
1369  002662  050244  067675  071152            .WORD   EM123,DH123,DT123,DF123
1370  002670  070501
1371                                    ;ITEM 124
1372  002672  050306  067634  071352            .WORD   EM124,DH124,DT124,DF124
1373  002700  070561
1374                                    ;ITEM 125
1375  002702  050331  067545  071102            .WORD   EM125,DH125,DT125,DF125
1376  002710  070457
1377                                    ;ITEM 126
1378  002712  050355  067365  071036            .WORD   EM126,DH126,DT126,DF126
1379  002720  070457
1380                                    ;ITEM 127
1381  002722  050402  067675  071152            .WORD   EM127,DH127,DT127,DF127
1382  002730  070501
1383                                    ;ITEM 130
1384  002732  050444  067634  071352            .WORD   EM130,DH130,DT130,DF130
1385  002740  070561
1386                                    ;ITEM 131
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1387  002742  050467  067365  071036          WORD   EM131,DH131,DT131,DF131
1388  002750  070457
1389                          ,ITEM 132
1390  002752  050514  067575  071152          WORD   EM132,DH132,DT132,DF132
1391  002760  070501
1392                          ,ITEM 133
1393  002762  050557  067634  071352          WORD   EM133,DH133,DT133,DF133
1394  002770  070561
1395                          ,ITEM 134
1396  002772  050603  067365  071036          WORD   EM134,DH134,DT134,DF134
1397  003000  070457
1398                          ,ITEM 135
1399  003002  050631  067634  071124          .WORD  EM135,DH135,DT135,DF135
1400  003010  070505
1401                          ,ITEM 136
1402  003012  050704  067634  071124          .WORD  EM136,DH136,DT136,DF136
1403  003020  070505
1404                          ,ITEM 137
1405  003022  050723  067365  071164          WORD   EM137,DH137,DT137,DF137
1406  003030  070457
1407                          ,ITEM 140
1408  003032  050744  067634  071124          WORD   EM140,DH140,DT140,DF140
1409  003040  070505
1410                          ,ITEM 141
1411  003042  050765  067545  071102          .WORD  EM141,DH141,DT141,DF141
1412  003050  070457
1413                          ;ITEM 142
1414  003052  051034  067365  071102          .WORD  EM142,DH142,DT142,DF142
1415  003060  070457
1416                          ;ITEM 143
1417  003062  051057  067634  071124          .WORD  EM143,DH143,DT143,DF143
1418  003070  070505
1419                          ;ITEM 144
1420  003072  051101  067545  071102          .WORD  EM144,DH144,DT144,DF144
1421  003100  070457
1422                          ;ITEM 145
1423  003102  051151  067365  071102          .WORD  EM145,DH145,DT145,DF145
1424  003110  070457
1425                          ,ITEM 146
1426  003112  051175  067634  071124          WORD   EM146,DH146,DT146,DF146
1427  003120  070505
1428                          ;ITEM 147
1429  003122  051217  067545  071102          .WORD  EM147,DH147,DT147,DF147
1430  003130  070457
1431                          ;ITEM 150
1432  003132  051267  067365  071102          .WORD  EM150,DH150,DT150,DF150
1433  003140  070457
1434                          ;ITEM 151
1435  003142  051313  067634  071124          WORD   EM151,DH151,DT151,DF151
1436  003150  070505
1437                          ;ITEM 152
1438  003152  051336  067545  071102          .WORD  EM152,DH152,DT152,DF152
1439  003160  070457
1440                          ;ITEM 153
1441  003162  051407  067365  071102          .WORD  EM153,DH153,DT153,DF153
1442  003170  070457
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1443                                        ;ITEM 154
1444  003172  051434  067634  071124              .WORD   EM154,DH154,DT154,DF154
1445  003200  070505
1446                                        ;ITEM 155
1447  003202  051457  067545  071102              .WORD   EM155,DH155,DT155,DF155
1448  003210  070457
1449                                        ;ITEM 156
1450  003212  051530  067365  071102              .WORD   EM156,DH156,DT156,DF156
1451  003220  070457
1452                                        ;ITEM 157
1453  003222  051555  067634  071124              .WORD   EM157,DH157,DT157,DF157
1454  003230  070505
1455                                        ;ITEM 160
1456  003232  051577  067545  071102              .WORD   EM160,DH160,DT160,DF160
1457  003240  070457
1458                                        ;ITEM 161
1459  003242  051671  067365  071102              .WORD   EM161,DH161,DT161,DF161
1460  003250  070457
1461                                        ;ITEM 162
1462  003252  051715  067634  071124              .WORD   EM162,DH162,DT162,DF16
1463  003260  070505
1464                                        ;ITEM 163
1465  003262  051740  067365  071102              .WORD   EM163,DH163,DT163,DF163
1466  003270  070457
1467                                        ;ITEM 164
1468  003272  051765  067735  071102              .WORD   EM164,DH164,DT164,DF164
1469  003300  070457
1470                                        ;ITEM 165
1471  003302  052563  070024  071206              .WORD   EM165,DH165,DT165,DF165
1472  003310  070517
1473                                        ;ITEM 166
1474  003312  052604  070024  071206              .WORD   EM166,DH166,DT166,DF166
1475  003320  070517
1476                                        ;ITEM 167
1477  003322  052625  070024  071206              .WORD   EM167,DH167,DT167,DF167
1478  003330  070517
1479                                        ;ITEM 170
1480  003332  052646  070024  071206              .WORD   EM170,DH170,DT170,DF170
1481  003340  070517
1482                                        ;ITEM 171
1483  003342  052671  070024  071206              .WORD   EM171,DH171,DT171,DF171
1484  003350  070517
1485                                        ;ITEM 172
1486  003352  052714  070024  071206              .WORD   EM172,DH172,DT172,DF172
1487  003360  070517
1488                                        ;ITEM 173
1489  003362  052737  070114  071252              .WORD   EM173,DH173,DT173,DF173
1490  003370  070540
1491                                        ;ITEM 174
1492  003372  052762  070114  071252              .WORD   EM174,DH174,DT174,DF174
1493  003400  070540
1494                                        ;ITEM 175
1495  003402  053005  070114  071252              .WORD   EM175,DH175,DT175,DF175
1496  003410  070540
1497                                        ;ITEM 176
1498  003412  047076  067365  071102              .WORD   EM176,DH176,DT176,DF176
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1499  003420  070457
1500                                  ;ITEM 177
1501  003422  047121  067455  071102          .WORD   EM177,DH177,DT177,DF177
1502  003430  070457
1503                                  ;ITEM 200
1504  003432  053030  070024  071206          .WORD   EM200,DH200,DT200,DF200
1505  003440  070517
1506                                  ;ITEM 201
1507  003442  053105  070024  071206          .WORD   EM201,DH201,DT201,DF201
1508  003450  070517
1509                                  ;ITEM 202
1510  003452  053206  070024  071206          .WORD   EM202,DH202,DT202,DF202
1511  003460  070517
1512                                  ;ITEM 203
1513  003462  053307  070024  071206          .WORD   EM203,DH203,DT203,DF203
1514  003470  070517
1515                                  ;ITEM 204
1516  003472  053467  070024  071206          .WORD   EM204,DH204,DT204,DF204
1517  003500  070517
1518                                  ;ITEM 205
1519  003502  053544  070024  071206          .WORD   EM205,DH205,DT205,DF205
1520  003510  070517
1521                                  ;ITEM 206
1522  003512  053643  070024  071206          .WORD   EM206,DH206,DT206,DF206
1523  003520  070517
1524                                  ;ITEM 207
1525  003522  053744  070024  071206          .WORD   EM207,DH207,DT207,DF207
1526  003530  070517
1527                                  ;ITEM 210
1528  003532  054043  070024  071206          .WORD   EM210,DH210,DT210,DF210
1529  003540  070517
1530                                  ;ITEM 211
1531  003542  054142  070024  071206          .WORD   EM211,DH211,DT211,DF211
1532  003550  070517
1533                                  ;ITEM 212
1534  003552  054250  070024  071206          .WORD   EM212,DH212,DT212,DF212
1535  003560  070517
1536                                  ;ITEM 213
1537  003562  054351  070024  071206          .WORD   EM213,DH213,DT213,DF213
1538  003570  070517
1539                                  ;ITEM 214
1540  003572  054476  070024  071206          .WORD   EM214,DH214,DT214,DF214
1541  003600  070517
1542                                  ;ITEM 215
1543  003602  052041  067735  071102          .WORD   EM215,DH215,DT215,DF215
1544  003610  070457
1545                                  ;ITEM 216
1546  003612  052172  067634  071124          .WORD   EM216,DH216,DT216,DF216
1547  003620  070505
1548                                  ;ITEM 217
1549  003622  052214  067545  071102          .WORD   EM217,DH217,DT217,DF217
1550  003630  070457
1551                                  ;ITEM 220
1552  003632  052264  067365  071102          .WORD   EM220,DH220,DT220,DF220
1553  003640  070457
1554                                  ;ITEM 221
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1555  003642  052310  067735  071102          .WORD   EM221,DH221,DT221,DF221
1556  003650  070457
1557                                  ,ITEM 222
1558  003652  052442  067634  071124            WORD   EM222,DH222,DT222,DF222
1559  003660  070505
1560                                  ,ITEM 223
1561  003662  052465  067545  071102            WORD   EM223,DH223,DT223,DF223
1562  003670  070457
1563                                  ,ITEM 224
1564  003672  052536  067365  071102            WORD   EM224,DH224,DT224,DF224
1565  003700  070457
1566                                  ,ITEM 225
1567  003702  054623  067545  071102            WORD   EM225,DH225,DT225,DF225
1568  003710  070576
1569                                  ,ITEM 226
1570  003712  054646  067365  071102            WORD   EM226,DH226,DT226,DF226
1571  003720  070576
1572                                  ,ITEM 227
1573  003722  054672  070211  071152            WORD   EM227,DH227,DT227,DF227
1574  003730  070606
1575                                  ,ITEM 230
1576  003732  054722  067545  071102            WORD   EM230,DH230,DT230,DF230
1577  003740  070576
1578                                  ,ITEM 231
1579  003742  054746  067365  071102            WORD   EM231,DH231,DT231,DF231
1580  003750  070576
1581                                  ;ITEM 232
1582  003752  054773  070211  071152            WORD   EM232,DH232,DT232,DF232
1583  003760  070606
1584                                  ;ITEM 233
1585  003762  055024  067545  071102          .WORD   EM233,DH233,DT233,DF233
1586  003770  070576
1587                                  ,ITEM 234
1588  003772  055050  067365  071102          .WORD   EM234,DH234,DT234,DF234
1589  004000  070576
1590                                  ,ITEM 235
1591  004002  055075  070211  071152            WORD   EM235,DH235,DT235,DF235
1592  004010  070606
1593                                  ,ITEM 236
1594  004012  055126  067545  071102          .WORD   EM236,DH236,DT236,DF236
1595  004020  070576
1596                                  ;ITEM 237
1597  004022  055153  067365  071102          .WORD   EM237,DH237,DT237,DF237
1598  004030  070576
1599                                  ;ITEM 240
1600  004032  055201  070211  071152            WORD   EM240,DH240,DT240,DF240
1601  004040  070606
1602                                  ;ITEM 241
1603  004042  055233  067545  071102            WORD   EM241,DH241,DT241,DF241
1604  004050  070576
1605                                  ;ITEM 242
1606  004052  055260  067365  071102          .WORD   EM242,DH242,DT242,DF242
1607  004060  070576
1608                                  ;ITEM 243
1609  004062  055306  070211  071152            WORD   EM243,DH243,DT243,DF243
1610  004070  070606
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1611                                        ;ITEM 244
1612  004072  055340  067545  071102              WORD   EM244,DH244,DT244,DF244
1613  004100  070576
1614                                        ;ITEM 245
1615  004102  055364  067365  071102              WORD   EM245,DH245,DT245,DF245
1616  004110  070576
1617                                        ;ITEM 246
1618  004112  055411  067735  071102              WORD   EM246,DH246,DT246,DF246
1619  004120  070576
1620                                        ;ITEM 247
1621  004122  055442  070211  071152              WORD   EM247,DH247,DT247,DF247
1622  004130  070606
1623                                        ;ITEM 250
1624  004132  055473  067545  071102              WORD   EM250,DH250,DT250,DF250
1625  004140  070576
1626                                        ;ITEM 251
1627  004142  055520  067365  071102              WORD   EM251,DH251,DT251,DF251
1628  004150  070576
1629                                        ;ITEM 252
1630  004152  055546  067735  071102              WORD   EM252,DH252,DT252,DF252
1631  004160  070576
1632                                        ;ITEM 253
1633  004162  055600  070211  071152              WORD   EM253,DH253,DT253,DF253
1634  004170  070606
1635                                        ;ITEM 254
1636  004172  055632  067735  071102              .WORD  EM254,DH254,DT254,DF254
1637  004200  070576
1638                                        ;ITEM 255
1639  004202  055666  070211  071152              WORD   EM255,DH255,DT255,DF255
1640  004210  070606
1641                                        ;ITEM 256
1642  004212  055722  067545  071102              WORD   EM256,DH256,DT256,DF256
1643  004220  070576
1644                                        ;ITEM 257
1645  004222  055750  067365  071102              WORD   EM257,DH257,DT257,DF257
1646  004230  070576
1647                                        ;ITEM 260
1648  004232  055777  070024  071206              WORD   EM260,DH260,DT260,DF260
1649  004240  070612
1650                                        ;ITEM 261
1651  004242  056034  070024  071206              WORD   EM261,DH261,DT261,DF261
1652  004250  070612
1653                                        ;ITEM 262
1654  004252  056073  070024  071206              WORD   EM262,DH262,DT262,DF262
1655  004260  070612
1656                                        ;ITEM 263
1657  004262  056173  070024  071206              WORD   EM263,DH263,DT263,DF263
1658  004270  070612
1659                                        ;ITEM 264
1660  004272  056221  070024  071206              .WORD  EM264,DH264,DT264,DF264
1661  004300  070612
1662                                        ;ITEM 265
1663  004302  056316  070024  071206              WORD   EM265,DH265,DT265,DF265
1664  004310  070612
1665                                        ;ITEM 266
1666  004312  056407  070024  071206              WORD   EM266,DH266,DT266,DF266
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1667  004320  070612
1668                                  ;ITEM 267
1669  004322  056522  070024  071206          WORD   EM267,DH267,DT267,DF267
1670  004330  070612
1671                                  ;ITEM 270
1672  004332  056617  070024  071206          WORD   EM270,DH270,DT270,DF270
1673  004340  070612
1674                                  ;ITEM 271
1675  004342  056660  070024  071206          WORD   EM271,DH271,DT271,DF271
1676  004350  070612
1677                                  ;ITEM 272
1678  004352  056726  070024  071206          WORD   EM272,DH272,DT272,DF272
1679  004360  070612
1680                                  ;ITEM 273
1681  004362  057017  070024  071206          WORD   EM273,DH273,DT273,DF273
1682  004370  070633
1683                                  ;ITEM 274
1684  004372  057054  070024  071206          WORD   EM274,DH274,DT274,DF274
1685  004400  070633
1686                                  ;ITEM 275
1687  004402  057113  070024  071206          WORD   EM275,DH275,DT275,DF275
1688  004410  070633
1689                                  ;ITEM 276
1690  004412  057213  070024  071206          WORD   EM276,DH276,DT276,DF276
1691  004420  070633
1692                                  ;ITEM 277
1693  004422  057310  070024  071206          WORD   EM277,DH277,DT277,DF277
1694  004430  070633
1695                                  ;ITEM 300
1696  004432  057364  070024  071206          WORD   EM300,DH300,DT300,DF300
1697  004440  070633
1698                                  ;ITEM 301
1699  004442  057461  070024  071406          WORD   EM301,DH301,DT301,DF301
1700  004450  070654
1701                                  ;ITEM 302
1702  004452  057505  070024  071406          WORD   EM302,DH302,DT302,DF302
1703  004460  070654
1704                                  ;ITEM 303
1705  004462  057533  070114  071460          WORD   EM303,DH303,DT303,DF303
1706  004470  070700
1707                                  ;ITEM 304
1708  004472  057561  070024  071406          WORD   EM304,DH304,DT304,DF304
1709  004500  070654
1710                                  ;ITEM 305
1711  004502  057650  070024  071406          WORD   EM305,DH305,DT305,DF305
1712  004510  070654
1713                                  ;ITEM 306
1714  004512  057753  070024  071406          WORD   EM306,DH306,DT306,DF306
1715  004520  070654
1716                                  ;ITEM 307
1717  004522  060140  070024  071406          WORD   EM307,DH307,DT307,DF307
1718  004530  070654
1719                                  ;ITEM 310
1720  004532  060242  070024  071406          WORD   EM310,DH310,DT310,DF310
1721  004540  070654
1722                                  ;ITEM 311
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1723  004542  060345  070024  071406          WORD   EM311,DH311,DT311,DF311
1724  004550  070654
1725                                  ;ITEM 312
1726  004552  060446  070024  071406          WORD   EM312,DH312,DT312,DF312
1727  004560  070654
1728                                  ;ITEM 313
1729  004562  060550  070024  071406          WORD   EM313,DH313,DT313,DF313
1730  004570  070654
1731                                  ;ITEM 314
1732  004572  060651  070024  071406          WORD   EM314,DH314,DT314,DF314
1733  004600  070654
1734                                  ;ITEM 315
1735  004602  060752  070024  071406          WORD   EM315,DH315,DT315,DF315
1736  004610  070654
1737                                  ;ITEM 316
1738  004612  061053  070024  071406          .WORD  EM316,DH316,DT316,DF316
1739  004620  070654
1740                                  ;ITEM 317
1741  004622  061154  070024  071406          WORD   EM317,DH317,DT317,DF317
1742  004630  070654
1743                                  ;ITEM 320
1744  004632  061255  070024  071406          .WORD  EM320,DH320,DT320,DF320
1745  004640  070654
1746                                  ;ITEM 321
1747  004642  061356  070024  071406          WORD   EM321,DH321,DT321,DF321
1748  004650  070654
1749                                  ;ITEM 322
1750  004652  061457  070024  071532          WORD   EM322,DH322,DT322,DF322
1751  004660  070724
1752                                  ;ITEM 323
1753  004662  061514  070024  071532          .WORD  EM323,DH323,DT323,DF323
1754  004670  070724
1755                                  ;ITEM 324
1756  004672  061553  070114  071576          WORD   EM324,DH324,DT324,DF324
1757  004700  070745
1758                                  ;ITEM 325
1759  004702  061612  070024  071532          WORD   EM325,DH325,DT325,DF325
1760  004710  070724
1761                                  ;ITEM 326
1762  004712  061612  070024  071532          WORD   EM326,DH326,DT326,DF326
1763  004720  070724
1764                                  ;ITEM 327
1765  004722  061753  070024  071532          .WORD  EM327,DH327,DT327,DF327
1766  004730  070724
1767                                  ;ITEM 330
1768  004732  062055  070024  071532          .WORD  EM330,DH330,DT330,DF330
1769  004740  070724
1770                                  ;ITEM 331
1771  004742  062160  070024  071532          .WORD  EM331,DH331,DT331,DF331
1772  004750  070724
1773                                  ;ITEM 332
1774  004752  063434  070024  071532          .WORD  EM332,DH332,DT332,DF332
1775  004760  070724
1776                                  ;ITEM 333
1777  004762  061514  070024  071532          .WORD  EM333,DH333,DT333,DF333
1778  004770  070724
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1779                                        ;ITEM 334
1780  004772  062263  070024  071532              .WORD   EM334,DH334,DT334,DF334
1781  005000  070724
1782                                        ;ITEM 335
1783  005002  062357  070024  071532              .WORD   EM335,DH335,DT335,DF335
1784  005010  070724
1785                                        ;ITEM 336
1786  005012  062461  070024  071532              .WORD   EM336,DH336,DT336,DF336
1787  005020  070724
1788                                        ;ITEM 337
1789  005022  062535  070024  071532              .WORD   EM337,DH337,DT337,DF337
1790  005030  070724
1791                                        ;ITEM 340
1792  005032  062637  070024  071532              .WORD   EM340,DH340,DT340,DF340
1793  005040  070724
1794                                        ;ITEM 341
1795  005042  062741  070024  071532              .WORD   EM341,DH341,DT341,DF341
1796  005050  070724
1797                                        ;ITEM 342
1798  005052  063045  070024  071532              .WORD   EM342,DH342,DT342,DF342
1799  005060  070724
1800                                        ;ITEM 343
1801  005062  063147  070024  071532              .WORD   EM343,DH343,DT343,DF343
1802  005070  070724
1803                                        ;ITEM 344
1804  005072  063251  070024  071532              .WORD   EM344,DH344,DT344,DF344
1805  005100  070724
1806                                        ;ITEM 345
1807  005102  063526  070024  071532              .WORD   EM345,DH345,DT345,DF345
1808  005110  070724
1809                                        ;ITEM 346
1810  005112  063626  070024  071532              .WORD   EM346,DH346,DT346,DF346
1811  005120  070724
1812                                        ;ITEM 347
1813  005122  063724  070024  071532              .WORD   EM347,DH347,DT347,DF347
1814  005130  070766
1815                                        ;ITEM 350
1816  005132  063750  070024  071532              .WORD   EM350,DH350,DT350,DF350
1817  005140  070766
1818                                        ;ITEM 351
1819  005142  063776  067675  071152              .WORD   EM351,DH351,DT351,DF351
1820  005150  070606
1821                                        ;ITEM 352
1822  005152  064102  070024  071532              .WORD   EM352,DH352,DT352,DF352
1823  005160  070766
1824                                        ;ITEM 353
1825  005162  064206  070024  071532              .WORD   EM353,DH353,DT353,DF353
1826  005170  070766
1827                                        ;ITEM 354
1828  005172  064312  070024  071532              .WORD   EM354,DH354,DT354,DF354
1829  005200  070766
1830                                        ;ITEM 355
1831  005202  064416  070024  071532              .WORD   EM355,DH355,DT355,DF355
1832  005210  070766
1833                                        ;ITEM 356
1834  005212  064522  067545  071036              .WORD   EM356,DH356,DT356,DF356
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1835  005220  070576
1836                                  ,ITEM 357
1837  005222  064620  070251  071060          WORD   EM357,DH357,DT357,DF357
1838  005230  070576
1839                                  ,ITEM 360
1840  005232  064716  067675  071152          WORD   EM360,DH360,DT360,DF360
1841  005240  070606
1842                                  ,ITEM 361
1843  00524.  067146  067365  071406          WORD   EM361,DH361,DT361,DF361
1844  005250  070576
1845                                  ,ITEM 362
1846  005252  000000  000000  000000          WORD   EM362,DH362,DT362,DF362
1847  005260  000000
1848                                  ,ITEM 363
1849  005262  000000  000000  000000          .WORD  EM363,DH363,DT363,DF363
1850  005270  000000
1851                                  ,ITEM 364
1852  005272  000000  000000  000000          WORD   EM364,DH364,DT364,DF364
1853  005300  000000
1854                                  ,ITEM 365
1855  005302  000000  000000  000000          .WORD  EM365,DH365,DT365,DF365
1856  005310  000000
1857                                  ,ITEM 366
1858  005312  000000  000000  000000          .WORD  EM366,DH366,DT366,DF366
1859  005320  000000
1860                                  ,ITEM 367
1861  005322  000000  000000  000000          .WORD  EM367,DH367,DT367,DF367
1862  005330  00000C
1863                                  ;ITEM 370
1864  005332  000000  000000  000000          .WORD  EM370,DH370,DT370,DF370
1865  005340  000000
1866                                  ,ITEM 371
1867  005342  000000  000000  000000          WORD   EM371,DH371,DT371,DF371
1868  005350  000000
1869                                  ,ITEM 372
1870  005352  000000  000000  000000          .WORD  EM372,DH372,DT372,DF372
1871  005360  000000
1872                                  ,ITEM 373
1873  005362  000000  000000  000000          .WORD  EM373,DH373,DT373,DF373
1874  005370  000000
1875                                  ;ITEM 374
1876  005372  000000  000000  000000          .WORD  EM374,DH374,DT374,DF374
1877  005400  000000
1878                                  ,ITEM 375
1879  005402  000000  000000  000000          WORD   EM375,DH375,DT375,DF375
1880  005410  000000
1881                                  ;ITEM 376
1882  005412  000000  000000  000000          WORD   EM376,DH376,DT376,DF376
1883  005420  000000
1884                                  ,ITEM 377
1885  005422  000000  000000  000000          WORD   EM377,DH377,DT377,DF377
1886  005430  000000
1887                                  ,ITEM 400
1888  005432  000000  000000  000000          WORD   EM400,DH400,DT400,DF400
1889  005440  000000
1890                                  ,ITEM 401
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1891  005442  065011  067545  071102          WORD   EM401,DM401,DT401,DF401
1892  005450  070576
1893                                ,ITEM 402
1894  005452  065034  067365  071102          .WORD  EM402,DM402,DT402,DF402
1895  005460  070576
1896                                ,ITEM 403
1897  005462  065056  067675  071152          .WORD  EM403,DM403,DT403,DF403
1898  005470  070606
1899                                ,ITEM 404
1900  005472  065210  070211  071152          .WORD  EM404,DM404,DT404,DF404
1901  005500  070606
1902                                ,ITEM 405
1903  005502  065240  067545  071102          .WORD  EM405,DM405,DT405,DF405
1904  005510  070576
1905                                ,ITEM 406
1906  005512  065264  067365  071102          .WORD  EM406,DM406,DT406,DF406
1907  005520  070576
1908                                ,ITEM 407
1909  005522  065307  067675  071152          .WORD  EM407,DM407,DT407,DF407
1910  005530  070606
1911                                ,ITEM 410
1912  005532  065442  070211  071152          .WORD  EM410,DM410,DT410,DF410
1913  005540  070606
1914                                ;ITEM 411
1915  005542  065473  067545  071102          .WORD  EM411,DM411,DT411,DF411
1916  005550  070576
1917                                ;ITEM 412
1918  005552  065517  067365  071102          .WORD  EM412,DM412,DT412,DF412
1919  005560  070576
1920                                ;ITEM 413
1921  005562  065542  067675  071152          .WORD  EM413,DM413,DT413,DF413
1922  005570  070606
1923                                ;ITEM 414
1924  005572  065675  070211  071152          .WORD  EM414,DM414,DT414,DF414
1925  005600  070606
1926                                ;ITEM 415
1927  005602  065726  067545  071102          WORD   EM415,DM415,DT415,DF415
1928  005610  070576
1929                                ,ITEM 416
1930  005612  065753  067365  071102          .WORD  EM416,DM416,DT416,DF416
1931  005620  070576
1932                                ,ITEM 417
1933  005622  065777  067675  071152          .WORD  EM417,DM417,DT417,DF417
1934  005630  070606
1935                                ,ITEM 420
1936  005632  066045  070211  071152          WORD   EM420,DM420,DT420,DF420
1937  005640  070606
1938                                ,ITEM 421
1939  005642  066077  067545  071102          WORD   EM421,DM421,DT421,DF421
1940  005650  070576
1941                                ;ITEM 422
1942  005652  066124  067365  071102          .WORD  EM422,DM422,DT422,DF422
1943  005660  070576
1944                                ,ITEM 423
1945  005662  066150  067675  071152          WORD   EM423,DM423,DT423,DF423
1946  005670  070606
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1947                                    ;ITEM 424
1948  005672  066216  070211  071152            .WORD   EM424,DM424,DT424,DF424
1949  005700  070606
1950                                    ;ITEM 425
1951  005702  066250  067545  071102            .WORD   EM425,DM425,DT425,DF425
1952  005710  070576
1953                                    ;ITEM 426
1954  005712  066274  067365  071102            .WORD   EM426,DM426,DT426,DF426
1955  005720  070576
1956                                    ;ITEM 427
1957  005722  066317  067675  071152            .WORD   EM427,DM427,DT427,DF427
1958  005730  070606
1959                                    ;ITEM 430
1960  005732  066452  070211  071152            .WORD   EM430,DM430,DT430,DF430
1961  005740  070606
1962                                    ;ITEM 431
1963  005742  066503  067675  071152            .WORD   EM431,DM431,DT431,DF431
1964  005750  070606
1965                                    ;ITEM 432
1966  005752  066556  067545  071102            .WORD   EM432,DM432,DT432,DF432
1967  005760  070576
1968                                    ;ITEM 433
1969  005762  066603  067365  071102            .WORD   EM433,DM433,DT433,DF433
1970  005770  070576
1971                                    ;ITEM 434
1972  005772  066627  067675  071152            .WORD   EM434,DM434,DT434,DF434
1973  006000  070606
1974                                    ;ITEM 435
1975  006002  066763  070211  071152            .WORD   EM435,DM435.DT435,DF435
1976  006010  070606
1977                                    ;ITEM 436
1978  006012  067015  067675  071152            .WORD   EM436,DM436,DT436,DF436
1979  006020  070606
1980                                    ;ITEM 437
1981  006022  067072  067545  071102            .WORD   EM437,DM437,DT437,DF437
1982  006030  070576
1983                                    ;ITEM 440
1984  006032  067120  067545  071102            .WORD   EM440,DM440,DT440,DF440
1985  006040  070576
1986                                    ;ITEM 441
1987  006042  067171  070341  071642            .WORD   EM441,DM441,DT441,DF441
1988  006050  071007
1989                                    ;ITEM 442
1990  006052  067225  070407  071660            .WORD   EM442,DM442,DT442,DF442
1991  006060  071007
1992                                    ;ITEM 443
1993  006062  067257  070407  071660            .WORD   EM443,DM443,DT443,DF443
1994  006070  071007
1995
1996
1997                                    .SBTTL  ACT11 HOOKS
1998
1999                                    ;;*****************************************************************
2000                                    ;HOOKS REQUIRED BY ACT11
2001          006072                            $SVPC=                  ;SAVE PC
2002          000046                             =46
```

```
2003  000046  037344                        $ENDAD                  ;;1)SET LOC 46 TO ADDRESS OF $ENDAD IN  $EOP
2004          000052                        .=52
2005  000052  000000                         WORD   0               ;;2)SET LOC 52 TO ZERO
2006          006072                         =$SVPC                 ;; RESTORE PC
2007                                 SBTTL  APT PARAMETER BLOCK
2008
2009                                ;;*****************************************************************
2010                                ;SET LOCATIONS 24 AND 44 AS REQUIRED FOR APT
2011                                ;;*****************************************************************
2012          006072                        .$X=     ;;SAVE CURRENT LOCATION
2013          000024                        .=24     ;;SET POWER FAIL TO POINT TO START OF PROGRAM
2014  000024  000200                        200      ;;FOR APT START UP
2015          000044                        .=44     ;;POINT TO APT INDIRECT ADDRESS PNTR
2016  000044  006072                        $APTHDR  ;;POINT TO APT HEADER BLOCK
2017          006072                        .=.$X    ;;RESET LOCATION COUNTER
2018                                ;;*****************************************************************
2019                                ;SETUP APT PARAMETER BLOCK AS DEFINED IN THE APT-PDP11 DIAGNOSTIC
2020                                ;INTERFACE SPEC
2021
2022  006072                        $APTHD.
2023  006072  000000               $HIBTS: .WORD   0       ;;TWO HIGH BITS OF 18 BIT MAILBOX ADDR
2024  006074  001316               $MBADR: .WORD   $MAIL   ;;ADDRESS OF APT MAILBOX (BITS 0-15)
2025  006076  000010               $TSTM:  .WORD   10      ;;RUN TIM OF LONGEST TEST
2026  006100  000040               $PASTM: .WORD   40      ;;RUN TIME IN SECS. OF 1ST PASS ON 1 UNIT (QUICK VERIFY)
2027  006102  000000               $UNITM: .WORD   0       ;;ADDITIONAL RUN TIME (SECS) OF A PASS FOR EACH ADDITIONAL UNIT
2028  006104  000052                       .WORD   $ETEND-$MAIL/2 ;;LENGTH MAILBOX-ETABLE(WORDS)
2029
2030
2031  006106                        START.
2032                                .SBTTL  INITIALIZE THE COMMON TAGS
2033                                ;;CLEAR THE COMMON TAGS ($CMTAG) AREA
2034  006106  012706  001100               MOV     #$CMTAG,R6      ;;FIRST LOCATION TO BE CLEARED
2035  006112  005026                       CLR     (R6)+           ;;CLEAR MEMORY LOCATION
2036  006114  022706  001140               CMP     #$WR,R6 ;;DONE?
2037  006120  001374                       BNE     .-6             ;;LOOP BACK IF NO
2038  006122  012706  001100               MOV     #STACK,SP       ;;SETUP THE STACK POINTER
2039                                ;;INITIALIZE A FEW VECTORS
2040  006126  012737  037424  000020       MOV     #$SCOPE,@#IOTVEC ;;IOT VECTOR FOR SCOPE ROUTINE
2041  006134  012737  000340  000022       MOV     #340,@#IOTVEC+2 ;;LEVEL 7
2042  006142  012737  037704  000030       MOV     #$ERROR,@#EMTVEC ;;EMT VECTOR FOR ERROR ROUTINE
2043  006150  012737  000340  000032       MOV     #340,@#EMTVEC+2 ;;LEVEL 7
2044  006156  012737  041652  000034       MOV     #$TRAP,@#TRAPVEC ;;TRAP VECTOR FOR TRAP CALLS
2045  006164  012737  000340  000036       MOV     #340,@#TRAPVEC+2;LEVEL 7
2046  006172  012737  041736  000024       MOV     #$PWRDN,@#PWRVEC ;;POWER FAILURE VECTOR
2047  006200  012737  000340  000026       MOV     #340,@#PWRVEC+2 ;;LEVEL 7
2048  006206  016767  030754  030744       MOV     $ENDCT,$EOPCT   ;;SETUP END-OF-PROGRAM COUNTER
2049  006214  005067  173062               CLR     $TIMES          ;;INITIALIZE NUMBER OF ITERATIONS
2050  006220  005067  173060               CLR     $ESCAPE         ;;CLEAR THE ESCAPE ON ERROR ADDRESS
2051  006224  112767  000001  172663       MOVB    #1,$ERMAX       ;;ALLOW ONE ERROR PER TEST
2052                                ;;INITIALIZE THE "T-BIT" TRAP VECTOR. THEN LOAD LOCATION "$RTRN", IN
2053                                ;;THE "END-OF-PASS" ($EOP) ROUTINE, WITH A "RTI" OR "RTT"
2054  006232  012737  037410  000014       MOV     #$RTRN,@#TBITVEC ;;SET "T" BIT VECTOR TO $RTRN
2055  006240  012737  000340  000016       MOV     #340,@#TBITVEC+2 ;;LEVEL 7
2056  006246  012767  000002  031134       MOV     #RTI,$RTRN      ;;SET $RTRN TO A RTI
2057  006254  012737  00631   000010       MOV     #65$,@#RESVEC   ;;TRY TO DO A RTT
2058  006262  005046                       CLR     -(SP)           ;;DUMMY PS
```

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2059  006264  012746  006272          MOV     #64$,-(SP)      ;;AND PC
2060  006270  000006                  RTT                     ;;TRY THE RTT
2061  006272  012767  000006  031110  64$     MOV     #RTT,$RTRN      ;;RTT IS LEGAL--SET $RTRN TO A RTT
2062  006300  000402                  BR      66$
2063  006302  062706  000010          65$     ADD     #10,SP          ;;RTT ILLEGAL--CLEAN OFF THE STACK
2064  006306  012737  000012  000010  66$     MOV     #RESVEC+2,@#RESVEC ;;RESTORE TRAP CATCHER
2065  006314  005067  031076          CLR     $TBIT           ;;CLEAR "T" BIT SWITCH
2066  006320  012767  006320  172560  MOV     # ,$LPADR        ;;INITIALIZE THE LOOP ADDRESS FOR SCOPE
2067  006326  012767  006326  172554  MOV     #.,$LPERR       ;;SETUP THE ERROR LOOP ADDRESS
2068                                  ;;SIZE FOR A HARDWARE SWITCH REGISTER.  IF NOT FOUND OR IT IS
2069                                  ;;EQUAL TO A "-1", SETUP FOR A SOFTWARE SWITCH REGISTER
2070  006334  013746  000004          MOV     @#ERRVEC,-(SP)  ;;SAVE ERROR VECTOR
2071  006340  012737  006374  000004  MOV     #67$,@#ERRVEC   ;;SET UP ERROR VECTOR
2072  006346  012767  177570  172564  MOV     #DSWR,SWR       ;;SETUP FOR A HARDWARE SWICH REGISTER
2073  006354  012767  177570  172560  MOV     #DDISP,DISPLAY  ;;AND A HARDWARE DISPLAY REGISTER
2074  006362  022777  177777  172550  CMP     #-1,@SWR        ;;TRY TO REFERENCE HARDWARE SWR
2075  006370  001012                  BNE     69$             ;;BRANCH IF NO TIMEOUT TRAP OCCURRED
2076                                                          ;;AND  THE HARDWARE SWR IS NOT = -1
2077  006372  000403                  BR      68$             ;;BRANCH IF NO TIMEOUT
2078  006374  012716  006402          67$     MOV     #68$,(SP)       ;;SET UP FOR TRAP RETURN
2079  006400  000002                  RTI
2080  006402  012767  000176  172530  68$     MOV     #SWREG,SWR      ;;POINT TO SOFTWARE SWR
2081  006410  012767  000174  172524          MOV     #DISPREG,DISPLAY
2082  006416  012637  000004          69$     MOV     (SP)+,@#ERRVEC  ;;RESTORE ERROR VECTOR
2083
2084  006422  005067  172676          CLR     $PASS           ;;CLEAR PASS COUNT
2085  006426  132767  000200  172703  BITB    #APTSIZE,$ENVM  ;;TEST USER SIZE UNDER APT
2086  006434  001403                  BEQ     70$             ;;YES,USE NON-APT SWITCH
2087  006436  012767  001340  172474  MOV     #$SWREG,SWR     ;;NO,USE APT SWITCH REGISTER
2088  006444                          70$:
2089                                   SBTTL  TYPE PROGRAM NAME
2090                                  ;;TYPE THE NAME OF THE PROGRAM IF FIRST PASS
2091  006444  005227  177777          INC     #-1             ;;FIRST TIME?
2092  006450  001046                  BNE     71$             ;;BRANCH IF NO
2093  006452  022737  037344  000042  CMP     #$ENDAD,@#42    ;;ACT-11?
2094  006460  001442                  BEQ     71$             ;;BRANCH IF YES
2095  006462  104401  006530          TYPE    ,72$            ;;TYPE ASCIZ STRING
2096                                   SBTTL  GET VALUE FOR SOFTWARE SWITCH REGISTER
2097  006466  005737  000042          TST     @#42            ;;ARE WE RUNNING UNDER XXDP/ACT?
2098  006472  001012                  BNE     73$             ;;BRANCH IF YES
2099  006474  126727  172636  000001  CMPB    $ENV,#1         ;;ARE WE RUNNING UNDER APT?
2100  006502  001406                  BEQ     73$             ;;BRANCH IF YES
2101  006504  026727  172430  000176  CMP     SWR,#SWREG      ;;SOFTWARE SWITCH REG SELECTED?
2102  006512  001005                  BNE     74$             ;;BRANCH IF NO
2103  006514  104405                  GTSWR                   ;;GET SOFT-SWR SETTINGS
2104  006516  000403                  BR      74$
2105  006520  112767  000001  172406  73$     MOVB    #1,$AUTOB       ;;SET AUTO-MODE INDICATOR
2106  006526                          74$:
2107  006526  000417                  BR      71$             ;;GET OVER THE ASCIZ
2108                                  ;;72$:  .ASCIZ  <CRLF>%CFFPCB0 11/34 FPP DIAG PRT3%<CRLF>
2109  006566                          71$:
2110
2111  006566                          LOOP
2112
2113
2114
```

```



                                        ;;*******************************************************************
                                        ;*TEST 1          STF WITH ILLEGAL ACCUMULATOR TEST
                                        ;*
                                        ;*THIS IS A TEST OF THE ST INSTRUCTION USING ILLEGAL ACCUMULATOR 7, MODE 0
                                        ;*
                                        ;;*******************************************************************
 006566  000004                         TST1     SCOPE

 006570                                 0001
 006570  104413                                  LPERR                          ;SET UP THE LOOP ON ERROR ADDRESS
 006572  005000                                  CLR      R0                    ;SET THE FPS
 006574  170100                                  LDFPS    R0

 006576  012737  006634  000244                  MOV      #000T,@#FPVECT        ;SET UP FOR FP TRAPS
 006604  012737  006612  001236                  MOV      #1$,@#$TMP2

 006612  174007                         1$       STF      AC0,AC7               ;THIS TEST INSTRUCTION SHOULD
                                                                                ;CAUSE A TRAP

                                        ;REPORT FAILURE OF USE OF ILLEGAL ACCUMULATOR 7 TO CAUSE AN FPP TRAP
 006614                                 0002
 006614  170200                                  STFPS    R0                    ;GET FPS
 006616  010037  001240                          MOV      R0,@#$TMP3
 006622  170300                                  STST     R0                    ;GET FEC
 006624  010037  001242                          MOV      R0,@#$TMP4
 006630  104001                         3$       ERROR    1                     ;STF WITH ILLEGAL ACCUMULATOR, MODE
                                                                                ;0, DIDN'T TRAP   ST 765 TO ST 537
 006632  000434                                  BR       000DONE

                                        ;TRAP TO 000T, HERE, WHEN THE EXPECTED ERROR OCCURS.
 006634  011600                         000T     MOV      (SP),R0               ;MAKE SURE THE ERROR OCCURRED
 006636  022700  006614                          CMP      #0002,R0              ;AT THE CORRECT ADDRESS
 006642  001402                                  BEQ      0003                  ;BRANCH IF TRAP ADDRESS CORRECT
 006644  000137  042554                          JMP      @#FPSPUR              ;IF INCORRECT GO REPORT SPURIOUS
                                                                                ;FP TRAP

 006650  170204                         0003     STFPS    R4                    ;GET FPS
 006652  170305                                  STST     R5                    ;GET FEC
 006654  010437  001240                          MOV      R4,@#$TMP3            ;SAVE DATA INCASE OF ERROR
 006660  010537  001242                          MOV      R5,@#$TMP4
 006664  012702  100000                          MOV      #100000,R2            ;EXPECTED FPS
 006670  012703  000002                          MOV      #2,R3                 ;EXPECTED FEC
 006674  010237  001244                          MOV      R2,@#$TMP5
 006700  010337  001246                          MOV      R3,@#$TMP6
 006704  022626                                  CMP      (SP)+,(SP)+           ;RESET THE STACK

 006706  020204                                  CMP      R2,R4                 ;WAS FPS CORRECT?
 006710  001402                                  BEQ      0004                  ;BRANCH IF YES
                                                                                ;OTHERWISE REPORT FPS INCORRECTLY
 006712  104002                         1$       ERROR    2                     ;SET AFTER USE OF ILLEGAL ACC
 006714  000403                                  BR       000DONE

 006716  020305                         0004     CMP      R3,R5                 ;WAS THE FEC CORRECT?
 006720  001401                                  BEQ      000DONE               ;BRANCH IF CORRECT
```

```
2171                                                    ,OTHERWISE REPORT INCORRECT FEC
2172  006722  104003                1$      ERROR   3     ;AFTER USE OF ILLEGAL ACC
2173
2174  006724                        000DONE
2175  006724  104412                        RSETUP        ,GO INITIALIZE THE FPS AND STACK, AND
2176                                                        ,SEE IF THE USER HAS EXPRESSED
2177                                                        ;THE DESIRE TO CHANGE THE SOFTWARE
2178                                                        ,VIRTUAL CONSOLE SWITCH REGISTER (HAS
2179                                                        ,THE USER TYPED CONTROL G?)
2180
2181
2182
2183
2184                                ,,**********************************************************************
2185                                ,*TEST 2        FDST MODE 1, FLOATING MODE, TEST
2186                                ,*
2187                                ,*THIS IS A TEST OF THE STF INSTRUCTION USING FDST MODE 1
2188                                ,*
2189                                ,;**********************************************************************
2190  006726  000004                TST2    SCOPE
2191
2192  006730                        PPP1
2193  006730  104413                        LPERR         ,SET UP THE LOOP ON ERROR ADDRESS
2194
2195  006732  012700  177777                MOV     #-1,R0        ,SET UP A BACKROUND PATTERN IN THE
2196  006736  012701  007066                MOV     #PPPBF0,R1    ,INPUT BUFFER
2197  006742  012702  000014                MOV     #14,R2
2198  006746  010021                PPP2    MOV     R0,(R1)+
2199  006750  077202                        SOB     R2,PPP2
2200
2201  006752  012700  000200                MOV     #200,R0       ,SET FD MODE
2202  006756  170100                        LDFPS   R0
2203  006760  012700  007116                MOV     #PPPTP1,R0    ,PUT TEST DATA INTO AC0
2204  006764  172410                        LDD     (R0),AC0
2205
2206  006766  012700  007102                MOV     #PPPBF1,R0    ,FDST ADDRESS
2207  006772  005002                        CLR     R2            ,CLEAR THE FPS
2208  006774  170102                        LDFPS   R2
2209  006776  012737  007010  001236        MOV     #PPP3,@#$TMP2
2210  007004  010037  001240                MOV     R0,@#$TMP3
2211
2212  007010  174010                PPP3    STF     AC0 (R0)      ,TEST INSTRUCTION
2213
2214  007012  022700  007102                CMP     #PPPBF1,R0    ,WAS R0 MODIFIED DURING EXECUTION?
2215  007016  001404                        BEQ     PPP4          ,BRANCH IF R0 NOT MODIFIED, CORRECT
2216
2217  007020  010037  001242                MOV     R0,@#$TMP4    ,OTHERWISE REPORT ERROR, R0 MODIFIED
2218  007024  104004                1$      ERROR   4
2219  007026  000456                        BR      PPPDONE       ,GO TO NEXT TEST
2220
2221  007030  012700  007102        PPP4    MOV     #PPPBF1,R0    ,CHECK THE DATA IN THE OUTPUT BUFFER
2222  007034  012701  007116                MOV     #PPPTP1,R1
2223  007040  022021                        CMP     (R0)+,(R1)+
2224  007042  001031                        BNE     PPP10         ,BRANCH IF INCORRECT
2225  007044  022011                        CMP     (R0)+,(R1)
2226  007046  001027                        BNE     PPP10         ,BRANCH IF INCORRECT
```

```
2227  007050  022720  177777          CMP     #-1,(R0)+       ,WAS FLOATING MODE USED?
2228  007054  001034                  BNE     PPP15           ,BRANCH IF NOT
2229  007056  022710  177777          CMP     #-1,(R0)
2230  007062  001031                  BNE     PPP15
2231  007064  000437                  BR      PPPDONE ,GO TO NEXT TEST
2232
2233  007066  177777  177777  177777  PPPBF0  WORD    -1,-1,-1,-1,-1,-1
2234  007074  177777  177777  177777
2235
2236  007102  177777  177777  177777  PPPBF1  WORD    -1,-1,-1,-1,-1,-1
2237  007110  177777  177777  177777
2238
2239  007116  123456  023456          PPPTP1  WORD    123456,23456
2240  007122  034567  045671                  WORD    34567,45671
2241
2242                                  ;REPORT DATA IN OUT PUT BUFFER INCORRECT
2243  007126  012737  007116  001242  PPP10:  MOV     #PPPTP1,@#$TMP4
2244  007134  012737  007102  001240          MOV     #PPPBF1,@#$TMP3
2245  007142  104005                  1$:     ERROR   5               ,BAD DATA
2246  007144  000407                          BR      PPPDONE
2247
2248                                  ,REPORT FLOATING MODE NOT USED, BUT FD FAILED
2249  007146  012737  007116  001242  PPP15:  MOV     #PPPTP1,@#$TMP4
2250  007154  012737  007102  001240          MOV     #PPPBF1,@#$TMP3
2251  007162  104006                  1$      ERROR   6               ,ST 707 TO 245 INTO 244 (BUT FD)
2252
2253  007164                          PPPDONE
2254  007164  104412                          RSETUP                  ,GO INITIALIZE THE FPS AND STACK, AND
2255                                                                  ,SEE IF THE USER HAS EXPRESSED
2256                                                                  ,THE DESIRE TO CHANGE THE SOFTWARE
2257                                                                  ,VIRTUAL CONSOLE SWITCH REGISTER (HAS
2258                                                                  ,THE USER TYPED CONTROL G?)
2259
2260
2261
2262
2263                                  ,,**********************************************************************
2264                                  ,*TEST 3         FDST MODE 2 TEST
2265                                  ,*
2266                                  ,*THIS IS A TEST OF BOTH STF AND STD WITH FDST MODE 2
2267                                  ,*
2268                                  ,,**********************************************************************
2269  007166  000004                  TST3    SCOPE
2270
2271                                  ,FIRST TEST STF
2272  007170                          QQQ1:
2273  007170  104413                          LPERR                   ;SET UP THE LOOP ON ERROR ADDRESS
2274
2275  007172  012700  177777                  MOV     #-1,R0  ,SET UP THE OUTPUT BUFFER
2276  007176  012701  007330                  MOV     #QQQBF0,R1
2277  007202  012702  000014                  MOV     #14,R2
2278  007206  010021                  QQQ2    MOV     R0,(R1)+
2279  007210  077202                          SOB     R2,QQQ2
2280
2281  007212  012700  000200                  MOV     #200,R0         ,SET FD MODE
2282  007216  170100                          LDFPS   R0
```

```
2283  007220  012700  007360            MOV     #QQQTP1,R0      ,SETUP AC0
2284  007224  172410                    LDD     (R0),AC0
2285
2286  007226  012700  007344            MOV     #QQQBF1,R0      ,FDST ADDRESS
2287  007232  005002                    CLR     R2
2288  007234  170102                    LDFPS   R2              ,SET FPS
2289  007236  012737  007244  001236    MOV     #QQQ3,@#$TMP2
2290
2291  007244  174020            QQQ3    STF     AC0,(R0)+       ,TEST INSTRUCTION
2292
2293  007246  022700  007350            CMP     #QQQBF1+4,R0    ,WAS R0 INCREMENTED BY 4 PROPERLY?
2294
2295  007252  001407                    BEQ     QQQ4            ,BRANCH IF R0 CORRECT
2296  007254  010037  001242            MOV     R0,@#$TMP4      ,REPORT R0 INCORRECT AFTER FDST MODE 2
2297  007260  012737  007350  001240    MOV     #QQQBF1+4,@#$TMP3
2298  007266  104007            1$      ERROR   7               ,BAD CONSTANT USED OR DIDN'T GO 527 TO 642
2299  007270  000526                    BR      QQQDONE
2300  007272  012700  007344    QQQ4    MOV     #QQQBF1,R0      ,WAS THE OUTPUT DATA CORRECT?
2301  007276  012701  007360            MOV     #QQQTP1,R1
2302  007302  022021                    CMP     (R0)+,(R1)+
2303  007304  001031                    BNE     QQQ10           ,BRANCH IF INCORRECT
2304  007306  022021                    CMP     (R0)+,(R1)+
2305  007310  001027                    BNE     QQQ10           ,BRANCH IF INCORRECT
2306  007312  022027  177777            CMP     (R0)+,#-1       ,SEE IF ANY OTHER DATA BUFFER WORDS WERE MODIFIED
2307  007316  001024                    BNE     QQQ10           ,BRANCH IF INCORRECT
2308  007320  022027  177777            CMP     (R0)+,#-1
2309  007324  001021                    BNE     QQQ10           ,BRANCH IF INCORRECT
2310  007326  000430                    BR      QQQ20
2311  007330  177777  177777  177777  QQQBF0  .WORD   -1,-1,-1,-1,-1,-1
2312  007336  177777  177777  177777
2313  007344  177777  177777  177777  QQQBF1  .WORD   -1,-1,-1,-1,-1,-1
2314  007352  177777  177777  177777
2315  007360  076543            QQQTP1  76543
2316  007362  065432                    65432
2317  007364  054321                    54321
2318  007366  043210                    43210
2319                            ,REPORT OUTPUT DATA INCORRECT
2320  007370  012737  007360  001240    QQQ10.  MOV     #QQQTP1,@#$TMP3
2321  007376  012737  007344  001242            MOV     #QQQBF1,@#$TMP4
2322  007404  104010            1$      ERROR   10              ,BAD DATA
2323  007406  000457                    BR      QQQDONE
2324
2325                            ,NOW TEST STD MODE 2
2326
2327  007410                    QQQ20
2328  007410  104413                    LPERR                   ,SET UP THE LOOP ON ERROR ADDRESS
2329  007412  012700  007330            MOV     #QQQBF0,R0      ,SET UP DEFAULT INPUT DATA BUFFER
2330  007416  010001                    MOV     R0,R1
2331  007420  012702  000014            MOV     #14,R2
2332  007424  010021            QQQ22   MOV     R0,(R1)+
2333  007426  077202                    SOB     R2,QQQ22
2334  007430  012700  000200            MOV     #200,R0         ,ENTER FLOATING DOUBLE MODE
2335  007434  170100                    LDFPS   R0
2336  007436  012700  007360            MOV     #QQQTP1,R0      ,LOAD AC0
2337  007442  172410                    LDD     (R0),AC0
2338  007444  012700  007344            MOV     #QQQBF1,R0      ,SET DESTINATION ADDRESS
```

```
2339  007450  012737  007456  001236          MOV     #QQQ23,@#$TMP2
2340  007456  174020                  QQQ23   STD     AC0,(R0)+       ;TEST INSTRUCTION
2341  007460  022700  007354                  CMP     #QQQBF1+10,R0   ;WAS R0 INCREMENTED BY 10 CORRECTLY?
2342  007464  001407                          BEQ     QQQ24           ;BRANCH IF CORRECT
2343  007466  010037  001242                  MOV     R0,@#$TMP4      ;REPORT R0 INCORRECTLY INCREMENTED
2344  007472  012737  007354  001240          MOV     #QQQBF1+10,@#$TMP3
2345  007500  104011                  1$      ERROR   11              ;DO NOT INCREM BY 10 BAD CONSTANT
2346  007502  000421                          BR      QQQDONE
2347  007504  012700  007344          QQQ24   MOV     #QQQBF1,R0      ;DID THE DATA REACH THE OUTPUT BUFFER CORRECTLY?
2348  007510  012701  007360                  MOV     #QQQTP1,R1
2349  007514  012702  000004                  MOV     #4,R2
2350  007520  022021                  1$      CMP     (R0)+,(R1)+
2351  007522  001002                          BNE     QQQ25           ;BRANCH IF INCORRECT
2352  007524  077203                          SOB     R2,1$
2353  007526  000407                          BR      QQQDONE
2354                                  ;REPORT DATA INCORRECT
2355  007530  012737  007360  001240  QQQ25   MOV     #QQQTP1,@#$TMP3
2356  007536  012737  007344  001242          MOV     #QQQBF1,@#$TMP4
2357  007544  104012                  1$      ERROR   12              ;BAD DATA
2358  007546                          QQQDONE
2359  007546  104412                          RSETUP                  ;GO INITIALIZE THE FPS AND STACK, AND
2360                                                                  ;SEE IF THE USER HAS EXPRESSED
2361                                                                  ;THE DESIRE TO CHANGE THE SOFTWARE
2362                                                                  ;VIRTUAL CONSOLE SWITCH REGISTER (HAS
2363                                                                  ;THE USER TYPED CONTROL G?)
2364
2365                                  ;;*****************************************************************
2366                                  ;*TEST 4         FDST MODE 2, WITH GR7, TEST
2367                                  ;*
2368                                  ;*THIS IS A TEST OF STF WITH GR7 MODE 2 OR IMMEDIATE MODE
2369                                  ;*
2370                                  ;;*****************************************************************
2371  007550  000004                  TST4    SCOPE
2372
2373  007552                          RRR1
2374  007552  104413                          LPERR                   ;SET UP THE LOOP ON ERROR ADDRESS
2375  007554  012700  007632                  MOV     #RRR3,R0        ;SET UP THE DATA BUFFER FOLLOWING THE TEST INSTRUCTION
2376  007560  012701  007700                  MOV     #RRRTP1,R1
2377  007564  012702  000004                  MOV     #4,R2
2378  007570  012021                  1$      MOV     (R0)+,(R1)+
2379  007572  077202                          SOB     R2,1$
2380  007574  012700  000200                  MOV     #200,R0         ;ENTER FLOATING DOUBLE MODE
2381  007600  170100                          LDFPS   R0
2382  007602  012700  007710                  MOV     #RRRTP2,R0      ;SET UP AC0
2383  007606  172410                          LDD     (R0),AC0
2384  007610  012737  007730  000004          MOV     #RRR10,@#ERRVECT ;SET UP FOR AN ODD ADDRESS
2385  007616  012737  007630  001236          MOV     #RRR2,@#$TMP2
2386  007624  005001                          CLR     R1
2387  007626  005004                          CLR     R4
2388                                  ;THIS IS THE TEST INSTRUCTION  IT SHOULD MODIFY THE FIRST LOCATION
2389                                  ;AFTER IT TO BE AN INCREMENT R4, INC R4, INSTRUCTION INSTEAD
2390                                  ;OF AN INCREMENT R1 INSTRUCTION  THE INCREMENT R4 SHOULD NOT BE
2391                                  ;EXECUTED SINCE THE PC SHOULD BE INCREMENTED BY TWO DURING IMMEDIATE
2392                                  ;MODE ADDRESSING.  THUS AFTER THE EXECUTION OF THE NEXT 5 INSTRUCTIONS
2393                                  ;R1 SHOULD CONTAIN 3 AND R4 SHOULD CONTAIN 0
2394  007630  174027                  RRR2    STD     AC0,(R7)+       ;TEST INSTRUCTION
```

```
2395  007632  005201                  RRR3    INC     R1              ;THE STD INSTRUCTION SHOULD CHANGE THIS TO INC R4
2396  007634  005201                          INC     R1
2397  007636  005201                          INC     R1
2398  007640  005201                          INC     R1
2399  007642  012700  007720                  MOV     #RRREXP,R0      ;SEE IF THE DATA WAS OUTPUT CORRECTLY
2400  007646  012702  007632                  MOV     #RRR3,R2
2401  007652  012703  000004                  MOV     #4,R3
2402  007656  022022                  RRR4    CMP     (R0)+,(R2)+
2403  007660  001051                          BNE     RRR25           ;BRANCH IF INCORRECT
2404  007662  077303                          SOB     R3,RRR4
2405  007664  005704                          TST     R4              ;MAKE SURE R4 IS 0
2406  007666  001056                          BNE     RRR15           ;BRANCH IF R4 IS INCORRECT
2407  007670  022701  000003                  CMP     #3,R1           ;SEE IF R1 IS CORRECT
2408  007674  001053                          BNE     RRR15           ;BRANCH IF R1 IS INCORRECT
2409  007676  000474                          BR      RRRDONE
2410                                  ;THESE ARE TEST DATA PATTERNS USED TO SET UP THE OUTPUT BUFFER AT RRR3
2411  007700  005201                  RRRTP1  INC     R1
2412  007702  005201                          INC     R1
2413  007704  005201                          INC     R1
2414  007706  005201                          INC     R1
2415                                  ;THIS IS THE DATA PUT IN AC0 BEFORE EXECUTION OF THE STD
2416  007710  005204                  RRRTP2  INC     R4
2417  007712  005204                          INC     R4
2418  007714  005204                          INC     R4
2419  007716  005204                          INC     R4
2420                                  ;THIS IS THE EXPECTED DATA AT RRR3 AFTER EXECUTION OF THE STD
2421  007720  005204                  RRREXP  INC     R4
2422  007722  005201                          INC     R1
2423  007724  005201                          INC     R1
2424  007726  005201                          INC     R1
2425                                  ;IF A FAILURE IN THE FDST FLOWS RESULTS IN AN ODD ADDRESS TRAP THROUGH
2426                                  ;4 TO HERE.
2427  007730  011602                  RRR10.  MOV     (SP),R2         ;SEE IF THE TRAP WAS BECAUSE OF AN ODD ADDRESS
2428  007732  032702  000001                  BIT     #1,R2
2429  007736  001005                          BNE     RRR11           ;BRANCH IF YES
2430  007740  020227  007634                  CMP     R2,#RRR3+2      ;SEE IF THE TRAP OCCURRED AT THE TEST INSTRUCTION
2431  007744  001412                          BEQ     RRR12           ;BRANCH IF YES
2432  007746  000137  042610                  JMP     @#CPSPUR        ;OTHERWISE REPORT A SPURIOUS TRAP THROUGH VECTOR 4
2433                                  ;REPORT A FAILURE IN THE FDST FLOWS RESULTED IN AN ODD ADDRESS TRAP
2434  007752  010237  001236          RRR11   MOV     R2,@#$TMP2
2435  007756  012737  007634  001240          MOV     #RRR3+2,@#$TMP3
2436  007764  022626                          CMP     (SP)+,(SP)+
2437  007766  104013                  1$      ERROR   13              ;BAD CONSTANT #2 + PC ODD ADDR
2438  007770  000437                          BR      RRRDONE
2439  007772  010237  001236          RRR12   MOV     R2,@#$TMP2
2440  007776  022626                          CMP     (SP)+,(SP)+
2441  010000  104014                  1$      ERROR   14              ;ODD ADDRESS TRAP
2442  010002  000432                          BR      RRRDONE         ;WRONG MODE USED
2443
2444                                  ;REPORT DATA INCORRECT
2445  010004  012737  007632  001240  RRR25   MOV     #RRR3,@#$TMP3
2446  010012  012737  007720  001242          MOV     #RRREXP,@#$TMP4
2447  010020  104015                  1$      ERROR   15              ;BAD DATA BUT GR7 FAIL
2448  010022  000422                          BR      RRRDONE
2449
2450                                  ;REPORT PC INCORRECT MODIFIED DURING THE EXECUTION OF FDST IMMEDIATE
```

```
                                       ,MODE  THE PC SHOULD HAVE BEEN INCREMENTED BY 2 BUT IT WASN'T
                                       ,USE R1 AND R4 TO COMPUTE THE ACTUAL ACTION THAT WAS TAKEN ON THE PC
010024  012737  007634  001240  RRR15    MOV     #RRR3+2,@#STMP3
010032  005704                           TST     R4                   ,IS R4 CLEAR
010034  001404                           BEQ     1$
010036  012737  007632  001242           MOV     #RRR3,@#STMP4
010044  000410                           BR      2$
010046  012702  007634          1$       MOV     #RRR3+2,R2
010052  062701  177775                   ADD     #-3,R1
010056  006301                           ASL     R1
010060  160102                           SUB     R1,R2
010062  010237  001242                   MOV     R2,@#STMP4
010066                          2$
010066  104016                  3$       ERROR   16                   ,BAD CONSTANT PC+
010070                          RRRDONE
010070  104412                           RSETUP                       ,GO INITIALIZE THE FPS AND STACK, AND
                                                                      ,SEE IF THE USER HAS EXPRESSED
                                                                      ,THE DESIRE TO CHANGE THE SOFTWARE
                                                                      ,VIRTUAL CONSOLE SWITCH REGISTER (HAS
                                                                      ,THE USER TYPED CONTROL G?)

                                ,,*************************************************************************
                                ,*TEST 5          FDST MODE 4 TEST
                                ,*
                                ,*THIS IS A TEST OF STD WITH FDST MODE 4
                                ,*
                                ,,*************************************************************************
010072  000004                  TST5     SCOPE

010074                          SSS1
010074  104413                           LPERR                        ,SET UP THE LOOP ON ERROR ADDRESS
010076  012700  177777                   MOV     #-1,R0               ,SET UP THE OUTPUT BUFFER
010102  012701  010232                   MOV     #SSSBFO,R1
010106  012702  000010                   MOV     #10,R2
010112  010021                  1$       MOV     R0,(R1)+
010114  077202                           SOB     R2,1$
010116  012700  000200                   MOV     #200,R0              ,ENTER FLOATING DOUBLE MODE
010122  170100                           LDFPS   R0
010124  012700  010252                   MOV     #SSSTP1,R0           ,SET UP AC0
010130  172410                           LDD     (R0),AC0
010132  012737  010272  000004           MOV     #SSS10,@#ERRVECT ,SET UP FOR A TRAP TO 4
010140  012737  010152  001236           MOV     #SSS2,@#STMP2
010146  012700  010242                   MOV     #SSSA1,R0            ,SET UP THE DESTINATION ADDRESS

010152  174040                  SSS2     STD     AC0,-(R0)            ,TEST INSTRUCTION
010154  005201                           INC     R1
010156  020027  010232                   CMP     R0,#SSSBFO           ,SEE IF R0 WAS DECREMENTED PROPERLY
010162  001060                           BNE     SSS15                ,BRANCH IF R0 IS INCORRECT
010164  012700  010232                   MOV     #SSSBFO,R0           ,WAS THE OUTPUT DATA CORRECT?
010170  012701  010252                   MOV     #SSSTP1,R1
010174  012702  000004                   MOV     #4,R2
010200  022021                  1$       CMP     (R0)+,(R1)+
010202  001057                           BNE     SSS20                ,BRANCH IF INCORRECT
010204  077203                           SOB     R2,1$
010206  012700  177777                   MOV     #-1,R0               ,IS THE REST OF THE OUTPUT BUFFER CORRECT, -1?
010212  012701  010242                   MOV     #SSSA1,R1
```

```
2507  010216  012702  000004            MOV     #4,R2
2508  010222  020021                 2$  CMP     R0,(R1)+
2509  010224  001056                     BNE     SSS25           ;BRANCH IF INCORRECT
2510  010226  077203                     SOB     R2,2$
2511  010230  000463                     BR      SSSDONE
2512
2513                                  ;THIS IS THE OUTPUT DATA BUFFER
2514  010232  177777                 SSSBF0  -1
2515  010234  177777                         -1
2516  010236  177777                         -1
2517  010240  177777                         -1
2518  010242  177777                 SSSA1   -1
2519  010244  177777                         -1
2520  010246  177777                         -1
2521  010250  177777                         -1
2522
2523                                  ;THIS IS THE TEST DATA LOADED INTO AC0
2524  010252  147250                 SSSTP1  147250
2525  010254  036147                         36147
2526  010256  025036                         25036
2527  010260  147250                         147250
2528  010262  177777                 SSSTP2  -1
2529  010264  177777                         -1
2530  010266  177777                         -1
2531  010270  177777                         -1
2532
2533                                  ;IF AN ODD ADDRESS TRAP OCCURS  COME HERE
2534  010272  011600                 SSS10.  MOV     (SP),R0         ;SEE IF THE TRAP ACCURRED ON THE TEST INSTRUCTION
2535  010274  020027  010154                 CMP     R0,#SSS2+2
2536  010300  001405                         BEQ     SSS11           ;BRANCH IF YES
2537  010302  020027  010156                 CMP     R0,#SSS2+4
2538  010306  001402                         BEQ     SSS11           ;BRANCH IF YES.
2539  010310  000137  042610                 JMP     @#CPSPUR        ;OTHERWISE GO REPORT A SPURIOUS TRAP THROUGH 4.
2540                                  ;REPORT FAILURE IN FDST FLOWS RESULTED IN AN ODD ADDRESS
2541  010314  010037  001236         SSS11.  MOV     R0,@#$TMP2
2542  010320  104017                 2$:     ERROR   17              ;FDST FORK X ODD AD RES
2543  010322  000426                         BR      SSSDONE
2544
2545                                  ;REPORT R0 INCORRECTLY DECREMENTED
2546  010324  010037  001242         SSS15   MOV     R0,@#$TMP4
2547  010330  012737  010232  001240         MOV     #SSSBF0,@#$TMP3
2548  010336  104020                 1$      ERROR   20              ;R0 NOT DECRE PROP
2549  010340  000417                         BR      SSSDONE
2550
2551                                  ;REPORT OUTPUT DATA INCORRECT
2552  010342  012737  010232  001240 SSS20:  MOV     #SSSBF0,@#$TMP3
2553  010350  012737  010252  001242         MOV     #SSSTP1,@#$TMP4
2554  010356  104021                 1$.     ERROR   21              ;BAD DATA
2555  010360  000407                         BR      SSSDONE
2556  010362  012737  010242  001242 SSS25:  MOV     #SSSA1,@#$TMP4
2557  010370  012737  010262  001240         MOV     #SSSTP2,@#$TMP3
2558  010376  104022                 1$      ERROR   22              ;DATA BAD OUTSIDE TARGET AREA
2559  010400                         SSSDONE
2560  010400  104412                         RSETUP                  ;GO INITIALIZE THE FPS AND STACK, AND
2561                                                                  ;SEE IF THE USER HAS EXPRESSED
2562                                                                  ;THE DESIRE TO CHANGE THE SOFTWARE
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2563                                                    ;VIRTUAL CONSOLE SWITCH REGISTER (HAS
2564                                                    ;THE USER TYPED CONTROL G?)
2565
2566                            ;;*************************************************************
2567                            ;*TEST 6        FDST MODE 3 TEST
2568                            ;*
2569                            ;*THIS IS A TEST OF FDST MODE 3 USING STD
2570                            ;*
2571                            ;;*************************************************************
2572  010402  000004            TST6    SCOPE
2573
2574  010404                    TTT1
2575  010404  104413                    LPERR                   ;SET UP THE LOOP ON ERROR ADDRESS
2576  010406  012701  010524            MOV     #TTTBFO,R1      ;SET UP THE OUTPUT DATA BUFFER
2577  010412  012700  177777            MOV     #-1,R0
2578  010416  012702  000012            MOV     #12,R2
2579  010422  010021            1$      MOV     R0,(R1)+
2580  010424  077202                    SOB     R2,1$
2581  010426  012737  010524  010540    MOV     #TTTBFO,@#TTTA2
2582  010434  012700  000200            MOV     #200,R0         ;ENTER DOUBLE FLOATING MODE
2583  010440  170100                    LDFPS   R0
2584  010442  012700  010550            MOV     #TTTTP1,R0      ;SET UP AC0
2585  010446  172410                    LDD     (R0),AC0
2586  010450  012737  010560  000004    MOV     #TTT10,@#ERRVECT ;SET UP FOR TRAPS TO 4
2587  010456  016737  000006  001236    MOV     TTT2,@#$TMP2
2588  010464  012700  010540            MOV     #TTTA2,R0       ;SET UP THE DESTINATION ADDRESS
2589
2590  010470  174030            TTT2    STD     AC0,@(R0)+      ;TEST INSTRUCTION
2591
2592  010472  020027  010542            CMP     R0,#TTTA2+2     ;SEE IF R0 WAS INCREMENTED CORRECTLY
2593  010476  001046                    BNE     TTT15           ;BRANCH IF INCORRECT
2594  010500  012701  010524            MOV     #TTTBFO,R1      ;CHECK THE OUTPUT DATA BUFFER
2595  010504  012702  010550            MOV     #TTTTP1,R2
2596  010510  012703  000004            MOV     #4,R3
2597  010514  022122            TTT3    CMP     (R1)+,(R2)+
2598  010516  001045                    BNE     TTT20           ;BRANCH IF NOT CORRECT
2599  010520  077303                    SOB     R3,TTT3
2600  010522  000452                    BR      TTTDONE
2601
2602                            ;THIS IS THHE OUTPUT DATA BUFFER
2603  010524  177777            TTTBFO  -1
2604  010526  177777                    -1
2605  010530  177777                    -1
2606  010532  177777                    -1
2607  010534  177777                    -1
2608  010536  177777            TTTA1:  -1
2609  010540  010524            TTTA2:  TTTBFO
2610  010542  177777            TTTA3:  -1
2611  010544  177777                    -1
2612  010546  177777                    -1
2613  010550  101213            TTTTP1: 101213
2614  010552  141516                    141516
2615  010554  071727                    71727
2616  010556  037475                    37475
2617
2618                            ;TRAP THROUGH VECTOR 4 TO HERE
```

```
2619  010560  011602                  TTT10   MOV     (SP),R2         ;SEE IF THE TRAP ADDRESS IS THAT OF THE TEST INSTRUCTION
2620  010562  020227  010472                  CMP     R2,#TTT2+2
2621  010566  001405                  BEQ     TTT11           ;BRANCH IF YES
2622  010570  020227  010474                  CMP     R2,#TTT2+4
2623  010574  001402                  BEQ     TTT11           ;BRANCH IF YES
2624  010576  000137  042610                  JMP     @#CPSPUR        ;OTHERWISE GO REPORT A SPURIOUS TRAP TO 4
2625
2626                                  ;REPORT A FAILURE IN THE FDST FLOWS RESULTED IN AN ODD ADDRESS TRAP
2627  010602  010237  001236          TTT11   MOV     R2,@#$TMP2
2628  010606  022626                  CMP     (SP)+,(SP)+
2629  010610  104023                  1$      ERROR   23              ;BET FDST X ODD ADR
2630  010612  000416                  BR      TTTDONE
2631
2632                                  ;REPORT R0 INCORRECT.
2633  010614  010037  001242          TTT15   MOV     R0,@#$TMP4
2634  010620  012737  010542  001240          MOV     #TTTA2+2,@#$TMP3
2635  010626  104024                  1$.     ERROR   24              ;R0 NOT INCREMENT PROPERLY
2636  010630  000407                  BR      TTTDONE
2637
2638                                  ;REPORT INCORRECT OUTPUT DATA.
2639  010632  012737  010524  001240  TTT20   MOV     #TTTBF0,@#$TMP3
2640  010640  012737  010550  001242          MOV     #TTTTP1,@#$TMP4
2641  010646  104025                  1$      ERROR   25              ;BAD DATA
2642  010650                          TTTDONE
2643  010650  104412                          RSETUP                  ;GO INITIALIZE THE FPS AND STACK, AND
2644                                                                  ;SEE IF THE USER HAS EXPRESSED
2645                                                                  ;THE DESIRE TO CHANGE THE SOFTWARE
2646                                                                  ;VIRTUAL CONSOLE SWITCH REGISTER (HAS
2647                                                                  ;THE USER TYPED CONTROL G?)
2648
2649                                  ;;**************************************************************
2650                                  ;*TEST 7         FDST MODE 5 TEST
2651                                  ;*
2652                                  ;*THIS IS A TEST OF FDST MODE 5 USING STD
2653                                  ;*
2654                                  ;;**************************************************************
2655  010652  000004                  TST7.   SCOPE
2656
2657  010654                          UUU1:
2658  010654  104413                          LPERR                   ;SET UP THE LOOP ON ERROR ADDRESS
2659  010656  012701  010774                  MOV     #UUUBF0,R1      ;SET UP THE OUTPUT DATA BUFFER
2660  010662  012700  177777                  MOV     #-1,R0
2661  010666  012702  000012                  MOV     #12,R2
2662  010672  010021                  1$      MOV     R0,(R1)+
2663  010674  077202                          SOB     R2,1$
2664  010676  012737  010774  011006          MOV     #UUUBF0,@#UUUA1
2665  010704  012700  000200                  MOV     #200,R0         ;ENTER DOUBLE FLOATING MODE
2666  010710  170100                          LDFPS   R0
2667  010712  012700  011020                  MOV     #UUUTP1,R0      ;SET UP AC0
2668  010716  172410                          LDD     (R0),AC0
2669  010720  012737  011030  000004          MOV     #UUU10,@#ERRVECT ;GET READY FOR ANY TRAPS TO 4
2670  010726  016737  000006  001236          MOV     UUU2,@#$TMP2
2671  010734  012700  011010                  MOV     #UUUA2,R0       ;SET UP THE DESTINATION ADDRESS
2672  010740  174050                  UUU2    STD     AC0,@-(R0)      ;TEST INSTRUCTION
2673  010742  020027  011006                  CMP     R0,#UUUA2-2     ;WAS R0 DECRIMENTED PROPERLY?
2674  010746  001046                          BNE     UUU15           ;BRANCH IF R0 IS INCORRECT
```

```
2675  010750  012701  010774          MOV     #UUUBFO,R1      ;WAS THE DATA OUTPUT CORRECTLY?
2676  010754  012702  011020          MOV     #UUUTP1,R2
2677  010760  012703  000004          MOV     #4,R3
2678  010764  022122          UUU3    CMP     (R1)+,(R2)+
2679  010766  001045                  BNE     UUU20           ;BRANCH IF DATA IS INCORRECT
2680  010770  077303                  SOB     R3,UUU3
2681  010772  000452                  BR      UUUDONE
2682
2683                          ;THIS IS THE OUTPUT DATA BUFFER
2684  010774  177777          UUUBFO  -1
2685  010776  177777                  -1
2686  011000  177777                  -1
2687  011002  177777                  -1
2688  011004  177777                  -1
2689  011006  010774          UUUA1   UUUBFO
2690  011010  177777          UUUA2   -1
2691  011012  177777          UUUA3   -1
2692  011014  177777                  -1
2693  011016  177777                  -1
2694  011020  020212          UUUTP1. 20212
2695  011022  023242                  23242
2696  011024  026273                  26273
2697  011026  031323                  031323
2698
2699                          ;IF A TRAP TO 4 OCCURS COME HERE
2700  011030  011602          UUU10   MOV     (SP),R2         ;SEE IF THE TRAP OCCURRED ON THE TEST INSTRUCTION
2701  011032  020227  010742          CMP     R2,#UUU2+2
2702  011036  001405                  BEQ     UUU11           ;BRANCH IF YES
2703  011040  020227  010744          CMP     R2,#UUU2+4
2704  011044  001402                  BEQ     UUU11           ;BRANCH IF YES.
2705  011046  000137  042610          JMP     @#CPSPUR        ;OTHERWISE REPORT A SPURIOUS TRAP TO 4
2706                          ;REPORT FAILURE OF FDST RESULTED IN AN ODD ADDRESS TRAP TO 4
2707  011052  010237  001236  UUU11:  MOV     R2,@#$TMP2
2708  011056  022626                  CMP     (SP)+,(SP)+
2709  011060  104026          1$.     ERROR   26              ;DET FDST X ODD ADR
2710  011062  000416                  BR      UUUDONE
2711
2712                          ;REPORT R0 INCORRECT.
2713  011064  010037  001242  UUU15:  MOV     R0,@#$TMP4
2714  011070  012737  011012  001240          MOV     #UUUA2+2,@#$TMP3
2715  011076  104027          1$.     ERROR   27              ;R0 NOT INCREMENT PROPERLY
2716  011100  000407                  BR      UUUDONE
2717
2718                          ;REPORT BAD DATA
2719  011102  012737  010774  001242  UUU20:  MOV     #UUUBFO,@#$TMP4
2720  011110  012737  011020  001240          MOV     #UUUTP1,@#$TMP3
2721  011116  104030          1$:     ERROR   30              ;BAD DATA
2722  011120                  UUUDONE:
2723  011120  104412                  RSETUP                  ;GO INITIALIZE THE FPS AND STACK, AND
2724                                                          ;SEE IF THE USER HAS EXPRESSED
2725                                                          ;THE DESIRE TO CHANGE THE SOFTWARE
2726                                                          ;VIRTUAL CONSOLE SWITCH REGISTER (HAS
2727                                                          ;THE USER TYPED CONTROL G?)
2728
2729                          ;;**********************************************************************
2730                          ;*TEST 10        FDST MODE 6, INDEX MODE, TEST
```

```
                                        ;*
                                        ;*THIS IS A TEST OF FDST MODE 6, INDEX MODE, USING STD
                                        ;*
                                        ;;*****************************************************************
011122  000004                        TST10:  SCOPE

011124                                  VVV1:
011124  104413                                LPERR                   ;SET UP THE LOOP ON ERROR ADDRESS
011126  012700  000200                        MOV     #200,R0         ;ENTER DOUBLE FLOATING MODE
011132  170100                              LDFPS   R0
011134  012701  011244                      MOV     #VVVBF0,R1      ;SET UP THE OUT PUT DATA BUFFER
011140  012700  177777                      MOV     #-1,R0
011144  012702  000004                      MOV     #4,R2
011150  010021                      1$      MOV     R0,(R1)+
011152  077202                              SOB     R2,1$
011154  012737  011264  000004              MOV     #VVV10,@#ERRVECT ;SET UP VECTOR 4 INCASE OF ERROR
011162  012700  011254                      MOV     #VVVTP1,R0      ;SET UP AC0
011166  172410                              LDD     (R0),AC0
011170  012737  011206  001236              MOV     #VVV2,@#$TMP2
011176  012700  003343                      MOV     #VVVBF0-5701,R0 ;SET UP THE DESTINATION ADDRESS
011202  012701  000001                      MOV     #1,R1
011206  174060  005701              VVV2.   STD     AC0,5701(R0)    ;TEST INSTRUCTION

011212  020027  003343                      CMP     R0,#VVVBF0-5701 ;SEE IF R0 WAS MODIFIED
011216  001040                              BNE     VVV15           ;BRANCH IF INCORRECT
011220  012702  011244                      MOV     #VVVBF0,R2      ;WAS THE OUTPUT DATA CORRECT
011224  012703  011254                      MOV     #VVVTP1,R3
011230  012704  000004                      MOV     #4,R4
011234  022223                      1$      CMP     (R2)+,(R3)+
011236  001037                              BNE     VVV20           ;BRANCH IF INCORRECT DATA
011240  077403                              SOB     R4,1$
011242  000444                              BR      VVVDONE
011244  177777                      VVVBF0: -1
011246  177777                              -1
011250  177777                              -1
011252  177777                              -1
011254  030313                      VVVTP1: 30313
011256  023334                              23334
011260  035363                              35363
011262  074041                              74041

                                        ;COME HERE AFTER A TRAP THROUGH VECTOR 4.
011264  011602                      VVV10:  MOV     (SP),R2         ;SEE IF THE TRAP OCCURRED ON THE TEST INSTR
011266  020227  011210                      CMP     R2,#VVV2+2
011272  001405                              BEQ     VVV11           ;BRANCH IF YES
011274  020227  011212                      CMP     R2,#VVV2+4
011300  001402                              BEQ     VVV11           ;BRANCH IF YES
011302  000137  042554                      JMP     @#FPSPUR        ;OTHERWISE GO REPORT SPURIOUS TRAP TO 4
                                        ;REPORT FAILURE OF FDST RESULTED IN AN ODD ADDRESS TRAP TO 4
011306  010237  001236              VVV11:  MOV     R2,@#$TMP2
011312  022626                              CMP     (SP)+,(SP)+
011314  104031                      1$      ERROR   31              ;FDST FORK X ODD ADD
011316  000416                              BR      VVVDONE

                                        ;REPORT R0 MODIFIED
011320  010037  001242              VVV15   MOV     R0,@#$TMP4
```

```
2787  011324  012737  003343  001240          MOV     #VVVBF0-5701,@#$TMP3
2788  011332  104032                  1$:     ERROR   32              ;RO MODIFIED!
2789  011334  000407                          BR      VVVDONE
2790
2791                                  ;REPORT INCORRECT DATA.
2792  011336  012737  011244  001240  VVV20:  MOV     #VVVBF0,@#$TMP3
2793  011344  012737  011254  001242          MOV     #VVVTP1,@#$TMP4
2794  011352  104033                  1$:     ERROR   33              ;BAD DATA
2795  011354                          VVVDONE.
2796  011354  104412                          RSETUP                  ;GO INITIALIZE THE FPS AND STACK, AND
2797                                                                  ,SEE IF THE USER HAS EXPRESSED
2798                                                                  ,THE DESIRE TO CHANGE THE SOFTWARE
2799                                                                  ;VIRTUAL CONSOLE SWITCH REGISTER (HAS
2800                                                                  ;THE USER TYPED CONTROL G?)
2801
2802                                  ,,**************************************************************
2803                                  ;*TEST 11       FDST MODE 7, INDEX DEFERRED MODE, TEST
2804                                  ;*
2805                                  ;*THIS IS A TEST OF FDST MODE 7, INDEX DEFERRED MODE, USING STD
2806                                  ,*
2807                                  ;;**************************************************************
2808  011356  000004                  TST11:  SCOPE
2809
2810  011360                          WWW1.
2811  011360  104413                          LPERR                   ;SET UP THE LOOP ON ERROR ADDRESS
2812  011362  012700  000200                  MOV     #200,R0         ;ENTER DOUBLE FLOATING MODE
2813  011366  170100                          LDFPS   R0
2814  011370  012701  011506                  MOV     #WWWBF0,R1      ;SET UP THE OUTPUT DATA BUFFER
2815  011374  012700  177777                  MOV     #-1,R0
2816  011400  012702  000004                  MOV     #4,R2
2817  011404  010021                  1$:     MOV     R0,(R1)+
2818  011406  077202                          SOB     R2,1$
2819  011410  012737  011536  000004          MOV     #WWW10,@#ERRVECT ,SET UP FOR TRAPS TO 4
2820  011416  012700  011516                  MOV     #WWWTP1,R0      ,SET UP AC0
2821  011422  172410                          LDD     (R0),AC0
2822  011424  012737  011450  001236          MOV     #WWW2,@#$TMP2
2823  011432  012700  003625                  MOV     #WWWBF1-5701,R0 ,SET UP THE DESTINATION ADDRESS
2824  011436  012701  000001                  MOV     #1,R1
2825  011442  012737  011506  011526          MOV     #WWWBF0,@#WWWBF1
2826  011450  174070  005701          WWW2:   STD     AC0,@5701(R0)   ;TEST INSTRUCTION.
2827
2828  011454  020027  003625                  CMP     R0,#WWWBF1-5701 ;IS R0 CORRECT?
2829  011460  001044                          BNE     WWW15           ;BRANCH IF INCORRECT
2830  011462  012702  011506                  MOV     #WWWBF0,R2      ,WAS THE DATA OUTPUT CORRECTLY?
2831  011466  012703  011516                  MOV     #WWWTP1,R3
2832  011472  012704  000004                  MOV     #4,R4
2833  011476  022223                  1$      CMP     (R2)+,(R3)+
2834  011500  001043                          BNE     WWW20           ,BRANCH IF DATA IS INCORRECT
2835  011502  077403                          SOB     R4,1$
2836  011504  000450                          BR      WWWDONE
2837  011506  177777          WWWBF0: -1
2838  011510  177777                  -1
2839  011512  177777                  -1
2840  011514  177777                  -1
2841  011516  041424          WWWTP1: 41424
2842  011520  034445                  34445
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011522  046475                                     46475
011524  051525                                     051525
011526  177777                           WWWBF1    -1
011530  177777                                     -1
011532  177777                                     -1
011534  177777                                     -1

                                         ,TRAP THROUGH 4 TO HERE
011536  011602                           WWW10     MOV     (SP),R2           ,SEE IF THE TRAP OCCURRED ON THE TEST INSTR
011540  020227  011452                             CMP     R2,#WWW2+2
011544  001405                                     BEQ     WWW11             ,BRANCH IF YES
011546  020227  011454                             CMP     R2,#WWW2+4
011552  001402                                     BEQ     WWW11             ,BRANCH IF YES
011554  000137  042554                             JMP     @#FPSPUR          ,OTHERWISE GO REPORT SPURIOUS TRAP TO 4
                                         ,REPORT FAILURE OF FDST FORK RESULTED IN AN ODD ADDRESS TRAP TO 4
011560  010237  001236                   WWW11     MOV     R2,@#STMP2
011564  022626                                     CMP     (SP)+,(SP)+
011566  104034                           1$        ERROR   34                ,FDST FORK X ODD ADD
011570  000416                                     BR      WWWDONE

                                         ,REPORT R0 MODIFIED
011572  010037  001242                   WWW15     MOV     R0,@#STMP4
011576  012737  003605  001240                     MOV     #WWWBF0-5701,@#STMP3
011604  104035                           1$        ERROR   35                ,R0 MODIFIED!
011606  000407                                     BR      WWWDONE

                                         ,REPORT DATA INCORRECT
011610  012737  011506  001240           WWW20     MOV     #WWWBF0,@#STMP3
011616  012737  011516  001242                     MOV     #WWWTP1,@#STMP4
011624  104036                           1$        ERROR   36                ,BAD DATA
011626                                   WWWDONE
011626  104412                                     RSETUP                    ,GO INITIALIZE THE FPS AND STACK, AND
                                                                             ,SEE IF THE USER HAS EXPRESSED
                                                                             ,THE DESIRE TO CHANGE THE SOFTWARE
                                                                             ,VIRTUAL CONSOLE SWITCH REGISTER (HAS
                                                                             ;THE USER TYPED CONTROL G?)

                                         ,,*************************************************************
                                         ,*TEST 12          STCFD TEST
                                         ,*
                                         ,*THIS IS A TEST OF THE STCFD INSTRUCTION
                                         ,*
                                         ,,*************************************************************
011630  000004                           TST12:    SCOPE

                                         ,AC=0
011632                                   XXX1
011632  104413                                     LPERR                     ,SET UP THE LOOP ON ERROR ADDRESS
011634  004767  000330                             JSR     PC,STCFDS
011640  000000                           1$        0               ,AC
011642  000000                                     0
011644  000000                                     0
011646  000000                                     0
011650  000000                           2$        0               ,RES
011652  000000                                     0
011654  000000                                     0
```

```
2899  011656  000000                    0
2900  011660  000000              3$    0               ,ERROR RES
2901  011662  000000                    0
2902  011664  177777                    -1
2903  011666  177777                    -1
2904  011670  047000              4$    47000           ,FPS BEFORE EXECUTION
2905  011672  047004                    47004           ,FPS AFTER EXECUTION
2906  011674  177777                    -1              ,FEC
2907  011676  147004                    147004          ,ERROR FPS
2908  011700  104042              5$    ERROR   42              ,FDFL<---FDFLXST 767
2909  011702  000401                    BR      6$
2910  011704  104043                    ERROR   43              ,BUT EZBT X ST560 TO 061 INTO 261
2911  011706                      6$
2912                                    ;
2913  011706                      XXX2
2914  011706  104413                    LPERR                   ,SET UP THE LOOP ON ERROR ADDRESS
2915  011710  004767  000254            JSR     PC,STCFDS
2916  011714  017203              1$    17203           ,AC
2917  011716  142536                    142536
2918  011720  047506                    47506
2919  011722  172031                    172031
2920  011724  017203              2$    17203           ,RES
2921  011726  142536                    142536
2922  011730  000000                    0
2923  011732  000000                    0
2924  011734  017203              3$    17203           ,ERROR RES
2925  011736  142536                    142536
2926  011740  047506                    47506
2927  011742  172031                    172031
2928  011744  040000              4$    40000           ,FPS BEFORE EXECUTION
2929  011746  040000                    40000           ,FPS AFTER EXECUTION
2930  011750  177777                    -1              ,FEC
2931  011752  177777                    -1              ,ERROR FPS
2932  011754  104044              5$    ERROR   44              ,X11(1,0)<---0 X ST766
2933  011756  000401                    BR      6$
2934  011760  104040                    ERROR   40
2935  011762                      6$
2936                                    ;
2937  011762                      XXX3
2938  011762  104413                    LPERR                   ,SET UP THE LOOP ON ERROR ADDRESS
2939  011764  004767  000200            JSR     PC,STCFDS
2940  011770  050717              1$    50717           ,AC
2941  011772  027374                    27374
2942  011774  075767                    75767
2943  011776  077071                    77071
2944  012000  050717              2$    50717           ,RES
2945  012002  027374                    27374
2946  012004  000000                    0
2947  012006  000000                    0
2948  012010  000000              3$    0               ,ERROR RES
2949  012012  000000                    0
2950  012014  000000                    0
2951  012016  000000                    0
2952  012020  047000              4$    47000           ,FPS BEFORE EXECUTION
2953  012022  047000                    47000           ,FPS AFTER EXECUTION
2954  012024  177777                    -1              ,FEC
```

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 2955  012026  174002                          174002          ,ERROR FPS
 2956  012030  104045                  5$      ERROR   45              ,BUT OPIC X ST251
 2957  012032  000401                          BR      6$
 2958  012034  104046                          ERROR   46              ,BUT EZBT X ST421
 2959  012036                          6$
 2960                                  ,
 2961  012036                          XXX4
 2962  012036  104413                          LPERR                   ,SET UP THE LOOP ON ERROR ADDRESS
 2963  012040  004767  000124                  JSR     PC,STCFDS
 2964  012044  020212                  1$      20212           ,AC
 2965  012046  032425                          32425
 2966  012050  026272                          26272
 2967  012052  002123                          02123
 2968  012054  020212                  2$      20212           ,RES
 2969  012056  032425                          32425
 2970  012060  000000                          0
 2971  012062  000000                          0
 2972  012064  020212                  3$      20212           ,ERROR RES
 2973  012066  032425                          32425
 2974  012070  100000                          100000
 2975  012072  000000                          0
 2976  012074  040000                  4$      40000           ,FPS BEFORE EXECUTION
 2977  012076  040000                          40000           ,FPS AFTER EXECUTION
 2978  012100  177777                          -1              ,FEC
 2979  012102  177777                          -1              ,ERROR FPS
 2980  012104  104047                  5$      ERROR   47              ,BUT FD IN ROUND X ST113
 2981  012106  000401                          BR      6$
 2982  012110  104040                          ERROR   40
 2983  012112                          6$
 2984                                  ,
 2985  012112                          XXX5
 2986  012112  104413                          LPERR                   ,SET UP THE LOOP ON ERROR ADDRESS
 2987  012114  004767  000050                  JSR     PC,STCFDS
 2988  012120  121314                  1$      121314          ,AC
 2989  012122  151617                          151617
 2990  012124  101112                          101112
 2991  012126  131415                          131415
 2992  012130  121314                  2$      121314          ,RES
 2993  012132  151617                          151617
 2994  012134  000000                          0
 2995  012136  000000                          0
 2996  012140  021314                  3$      21314           ,ERROR RES
 2997  012142  151617                          151617
 2998  012144  000000                          0
 2999  012146  000000                          0
 3000  012150  040000                  4$      40000           ,FPS BEFORE EXECUTION
 3001  012152  040010                          40010           ,FPS AFTER EXECUTION
 3002  012154  177777                          -1              ,FEC
 3003  012156  177777                          -1              ,ERROR FPS
 3004  012160  104050                  5$      ERROR   50              ,BUT ENBT X ST567 OR BAD SIGN ST460
 3005  012162  000401                          BR      6$
 3006  012164  104040                          ERROR   40
 3007  012166  000535                  6$      BR      XXXDONE
 3008
 3009                                  .
 3010
```

```
3011
3012                                    ;THIS SUBROUTINE, STCFDS, IS USED TO SET UP THE OPERANDS, EXECUTE
3013                                    ;THE STCFD INSTRUCTION AND CHECK THE RESULTS  A CALL
3014                                    ;TO IT IS MADE THUS
3015                                    ;
3016                                    ;               JSR     PC,@#STCFDS
3017                                    ;               ACARG    WORD   X,X,X,X          ;AC OPERAND
3018                                    ;               RES      WORD   X,X,X,X          ;EXPECTED RESULT
3019                                    ;               ERRES    WORD   X,X,X,X          ;ERROR RESULT
3020                                    ;               FPSB     WORD   X                ;FPS BEFORE EXECUTION
3021                                    ;               FPSA     WORD   X                ;FPS AFTER EXECUTION
3022                                    ;               FEC      WORD   X                ;EXPECTED FEC
3023                                    ;               ERFPS    WORD   X                ;ERROR FPS
3024                                    ;               ERR1     ERROR  X                ;DATA ERROR
3025                                    ;                       BR      CONT
3026                                    ;               ERR2     ERROR  X                ;FPS ERROR
3027                                    ;               CONT                             ;RETURN ADDRESS
3028                                    ;
3029                                    ;THE OPERANDS ARE SET UP (USING AC0 AS THE ACCUMULATOR)  THEN
3030                                    ;THE STCFD INSTRUCTION IS EXECUTED
3031                                    ;THE RESULT IS CHECKED AGAINST RES  IF THE RESULT IS CORRECT THEN THE FPS IS
3032                                    ;COMPARED WITH FPSA IF THIS TOO IS CORRECT STCFDS RETURNS CONTROL
3033                                    ;TO THE CALLING ROUTINE AT CONT.  IF THE FPS IS BAD STCFDS
3034                                    ;COMPARE IT TO ERROR FPS.  IF THIS MATCHES THEN STCFDS WILL RETURN
3035                                    ;TO THE ERROR CALL AT ERR2, OTHERWISE STCFDS ITSELF
3036                                    ;REPORTS THIS FAILURE AND THEN RETURNS TO CONT.  IF THE RESULT OF THE
3037                                    ;STCFD IS INCORRECT, THE INCORRECT RESULT IS COMPARED WITH THE
3038                                    ;ANTICIPATED FAILING DATA PATTERN, ERRES.  IF THE FAILURE IN
3039                                    ;THE RESULT WAS ANTICIPATED CORRECTLY TO BE ERRES THEN STCFDS
3040                                    ;WILL TRANSFER CONTROL TO THE ERROR CALL AT ERR1.  OTHERWISE THE
3041                                    ;RESULT WAS INCORRECT BUT WAS NOT ANTICIPATED AND STCFDS WILL
3042                                    ;REPORT THE FAILURE AFTER WHICH CONTROL WILL BE PASSED TO CONT
3043
3044  012170  012601                    STCFDS. MOV     (SP)+,R1                ;PICK UP THE POINTER TO THE OPERANDS
3045  012172  012700  000200                    MOV     #200,R0         ;ENTER DOUBLE FLOATING MODE
3046  012176  170100                            LDFPS   R0
3047  012200  010100                            MOV     R1,R0           ;LOAD AC0
3048  012202  172410                            LDD     (R0),AC0
3049  012204  012700  177777                    MOV     #-1,R0          ;FILL THE OUTPUT BUFFER WITH -1'S
3050  012210  012702  012452                    MOV     #STCFT,R2
3051  012214  012703  000004                    MOV     #4,R3
3052  012220  010022                    1$      MOV     R0,(R2)+
3053  012222  077302                            SOB     R3,1$
3054  012224  016100  000030                    MOV     30(R1),R0       ;LOAD THE FPS
3055  012230  170100                            LDFPS   R0
3056  012232  012737  012244  001236            MOV     #2$,@#$TMP2
3057  012240  012700  012452                    MOV     #STCFT,R0       ;SET UP THE DESTINATION ADDRESS
3058  012244  176010                    2$      STCFD   AC0,(R0)        ;TEST INSTRUCTION
3059
3060  012246  170204                            STFPS   R4              ;GET THE FPS.
3061  012250  170305                            STST    R5              ;GET THE FEC
3062  012252  010102                            MOV     R1,R2           ;SAVE THE DATA IN CASE OF ERROR
3063  012254  010237  001240                    MOV     R2,@#$TMP3
3064  012260  062702  000010                    ADD     #10,R2
3065  012264  010237  001244                    MOV     R2,@#$TMP5
3066  012270  012737  012452  001242            MOV     #STCFT,@#$TMP4
```

```
3067  012276  010437  001250                MOV     R4,@#$TMP7
3068  012302  016137  000032  001252        MOV     32(R1),@#$TMP10
3069
3070  012310  010102                        MOV     R1,R2           ;CHECK THE RESULT
3071  012312  062702  000010                ADD     #10,R2
3072  012316  012703  012452                MOV     #STCFT,R3
3073  012322  012700  000004                MOV     #4,R0
3074  012326  022223                3$      CMP     (R2)+,(R3)+
3075  012330  001014                        BNE     15$             ;BRANCH IF INCORRECT
3076  012332  077003                        SOB     R0,3$
3077
3078  012334  016102  000032                MOV     32(R1),R2
3079  012340  020204                        CMP     R2,R4           ;IS THE FPS CORRECT?
3080  012342  001025                        BNE     20$             ;BRANCH IF FPS INCORRECT
3081  012344  005702                        TST     R2              ;IF EXPECTED FPS IS NEGATIVE, THEN
3082  012346  100003                        BPL     4$              ;GO AHEAD AND CHECK THE FEC
3083  012350  026105  000036                CMP     36(R1),R5
3084  012354  001027                        BNE     25$             ;BRANCH IF FEC IS INCORRECT
3085  012356  000161  000046        4$      JMP     46(R1)          ;RETURN
3086
3087                                ;RESULT INCORRECT
3088  012362  010102                15$     MOV     R1,R2           ;SEE IF ERROR WAS ANTICIPATED
3089  012364  062702  000020                ADD     #20,R2
3090  012370  012703  012452                MOV     #STCFT,R3
3091  012374  012700  000004                MOV     #4,R0
3092  012400  022223                16$     CMP     (R2)+,(R3)+
3093  012402  001003                        BNE     17$             ;BRANCH IF NOT ANTICIPATED
3094  012404  077003                        SOB     R0,16$
3095  012406  000161  000040                JMP     40(R1)          ;IF ERROR WAS ANTICIPATED RETURN
3096                                ;OTHERWISE REPORT RESULT INCORRECT HERE
3097  012412                        17$
3098  012412  104037                18$     ERROR   37              ;DATA ERROR
```

```
3099  012414  000760                        BR      4$
3100
3101                                  ,FPS INCORRECT
3102  012416  020461  000034          20$   CMP     R4,34(R1)       ,WAS THE ERROR ANTICIPATED
3103  012422  001002                        BNE     21$             ,BRANCH IF NOT ANTICIPATED
3104  012424  000161  000044                JMP     44(R1)          ,IF IT WAS ANTICIPATED RETURN
3105
3106                                  ,THE FPS ERROR WAS NOT ANTICIPATED SO REPORT FPS INCORRECT HERE
3107  012430                          21$
3108  012430  104040                  22$   ERROR   40              ,FPS X
3109  012432  000751                        BR      4$
3110
3111                                  ,REPORT FEC INCORRECT
3112  012434  016137  000036  001256  25$   MOV     36(R1),@#$TMP12
3113  012442  010537  001254                MOV     R5,@#$TMP11
3114  012446  104041                  26$   ERROR   41              ,FEC X
3115  012450  000742                        BR      4$
3116  012452  177777  177777  177777  STCFT   -1,-1,-1,-1
3117  012460  177777
3118  012462                          XXXDONE
3119  012462  104412                        RSETUP                  ,GO INITIALIZE THE FPS AND STACK, AND
3120                                                                  ,SEE IF THE USER HAS EXPRESSED
3121                                                                  ,THE DESIRE TO CHANGE THE SOFTWARE
3122                                                                  ,VIRTUAL CONSOLE SWITCH REGISTER (HAS
3123                                                                  ,THE USER TYPED CONTROL G?)
3124
3125                                  ,,**********************************************************************
3126                                  ,*TEST 13       STCDF TEST
3127                                  ,*
3128                                  ,*THIS IS A TEST OF THE STCDF INSTRUCTION
3129                                  ,*
3130                                  ,,**********************************************************************
3131  012464  000004                  TST13   SCOPE
3132
3133                                  ,AC=0
3134  012466                          YYY1
3135  012466  104413                        LPERR                   ,SET UP THE LOOP ON ERROR ADDRESS
3136  012470  004767  000330                JSR     PC,STCDFS
3137  012474  000000                  1$    0                       ,AC
3138  012476  000000                        0
3139  012500  000000                        0
3140  012502  000000                        0
3141  012504  000000                  2$    0                       ,RES
3142  012506  000000                        0
3143  012510  177777                        -1
3144  012512  177777                        -1
3145  012514  000000                  3$    0                       ,ERROR RES
3146  012516  000000                        0
3147  012520  000000                        0
3148  012522  000000                        0
3149  012524  047200                  4$    47200                   ,FPS BEFORE EXECUTION
3150  012526  047204                        47204                   ,FPS AFTER EXECUTION
3151  012530  177777                        -1                      ,FEC
3152  012532  177777                        -1                      ,ERROR FPS
3153  012534  104054                  5$    ERROR   54              ,FDFL<---FDFL X ST767
3154  012536  000401                        BR      6$
```

```
3155  012540  104052                    ERROR   52              ;FPS INCORRECT
3156  012542                  6$
3157                          ;
3158  012542                  YYY2
3159  012542  104413                    LPERR                   ;SET UP THE LOOP ON ERROR ADDRESS
3160  012544  004767  000254            JSR     PC,STCDFS
3161  012550  067574          1$        67574                   ;ACO
3162  012552  073727                    73727
3163  012554  170777                    170777
3164  012556  067574                    67574
3165  012560  067574          2$        67574                   ;RES
3166  012562  073730                    73730
3167  012564  177777                    -1
3168  012566  177777                    -1
3169  012570  067574          3$        67574                   ;ERROR RES
3170  012572  073727                    73727
3171  012574  177777                    -1
3172  012576  177777                    -1
3173  012600  040200          4$        40200                   ;FPS BEFORE EXECUTION
3174  012602  040200                    40200                   ;FPS AFTER EXECUTION
3175  012604  177777                    -1                      ;FEC
3176  012606  177777                    -1                      ;ERROR FPS
3177  012610  104055          5$        ERROR   55              ;EITHER ROUND FAILED OR WENT TO 766 X1(1,0)<---0 INTO 76
3178  012612  000401                    BR      6$
3179  012614  104052                    ERROR   52
3180  012616                  6$
3181                          ;
3182  012616                  YYY3
3183  012616  104413                    LPERR                   ;SET UP THE LOOP ON ERROR ADDRESS
3184  012620  004767  000200            JSP     PC,STCDFS
3185  012624  077777          1$        77777                   ;ACO
3186  012626  177777                    -1
3187  012630  100000                    100000
3188  012632  000000                    0
3189  012634  000000          2$        0                       ;RES
3190  012636  000000                    0
3191  012640  177777                    -1
3192  012642  177777                    -1
3193  012644  077777          3$        77777                   ;ERROR RES
3194  012646  177777                    -1
3195  012650  177777                    -1
3196  012652  177777                    -1
3197  012654  040200          4$        40200                   ;FPS BEFORE EXECUTION
3198  012656  040206                    40206                   ;FPS AFTER EXECUTION
3199  012660  177777                    -1                      ;FEC
3200  012662  040204                    40204                   ;ERROR FPS
3201  012664  104055          5$        ERROR   55
3202  012666  000401                    BR      6$
3203  012670  104056                    ERROR   56              ;BUT EZBT X ST421 TO 062 INTO 262
3204  012672                  6$
3205                          ;
3206  012672                  YYY4
3207  012672  104413                    LPERR                   ;SET UP THE LOOP ON ERROR ADDRESS
3208  012674  004767  000124            JSR     PC,STCDFS
3209  012700  077777          1$        77777                   ;ACO
3210  012702  177777                    -1
```

```
3211  012704  100000                    100000
3212  012706  000000                    0
3213  012710  000000              2$    0                       ,RES
3214  012712  000000                    0
3215  012714  177777                    -1
3216  012716  177777                    -1
3217  012720  077777              3$    77777                   ,ERROR RES
3218  012722  177777                    -1
3219  012724  177777                    -1
3220  012726  177777                    -1
3221  012730  040200              4$    40200                   ,FPS BEFORE EXECUTION
3222  012732  040206                    40206                   ,FPS AFTER EXECUTION
3223  012734  177777                    -1                      ,FEC
3224  012736  140206                    140206                  ,ERROR FPS
3225  012740  104055              5$    ERROR   55
3226  012742  000401                    BR      6$
3227  012744  104057                    ERROR   57              ,BUT FIV ST262 TO 123 INTO 103
3228  012746                      6$
3229                                    ;
3230  012746                      YYY5
3231  012746  104413                    LPERR                   ,SET UP THE LOOP ON ERROR ADDRESS
3232  012750  004767  000050            JSR     PC,STCDFS
3233  012754  177777              1$    177777                  ,AC0
3234  012756  177777                    -1
3235  012760  100000                    100000
3236  012762  000000                    0
3237  012764  100000              2$    100000                  ,RES
3238  012766  000000                    0
3239  012770  177777                    -1
3240  012772  177777                    -1
3241  012774  000000              3$    0                       ,ERROR RES
3242  012776  000000                    0
3243  013000  177777                    -1
3244  013002  177777                    -1
3245  013004  047200              4$    47200                   ,FPS BEFORE EXECUTION
3246  013006  147216                    147216                  ;FPS AFTER EXECUTION
3247  013010  000010                    10                      ,FEC
3248  013012  047206                    47206                   ,ERROR FPS
3249  013014  104060              5$    ERROR   60              ,BUT FIV ST262 FAIL TO 103 INT 123
3250  013016  000401                    BR      6$
3251  013020  104061                    ERROR   61              ,BUT FLAG ST 147 X TO ST 361 INTO 365
3252  013022  000535              6$    BR      YYYDONE
3253                                    ;THIS SUBROUTINE, STCDFS, IS USED TO SET UP THE OPERANDS, EXECUTE
3254                                    ;THE STCDF INSTRUCTION AND CHECK THE RESULTS  A CALL
3255                                    ;TO IT IS MADE THUS:
3256                                    ;
3257                                    ;               JSR     PC,@#STCFDS
3258                                    ;               ACARG.  .WORD   X,X,X,X         ;AC OPERAND
3259                                    ;               RES.    .WORD   X,X,X,X         ;EXPECTED RESULT
3260                                    ;               ERRES.  .WORD   X,X,X,X         ;ERROR RESULT
3261                                    ;               FPSB    .WORD   X               ;FPS BEFORE EXECUTION
3262                                    ;               FPSA:   .WORD   X               ;FPS AFTER EXECUTION
3263                                    ;               FEC     .WORD   X               ;EXPECTED FEC
3264                                    ;               ERFPS   .WORD   X               ;ERROR FPS
3265                                    ;               ERR1    ERROR   X               ;DATA ERROR
3266                                    ;                       BR      CONT
```

```
3267                                    ;              ERR2.   ERROR   X              ;FPS ERROR
3268                                    ;              CONT:                          ;RETURN ADDRESS
3269                                    ;
3270                                    ;THE OPERANDS ARE SET UP (USING AC0 AS THE ACCUMULATOR)  THEN
3271                                    ;THE STCFD INSTRUCTION IS EXECUTED
3272                                    ;THE RESULT IS CHECKED AGAINST RES.  IF THE RESULT IS CORRECT THEN THE FPS IS
3273                                    ;COMPARED WITH FPSA IF THIS TOO IS CORRECT STCFDS RETURNS CONTROL
3274                                    ;TO THE CALLING ROUTINE AT CONT.  IF THE FPS IS BAD STCFDS
3275                                    ;COMPARE IT TO ERROR FPS.  IF THIS MATCHES THEN STCFDS WILL RETURN
3276                                    ;TO THE ERROR CALL AT ERR2, OTHERWISE STCFDS ITSELF
3277                                    ;REPORTS THIS FAILURE AND THEN RETURNS TO CONT.  IF THE RESULT OF THE
3278                                    ;STCFD IS INCORRECT, THE INCORRECT RESULT IS COMPARED WITH THE
3279                                    ;ANTICIPATED FAILING DATA PATTERN, ERRES.  IF THE FAILURE IN
3280                                    ;THE RESULT WAS ANTICIPATED CORRECTLY TO BE ERRES THEN STCFDS
3281                                    ;WILL TRANSFER CONTROL TO THE ERROR CALL AT ERR1.  OTHERWISE THE
3282                                    ;RESULT WAS INCORRECT BUT WAS NOT ANTICIPATED AND STCFDS WILL
3283                                    ;REPORT THE FAILURE AFTER WHICH CONTROL WILL BE PASSED TO CONT
3284
3285  0:3024  012601                    STCDFS  MOV     (SP)+,R1        ;PICK UP THE POINTER TO THE OPERANDS
3286  013026  012700  000200                    MOV     #200,R0         ;ENTER DOUBLE FLOATING MODE
3287  013032  170100                             LDFPS   R0
3288  013034  010100                             MOV     R1,R0           ;LOAD AC0
3289  013036  172410                             LDD     (R0),AC0
3290  013040  012700  177777                    MOV     #-1,R0          ;FILL THE OUTPUT BUFFER WITH -1'S
3291  013044  012702  013306                    MOV     #STCDT,R2
3292  013050  012703  000004                    MOV     #4,R3
3293  013054  010022                     1$.    MOV     R0,(R2)+
3294  013056  077302                             SOB     R3,1$
3295  013060  016100  000030                    MOV     30(R1),R0       ;LOAD THE FPS
3296  013064  170100                             LDFPS   R0
3297  013066  012737  013100  001236             MOV     #2$,@#$TMP2
3298  013074  012700  013306                    MOV     #STCDT,R0       ;SET UP THE DESTINATION ADDRESS
3299  013100  176010                     2$      STCDF   AC0,(R0)        ;TEST INSTRUCTION
3300
3301  013102  170204                             STFPS   R4              ;GET THE FPS.
3302  013104  170305                             STST    R5              ;GET THE FEC
3303  013106  010102                             MOV     R1,R2           ;SAVE THE DATA IN CASE OF ERROR
3304  013110  010237  001240                    MOV     R2,@#$TMP3
3305  013114  062702  000010                    ADD     #10,R2
3306  013120  010237  001244                    MOV     R2,@#$TMP5
3307  013124  012737  013306  001242             MOV     #STCDT,@#$TMP4
3308  013132  010437  001250                    MOV     R4,@#$TMP7
3309  013136  016137  000032  001252             MOV     32(R1),@#$TMP10
3310
3311  013144  010102                             MOV     R1,R2           ;CHECK THE RESULT
3312  013146  062702  000010                    ADD     #10,R2
3313  013152  012703  013306                    MOV     #STCDT,R3
3314  013156  012700  000004                    MOV     #4,R0
3315  013162  022223                     3$      CMP     (R2)+,(R3)+
3316  013164  001014                             BNE     15$             ;BRANCH IF INCORRECT
3317  013166  077003                             SOB     R0,3$
3318
3319  013170  016102  000032                    MOV     32(R1),R2
3320  013174  020204                             CMP     R2,R4           ;IS THE FPS CORRECT?
3321  013176  001025                             BNE     20$             ;BRANCH IF FPS INCORRECT
3322  013200  005702                             TST     R2              ;IF EXPECTED FPS IS NEGATIVE, THEN
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```
3323  013202  101003                        BPL     4$              ,GO AHEAD AND CHECK THE FEC
3324  013204  026105  000034                CMP     34(R1),R5
3325  013210  001027                        BNE     25$             ,BRANCH IF FEC IS INCORRECT
3326  013212  000161  000046        4$      JMP     46(R1)          ,RETURN
3327
3328                                ,RESULT INCORRECT:
3329  013216  010102                15$     MOV     R1,R2           ,SEE IF ERROR WAS ANTICIPATED
3330  013220  062702  000020                ADD     #20,R2
3331  013224  012703  013306                MOV     #STCDT,R3
3332  013230  012700  000004                MOV     #4,R0
3333  013234  022223                16$     CMP     (R2)+,(R3)+
3334  013236  001003                        BNE     17$             ,BRANCH IF NOT ANTICIPATED
3335  013240  077003                        SOB     R0,16$
3336  013242  000161  000040                JMP     40(R1)          ,IF ERROR WAS ANTICIPATED RETURN
3337                                ,OTHERWISE REPORT RESULT INCORRECT HERE.
3338  013246                        17$
3339  013246  104051                18$     ERROR   51              ,DATA ERROR
3340  013250  000760                        BR      4$
3341
3342                                ,FPS INCORRECT
3343  013252  020461  000034        20$     CMP     R4,34(R1)               ,WAS THE ERROR ANTICIPATED
3344  013256  001002                        BNE     21$             ,BRANCH IF NOT ANTICIPATED
3345  013260  000161  000044                JMP     44(R1)          ,IF IT WAS ANTICIPATED RETURN
3346
3347                                ,THE FPS ERROR WAS NOT ANTICIPATED SO REPORT FPS INCORRECT HERE
3348  013264                        21$
3349  013264  104052                22$     ERROR   52              ,FPS X
3350  013266  000751                        BR      4$
3351
3352                                ,REPORT FEC INCORRECT:
3353  013270  016137  000036  001256  25$     MOV     36(R1),@#$TMP12
3354  013276  010537  001254                MOV     R5,@#$TMP11
3355  013302  104053                26$:    ERROR   53              ,FEC X
3356  013304  000742                        BR      4$
3357  013306  177777  177777  177777  STCDT.  -1,-1,-1,-1
3358  013314  177777
3359  013316                        YYYDONE
3360  013316  104412                        RSETUP                  ,GO INITIALIZE THE FPS AND STACK, AND
3361                                                                ;SEE IF THE USER HAS EXPRESSED
3362                                                                ;THE DESIRE TO CHANGE THE SOFTWARE
3363                                                                ;VIRTUAL CONSOLE SWITCH REGISTER (HAS
3364                                                                ;THE USER TYPED CONTROL G?)
3365                                ,,**************************************************************
3366                                ,*TEST 14        STCFD WITH ILLEGAL ACCUMULATOR TEST
3367                                ,*
3368                                ,*THIS TEST STCFD WITH ILLEGAL AC 6
3369                                ,*
3370                                ,;**************************************************************
3371  013320  000004                TST14:  SCOPE
3372
3373  013322                        ZZZ1:
3374  013322  104413                        LPERR                   ,SET UP THE LOOP ON ERROR ADDRESS
3375  013324  012700  040000                MOV     #40000,R0       ,DISSABLE INTERRUPTS
3376  013330  170100                        LDFPS   R0
3377  013332  012737  013340  001236        MOV     #ZZZ2,@#$TMP2
3378  013340  176006                ZZZ2    STCFD   AC0,AC6         ,THIS TEST INSTRUCTION SHOULD CAUSE AN ER OR
```

```
 3379
 3380  013342  170204                          STFPS   R4              ,GET FPS
 3381  013344  170305                          STST    R5              ,GET FEC.
 3382  013346  020427  140000                  CMP     R4,#140000      ;IS FPS CORRECT?
 3383  013352  001004                          BNE     ZZZ10           ,BRANCH IF INCORRECT FPS
 3384  013354  022705  000002                  CMP     #2,R5           ,IS FEC CORRECT?
 3385  013360  001010                          BNE     ZZZ15           ,BRANCH IF INCORRECT
 3386  013362  000415                          BR      ZZZDONE
 3387
 3388                                  ,REPORT FPS INCORRECT AFTER USE OF ILLEGAL ACCUMULATOR
 3389  013364  010437  001242          ZZZ10:  MOV     R4,@#$TMP4
 3390  013370  012737  140000  001240          MOV     #140000,@#$TMP3
 3391  013376  104062                  1$      ERROR   62              ,BUT FDST ST767 X TO 567 INTO 577
 3392  013400  000406                          BR      ZZZDONE
 3393
 3394                                  ,REPORT FEC INCORRECT AFTER USE OF ILLEGAL ACCUMULATOR
 3395  013402  010537  001242          ZZZ15:  MOV     R5,@#$TMP4
 3396  013406  012737  000002  001240          MOV     #2,@#$TMP3
 3397  013414  104067                  1$      ERROR   63              ,FEC<---2 ST577 X
 3398  013416                          ZZZDONE
 3399  013416  104412                          RSETUP                  ,GO INITIALIZE THE FPS AND STACK, AND
 3400                                                                  ;SEE IF THE USER HAS EXPRESSED
 3401                                                                  ;THE DESIRE TO CHANGE THE SOFTWARE
 3402                                                                  ,VIRTUAL CONSOLE SWITCH REGISTER (HAS
 3403                                                                  ;THE USER TYPED CONTROL G?)
 3404
 3405                                  ,,**********************************************************************
 3406                                  ,*TEST 15       CLRD TEST
 3407                                  ;*
 3408                                  ,*THIS IS A TEST OF THE CRLF AND CLRD INSTRUCTIONS
 3409                                  ;*
 3410                                  ;;**********************************************************************
 3411  013420  000004                  TST15:  SCOPE
 3412  013422                          AAB1:
 3413  013422  104413                          LPERR                   ;SET UP THE LOOP ON ERROR ADDRESS
 3414  013424  012700  013610                  MOV     #AABTP1,R0      ,SET UP OUTPUT BUFFER
 3415  013430  012701  013600                  MOV     #AABBF0,R1
 3416  013434  012702  000004                  MOV     #4,R2
 3417  013440  012021                  1$      MOV     (R0)+,(R1)+
 3418  013442  077202                          SOB     R2,1$
 3419  013444  012700  013600                  MOV     #AABBF0,R0      ,SET UP DESTINATION OPERAND ADDRESS
 3420  013450  012701  000213                  MOV     #213,R1         ,SET UP FPS
 3421  013454  170101                          LDFPS   R1
 3422  013456  012737  013464  001236          MOV     #2$,@#$TMP2
 3423  013464  170410                  2$      CLRD    (R0)            ;TEST INSTRUCTION
 3424
 3425  013466  170205                          STFPS   R5              ,GET FPS.
 3426  013470  012702  000004                  MOV     #4,R2           ,SEE IF RESULT CLEAR, 0
 3427  013474  012701  013600                  MOV     #AABBF0,R1
 3428  013500  005721                  3$      TST     (R1)+
 3429  013502  001010                          BNE     AAB2            ,BRANCH IF RESULT INCORRECT, NOT 0
 3430  013504  077203                          SOB     R2,3$
 3431  013506  022705  000204                  CMP     #204,R5         ,SEE IF FPS IS CORRECT.
 3432  013512  001014                          BNE     AAB3            ;BRANCH IF INCORRECT
 3433  013514  020027  013600                  CMP     R0,#AABBF0      ,SEE IF R0 IS CORRECT
 3434  013520  001020                          BNE     AAB4            ,BRANCH IF R0 IS INCORRECT
```

```
3435  013522  000442                          BR      AABDONE
3436
3437                                  ,RESULT NOT 0, REPORT ERROR
3438  013524  012737  013600  001240  AAB2    MOV     #AABBF0,@#$TMP3
3439  013532  012737  013620  001242          MOV     #AABTP2,@#$TMP4
3440  013540  104064                  1$:     ERROR   64              ,BAD DATA = 0 X 11+ZERO ST770 X
3441  013542  000432                          BR      AABDONE
3442
3443                                  ,REPORT FPS INCORRECT.
3444  013544  010437  001242          AAB3.   MOV     R4,@#$TMP4
3445  013550  012737  000204  001240          MOV     #204,@#$TMP3
3446  013556  104065                  1$.     ERROR   65              ;BAD FPS
3447  013560  000423                          BR      AABDONE
3448
3449                                  ,REPORT R0 INCORRECT.
3450  013562  010037  001242          AAB4    MOV     R0,@#$TMP4
3451  013566  012737  013600  001240          MOV     #AABBF0,@#$TMP3
3452  013574  104066                  1$.     ERROR   66
3453  013576  000414                          BR      AABDONE
3454
3455                                  ,THIS IS THE TEST DATA BUFFER, OUTPUT DATA BUFFER
3456  013600  073475                  AABBF0: 73475
3457  013602  067707                          67707
3458  013604  127347                          127347
3459  013606  056770                          56770
3460                                  ,THIS IS THE DATA USED TO SET UP THE OUTPUT BUFFER
3461  013610  073475                  AABTP1: 73475
3462  013612  067707                          67707
3463  013614  127347                          127347
3464  013616  056770                          56770
3465                                  ,THIS IS THE EXPECTED DATA, RESULT
3466  013620  000000                  AABTP2: 0
3467  013622  000000                          0
3468  013624  000000                          0
3469  013626  000000                          0
3470  013630                          AABDONE
3471  013630  104412                          RSETUP                  ,GO INITIALIZE THE FPS AND STACK, AND
3472                                                                  ,SEE IF THE USER HAS EXPRESSED
3473                                                                  ,THE DESIRE TO CHANGE THE SOFTWARE
3474                                                                  ,VIRTUAL CONSOLE SWITCH REGISTER (HAS
3475                                                                  ;THE USER TYPED CONTROL G?)
3476
3477                                  ;;*******************************************************************
3478                                  ,*TEST 16       CLRD WITH ILLEGAL ACCUMULATOR TEST
3479                                  ;*
3480                                  ;*THIS IS A TEST OF CLRD WITH ILLEGAL AC7.
3481                                  ,*
3482                                  ;,*******************************************************************
3483  013632  000004                  TST16:  SCOPE
3484  013634                          CCB1:
3485  013634  104413                          LPERR                   ,SET UP THE LOOP ON ERROR ADDRESS
3486  013636  012700  040200                  MOV     #40200,R0       ,SET UP THE FPS, NO INTERRUPTS AND FD=1
3487  013642  170100                          LDFPS   R0
3488  013644  012737  013652  001236          MOV     #CCB2,@#$TMP2
3489  013652  170407                  CCB2    CLRD    AC7             ,TEST INSTRUCTION
3490
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```
3491  013654  170204                          STFPS   R4              ;GET FPS
3492  013656  170305                          STST    R5              ;GET FEC
3493  013660  020427  140200                  CMP     R4,#140200              ;IS THE FPS CORRECT?
3494  013664  001004                          BNE     CCB10           ;BRANCH IF FPS IS INCORRECT
3495  013666  022705  000002                  CMP     #2,R5           ;IS THE FEC CORRECT?
3496  013672  001010                          BNE     CCB15           ;BRANCH IF FEC IS INCORRECT
3497  013674  000415                          BR      CCBDONE
3498
3499                                  ;REPORT INCORRECT FPS:
3500  013676  010437  001242          CCB10   MOV     R4,@#$TMP4
3501  013702  012737  140200  001240          MOV     #140200,@#$TMP3
3502  013710  104067                  1$      ERROR   67              ;BUT FDST ST 700X TO 607 INTO 677
3503  013712  000406                          BR      CCBDONE
3504
3505                                  ;REPORT INCORRECT FEC:
3506  013714  010537  001242          CCB15:  MOV     R5,@#$TMP4
3507  013720  012737  000002  001240          MOV     #2,@#$TMP3
3508  013726  104070                  1$:     ERROR   70              ;FEC<---2 ST 677 X
3509  013730                          CCBDONE:
3510  013730  104412                          RSETUP                  ;GO INITIALIZE THE FPS AND STACK, AND
3511                                                                  ;SEE IF THE USER HAS EXPRESSED
3512                                                                  ;THE DESIRE TO CHANGE THE SOFTWARE
3513                                                                  ;VIRTUAL CONSOLE SWITCH REGISTER (HAS
3514                                                                  ;THE USER TYPED CONTROL G?)
3515
3516                                  ;;**********************************************************************
3517                                  ;*TEST 17        NEGF, ABSF AND TSTF SOURCE MODE 0 WITH ILLEGAL AC7, TEST
3518                                  ;*
3519                                  ;*THIS IS A TEST OF THE SPECIAL
3520                                  ;*DEST FLOWS USING THE NEGD INST
3521                                  ;*WITH MODE ZERO AND ILLEGAL
3522                                  ;*AC7.
3523                                  ;*
3524                                  ;;**********************************************************************
3525  013732  000004                  TST17:  SCOPE
3526
3527  013734                          VVB1:
3528  013734  104413                          LPERR                   ;SET UP THE LOOP ON ERROR ADDRESS
3529  013736  012700  040200                  MOV     #40200,R0               ;SET UP THE FPS, FID=1 AND FD=1
3530  013742  170100                          LDFPS   R0
3531  013744  012737  013752  001236          MOV     #VVB2,@#$TMP2
3532
3533  013752  170707                  VVB2:   NEGD    AC7             ;TEST INSTRUCTION.
3534
3535  013754  170204                          STFPS   R4              ;GET FPS.
3536  013756  170305                          STST    R5              ;GET FEC
3537
3538  013760  022704  140200                  CMP     #140200,R4              ;IS FPS CORRECT?
3539  013764  001004                          BNE     VVB10           ;BRANCH IF FPS IS INCORRECT
3540  013766  022705  000002                  CMP     #2,R5           ;IS FEC CORRECT?
3541  013772  001010                          BNE     VVB15           ;BRANCH IF FEC IS INCORRECT
3542  013774  000415                          BR      VVBDONE
3543
3544                                  ;REPORT INCORRECT FPS
3545  013776  012737  140200  001240  VVB10   MOV     #140200,@#$TMP3
3546  014004  010437  001242                  MOV     R4,@#$TMP4
```

```
3547  014010  104176                  1$      ERROR   176             ,FPS BAD
3548  014012  000406                          BR      VVBDONE
3549
3550                                  ,REPORT FEC INCORRECT
3551  014014  012737  000002  001240  VVB15   MOV     #2,@#$TMP3
3552  014022  010537  001242                  MOV     R5,@#$TMP4
3553  014026  104177                  1$      ERROR   177             ,FEC BAD
3554
3555  014030                          VVBDONE
3556  014030  104412                          RSETUP                  ,GO INITIALIZE THE FPS AND STACK, AND
3557                                                                  ,SEE IF THE USER HAS EXPRESSED
3558                                                                  ,THE DESIRE TO CHANGE THE SOFTWARE
3559                                                                  ,VIRTUAL CONSOLE SWITCH REGISTER (HAS
3560                                                                  ;THE USER TYPED CONTROL G?)
3561
3562                                  ,,**********************************************************************
3563                                  ,*TEST 20       NEGF, ABSF AND TSTF SOURCE MODE 0 TEST
3564                                  ,*
3565                                  ,*THIS IS A TEST THE NEGF,  ABSF AND TSTF
3566                                  ,*SOURCE FLOWS   THE NEGD INSTRUCTION
3567                                  ,*IS USED TO TEST MODE 0
3568                                  ,*
3569                                  ,,**********************************************************************
3570  014032  000004                  TST20   SCOPE
3571
3572  014034                          DDB1
3573  014034  104413                          LPERR                   ,SET UP THE LOOP ON ERROR ADDRESS
3574  014036  012700  000200                  MOV     #200,R0         ,SET FD MODE
3575  014042  170100                          LDFPS   R0
3576  014044  012700  014206                  MOV     #DDBTP1,R0      ;SET UP AC0
3577  014050  172410                          LDD     (R0),AC0                ,SET AC0 = 0
3578  014052  005000                          CLR     R0              ,CLEAR THE FPS
3579  014054  170100                          LDFPS   R0
3580  014056  012700  014216                  MOV     #DDBTP2,R0              ,LOAD AC0 TO BE A FLOATING 0
3581  014062  172410                          LDF     (R0),AC0        ;SET AC0=ZERO
3582                                                                  ,FLOAT
3583  014064  012700  000201                  MOV     #201,R0         ;SET FD MODE
3584  014070  170100                          LDFPS   R0
3585  014072  012737  014100  001236          MOV     #DDB2,@#$TMP2
3586
3587  014100  170700                  DDB2    NEGD    AC0             ,TEST INSTRUCTION
3588
3589  014102  170205                          STFPS   R5              ,GET FPS
3590  014104  012700  000200                  MOV     #200,R0         ,SET FD MODE.
3591  014110  170100                          LDFPS   R0
3592  014112  012700  014226                  MOV     #DDBBF0,R0      ,GET THE RESULT OUT OF AC0
3593  014116  174010                          STD     AC0,(R0)
3594                                                                  ,SEE IF THE RESULT IS CORRECT
3595  014120  012701  000004                  MOV     #4,R1
3596  014124  005720                  1$      TST     (R0)+
3597  014126  001005                          BNE     DDB5            ,BRANC  IF THE RESULT IS INCORRECT
3598  014130  077103                          SOB     R1,1$
3599  014132  022705  000204                  CMP     #204,R5         ,IS THE FPS CORRECT?
3600  014136  001014                          BNE     DDB6            ,BRANCH IF THE FPS IS INCORRECT
3601  014140  000442                          BR      DDBDONE
3602
```

```
                                        ,RESULT INCORRECT, REPORT FAILURE
014142  012737  014216  001242  DDB5    MOV     #DDBTP2,@#$TMP4 ,EXPECT DO
014150  012737  014236  001240          MOV     #DDBTP3,@#$TMP3 ,PREV FO IMPURE
014156  012737  014226  001244          MOV     #DDB8F0,@#$TMP5 ,GOT
014164  104071                  1$      ERROR   71
014166  000427                          BR      DDBDONE

                                        ,REPORT FPS INCORRECT.
014170  012737  000204  001240  DDB6    MOV     #204,@#$TMP3
014176  010537  001242                  MOV     R5,@#$TMP4
014202  104072                  1$      ERROR   72
014204  000420                          BR      DDBDONE

                                        ,THESE ARE TEST DATA TABLES AND AN OUTPUT BUFFER
014206  101112                  DDBTP1. 101112
014210  131415                          131415
014212  161710                          161710
014214  111213                          111213
014216  000000                  DDBTP2  0
014220  000000                          0
014222  000000                          0
014224  000000                          0

014226  177777                  DDB8F0  -1
014230  177777                          -1
014232  177777                          -1
014234  177777                          -1
014236  000000                  DDBTP3  0
014240  000000                          0
014242  161710                          161710
014244  111213                          111213

014246                          DDBDONE
014246  104412                          RSETUP                  ,GO INITIALIZE THE FPS AND STACK, AND
                                                                ;SEE IF THE USER HAS EXPRESSED
                                                                ;THE DESIRE TO CHANGE THE SOFTWARE
                                                                ;VIRTUAL CONSOLE SWITCH REGISTER (HAS
                                                                ;THE USER TYPED CONTROL G?)

                                        ,,*******************************************************************
                                        ,*TEST 21       NEGF, ABSF AND TSTF SOURCE MODE 1 TEST
                                        ,*
                                        ;*THIS IS A TEST THE NEGF,  ABSF AND TSTF
                                        ,*SOURCE FLOWS.  THE NEGD INSTRUCTION
                                        ,*IS USED TO TEST MODE 1
                                        ,*
                                        ,,*******************************************************************
014250  000004                  TST21   SCOPE

014252                          EEB1
014252  104413                          LPERR                   ,SET UP THE LOOP ON ERROR ADDRESS
014254  012700  014362                  MOV     #EEBTP1,R0      ,SET UP THE DATA BUFFER
014260  012701  014412                  MOV     #EEB8F1,R1
014264  012702  000004                  MOV     #4,R2
014270  012021                  1$      MOV     (R0)+,(R1)+
014272  077202                          SOB     R2,1$
```

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3659  014274  012700  000200                MOV     #200,R0         ,SET FD MODE
3660  014300  170100                        LDFPS   R0
3661  014302  012700  014412                MOV     #EEBBF1,R0      ,SET UP THE OPERAND ADDRESS
3662  014306  012737  014322  001236        MOV     #EEB2,@#$TMP2
3663  014314  012737  014422  000004        MOV     #EEB10,@#ERRVECT ,SET UP VECTOR 4 IN CASE OF ERROR
3664  014322  170710            EEB2        NEGD    (R0)            ,TEST INSTRUCTION
3665
3666  014324  170205                        STFPS   R5              ,GET FPS
3667  014326  012701  014412                MOV     #EEBBF1,R1      ,SEE IF RESULT IS CORRECT
3668  014332  012702  000004                MOV     #4,R2
3669  014336  005721            1$          TST     (R1)+
3670  014340  001046                        BNE     EEB15           ,BRANCH IF NOT CORRECT
3671  014342  077203                        SOB     R2,1$
3672
3673  014344  020027  014412                CMP     R0,#EEBBF1      ,IS R0 CORRECT?
3674  014350  001055                        BNE     EEB20                   ,BRANCH IF NOT CORRECT
3675  014352  022705  000204                CMP     #204,R5         ,IS THE FPS CORRECT?
3676  014356  001061                        BNE     EEB25           ,BRANCH IF NOT CORRECT
3677  014360  000466                        BR      EEBDONE
3678
3679                                    ,THESE ARE TEST DATA TABLES AND A BUFFER
3680  014362  000177            EEBTP1  177
3681  014364  167574                    167574
3682  014366  137271                    137271
3683  014370  107675                    107675
3684  014372  000000            EEBTP2  0
3685  014374  000000                    0
3686  014376  000000                    0
3687  014400  000000                    0
3688  014402  177777            EEBBF0  -1
3689  014404  177777                    -1
3690  014406  177777                    -1
3691  014410  177777                    -1
3692  014412  177777            EEBBF1  -1
3693  014414  177777                    -1
3694  014416  177777                    -1
3695  014420  177777                    -1
3696
3697                                    ,IF A TRAP TO 4 OCCURS COME HERE
3698  014422  011602            EEB10.  MOV     (SP),R2         ,SEE IF THE TRAP OCCURRED ON THE TEST INSTR
3699  014424  020227  014324            CMP     R2,#EEB2+2
3700  014430  001405                    BEQ     1$              ,BRANCH IF YES
3701  014432  020227  014326            CMP     R2,#EEB2+4
3702  014436  001402                    BEQ     1$              ,BRANCH IF YES
3703  014440  000137  042610            JMP     @#CPSPUR        ,OTHERWISE GO REPORT A SPURIOUS TRAP TO 4
3704                                  ,REPORT A FAILURE IN THE FDST FLOWS RESULTED IN AN ODD ADDRESS TRAP TO 4
3705  014444  022626            1$      CMP     (SP)+,(SP)+     ;RESET THE STACK
3706  014446  010237  001236            MOV     R2,@#$TMP2
3707  014452  104107            2$      ERROR   107             ,ODD ADRES
3708  014454  000430                    BR      EEBDONE         ,BUT FDSTX IN ST 771
3709
3710                                    ,REPORT RESULT INCORRECT
3711  014456  012737  014372  001242    EEB15   MOV     #EEBTP2,@#$TMP4
3712  014464  012737  014362  001240            MOV     #EEBTP1,@#$TMP3
3713  014472  012737  014412  001244            MOV     #EEBBF1 @#$TMP5
3714  014500  104073            1$      ERROR   73              ,BAD DATA X11*0 ST 312X
```

```
3715  014502  000415                          BR      EEBDONE
3716
3717                                  ,R0 INCORRECT
3718  014504  012737  014412  001240  EEB20   MOV     #EEBBF1,@#$TMP3
3719  014512  010037  001242                  MOV     R0,@#$TMP4
3720  014516  104074                  1$      ERROR   74              ,R0 BADX
3721  014520  000406                          BR      EEBDONE
3722
3723                                  ,REPORT FPS INCORRECT
3724  014522  010537  001240          EEB25   MOV     R5,@#$TMP3
3725  014526  012737  000204  001244          MOV     #204,@#$TMP5
3726  014534  104075                  1$      ERROR   75              ,FPS X
3727
3728  014536                          EEBDONE
3729  014536  104412                          RSETUP                  ,GO INITIALIZE THE FPS AND STACK, AND
3730                                                                  ,SEE IF THE USER HAS EXPRESSED
3731                                                                  ,THE DESIRE TO CHANGE THE SOFTWARE
3732                                                                  ,VIRTUAL CONSOLE SWITCH REGISTER (HAS
3733                                                                  ,THE USER TYPED CONTROL G?)
3734
3735                                  ,,*****************************************************************
3736                                  ,*TEST 22       NEGF, ABSF AND TSTF SOURCE MODE 2 TEST
3737                                  ,*
3738                                  ,*THIS IS A TEST THE NEGF,  ABSF AND TSTF
3739                                  ,*SOURCE FLOWS.  THE ABSD INSTRUCTION
3740                                  ,*IS USED TO TEST MODE 2
3741                                  ,*
3742                                  ,,*****************************************************************
3743  014540  000004                  TST22.  SCOPE
3744
3745  014542                          FFB1
3746  014542  104413                          LPERR                   ,SET UP THE LOOP ON ERROR ADDRESS
3747  014544  012700  014652                  MOV     #FFBTP1,R0              ,SET UP THE DATA BUFFER
3748  014550  012701  014702                  MOV     #FFBBF1,R1
3749  014554  012702  000004                  MOV     #4,R2
3750  014560  012021                  1$      MOV     (R0)+,(R1)+
3751  014562  077202                          SOB     R2,1$
3752  014564  012700  000200                  MOV     #200,R0         ,SET FD
3753  014570  170100                          LDFPS   R0
3754  014572  012700  014702                  MOV     #FFBBF1,R0      ,SET UP THE OPERAND ADDRESS
3755  014576  012737  014612  001236          MOV     #FFB2,@#$TMP2
3756  014604  012737  014712  000004          MOV     #FFB10,@#ERRVECT ,SET UP VECTOR 4 IN CASE OF AN ERROR
3757
3758  014612  170620                  FFB2    ABSD    (R0)+           ,TEST INSTRUCTION
3759
3760  014614  170205                          STFPS   R5              ,GET FPS
3761  014616  012701  014702                  MOV     #FFBBF1,R1              ,CHECK RESULT
3762  014622  012702  000004                  MOV     #4,R2
3763  014626  005721                  1$      TST     (R1)+
3764  014630  001046                          BNE     FFB15           ,BRANCH IF INCORRECT
3765  014632  077203                          SOB     R2,1$
3766
3767  014634  020027  014712                  CMP     R0,#FFBBF1+10   ,IS R0 CORRECT?
3768  014640  001055                          BNE     FFB20           ,BRANCH IF INCORRECT
3769  014642  022705  000204                  CMP     #204,R5         ,IS THE FPS CORRECT?
3770  014646  001061                          BNE     FFB25           ,BRANCH IF INCORRECT
```

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3771  014650  000466                          BR      FFBDONE
3772
3773                                  ,THESE ARE TEST DATA TABLES AND DATA BUFFER
3774  014652  000177                FFBTP1  177
3775  014654  167574                        167574
3776  014656  137271                        137271
3777  014660  107675                        107675
3778  014662  000000                FFBTP2  0
3779  014664  000000                        0
3780  014666  000000                        0
3781  014670  000000                        0
3782  014672  177777                FFBBF0  -1
3783  014674  177777                        -1
3784  014676  177777                        -1
3785  014700  177777                        -1
3786  014702  177777                FFBBF1  -1
3787  014704  177777                        -1
3788  014706  177777                        -1
3789  014710  177777                        -1
3790
3791                                  ,IF A TRAP TO 4 OCCURS COME HERE
3792  014712  011602                FFB10   MOV     (SP),R2         ,SEE IF THE TRAP OCCURRED ON THE TEST INSTRUCTION
3793  014714  020227  014614                CMP     R2,#FFB2+2
3794  014720  001405                        BEQ     1$              ,BRANCH IF YES
3795  014722  020227  014616                CMP     R2,#FFB2+4
3796  014726  001402                        BEQ     1$              ,BRANCH IF YES
3797  014730  000137  042610                JMP     @#CPSPUR        ,OTHERWISE GO REPORT SPURIOUS TRAP TO 4
3798                                  ,REPORT AN FDST FLOW FAILURE RESULTED IN A TRAP TO 4
3799  014734  022626                1$      CMP     (SP)+,(SP)+
3800  014736  010237  001236                MOV     R2,@#$TMP2
3801  014742  104076                2$      ERROR   76              ,ODD ADRES
3802  014744  000430                        BR      FFBDONE         ,BUT FDSTX IN ST 771
3803
3804                                  ,REPORT RESULT INCORRECT:
3805  014746  012737  014662  001240FFB15   MOV     #FFBTP2,@#$TMP3
3806  014754  012737  014652  001242        MOV     #FFBTP1,@#$TMP4
3807  014762  012737  014702  001244        MOV     #FFBBF1,@#$TMP5
3808  014770  104077                1$      ERROR   77              ,BAD DATA X11#0 ST 312X
3809  014772  000415                        BR      FFBDONE
3810
3811                                  ,REPORT R0 INCORRECT
3812  014774  012737  014706  001240FFB20   MOV     #FFBBF1+4,@#$TMP3
3813  015002  010037  001242                MOV     R0,@#$TMP4
3814  015006  104100                1$      ERROR   100             ,R0 BADX
3815  015010  000406                        BR      FFBDONE
3816
3817                                  ,REPORT FPS INCORRECT
3818  015012  010537  001240        FFB25   MOV     R5,@#$TMP3
3819  015016  012737  000204  001244        MOV     #204,@#$TMP5
3820  015024  104101                1$      ERROR   101             ,FPS X
3821
3822  015026                        FFBDONE
3823  015026  104412                        RSETUP                  ,GO INITIALIZE THE FPS AND STACK, AND
3824                                                                ,SEE IF THE USER HAS EXPRESSED
3825                                                                ,THE DESIRE TO CHANGE THE SOFTWARE
3826                                                                ,VIRTUAL CONSOLE SWITCH REGISTER (HAS
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3827                                                    ,THE USER TYPED CONTROL G?)
3828                                    ,,**********************************************************************
3829                                    ,*TEST 23       NEGF, ABSF AND TSTF SOURCE MODE 4 TEST
3830                                    ,*
3831                                    ,*THIS IS A TEST THE NEGF,  ABSF AND TSTF
3832                                    ,*SOURCE FLOWS   THE ABSD INSTRUCTION
3833                                    ,*IS USED TO TEST MODE 4
3834                                    ,*
3835                                    ,,**********************************************************************
3836  015030  000004                    TST23   SCOPE
3837
3838  015032                            GGB1
3839  015032  104413                           LPERR                   ,SET UP THE LOOP ON ERROR ADDRESS
3840  015034  012700  015142                   MOV     #GGBTP1,R0              ,SET UP THE DATA BUFFER
3841  015040  012701  015162                   MOV     #GGBBF0,R1
3842  015044  012702  000004                   MOV     #4,R2
3843  015050  012021                   1$      MOV     (R0)+,(R1)+
3844  015052  077202                           SOB     R2,1$
3845  015054  012700  000200                   MOV     #200,R0         ,SET FD
3846  015060  170100                           LDFPS   R0
3847  015062  012700  015172                   MOV     #GGBBF1,R0      ,SET UP THE OPERAND ADDRESS
3848  015066  012737  015102  001236           MOV     #GGB2,@#$TMP2
3849  015074  012737  015202  000004           MOV     #GGB10,@#ERRVECT ,SET UP VECTOR 4 IN CASE OF AN ERROR
3850
3851  015102  170640                    GGB2    ABSD    -(R0)           ,TEST INSTRUCTION
3852
3853  015104  170205                           STFPS   R5              ,GET FPS
3854  015106  012701  015162                   MOV     #GGBBF0,R1              ,CHECK RESULT
3855  015112  012702  000004                   MOV     #4,R2
3856  015116  005721                   1$      TST     (R1)+
3857  015120  001046                           BNE     GGB15           ,BRANCH IF INCORRECT
3858  015122  077203                           SOB     R2,1$
3859
3860  015124  020027  015162                   CMP     R0,#GGBBF0      ,IS R0 CORRECT?
3861  015130  001055                           BNE     GGB20           ,BRANCH IF INCORRECT
3862  015132  022705  000204                   CMP     #204,R5         ,IS THE FPS CORRECT?
3863  015136  001061                           BNE     GGB25           ,BRANCH IF INCORRECT
3864  015140  000466                           BR      GGBDONE
3865
3866                                    ,THESE ARE TEST DATA TABLES AND DATA BUFFER
3867  015142  000177                    GGBTP1  177
3868  015144  117273                            117273
3869  015146  147576                            147576
3870  015150  177071                            177071
3871  015152  000000                    GGBTP2  0
3872  015154  000000                            0
3873  015156  000000                            0
3874  015160  000000                            0
3875  015162  177777                    GGBBF0  -1
3876  015164  177777                            -1
3877  015166  177777                            -1
3878  015170  177777                            -1
3879  015172  177777                    GGBBF1   1
3980  015174  177777                            -1
3881  015176  177777                            -1
3882  015200  177777                            -1
```

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3883
3884                                    ;IF A TRAP TO 4 OCCURS COME HERE
3885  015202  011602                    GGB10   MOV     (SP),R2         ;SEE IF THE TRAP OCCURRED ON THE TEST INSTRUCTION
3886  015204  020227  015104                    CMP     R2,#GGB2+2
3887  015210  001405                            BEQ     1$              ;BRANCH IF YES
3888  015212  020227  015106                    CMP     R2,#GGB2+4
3889  015216  001402                            BEQ     1$              ;BRANCH IF YES
3890  015220  000137  004610                    JMP     @#CPSPUR        ;OTHERWISE GO REPORT SPURIOUS TRAP TO 4
3891                                    ;REPORT AN FDST FLOW FAILURE RESULTED IN A TRAP TO 4
3892  015224  022626                    1$      CMP     (SP)+,(SP)+
3893  015226  010237  001236                    MOV     R2,@#$TMP2
3894  015232  104102                    2$      ERROR   102             ;ODD ADRES
3895  015234  000430                            BR      GGBDONE         ;BUT FDSTX IN ST 771
3896
3897                                    ;REPORT RESULT INCORRECT
3898  015236  012737  015152  001240    GGB15   MOV     #GGBTP2,@#$TMP3
3899  015244  012737  015142  001242            MOV     #GGBTP1,@#$TMP4
3900  015252  012737  015162  001244            MOV     #GGBBF0,@#$TMP5
3901  015260  104103                    1$      ERROR   103             ;BAD DATA X11X0 ST 312X
3902  015262  000415                            BR      GGBDONE
3903
3904                                    ;REPORT R0 INCORRECT
3905  015264  012737  015162  001240    GGB20   MOV     #GGBBF01,@#$TMP3
3906  015272  010037  001242                    MOV     R0,@#$TMP4
3907  015276  104104                    1$      ERROR   104             ;R0 BADX
3908  015300  000406                            BR      GGBDONE
3909
3910                                    ;REPORT FPS INCORRECT
3911  015302  010537  001240    GGB25   MOV     R5,@#$TMP3
3912  015306  012737  000204  001244            MOV     #204,@#$TMP5
3913  015314  104105                    1$      ERROR   105             ;FPS X
3914
3915  015316                            GGBDONE
3916  015316  104412                            RSETUP                  ;GO INITIALIZE THE FPS AND STACK, AND
3917                                                                    ;SEE IF THE USER HAS EXPRESSED
3918                                                                    ;THE DESIRE TO CHANGE THE SOFTWARE
3919                                                                    ;VIRTUAL CONSOLE SWITCH REGISTER (HAS
3920                                                                    ;THE USER TYPED CONTROL G?)
3921                                    ;;**********************************************************************
3922                                    ;*TEST 24        NEGF, ABSF AND TSTF SOURCE MODE 3 TEST
3923                                    ;*
3924                                    ;*THIS IS A TEST THE NEGF,  ABSF AND TSTF
3925                                    ;*SOURCE FLOWS   THE ABSD INSTRUCTION
3926                                    ;*IS USED TO TEST MODE 3
3927                                    ;*
3928                                    ;;**********************************************************************
3929  015320  000004                    TST24   SCOPE
3930
3931  015322                            HHB1
3932  015322  104413                            LPERR                   ;SET UP THE LOOP ON ERROR ADDRESS
3933  015324  012700  015432                    MOV     #HHBTP1,R0              ;SET UP THE DATA BUFFER
3934  015330  012701  015462                    MOV     #HHBBF0,R1
3935  015334  012702  000010                    MOV     #10,R2
3936  015340  012021                    1$      MOV     (R0)+,(R1)+
3937  015342  077202                            SOB     R2,1$
3938  015344  012700  000200                    MOV     #200,R0         ;SET FD
```

```
3939  015350  170100                          LDFPS   R0
3940  015352  012700  015472                  MOV     #HHBBF1,R0      ;SET UP THE OPERAND ADDRESS
3941  015356  012737  015372  001236          MOV     #HHB2,@#$TMP2
3942  015364  012737  015502  000004          MOV     #HHB10,@#ERRVECT ;SET UP VECTOR 4 IN CASE OF AN ERROR
3943
3944  015372  170630                  HHB2    ABSD    @(R0)+          ;TEST INSTRUCTION
3945
3946  015374  170205                          STFPS   R5              ;GET FPS
3947  015376  012701  015462                  MOV     #HHBBF0,R1              ;CHECK RESULT
3948  015402  012702  000004                  MOV     #4,R2
3949  015406  005721                  1$      TST     (R1)+
3950  015410  001052                          BNE     HHB15           ;BRANCH IF INCORRECT
3951  015412  077203                          SOB     R2,1$
3952  015414  020027  015474                  CMP     R0,#HHBBF1+2    ;IS R0 CORRECT?
3953  015420  001061                          BNE     HHB20           ;BRANCH IF INCORRECT
3954  015422  022705  000204                  CMP     #204,R5         ;IS THE FPS CORRECT?
3955  015426  001065                          BNE     HHB25           ;BRANCH IF INCORRECT
3956  015430  000472                          BR      HHBDONE
3957
3958                                  ;THESE ARE TEST DATA TABLES AND DATA BUFFER
3959  015432  000177                  HHBTP1  177
3960  015434  147576                          147576
3961  015436  177071                          177071
3962  015440  107576  015462  177777          107576,HHBBF0,-1 -1,-1
3963  015446  177777  177777
3964  015452  000000  000000  000000  HHBTP2  0,0,0,0
3965  015460  000000
3966  015462  177777                  HHBBF0  -1
3967  015464  177777                          -1
3968  015466  177777                          -1
3969  015470  177777                          -1
3970  015472  177777                  HHBBF1  -1
3971  015474  177777                          -1
3972  015476  177777                          -1
3973  015500  177777                          -1
3974
3975                                  ;IF A TRAP TO 4 OCCURS COME HERE
3976  015502  011602                  HHB10   MOV     (SP),R2         ;SEE IF THE TRAP OCCURRED ON THE TEST INSTRUCTION
3977  015504  020227  015374                  CMP     R2,#HHB2+2
3978  015510  001405                          BEQ     1$              ;BRANCH IF YES
3979  015512  020227  015376                  CMP     R2,#HHB2+4
3980  015516  001402                          BEQ     1$              ;BRANCH IF YES
3981  015520  000137  042610                  JMP     @#CPSPUR        ;OTHERWISE GO REPORT SPURIOUS TRAP TO 4
3982                                  ;REPORT AN FDST FLOW FAILURE RESULTED IN A TRAP TO 4
3983  015524  022626                  1$      CMP     (SP)+,(SP)+
3984  015526  010237  001236                  MOV     R2,@#$TMP2
3985  015532  104106                  2$      ERROR   106             ;ODD ADRES
3986  015534  000430                          BR      HHBDONE         ;BUT FDSTX IN ST 771
3987
3988                                  ;REPORT RESULT INCORRECT:
3989  015536  012737  015452  001240  HHB15:  MOV     #HHBTP2,@#$TMP3
3990  015544  012737  015432  001242          MOV     #HHBTP1,@#$TMP4
3991  015552  012737  015462  001244          MOV     #HHBBF0,@#$TMP5
3992  015560  104110                  1$      ERROR   110             ;BAD DATA X11*0 ST 3127
3993  015562  000415                          BR      HHBDONE
3994
```

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                                        ,REPORT R0 INCORRECT
015564  012737  015474  001240  HHB20   MOV     #HHBBF1+2,@#$TMP3
015572  010037  001242                  MOV     R0,@#$TMP4
015576  104111                  1$      ERROR   111             ,R0 INCORRECT
015600  000406                          BR      HHBDONE
                                        ,REPORT FPS INCORRECT
015602  010537  001240          HHB25   MOV     R5,@#$TMP3
015606  012737  000204  001244          MOV     #204,@#$TMP5
015614  104112                  1$      ERROR   112             ,FPSX

015616                          HHBDONE
015616  104412                          RSETUP                  ,GO INITIALIZE THE FPS AND STACK, AND
                                                                ,SEE IF THE USER HAS EXPRESSED
                                                                ,THE DESIRE TO CHANGE THE SOFTWARE
                                                                ,VIRTUAL CONSOLE SWITCH REGISTER (HAS
                                                                ,THE USER TYPED CONTROL G?)
                                ,,*****************************************************************
                                ,*TEST 25       NEGF, ABSF AND TSTF SOURCE MODE 5 TEST
                                ,*
                                ,*THIS IS A TEST THE NEGF,  ABSF AND TSTF
                                ,*SOURCE FLOWS   THE NEGD INSTRUCTION
                                ,*IS USED TO TEST MODE 5
                                ,*
                                ,,*****************************************************************
015620  000004                  TST25   SCOPE

015622                          11B1
015622  104413                          LPERR                   ,SET UP THE LOOP ON ERROR ADDRESS
015624  012700  015732                  MOV     #11BTP1,R0              ,SET UP THE DATA BUFFER
015630  012701  015762                  MOV     #11BBF0,R1
015634  012702  000010                  MOV     #10,R2
015640  012021                  1$      MOV     (R0)+,(R1)+
015642  077202                          SOB     R2,1$
015644  012700  000200                  MOV     #200,R0         ,SET FD
015650  170100                          LDFPS   R0
015652  012700  015774                  MOV     #11BBF1+2,R0    ,SET UP THE OPERAND ADDRESS
015656  012737  015672  001236          MOV     #11B2,@#$TMP2
015664  012737  016002  000004          MOV     #11B10,@#ERRVECT ,SET UP VECTOR 4 IN CASE OF AN ERROR

015672  170750          11B2    NEGD    @-(R0)          ,TEST INSTRUCTION

015674  170205                          STFPS   R5              ,GET FPS
015676  012701  015762                  MOV     #11BBF0,R1              ;CHECK RESULT
015702  012702  000004                  MOV     #4,R2
015706  005721                  1$      TST     (R1)+
015710  001052                          BNE     11B15           ,BRANCH IF INCORRECT
015712  077203                          SOB     R2,1$
015714  020027  015772                  CMP     R0,#11BBF1      ,IS R0 CORRECT?
015720  001061                          BNE     11B20           ,BRANCH IF INCORRECT
015722  022705  000204                  CMP     #204,R5         ,IS THE FPS CORRECT?
015726  001065                          BNE     11B25           ,BRANCH IF INCORRECT
015730  000472                          BR      11BDONE

                                ,THESE ARE TEST DATA TABLES AND DATA BUFFER
015732  000176                  11BTP1: 176
015734  177074                          177074
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4051  015736  127374                          127374
4052  015740  157677  015762  177777          157677,I1BBF0,-1,-1,-1
4053  015746  177777  177777
4054  015752  000000                I1BTP2    0
4055  015754  000000                          0
4056  015756  000000                          0
4057  015760  000000                          0
4058  015762  177777                I1BBF0    -1
4059  015764  177777                          -1
4060  015766  177777                          -1
4061  015770  177777                          -1
4062  015772  177777                I1BBF1    -1
4063  015774  177777                          -1
4064  015776  177777                          -1
4065  016000  177777                          -1
4066
4067                                ,IF A TRAP TO 4 OCCURS COME HERE
4068  016002  011602                I1B10     MOV     (SP),R2         ,SEE IF THE TRAP OCCURRED ON THE TEST INSTRUCTION
4069  016004  020227  015674                  CMP     R2,#I1B2+2
4070  016010  001405                          BEQ     1$              ,BRANCH IF YES
4071  016012  020227  015676                  CMP     R2,#I1B2+4
4072  016016  001402                          BEQ     1$              ,BRANCH IF YES
4073  016020  000137  042610                  JMP     @#CPSPUR        ,OTHERWISE GO REPORT SPURIOUS TRAP TO 4
4074                                ,REPORT AN FDST FLOW FAILURE RESULTED IN A TRAP TO 4
4075  016024  022626                1$        CMP     (SP)+,(SP)+
4076  016026  010237  001236                  MOV     R2,@#$TMP2
4077  016032  104113                2$:       ERROR   113             ;ODD ADRES
4078  016034  000430                          BR      I1BDONE         ,BUT FDSTX IN ST 771
4079
4080                                ,REPORT RESULT INCORRECT:
4081  016036  012737  015752  001240  I1B15:   MOV     #I1BTP2,@#$TMP3
4082  016044  012737  015732  001242            MOV     #I1BTP1,@#$TMP4
4083  016052  012737  015762  001244            MOV     #I1BBF0,@#$TMP5
4084  016060  104114                1$:       ERROR   114             ,BAD DATA X11*0 ST 3127
4085  016062  000415                          BR      I1BDONE
4086
4087                                ,REPORT R0 INCORRECT.
4088  016064  012737  015772  001240  I1B20:   MOV     #I1BBF1,@#$TMP3
4089  016072  010037  001242                  MOV     R0,@#$TMP4
4090  016076  104115                1$:       ERROR   115             ,R0 BADX
4091  016100  000406                          BR      I1BDONE
4092                                ,REPORT FPS INCORRECT.
4093  016102  010537  001240        I1B25     MOV     R5,@#$TMP3
4094  016106  012737  000204  001244          MOV     #204,@#$TMP5
4095  016114  104116                1$:       ERROR   116             ;FPSX
4096
4097  016116                        I1BDONE
4098  016116  104412                          RSETUP                  ,GO INITIALIZE THE FPS AND STACK, AND
4099                                                                  ,SEE IF THE USER HAS EXPRESSED
4100                                                                  ,THE DESIRE TO CHANGE THE SOFTWARE
4101                                                                  ,VIRTUAL CONSOLE SWITCH REGISTER (HAS
4102                                                                  ,THE USER TYPED CONTROL G?)
4103
4104                                ;,*****************************************************************
4105                                ,*TEST 26        NEGF, ABSF AND TSTF SOURCE MODE 6 TEST
4106                                ,*
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```
                                ;*THIS IS A TEST THE NEGF,  ABSF AND TSTF
                                ;*SOURCE FLOWS.  THE ABSD INSTRUCTION
                                ;*IS USED TO TEST MODE 6
                                ;*
                                ;;**********************************************************************
016120  000004                  TST26:  SCOPE

016122                          JJB1:
016122  104413                          LPERR                   ;SET UP THE LOOP ON ERROR ADDRESS
016124  012700  016234                  MOV     #JJBTP1,R0              ;SET UP THE DATA BUFFER
016130  012701  016256                  MOV     #JJBBF0,R1
016134  012702  000004                  MOV     #4,R2
016140  012021                  1$:     MOV     (R0)+,(R1)+
016142  077202                          SOB     R2,1$
016144  012700  000200                  MOV     #200,R0         ;SET FD.
016150  170100                          LDFPS   R0
016152  012700  016247                  MOV     #JJBBF0-7,R0    ;SET UP THE OPERAND ADDRESS
016156  012737  016172  001236          MOV     #JJB2,@#$TMP2
016164  012737  016276  000004          MOV     #JJB10,@#ERRVECT ;SET UP VECTOR 4 IN CASE OF AN ERROR

016172  170660  000007  JJB2.:  ABSD    7(R0)           ;TEST INSTRUCTION

016176  170205                          STFPS   R5              ;GET FPS.
016200  012701  016256                  MOV     #JJBBF0,R1              ;CHECK RESULT
016204  012702  000004                  MOV     #4,R2
016210  005721                  1$.:    TST     (R1)+
016212  001047                          BNE     JJB15           ;BRANCH IF INCORRECT
016214  077203                          SOB     R2,1$
016216  020027  016247                  CMP     R0,#JJBBF0-7    ;IS R0 CORRECT?
016222  001043                          BNE     JJB15           ;BRANCH IF INCORRECT
016224  022705  000204                  CMP     #204,R5         ;IS THE FPS CORRECT?
016230  001053                          BNE     JJB20           ;BRANCH IF INCORRECT
016232  000467                          BR      JJBDONE

                                ;THESE ARE TEST DATA TABLES AND DATA BUFFER
016234  000177                  JJBTP1: 177
016236  161524                          161524
016240  131273                          131273
016242  107174  000000                  107174,
016246  000000                  JJBTP2  0
016250  000000                          0
016252  000000                          0
016254  000000                          0
016256  177777                  JJBBF0  -1
016260  177777                          -1
016262  177777                          -1
016264  177777                          -1
016266  177777                  JJBBF1  -1
016270  177777                          -1
016272  177777                          -1
016274  177777                          -1

                                ;IF A TRAP TO 4 OCCURS COME HERE
016276  011602                  JJB10:  MOV     (SP),R2         ;SEE IF THE TRAP OCCURRED ON THE TEST INSTRUCTION
016300  020227  016174                  CMP     R2,#JJB2+2
016304  001405                          BEQ     1$              ;BRANCH IF YES
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4163  016306  020227  016176          CMP     R2,#JJB2+4
4164  016312  001402                  BEQ     1$              ,BRANCH IF YES
4165  016314  000137  042610          JMP     @#CPSPUR        ,OTHERWISE GO REPORT SPURIOUS TRAP TO 4
4166                                  ,REPORT AN FDST FLOW FAILURE RESULTED IN A TRAP TO 4
4167  016320  022626                  1$      CMP     (SP)+,(SP)+
4168  016322  010237  001236                  MOV     R2,@#STMP2
4169  016326  104117                  2$      ERROR   117             ;ODD ADRES
4170  016330  000430                          BR      JJBDONE         ;BUT FDSTX IN ST 771
4171
4172                                  ,REPORT RESULT INCORRECT:
4173  016332  012737  016246  001240  JJB15:  MOV     #JJBTP2,@#STMP3
4174  016340  012737  016234  001242          MOV     #JJBTP1,@#STMP4
4175  016346  012737  016256  001244          MOV     #JJBBF0,@#STMP5
4176  016354  104120                  1$.     ERROR   120             ;BAD DATA X11#0 ST 3127
4177  016356  000415                          BR      JJBDONE
4178
4179                                  ,REPORT R0 INCORRECT:
4180  016360  012737  016247  001240  JJB20:  MOV     #JJBBF0-7,@#STMP3
4181  016366  010037  001242                  MOV     R0,@#STMP4
4182  016372  104124                  1$:     ERROR   124             ;R0 BADX
4183  016374  000406                          BR      JJBDONE
4184                                  ;REPORT FPS INCORRECT:
4185  016376  010537  001240          JJB25:  MOV     R5,@#STMP3
4186  016402  012737  000204  001244          MOV     #204,@#STMP5
4187  016410  104122                  1$.     ERROR   122             ,FPSX
4188  016412                          JJBDONE:
4189  016412  104412                          RSETUP                  ;GO INITIALIZE THE FPS AND STACK, AND
4190                                                                  ,SEE IF THE USER HAS EXPRESSED
4191                                                                  ;THE DESIRE TO CHANGE THE SOFTWARE
4192                                                                  ;VIRTUAL CONSOLE SWITCH REGISTER (HAS
4193                                                                  ;THE USER TYPED CONTROL G?)
4194                                  ;;**************************************************************
4195                                  ,*TEST 27       NEGF, ABSF AND TSTF SOURCE MODE 7 TEST
4196                                  ;*
4197                                  ;*THIS IS A TEST THE NEGF,  ABSF AND TSTF
4198                                  ,*SOURCE FLOWS.  THE ABSD INSTRUCTION
4199                                  ;*IS USED TO TEST MODE 6
4200                                  ;*
4201                                  ;,**************************************************************
4202  016414  000004                  TST27:  SCOPE
4203
4204  016416                          KKB1:
4205  016416  104413                          LPERR                   ;SET UP THE LOOP ON ERROR ADDRESS
4206  016420  012700  016530                  MOV     #KKBTP1,R0              ,SET UP THE DATA BUFFER
4207  016424  012701  016560                  MOV     #KKBBF0,R1
4208  016430  012702  000010                  MOV     #10,R2
4209  016434  012021                  1$:     MOV     (R0)+,(R1)+
4210  016436  077202                          SOB     R2,1$
4211  016440  012700  000200                  MOV     #200,R0         ,SET FD
4212  016444  170100                          LDFPS   R0
4213  016446  012700  016561                  MOV     #KKBBF1-7,R0    ,SET UP THE OPERAND ADDRESS
4214  016452  012737  016466  001236          MOV     #KKB2,@#STMP2
4215  016460  012737  016600  000004          MOV     #KKB10,@#ERRVECT ,SET UP VECTOR 4 IN CASE OF AN ERROR
4216
4217  016466  170770  000007          KKB2    NEGD    @7(R0)          ,TEST INSTRUCTION
4218
```

```
016472  170205                          STFPS   R5              ,GET FPS
016474  012701  016560                  MOV     #KKBBF0,R1              ,CHECK RESULT
016500  012702  000004                  MOV     #4,R2
016504  005721                  1$      TST     (R1)+
016506  001052                          BNE     KKB15           ,BRANCH IF INCORRECT
016510  077203                          SOB     R2,1$
016512  020027  016561                  CMP     R0,#KKBBF1-7    ,IS R0 CORRECT?
016516  001061                          BNE     KKB20           ,BRANCH IF INCORRECT
016520  022705  000204                  CMP     #204,R5         ,IS THE FPS CORRECT?
016524  001056                          BNE     KKB20           ,BRANCH IF INCORRECT
016526  000472                          BR      KKBDONE

                                ,THESE ARE TEST DATA TABLES AND DATA BUFFER
016530  000177                  KKBTP1. 177
016532  167574                          167574
016534  137271                          137271
016536  107675  016560  177777          107675,KKBBF0,-1,-1,-1
016544  177777  177777
016550  000000                  KKBTP2. 0
016552  000000                          0
016554  000000                          0
016556  000000                          0
016560  177777                  KKBBF0  -1
016562  177777                          -1
016564  177777                          -1
016566  177777                          -1
016570  177777                  KKBBF1  -1
016572  177777                          -1
016574  177777                          -1
```

```
4248  016576  177777                        -1
4249
4250                                  ,IF A TRAP TO 4 OCCURS COME HERE
4251  016600  011602                  KKB10   MOV     (SP),R2         ,SEE IF THE TRAP OCCURRED ON THE TEST INSTRUCTION
4252  016602  020227  016470                  CMP     R2,#KKB2+2
4253  016606  001405                          BEQ     1$              ,BRANCH IF YES
4254  016610  020227  016472                  CMP     R2,#KKB2+4
4255  016614  001402                          BEQ     1$              ,BRANCH IF YES
4256  016616  000137  042610                  JMP     @#CPSPUR        ;OTHERWISE GO REPORT SPURIOUS TRAP TO 4
4257                                  ,REPORT AN FDST FLOW FAILURE RESULTED IN A TRAP TO 4
4258  016622  022626                  1$      CMP     (SP)+,(SP)+
4259  016624  010237  001236                  MOV     R2,@#$TMP2
4260  016630  104123                  2$      ERROR   123             ,ODD ADRES
4261  016632  000430                          BR      KKBDONE         ,BUT FDSTX IN ST 771
4262
4263                                  ,REPORT RESULT INCORRECT:
4264  016634  012737  016550  001240  KKB15   MOV     #KKBTP2,@#$TMP3
4265  016642  012737  016530  001242          MOV     #KKBTP1,@#$TMP4
4266  016650  012737  016560  001244          MOV     #KKBBF0,@#$TMP5
4267  016656  104124                  1$.     ERROR   124             ,BAD DATA X11%0 ST 3127
4268  016660  000415                          BR      KKBDONE
4269
4270                                  ,REPORT R0 INCORRECT·
4271  016662  012737  016561  001240  KKB20:  MOV     #KKBBF1-7,@#$TMP3
4272  016670  010037  001242                  MOV     R0,@#$TMP4
4273  016674  104125                  1$·     ERROR   125             ,R0 BADX
4274  016676  000406                          BR      KKBDONE
4275                                  ,REPORT FPS INCORRECT.
4276  016700  010537  001240          KKB25:  MOV     R5,@#$TMP3
4277  016704  012737  000204  001244          MOV     #204,@#$TMP5
4278  016712  104126                  1$.     ERROR   126             ,FPSX
4279
4280  016714                          KKBDONE.
4281  016714  104412                          RSETUP                  ,GO INITIALIZE THE FPS AND STACK, AND
4282                                                                  ,SEE IF THE USER HAS EXPRESSED
4283                                                                  ,THE DESIRE TO CHANGE THE SOFTWARE
4284                                                                  ,VIRTUAL CONSOLE SWITCH REGISTER (HAS
4285                                                                  ,THE USER TYPED CONTROL G?)
4286                                  ;,**********************************************************************
4287                                  ,*TEST 30       NEGF, ABSF AND TSTF SOURCE MODE 6, GR7, TEST
4288                                  ,*
4289                                  ;*THIS IS A TEST THE NEGF,  ABSF AND TSTF
4290                                  ;*SOURCE FLOWS.  THE NEGD INSTRUCTION
4291                                  ,*IS USED TO TEST MODE 6
4292                                  ,*
4293                                  ,,**********************************************************************
4294  016716  000004                  TST30:  SCOPE
4295  016720                          LLB1
4296  016720  104413                          LPERR                   ,SET UP THE LOOP ON ERROR ADDRESS
4297  016722  012700  017020                  MOV     #LLBTP1,R0              ,SET UP THE DATA BUFFER
4298  016726  012701  017040                  MOV     #LLBBF0,R1
4299  016732  012702  000004                  MOV     #4,R2
4300  016736  012021                  1$      MOV     (R0)+,(R1)+
4301  016740  077202                          SOB     R2,1$
4302  016742  012700  000200                  MOV     #200,R0         ,SET FD
4303  016746  170100                          LDFPS   R0
```

```
 4304  016750  012737  016764  001236          MOV     #LLB2,@#$TMP2
 4305  016756  012737  017060  000004          MOV     #LLB10,@#ERRVECT ,SET UP VECTOR 4 IN CASE OF AN ERROR
 4306
 4307  016764  170767  000050          LLB2    NEGD    LLBBF0          ,TEST INSTRUCTION
 4308
 4309  016770  170205                          STFPS   R5              ,GET FPS
 4310  016772  012701  017040                  MOV     #LLBBF0,R1              ,CHECK RESULT
 4311  016776  012702  000004                  MOV     #4,R2
 4312  017002  005721                  1$      TST     (R1)+
 4313  017004  001043                          BNE     LLB15           ,BRANCH IF INCORRECT
 4314  017006  077203                          SOB     R2,1$
 4315  017010  022705  000204                  CMP     #204,R5         ,IS THE FPS CORRECT?
 4316  017014  001052                          BNE     LLB25           ,BRANCH IF INCORRECT
 4317  017016  000457                          BR      LLBDONE
 4318
 4319                                  ,THESE ARE TEST DATA TABLES AND DATA BUFFER
 4320  017020  000127                  LLBTP1  127
 4321  017022  137475                          137475
 4322  017024  147372                          147372
 4323  017026  117057                          117057
 4324  017030  000000                  LLBTP2  0
 4325  017032  000000                          0
 4326  017034  000000                          0
 4327  017036  000000                          0
 4328  017040  177777                  LLBBF0  -1
 4329  017042  177777                          -1
 4330  017044  177777                          -1
 4331  017046  177777                          -1
 4332  017050  177777                  LLBBF1  -1
 4333  017052  177777                          -1
 4334  017054  177777                          -1
 4335  017056  177777                          -1
 4336
 4337                                  ,IF A TRAP TO 4 OCCURS COME HERE
 4338  017060  011602                  LLB10   MOV     (SP),R2         ,SEE IF THE TRAP OCCURRED ON THE TEST INSTRUCTION
 4339  017062  020227  016766                  CMP     R2,#LLB2+2
 4340  017066  001405                          BEQ     1$              ,BRANCH IF YES
 4341  017070  020227  016770                  CMP     R2,#LLB2+4
 4342  017074  001402                          BEQ     1$              ,BRANCH IF YES
 4343  017076  000137  042610                  JMP     @#CPSPUR        ;OTHERWISE GO REPORT SPURIOUS TRAP TO 4
 4344                                  ,REPORT AN FDST FLOW FAILURE RESULTED IN A TRAP TO 4
 4345  017102  022626                  1$      CMP     (SP)+,(SP)+
 4346  017104  010237  001236                  MOV     R2,@#$TMP2
 4347  017110  104127                  2$      ERROR   127             ,ODD ADRES
 4348  017112  000421                          BR      LL9DONE         ,BUT FDSTX IN ST 771
 4349
 4350                                  ,REPORT RESULT INCORRECT:
 4351  017114  012737  017030  001240  LLB15   MOV     #LLBTP2,@#$TMP3
 4352  017122  012737  017020  001242          MOV     #LLBTP1,@#$TMP4
 4353  017130  012737  017040  001244          MOV     #LLBBF0,@#$TMP5
 4354  017136  104130                  1$      ERROR   130             ,BAD DATA X11#0 ST 3127
 4356  017140  000406                          BR      LLBDONE
 4356                                  ,REPORT FPS INCORRECT.
 4357  017142  010537  001240          LLB25   MOV     R5,@#$TMP3
 4358  017146  012737  000204  001244          MOV     #204,@#$TMP5
 4359  017154  104131                  1$      ERROR   131             ,FPSX
```

```
4360
4361  017156                                LLBDONE
4362  017156  104412                              RSETUP                  ,GO INITIALIZE THE FPS AND STACK, AND
4363                                                                      ,SEE IF THE USER HAS EXPRESSED
4364                                                                      ,THE DESIRE TO CHANGE THE SOFTWARE
4365                                                                      ,VIRTUAL CONSOLE SWITCH REGISTER (HAS
4366                                                                      ;THE USER TYPED CONTROL G?)
4367                                        ,,**********************************************************************
4368                                        ,*TEST 31       NEGF, ABSF AND TSTF SOURCE MODE 7, GR7, TEST
4369                                        ,*
4370                                        ,*THIS IS A TEST THE NEGF,  ABSF AND TSTF
4371                                        ,*SOURCE FLOWS.  THE ABSD INSTRUCTION
4372                                        ,*IS USED TO TEST MODE 7
4373                                        ,*
4374                                        ,,**********************************************************************
4375  017160  000004                        TST31   SCOPE
4376
4377  017162                                MMB1
4378  017162  104413                              LPERR                   ,SET UP THE LOOP ON ERROR ADDRESS
4379  017164  012700  017262                      MOV     #MMBTP1,R0              ,SET UP THE DATA BUFFER
4380  017170  012701  017312                      MOV     #MMBBF0,R1
4381  017174  012702  000010                      MOV     #10,R2
4382  017200  012021                       1$     MOV     (R0)+,(R1)+
4383  017202  077202                              SOB     R2,1$
4384  017204  012700  000200                      MOV     #200,R0         ,SET FD
4385  017210  170100                              LDFPS   R0
4386  017212  012737  017226  001236              MOV     #MMB2,@#$TMP2
4387  017220  012737  017332  000004              MOV     #MMB10,@#ERRVECT ,SET UP VECTOR 4 IN CASE OF AN ERROR
4388
4389  017226  170677  000070                MMB2    ABSD    @#MMBBF1        ;TEST INSTRUCTION.
4390
4391  017232  170205                              STFPS   R5              ,GET FPS
4392  017234  012701  017312                      MOV     #MMBBF0,R1              ,CHECK RESULT
4393  017240  012702  000004                      MOV     #4,R2
4394  017244  005721                       1$     TST     (R1)+
4395  017246  001047                              BNE     MMB15           ,BRANCH IF INCORRECT
4396  017250  077203                              SOB     R2,1$
4397  017252  022705  000204                      CMP     #204,R5         ,IS THE FPS CORRECT?
4398  017256  001056                              BNE     MMB25           ,BRANCH IF INCORRECT
4399  017260  000463                              BR      MMBDONE
4400
4401                                        ,THESE ARE TEST DATA TABLES AND DATA BUFFER
4402  017262  000137                        MMBTP1: 137
4403  017264  045607                              045607
4404  017266  101230                              101230
4405  017270  045607  017312  177777              45607,MMBBF0,-1,-1,-1
4406  017276  177777  177777
4407  017302  000000                        MMBTP2  0
4408  017304  000000                                0
4409  017306  000000                                0
4410  017310  000000                                0
4411  017312  177777                        MMBBF0  -1
4412  017314  177777                                -1
4413  017316  177777                                -1
4414  017320  177777                                -1
4415  017322  177777                        MMBBF1  -1
```

```
4416  017324  177777                          -1
4417  017326  177777                          -1
4418  017330  177777                          -1
4419
4420                                  ;IF A TRAP TO 4 OCCURS COME HERE
4421  017332  011602                 MMB10    MOV     (SP),R2         ;SEE IF THE TRAP OCCURRED ON THE TEST INSTRUCTION
4422  017334  020227  017230                   CMP     R2,#MMB2+2
4423  017340  001405                          BEQ     1$              ;BRANCH IF YES
4424  017342  020227  017232                   CMP     R2,#MMB2+4
4425  017346  001402                          BEQ     1$              ;BRANCH IF YES
4426  017350  000137  042610                   JMP     @#CPSPUR        ;OTHERWISE GO REPORT SPURIOUS TRAP TO 4
4427                                  ;REPORT AN FDST FLOW FAILURE RESULTED IN A TRAP TO 4
4428  017354  022626                 1$       CMP     (SP)+,(SP)+
4429  017356  010237  001236                   MOV     R2,@#$TMP2
4430  017362  104132                 2$       ERROR   132             ;ODD ADRES
4431  017364  000421                          BR      MMBDONE         ;BUT FDSTX IN ST 771
4432
4433                                  ;REPORT RESULT INCORRECT.
4434  017366  012737  017302  001240 MMB15    MOV     #MMBTP2,@#$TMP3
4435  017374  012737  017262  001242          MOV     #MMBTP1,@#$TMP4
4436  017402  012737  017312  001244          MOV     #MMBBFO,@#$TMP5
4437  017410  104133                 1$       ERROR   133             ;BAD DATA X11#0 ST 3127
4438  017412  000406                          BR      MMBDONE
4439                                  ;REPORT FPS INCORRECT.
4440  017414  010537  001240        MMB25    MOV     R5,@#$TMP3
4441  017420  012737  000204  001244          MOV     #204,@#$TMP5
4442  017426  104134                 1$       ERROR   134             ;FPSX
4443
4444  017430                         MMBDONE:
4445  017430  104412                          RSETUP                  ;GO INITIALIZE THE FPS AND STACK, AND
4446                                                                  ;SEE IF THE USER HAS EXPRESSED
4447                                                                  ;THE DESIRE TO CHANGE THE SOFTWARE
4448                                                                  ;VIRTUAL CONSOLE SWITCH REGISTER (HAS
4449                                                                  ;THE USER TYPED CONTROL G?)
4450                                  ;;*****************************************************************
4451                                  ;*TEST 32        SPECIAL DEST, MODE 0, TEST
4452                                  ;*
4453                                  ;*THIS IS A TEST OF THE NEGF ABSF AND TSTF DESTINATION FLOWS
4454                                  ;*MODE 0 USING THE NEGD INSTR
4455                                  ;*
4456                                  ;;*****************************************************************
4457  017432  000004                 TST32    SCOPE
4458
4459  017434                         NNB1:
4460  017434  104413                          LPERR                   ;SET UP THE LOOP ON ERROR ADDRESS
4461  017436  012700  000200                  MOV     #200,R0         ;SET FD
4462  017442  170100                          LDFPS   R0
4463  017444  012700  017532                  MOV     #NNBTP1,R0              ;SET UP AC0
4464  017450  172410                          LDD     (R0),AC0
4465  017452  012737  017460  001236          MOV     #NNB2,@#$TMP2
4466
4467  017460  170700                 NNB2     NEGD    AC0             ;TEST INSTRUCTION
4468
4469  017462  170205                          STFPS   R5              ;GET FPS
4470  017464  012700  000200                  MOV     #200,R0         ;SET FD
4471  017470  170100                          LDFPS   R0
```

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 4472  017472  012700  017552            MOV     ##NNBBF0,R0             ,GET THE RESULT
 4473  017476  174010                    STD     AC0,(R0)
 4474  017500  012700  017552            MOV     #NNBBF0,R0              ,IS THE RESULT CORRECT?
 4475  017504  012701  017542            MOV     #NNBTP2,R1
 4476  017510  012702  000004            MOV     #4,R2
 4477  017514  022021                1$  CMP     (R0)+,(R1)+
 4478  017516  001021                    BNE     NNB10           ,BRANCH IF INCORRECT
 4479  017520  077203                    SOB     R2,1$
 4480  017522  022705  000210            CMP     #210,R5         ,IS THE FPS CORRECT?
 4481  017526  001033                    BNE     NNB15           ,BRANCH IF INCORRECT
 4482  017530  000440                    BR      NNBDONE
 4483
 4484                                ,THESE ARE DATA TABLES AND A DATA BUFFER
 4485  017532  013572                NNBTP1  013572
 4486  017534  046013                        46013
 4487  017536  057246                        57246
 4488  017540  013570                        013570
 4489  017542  113572                NNBTP2  113572
 4490  017544  046013                        46013
 4491  017546  057246                        57246
 4492  017550  013570                        013570
 4493  017552  000000                NNBBF0  0
 4494  017554  000000                        0
 4495  017556  000000                        0
 4496  017560  000000                        0
 4497
 4498                                ,REPORT RESULT INCORRECT.
 4499  017562  012737  017552  001240 NNB10   MOV     #NNBBF0,@#$TMP3
 4500  017570  012737  017542  001242         MOV     #NNBTP2,@#$TMP4
 4501  017576  023737  017532  017552         CMP     @#NNBTP1,@#NNBBF0
 4502  017604  001002                        BNE     NNB11
 4503  017606  104135                1$      ERROR   135             ,E10*200X ST 336
 4504  017610  000410                        BR      NNBDONE
 4505
 4506                                ,REPORT RESULT INCORRECT.
 4507  017612                        NNB11
 4508  017612  104136                1$      ERROR   136             ,BAD DATA NEGF
 4509  017614  000406                        BR      NNBDONE
 4510
 4511                                ,REPORT FPS INCORRECT.
 4512  017616  010537  001242        NNB15:  MOV     R5,@#$TMP4
 4513  017622  012737  000210  001240        MOV     #210,@#$TMP3
 4514  017630  104137                1$      ERROR   137             ,FPSX
 4515
 4516  017632                        NNBDONE
 4517  017632  104412                        RSETUP                  ,GO INITIALIZE THE FPS AND STACK, AND
 4518                                                                ,SEE IF THE USER HAS EXPRESSED
 4519                                                                ,THE DESIRE TO CHANGE THE SOFTWARE
 4520                                                                ;VIRTUAL CONSOLE SWITCH REGISTER (HAS
 4521                                                                ;THE USER TYPED CONTROL G?)
 4522                                ,,**************************************************************
 4523                                ,*TEST 33        SPECIAL DEST, MODE 1, TEST
 4524                                ,*
 4525                                ,*THIS IS A TEST OF THE NEGF ABSF AND TSTF DESTINATION FLOWS
 4526                                ,*MODE 1 USING THE NEGD INSTR
 4527                                ,*
```

```
4528                                    ;;*****************************************************************
4529  017634  000004                    TST33   SCOPE
4530
4531  017636                            00B1
4532  017636  104413                            LPERR                   ;SET UP THE LOOP ON ERROR ADDRESS
4533  017640  012701  017750                    MOV     #00BTP1,R1      ;SET UP THE DATA BUFFER
4534  017644  012700  017760                    MOV     #00BTP2,R0
4535  017650  012702  000004                    MOV     #4,R2
4536  017654  012021                    1$      MOV     (R0)+,(R1)+
4537  017656  077202                            SOB     R2,1$
4538  017660  012700  017750                    MOV     #00BTP1,R0
4539  017664  042710  100000                    BIC     #100000,(R0)    ;MAKE OPERAND POSITIVE
4540  017670  012737  017704  001236            MOV     #00B2,@#$TMP2
4541  017676  012701  000200                    MOV     #200,R1         ;SET FD
4542  017702  170101                            LDFPS   R1
4543
4544  017704  170710                    00B2    NEGD    (R0)            ;TEST INSTRUCTION
4545  017706  170205                            STFPS   R5              ;GET FPS
4546  017710  012701  017750                    MOV     #00BTP1,R1              ;IS THE RESULT CORRECT
4547  017714  012702  017760                    MOV     #00BTP2,R2
4548  017720  012703  000004                    MOV     #4,R3
4549  017724  022122                    1$      CMP     (R1)+,(R2)+
4550  017726  001020                            BNE     00B10           ;BRANCH IF INCORRECT
4551  017730  077303                            SOB     R3,1$
4552  017732  022700  017750                    CMP     #00BTP1,R0      ;IS R0 CORRECT
4553  017736  001024                            BNE     00B15           ;BRANCH IF INCORRECT
4554  017740  022705  000210                    CMP     #210,R5         ;IS THE FPS CORRECT?
4555  017744  001030                            BNE     00B20           ;BRANCH IF INCORRECT
4556  017746  000435                            BR      00BDONE
4557
4558                                    ;THESE ARE DATA TABLES AND A DATA BUFFER
4559  017750  023245                    00BTP1  023245
4560  017752  026720                            26720
4561  017754  122324                            122324
4562  017756  052672                            52672
4563  017760  123245                    00BTP2  123245
4564  017762  026720                            26720
4565  017764  122324                            122324
4566  017766  052672                            52672
4567
4568                                    ;REPORT RESULT INCORRECT.
4569  017770  012737  017750  001240    00B10   MOV     #00BTP1,@#$TMP3
4570  017776  012737  017760  001242            MOV     #00BTP2,@#$TMP4
4571  020004  104140                    1$      ERROR   140             ;BAD DATP
4572  020006  000415                            BR      00BDONE
4573
4574                                    ;REPORT R0 INCORRECT.
4575  020010  012737  017750  001240    00B15   MOV     #00BTP1,@#$TMP3
4576  020016  010037  001242                    MOV     R0,@#$TMP4
4577  020022  104141                    1$      ERROR   141             ;SPEC DESTX
4578  020024  000406                            BR      00BDONE         ;RGX
4579
4580                                    ;REPORT FPS INCORRECT:
4581  020026  012737  000210  001240    00B20   MOV     #210,@#$TMP3
4582  020034  010537  001242                    MOV     R5,@#$TMP4
4583  020040  104142                    1$      ERROR   142
```

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4584
4585  020042                          00BDONE
4586  020042  104412                          RSETUP                  ;GO INITIALIZE THE FPS AND STACK, AND
4587                                                                  ;SEE IF THE USER HAS EXPRESSED
4588                                                                  ;THE DESIRE TO CHANGE THE SOFTWARE
4589                                                                  ;VIRTUAL CONSOLE SWITCH REGISTER (HAS
4590                                                                  ;THE USER TYPED CONTROL G?)
4591                                  ;;*****************************************************************
4592                                  ;*TEST 34        SPECIAL DEST, MODE 2, TEST
4593                                  ;*
4594                                  ;*THIS IS A TEST OF THE NEGF ABSF AND TSTF DESTINATION FLOWS
4595                                  ;*MODE 2 USING THE NEGD INSTR
4596                                  ;*
4597                                  ;;*****************************************************************
4598  020044  000004                  TST34   SCOPE
4599  020046                          PPB1
4600  020046  104413                          LPERR                   ;SET UP THE LOOP ON ERROR ADDRESS
4601
4602  020050  012701  020160                  MOV     #PPBTP1,R1      ;SET UP THE DATA BUFFER
4603  020054  012700  020170                  MOV     #PPBTP2,R0
4604  020060  012702  000004                  MOV     #4,R2
4605  020064  012021                  1$      MOV     (R0)+,(R1)+
4606  020066  077202                          SOB     R2,1$
4607  020070  012700  020160                  MOV     #PPBTP1,R0
4608  020074  042710  100000                  BIC     #100000,(R0)    ;MAKE OPERAND POSITIVE
4609  020100  012737  020114  001236          MOV     #PPB2,@#$TMP2
4610  020106  012701  000200                  MOV     #200,R1         ;SET FD
4611  020112  170101                          LDFPS   R1
4612
4613  020114  170720                  PPB2    NEGD    (R0)+           ;TEST INSTRUCTION
4614
4615  020116  170205                          STFPS   R5              ;GET FPS
4616  020120  012701  020160                  MOV     #PPBTP1,R1              ;IS THE RESULT CORRECT
4617  020124  012702  020170                  MOV     #PPBTP2,R2
4618  020130  012703  000004                  MOV     #4,R3
4619  020134  022122                  1$      CMP     (R1)+,(R2)+
4620  020136  001020                          BNE     PPB10           ;BRANCH IF INCORRECT
4621  020140  077303                          SOB     R3,1$
4622  020142  022700  020170                  CMP     #PPBTP1+10,R0   ;IS R0 CORRECT
4623  020146  001024                          BNE     PPB15           ;BRANCH IF INCORRECT
4624  020150  022705  000210                  CMP     #210,R5         ;IS THE FPS CORRECT?
4625  020154  001030                          BNE     PPB20           ;BRANCH IF INCORRECT
4626  020156  000435                          BR      PPBDONE
4627
4628                                  ;THESE ARE DATA TABLES AND A DATA BUFFER
4629  020160  023245                  PPBTP1  023245
4630  020162  026720                          26720
4631  020164  122324                          122324
4632  020166  052672                          52672
4633  020170  123245                  PPBTP2  123245
4634  020172  026720                          26720
4635  020174  122324                          122324
4636  020176  052672                          52672
4637
4638                                  ;REPORT RESULT INCORRECT.
4639  020200  012737  020160  001240  PPB10   MOV     #PPBTP1,@#$TMP3
```

```
 4640  020206  012737  020170  001242          MOV     #PPBTP2,@#$TMP4
 4641  020214  104143                  1$      ERROR   143             ;BAD DATA
 4642  020216  000415                          BR      PPBDONE
 4643
 4644                                          ;REPORT R0 INCORRECT.
 4645  020220  012737  020170  001240  PPB15   MOV     #PPBTP1+10,@#$TMP3
 4646  020226  010037  001242                  MOV     R0,@#$TMP4
 4647  020232  104144                  1$      ERROR   144             ;SPEC DESTX ROX
 4648  020234  000406                          BR      PPBDONE
 4649
 4650                                          ;REPORT FPS INCORRECT:
 4651  020236  012737  000210  001240  PPB20   MOV     #210,@#$TMP3
 4652  020244  010537  001242                  MOV     R5,@#$TMP4
 4653  020250  104145                  1$      ERROR   145
 4654
 4655  020252                          PPBDONE:
 4656  020252  104412                          RSETUP                  ;GO INITIALIZE THE FPS AND STACK, AND
 4657                                                                  ;SEE IF THE USER HAS EXPRESSED
 4658                                                                  ;THE DESIRE TO CHANGE THE SOFTWARE
 4659                                                                  ;VIRTUAL CONSOLE SWITCH REGISTER (HAS
 4660                                                                  ;THE USER TYPED CONTROL G?)
 4661                                  ;;**************************************************************
 4662                                  ;*TEST 35        SPECIAL DEST, MODE 4, TEST
 4663                                  ;*
 4664                                  ;*THIS IS A TEST OF THE NEGF ABSF AND TSTF DESTINATION FLOWS
 4665                                  ;*MODE 4 USING THE NEGD INSTR
 4666                                  ;*
 4667                                  ;;**************************************************************
 4668  020254  000004                  TST35.  SCOPE
 4669  020256                          QQB1:
 4670  020256  104413                          LPERR                   ;SET UP THE LOOP ON ERROR ADDRESS
 4671  020260  012701  020372                  MOV     #QQBTP1,R1      ;SET UP THE DATA BUFFER
 4672  020264  012700  020412                  MOV     #QQBTP2,R0
 4673  020270  012702  000004                  MOV     #4,R2
 4674  020274  012021                  1$      MOV     (R0)+,(R1)+
 4675  020276  077202                          SOB     R2,1$
 4676  020300  012700  020402                  MOV     #QQBTP1+10,R0
 4677  020304  042760  100000  177770          BIC     #100000,-10(R0) ;MAKE OPERAND POSITIVE
 4678  020312  012737  020326  001236          MOV     #QQB2,@#$TMP2
 4679  020320  012701  000200                  MOV     #200,R1         ;SET FD
 4680  020324  170101                          LDFPS   R1
 4681
 4682  020326  170740                  QQB2    NEGD    -(R0)           ;TEST INSTRUCTION
 4683
 4684  020330  170205                          STFPS   R5              ;GET FPS
 4685  020332  012701  020372                  MOV     #QQBTP1,R1              ;IS THE RESULT CORRECT
 4686  020336  012702  020412                  MOV     #QQBTP2,R2
 4687  020342  012703  000004                  MOV     #4,R3
 4688  020346  022122                  1$      CMP     (R1)+,(R2)+
 4689  020350  001024                          BNE     QQB10           ;BRANCH IF INCORRECT
 4690  020352  077303                          SOB     R3,1$
 4691  020354  022700  020372                  CMP     #QQBTP1,R0      ;IS R0 CORRECT
 4692  020360  001030                          BNE     QQB15           ;BRANCH IF INCORRECT
 4693  020362  022705  000210                  CMP     #210,R5         ;IS THE FPS CORRECT?
 4694  020366  001034                          BNE     QQB20           ;BRANCH IF INCORRECT
 4695  020370  000441                          BR      QQBDONE
```

```
 4696
 4697                                        ,THESE ARE DATA TABLES AND A DATA BUFFER
 4698  020372  023245                        QQBTP1  023245
 4699  020374  026720                                26720
 4700  020376  122324                                122324
 4701  020400  052672                                52672
 4702  020402  177777  177777  177777                 WORD    -1,-1,-1,-1
 4703  020410  177777
 4704  020412  123245                        QQBTP2  123245
 4705  020414  026720                                26720
 4706  020416  122324                                122324
 4707  020420  052672                                52672
 4708
 4709                                        ,REPORT RESULT INCORRECT
 4710  020422  012737  020372  001240        QQB10   MOV     #QQBTP1,@#$TMP3
 4711  020430  012737  020412  001242                MOV     #QQBTP2,@#$TMP4
 4712  020436  104146                        1$      ERROR   146             ,BAD DATA
 4713  020440  000415                                BR      QQBDONE
 4714
 4715                                        ,REPORT R0 INCORRECT
 4716  020442  012737  020372  001240        QQB15:  MOV     #QQBTP1,@#$TMP3
 4717  020450  010037  001242                        MOV     R0,@#$TMP4
 4718  020454  104147                        1$.     ERROR   147             ,SPEC DESTX ROX
 4719  020456  000406                                BR      QQBDONE
 4720
 4721
 4722                                        ,REPORT FPS INCORRECT
 4723  020460  012737  000210  001240        QQB20:  MOV     #210,@#$TMP3
 4724  020466  010537  001242                        MOV     R5,@#$TMP4
 4725  020472  104150                        1$      ERROR   150
 4726
 4727  020474                                QQBDONE
 4728  020474  104412                                RSETUP                  ,GO INITIALIZE THE FPS AND STACK, AND
 4729                                                                        ,SEE IF THE USER HAS EXPRESSED
 4730                                                                        ,THE DESIRE TO CHANGE THE SOFTWARE
 4731                                                                        ;VIRTUAL CONSOLE SWITCH REGISTER (HAS
 4732                                                                        ,THE USER TYPED CONTROL G?)
 4733
 4734                                        ,,**************************************************************
 4735                                        ,*TEST 36       SPECIAL DEST, MODE 3, TEST
 4736                                        ,*
 4737                                        ,*THIS IS A TEST OF THE NEGF ABSF AND TSTF DESTINATION FLOWS
 4738                                        ,*MODE 3 USING THE NEGD INSTR
 4739                                        ,*
 4740                                        ;;**************************************************************
 4741  020476  000004                        TST36:  SCOPE
 4742
 4743  020500                                RRB1
 4744  020500  104413                                LPERR                   ,SET UP THE LOOP ON ERROR ADDRESS
 4745  020502  012701  020620                        MOV     #RRBTP1,R1      ,SET UP THE DATA BUFFER
 4746  020506  012700  020630                        MOV     #RRBTP2,R0
 4747  020512  012702  000004                        MOV     #4,R2
 4748  020516  012021                        1$      MOV     (R0)+,(R1)+
 4749  020520  077202                                SOB     R2,1$
 4750  020522  012700  020640                        MOV     #RRBTP3,R0
 4751  020526  012710  020620                        MOV     #RRBTP1,(R0)
```

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 4752  020532  042737  100000  020620          BIC     #100000,@#RRBTP1        ,MAKE THE OPERAND POSITIVE
 4753  020540  012737  020554  001236          MOV     #RRB2,@#$TMP2
 4754  020546  012701  000200                  MOV     #200,R1         ,SET FD.
 4755  020552  170101                          LDFPS   R1
 4756
 4757  020554  170730                  RRB2    NEGD    @(R0)+          ,TEST INSTRUCTION
 4758
 4759  020556  170205                          STFPS   R5              ,GET FPS
 4760  020560  012701  020620                  MOV     #RRBTP1,R1              ,IS THE RESULT CORRECT
 4761  020564  012702  020630                  MOV     #RRBTP2,R2
 4762  020570  012703  000004                  MOV     #4,R3
 4763  020574  022122                  1$      CMP     (R1)+,(R2)+
 4764  020576  001021                          BNE     RRB10           ,BRANCH IF INCORRECT
 4765  020600  077303                          SOB     R3,1$
 4766  020602  022700  020642                  CMP     #RRBTP3+2,R0    ,IS R0 CORRECT.
 4767  020606  001025                          BNE     RRB15           ,BRANCH IF INCORRECT
 4768  020610  022705  000210                  CMP     #210,R5         ,IS THE FPS CORRECT?
 4769  020614  001031                          BNE     RRB20           ,BRANCH IF INCORRECT
 4770  020616  000436                          BR      RRBDONE
 4771
 4772                                  ,THESE ARE DATA TABLES AND A DATA BUFFER
 4773  020620  023245                  RRBTP1. 023245
 4774  020622  026720                          26720
 4775  020624  122324                          122324
 4776  020626  052672                          52672
 4777  020630  123245                  RRBTP2. 123245
 4778  020632  026720                          26720
 4779  020634  123324                          123324
 4780  020636  052672                          52672
 4781  020640  020620                  RRBTP3. RRBTP1
 4782
 4783                                  ,REPORT RESULT INCORRECT.
 4784  020642  012737  020620  001240  RRB10:  MOV     #RRBTP1,@#$TMP3
 4785  020650  012737  020630  001242          MOV     #RRBTP2,@#$TMP4
 4786  020656  104150                  1$:     ERROR   150             ,BAD DATA
 4787  020660  000415                          BR      RRBDONE
 4788
 4789                                  ,REPORT R0 INCORRECT.
 4790  020662  012737  020642  001240  RRB15:  MOV     #RRBTP3+2,@#$TMP3
 4791  020670  010037  001242                  MOV     R0,@#$TMP4
 4792  020674  104152                  1$.     ERROR   152             ,SPEC DESTX ROX
 4793  020676  000406                          BR      RRBDONE
 4794
 4795                                  ;REPORT FPS INCORRECT:
 4796  020700  012737  000210  001240  RRB20:  MOV     #210,@#$TMP3
 4797  020706  010537  001242                  MOV     R5,@#$TMP4
 4798  020712  104153                  1$:     ERROR   153
 4799
 4800  020714                          RRBDONE
 4801  020714  104412                          RSETUP                  ,GO INITIALIZE THE FPS AND STACK, AND
 4802                                                                  ;SEE IF THE USER HAS EXPRESSED
 4803                                                                  ,THE DESIRE TO CHANGE THE SOFTWARE
 4804                                                                  ,VIRTUAL CONSOLE SWITCH REGISTER (HAS
 4805                                                                  ;THE USER TYPED CONTROL G?)
 4806
 4807                                  ,,**********************************************************************
```

```
 4808                                   ,*TEST 37       SPECIAL DEST, MODE 5, TEST
 4809                                   ;*
 4810                                   ,*THIS IS A TEST OF THE NEGF ABSF AND TSTF DESTINATION FLOWS
 4811                                   ,*MODE 5 USING THE NEGD INSTR
 4812                                   ,*
 4813                                   ,,**********************************************************************
 4814  020716  000004                   TST37.  SCOPE
 4815  020720                           SSB1
 4816  020720  104413                           LPERR                   ;SET UP THE LOOP ON ERROR ADDRESS
 4817  020722  012701  021042                   MOV     #SSBTP1,R1      ;SET UP THE DATA BUFFER
 4818  020726  012700  021052                   MOV     #SSBTP2,R0
 4819  020732  012702  000004                   MOV     #4,R2
 4820  020736  012021                   1$      MOV     (R0)+,(R1)+
 4821  020740  077202                           SOB     R2,1$
 4822  020742  012700  021064                   MOV     #SSBTP3+2,R0
 4823  020746  012760  021042  177776         MOV     #SSBTP1,-2(R0)
 4824  020754  042737  100000  021042         BIC     #100000,@#SSBTP1        ;MAKE THE OPERAND POSITIVE
 4825  020762  012737  020776  001236         MOV     #SSB2,@#$TMP2
 4826  020770  012701  000200                 MOV     #200,R1         ,SET FD
 4827  020774  170101                         LDFPS   R1
 4828
 4829  020776  170750                   SSB2    NEGD    @-(R0)          ;TEST INSTRUCTION.
 4830
 4831  021000  170205                           STFPS   R5              ;GET FPS.
 4832  021002  012701  021042                   MOV     #SSBTP1,R1              ;IS THE RESULT CORRECT
 4833  021006  012702  021052                   MOV     #SSBTP2,R2
 4834  021012  012703  000004                   MOV     #4,R3
 4835  021016  022122                   1$      CMP     (R1)+,(R2)+
 4836  021020  001021                           BNE     SSB10           ,BRANCH IF INCORRECT.
 4837  021022  077303                           SOB     R3,1$
 4838  021024  022700  021062                   CMP     #SSBTP3,R0      ,IS R0 CORRECT.
 4839  021030  001025                           BNE     SSB15           ;BRANCH IF INCORRECT
 4840  021032  022705  000210                   CMP     #210,R5         ,IS THE FPS CORRECT?
 4841  021036  001031                           BNE     SSB20           ,BRANCH IF INCORRECT
 4842  021040  000436                           BR      SSBDONE
 4843
 4844                                   ,THESE ARE DATA TABLES AND A DATA BUFFER
 4845  021042  023245                   SSBTP1: 023245
 4846  021044  026720                           26720
 4847  021046  122324                           122324
 4848  021050  052672                           52672
 4849  021052  123245                   SSBTP2: 123245
 4850  021054  026270                           26270
 4851  021056  122324                           122324
 4852  021060  052672                           52672
 4853  021062  021042                   SSBTP3: SSBTP1
 4854
 4855                                   ;REPORT RESULT INCORRECT.
 4856  021064  012737  021042  001240   SSB10:  MOV     #SSBTP1,@#$TMP3
 4857  021072  012737  021052  001242           MOV     #SSBTP2,@#$TMP4
 4858  021100  104154                   1$.     ERROR   154             ,BAD DATA
 4859  021102  000415                           BR      SSBDONE
 4860
 4861                                   ;REPORT R0 INCORRECT:
 4862  021104  012737  021062  001240   SSB15.  MOV     #SSBTP3,@#$TMP3
 4863  021112  010037  001242                   MOV     R0,@#$TMP4
```

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4864  021116  104155                    1$      ERROR   155             ,SPEC DESTX ROX
4865  021120  000406                            BR      SSBDONE
4866
4867                                    ;REPORT FPS INCORRECT.
4868  021122  012737  000210  001240    SSB20.  MOV     #210,@#$TMP3
4869  021130  010537  001242                    MOV     R5,@#$TMP4
4870  021134  104156                    1$      ERROR   156
4871
4872  021136                            SSBDONE.
4873  021136  104412                            RSETUP                  ,GO INITIALIZE THE FPS AND STACK, AND
4874                                                                    ;SEE IF THE USER HAS EXPRESSED
4875                                                                    ;THE DESIRE TO CHANGE THE SOFTWARE
4876                                                                    ;VIRTUAL CONSOLE SWITCH REGISTER (HAS
4877                                                                    ;THE USER TYPED CONTROL G?).
4878                                    ,,*******************************************************************
4879                                    ;*TEST 40       SPECIAL DEST, FLOATING MODE 2, TEST
4880                                    ;*
4881                                    ;*THIS IS A TEST OF THE NEGF ABSF AND TSTF DESTINATION FLOWS
4882                                    ;*MODE 2 USING THE NEGF INSTR
4883                                    ,*
4884                                    ;,*******************************************************************
4885  021140  000004                    TST40.  SCOPE
4886  021142                            TTB1:
4887  021142  104413                            LPERR                   ,SET UP THE LOOP ON ERROR ADDRESS
4888  021144  012701  021254                    MOV     #TTBTP1,R1      ;SET UP THE DATA BUFFER
4889  021150  012700  021264                    MOV     #TTBTP2,R0
4890  021154  012702  000004                    MOV     #4,R2
4891  02116C  012021                    1$      MOV     (R0)+,(R1)+
4892  021162  077202                            SOB     R2,1$
4893  021164  012700  021254                    MOV     #TTBTP1,R0
4894  021170  042710  100000                    BIC     #100000,(R0)    ,MAKE OPERAND POSITIVE
4895  021174  012737  021210  001236            MOV     #TTB2,@#$TMP2
4896  021202  012701  000000                    MOV     #000,R1         ,SET FD
4897  021206  170101                            LDFPS   R1
4898
4899  021210  170720                    TTB2.   NEGF    (R0)+           ;TEST INSTRUCTION
4900
4901  021212  170205                            STFPS   R5              ,GET FPS
4902  021214  012701  021254                    MOV     #TTBTP1,R1              ,IS THE RESULT CORRECT
4903  021220  012702  021264                    MOV     #TTBTP2,R2
4904  021224  012703  000004                    MOV     #4,R3
4905  021230  022122                    1$.     CMP     (R1)+,(R2)+
4906  021232  001020                            BNE     TTB10           ;BRANCH IF INCORRECT
4907  021234  077303                            SOB     R3,1$
4908  021236  022700  021260                    CMP     #TTBTP1+4,R0    ;IS R0 CORRECT.
4909  021242  001024                            BNE     TTB15           ;BRANCH IF INCORRECT.
4910  021244  022705  000010                    CMP     #010,R5         ;IS THE FPS CORRECT?
4911  021250  001030                            BNE     TTB20           ;BRANCH IF INCORRECT
4912  021252  000435                            BR      TTBDONE
4913
4914                                    ,THESE ARE DATA TABLES AND A DATA BUFFER
4915  021254  023245                    TTBTP1: 023245
4916  021256  026720                            26720
4917  021260  122324                            122324
4918  021262  052672                            52672
4919  021264  123245                    TTBTP2  123245
```

```
 4920  021266  026720                          26720
 4921  021270  122324                          122324
 4922  021272  052672                          52672
 4923
 4924                                  ;REPORT RESULT INCORRECT:
 4925  021274  012737  021254  001240  TTB10.  MOV     #TTBTP1,@#$TMP3
 4926  021302  012737  021264  001242          MOV     #TTBTP2,@#$TMP4
 4927  021310  104150                  1$:     ERROR   150             ;BAD DATA
 4928  021312  000415                          BR      TTBDONE
 4929
 4930                                  ;REPORT R0 INCORRECT:
 4931  021314  012737  021260  001240  TTB15:  MOV     #TTBTP1+4,@#$TMP3
 4932  021322  010037  001242                  MOV     R0,@#$TMP4
 4933  021326  104160                  1$:     ERROR   160             ;SPEC DESTX ROX
 4934  021330  000406                          BR      TTBDONE
 4935
 4936                                  ;REPORT FPS INCORRECT:
 4937  021332  012737  000010  001240  TTB20:  MOV     #010,@#$TMP3
 4938  021340  010537  001242                  MOV     R5,@#$TMP4
 4939  021344  104161                  1$:     ERROR   161
 4940
 4941  021346                          TTBDONE
 4942  021346  104412                          RSETUP                  ;GO INITIALIZE THE FPS AND STACK, AND
 4943                                                                  ;SEE IF THE USER HAS EXPRESSED
 4944                                                                  ;THE DESIRE TO CHANGE THE SOFTWARE
 4945                                                                  ;VIRTUAL CONSOLE SWITCH REGISTER (HAS
 4946                                                                  ;THE USER TYPED CONTROL G?)
 4947                                  ;;**************************************************************************
 4948                                  ;*TEST 41        SPECIAL DEST, MODE2, GR7 (IMMEDIATE), TES
 4949                                  ;*
 4950                                  ;*THIS IS A TEST OF THE NEGF ABSF AND TSTF DESTINATION FLOWS
 4951                                  ;*MODE 2(IMMEDIATE) USING THE NEGD INSTR
 4952                                  ;*
 4953                                  ;;**************************************************************************
 4954  021350  000004                  TST41:  SCOPE
 4955  021352                          UUB1:
 4956  021352  104413                          LPERR                   ;SET UP THE LOOP ON ERROR ADDRESS
 4957  021354  012700  021500                  MOV     #UUBTP2,R0
 4958  021360  012701  021426                  MOV     #UUBTP1,R1      ;SET UP THE DATA BUFFER.
 4959  021364  012702  000004                  MOV     #4,R2
 4960  021370  012021                  1$      MOV     (R0)+,(R1)+
 4961  021372  077202                          SOB     R2,1$
 4962  021374  012700  021426                  MOV     #UUBTP1,R0
 4963  021400  042737  100000  021426          BIC     #100000,@#UUBTP1        ;MAKE THE OPERAND POSITIVE
 4964  021406  012737  021424  001236          MOV     #UUB2,@#$TMP2
 4965  021414  012701  000200                  MOV     #200,R1         ;SET FD.
 4966  021420  170101                          LDFPS   R1
 4967  021422  005001                          CLR     R1
 4968
 4969  021424  170727                  UUB2:   NEGD    (R7)+           ;TEST INSTRUCTION
 4970  021426  005201  005201  005201  UUBTP1: 5201,5201,5201,5201
 4971  021434  005201
 4972                                  ;NOTE THAT AFTER EXECUTING THIS INSTRUCTION R1 SHOULD CONTAIN 3
 4973  021436  170205                          STFPS   R5              ;GET FPS.
 4974  021440  012703  021426                  MOV     #UUBTP1,R3      ;IS THE RESULT CORRECT
 4975  021444  012702  021500                  MOV     #UUBTP2,R2
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 4976  021450  012704  000004            MOV     #4,R4
 4977  021454  022322                1$  CMP     (R3)+,(R2)+
 4978  021456  001014                    BNE     UUB10           ,BRANCH IF INCORRECT
 4979  021460  077403                    SOB     R4,1$
 4980  021462  022701  000003            CMP     #3,R1           ,WAS R1 INCREMENTED CORRECTLY
 4981  021466  001027                    BNE     UUB15           ,BRANCH IF INCORRECT.
 4982  021470  022705  000210            CMP     #210,R5         ,IS THE FPS CORRECT?
 4983  021474  001015                    BNE     UUB20           ,BRANCH IF INCORRECT.
 4984  021476  000436                    BR      UUBDONE
 4985
 4986                                ,THESE ARE DATA TABLE
 4987  021500  105201                UUBTP2  105201
 4988  021502  005201                        5201
 4989  021504  005201                        5201
 4990  021506  005201                        5201
 4991
 4992                                ,REPORT RESULT INCORRECT:
 4993  021510  012737  021426  001240 UUB10:  MOV     #UUBTP1,@#$TMP3
 4994  021516  012737  021500  001242        MOV     #UUBTP2,@#$TMP4
 4995  021524  104162                1$:     ERROR   162             ,BAD DATA
 4996  021526  000422                        BR      UUBDONE
 4997
 4998                                ,REPORT FPS INCORRECT
 4999  021530  012737  000210  001240 UUB20.  MOV     #210,@#$TMP3
 5000  021536  010537  001242                MOV     R5,@#$TMP4
 5001  021542  104163                1$      ERROR   163             ,FPS
 5002  021544  000413                        BR      UUBDONE
 5003
 5004                                ,REPORT PC INCORRECTLY INCREMENTED DURING EXECUTION
 5005  021546  162701  000003        UUB15   SUB     #3,R1
 5006  021552  006301                        ASL     R1
 5007  021554  012702  021430                MOV     #UUBTP1+2,R2
 5008  021560  010237  001240                MOV     R2,@#$TMP3
 5009  021564  160102                        SUB     R1,R2
 5010  021566  010237  001242                MOV     R2,@#$TMP4
 5011  021572  104164                1$      ERROR   164             ,PC BAD CONSTAND B GR7X
 5012
 5013  021574                        UUBDONE:
 5014  021574  104412                        RSETUP                  ;GO INITIALIZE THE FPS AND STACK, AND
 5015                                                                ,SEE IF THE USER HAS EXPRESSED
 5016                                                                ,THE DESIRE TO CHANGE THE SOFTWARE
 5017                                                                ,VIRTUAL CONSOLE SWITCH REGISTER (HAS
 5018                                                                ,THE USER TYPED CONTROL G?)
 5019                                ,,**************************************************************
 5020                                ;*TEST 42       SPECIAL DEST, MODE 6, TEST
 5021                                ,*
 5022                                ,*THIS IS A TEST OF THE NEGF ABSF AND TSTF DESTINATION FLOWS
 5023                                ;*MODE 6 USING THE NEGD INSTR.
 5024                                ;*
 5025                                ,;**************************************************************
 5026  021576  000004                TST42:  SCOPE
 5027  021600                        XXB1.
 5028  021600  104413                        LPERR                   ,SET UP THE LOOP ON ERROR ADDRESS
 5029  021602  012701  021724                MOV     #XXBTP1,R1      ,SET UP THE DATA BUFFER
 5030  021606  012700  021734                MOV     #XXBTP2,R0
 5031  021612  012702  000004                MOV     #4,R2
```

```
 5032  021616  012021                    1$      MOV     (R0)+,(R1)+
 5033  021620  077202                            SOB     R2,1$
 5034  021622  012700  014523                    MOV     #XXBTP1-5201,R0
 5035  021626  042737  100000  021724            BIC     #100000,@#XXBTP1,MAKE OPERAND POSITIVE
 5036  021634  012737  021652  001236            MOV     #XXB2,@#$TMP2
 5037  021642  012701  000200                    MOV     #200,R1         ,SET FD
 5038  021646  170101                            LDFPS   R1
 5039                                                                    ;
 5040  021650  005001                            CLR     R1
 5041  021652  170760  005201            XXB2    NEGD    5201(R0)                ,TEST INSTRUCTION
 5042
 5043  021656  170205                            STFPS   R5              ,GET FPS
 5044  021660  005701                            TST     R1
 5045  021662  001030                            BNE     XXB25           ,WAS THE PC CORRECT AFTER EXECUTION?
 5046  021664  012701  021724                    MOV     #XXBTP1,R1              ,IS THE RESULT CORRECT
 5047  021670  012702  021734                    MOV     #XXBTP2,R2
 5048  021674  012703  000004                    MOV     #4,R3
 5049  021700  022122                    1$      CMP     (R1)+,(R2)+
 5050  021702  001030                            BNE     XXB10           ,BRANCH IF INCORRECT
 5051  021704  077303                            SOB     R3,1$
 5052  021706  022700  014523                    CMP     #XXBTP1-5201,R0 ,IS R0 CORRECT
 5053  021712  001034                            BNE     XXB15           ,BRANCH IF INCORRECT
 5054  021714  022705  000210                    CMP     #210,R5         ;IS THE FPS CORRECT?
 5055  021720  001040                            BNE     XXB20           ,BRANCH IF INCORRECT
 5056  021722  000445                            BR      XXBDONE
 5057
 5058                                    ,THESE ARE DATA TABLES AND A DATA BUFFER
 5059  021724  023245                    XXBTP1: 023245
 5060  021726  026720                            26720
 5061  021730  122324                            122324
 5062  021732  052672                            52672
 5063  021734  123245                    XXBTP2: 123245
 5064  021736  026720                            26720
 5065  021740  122324                            122324
 5066  021742  052672                            52672
 5067
 5068
 5069                                    ;REPORT PC INCORRECT AFTER EXECUTION.
 5070  021744  012737  021654  001242    XXB25:  MOV     #XXB2+2,@#$TMP4
 5071  021752  012737  021656  001240            MOV     #XXB2+4,@#$TMP3
 5072  021760  104215                    1$:     ERROR   215             ;PC NOT INCREMENTED BY 2.
 5073  021762  000425                            BR      XXBDONE
 5074
 5075                                    ;REPORT RESULT INCORRECT:
 5076  021764  012737  021724  001240    XXB10:  MOV     #XXBTP1,@#$TMP3
 5077  021772  012737  021734  001242            MOV     #XXBTP2,@#$TMP4
 5078  022000  104216                    1$:     ERROR   216             ,BAD DATA
 5079  022002  000415                            BR      XXBDONE
 5080
 5081                                    ;REPORT R0 INCORRECT.
 5082  022004  012737  014523  001240    XXB15:  MOV     #XXBTP1-5201,@#$TMP3
 5083  022012  010037  001242                    MOV     R0,@#$TMP4
 5084  022016  104217                    1$:     ERROR   217             ,SPEC DESTX ROX
 5085  022020  000406                            BR      XXBDONE
 5086
 5087
```

```
                                            ,REPORT FPS INCORRECT
022022  012737  000210  001240  XXB20   MOV     #210,@#$TMP3
022030  010537  001242                  MOV     R5,@#$TMP4
022034  104220                  1$      ERROR   220

022036                          XXBDONE
022036  104412                          RSETUP                  ,GO INITIALIZE THE FPS AND STACK, AND
                                                                ,SEE IF THE USER HAS EXPRESSED
                                                                ,THE DESIRE TO CHANGE THE SOFTWARE
                                                                ,VIRTUAL CONSOLE SWITCH REGISTER (HAS
                                                                ,THE USER TYPED CONTROL G?)

                                ,,*************************************************************
                                ,*TEST 43       SPECIAL DEST, MODE 7, TEST
                                ,*
                                ,*THIS IS A TEST OF THE NEGF ABSF AND TSTF DESTINATION FLOWS
                                ,*MODE 7 USING THE NEGD INSTR
                                ,*
                                ,,*********************************************** ,***********
022040  000004                  TST43   SCOPE

022042                          YYB1
022042  104413                          LPERR                   ;SET UP THE LOOP ON ERROR ADDRESS
022044  012701  022174                  MOV     #YYBTP1,R1      ,SET UP THE DATA BUFFER
022050  012700  022204                  MOV     #YYBTP2,R0
022054  012702  000004                  MOV     #4,R2
022060  012021                  1$      MOV     (R0)+,(R1)+
022062  077202                          SOB     R2,1$
022064  012700  015013                  MOV     #YYBTP3-5201,R0
022070  012760  022174  005201          MOV     #YYBTP1,5201(R0)
022076  042737  100000  022174          BIC     #100000,@#YYBTP1        ,MAKE THE OPERAND POSITIVE
022104  012737  022122  001236          MOV     #YYB2,@#$TMP2
022112  012701  000200                  MOV     #200,R1         ,SET FD
022116  170101                          LDFPS   R1

022120  005001                          CLR     R1
022122  170770  005201          YYB2:   NEGD    @5201(R0)               ,TEST INSTRUCTION

022126  170205                          STFPS   R5              ,GET FPS
022130  005701                          TST     R1              ;WAS THE PC CORRECT AFTER EXECUTION?
022132  001031                          BNE     YYB25
022134  012701  022174                  MOV     #YYBTP1,R1              ,IS THE RESULT CORRECT
022140  012702  022204                  MOV     #YYBTP2,R2
022144  012703  000004                  MOV     #4,R3
022150  022122                  1$      CMP     (R1)+,(R2)+
022152  001031                          BNE     YYB10           ;BRANCH IF INCORRECT
022154  077303                          SOB     R3,1$
022156  022700  015013                  CMP     #YYBTP3-5201,R0 ;IS R0 CORRECT.
022162  001035                          BNE     YYB15           ,BRANCH IF INCORRECT
022164  022705  000210                  CMP     #210,R5         ,IS THE FPS CORRECT?
022170  001041                          BNE     YYB20           ,BRANCH IF INCORRECT
022172  000446                          BR      YYBDONE

                                .THESE ARE DATA TABLES AND A DATA BUFFER
022174  023245                  YYBTP1  023245
022176  026720                          26720
```

```
5144  022200  122324                        122324
5145  022202  052672                        52672
5146  022204  123245              YYBTP2.   123245
5147  022206  026720                        26720
5148  022210  123324                        123324
5149  022212  052672                        52672
5150  022214  022174              YYBTP3    YYBTP1
5151
5152                              ,REPORT PC INCORRECT AFTER EXECUTION
5153  022216  016737  177702  001242  YYB25     MOV     YYB2+2,@#$TMP4
5154  022224  016737  177676  001240            MOV     YYB2+4,@#$TMP3
5155  022232  104221                  1$        ERROR   221             ,PC NOT INCREMENTED BY 2
5156  022234  000425                            BR      YYBDONE
5157
5158                              ;REPORT RESULT INCORRECT
5159  022236  012737  022174  001240  YYB10:    MOV     #YYBTP1,@#$TMP3
5160  022244  012737  022204  001242            MOV     #YYBTP2,@#$TMP4
5161  022252  104222                  1$        ERROR   222             ,BAD DATA
5162  022254  000415                            BR      YYBDONE
5163
5164                              ,REPORT R0 INCORRECT:
5165  022256  012737  015013  001240  YYB15     MOV     #YYBTP3-5201,@#$TMP3
5166  022264  010037  001242                    MOV     R0,@#$TMP4
5167  022270  104223                  1$        ERROR   223             ,SPEC DESTX ROX
5168  022272  000406                            BR      YYBDONE
5169
5170                              ,REPORT FPS INCORRECT
5171  022274  012737  000210  001240  YYB20:    MOV     #210,@#$TMP3
5172  022302  010537  001242                    MOV     R5,@#$TMP4
5173  022306  104224                  1$        ERROR   224
5174
5175  022310                          YYBDONE:
5176  022310  104412                            RSETUP                  ,GO INITIALIZE THE FPS AND STACK, AND
5177                                                                      ,SEE IF THE USER HAS EXPRESSED
5178                                                                      ,THE DESIRE TO CHANGE THE SOFTWARE
5179                                                                      ;VIRTUAL CONSOLE SWITCH REGISTER (HAS
5180                                                                      ;THE USER TYPED CONTROL G?)
5181                              ,,**********************************************************************
5182                              ,*TEST 44       NEGD, ABSD AND TSTD TEST
5183                              ;*
5184                              ,*THIS IS A TEST OF THE NEGD ABSD AND TSTD INSTRUCTIONS
5185                              ,*
5186                              ,;**********************************************************************
5187  022312  000004              TST44:  SCOPE
5188                              ,TEST NEGD WITH POS NONZERO OPERAND
5189  022314                      WWB1:
5190  022314  104413                            LPERR                   ,SET UP THE LOOP ON ERROR ADDRESS
5191  022316  004767  000634                    JSR     PC,NATSUB
5192  022322  000000                  1$        0                       ,FLAG=NEGD
5193  022324  016341                  2$:       16341                   ,OPERAND
5194  022326  055772                            55772
5195  022330  021133                            21133
5196  022332  055447                            55447
5197  022334  116341                  3$        116341                  ,RESULT
5198  022336  055772                            55772
5199  022340  021133                            21133
```

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5200  022342  055447                    55447
5201  022344  016341              4$    16341                    ,ERROR RES
5202  022346  055772                    55772
5203  022350  021133                    21133
5204  022352  055447                    55447
5205  022354  000207              5$    207                      ,FPS BEFORE EXECUTION
5206  022356  000210                    210                      ,FPS AFTER EXECUTION
5207  022360  000200                    200                      ,ERROR FPS
5208  022362  177777                    -1                       ,FEC
5209  022364  104200              6$    ERROR   200              ,E10<---E10*200X ST 336
5210  022366  000401                    BR      7$
5211  022370  104201                    ERROR   201              ,BUT ENBT ST 336X WENT TO 053 INTO 453
5212  022372                      7$
5213                              ,TEST NEGD WITH NEG OPERAND
5214  022372                      WWB2
5215  022372  104413                    LPERR                    ,SET UP THE LOOP ON ERROR ADDRESS
5216  022374  004767  000556            JSR     PC,NATSUB
5217  022400  000000              1$    0                        ,FLAG=NEGD
5218  022402  152525              2$    152525                   ,OPERAND
5219  022404  053545                    53545
5220  022406  055565                    55565
5221  022410  057505                    57505
5222  022412  052525              3$    52525                    ,RESULT
5223  022414  053545                    53545
5224  022416  055565                    55565
5225  022420  057505                    57505
5226  022422  152525              4$    152525                   ,ERROR RES
5227  022424  053545                    53545
5228  022426  055565                    55565
5229  022430  057505                    57505
5230  022432  000217              5$    217                      ,FPS BEFORE EXECUTION
5231  022434  000200                    200                      ,FPS AFTER EXECUTION
5232  022436  000210                    210                      ,ERROR FPS
5233  022440  177777                    -1                       ,FEC
5234  022442  104200              6$    ERROR   200              ,E10<---E10*200X S336
5235  022444  000401                    BR      7$
5236  022446  104202                    ERROR   202              ,BUT ENBT X ST336 TO 453 INTO 053
5237  022450                      7$
5238                              ,TEST ABSD WITH POSITIVE OPERAND
5239  022450                      WWB3
5240  022450  104413                    LPERR                    ,SET UP THE LOOP ON ERROR ADDRESS
5241  022452  004767  000500            JSR     PC,NATSUB
5242  022456  000001              1$    1                        ,FLAG=ABSD
5243  022460  060705              2$    60705                    ,OPERAND
5244  022462  124735                    124735
5245  022464  060124                    60124
5246  022466  073560                    73560
5247  022470  060705              3$    60705                    ,RESULT
5248  022472  124735                    124735
5249  022474  060124                    60124
5250  022476  073560                    73560
5251  022500  160705              4$    160705                   ,ERROR RES
5252  022502  124735                    124735
5253  022504  060124                    60124
5254  022506  073560                    73560
5255  022510  000217              5$    217                      ,FPS BEFORE EXECUTION
```

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5256  022512  000200                    200                     ,FPS AFTER EXECUTION
5257  022514  000210                    210                     ,ERROR FPS
5258  022516  177777                    -1                      ,EITHER BUT OP1B
5259  022520  104203              6$    ERROR   203             ,BUT ST 055 TO 336 INTO 335
5260  022522  000401                    BR      7$
5261  022524  104203                    ERROR   203             ,OR BUT ENBT ST 335 TO 452 INTO 052
5262  022526                      7$
5263                              ,TEST ABSD WITH NEG  OPERAND
5264  022526                      WWB4
5265  022526  104413                    LPERR                   ,SET UP THE LOOP ON ERROR ADDRESS
5266  022530  004767  000422            JSR     PC,NATSUB
5267  022534  000001              1$    1                       ,FLAG=ABSD
5268  022536  154345              2$    154345                  ,OPERAND
5269  022540  076567                    76567
5270  022542  032123                    32123
5271  022544  043234                    43234
5272  022546  054345              3$    54345                   ,RESULT
5273  022550  076567                    76567
5274  022552  032123                    32123
5275  022554  043234                    43234
5276  022556  154345              4$    154345                  ,ERROR RES
5277  022560  076567                    76567
5278  022562  032123                    32123
5279  022564  043234                    43234
5280  022566  000217              5$    217                     ,FPS BEFORE EXECUTION
5281  022570  000200                    200                     ,FPS AFTER EXECUTION
5282  022572  177777                    -1                      ,ERROR FPS
5283  022574  177777                    -1
5284  022576  104204              6$    ERROR   204             ,E10*E10*200X ST 452
5285  022600  000401                    BR      7$
5286  022602  104171                    ERROR   171
5287  022604                      7$
5288                              ,TEST WITH POSITIVE OP
5289  022604                      WWB5
5290  022604  104413                    LPERR                   ,SET UP THE LOOP ON ERROR ADDRESS
5291  022606  004767  000344            JSR     PC,NATSUB
5292  022612  000002              1$    2                       ,FLAG=TSTD
5293  022614  012321              2$    12321                   ,OPERAND
5294  022616  045654                    45654
5295  022620  070107                    70107
5296  022622  034543                    34543
5297  022624  012321              3$    12321                   ,RESULT
5298  022626  045654                    45654
5299  022630  070107                    70107
5300  022632  034543                    34543
5301  022634  112321              4$    112321                  ,ERROR RES
5302  022636  045654                    45654
5303  022640  070107                    70107
5304  022642  034543                    34543
5305  022644  000217              5$    217                     ,FPS BEFORE EXECUTION
5306  022646  000200                    200                     ,FPS AFTER EXECUTION
5307  022650  000210                    210                     ,ERROR FPS
5308  022652  177777                    -1
5309  022654  104205              6$    ERROR   205             ,BUT (OP1B) X ST044 TO 336 INTO 334
5310  022656  000401                    BR      7$
5311  022660  104206                    ERROR   206             ,BUT ENBT ST 334 TO 453 INTO 053
```

```
 5312  022662                          7$
 5313                                  ,TEST TSTD WITH NEG OP
 5314  022662                          WWB6
 5315  022662  104413                          LPERR                   ,SET UP THE LOOP ON ERROR ADDRESS
 5316  022664  004767  000266                  JSR     PC,NATSUB
 5317  022670  000002                  1$      2                       ,FLAG=TSTD
 5318  022672  123765                  2$      123765                  ,OPERAND
 5319  022674  023407                          23407
 5320  022676  034510                          34510
 5321  022700  045621                          45621
 5322  022702  123765                  3$      123765                  ,RESULT
 5323  022704  023407                          23407
 5324  022706  034510                          34510
 5325  022710  045621                          45621
 5326  022712  023765                  4$      23765                   ,ERROR RES
 5327  022714  023407                          23407
 5328  022716  034510                          34510
 5329  022720  045621                          45621
 5330  022722  000207                  5$      207                     ,FPS BEFORE EXECUTION
 5331  022724  000210                          210                     ,FPS AFTER EXECUTION
 5332  022726  000200                          200                     ,ERROR FPS
 5333  022730  177777                          -1
 5334  022732  104207                  6$      ERROR   207             ,BUT OPB1 ST 055 TO 335 INTO 334
 5335  022734  000401                          BR      7$
 5336  022736  104210                          ERROR   210             ,BUT ENBT ST 334 TO 053 INTO 453
 5337  022740                          7$
 5338                                  ,TEST TSTD 0 OP
 5339  022740                          WWB7
 5340  022740  104413                          LPERR                   ,SET UP THE LOOP ON ERROR ADDRESS
 5341  022742  004767  000210                  JSR     PC,NATSUB
 5342  022746  000002                  1$      2                       ,FLAG=TSTD
 5343  022750  000175                  2$      175                     ,OPERAND
 5344  022752  176737                          176737
 5345  022754  071727                          71727
 5346  022756  037574                          37574
 5347  022760  000175                  3$      175                     ,RESULT
 5348  022762  176737                          176737
 5349  022764  071727                          71727
 5350  022766  037574                          37574
 5351  022770  000000                  4$      0                       ,ERROR RES
 5352  022772  000000                          0
 5353  022774  000000                          0
 5354  022776  000000                          0
 5355  023000  000200                  5$      200                     ,FPS BEFORE EXECUTION
 5356  023002  000204                          204                     ,FPS AFTER EXECUTION
 5357  023004  000214                          214                     ,ERROR FPS
 5358  023006  177777                          -1
 5359  023010  104211                  6$      ERROR   211             ,BUT OP1B ST 255 TO 311 OR 312 INTO 310
 5360  023012  000401                          BR      7$
 5361  023014  104212                          ERROR   212             ,BUT ENBT ST 310 TO 402 INTO 002
 5362  023016                          7$
 5363                                  ,TEST TSTD -0 OP FIUV=0
 5364  023016                          WWB8
 5365  023016  104413                          LPERR                   ,SET UP THE LOOP ON ERROR ADDRESS
 5366  023020  004767  000132                  JSR     PC,NATSUB
 5367  023024  000002                  1$      2                       ,FLAG=TSTD
```

```
 5368  023026  100123                2$      100123                  ,OPERAND
 5369  023030  021012                        21012
 5370  023032  034565                        34565
 5371  023034  043210                        43210
 5372  023036  100123                3$      100123                  ,RESULT
 5373  023040  021012                        21012
 5374  023042  034565                        34565
 5375  023044  043210                        43210
 5376  023046  000000                4$      0                       ,ERROR RES
 5377  023050  000000                        0
 5378  023052  000000                        0
 5379  023054  000000                        0
 5380  023056  040203                5$      40203                   ,FPS BEFORE EXECUTION
 5381  023060  040214                        040214                  ,FPS AFTER EXECUTION
 5382  023062  140214                        140214                  ,ERROR FPS
 5383  023064  177777                        -1
 5384  023066  104211                6$      ERROR   211             ,+
 5385  023070  000401                        BR      7$
 5386  023072  104213                        ERROR   213             ,BUT FIUV ST 257 TO 355 INTO 255
 5387  023074                        7$
 5388                                ,TEST TSTD -0 OP FIUV=1
 5389  023074                        WWB9
 5390  023074  104413                        LPERR                   ,SET UP THE LOOP ON ERROR ADDRESS
 5391  023076  004767  000054                JSR     PC,NATSUB
 5392  023102  000002                1$      2                       ,FLAG=TSTD
 5393  023104  100137                2$.     100137                  ;OPERAND
 5394  023106  024613                        24613
 5395  023110  057024                        57024
 5396  023112  060137                        60137
 5397  023114  100137                3$      100137                  ,RESULT
 5398  023116  024613                        24613
 5399  023120  057024                        57024
 5400  023122  060137                        60137
 5401  023124  000000                4$      0                       ,ERROR RES
 5402  023126  000000                        0
 5403  023130  000000                        0
 5404  023132  000000                        0
 5405  023134  044200                5$      44200                   ,FPS BEFORE EXECUTION
 5406  023136  144214                        144214                  ,FPS AFTER EXECUTION.
 5407  023140  044214                        044214                  ,ERROR FPS
 5408  023142  000014                        14
 5409  023144  104211                6$      ERROR   211             ,+
 5410  023146  000401                        BR      7$
 5411  023150  104214                        ERROR   214             ,BUT FIUV ST 257 TO 255 INTO 355
 5412  023152                        7$
 5413  023152  000167  000414                JMP     WWBDONE
 5414
 5415                                ,THIS SUBROUTINE, NATSUB, IS USED TO SET UP THE OPERANDS, EXECUTE
 5416                                ,THE EITHER A TSTD, AN ABSD OR A NEGD INSTRUCTION AND CHECK THE RESULTS  A CALL
```

```
                                ,TO IT IS MADE THUS
                                ,
                                ,               JSR     PC,@#NATSUB
                                ,               FLAG    WORD    X               ,INSTRUCTION TYPE FLAG
                                ,               ACARG   WORD    X,X,X,X         ,OPERAND
                                ,               RES     WORD    X,X,X,X         ,EXPECTED RESULT
                                ,               ERRES   WORD    X,X,X,X         ,ERROR RESULT
                                ,               FPSB    WORD    X               ,FPS BEFORE EXECUTION
                                ,               FPSA    WORD    X               ,FPS AFTER EXECUTION
                                ,               FEC     WORD    X               ,EXPECTED FEC
                                ,               ERFPS   WORD    X               ,ERROR FPS
                                ,               ERR1    ERROR   X               ,DATA ERROR
                                ,                       BR      CONT
                                ,               ERR2:   ERROR   X               ,FPS ERROR
                                ,               CONT:                           ,RETURN ADDRESS
                                ,
                                ,THE OPERAND IS SET UP IN NATBF1  THEN
                                ,THE EITHER THE TSTD, NEGD OR ABSD INSTRUCTION IS EXECUTED
                                ,NATSUB USES THE FIRST OPERAND AS A FLAG TO DETERMINE WHICH INSTRUCTION
                                ,IS TO BE EXECUTED: 0 = NEGD, 1 = ABSD, 2 = TSTD
                                ,THE RESULT IS CHECKED AGAINST RES. IF THE RESULT IS CORRECT THEN THE FPS IS
                                ,COMPARED WITH FPSA. IF THIS TOO IS CORRECT NATSUB RETURNS CONTROL
                                ,TO THE CALLING ROUTINE AT CONT  IF THE FPS IS BAD NATSUB
                                ;COMPARE IT TO ERROR FPS. IF THIS MATCHES THEN NATSUB WILL RETURN
                                ,TO THE ERROR CALL AT ERR2, OTHERWISE NATSUB ITSELF
                                ,REPORTS THIS FAILURE AND THEN RETURNS TO CONT  IF THE RESULT OF THE
                                ,INSTRUCTION IS INCORRECT, THE INCORRECT RESULT IS COMPARED WITH THE
                                ,ANTICIPATED FAILING DATA PATTERN, ERRES. IF THE FAILURE IN
                                ,THE RESULT WAS ANTICIPATED CORRECTLY TO BE ERRES THEN NATSUB
                                ,WILL TRANSFER CONTROL TO THE ERROR CALL AT ERR1.  OTHERWISE THE
                                ,RESULT WAS INCORRECT BUT WAS NOT ANTICIPATED AND NATSUB WILL
                                ,REPORT THE FAILURE AFTER WHICH CONTROL WILL BE PASSED TO CONT

023156  012601                  NATSUB: MOV     (SP)+,R1                ,GET A POINTER TO THE ARGUMENTS
023160  010102                          MOV     R1,R2           ,COPY THE OPERAND
023162  062702  000002                  ADD     #2,R2
023166  012703  023560                  MOV     #NATBF1,R3
023172  012704  000004                  MOV     #4,R4
023176  012223                  1$:     MOV     (R2)+,(R3)+
023200  077402                          SOB     R4,1$
023202  016100  000032                  MOV     32(R1),R0       ,LOAD THE FPS
023206  170100                          LDFPS   R0
023210  012700  023560                  MOV     #NATBF1,R0      ,SET UP THE OPERAND ADDRESS
023214  011102                          MOV     (R1),R2         ;GET THE FLAG TO DETERMINE WHICH
023216  006302                          ASL     R2              ,INSTRUCTION TO EXECUTE
023220  006302                          ASL     R2              ,0 = NEGD, 1 = ABSD, 2 = TSTD
023222  012703  023236                  MOV     #NATINS,R3
023226  060203                          ADD     R2,R3
023230  010337  001236                  MOV     R3,@#$TMP2
023234  000113                          JMP     (R3)            ,GO EXECUTE THE INSTRUCTION
023236  170710                  NATINS: NEGD    (R0)
023240  000403                          BR      2$
023242  170610                          ABSD    (R0)
023244  000401                          BR      2$
023246  170510                          TSTD    (R0)
```

```
 5473
 5474  023250  170204                  2$      STFPS   R4              ,GET THE FPS
 5475  023252  170305                          STST    R5              ,GET THE FEC
 5476  023254  010102                          MOV     R1,R2
 5477  023256  062702  000002                  ADD     #2,R2
 5478  023262  010237  001240                  MOV     R2,@#$TMP3
 5479  023266  062702  000010                  ADD     #10,R2
 5480  023272  010237  001244                  MOV     R2,@#$TMP5
 5481  023276  012737  023560  001242          MOV     #NATBF1,@#$TMP4
 5482  023304  010437  001250                  MOV     R4,@#$TMP7
 5483  023310  016137  000034  001252          MOV     34(P1),@#$TMP10
 5484  023316  010100                          MOV     R1,R0           ,WAS THE RESULT CORRECT?
 5485  023320  062700  000012                  ADD     #12,R0
 5486  023324  012702  023560                  MOV     #NATBF1,R2
 5487  023330  012703  000004                  MOV     #4,R3
 5488  023334  022022                  3$      CMP     (R0)+,(R2)+
 5489  023336  001014                          BNE     10$             ,BRANCH IF INCORRECT
 5490  023340  077303                          SOB     R3,3$
 5491  023342  026104  000034                  CMP     34(R1),R4       ,WAS THE FPS CORRECT?
 5492  023346  001032                          BNE     15$             ;BRANCH IF INCORRECT
 5493  023350  005761  000034                  TST     34(R1)          ;IF THE EXPECTED FPS WAS NEGATIVE CHECK THE FEC
 5494  023354  100003                          BPL     4$
 5495  023356  026105  000040                  CMP     40(R1),R5       ,WAS THE FEC CORRECT
 5496  023362  001037                          BNE     20$             ,BRANCH IF INCORRECT
 5497  023364  000161  000050          4$      JMP     50(R1)          ,RETURN.
 5498
 5499                                  ,THE RESULT WAS INCORRECT BUT WAS THIS FAILURE ANTICIPATED?
 5500                                  ,SEE IF THE RESULT WAS ANTICIPATED
 5501  023370                          10$:
 5502  023370  011105                          MOV     (R1),R5
 5503  023372  006305                          ASL     R5
 5504  023374  006305                          ASL     R5
 5505  023376  062705  023510                  ADD     #NATER1,R5
 5506  023402  010100                          MOV     R1,R0
 5507  023404  062700  000022                  ADD     #22,R0
 5508  023410  012702  023560                  MOV     #NATBF1,R2
 5509  023414  012703  000004                  MOV     #4,R3
 5510  023420  022022                  11$     CMP     (R0)+,(R2)+
 5511  023422  001003                          BNE     12$             ,BRANCH IF NOT ANTICIPATED
 5512  023424  077303                          SOB     R3,11$
 5513
 5514                                  ;THE ERROR WAS ANTICIPATED SO RETURN
 5515  023426  000161  000042                  JMP     42(R1)
 5516
 5517                                  ,THE ERROR WAS NOT ANTICIPATED SO REPORT IT HERE
 5518  023432  000115                  12$:    JMP     (R5)            ;GO TO THE PROPER ERROR CALL
 5519
 5520                                  ,THE FPS WAS INCORRECT.
 5521  023434  026105  000036          15$.    CMP     36(R1),R5       ,WAS THIS ERROR ANTICIPATED?
 5522  023440  001002                          BNE     16$             ,BRANCH IF NOT ANTICIPATED
 5523
 5524                                  ,THE FPS ERROR WAS ANTICIPATED SO RETURN
 5525  023442  000161  000046                  JMP     46(R1)
 5526
 5527                                  ,THE FPS FAILURE WAS NOT ANTICIPATED SO REPORT IT HERE
 5528  023446  011102                  16$     MOV     (R1),R2
```

```
5529  023450  006302                          ASL     R2
5530  023452  006302                          ASL     R2
5531  023454  062702  023526                  ADD     #NATER2,R2
5532  023460  000112                          JMP     (R2)            ,GO TO THE PROPER ERROR CALL
5533
5534                                  ,REPORT THAT THE FEC WAS INCORRECT
5535  023462  016137  000040  001256  20$:    MOV     40(R1),@#$TMP12
5536  023470  010537  001254                  MOV     R5,@#$TMP11
5537  023474  011102                          MOV     (R1),R2
5538  023476  006302                          ASL     R2
5539  023500  006302                          ASL     R2
5540  023502  062702  023542                  ADD     #NATER3,R2
5541  023506  000112                          JMP     (R2)            ,GO TO THE PROPER ERROR CALL
5542
5543                                  ,THESE ARE THE ERROR CALLS FOR EACH INDIVIDUAL INSTRUCTION AND CONDITION
5544  023510  104165                  NATER1: ERROR   165             ,NEGD BAD DATA
5545  023512  000403                          BR      NATRET
5546  023514  104166                          ERROR   166             ,ABSD BAD DATA
5547  023516  000401                          BR      NATRET
5548  023520  104167                          ERROR   167             ,TSTD BAD DATA
5549  023522  000161  000050          NATRET: JMP     50(R1)
5550
5551                                  ,FPS INCORRECT
5552  023526  104170                  NATER2: ERROR   170             ,NEGD FPSX
5553  023530  000774                          BR      NATRET
5554  023532  104171                          ERROR   171             ,ABSD FPSX
5555  023534  000772                          BR      NATRET
5556  023536  104172                          ERROR   172             ,TSTD FPSX
5557  023540  000770                          BR      NATRET
5558
5559                                  ,FEC INCORRECT.
5560  023542  104173                  NATER3: ERROR   173             ,NEGD FECX
5561  023544  000766                          BR      NATRET
5562  023546  104174                          ERROR   174             ,ABSD FECX
5563  023550  000764                          BR      NATRET
5564  023552  104175                          ERROR   175             ,TSTD FECX
5565  023554  000762                          BR      NATRET
5566
5567  023556  177777                          .WORD   -1
5568  023560  177777  177777  177777  NATBF1: .WORD   -1,-1,-1,-1,-1
5569  023566  177777  177777
5570
5571  023572                          WWBDONE:
5572  023572  104412                          RSETUP                  ,GO INITIALIZE THE FPS AND STACK, AND
5573                                                                  ,SEE IF THE USER HAS EXPRESSED
5574                                                                  ;THE DESIRE TO CHANGE THE SOFTWARE
5575                                                                  ,VIRTUAL CONSOLE SWITCH REGISTER (HAS
5576                                                                  ,THE USER TYPED CONTROL G?)
5577
5578
5579
5580                                  ;,*****************************************************************
5581                                  ;*TEST 45        SOURCE MODES, MODE 1 (FL=0), TEST
5582                                  ;*
5583                                  ;*  THIS IS A TEST OF SOURCE MODE 1
5584                                  ;*  USING THE LDFPS INSTR
```

```
5585                                    ;*
5586                                    ;;**********************************************************************
5587  023574  000004                    TST45:  SCOPE
5588
5589
5590  023576                            AAC1
5591  023576  104413                            LPERR                   ;SET UP THE LOOP ON ERROR ADDRESS
5592
5593  023600  012700  023656                    MOV     #AACTP1,R0      ;SET UP TEST DATA IN BUFFER
5594  023604  012710  147517                    MOV     #147517,(R0)
5595  023610  012737  147517  001240            MOV     #147517,@#$TMP3 ;SAVE DATA IN CASE OF ERROR
5596  023616  012737  023632  001236            MOV     #AAC2,@#$TMP2
5597  023624  012737  023716  000004            MOV     #AAC20,@#ERRVECT        ;SET UP FOR TRAPS TO 4
5598  023632  170110                    AAC2:   LDFPS   (R0)            ;TEST INSTRUCTION
5599
5600  023634  170205                            STFPS   R5              ;GET FPS
5601
5602  023636  020027  023656                    CMP     R0,#AACTP1      ;IS R0 CORRECT?
5603  023642  001007                            BNE     AAC10           ;BR IF NOT.
5604  023644  022705  147517                    CMP     #147517,R5      ;IS FPS CORRECT?
5605  023650  001013                            BNE     AAC11           ;BR IF NOT.
5606  023652  000437                            BR      AACDONE
5607
5608                                    ;TEST BUFFER AND DATA:
5609  023654  177777                            -1
5610  023656  147517                    AACTP1: 147517
5611  023660  177777                            -1
5612
5613                                    ;REPORT R0 INCORRECT.
5614  023662  012737  023656  001240    AAC10:  MOV     #AACTP1,@#$TMP3
5615  023670  010037  001242                    MOV     R0,@#$TMP4
5616  023674  104225                    1$:     ERROR   225             ;R0 BAD BUT FSRC FAILED
5617  023676  000425                            BR      AACDONE
5618
5619                                    ;REPORT FPS INCORRECT.
5620  023700  012737  147517  001240    AAC11:  MOV     #147517,@#$TMP3 ;REPORT FPS INCORRECT
5621  023706  010537  001242                    MOV     R5,@#$TMP4
5622  023712  104226                    1$:     ERROR   226
5623  023714  000416                            BR      AACDONE
5624
5625                                    ;TRAP HERE THROUGH VECTOR FOUR. SEE IF THE TRAP WAS DURING
5626                                    ;EXECUTION OF THE FPS INSTRUCTION BEING TESTED  IF SO REPORT
5627                                    ;FAILURE. OTHERWISE GO TO THE SPURIOUS TRAP TO 4 HANDLING
5628  023716                            AAC20:
5629  023716  011602                            MOV     (SP),R2
5630  023720  020227  023634                    CMP     R2,#AAC2+2
5631  023724  001405                            BEQ     1$
5632  023726  020227  023636                    CMP     R2,#AAC2+4
5633  023732  001402                            BEQ     1$
5634  023734  000137  042610                    JMP     @#CPSPUR
5635  023740  022626                    1$.     CMP     (SP)+,(SP)+
5636  023742  010237  001236                    MOV     R2,@#$TMP2
5637  023746  104227                    2$.     ERROR   227             ;ODD ADRES
5638  023750  000400                            BR      AACDONE         ;BUT FDSTX IN ST 771
5639
5640  023752                            AACDONE:
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 5641  023752  104412                          RSETUP                  ,GO INITIALIZE THE FPS AND STACK, AND
 5642                                                                  ;SEE IF THE USER HAS EXPRESSED
 5643                                                                  ;THE DESIRE TO CHANGE THE SOFTWARE
 5644                                                                  ;VIRTUAL CONSOLE SWITCH REGISTER (HAS
 5645                                                                  ;THE USER TYPED CONTROL G?)
 5646
 5647
 5648                                  ,,**********:**********:**************************************
 5649                                  ,*TEST 46       SOURCE MODES, MODE 2 (FL=0), TEST
 5650                                  ;*
 5651                                  ,*  THIS IS A TEST OF SOURCE MODE 2
 5652                                  ,*  USING THE LDFPS INSTR
 5653                                  ;*
 5654                                  ;;**********************************************************************
 5655  023754  000004                  TST46:  SCOPE
 5656
 5657  023756                          BBC1:
 5658  023756  104413                          LPERR                   ,SET UP THE LOOP ON ERROR ADDRESS
 5659
 5660  023760  012700  024036                  MOV     #BBCTP1,R0      ,SET UP TEST DATA IN BUFFER
 5661  023764  012710  145212                  MOV     #145212,(R0)
 5662  023770  012737  145212  001240          MOV     #145212,@#$TMP3 ;SAVE DATA IN CASE OF ERROR
 5663  023776  012737  024012  001236          MOV     #BBC2,@#$TMP2
 5664  024004  012737  024076  000004          MOV     #BBC20,@#ERRVECT ;SET UP FOR TRAPS TO 4
 5665
 5666  024012  170120                  BBC2:   LDFPS   (R0)+           ;TEST INSTRUCTION
 5667
 5668  024014  170205                          STFPS   R5              ;GET FPS
 5669
 5670  024016  020027  024040                  CMP     R0,#BBCTP1+2    ,IS R0 CORRECT?
 5671  024022  001007                          BNE     BBC10           ,BR IF NOT.
 5672  024024  022705  145212                  CMP     #145212,R5      ;IS THE FPS CORRECT?
 5673  024030  001013                          BNE     BBC11           ,BR IF NOT
 5674  024032  000436                          BR      BBCDONE
 5675
 5676
 5677                                  ;TEST BUFFER AND DATA:
 5678  024034  177777                          -1
 5679  024036  177777                  BBCTP1  .WORD   -1
 5680  024040  177777                          -1
 5681
 5682
 5683                                  ;REPORT R0 INCORRECT.
 5684  024042  012737  024040  001240  BBC10:  MOV     #BBCTP1+2,@#$TMP3
 5685  024050  010037  001242                  MOV     R0,@#$TMP4
 5686  024054  104230                  1$:     ERROR   230             ;R0 BAD BUT FSRC FAILED
 5687  024056  000424                          BR      BBCDONE
 5688
 5689                                  ,REPORT FPS INCORRECT.
 5690  024060  012737  145212  001240  BBC11:  MOV     #145212,@#$TMP3 ,REPORT FPS INCORRECT
 5691  024066  010537  001242                  MOV     R5,@#$TMP4
 5692  024072  104231                  1$.     ERROR   231
 5693  024074  000415                          BR      BBCDONE
 5694
 5695                                  ,TRAP HERE THROUGH VECTOR FOUR. SEE IF THE TRAP WAS DURING
 5696                                  ,EXECUTION OF THE FPS INSTRUCTION BEING TESTED  IF SO REPORT
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5697                                    ,FAILURE  OTHERWISE GO TO THE SPURIOUS TRAP TO 4 HANDLING
5698  024076                            BBC20
5699  024076  011602                            MOV     (SP),R2
5700  024100  020227  024014                    CMP     R2,#BBC2+2
5701  024104  001405                            BEQ     1$
5702  024106  020227  024016                    CMP     R2,#BBC2+4
5703  024112  001402                            BEQ     1$
5704  024114  000137  042610                    JMP     @#CPSPUR
5705  024120  022626                    1$      CMP     (SP)+,(SP)+
5706  024122  010237  001236                    MOV     R2,@#$TMP2
5707  024126  104232                    2$      ERROR   232             ,ODD ADRES
5708                                                                    ,BUT FDSTX IN ST 771
5709
5710  024130                            BBCDONE
5711  024130  104412                            RSETUP                  ,GO INITIALIZE THE FPS AND STACK, AND
5712                                                                    ,SEE IF THE USER HAS EXPRESSED
5713                                                                    ,THE DESIRE TO CHANGE THE SOFTWARE
5714                                                                    ,VIRTUAL CONSOLE SWITCH REGISTER (HAS
5715                                                                    ,THE USER TYPED CONTROL G?)
5716
5717
5718                                    ,,*******************************************************************
5719                                    ,*TEST 47       SOURCE MODES, MODE 4 (FL=0), TEST
5720                                    ,*
5721                                    ,*  THIS IS A TEST OF SOURCE MODE 4
5722                                    ,*  USING THE LDFPS INSTR
5723                                    ,*
5724                                    ,,*******************************************************************
5725  024132  000004                    TST47   SCOPE
5726
5727  024134                            DDC1
5728  024134  104413                            LPERR                   ,SET UP THE LOOP ON ERROR ADDRESS
5729
5730  024136  012700  024226                    MOV     #DDCTP1+2,R0    ,SET UP THE TEST DATA BUFFER
5731  024142  012760  105252  177776            MOV     #105252,-2(R0)
5732  024150  012737  105252  001240            MOV     #105252,@#$TMP3 ,SAVE DATA IN CASE OF ERROR
5733  024156  012737  024172  001236            MOV     #DDC2,@#$TMP2
5734  024164  012737  024272  000004            MOV     #DDC20,@#ERRVEC
5735  024172  170140                    DDC2    LDFPS   -(R0)
5736  024174  170205                            STFPS   R5
5737  024176  020027  024224                    CMP     R0,#DDCTP1
5738  024202  001015                            BNE     DDC10
5739  024204  022705  105252                    CMP     #105252,R5
5740  024210  001021                            BNE     DDC11
5741  024212  000444                            BR      DDCDONE
5742
5743  024214  177777  177777  177777            -1,-1,-1,-1
5744  024222  177777
5745  024224  177777                    DDCTP1  -1
5746  024226  177777  177777  177777            -1,-1,-1,-1
5747  024234  177777
5748
5749  024236  012737  024224  001240    DDC10   MOV     #DDCTP1,@#$TMP3
5750  024244  010037  001242                    MOV     R0,@#$TMP4
5751  024250  104233                    1$      ERROR   233             ,R0 BAD BUT FSRC FAILED
5752  024252  000424                            BR      DDCDONE
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 5753  024254  012737  105252  001240  DDC11   MOV     #105252,@#$TMP3 ,REPORT FPS INCORRECT
 5754  024262  010537  001242          DDC11   MOV     R5,@#$TMP4
 5755  024266  104234                  1$      ERROR   234
 5756  024270  000415                          BR      DDCDONE
 5757  024272  011602                  DDC20   MOV     (SP),R2
 5758  024274  020227  024174                  CMP     R2,#DDC2+2
 5759  024300  001405                          BEQ     1$
 5760  024302  020227  024176                  CMP     R2,#DDC2+4
 5761  024306  001402                          BEQ     1$
 5762  024310  000137  042610                  JMP     @#CPSPUR
 5763  024314  022626                  1$      CMP     (SP)+,(SP)+
 5764  024316  010237  001236                  MOV     R2,@#$TMP2
 5765  024322  104235                  2$      ERROR   235             ,DDD ADRES
 5766  024324                          DDCDONE
 5767  024324  104412                          RSETUP                  ,GO INITIALIZE THE FPS AND STACK, AND
 5768                                                                  ,SEE IF THE USER HAS EXPRESSED
 5769                                                                  ,THE DESIRE TO CHANGE THE SOFTWARE
 5770                                                                  ,VIRTUAL CONSOLE SWITCH REGISTER (HAS
 5771                                                                  ,THE USER TYPED CONTROL G?)
 5772                                  ,,**************************************************************
 5773                                  ,*TEST 50       SOURCE MODES, MODE 3 (FL=0), TEST
 5774                                  ,*
 5775                                  ,*  THIS IS A TEST OF SOURCE MODE 3
 5776                                  ,*  USING THE LDFPS INSTR
 5777                                  ;*
 5778                                  ,;**************************************************************
 5779  024326  000004                  TST50:  SCOPE
 5780  024330                          EEC1:
 5781  024330  104413                          LPERR                   ,SET UP THE LOOP ON ERROR ADDRESS
 5782  024332  012700  024434                  MOV     #EECTP2,R0
 5783  024336  012710  024424                  MOV     #EECTP1,(R0)
 5784  024342  012767  103456  000054          MOV     #103456,EECTP1
 5785  024350  012737  103456  001240          MOV     #103456,@#$TMP3
 5786  024356  012737  024372  001236          MOV     #EEC2,@#$TMP2
 5787  024364  012737  024502  000004          MOV     #EEC20,@#ERRVECT ,SET UP FOR TRAPS TO 4
 5788  024372  170130                  EEC2    LDFPS   @(R0)+          ,TEST INSTRUCTION
 5789  024374  170205                          STFPS   R5              ;GET THE FPS
 5790  024376  020027  024436                  CMP     R0,#EECTP2+2    ,IS R0 CORRECT?
 5791  024402  001021                          BNE     EEC10           ,BR IF NOT
 5792  024404  022705  103456                  CMP     #103456,R5      ,IS THE FPS CORRECT?
 5793  024410  001025                          BNE     EEC11           ,BR IF NOT
 5794  024412  000450                          BR      EECDONE
 5795
 5796
 5797                                  ,TEST BUFFER AND DATA
 5798  024414  177777  177777  177777          -1,-1,-1,-1
 5799  024422  177777
 5800  024424  177777                  EECTP1  -1
 5801  024426  177777  177777  177777          -1,-1,-1
 5802  024434  024424  177777  177777  EECTP2: EECTP1,-1,-1,-1,
 5803  024442  177777  000000
 5804
 5805
 5806                                  ,REPORT R0 INCORRECT
 5807  024446  012737  024436  001240  EEC10   MOV     #EECTP2+2,@#$TMP3
 5808  024454  010037  001242                  MOV     R0,@#$TMP4
```

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5809  024460  104236                  1$      ERROR   236             ,R0 BAD BUT FSRC FAILED
5810  024462  000424                          BR      EECDONE
5811
5812                                  ,REPORT FPS INCORRECT
5813  024464  012737  103456  001240  EEC11   MOV     #103456,@#$TMP3 ,REPORT FPS INCORRECT
5814  024472  010537  001242                  MOV     R5,@#$TMP4
5815  024476  104237                  1$      ERROR   237
5816  024500  000415                          BR      EECDONE
5817                                  ,TRAP HERE THROUGH VECTOR FOUR  SEE IF THE TRAP WAS DURING
5818                                  ,EXECUTION OF THE FPS INSTRUCTION BEING TESTED  IF SO REPORT
5819                                  ,FAILURE  OTHERWISE GO TO THE SPURIOUS TRAP TO 4 HANDLING
5820  024502  011602                  EEC20   MOV     (SP),R2
5821  024504  020227  024374                  CMP     R2,#EEC2+2
5822  024510  001405                          BEQ     1$
5823  024512  020227  024376                  CMP     R2,#EEC2+4
5824  024516  001402                          BEQ     1$
5825  024520  000137  042610                  JMP     @#CPSPUR
5826  024524  022626                  1$      CMP     (SP)+,(SP)+
5827  024526  010237  001236                  MOV     R2,@#$TMP2
5828  024532  104240                  2$      ERROR   240             ,DDD ADRES
5829  024534                          EECDONE
5830  024534  104412                          RSETUP                  ;GO INITIALIZE THE FPS AND STACK, AND
5831                                                                  ,SEE IF THE USER HAS EXPRESSED
5832                                                                  ,THE DESIRE TO CHANGE THE SOFTWARE
5833                                                                  ,VIRTUAL CONSOLE SWITCH REGISTER (HAS
5834                                                                  ,THE USER TYPED CONTROL G?)
5835                                  ,,*********************************************************************
5836                                  ,*TEST 51       SOURCE MODES, MODE 5 (FL=0), TEST
5837                                  ,*
5838                                  ,*  THIS IS A TEST OF SOURCE MODE 5
5839                                  ,*  USING THE LDFPS INSTR
5840                                  ,*
5841                                  ,;*********************************************************************
5842  024536  000004                  TST51:  SCOPE
5843  024540                          FFC1
5844  024540  104413                          LPERR                   ,SET UP THE LOOP ON ERROR ADDRESS
5845  024542  012700  024642                  MOV     #FFCTP2+2,R0    ,SET UP THE TEST DATA BUFFER
5846  024546  012760  024630  177776          MOV     #FFCTP1,-2(R0)
5847  024554  012737  045412  024630          MOV     #45412,@#FFCTP1
5848  024562  012737  045412  001240          MOV     #45412,@#$TMP3  ;SAVE DATA IN CASE OF ERROR
5849  024570  012737  024540  001236          MOV     #FFC1,@#$TMP2
5850  024576  012737  024704  000004          MOV     #FFC20,@#ERRVECT ,SET UP FOR TRAPS TO 4
5851  024604  170150                  FFC2    LDFPS   @-(R0)          ,TEST INSTRUCTION
5852  024606  170205                          STFPS   R5              ,GET THE FPS
5853  024610  020027  024640                  CMP     R0,#FFCTP2      ,IS R0 CORRECT?
5854  024614  001015                          BNE     FFC10           ,BR IF NOT
5855  024616  022705  045412                  CMP     #45412,R5       ,IS THE FPS CORRECT?
5856  024622  001021                          BNE     FFC11           ,BR IF NOT
5857  024624  000444                          BR      FFCDONE
5858
5859
5860                                  ,TEST BUFFER AND DATA
5861  024626  177777                          -1
5862  024630  177777                  FFCTP1: -1
5863  024632  177777  177777  177777          -1,-1,-1
5864  024640  024630  177777  177777  FFCTP2: FFCTP1,-1,-1,-1
```

```
 5865  024646  177777
 5866
 5867
 5868                                   ,REPORT RO INCORRECT
 5869  024650  012737  024640  001240  FFC10   MOV     #FFCTP2,@#$TMP3
 5870  024656  010037  001242                  MOV     R0,@#$TMP4
 5871  024662  104241                  1$      ERROR   241             ,RO BAD BUT FSRC FAILED
 5872  024664  000424                          BR      FFCDONE
 5873
 5874                                   ,REPORT FPS INCORRECT
 5875  024666  012737  045412  001240  FFC11   MOV     #45412,@#$TMP3  ,REPORT FPS INCORRECT
 5876  024674  010537  001242                  MOV     R5,@#$TMP4
 5877  024700  104242                  1$      ERROR   242
 5878  024702  000415                          BR      FFCDONE
 5879                                   ,TRAP HERE THROUGH VECTOR FOUR  SEE IF THE TRAP WAS DURING
 5880                                   ,EXECUTION OF THE FPS INSTRUCTION BEING TESTED  IF SO REPORT
 5881                                   ,FAILURE  OTHERWISE GO TO THE SPURIOUS TRAP TO 4 HANDLING
 5882  024704  011602                  FFC20:  MOV     (SP),R2
 5883  024706  020227  024606                  CMP     R2,#FFC2+2
 5884  024712  001405                          BEQ     1$
 5885  024714  020227  024610                  CMP     R2,#FFC2+4
 5886  024720  001402                          BEQ     1$
 5887  024722  000137  042610                  JMP     @#CPSPUR
 5888  024726  022626                  1$      CMP     (SP)+,(SP)+
 5889  024730  010237  001236                  MOV     R2,@#$TMP2
 5890  024734  104243                  2$      ERROR   243             ,ODD ADRES
 5891  024736                          FFCDONE
 5892  024736  104412                          RSETUP                  ,GO INITIALIZE THE FPS AND STACK, AND
 5893                                                                  ,SEE IF THE USER HAS EXPRESSED
 5894                                                                  ,THE DESIRE TO CHANGE THE SOFTWARE
 5895                                                                  ,VIRTUAL CONSOLE SWITCH REGISTER (HAS
 5896                                                                  ,THE USER TYPED CONTROL G?)
 5897                                   ,,**************************************************************************
 5898                                   ,*TEST 52       SOURCE MODES, MODE 6 (FL=0), TEST
 5899                                   ,*
 5900                                   ;*  THIS IS A TEST OF SOURCE MODE 6
 5901                                   ,*  USING THE LDFPS INSTR
 5902                                   ,*
 5903                                   ,,**************************************************************************
 5904  024740  000004                  TST52:  SCOPE
 5905  024742                          GGC1:
 5906  024742  104413                          LPERR                   ,SET UP THE LOOP ON ERROR ADDRESS
 5907  024744  012700  017633                  MOV     #GGCTP1-5201,R0 ,SET UP THE TEST DATA BUFFER
 5908  024750  012737  046543  025034          MOV     #46543,@#GGCTP1
 5909  024756  012737  046543  001240          MOV     #46543,@#$TMP3  ,SAVE DATA IN CASE OF ERROR
 5910  024764  012737  025002  001236          MOV     #GGC2,@#$TMP2
 5911  024772  005001                          CLR     R1
 5912  024774  012737  025122  000004          MOV     #GGC20,@#ERRVECT ,SET UP FOR TRAPS TO 4
 5913  025002  170160  005201          GGC2    LDFPS   5201(R0)                ,TEST INSTRUCTION
 5914  025006  170204                          STFPS   R4              ,GET THE FPS
 5915  025010  005701                          TST     R1              ,WAS PC CORRECT AFTER EXECUTION?
 5916  025012  001033                          BNE     GGC25           ,BR IF NOT
 5917  025014  020027  017633                  CMP     R0,#GGCTP1-5201 ,IS R0 CORRECT?
 5918  025020  001012                          BNE     GGC10           ,BR IF NOT
 5919  025022  022704  046543                  CMP     #46543,R4       ,IS THE FPS CORRECT?
 5920  025026  001016                          BNE     GGC11           ,BR IF NOT
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 5921  025030  000451                          BR      GGCDONE
 5922
 5923
 5924                                  ,TEST BUFFER AND DATA
 5925  025032  177777                          -1
 5926  025034  177777  177777  177777  GGCTP1  -1,-1,-1,-1
 5927  025042  177777
 5928  025044  177777                          -1
 5929
 5930                                  ,REPORT RO INCORRECT
 5931  025046  012737  017633  001240  GGC10.  MOV     #GGCTP1-5201,@#$TMP3
 5932  025054  010037  001242                  MOV     R0,@#$TMP4
 5933  025060  104244                  1$      ERROR   244             ,R0 BAD BUT FSRC FAILED
 5934  025062  000434                          BR      GGCDONE
 5935
 5936                                  ,REPORT FPS INCORRECT
 5937  025064  012737  046543  001240  GGC11.  MOV     #46543,@#$TMP3  ,REPORT FPS INCORRECT
 5938  025072  010437  001242                  MOV     R4,@#$TMP4
 5939  025076  104245                  1$      EPROR   245
 5940  025100  000425                          BR      GGCDONE
 5941
 5942                                  ,REPORT PC INCORRECT AFTER INSTRUCTION
 5943  025102  01273/  025006  001240  GGC25   MOV     #GGC2+4,@#$TMP3
 5944  025110  012737  025004  001242          MOV     #GGC2+2,@#$TMP4
 5945  025116  104246                  1$      ERROR   246             ,PC X
 5946  025120  000415                          BR      GGCDONE
 5947                                  ,TRAP HERE THROUGH VECTOR FOUR  SEE IF THE TRAP WAS DURING
 5948                                  ,EXECUTION OF THE FPS INSTRUCTION BEING TESTED  IF SO REPORT
 5949                                  ,FAILURE  OTHERWISE GO TO THE SPURIOUS TRAP TO 4 HANDLING
 5950  025122  011602                  GGC20   MOV     (SP),R2
 5951  025124  020227  025004                  CMP     R2,#GGC2+2
 5952  025130  001405                          BEQ     1$
 5953  025132  020227  025006                  CMP     R2,#GGC2+4
 5954  025136  001402                          BEQ     1$
 5955  025140  000137  042610                  JMP     @#CPSPUR
 5956  025144  022626                  1$      CMP     (SP)+,(SP)+
 5957  025146  010237  001236                  MOV     R2,@#$TMP2
 5958  025152  104247                  2$      ERROR   247             ,ODD ADRES
 5959  025154                          GGCDONE
 5960  025154  104412                          RSETUP                  ,GO INITIALIZE THE FPS AND STACK, AND
 5961                                                                  ,SEE IF THE USER HAS EXPRESSED
 5962                                                                  ,THE DESIRE TO CHANGE THE SOFTWARE
 5963                                                                  ,VIRTUAL CONSOLE SWITCH REGISTER (HAS
 5964                                                                  ,THE USER TYPED CONTROL G?)
 5965                                  ,,**************************************************************
 5966                                  ,*TEST 53       SOURCE MODES, MODE 7 (FL=0), TEST
 5967                                  ,*
 5968                                  ,*  THIS IS A TEST OF SOURCE MODE 7
 5969                                  ,*  USING THE LDFPS INSTR
 5970                                  ,*
 5971                                  ,,**************************************************************
 5972  025156  000004                  TST53   SCOPE
 5973  025160                          HHC1
 5974  025160  104413                          LPERR                   ,SET UP THE LOOP ON ERROR ADDRESS
 5975  025162  012700  020067                  MOV     #HHCTP2-5201,R0 ,SET UP THE TEST DATA BUFFER
 5976  025166  012760  025260  005201          MOV     #HHCTP1,5201(R0)
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 5977  025174  012737  004547  025260          MOV     #4547,@#HHCTP1
 5978  025202  012737  004547  001240          MOV     #4547,@#$TMP3   ,SAVE DATA IN CASE OF ERROR
 5979  025210  012737  025226  001236          MOV     #HHC2,@#$TMP2
 5980  025216  005001                          CLR     R1
 5981  025220  012737  025354  000004          MOV     #HHC20,@#ERRVECT ,SET UP FOR TRAPS TO 4
 5982  025226  170170  005201          HHC2    LDFPS   @5201(R0)               ,TEST INSTRUCTION
 5983  025232  170204                          STFPS   R4              ,GET THE FPS.
 5984  025234  005701                          TST     R1              ,WAS PC CORRECT AFTER EXECUTION?
 5985  025236  001036                          BNE     HHC25           ,BR IF NOT
 5986  025240  020027  020067                  CMP     R0,#HHCTP2-5201 ,IS R0 CORRECT?
 5987  025244  001015                          BNE     HHC10           ,BR IF NOT
 5988  025246  022704  004547                  CMP     #4547,R4        ,IS THE FPS CORRECT?
 5989  025252  001021                          BNE     HHC11           ,BR IF NOT
 5990  025254  000454                          BR      HHCDONE
 5991
 5992
 5993                                  ,TEST BUFFER AND DATA
 5994  025256  177777                          -1
 5995  025260  177777  177777  177777  HHCTP1   WORD -1,-1,-1,-1
 5996  025266  177777
 5997  025270  177777  177777  177777  HHCTP2   WORD -1,-1,-1,-1
 5998  025276  177777
 5999
 6000                                  ,REPORT R0 INCORRECT
 6001  025300  012737  020067  001240  HHC10   MOV     #HHCTP2-5201,@#$TMP3
 6002  025306  010037  001242                  MOV     R0,@#$TMP4
 6003  025312  104250                  1$      ERROR   250             ,R0 BAD BUT FSRC FAILED
 6004  025314  000434                          BR      HHCDONE
 6005
 6006                                  ,REPORT FPS INCORRECT
 6007  025316  012737  004547  001240  HHC11   MOV     #4547,@#$TMP3   ,REPORT FPS INCORRECT
 6008  025324  010437  001242                  MOV     R4,@#$TMP4
 6009  025330  104251                  1$      ERROR   251
 6010  025332  000425                          BR      HHCDONE
 6011
 6012                                  ,REPORT PC INCORRECT AFTER INSTRUCTION
 6013  025334  012737  025232  001240  HHC25   MOV     #HHC2+4,@#$TMP3
 6014  025342  012737  025230  001242          MOV     #HHC2+2,@#$TMP4
 6015  025350  104252                  1$      ERROR   252             ,PC X
 6016  025352  000415                          BR      HHCDONE
 6017                                  ,TRAP HERE THROUGH VECTOR FOUR  SEE IF THE TRAP WAS DURING
 6018                                  ,EXECUTION OF THE FPS INSTRUCTION BEING TESTED  IF SO REPORT
 6019                                  ,FAILURE.  OTHERWISE GO TO THE SPURIOUS TRAP TO 4 HANDLING
 6020  025354  011602                  HHC20   MOV     (SP),R2
 6021  025356  020227  025230                  CMP     R2,#HHC2+2
 6022  025362  001405                          BEQ     1$
 6023  025364  020227  025232                  CMP     R2,#HHC2+4
 6024  025370  001402                          BEQ     1$
 6025  025372  000137  042610                  JMP     @#CPSPUR
 6026  025376  022626                  1$      CMP     (SP)+,(SP)+
 6027  025400  010237  001236                  MOV     R2,@#$TMP2
 6028  025404  104253                  2$      ERROR   253             ,DDD ADDRESS
 6029  025406                          HHCDONE
 6030  025406  104412                          RSETUP                  ,GO INITIALIZE THE FPS AND STACK.  AND
 6031                                                                  ,SEE IF THE USER HAS EXPRESSED
 6032                                                                  ,THE DESIRE TO CHANGE THE SOFTWARE
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6033                                                    ,VIRTUAL CONSOLE SWITCH REGISTER (HAS
6034                                                    ,THE USER TYPED CONTROL G?)
6035
6036
6037
6038                            ,,**********************************************************************
6039                            ,*TEST 54       SOURCE MODES, MODE 2 GR7 (FL=1), TEST
6040                            ,*
6041                            ,* THIS IS A TEST OF THE LDCLD WITH
6042                            ,* IMMEDIATE ADDRESSING MODE
6043                            ,*
6044                            ,,**************************************************:*****************
6045  025410  000004            TST54   SCOPE
6046
6047  025412                    IIC1
6048  025412  104413                    LPERR                       ,SET UP THE LOOP ON ERROR ADDRESS
6049  025414  012737  025440  001236    MOV     #IIC2,@#$TMP2       ,SAVE DATA IN CASE OF ERROR
6050  025422  012737  025512  000004    MOV     #IIC20,@#ERRVECT    ,SET UP FOR TRAPS TO 4
6051  025430  012700  000300            MOV     #300,R0
6052  025434  170100                    LDFPS   R0
6053  025436  005001                    CLR     R1
6054
6055  025440  177027            IIC2    LDCLD   (R7)+,AC0                   ,TEST INSTRUCTION
6056  025442  005201                    5201
6057  025444  005201                    5201
6058  025446  005201                    5201
6059  025450  005201                    5201
6060
6061  025452  020127  000003            CMP     R1,#3               ,WAS PC CORRECT AFTER EXECUTION?
6062  025456  001421                    BEQ     IICDONE             ,BR IF YES
6063
6064
6065                            ,REPORT PC INCORRECT AFTER INSTRUCTION
6066  025460  012704  025444  IIC3    MOV     #IIC2+4,R4
6067  025464  162701  000003            SUB     #3,R1
6068  025470  006301                    ASL     R1
6069  025472  160104                    SUB     R1,R4
6070  025474  010437  001242            MOV     R4,@#$TMP4
6071  025500  012737  025444  001240    MOV     #IIC2+4,@#$TMP3
6072  025506  104254            1$      ERROR   254                 ,BAD CONSTANT
6073  025510  000404                    BR      IICDONE
6074                            ,TRAP HERE THROUGH VECTOR FOUR  SEE IF THE TRAP WAS DURING
6075                            ,EXECUTION OF THE FPS INSTRUCTION BEING TESTED  IF SO REPORT
6076                            ,FAILURE. OTHERWISE GO TO THE SPURIOUS TRAP TO 4 HANDLING
6077  025512  011637  001236  IIC20.  MOV     (SP),@#$TMP2
6078  025516  022626                    CMP     (SP)+,(SP)+
6079  025520  104255            1$      ERROR   255                 ,BAD CONSTANT ODD ADD
6080
6081  025522                    IICDONE
6082  025522  104412                    RSETUP                      ,GO INITIALIZE THE FPS AND STACK, AND
6083                                                                ,SEE IF THE USER HAS EXPRESSED
6084                                                                ,THE DESIRE TO CHANGE THE SOFTWARE
6085                                                                ,VIRTUAL CONSOLE SWITCH REGISTER (HAS
6086                                                                ,THE USER TYPED CONTROL G?)
6087
6088
```

```
6089                                    ;;**********************************************************************
6090                                    ;*TEST 55        SOURCE MODES, MODE 2 (FL=1), TEST
6091                                    ;*
6092                                    ;* THIS IS A TEST OF THE LDCLD INSTR
6093                                    ;* WITH MODE 2
6094                                    ;*
6095                                    ;;**********************************************************************
6096  025524  000004                    TST55   SCOPE
6097
6098  025526                            TCC1
6099  025526  104413                           LPERR                   ;SET UP THE LOOP ON ERROR ADDRESS
6100  025530  016737  000014  001236           MOV     TCC2,@#$TMP2    ;SAVE DATA IN CASE OF ERROR
6101  025536  012700  000300                   MOV     #300,R0
6102  025542  170100                           LDFPS   R0
6103  025544  012700  025640                   MOV     #TCCBF0,R0      ;SET UP THE TEST DATA BUFFER
6104  025550  177020                   TCC2    LDCLD   (R0)+,AC0               ;TEST INSTRUCTION
6105
6106  025552  170204                           STFPS   R4              ;GET THE FPS
6107  025554  012701  025650                   MOV     #TCCBF1,R1      ;GET THE RESULT
6108  025560  012702  000200                   MOV     #200,R2
6109  025564  170102                           LDFPS   R2
6110  025566  174011                           STD     AC0,(R1)
6111  025570  020027  025644                   CMP     R0,#TCCBF0+4    ;IS R0 CORRECT?
6112  025574  001407                           BEQ     TCC3
6113                                    ;REPORT R0 INCORRECT
6114  025576  010037  001242                   MOV     R0,@#$TMP4
6115  025602  012737  025644  001240           MOV     #TCCBF0+4,@#$TMP3
6116  025610  104256                   1$      ERROR   256             ;BAD CONST
6117  025612  000422                           BR      TCCDONE
6118
6119  025614  022704  000300           TCC3    CMP     #300,R4 ;IS THE FPS CORRECT?
6120  025620  001417                           BEQ     TCCDONE
6121
6122                                    ;REPORT FPS INCORRECT.
6123  025622  010437  001242                   MOV     R4,@#$TMP4
6124  025626  012737  000300  001240           MOV     #300,@#$TMP3
6125  025634  104257                   1$      ERROR   257             ;FPS X
6126  025636  000410                           BR      TCCDONE
6127
6128
6129                                    ;TEST BUFFER AND DATA.
6130  025640  001234  067076  054321   TCCBF0: .WORD   01234,67076,54321,012345
6131  025646  012345
6132  025650  177777  177777  177777   TCCBF1  -1,-1,-1,-1
6133  025656  177777
6134
6135  025660                            TCCDONE
6136  025660  104412                           RSETUP                  ;GO INITIALIZE THE FPS AND STACK, AND
6137                                                                    ;SEE IF THE USER HAS EXPRESSED
6138                                                                    ;THE DESIRE TO CHANGE THE SOFTWARE
6139                                                                    ;VIRTUAL CONSOLE SWITCH REGISTER (HAS
6140                                                                    ;THE USER TYPED CONTROL G?)
6141
6142
6143
6144                                    ;;**********************************************************************
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```
                                ;*TEST 56       LDCIF AND LDCLF TEST
                                ;*
                                ;* THIS IS A TEST OF THE LDCIF AND
                                ;* THE LDCLF INSTRUCTIONS
                                ;*
                                ;;*****************************************************************
025662  000004                TST56.  SCOPE


                                ;ZERO   OPERAND FL=0

025664                          KKC1
025664  104413                        LPERR                   ;SET UP THE LOOP ON ERROR ADDRESS
025666  004737  027016                JSR     PC,@#LDCFSUB    ;GO EXECUTE INSTRUCTION

025672  000000  000000          1$       WORD   0,0             ;FSRC OPERAND
025676  000000  000000          2$       WORD   0,0             ;EXPECTED RESULT.
025702  177777  177777          3$       WORD   -1,-1           ;ANTICIPATED ERRONEOUS RESULT
025706  000000                  4$      0                       ;FPS BEFORE EXECUTION.
025710  000004                          4                       ;FPS AFTER EXECUTION
025712  177777                          -1                      ;ANTICIPATED ERRONEOUS FPS
025714  104260                  5$      ERROR   260             ;REPORT RESULT INCORRECT
025716  000401                          BR      6$
025720  104261                          ERROR   261             ;REPORT FPS INCORRECT
025722                          6$
                                ;ZERO   OPERAND FL=0

025722                          KKC2
025722  104413                        LPERR                   ;SET UP THE LOOP ON ERROR ADDRESS
025724  004737  027016                JSR     PC,@#LDCFSUB    ;GO EXECUTE THE INSTRUCTION

025730  000000  177777          1$       WORD   0,-1            ;FSRC OPERAND
025734  000000  000000          2$      .WORD   0,0             ;EXPECTED RESULT.
025740  004177  177400          3$.     4177,177400             ;ANTICIPATED ERRONEOUS RESULT
025744  000000                  4$      0                       ;FPS BEFORE EXECUTION
025746  000004                          4                       ;FPS AFTER EXECUTION
025750  177777                          -1                      ;ANTICIPATED ERRONEOUS FPS
025752  104262                  5$.     ERROR   262             ;(BUT FL) ST
025754  000401                          BR      6$              ;277 TO 300
025756  104261                          ERROR   261             ;INTO 301
025760                          6$:
                                ;ZERO   OPERAND FL=1

025760                          KKC3:
025760  104413                        LPERR                   ;SET UP THE LOOP ON ERROR ADDRESS
025762  004737  027016                JSR     PC,@#LDCFSUB    ;GO EXECUTE THE INSTRUCTION

025766  000000  000000          1$       WORD   0,0             ;FSRC OPERAND.
025772  000000  000000          2$       WORD   0,0             ;EXPECTED RESULT
025776  177777  177777          3$       WORD   -1,-1           ;ANTICIPATED ERRONEOUS RESULT
026002  000100                  4$      100                     ;FPS BEFORE EXECUTION.
026004  000104                          104                     ;FPS AFTER EXECUTION
026006  000004                          4                       ;ANTICIPATED ERRONEOUS FPS
026010  104260                  5$      ERROR   260             ;REPORT RESULT INCORRECT
026012  000401                          BR      6$
026014  104263                          ERROR   263     ;FL WAS CLR'ED
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 6201  026016                          6$
 6202                                  ,OPERAND        POSITIVE        FL=0
 6203  026016                          KKC4
 6204  026016  104413                          LPERR                           ,SET UP THE LOOP ON ERROR ADDRESS
 6205  026020  004737  027016                  JSR     PC,@#LDCFSUB    ,GO EXECUTE THE INSTRUCTION
 6206  026024  040000  000000          1$       WORD    40000,0         ;FSRC OPERAND.
 6207  026030  043600  000000          2$       WORD    43600,0         ;EXPECTED RESULT.
 6208  026034  047600  000000          3$       WORD    47600,0         ,ANTICIPATED ERRONEOUS RESULT
 6209  026040  000017                  4$       17                      ;FPS BEFORE EXECUTION.
 6210  026042  000000                           0                       ;FPS AFTER EXECUTION.
 6211  026044  177777                           -1                      ;ANTICIPATED ERRONEOUS FPS
 6212  026046  104264                  5$       ERROR   264     ,ST 107 BAD
 6213  026050  000401                           BR      6$              ,CONSTANT 231 INSD
 6214  026052  104261                           ERROR   261             ;215
 6215  026054                          6$
 6216                                  ,OPERAND=1,     FL=0
 6217  026054                          KKC5
 6218  026054  104413                          LPERR                           ;SET UP THE LOOP ON ERROR ADDRESS
 6219  026056  004737  027016                  JSR     PC,@#LDCFSUB    ,GO EXECUTE THE INSTRUCTION
 6220  026062  000001  000000          1$       WORD    1,0             ;FSRC OPERAND.
 6221  026066  040200  000000          2$       WORD    40200,0         ;EXPECTED RESULT.
 6222  026072  044200  000000          3$       .WORD   44200,0         ;ANTICIPATED ERRONEOUS RESULT
 6223  026076  000017                  4$       17                      ,FPS BEFORE EXECUTION.
 6224  026100  000000                           0                       ;FPS AFTER EXECUTION.
 6225  026102  177777                           -1                      ,ANTICIPATED ERRONEOUS FPS
 6226  026104  104264                  5$       ERROR   264             ;REPORT RESULT INCORRECT
 6227  026106  000401                           BR      6$
 6228  026110  104261                           ERROR   261             ,REPORT FPS INCORRECT
 6229  026112                          6$
 6230
 6231
 6232                                  ,OPERAND=       PATTERN FL=0
 6233  026112                          KKC6
 6234  026112  104413                          LPERR                           ,SET UP THE LOOP ON ERROR ADDRESS
 6235  026114  004737  027016                  JSR     PC,@#LDCFSUB    ,GO EXECUTE THE INSTRUCTION
 6236  026120  000252  000000          1$       WORD    252,0           ;FSRC OPERAND.
 6237  026124  042052  000000          2$       .WORD   42052,0         ,EXPECTED RESULT.
 6238  026130  046052  000000          3$:      .WORD   46052,0         ;ANTICIPATED ERRONEOUS RESULT
 6239  026134  000000                  4$       0                       ;FPS BEFORE EXECUTION.
 6240  026136  000000                           0                       ;FPS AFTER EXECUTION.
 6241  026140  177777                           -1                      ;ANTICIPATED ERRONEOUS FPS
 6242  026142  104264                  5$       ERROR   264             ;REPORT RESULT INCORRECT
 6243  026144  000401                           BR      6$
 6244  026146  104261                           ERROR   261             ;REPORT FPS INCORRECT
 6245  026150                          6$·
 6246
 6247                                  ;OPERAND=-40000 FL=0
 6248  026150                          KKC7
 6249  026150  104413                          LPERR                           ,SET UP THE LOOP ON ERROR ADDRESS
 6250  026152  004737  027016                  JSR     PC,@#LDCFSUB    ;GO EXECUTE THE INSTRUCTION
 6251  026156  140000  000000          1$       WORD    -40000,0                ;FSRC OPERAND
 6252  026162  143600  000000          2$       WORD    143600,0                ;EXPECTED RESULT
 6253  026166  043600  000000          3$       WORD    43600,0         ;ANTICIPATED ERRONEOUS RESULT
 6254  026172  000007                  4$       7                       ,FPS BEFORE EXECUTION.
 6255  026174  000010                           10                      ,FPS AFTER EXECUTION
 6256  026176  177777                           -1                      ,ANTICIPATED ERRONEOUS FPS
```

```
6257  026200  104265                5$      ERROR   265             ;(SET SIGN) ST 146
6258  026202  000401                        BR      6$
6259  026204  104261                        ERROR   261             ;REPORT FPS INCORRECT
6260  026206                        6$
6261
6262                                ;OPERAND=-1     FL-0
6263  026206                        KKC8
6264  026206  104413                        LPERR                   ;SET UP THE LOOP ON ERROR ADDRESS
6265  026210  004737  027016                JSR     PC,@#LDCFSUB    ;GO EXECUTE THE INSTRUCTION
6266  026214  177777  000000        1$      .WORD   -1,0            ;FSRC OPERAND
6267  026220  140200  000000        2$      WORD    140200,0                ;EXPECTED RESULT
6268  026224  144000  000400        3$      WORD    144000,400              ;ANTICIPATED ERRONEOUS RESULT
6269  026230  000000                4$      0                       ;FPS BEFORE EXECUTION
6270  026232  000010                        10                      ;FPS AFTER EXECUTION
6271  026234  177777                        -1                      ;ANTICIPATED ERRONEOUS FPS
6272  026236  104266                5$      ERROR   266             ;ST 372 TO 152 INTO
6273  026240  000401                        BR      6$              ;112 (BUF XNBT)
6274  026242  104261                        ERROR   261             ;REPORT FPS INCORRECT
6275  026244                        6$
6276
6277                                ;OPERAND=PATTERN        FL=0
6278  026244                        KKC9
6279  026244  104413                        LPERR                   ;SET UP THE LOOP ON ERROR ADDRESS
6280  026246  004737  027016                JSR     PC,@#LDCFSUB    ;GO EXECUTE THE INSTRUCTION
6281  026252  125252  000000        1$.     WORD    125252,0                ;FSRC OPERAND
6282  026256  143652  126000        2$      WORD    143652,126000           ;EXPECTED RESULT
6283  026262  043652  126000        3$.     .WORD   43652,126000            ;ANTICIPATED ERRONEOUS RESULT
6284  026266  000007                4$.     7                       ;FPS BEFORE EXECUTION
6285  026270  000010                        10                      ;FPS AFTER EXECUTION.
6286  026272  177777                        -1                      ;ANTICIPATED ERRONEOUS FPS
6287  026274  104265                5$      ERROR   265             ;REPORT RESULT INCORRECT
6288  026276  000401                        BR      6$
6289  026300  104261                        ERROR   261             ;REPORT FPS INCORRECT
6290  026302                        6$
6291
6292                                ;OPERAND        POS     FL-1
6293  026302                        KKC10:
6294  026302  104413                        LPERR                   ;SET UP THE LOOP ON ERROR ADDRESS
6295  026304  004737  027016                JSR     PC,@#LDCFSUB    ;GO EXECUTE THE INSTRUCTION
6296  026310  040000  000000        1$      WORD    40000,0         ;FSRC OPERAND.
6297  026314  047600  000000        2$:     .WORD   47600,0         ;EXPECTED RESULT
6298  026320  043600  000000        3$:     WORD    43600,0         ;ANTICIPATED ERRONEOUS RESULT
6299  026324  000117                4$      117                     ;FPS BEFORE EXECUTION
6300  026326  000100                        100                     ;FPS AFTER EXECUTION
6301  026330  177777                        -1                      ;ANTICIPATED ERRONEOUS FPS
6302  026332  104267                5$      ERROR   267     ;ST 107 CONSTANT
6303  026334  000401                        BR      6$              ;BAD 237 INST 217
6304  026336  104261                        ERROR   261             ;REPORT FPS INCORRECT
6305  026340                        6$:
6306
6307                                ;OPERAND=1      FL=1
6308  026340                        KKC11:
6309  026340  104413                        LPERR                   ;SET UP THE LOOP ON ERROR ADDRESS
6310  026342  004737  027016                JSR     PC,@#LDCFSUB    ;GO EXECUTE THE INSTRUCTION.
6311  026346  000000  000001        1$.     .WORD   0,1             ;FSRC OPERAND
6312  026352  040200  000000        2$      .WORD   40200,0         ;EXPECTED RESULT.
```

```
6313  026356  034200  000000          3$       WORD   34200,0          ,ANTICIPATED ERRONEOUS RESULT
6314  026362  000100                  4$       100                     ,FPS BEFORE EXECUTION
6315  026364  000100                           100                     ;FPS AFTER EXECUTION.
6316  026366  177777                           -1                      ;ANTICIPATED ERRONEOUS FPS
6317  026370  104267                  5$       ERROR  267              ;REPORT RESULT INCORRECT
6318  026372  000401                           BR     6$
6319  026374  104261                           ERROR  261              ;REPORT FPS INCORRECT
6320  026376                          6$
6321
6322                                  ,OPERAND=       PATTERN FL=1
6323  026376                          KKC12
6324  026376  104413                           LPERR                  ;SET UP THE LOOP ON ERROR ADDRESS
6325  026400  004737  027016                   JSR    PC,@#LDCFSUB    ;GO EXECUTE THE INSTRUCTION
6326  026404  000000  000252          1$       WORD   0,252           ;FSRC OPERAND.
6327  026410  042052  000000          2$.      WORD   42052,0         ,EXPECTED RESULT.
6328  026414  036052  000000          3$       WORD   36052,0         ,ANTICIPATED ERRONEOUS RESULT
6329  026420  000111                  4$.      111                    ;FPS BEFORE EXECUTION.
6330  026422  000100                           100                    ,FPS AFTER EXECUTION.
6331  026424  177777                           -1                     ;ANTICIPATED ERRONEOUS FPS
6332  026426  104267                  5$.      ERROR  267             ,REPORT RESULT INCORRECT
6333  026430  000401                           BR     6$
6334  026432  104261                           ERROR  261             ,REPORT FPS INCORRECT
6335  026434                          6$.
6336
6337                                  ,OPERAND=-40000,0       FL=1
6338  026434                          KKC13:
6339  026434  104413                           LPERR                  ,SET UP THE LOOP ON ERROR ADDRESS
6340  026436  004737  027016                   JSR    PC,@#LDCFSUB    ,GO EXECUTE THE INSTRUCTION
6341  026442  140000  000000          1$       WORD   -40000,0                ;FSRC OPERAND.
6342  026446  147600  000000          2$.      .WORD  147600,0                ;EXPECTED RESULT
6343  026452  047600  000000          3$       WORD   47600,0         ,ANTICIPATED ERRONEOUS RESULT
6344  026456  000107                  4$:      107                    ;FPS BEFORE EXECUTION.
6345  026460  000110                           110                    ,FPS AFTER EXECUTION.
6346  026462  177777                           -1                     ;ANTICIPATED ERRONEOUS FPS
6347  026464  104265                  5$       ERROR  265     ;SET SIGN
6348  026466  000401                           BR     6$
6349  026470  104261                           ERROR  261             ;REPORT FPS INCORRECT
6350  026472                          6$:
6351
6352                                  ,OPERAND=-1,-1  FL=1
6353  026472                          KKC14:
6354  026472  104413                           LPERR                  ;SET UP THE LOOP ON ERROR ADDRESS
6355  026474  004737  027016                   JSR    PC,@#LDCFSUB    ;GO EXECUTE THE INSTRUCTION
6356  026500  177777  177777          1$:      .WORD  -1,-1           ;FSRC OPERAND.
6357  026504  140200  000000          2$       WORD   140200,0                ;EXPECTED RESULT.
6358  026510  150000  000000          3$:      WORD   150000,0                ;ANTICIPATED ERRONEOUS RESULT
6359  026514  000100                  4$       100                    ;FPS BEFORE EXECUTION.
6360  026516  000110                           110                    ,FPS AFTER EXECUTION.
6361  026520  177777                           -1                     ,ANTICIPATED ERRONEOUS FPS
6362  026522  104266                  5$       ERROR  266             ;(BUT XNBT)
6363  026524  000401                           BR     6$
6364  026526  104261                           ERROR  261             ;REPORT FPS INCORRECT
6365  026530                          6$
6366
6367                                  ;OPERAND=-PATTERN       FL=1,   ROUND MODE
6368  026530                          KKC15
```

```
 6369  026530  104413                        LPERR                   ;SET UP THE LOOP ON ERROR ADDRESS
 6370  026532  004737  027016                JSR     PC,@#LDCFSUB    ;GO EXECUTE THE INSTRUCTION
 6371  026536  125252  125252        1$:     .WORD   125252,125252           ;FSRC OPERAND.
 6372  026542  147652  125253        2$:     .WORD   147652,125253           ;EXPECTED RESULT.
 6373  026546  047652  125253        3$:     .WORD   47652,125253            ;ANTICIPATED ERRONEOUS RESULT
 6374  026552  000105                4$:     105                     ;FPS BEFORE EXECUTION.
 6375  026554  000110                        110                     ;FPS AFTER EXECUTION.
 6376  026556  177777                        -1                      ;ANTICIPATED ERRONEOUS FPS
 6377  026560  104265                5$:     ERROR   265             ;REPORT RESULT INCORRECT.
 6378  026562  000401                        BR      6$
 6379  026564  104261                        ERROR   261             ;REPORT FPS INCORRECT
 6380  026566                        6$:
 6381
 6382                                ,OPERAND=77777,177500   FL=1,  ROUND MODE
 6383  026566                        KKC16:
 6384  026566  104413                        LPERR                   ;SET UP THE LOOP ON ERROR ADDRESS
 6385  026570  004737  027016                JSR     PC,@#LDCFSUB    ;GO EXECUTE THE INSTRUCTION
 6386  026574  077777  177500        1$:     .WORD   77777,177500            ;FSRC OPERAND.
 6387  026600  047777  177777        2$:     .WORD   47777,177777            ;EXPECTED RESULT
 6388  026604  047777  177776        3$:     .WORD   47777,177776            ;ANTICIPATED ERRONEOUS RESULT
 6389  026610  000117                4$:     117                     ;FPS BEFORE EXECUTION.
 6390  026612  000100                        100                     ;FPS AFTER EXECUTION.
 6391  026614  177777                        -1                      ;ANTICIPATED ERRONEOUS FPS
 6392  026616  104270                5$      ERROR   270             ;ST 631 INTO RND
 6393  026620  000401                        BR      6$
 6394  026622  104261                        ERROR   261             ;REPORT FPS INCORRECT
 6395  026624                        6$:
 6396
 6397                                ,OPERAND=40000,000100   FL=1,  ROUND MODE
 6398  026624                        KKC17:
 6399  026624  104413                        LPERR                   ;SET UP THE LOOP ON ERROR ADDRESS
 6400  026626  004737  027016                JSR     PC,@#LDCFSUB    ;GO EXECUTE THE INSTRUCTION
 6401  026632  040000  000100        1$:     .WORD   40000,100               ;FSRC OPERAND
 6402  026636  047600  000001        2$:     .WORD   47600,1         ;EXPECTED RESULT
 6403  026642  047600  000000        3$:     .WORD   47600,0         ;ANTICIPATED ERRONEOUS RESULT
 6404  026646  000102                4$:     102                     ;FPS BEFORE EXECUTION
 6405  026650  000100                        100                     ;FPS AFTER EXECUTION.
 6406  026652  177777                        -1                      ;ANTICIPATED ERRONEOUS FPS
 6407  026654  104270                5$.     ERROR   270             ;REPORT RESULT INCORRECT
 6408  026656  000401                        BR      6$
 6409  026660  104261                        ERROR   261             ;REPORT FPS INCORRECT
 6410  026662                        6$:
 6411
 6412                                ;OPERAND=40000,000100   FL=1,  TRUNC MODE
 6413  026662                        KKC18:
 6414  026662  104413                        LPERR                   ;SET UP THE LOOP ON ERROR ADDRESS
 6415  026664  004737  027016                JSR     PC,@#LDCFSUB    ;GO EXECUTE THE INSTRUCTION
 6416  026670  040000  000100        1$:     WORD    40000,100               ;FSRC OPERAND
 6417  026674  047600  000000        2$.     .WORD   47600,0         ;EXPECTED RESULT
 6418  026700  047600  000001        3$      .WORD   47600,1         ;ANTICIPATED ERRONEOUS RESULT
 6419  026704  000157                4$:     157                     ;FPS BEFORE EXECUTION
 6420  026706  000140                        140                     ;FPS AFTER EXECUTION
 6421  026710  177777                        -1                      ;ANTICIPATED ERRONEOUS FPS
 6422  026712  104271                5$      ERROR   271             ;ST 631  ..  INTO TRNC
 6423  026714  000401                        BR      6$
 6424  026716  104261                        ERROR   261             ;REPORT FPS INCORRECT
```

```
6425  026720                          6$
6426                                  ,OPERAND=100000,0 (MOST NEG #)  FL=0
6427  026720                          KKC19
6428  026720  104413                          LPERR                   ;SET UP THE LOOP ON ERROR ADDRESS
6429  026722  004737  027016                  JSR     PC,@#LDCFSUB    ,GO EXECUTE THE INSTRUCTION
6430  026726  100000  000000          1$       WORD    100000,0                ,FSRC OPERAND
6431  026732  144000  000000          2$       WORD    144000,0                ;EXPECTED RESULT
6432  026736  143600  000000          3$       WORD    143600,0                ;ANTICIPATED ERRONEOUS RESULT
6433  026742  000007                  4$       7                       ,FPS BEFORE EXECUTION
6434  026744  000010                           10                      ,FPS AFTER EXECUTION.
6435  026746  177777                           -1                      ,ANTICIPATED ERRONEOUS FPS
6436  026750  104272                  5$       ERROR   272             ,ST 630 RH#R14+1
6437  026752  000401                           BR      6$
6438  026754  104261                           ERROR   261             ,REPORT FPS INCORRECT
6439  026756                          6$
6440
6441                                  ,OPERAND=100000,0       FL=1
6442  026756                          KKC20
6443  026756  104413                          LPERR                   ,SET UP THE LOOP ON ERROR ADDRESS
6444  026760  004737  027016                  JSR     PC,@#LDCFSUB    ,GO EXECUTE THE INSTRUCTION
6445  026764  100000  000000          1$       WORD    100000,0                ;FSRC OPERAND
6446  026770  150000  000000          2$       WORD    150000,0                ;EXPECTED RESULT
6447  026774  147600  000000          3$       WORD    147600,0                ;ANTICIPATED ERRONEOUS RESULT
6448  027000  000107                  4$       107                     ,FPS BEFORE EXECUTION
6449  027002  000110                           110                     ,FPS AFTER EXECUTION
6450  027004  177777                           -1                      ,ANTICIPATED ERRONEOUS FPS
6451  027006  104272                  5$       ERROR   272             ,REPORT RESULT INCORRECT
6452  027010  000401                           BR      6$
6453  027012  104261                           ERROR   261             ,REPORT FPS INCORRECT
6454  027014  000506                  6$       BR      KKCDONE
6455
6456                                  ,THIS SUBROUTINE, LDCFSUB, IS USED TO SET UP THE OPERANDS, EXECUTE
6457                                  ,THE LDCIF OR LDCLF INSTRUCTION AND CHECK THE RESULTS  A CALL
6458                                  ,TO IT IS MADE THUS
6459                                  ,
6460                                  ,               JSR     PC,@#LDCFSUB
6461                                  ,               ACARG:  WORD    X,X             ,AC OPERAND
6462                                  ,               RES     WORD    X,X             ,EXPECTED RESULT
6463                                  ,               ERRES:  WORD    X,X             ,ERROR RESULT
6464                                  ,               FPSB:   WORD    X               ,FPS BEFORE EXECUTION
6465                                  ,               FPSA:   WORD    X               ,FPS AFTER EXECUTION
6466                                  ,               ERFPS   WORD    X               ,ERROR FPS
6467                                  ,               ERR1    ERROR   X               ,DATA ERROR
6468                                  ,                       BR      CONT
6469                                  ,               ERR2:   ERROR   X               ,FPS ERROR
6470                                  ,               CONT                            ,RETURN ADDRESS
6471                                  ,
6472                                  ,THE OPERANDS ARE SET UP (USING AC0 AS THE ACCUMULATOR)  THEN
6473                                  ,THE LDCIF OR LDCLF INSTRUCTION IS EXECUTED
6474                                  ,THE RESULT IS CHECKED AGAINST RES  IF THE RESULT IS CORRECT THEN THE FPS IS
6475                                  ,COMPARED WITH FPSA IF THIS TOO IS CORRECT LDCFSUB RETURNS CONTROL
6476                                  ,TO THE CALLING ROUTINE AT CONT.  IF THE FPS IS BAD LDCFSUB WILL
6477                                  ,COMPARE IT TO ERROR FPS.  IF THIS MATCHES THEN LDCFSUB WILL RETURN
6478                                  ,TO THE ERROR CALL AT ERR2, OTHERWISE LDCFSUB ITSELF
6479                                  ,REPORTS THIS FAILURE AND THEN RETURNS TO CONT  IF THE RESULT OF THE
6480                                  ,LDCIF OR LDCLF IS INCORRECT, THE INCORRECT RESULT IS COMPARED WITH THE
```

```
                                        ;ANTICIPATED FAILING DATA PATTERN, ERRES  IF THE FAILURE IN
                                        ;THE RESULT WAS ANTICIPATED CORRECTLY TO BE ERRES THEN LDCFSUB
                                        ;WILL TRANSFER CONTROL TO THE ERROR CALL AT ERR1  OTHERWISE THE
                                        ;RESULT WAS INCORRECT BUT WAS NOT ANTICIPATED AND LDCFSUB
                                        ;REPORT THE FAILURE AFTER WHICH CONTROL WILL BE PASSED TO CONT

027016  012601                  LDCFSUB.       MOV     (SP)+,R1        ;GET A POINTER TO THE ARGUMENTS
027020  016100  000014                  MOV     14(R1),R0       ;SET THE FPS
027024  170100                  LDFPS   R0
027026  012737  027036  001236          MOV     #1$,@#$TMP2
027034  010100                  MOV     R1,R0

027036  177010                  1$      LDCIF   (R0),AC0                ;TEST INSTRUCTION LDCIF OR LDCLF

027040  170204                  STFPS   R4              ;GET FPS
027042  012700  027222          MOV     #LDCT,R0        ;GET THE RESULT
027046  012702  000200          MOV     #200,R2
027052  170102                  LDFPS   R2
027054  174010                  STD     AC0,(R0)

027056  012702  027222          MOV     #LDCT,R2        ;SEE IF THE RESULT WAS CORRECT
027062  010237  001242          MOV     R2,@#$TMP4
027066  010137  001240          MOV     R1,@#$TMP3
027072  010103                  MOV     R1,R3
027074  062703  000004          ADD     #4,R3
027100  010337  001244          MOV     R3,@#$TMP5
027104  010437  001250          MOV     R4,@#$TMP7
027110  016137  000016  001252          MOV     16(R1),@#$TMP10
027116  010100                  MOV     R1,R0
027120  062700  000004          ADD     #4,R0
027124  012703  000002          MOV     #2,R3
027130  022022                  2$      CMP     (R0)+,(R2)+
027132  001006                  BNE     10$             ;BR IF INCORRECT
027134  077303                  SOB     R3,2$

027136  026104  000016          CMP     16(R1),R4       ;SEE IF THE FPS WAS CORRECT
027142  001020                  BNE     15$             ;BR IF INCORRECT
027144  000161  000030          3$      JMP     30(R1)          ;RETURN

                                        ;RESULT IN CORRECT SO SEE IF THE FAILURE WAS ANTICIPATED
027150  012702  027222          10$     MOV     #LDCT,R2
027154  010100                  MOV     R1,R0
027156  062700  000010          ADD     #10,R0
027162  012703  000002          MOV     #2,R3
027166  022022                  11$     CMP     (R0)+,(R2)+
027170  001003                  BNE     13$
027172  077303                  SOB     R3,11$
027174  000161  000022          JMP     22(R1)

                                        ;THE FAILURE WAS NOT ANTICIPATED SO REPORT THE ERROR HERE
027200                          13$

027200  104260                  14$     ERROR   260             ;BAD RES
027202  000760                  BR      3$
```

```
6537                                    ;THE FPS WAS INCORRECT SO SEE IF IT WAS ANTICIPATED
6538  027204  026104  000020            15$     CMP     20(R1),R4
6539  027210  001002                            BNE     16$
6540  027212  000161  000026                    JMP     26(R1)
6541
6542                                    ;FPS ERROR NOT ANTICIPATED SO REPORT IT HERE
6543  027216                            16$
6544  027216  104261                    17$     ERROR   261             ;BAD FPS
6545  027220  000751                            BR      3$
6546
6547                                    ;DATA BUFFER
6548  027222  000000  000000  000000  LDCT    WORD    0,0,0,0
6549  027230  000000
6550
6551  027232                            KKCDONE
6552  027232  104412                            RSETUP                  ;GO INITIALIZE THE FPS AND STACK, AND
6553                                                                    ;SEE IF THE USER HAS EXPRESSED
6554                                                                    ;THE DESIRE TO CHANGE THE SOFTWARE
6555                                                                    ;VIRTUAL CONSOLE SWITCH REGISTER (HAS
6556                                                                    ;THE USER TYPED CONTROL G?)
6557
```

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6558
6559                                    ,,**********************************************************************
6560                                    ,*TEST 57       LDCID AND LDCLD TEST
6561                                    ,*
6562                                    ,* THIS IS A TEST OF LDCID AND LDCLD
6563                                    ,*
6564                                    ,,**********************************************************************
6565  027234  000004                    TST57   SCOPE
6566                                    ,OPERAND=0      FL=0,   FD=1
6567  027236                            LLC1
6568  027236  104413                            LPERR                   ,SET UP THE LOOP ON ERROR ADDRESS
6569  027240  004737  030034                    JSR     PC,@#LDCDSUB    ,GO EXECUTE THE INSTRUCTION
6570  027244  000000  000000            1$       WORD    0,0             ,FSRC OPERAND
6571  027250  000000  000000  000000    2$       WORD    0,0,0,0         ,EXPECTED RESULT
6572  027256  000000
6573  027260  177777  177777  177777    3$       WORD    -1,-1,-1,-1             ,ANTICIPATED ERRONEOUS RESUL
6574  027266  177777
6575  027270  000213                    4$      213                     ,FPS BEFORE EXECUTION
6576  027272  000204                            204                     ,FPS AFTER EXECUTION
6577  027274  177777                            -1                      ,ANTICIPATED ERRONEOUS FPS
6578  027276  104273                    5$      ERROR   273             ,REPORT RESULT INCORRECT
6579  027300  000401                            BR      6$
6580  027302  104274                            ERROR   274             ,REPORT FPS INCORRECT
6581  027304                            6$
6582                                    ,OPERAND=0      FL=0,   FD=1
6583  027304                            LLC2
6584  027304  104413                            LPERR                   ,SET UP THE LOOP ON ERROR ADDRESS
6585  027306  004737  030034                    JSR     PC,@#LDCDSUB    ,GO EXECUTE THE INSTRUCTION
6586  027312  000000  177777            1$       WORD    0,-1            ,FSRC OPERAND
6587  027316  000000  000000  000000    2$       WORD    0,0,0,0         ,EXPECTED RESULT
6588  027324  000000
6589  027326  004177  177400  000000    3$       WORD    4177,177400,0,0         ,ANTICIPATED ERRONEOUS RESULT
6590  027334  000000
6591  027336  000200                    4$      200                     ,FPS BEFORE EXECUTION
6592  027340  000204                            204                     ,FPS AFTER EXECUTION
6593  027342  177777                            -1                      ,ANTICIPATED ERRONEOUS FPS
6594  027344  104275                    5$      ERROR   275             ,(BUT FL)S+277
6595  027346  000401                            BR      6$              ,TO 300 INTO 301
6596  027350  104274                            ERROR   274             ,REPORT FPS INCORRECT
6597  027352                            6$
6598
6599                                    ,OPERAND=0      FL=1    FD=1
6600  027352                            LLC3
6601  027352  104413                            LPERR                   ,SET UP THE LOOP ON ERROR ADDRESS
6602  027354  004737  030034                    JSR     PC,@#LDCDSUB    ,GO EXECUTE THE INSTRUCTION
6603  027360  000000  000000            1$       WORD    0,0             ,FSRC OPERAND
6604  027364  000000  000000  000000    2$       WORD    0,0,0,0         ,EXPECTED RESULT
6605  027372  000000
6606  027374  177777  177777  177777    3$       WORD    -1,-1,-1,-1             ;ANTICIPATED ERRONEOUS RESULT
6607  027402  177777
6608  027404  000211                    4$      211                     ,FPS BEFORE EXECUTION
6609  027406  000204                            204                     ,FPS AFTER EXECUTION
6610  027410  177777                            -1                      ,ANTICIPATED ERRONEOUS FPS
6611  027412  104273                    5$      ERROR   273             ,REPORT RESULT INCORRECT
6612  027414  000401                            BR      6$
6613  027416  104274                            ERROR   274             ,REPORT FPS INCORRECT
```

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6614  027420                          6$
6615
6616                                  ,OPERAND=40000  FL=0    FD=1
6617  027420                          LLC4
6618  027420  104413                          LPERR                   ,SET UP THE LOOP ON ERROR ADDRESS
6619  027422  004737  030034                  JSR     PC,@#LDCDSUB    ,GO EXECUTE THE INSTRUCTION
6620  027426  040000  000000          1$       WORD    40000,0         ,FSRC OPERAND
6621  027432  043600  000000  000000  2$       WORD    43600,0,0,0             ,EXPECTED RESULT
6622  027440  000000
6623  027442  047600  000000  000000  3$       WORD    47600,0,0,0             ,ANTICIPATED ERRONEOUS RESULT
6624  027450  000000
6625  027452  000217                  4$      217                     ,FPS BEFORE EXECUTION.
6626  027454  000200                          200                     ,FPS AFTER EXECUTION
6627  027456  177777                          -1                      ,ANTICIPATED ERRONEOUS FPS
6628  027460  104276                  5$      ERROR   276             ,ST 107 BAD CONST
6629  027462  000401                          BR      6$
6630  027464  104274                          ERROR   274             ,REPORT FPS INCORRECT
6631  027466                          6$
6632
6633                                  ,OPERAND=-40000 FL=0    FD=1
6634  027466                          LLC5
6635  027466  104413                          LPERR                   ,SET UP THE LOOP ON ERROR ADDRESS
6636  027470  004737  030034                  JSR     PC,@#LDCDSUB    ,GO EXECUTE THE INSTRUCTION
6637  027474  140000  000000          1$       WORD    -40000,0                ,FSRC OPERAND
6638  027500  143600  000000  000000  2$       WORD    143600,0,0,0            ,EXPECTED RESULT
6639  027506  000000
6640  027510  043600  000000  000000  3$       WORD    43600,0,0,0             ,ANTICIPATED ERRONEOUS RESULT
6641  027516  000000
6642  027520  000200                  4$      200                     ,FPS BEFORE EXECUTION
6643  027522  000210                          210                     ,FPS AFTER EXECUTION
6644  027524  177777                          -1                      ,ANTICIPATED ERRONEOUS FPS
6645  027526  104277                  5$      ERROR   277             ,(SET SIGN) ST 176
6646  027530  000401                          BR      6$
6647  027532  104274                          ERROR   274             ,REPORT FPS INCORRECT
6648  027534                          6$
6649
6650                                  ,OPERAND=40000,0        FL=1    FD=1
6651  027534                          LLC6
6652  027534  104413                          LPERR                   ,SET UP THE LOOP ON ERROR ADDRESS
6653  027536  004737  030034                  JSR     PC,@#LDCDSUB    ,GO EXECUTE THE INSTRUCTION
6654  027542  040000  000000          1$       WORD    40000,0         ,FSRC OPERAND
6655  027546  047600  000000  000000  2$       WORD    47600,0,0,0             ,EXPECTED RESULT
6656  027554  000000
6657  027556  043600  000000  000000  3$       WORD    43600,0,0,0             ,ANTICIPATED ERRONEOUS RESULT
6658  027564  000000
6659  027566  000317                          317                     ,FPS BEFORE EXECUTION
6660  027570  000300                          300                     ,FPS AFTER EXECUTION
6661  027572  177777                          -1                      ,ANTICIPATED ERRONEOUS FPS
6662  027574  104300                  5$      ERROR   300             ,ST 107 BAD CONS
6663  027576  000401                          BR      6$
6664  027600  104274                          ERROR   274             ,REPORT FPS INCORRECT
6665  027602                          6$
6666
6667                                  ,OPERAND=0,1    FL=1    FD=1
6668  027602                          LLC7
6669  027602  104413                          LPERR                   ,SET UP THE LOOP ON ERROR ADDRESS
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6670  027604  004737  030034            JSR     PC,@#LDCDSUB    ;GO EXECUTE THE INSTRUCTION
6671  027610  000000  000001      1$     WORD    0,1             ;FSRC OPERAND
6672  027614  040200  000000  000000  2$     WORD    40200,0,0,0             ;EXPECTED RESULT
6673  027622  000000
6674  027624  034200  000000  000000  3$     WORD    34200,0,0,0             ;ANTICIPATED ERRONEOUS RESULT
6675  027632  000000
6676  027634  000300                  4$     300                     ;FPS BEFORE EXECUTION
6677  027636  000300                         300                     ;FPS AFTER EXECUTION
6678  027640  177777                         -1                      ;ANTICIPATED ERRONEOUS FPS
6679  027642  104300                  5$     ERROR   300             ;REPORT FPS INCORRECT
6680  027644  000401                         BR      6$
6681  027646  104274                         ERROR   274             ;REPORT FPS INCORRECT
6682  027650                          6$
6683
6684                                  ;OPERAND=77777,177777   FL=1    FD=1
6685  027650                          LLC8
6686  027650  104413                         LPERR                   ;SET UP THE LOOP ON ERROR ADDRESS
6687  027652  004737  030034                 JSR     PC,@#LDCDSUB    ;GO EXECUTE THE INSTRUCTION
6688  027656  077777  177777      1$     WORD    77777,177777            ;FSRC OPERAND
6689  027662  047777  177777  177000  2$     WORD    47777,177777,177000,0           ;EXPECTED RESULT
6690  027670  000000
6691  027672  177777  177777  177777  3$     WORD    -1,-1,-1,-1             ;ANTICIPATED ERRONEOUS RESULT
6692  027700  177777
6693  027702  000317                  4$     317                     ;FPS BEFORE EXECUTION
6694  027704  000300                         300                     ;FPS AFTER EXECUTION
6695  027706  177777                         -1                      ;ANTICIPATED ERRONEOUS FPS
6696  027710  104273                  5$     ERROR   273             ;REPORT RESULT INCORRECT
6697  027712  000401                         BR      6$
6698  027714  104274                         ERROR   274             ;REPORT FPS INCORRECT
6699  027716                          6$
6700
6701                                  ;OPERAND=-PATTERN       FL=1    FD=1
6702
6703  027716                          LLC9
6704  027716  104413                         LPERR                   ;SET UP THE LOOP ON ERROR ADDRESS
6705  027720  004767  000110                 JSR     PC,LDCDSUB      ;GO EXECUTE THE INSTRUCTION
6706  027724  177777  177526      1$     WORD    -1,-252         ;FSRC OPERAND
6707  027730  142052  000000  000000  2$     WORD    142052,0,0,0            ;EXPECTED RESULT
6708  027736  000000
6709  027740  136052  000000  000000  3$     WORD    136052,0,0,0            ;ANTICIPATED ERRONEOUS RESULT
6710  027746  000000
6711  027750  000307                  4$     307                     ;FPS BEFORE EXECUTION
6712  027752  000310                         310                     ;FPS AFTER EXECUTION
6713  027754  177777                         -1                      ;ANTICIPATED ERRONEOUS FPS
6714  027756  104300                  5$     ERROR   300             ;REPORT RESULT INCORRECT
6715  027760  000401                         BR      6$
6716  027762  104274                         ERROR   274             ;REPORT FPS INCORRECT
6717  027764                          6$
6718
6719                                  ;OPERAND=PATTERN        FL=1    FD=1    FT=1
6720  027764                          LLC10
6721  027764  104413                         LPERR                   ;SET UP THE LOOP ON ERROR ADDRESS
6722  027766  004767  000042                 JSR     PC,LDCDSUB      ;GO EXECUTE THE INSTRUCTION
6723  027772  012345  067012      1$     WORD    12345,67012             ;FSRC OPERAND
6724  027776  047247  025560  050000  2$     WORD    47247,025560,050000,0           ;EXPECTED RESULT
6725  030004  000000
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6726  030006  177777  177777  177777  3$      WORD    -1,-1,-1,-1             ,ANTICIPATED ERRONEOUS RESULT
6727  030014  177777
6728  030016  000352                  4$      352                     ,FPS BEFORE EXECUTION
6729  030020  000340                          340                     ,FPS AFTER EXECUTION
6730  030022  177777                          -1                      ,ANTICIPATED ERRONEOUS FPS
6731  030024  104273                  5$      ERROR   273             ,REPORT RESULT INCORRECT
6732  030026  000401                          BR      6$
6733  030030  104274                          ERROR   274             ,REPORT FPS INCORRECT
6734  030032  000502                  6$      BR      LLCDONE
6735
6736                                  ,THIS SUBROUTINE, LDCDSUB, IS USED TO SET UP THE OPERANDS, EXECUTE
6737                                  ,THE LDCID OR LDCLD INSTRUCTION AND CHECK THE RESULTS  A CALL
6738                                  ,TO IT IS MADE THUS
6739                                  ,
6740                                  ,               JSR     PC,@#LDCDSUB
6741                                  ,       ACARG   WORD    X,X             ,AC OPERAND
6742                                  ,       RES     WORD    X,X,X,X         ,EXPECTED RESULT
6743                                  ,       ERRES   WORD    X,X,X,X         ,ERROR RESULT
6744                                  ,       FPSB    WORD    X               ,FPS BEFORE EXECUTION
6745                                  ,       FPSA    WORD    X               ,FPS AFTER EXECUTION
6746                                  ,       ERFPS   WORD    X               ,ERROR FPS
6747                                  ,       ERR1    ERROR   X               ,DATA ERROR
6748                                  ,               BR      CONT
6749                                  ,       ERR2    ERROR   X               ,FPS ERROR
6750                                  ,       CONT                            ,RETURN ADDRESS
6751                                  ,
6752                                  ,THE OPERANDS ARE SET UP (USING AC0 AS THE ACCUMULATOR)  THEN
6753                                  ,THE LDCID OR LDCLD INSTRUCTION IS EXECUTED
6754                                  ,THE RESULT IS CHECKED AGAINST RES  IF THE RESULT IS CORRECT THEN THE FPS IS
6755                                  ,COMPARED WITH FPSA IF THIS TOO IS CORRECT LDCDSUB RETURNS CONTROL
6756                                  ,TO THE CALLING ROUTINE AT CONT  IF THE FPS IS BAD LDCDSUB
6757                                  ,COMPARE IT TO ERROR FPS  IF THIS MATCHES THEN LDCDSUB WILL RETURN
6758                                  ,TO THE ERROR CALL AT ERR2, OTHERWISE LDCDSUB ITSELF
6759                                  ,REPORTS THIS FAILURE AND THEN RETURNS TO CONT.  IF THE RESULT OF THE
6760                                  ,LDCID OR LDCLD IS INCORRECT, THE INCORRECT RESULT IS COMPARED WITH THE
6761                                  ,ANTICIPATED FAILING DATA PATTERN, ERRES.  IF THE FAILURE IN
6762                                  ;THE RESULT WAS ANTICIPATED CORRECTLY TO BE ERRES THEN LDCDSUB
6763                                  ,WILL TRANSFER CONTROL TO THE ERROR CALL AT ERR1  OTHERWISE THE
6764                                  ,RESULT WAS INCORRECT BUT WAS NOT ANTICIPATED AND LDCDSUB WILL
6765                                  ,REPORT THE FAILURE AFTER WHICH CONTROL WILL BE PASSED TO CONT
6766
6767  030034  012601                  LDCDSUB         MOV     (SP)+,R1        ,GET A POINTER TO THE ARGUMENTS
6768  030036  016100  000024                  MOV     24(R1),R0       ,SET THE FPS
6769  030042  170100                  LDFPS   R0
6770  030044  012737  030054  001236          MOV     #1$,@#$TMP2
6771  030052  010100                  MOV     R1,R0
6772  030054  177010                  1$      LDCID   (R0),AC0        ,TEST INSTRUCTION, LDCID OR LDCLD
6773
6774  030056  170204                  STFPS   R4              ,GET FPS
6775  030060  012700  027222          MOV     #LDCT,R0        ,GET THE RESULT
6776  030064  012702  000200          MOV     #200,R2
6777  030070  170102                  LDFPS   R2
6778  030072  174010                  STD     AC0,(R0)
6779
6780                                  ,SEE IF THE RESULT IS CORRECT
6781  030074  012702  027222          MOV     #LDCT,R2
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6782  030100  010237  001242            MOV     R2,@#$TMP4
6783  030104  010137  001240            MOV     R1,@#$TMP3
6784  030110  010103                    MOV     R1,R3
6785  030112  062703  000004            ADD     #4,R3
6786  030116  010337  001244            MOV     R3,@#$TMP5
6787  030122  010437  001250            MOV     R4,@#$TMP7
6788  030126  016137  000026  001252    MOV     26(R1),@#$TMP10
6789  030134  010100                    MOV     R1,R0
6790  030136  062700  000004            ADD     #4,R0
6791  030142  012703  000002            MOV     #2,R3
6792  030146  022022              2$    CMP     (R0)+,(R2)+
6793  030150  001006                    BNE     10$             ;BR IF INCORRECT
6794  030152  077303                    SOB     R3,2$
6795
6796  030154  026104  000026            CMP     26(R1),R4               ;IS THE FPS CORRECT?
6797  030160  001020                    BNE     15$             ;BR IF INCORRECT
6798  030162  000161  000040      3$    JMP     40(R1)          ;RETURN
6799
6800                              ;THE RESULT WAS INCORRECT SO SEE IF THE ERROR WAS ANTICIPATED
6801  030166  012702  027222      10$   MOV     #LDCT,R2
6802  030172  010100                    MOV     R1,R0
6803  030174  062700  000014            ADD     #14,R0
6804  030200  012703  000002            MOV     #2,R3
6805  030204  022022              11$   CMP     (R0)+,(R2)+
6806  030206  001003                    BNE     13$
6807  030210  077303                    SOB     R3,11$
6808  030212  000161  000032            JMP     32(R1)
6809  030216                      13$
6810                              ;ERROR NOT ANTICIPATED SO REPORT RESULT INCORRECT HERE
6811  030216  104273              14$   ERROR   273                     ;BAD RES
6812  030220  000760                    BR      3$
6813
6814                              ;THE FPS WAS INCORRECT  SEE IF FAILURE WAS ANTICIPATED
6815  030222  026104  000030      15$   CMP     30(R1),R4
6816  030226  001002                    BNE     16$
6817  030230  000161  000036            JMP     36(R1)
6818                              ;FPS ERROR WAS NOT ANTICIPATED SO REPORT FAILURE HERE
6819  030234                      16$
6820
6821  030234  104274              17$   ERROR   274                     ;BAD FPS
6822  030236  000751                    BR      3$
6823
6824  030240                      LLCDONE
6825  030240  104412                    RSETUP                  ;GO INITIALIZE THE FPS AND STACK, AND
6826                                                          ;SEE IF THE USER HAS EXPRESSED
6827                                                          ;THE DESIRE TO CHANGE THE SOFTWARE
6828                                                          ;VIRTUAL CONSOLE SWITCH REGISTER (HAS
6829                                                          ;THE USER TYPED CONTROL G?)
6830
6831
6832                              ;;*****************************************************************
6833                              ;*TEST 60        LDEXP TEST
6834                              ;*
6835                              ;* THIS IS A TEST OF THE LDEXP INST
6836                              ;* A SUBROUTINE IS USED TO SET UP
6837                              ;* OPERANDS, EXECUTE THE LDEXP INST AND
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                                        ;* CHECK THE RESULTS
                                        ;*
                                        ;;*********.**********************************************************
030242  000004                          TST60:  SCOPE

                                        ; NON-ZERO RES  VALID EXPON=210 (EXCESS 200)=10
030244                                  MMC1
030244  104413                                  LPERR                   ;SET UP THE LOOP ON ERROR ADDRESS
030246  004767  001334                          JSR     PC,LDXSUB       ;GO EXECUTE THE INSTRUCTION
030252  012345  067012  034567          1$:     WORD    12345,67012,34567,012345        ;AC0 OPERAND
030260  012345
030262  000010                          2$:     WORD    10              ;EXPONENT OPERAND
030264  042145  067012  034567          3$:     WORD    42145,67012,34567,012345                ;EXPECTED RESULT
030272  012345
030274  002145  067012  034567          4$:     .WORD   2145,67012,34567,012345         ;ANTICIPATED ERRONEOUS RESULT
030302  012345
030304  047217                          5$:     47217                   ;FPS BEFORE EXECUTION
030306  047200                                  47200                   ;FPS AFTER EXECUTION
030310  147200                                  147200                  ;ANTICIPATED ERRONEOUS FPS
030312  177777                                  -1              ;EXPECTED FEC.
030314  104304                          6$:     ERROR   304             ;E12+E12+200 BAD
030316  000400                                  BR      7$              ;ST 624
030320  104305                          7$:     ERROR   305             ;REPORT FPS INCORRECT
                                                                        ;ST 625 INTO 304
                                        ;NON-ZERO       RES     NEG
030322                                  MMC2
030322  104413                                  LPERR                   ;SET UP THE LOOP ON ERROR ADDRESS
030324  004737  031606                          JSR     PC,@#LDXSUB     ;EXPON=377
030330  123456  070123  045670          1$:     .WORD   123456,70123,45670,123456       ;AC0 OPERAND
030336  123456
030340  000177                          2$:     .WORD   177             ;EXPONENT OPERAND
030342  177656  070123  045670          3$:     .WORD   177656,70123,45670,123456               ;EXPECTED RESULT
030350  123456
030352  137656  070123  045670          4$:     .WORD   137656,70123,45670,123456               ;ANTICIPATED ERRONEOUS RESULT
030360  123456
030362  047207                          5$:     47207                   ;FPS BEFORE EXECUTION
030364  047210                                  47210                   ;FPS AFTER EXECUTION
030366  147210                                  147210                  ;ANTICIPATED ERRONEOUS FPS
030370  177777                                  -1              ;EXPECTED FEC
030372  104304                          6$:     ERROR   304             ;REPORT RESULT INCORRECT
030374  000401                                  BR      7$
030376  104305                                  ERROR   305             ;REPORT FPS INCORRECT
030400                                  7$:

                                        ;NON-ZERO       RES,    EXP=256=(56)REAL
030400                                  MMC3:
030400  104413                                  LPERR                   ;SET UP THE LOOP ON ERROR ADDRESS
030402  004737  031606                          JSR     PC,@#LDXSUB     ;GO EXECUTE THE INSTRUCTION
030406  073261  057645  043323          1$:     .WORD   73261,057645,43323,101760       ;AC0 OPERAND
030414  101760
030416  000056                          2$:     .WORD   56              ;EXPONENT OPERAND
030420  053461  057645  043323          3$:     WORD    53461,057645,43323,101760               ;EXPECTED RESULT
030426  101760
030430  177777  177777  177777          4$:     WORD    -1,-1,-1,-1             ;ANTICIPATED ERRONEOUS RESULT
030436  177777
030440  047200                          5$:     47200                   ;FPS BEFORE EXECUTION
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6894  030442  047200                          47200                   ,FPS AFTER EXECUTION
6895  030444  147200                          147200                  ,ANTICIPATED ERRONEOUS FPS
6896  030446  177777                          -1                  EXPECTED FEC.
6897  030450  104301                  6$      ERROR   301             ,REPORT RESULT INCORRECT
6898  030452  000401                          BR      7$
6899  030454  104305                          ERROR   305             ,REPORT FPS INCORRECT
6900  030456                          7$.
6901
6902                                  ,EXP=27 (EXCESS 200)=-151 (OCT)
6903  030456                          MMC4.
6904  030456  104413                          LPERR                   ;SET UP THE LOOP ON ERROR ADDRESS
6905  030460  004737  031606                  JSR     PC,@#LDXSUB     ;GO EXECUTE THE INSTRUCTION
6906  030464  012223  024252  062720  1$:     .WORD   12223,24252,62720,21222 ;ACO OPERAND
6907  030472  021222
6908  030474  177627                  2$:     .WORD   -151            ;EXPONENT OPERAND
6909  030476  005623  024252  062720  3$      .WORD   5623,24252,62720,21222          ,EXPECTED RESULT
6910  030504  021222
6911  030506  177777  177777  177777  4$.     .WORD   -1,-1,-1,-1             ;ANTICIPATED ERRONEOUS RESULT
6912  030514  177777
6913  030516  047200                  5$      47200                   ;FPS BEFORE EXECUTION
6914  030520  047200                          47200                   ;FPS AFTER EXECUTION.
6915  030522  147200                          147200                  ,ANTICIPATED ERRONEOUS FPS
6916  030524  177777                          -1              ;EXPECTED FEC.
6917  030526  104301                  6$      ERROR   301             ,REPORT RESULT INCORRECT
6918  030530  000401                          BR      7$
6919  030532  104306                          ERROR   306             ,(BUT EZBT) ST 544 TO 504 INTO 704 0 (BUT EXBT) ST 704 1
6920  030534                          7$.
6921
6922                                  ,EXP=0 (EXCESS 200)=-200 (OCT), POSITIVE FRAC
6923                                  , FIU=1
6924  030534                          MMC5
6925  030534  104413                          LPERR                   ;SET UP THE LOOP ON ERROR ADDRESS
6926  030536  004737  031606                  JSR     PC,@#LDXSUB     ,GO EXECUTE THE INSTRUCTION
6927  030542  030131  032334  035363  1$      .WORD   30131,32334,35363,73031 ;ACO OPERAND
6928  030550  073031
6929  030552  177600                  2$:     .WORD   -200            ;EXPONENT OPERAND
6930  030554  000131  032334  035363  3$      .WORD   00131,32334,35363,73031         ,EXPECTED RESULT
6931  030562  073031
6932  030564  000000  000000  000000  4$       WORD   0,0,0,0         ;ANTICIPATED ERRONEOUS RESULT
6933  030572  000000
6934  030574  042200                  5$.     42200                   ,FPS BEFORE EXECUTION
6935  030576  142204                          142204                  ,FPS AFTER EXECUTION
6936  030600  042202                          42202                   ;ANTICIPATED ERRONEOUS FPS
6937  030602  000012                          12                  ,EXPECTED FEC.
6938  030604  104307                  6$:     ERROR   307             ,(BUT EXBT) ST 704 TO 64 INST 264
6939  030606  000401                          BR      7$
6940  030610  104310                          ERROR   310     ,(BUT FIU) ST 264 X
6941  030612                          7$
6942
6943                                  ;EXP=0  (EXCESS 200)=-200 (OCT), NEG FRACT,FIU=1
6944  030612                          MMC6.
6945  030612  104413                          LPERR                   ,SET UP THE LOOP ON ERROR ADDRESS
6946  030614  004737  031606                  JSR     PC,@#LDXSUB     ,GO EXECUTE THE INSTRUCTION
6947  030620  140414  024344  045464  1$.      WORD   140414,24344,45464,74045         ,ACO OPERAND
6948  030626  074045
6949  030630  177600                  2$       WORD   -200             ;EXPONENT OPERAND
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6950  030632  100014  024344  045464  3$      WORD   100014,24344,45464,74045      ,-0            ,EXPECTED RESULT
6951  030640  074045
6952  030642  000000  000000  000000  4$      WORD   0,0,0,0              ,ANTICIPATED ERRONEOUS RESULT
6953  030650  000000
6954  030652  042200                  5$      42200                       ,FPS BEFORE EXECUTION
6955  030654  142214                          142214                      ,FPS AFTER EXECUTION
6956  030656  042214                          42214                       ;ANTICIPATED ERRONEOUS FPS
6957  030660  000012                          12                  ,EXPECTED FEC.
6958  030662  104307                  6$      ERROR  307                  ,REPORT RESULT INCORRECT
6959  030664  000401                          BR     7$
6960  030666  104310                          ERROR  310                  ,REPORT FPS INCORRECT
6961  030670                          7$
6962
6963                                  ,EXP=0 (EXCESS 200)=-200 (OCT),POS FRAC, FIU=0
6964
6965  030670                          MMC7
6966  030670  104413                          LPERR                       ;SET UP THE LOOP ON ERROR ADDRESS
6967  030672  004737  031606                  JSR    PC,@#LDXSUB          ,GO EXECUTE THE INSTRUCTION
6968  030676  051525  035455  005675  1$      WORD   51525,35455,5675,05152  ;ACO OPERAND
6969  030704  005152
6970  030706  177600                  2$      WORD   -200                 ,EXPONENT OPERAND
6971  030710  000000  000000  000000  3$      WORD   0,0,0,0              ,EXPECTED RESULT.
6972  030716  000000
6973  030720  000125  035455  005675  4$      .WORD  00125,35455,5675,05152          ;ANTICIPATED ERRONEOUS RESULT
6974  030726  005152
6975  030730  045200                          45200                       ;FPS BEFORE EXECUTION
6976  030732  045204                          45204                       ;FPS AFTER EXECUTION.
6977  030734  145204                          145204                      ;ANTICIPATED ERRONEOUS FPS
6978  030736  177777                          -1                  ;EXPECTED FEC.
6979  030740  104311                  6$      ERROR  311                  ;(BUT FIU) ST 264 X          ,REPORT RESULT INCORRECT
6980  030742  000401                          BR     7$
6981  030744  104302                          ERROR  302                  ;REPORT FPS INCORRECT
6982  030746                          7$.
6983
6984                                  ,EXP=-1405 (EXCESS 200)=-1605 (OCT), FIU=1
6985  030746                          MMC8:
6986  030746  104413                          LPERR                       ;SET UP THE LOOP ON ERROR ADDRESS
6987  030750  004737  031606                  JSR    PC,@#LDXSUB          ,GO EXECUTE THE INSTRUCTION
6988  030754  061626  062636  046566  1$      WORD   61626,62636,46566,67606 ;ACO OPERAND
6989  030762  067606
6990  030764  176173                  2$.     .WORD  -1605                ;EXPONENT OPERAND
6991  030766  076626  062636  046566  3$:     .WORD  76626,62636,46566,67606        ,EXPECTED RESULT
6992  030774  067606
6993  030776  000000  000000  000000  4$      .WORD  0,0,0,0              ;ANTICIPATED ERRONEOUS RESULT
6994  031004  000000
6995  031006  042200                  5$      42200                       ,FPS BEFORE EXECUTION.
6996  031010  142200                          142200                      ,FPS AFTER EXECUTION.
6997  031012  042204                          42204                       ,ANTICIPATED ERRONEOUS FPS
6998  031014  000012                          12                  ;EXPECTED FEC.
6999  031016  104312                  6$      ERROR  312                  ;(BUT EZBT) ST 544 TO 704 INTO 504
7000  031020  000401                          BR     7$
7001  031022  104302                          ERROR  302                  ;REPORT FPS INCORRECT.
7002  031024                          7$
7003                                  ,EXP=-17416 (EXCESS 200)=-17616 (OCT), FIU=0
7004  031024                          MMC9
7005  031024  104413                          LPERR                       ,SET UP THE LOOP ON ERROR ADDRESS
```

```
 7006  031026  004737  031606                      JSR     PC,@#LDXSUB     ;GO EXECUTE THE INSTRUCTION
 7007  031032  071727  037475  076777  1$:         WORD    71727,37475,76777,17273 ;AC0 OPERAND
 7008  031040  017273
 7009  031042  160162                    2$:       WORD    -17616          ;EXPONENT OPERAND
 7010  031044  000000  000000  000000  3$:         WORD    0,0,0,0         ;EXPECTED RESULT.
 7011  031052  000000
 7012  031054  074527  037475  076777  4$:         WORD    74527,37475,76777,17273         ;ANTICIPATED ERRONEOUS RESULT
 7013  031062  017273
 7014  031064  045200                    5$:       45200                   ;FPS BEFORE EXECUTION
 7015  031066  045204                              45204                   ;FPS AFTER EXECUTION
 7016  031070  145200                              145200                  ;ANTICIPATED ERRONEOUS FPS
 7017  031072  177777                              -1              ;EXPECTED FEC
 7018  031074  104313                    6$:       ERROR   313             ;(BUT FIU) ST 504
 7019  031076  000401                              BR      7$
 7020  031100  104302                              ERROR   302             ;REPORT FPS INCORRECT
 7021  031102                            7$:
 7022
 7023                                    ;EXP=-1601 (EXCESS 200)=-2001 (OCT), FIU=1
 7024  031102                            MMC10:
 7025  031102  104413                              LPERR                   ;SET UP THE LOOP ON ERROR ADDRESS
 7026  031104  004737  031606                      JSR     PC,@#LDXSUB     ;GO EXECUTE THE INSTRUCTION.
 7027  031110  001020  030405  006070  1$:         .WORD   01020,30405,06070,00102 ;AC0 OPERAND.
 7028  031116  000102
 7029  031120  175777                    2$:       .WORD   -2001           ;EXPONENT OPERAND.
 7030  031122  037620  030405  006070  3$:         .WORD   37620,30405,06070,00102         ;EXPECTED RESULT
 7031  031130  000102
 7032  031132  000000  000000  000000  4$:         .WORD   0,0,0,0         ;ANTICIPATED ERRONEOUS RESULT
 7033  031140  000000
 7034  031142  042200                    5$:       42200                   ;FPS BEFORE EXECUTION.
 7035  031144  142200                              142200                  ;FPS AFTER EXECUTION.
 7036  031146  042204                              42204                   ;ANTICIPATED ERRONEOUS FPS
 7037  031150  000012                              12              ;EXPECTED FEC.
 7038  031152  104312                    6$:       ERROR   312             ;(BUT FIU) ST 504
 7039  031154  000401                              BR      7$
 7040  031156  104302                              ERROR   302             ;REPORT FPS INCORRECT
 7041  031160                            7$:
 7042
 7043                                    ;EXP=1206 (EXCESS 200)=1006 (OCT) FIV =1
 7044  031160                            MMC11:
 7045  031160  104413                              LPERR                   ;SET UP THE LOOP ON ERROR ADDRESS
 7046  031162  004737  031606                      JSR     PC,@#LDXSUB     ;GO EXECUTE THE INSTRUCTION
 7047  031166  012131  014151  016171  1$:         .WORD   12131,14151,16171,10111 ;AC0 OPERAND.
 7048  031174  010111
 7049  031176  001006                    2$:       .WORD   1006            ;EXPONENT OPERAND
 7050  031200  041531  014151  016171  3$:         .WORD   41531,14151,16171,10111         ;EXPECTED RESULT
 7051  031206  010111
 7052  031210  000000  000000  000000  4$:         WORD    0,0,0,0         ;ANTICIPATED ERRONEOUS RESULT
 7053  031216  000000
 7054  031220  041200                    5$:       41200                   ;FPS BEFORE EXECUTION
 7055  031222  141202                              141202                  ;FPS AFTER EXECUTION.
 7056  031224  041204                              41204                   ;ANTICIPATED ERRONEOUS FPS
 7057  031226  000010                              10              ;EXPECTED FEC.
 7058  031230  104314                    6$        ERROR   314             ;(BUT FIV) ST 104
 7059  031232  000401                              BR      7$
 7060  031234  104302                              ERROR   302             ;REPORT FPS INCORRECT
 7061  031236                            7$
```

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7062
7063                                    ,EXP=16315 (EXCESS 200)=16115 (OCT) FIV=0
7064  031236                            MMC12.
7065  031236  104413                            LPERR                   ;SET UP THE LOOP ON ERROR ADDRESS
7066  031240  004737  031606                    JSR     PC,@#LDXSUB     ,GO EXECUTE THE INSTRUCTION
7067  031244  027262  025242  023222  1$        WORD    27262,25242,23222,21202 ,ACO OPERAND
7068  031252  021202
7069  031254  016115                    2$      WORD    16115           ;EXPONENT OPERAND
7070  031256  000000  000000  000000  3$        WORD    0,0,0,0         ;EXPECTED RESULT
7071  031264  000000
7072  031266  063262  025242  023222  4$        WORD    63262,25242,23222,21202         ,ANTICIPATED ERRONEOUS RESULT
7073  031274  021202
7074  031276  046200                    5$      46200                   ,FPS BEFORE EXECUTION
7075  031300  046206                            46206                   ;FPS AFTER EXECUTION
7076  031302  146202                            146202                  ;ANTICIPATED ERRONEOUS FPS
7077  031304  177777                            -1              ,EXPECTED FEC.
7078  031306  104315                    6$      ERROR   315             ,(BUT FIV) ST 104
7079  031310  000401                            BR      7$
7080  031312  104302                            ERROR   302             ;REPORT FPS INCORRECT
7081  031314                            7$:
7082
7083                                    ,EXP=11011 (EXCESS 200)=10611 (OCT) FIV=1
7084
7085  031314                            MMC13
7086  031314  104413                            LPERR                   ;SET UP THE LOOP ON ERROR ADDRESS
7087  031316  004737  031606                    JSR     PC,@#LDXSUB     ;GO EXECUTE THE INSTRUCTION
7088  031322  030313  032333  034353  1$:       WORD    30313,32333,34353,36373 ;ACO OPERAND.
7089  031330  036373
7090  031332  010611                    2$:     WORD    10611           ;EXPONENT OPERAND.
7091  031334  002313  032333  034353  3$:     .WORD    2313,32333,34353,36373          ,EXPECTED RESULT
7092  031342  036373
7093  031344  000000  000000  000000  4$:     .WORD    0,0,0,0         ;ANTICIPATED ERRONEOUS RESULT
7094  031352  000000
7095  031354  041200                    5$:     41200                   ;FPS BEFORE EXECUTION
7096  031356  141202                            141202                  ;FPS AFTER EXECUTION.
7097  031360  041204                            41204                   ;ANTICIPATED ERRONEOUS FPS
7098  031362  000010                            10              ;EXPECTED FEC.
7099  031364  104316                    6$.     ERROR   316             ;(BUT FIV) ST 144
7100  031366  000401                            BR      7$
7101  031370  104302                            ERROR   302             ;REPORT FPS INCORRECT
7102  031372                            7$.
7103
7104                                    ;EXP=17123 (EXCESS 200)=16723 (OCT) FIV=0
7105
7106  031372                            MMC14:
7107  031372  104413                            LPERR                   ;SET UP THE LOOP ON ERROR ADDRESS
7108  031374  004737  031606                    JSR     PC,@#LDXSUB     ;GO EXECUTE THE INSTRUCTION
7109  031400  040414  042434  044454  1$:     .WORD    40414,42434,44454,46474 ;ACO OPERAND.
7110  031406  046474
7111  031410  016723                    2$:     .WORD    16723           ;EXPONENT OPERAND.
7112  031412  000000  000000  000000  3$:     .WORD    0,0,0,0         ;EXPECTED RESULT.
7113  031420  000000
7114  031422  024614  042434  044454  4$:     .WORD    24614,42434,44454,46474         ,ANTICIPATED ERRONEOUS RESULT
7115  031430  046474
7116  031432  046200                    5$:     46200                   ,FPS BEFORE EXECUTION.
7117  031434  046206                            46206                   ,FPS AFTER EXECUTION.
```

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7118  031436  146202                          146202              ,ANTICIPATED ERRONEOUS FPS
7119  031440  177777                          -1                  ,EXPECTED FEC
7120  031442  104317                  6$      ERROR   317         ,(BUT FIV) ST 144
7121  031444  000401                          BR 7$
7122  031446  104302                          ERROR   302         ,REPORT FPS INCORRECT
7123  031450                          7$
7124
7125                                  ,EXP=   254 (OCT)=      454 (EXCESS 200)        FIV=1
7126
7127  031450                          MMC15
7128  031450  104413                          LPERR               ;SET UP THE LOOP ON ERROR ADDRESS
7129  031452  004737  031606                  JSR     PC,@#LDXSUB ,GO EXECUTE THE INSTRUCTION
7130  031456  050515  052535  054555  1$      WORD    50515,52535,54555,56575 ,ACO OPERAND.
7131  031464  056575
7132  031466  000254                  2$      WORD    254         ;EXPONENT OPERAND
7133  031470  013115  052535  054555  3$      WORD    13115,52535,54555,56575     ;EXPECTED RESULT
7134  031476  056575
7135  031500  000000  000000  000000  4$      WORD    0,0,0,0     ;ANTICIPATED ERRONEOUS RESULT
7136  031506  000000
7137  031510  041200                  5$      41200               ,FPS BEFORE EXECUTION.
7138  031512  141202                          141202              ;FPS AFTER EXECUTION
7139  031514  041204                          41204               ;ANTICIPATED ERRONEOUS FPS
7140  031516  000010                          10          ,EXPECTED FEC.
7141  031520  104320                  6$      ERROR   320                 ;(BUT FIV) ST344
7142  031522  000401                          BR      7$
7143  031524  104302                          ERROR   302         ,REPORT FPS INCORRECT
7144  031526                          7$
7145
7146                                  ,EXP=   313 (OCT)=      513(EXCESS 200) FIV=0
7147
7148  031526                          MMC16
7149  031526  004413                          LPERR               ;SET UP THE LOOP ON ERROR ADDRESS
7150  031530  004737  031606                  JSR     PC,@#LDXSUB ,GO EXECUTE THE INSTRUCTION
7151  031534  060616  062636  064656  1$      .WORD   60616,62636,64656,66676 ,ACO OPERAND
7152  031542  066676
7153  031544  000313                  2$      WORD    313         ;EXPONENT OPERAND
7154  031546  000000  000000  000000  3$      .WORD   0,0,0,0     ,EXPECTED RESULT
7155  031554  000000
7156  031556  022616  062636  064656  4$      WORD    22616,62636,64656,66676     ;ANTICIPATED ERRONEOUS RESULT
7157  031564  066676
7158  031566  046200                  5$      46200               ,FPS BEFORE EXECUTION
7159  031570  046206                          46206               ,FPS AFTER EXECUTION
7160  031572  146202                          146202              ,ANTICIPATED ERRONEOUS FPS
7161  031574  177777                          -1          ,EXPECTED FEC
7162  031576  104321                  6$      ERROR   321                 ,(BUT FIV) ST 344
7163  031600  000401                          BR      7$
7164  031602  104302                          ERROR   302         ,REPORT FPS INCORRECT
7165  031604                          7$
7166  031604  000540                          BR      MMCDONE
7167
7168                                  ,THIS SUBROUTINE, LDXSUB, IS USED TO SET UP THE OPERANDS, EXECUTE
7169                                  ,THE LDEXP INSTRUCTION AND CHECK THE RESULTS  A CALL
7170                                  ,TO IT IS MADE THUS
7171                                  ;
7172                                  ;               JSR     PC,@#LDXSUB
7173                                  ;               ACARG   WORD    X,X,X,X         ,AC OPERAND
```

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7174                                    ,              EXP     WORD    X               ,EXPONENT
7175                                    ,              RES     WORD    X,X,X,X         ,EXPECTED RESULT
7176                                    ,              ERRES   WORD    X,X,X,X         ,ERROR RESULT
7177                                    ,              FPSB    WORD    X               ,FPS BEFORE EXECUTION
7178                                    ,              FPSA    WORD    X               ,FPS AFTER EXECUTION
7179                                    ,              ERFPS   WORD    X               ,ERROR FPS
7180                                    ,              FEC     WORD    X               ,EXPECTED FEC
7181                                    ,              ERR1    ERROR   X               ,DATA ERROR
7182                                    ,                      BR      CONT
7183                                    ,              ERR2    ERROR   X               ,FPS ERROR
7184                                    ,              CONT:                           ,RETURN ADDRESS
7185                                    ,
7186                                    ,THE OPERANDS ARE SET UP (USING AC0 AS THE ACCUMULATOR)  THEN
7187                                    ,THE LDEXP INSTRUCTION IS EXECUTED.
7188                                     THE RESULT IS CHECKED AGAINST RES  IF THE RESULT IS CORRECT THEN THE FPS IS
7189                                    ,COMPARED WITH FPSA IF THIS TOO IS CORRECT LDXSUB RETURNS CONTROL
7190                                    ,TO THE CALLING ROUTINE AT CONT.  IF THE FPS IS BAD LDXSUB
7191                                    ,COMPARE IT TO ERROR FPS.  IF THIS MATCHES THEN LDXSUB WILL RETURN
7192                                    ,TO THE ERROR CALL AT ERR2, OTHERWISE LDXSUB ITSELF
7193                                    ,REPORTS THIS FAILURE AND THEN RETURNS TO CONT  IF THE RESULT OF THE
7194                                    ,LDEXP IS INCORRECT, THE INCORRECT RESULT IS COMPARED WITH THE
7195                                    ,ANTICIPATED FAILING DATA PATTERN, ERRES.  IF THE FAILURE IN
7196                                    ,THE RESULT WAS ANTICIPATED CORRECTLY TO BE ERRES THEN LDXSUB
7197                                    ,WILL TRANSFER CONTROL TO THE ERROR CALL AT ERR1  OTHERWISE THE
7198                                    ,RESULT WAS INCORRECT BUT WAS NOT ANTICIPATED AND LDXSUB WILL
7199                                    ,REPORT THE FAILURE AFTER WHICH CONTROL WILL BE PASSED TO CONT
7200
7201  031606  012601                    LDXSUB: MOV     (SP)+,R1        ,GET A POINTER TO THE ARGUMENTS
7202  031610  012700  000200                    MOV     #200,R0         ,LOAD THE AC0 OPERAND
7203  031614  170100                            LDFPS   R0
7204  031616  010100                            MOV     R1,R0
7205  031620  172410                            LDD     (R0),AC0
7206  031622  012737  031644  001236            MOV     #1$,@#$TMP2
7207  031630  016100  000032                    MOV     32(R1),R0       ,SET UP THE FPS
7208  031634  170100                            LDFPS   R0
7209  031636  010100                            MOV     R1,R0
7210  031640  062700  000010                    ADD     #10,R0
7211
7212  031644  176410                    1$      LDEXP   (R0),AC0        ,TEST INSTRUCTION
7213
7214  031646  170204                            STFPS   R4              ,GET THE FPS
7215  031650  170305                            STST    R5              ,GET THE FEC
7216  031652  012700  000200                    MOV     #200,R0         ,GET THE RESULT
7217  031656  170100                            LDFPS   R0
7218  031660  012700  032076                    MOV     #LDXT,R0
7219  031664  174010                            STD     AC0,(R0)
7220  031666  010437  001250                    MOV     R4,@#$TMP7
7221  031672  016137  000034  001252            MOV     34(R1),@#$TMP10
7222  031700  010537  001254                    MOV     R5,@#$TMP11
7223  031704  016137  000040  001256            MOV     40(R1),@#$TMP12
7224  031712  010102                            MOV     R1,R2
7225  031714  010237  001240                    MOV     R2,@#$TMP3
7226  031720  062702  000010                    ADD     #10,R2
7227  031724  011237  001242                    MOV     (R2),@#$TMP4
7228  031730  062702  000002                    ADD     #2,R2
7229  031734  010237  001244                    MOV     R2,@#$TMP5
```

```
7230  031740  012737  032076  001246          MOV     #LDXT,@#$TMP6
7231  031746  012702  032076                  MOV     #LDXT,R2        ;SEE IF THE RESULT WAS CORRECT
7232  031752  010103                          MOV     R1,R3
7233  031754  062703  000012                  ADD     #12,R3
7234  031760  012700  000004                  MOV     #4,R0
7235  031764  022223                  2$      CMP     (R2)+,(R3)+
7236  031766  001014                          BNE     10$             ;BRANCH IF NOT CORRECT
7237  031770  077003                          SOB     R0,2$
7238  031772  020461  000034                  CMP     R4,34(R1)       ;SEE IF THE FPS WAS CORRECT
7239  031776  001026                          BNE     15$             ;BRANCH IF NOT CORRECT
7240  032000  005761  000034                  TST     34(R1)
7241  032004  100003                          BPL     3$
7242  032006  020561  000040                  CMP     R5,40(R1)       ;SEE IF THE FEC WAS CORRECT
7243  032012  001027                          BNE     20$             ;BRANCH IF NOT CORRECT
7244
7245  032014  000161  000050          3$      JMP     50(R1)          ;RETURN
7246
7247                                  ;THE RESULT WAS INCORRECT SO SEE IF THE FAILURE WAS ANTICIPATED
7248  032020  012702  032076          10$     MOV     #LDXT,R2
7249  032024  010103                          MOV     R1,R3
7250  032026  062703  000022                  ADD     #22,R3
7251  032032  012700  000004                  MOV     #4,R0
7252  032036  022223                  11$     CMP     (R2)+,(R3)+
7253  032040  001003                          BNE     12$
7254  032042  077003                          SOB     R0,11$
7255  032044  000161  000042                  JMP     42(R1)
7256
7257                                  ;THE ERROR WAS NOT ANTICIPATED SO REPORT IT HERE
7258  032050                          12$
7259  032050  104301                  13$     ERROR   301             ;BAD RES
7260  032052  000760                          BR      3$
7261
7262                                  ;SEE IF THE FPS ERROR WAS ANTICIPATED
7263  032054  026104  000036          15$     CMP     36(R1),R4
7264  032060  001002                          BNE     16$
7265  032062  000161  000046                  JMP     46(R1)
7266  032066                          16$
7267                                  ;THE FPS WAS NOT ANTICIPATED SO REPORT IT HERE
7268  032066  104302                  17$     ERROR   302             ;BAD FPS
7269  032070  000751                          BR      3$              ;BUT EZBTY8
7270                                                                  ;ST 063
7271
7272  032072                          20$
7273                                  ;REPORT FEC INCORRECT
7274  032072  104303                  21$     ERROR   303             ;BAD FEC
7275  032074  000747                          BR      3$
7276
7277                                  ;DATA BUFFER
7278  032076  000000  000000  000000  LDXT    WORD    0,0,0,0
7279  032104  000000
7280
7281  032106                          MMCDONE
7282  032106  104412                          RSETUP                  ;GO INITIALIZE THE FPS AND STACK, AND
7283                                                                  ;SEE IF THE USER HAS EXPRESSED
7284                                                                  ;THE DESIRE TO CHANGE THE SOFTWARE
7285                                                                  ;VIRTUAL CONSOLE SWITCH REGISTER (HAS
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7286                                                    ,THE USER TYPED CONTROL G?)
7287
7288
7289
7290                            ,,**********************************************************************
7291                            ,*TEST 61       DESTINATION MODES, MODE 1 (FL=0), TEST
7292                            ,*
7293                            ,* THIS IS A TEST OF DESTINATION MODE 1 USING
7294                            ,* THE STFPS INSTRUCTION
7295                            ,*
7296                            ,,**********************************************************************
7297  032110  000004            TST61   SCOPE
7298
7299
7300  032112                    NNC1
7301  032112  104413                    LPERR                   ,SET UP THE LOOP ON ERROR ADDRESS
7302  032114  012700  032212            MOV     #NNCTB0,R0      ,SET UP THE DATA BUFFER
7303  032120  012701  000006            MOV     #6,R1
7304  032124  012720  177777    1$      MOV     #-1,(R0)+
7305  032130  077103                    SOB     R1,1$
7306  032132  012700  102345            MOV     #102345,R0
7307  032136  012737  032160  001236    MOV     #NNC2,@#$TMP2
7308  032144  012737  032312  000004    MOV     #NNC25,@#ERRVECT ,SET UP FOR TRAPS TO 4
7309  032152  170100                    LDFPS   R0              ,SET UP FPS
7310  032154  012700  032216            MOV     #NNCTB1,R0
7311
7312  032160  170210            NNC2    STFPS   (R0)            ,TEST INSTRUCTION
7313  032162  020027  032216            CMP     R0,#NNCTB1      ,IS R0 CORRECT?
7314  032166  001017                    BNE     NNC10           ,BRANCH IF NOT CORRECT
7315  032170  023727  032216  102345    CMP     @#NNCTB1,#102345   ;IS RESULT CORRECT?
7316  032176  001023                    BNE     NNC15           ,BRANCH IF NOT CORRECT
7317  032200  023727  032220  177777    CMP     @#NNCTB1+2,#-1  ,IS THE RESULT CORRECT?
7318  032206  001030                    BNE     NNC20           ,BRANCH IF NOT CORRECT
7319  032210  000453                    BR      NNCDONE
7320
7321                            ,TEST DATA BUFFER.
7322  032212  177777  177777    NNCTB0:   WORD   -1,-1
7323  032216  177777  177777  177777  NNCTB1:  .WORD   -1,-1,-1,-1
7324  032224  177777
7325
7326                            ,REPORT R0 INCORRECT
7327  032226  010037  001242    NNC10.  MOV     R0,@#$TMP4
7328  032232  012737  032216  001240            MOV     #NNCTB1,@#$TMP3
7329  032240                    1$
7330  032240  104377                    ERROR   377
7331  032242  000001                     WORD   1
7332                                                            ,R0 BAD (BUT
7333  032244  000435                    BR      NNCDONE         ,    FDST)X
7334
7335                            ,REPORT RESULT INCORRECT.
7336  032246  012737  102345  001240  NNC15:  MOV     #102345,@#$TMP3                 ,    ST 634
7337  032254  013737  032216  001242          MOV     @#NNCTB1,@#$TMP4
7338  032262                    1$
7339  032262  104377                    ERROR   377
7340  032264  000002                     WORD   2
7341                                                                    ,BAD DATA
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 7342  032266  000424                        BR      NNCDONE
 7343
 7344
 7345                                  ;REPORT RESULT INCORRECT
 7346  032270  012737  177777  001240  NNC20   MOV     #-1,@#$TMP3
 7347  032276  013737  032220  001242          MOV     @#NNCTB1+2,@#$TMP4
 7348  032304                          1$
 7349  032304  104377                          ERROR   377
 7350  032306  000003                           WORD   3
 7351                                                                  ;(BUT GR7,FL)
 7352  032310  000413                          BR      NNCDONE                 ;ST 357 TO 416
 7353                                                                  ;INTO 417
 7354
 7355                                  ;IF A TRAP TO VECTOR 4 OCCURS COME HERE TO SEE IF THE TRAP OCCURRED
 7356                                  ;DURING EXECUTION OF THE FPP INSTRUCTION BEING TESTED, IF NOT GO
 7357                                  ;TO THE SPURIOUS TRAP TO 4 HANDLER
 7358  032312  011604                  NNC25   MOV     (SP),R4
 7359  032314  020427  032162                  CMP     R4,#NNC2+2
 7360  032320  001402                          BEQ     1$
 7361  032322  000137  042610                  JMP     @#CPSPUR
 7362
 7363  032326  011637  001236          1$      MOV     (SP),@#$TMP2
 7364  032332  022626                          CMP     (SP)+,(SP)+
 7365  032334                          2$
 7366  032334  104377                          ERROR   377
 7367  032336  000004                           WORD   4
 7368                                                                  ;(BUT FDST)+ ST634
 7369
 7370  032340                          NNCDONE
 7371  032340  104412                          RSETUP                  ;GO !NITIALIZE THE FPS AND STACK, AND
 7372                                                                  ;SEE IF THE USER HAS EXPRESSED
 7373                                                                  ;THE DESIRE TO CHANGE THE SOFTWARE
 7374                                                                  ;VIRTUAL CONSOLE SWITCH REGISTER (HAS
 7375                                                                  ;THE USER TYPED CONTROL G?)
 7376
 7377
 7378                                  ;;*****************************************************************
 7379                                  ;*TEST 62        DESTINATION MODES, MODE 2 (FL=0), TEST
 7380                                  ;*
 7381                                  ;* THIS IS A TEST OF DESTINATION MODE 2 USING
 7382                                  ;* THE STFPS INSTRUCTION
 7383                                  ;*
 7384                                  ;;*****************************************************************
 7385  032342  000004                  TST62   SCOPE
 7386
 7387
 7388  032344                          00C1
 7389  032344  104413                          LPERR                   ;SET UP THE LOOP ON ERROR ADDRESS
 7390  032346  012700  032444                  MOV     #00CTB0,R0      ;SET UP THE DATA BUFFER
 7391  032352  012701  000006                  MOV     #6,R1
 7392  032356  012720  177777          1$      MOV     #-1,(R0)+
 7393  032362  077103                          SOB     R1,1$
 7394  032364  012700  105412                  MOV     #105412,R0
 7395  032370  012737  032412  001236          MOV     #00C2,@#$TMP2
 7396  032376  012737  032544  000004          MOV     #00C25,@#ERRVECT  ;SET UP FOR TRAPS TO VECTOR 4
 7397  032404  170100                          LDFPS   R0              ;SET UP FPS
```

```
 7398  032406  012700  032450              MOV     #00CTB1,R0
 7399
 7400  032412  170220              00C2    STFPS   (R0)+           ;TEST INSTRUCTION
 7401  032414  020027  032452              CMP     R0,#00CTB1+2    ;IS R0 CORRECT?
 7402  032420  001017                      BNE     00C10           ;BRANCH IF NOT CORRECT
 7403  032422  023727  032450  105412      CMP     @#00CTB1,#105412  ;IS THE RESULT CORRECT?
 7404  032430  001023                      BNE     00C15           ;BRANCH IF NOT CORRECT
 7405  032432  023727  032452  177777      CMP     @#00CTB1+2,#-1  ;IS THE RESULT CORRECT?
 7406  032440  001030                      BNE     00C20           ;BRANCH IF NOT CORRECT
 7407  032442  000453                      BR      00CDONE
 7408
 7409                                  ;TEST DATA BUFFER
 7410  032444  177777  177777      00CTB0  .WORD   -1,-1
 7411  032450  177777  177777  177777  00CTB1  .WORD   -1,-1,-1,-1
 7412  032456  177777
 7413
 7414                                  ;REPORT R0 INCORRECT
 7415  032460  010037  001242      00C10   MOV     R0,@#$TMP4
 7416  032464  012737  032452  001240        MOV     #00CTB1+2,@#$TMP3
 7417  032472                      1$
 7418  032472  104377                      ERROR   377
 7419  032474  000005                       .WORD   5
 7420                                                                  ;R0 BAD (BUT
 7421  032476  000435                      BR      00CDONE           ;    FDST)X
 7422
 7423                                  ;REPORT RESULT INCORRECT
 7424  032500  012737  105412  001240  00C15   MOV     #105412,@#$TMP3           ;    ST 634
 7425  032506  013737  032450  001242        MOV     @#00CTB1,@#$TMP4
 7426  032514                      1$
 7427  032514  104377                      ERROR   377
 7428  032516  000006                       .WORD   6
 7429                                                                  ;BAD DATA
 7430  032520  000424                      BR      00CDONE
 7431
 7432
 7433                                  ;REPORT RESULT INCORRECT.
 7434  032522  012737  177777  001240  00C20:  MOV     #-1,@#$TMP3
 7435  032530  013737  032452  001242        MOV     @#00CTB1+2,@#$TMP4
 7436  032536                      1$
 7437  032536  104377                      ERROR   377
 7438  032540  000007                       .WORD   7
 7439                                                                  ;(BUT GR7,FL)
 7440  032542  000413                      BR      00CDONE           ;ST 357 TO 416
 7441                                                                  ;INTO 417
 7442
 7443                                  ;IF A TRAP TO VECTOR 4 OCCURS COME HERE TO SEE IF THE TRAP OCCURRED
 7444                                  ;DURING EXECUTION OF THE FPP INSTRUCTION BEING TESTED, IF NOT GO
 7445                                  ;TO THE SPURIOUS TRAP TO 4 HANDLER
 7446  032544  011604              00C25   MOV     (SP),R4
 7447  032546  020427  032414              CMP     R4,#00C2+2
 7448  032552  001402                      BEQ     1$
 7449  032554  000137  042610              JMP     @#CPSPUR
 7450
 7451  032560  011637  001236      1$      MOV     (SP),@#$TMP2
 7452  032564  022626                      CMP     (SP)+,(SP)+
 7453  032566                      2$
```

```
7454  032566  104377                    ERROR   377
7455  032570  000010                     WORD   10
7456                                                    ,(BUT FDST)+ ST634
7457
7458  032572                    OOCDONE
7459  032572  104412                    RSETUP                  ,GO INITIALIZE THE FPS AND STACK, AND
7460                                                            ,SEE IF THE USER HAS EXPRESSED
7461                                                            ,THE DESIRE TO CHANGE THE SOFTWARE
7462                                                            ,VIRTUAL CONSOLE SWITCH REGISTER (HAS
7463                                                            ,THE USER TYPED CONTROL G?)
7464
7465
7466
7467                              ,,**************************************************************
7468                              ,*TEST 63       DESTINATION MODES, MODE 4 (FL=0), TEST
7469                              ,*
7470                              ,* THIS IS A TEST OF DESTINATION MODE 4 USING
7471                              ,* THE STFPS INSTRUCTION
7472                              ,*
7473                              ,,**************************************************************
7474  032574  000004              TST63:  SCOPE
7475
7476  032576                      PPC1
7477  032576  104413                      LPERR                   ,SET UP THE LOOP ON ERROR ADDRESS
7478  032600  012700  032676              MOV     #PPCTB0,R0      ,SET UP THE DATA BUFFER
7479  032604  012701  000006              MOV     #6,R1
7480  032610  012720  177777      1$      MOV     #-1,(R0)+
7481  032614  077103                      SOB     R1,1$
7482  032616  012700  105555              MOV     #105555,R0
7483  032622  012737  032644  001236      MOV     #PPC2,@#$TMP2
7484  032630  012737  032776  000004      MOV     #PPC25,@#ERRVECT  ,SET UP FOR TRAPS TO VECTOR 4
7485  032636  170100                      LDFPS   R0              ,SET UP FPS
7486  032640  012700  032704              MOV     #PPCTB1+2,R0
7487
7488  032644  170240              PPC2    STFPS   -(R0)           ,TEST INSTRUCTION
7489  032646  020027  032702              CMP     R0,#PPCTB1      ,IS R0 CORRECT?
7490  032652  001017                      BNE     PPC10           ,BRANCH IF NOT CORRECT
7491  032654  023727  032702  105555      CMP     @#PPCTB1,#105555  ,IS THE RESULT CORRECT?
7492  032662  001023                      BNE     PPC15           ;BRANCH IF NOT CORRECT
7493  032664  023727  032704  177777      CMP     @#PPCTB1+2,#-1  ,IS THE RESULT CORRECT?
7494  032672  001030                      BNE     PPC20           ,BRANCH IF NOT CORRECT
7495  032674  000453                      BR      PPCDONE
7496
7497                              ,TEST DATA BUFFER:
7498  032676  177777  177777      PPCTB0: .WORD   -1,-1
7499  032702  177777  177777  177777  PPCTB1: .WORD   -1,-1,-1,-1
7500  032710  177777
7501
7502                              ,REPORT R0 INCORRECT
7503  032712  010037  001242      PPC10:  MOV     R0,@#$TMP4
7504  032716  012737  032702  001240      MOV     #PPCTB1,@#$TMP3
7505  032724                      1$:
7506  032724  104377                      ERROR   377
7507  032726  000011                       WORD   11
7508                                                    ,R0 BAD (BUT
7509  032730  000435                      BR      PPCDONE         ,    FDST)X
```

```
7510
7511                                        ;REPORT RESULT INCORRECT
7512  032732  012737  105555  001240  PPC15   MOV     #105555,@#$TMP3                 ;     ST 634
7513  032740  013737  032702  001242          MOV     @#PPCTB1,@#$TMP4
7514  032746                          1$
7515  032746  104377                          ERROR   377
7516  032750  000012                           WORD   12
7517                                                                        ;BAD DATA
7518  032752  000424                          BR      PPCDONE
7519
7520
7521                                        ;REPORT RESULT INCORRECT                    /
7522  032754  012737  177777  001240  PPC20   MOV     #-1,@#$TMP3
7523  032762  013737  032704  001242          MOV     @#PPCTB1+2,@#$TMP4
7524  032770                          1$
7525  032770  104377                          ERROR   377
7526  032772  000013                           WORD   13
7527                                                                        ;(BUT GR7,FL)
7528  032774  000413                          BR      PPCDONE                 ;ST 357 TO 416
7529                                                                        ;INTO 417
7530
7531                                    ;IF A TRAP TO VECTOR 4 OCCURS COME HERE TO SEE IF THE TRAP OCCURRED
7532                                    ;DURING EXECUTION OF THE FPP INSTRUCTION BEING TESTED, IF NOT GO
7533                                    ;TO THE SPURIOUS TRAP TO 4 HANDLER
7534  032776  011604                    PPC25   MOV     (SP),R4
7535  033000  020427  032646                   CMP     R4,#PPC2+2
7536  033004  001402                           BEQ     1$
7537  033006  000137  042610                   JMP     @#CPSPUR
7538
7539  033012  011637  001236            1$     MOV     (SP),@#$TMP2
7540  033016  022626                           CMP     (SP)+,(SP)+
7541  033020                          2$
7542  033020  104377                          ERROR   377
7543  033022  000014                           WORD   14
7544                                                                        ;(BUT FDST)+ ST634
7545
7546  033024                          PPCDONE
7547  033024  104412                          RSETUP                  ;GO INITIALIZE THE FPS AND STACK, AND
7548                                                                  ;SEE IF THE USER HAS EXPRESSED
7549                                                                  ;THE DESIRE TO CHANGE THE SOFTWARE
7550                                                                  ;VIRTUAL CONSOLE SWITCH REGISTER (HAS
7551                                                                  ;THE USER TYPED CONTROL G?)
7552
7553
7554
7555                                    ;;*****************************************************************
7556                                    ;*TEST 64       DESTINATION MODES, MODE 3 (FL=0), TEST
7557                                    ;*
7558                                    ;* THIS IS A TEST OF DESTINATION MODE 3 USING
7559                                    ;* THE STFPS INSTRUCTION
7560                                    ;*
7561                                    ;;*****************************************************************
7562  033026  000004                    TST64   SCOPE
7563
7564  033030                          QQC1
7565  033030  104413                          LPERR                   ;SET UP THE LOOP ON ERROR ADDRESS
```

```
7566  033032  012700  033134              MOV     #QQCTB0,R0      ,SET UP THE DATA BUFFER
7567  033036  012701  000010              MOV     #10,R1
7568  033042  012720  177777      1$      MOV     #-1,(R0)+
7569  033046  077103                      SOB     R1,1$
7570  033050  012700  106653              MOV     #106653,R0
7571  033054  012737  033102  001236      MOV     #QQC2,@#$TMP2
7572  033062  012737  033240  000004      MOV     #QQC25,@#ERRVECT  ,SET UP FOR TRAPS TO VECTOR 4
7573  033070  170100                      LDFPS   R0              ,SET UP FPS
7574  033072  012700  033150              MOV     #QQCTB2,R0
7575  033076  012710  033140              MOV     #QQCTB1,(R0)
7576
7577  033102  170230              QQC2    STFPS   @(R0)+          ,TEST INSTRUCTION
7578  033104  020027  033152              CMP     R0,#QQCTB2+2    ,IS R0 CORRECT?
7579  033110  001021                      BNE     QQC10           ,BRANCH IF NOT CORRECT
7580  033112  023727  033140  106653      CMP     @#QQCTB1,#106653  ,IS THE RESULT CORRECT?
7581  033120  001025                      BNE     QQC15           ;BRANCH IF NOT CORRECT
7582  033122  023727  033150  033140      CMP     @#QQCTB2,#QQCTB1  ,IS THE RESULT CORRECT?
7583  033130  001032                      BNE     QQC20           ,BRANCH IF NOT CORRECT
7584  033132  000455                      BR      QQCDONE
7585
7586                              ,TEST DATA BUFFER
7587  033134  177777  177777      QQCTB0: .WORD   -1,-1
7588  033140  177777  177777  177777  QQCTB1: .WORD   -1,-1,-1,-1
7589  033146  177777
7590  033150  177777  177777      QQCTB2  .WORD   -1,-1
7591
7592                              ,REPORT R0 INCORRECT.
7593  033154  010037  001242      QQC10   MOV     R0,@#$TMP4
7594  033160  012737  033152  001240      MOV     #QQCTB2+2,@#$TMP3
7595  033166                      1$
7596  033166  104377                      ERROR   377
7597  033170  000015                       WORD   15
7598                                                              ,R0 BAD (BUT
7599  033172  000435                      BR      QQCDONE         ,    FDST)X
7600
7601                              ,REPORT RESULT INCORRECT
7602  033174  012737  106653  001240  QQC15:  MOV     #106653,@#$TMP3                 ,    ST 634
7603  033202  013737  033140  001242          MOV     @#QQCTB1,@#$TMP4
7604  033210                      1$
7605  033210  104377                      ERROR   377
7606  033212  000016                      .WORD   16
7607                                                              ,BAD DATA
7608  033214  000424                      BR      QQCDONE
7609
7610
7611                              ,REPORT RESULT INCORRECT.
7612  033216  012737  033150  001240  QQC20:  MOV     #QQCTB2,@#$TMP3                 ,(BUT FDST)
7613  033224  013737  033142  001242          MOV     @#QQCTB1+2,@#$TMP4
7614  033232                      1$
7615  033232  104377                      ERROR   377
7616  033234  000017                       WORD   17
7617  033236  000413                      BR      QQCDONE
7618
7619
7620                              ,IF A TRAP TO VECTOR 4 OCCURS COME HERE TO SEE IF THE TRAP OCCURRED
7621                              ,DURING EXECUTION OF THE FPP INSTRUCTION BEING TESTED.  IF NOT GO
```

```
 7622                                   ,TO THE SPURIOUS TRAP TO 4 HANDLER
 7623  033240  011604                   QQC25   MOV     (SP),R4
 7624  033242  020427  033104                   CMP     R4,#QQC2+2
 7625  033246  001402                           BEQ     1$
 7626  033250  000137  042610                   JMP     @#CPSPUR
 7627
 7628  033254  011637  001236           1$      MOV     (SP),@#$TMP2
 7629  033260  022626                           CMP     (SP)+,(SP)+
 7630  033262                           2$
 7631  033262  104377                           ERROR   377
 7632  033264  000020                            WORD   20
 7633                                                                   ,(BUT FDST)+ ST634
 7634
 7635  033266                           QQCDONE
 7636  033266  104412                           RSETUP                  ,GO INITIALIZE THE FPS AND STACK, AND
 7637                                                                   ;SEE IF THE USER HAS EXPRESSED
 7638                                                                   ,THE DESIRE TO CHANGE THE SOFTWARE
 7639                                                                   ,VIRTUAL CONSOLE SWITCH REGISTER (HAS
 7640                                                                   ,THE USER TYPED CONTROL G?)
 7641
 7642
 7643
 7644                                   ,,*********************************************************************
 7645                                   ,*TEST 65       DESTINATION MODES, MODE 5 (FL=0), TEST
 7646                                   ;*
 7647                                   ,* THIS IS A TEST OF DESTINATION MODE 5 USING
 7648                                   ,* THE STFPS INSTRUCTION
 7649                                   ,*
 7650                                   ,,*********************************************************************
 7651  033270  000004                   TST65   SCOPE
 7652
 7653
 7654  033272                           RRC1:
 7655  033272  104413                           LPERR                   ,SET UP THE LOOP ON ERROR ADDRESS
 7656  033274  012700  033400                   MOV     #RRCTB0,R0      ,SET UP THE DATA BUFFER
 7657  033300  012701  000006                   MOV     #6,R1
 7658  033304  012720  177777           1$      MOV     #-1,(R0)+
 7659  033310  077103                           SOB     R1,1$
 7660  033312  012700  004301                   MOV     #004301,R0
 7661  033316  012737  033346  001236           MOV     #RRC2,@#$TMP2
 7662  033324  012737  033504  000004           MOV     #RRC25,@#ERRVECT  ,SET UP FOR TRAPS TO VECTOR 4
 7663  033332  170100                           LDFPS   R0              ,SET UP FPS
 7664  033334  012700  033416                   MOV     #RRCTB2+2,R0
 7665  033340  012760  033404  177776           MOV     #RRCTB1,-2(R0)
 7666
 7667  033346  170250                   RRC2    STFPS   @-(R0)          ,TEST INSTRUCTION
 7668  033350  020027  033414                   CMP     R0,#RRCTB2      ,IS R0 CORRECT?
 7669  033354  001021                           BNE     RRC10           ,BRANCH IF NOT CORRECT
 7670  033356  023727  033404  004301           CMP     @#RRCTB1,#004301  ,IS THE RESULT CORRECT?
 7671  033364  001025                           BNE     RRC15           ,BRANCH IF NOT CORRECT
 7672  033366  023727  033414  033404           CMP     @#RRCTB2,#RRCTB1  ,IS THE RESULT CORRECT?
 7673  033374  001032                           BNE     RRC20           ,BRANCH IF NOT CORRECT
 7674  033376  000455                           BR      RRCDONE
 7675
 7676                                   ,TEST DATA BUFFER
 7677  033400  177777  177777           RRCTB0   WORD   -1,-1
```

```
 7678  033404  177777  177777  177777  RRCTB1   WORD   -1,-1,-1,-1
 7679  033412  177777
 7680  033414  177777  177777          RRCTB2:  .WORD  -1,-1
 7681
 7682                                  ,REPORT RO INCORRECT
 7683  033420  01J037  001242          RRC10:   MOV    RO,@#$TMP4
 7684  033424  012737  033414  001240           MOV    #RRCTB2,@#$TMP3
 7685  033432                        1$
 7686  033432  104377                           ERROR  377
 7687  033434  000021                           .WORD  21
 7688                                                                 ,RO BAD (BUT
 7689  033436  000435                           BR     RRCDONE                ,    FDST)X
 7690
 7691                                  ;REPORT RESULT INCORRECT
 7692  033440  012737  004301  001240  RRC15:   MOV    #004301,@#$TMP3                ,    ST 634
 7693  033446  013737  033404  001242           MOV    @#RRCTB1,@#$TMP4
 7694  033454                        1$:
 7695  033454  104377                           ERROR  377
 7696  033456  000022                           .WORD  22
 7697                                                                 ,BAD DATA
 7698  033460  000424                           BR     RRCDONE
 7699
 7700
 7701                                  ;REPORT RESULT INCORRECT.
 7702  033462  012737  033414  001240  RRC20:   MOV    #RRCTB2,@#$TMP3                ,BUT FDST)
 7703  033470  013737  033406  001242           MOV    @#RRCTB1+2,@#$TMP4
 7704  033476                        1$·
 7705  033476  104377                           ERROR  377
 7706  033500  000023                           .WORD  23
 7707                                                                 ,(BUT GR7,FL)
 7708  033502  000413                           BR     RRCDONE         ,ST 357 TO 416
 7709                                                                 ,INTO 417
 7710
 7711                                  ;IF A TRAP TO VECTOR 4 OCCURS COME HERE TO SEE IF THE TRAP OCCURRED
 7712                                  ;DURING EXECUTION OF THE FPP INSTRUCTION BEING TESTED, IF NOT GO
 7713                                  ,TO THE SPURIOUS TRAP TO 4 HANDLER
 7714  033504  011604                  RRC25:   MOV    (SP),R4
 7715  033506  020427  033350                   CMP    R4,#RRC2+2
 7716  033512  001402                           BEQ    1$
 7717  033514  000137  042610                   JMP    @#CPSPUR
 7718
 7719  033520  011637  001236          1$·      MOV    (SP),@#$TMP2
 7720  033524  022626                           CMP    (SP)+,(SP)+
 7721  033526                        2$
 7722  033526  104377                           ERROR  377
 7723  033530  000024                           .WORD  24
 7724                                                                 ,(BUT FDST)+ ST634
 7725
 7726  033532                        RRCDONE
 7727  033532  104412                           RSETUP                 ,GO INITIALIZE THE FPS AND STACK, AND
 7728                                                                 ,SEE IF THE USER HAS EXPRESSED
 7729                                                                 ,THE DESIRE TO CHANGE THE SOFTWARE
 7730                                                                 ,VIRTUAL CONSOLE SWITCH REGISTER (HAS
 7731                                                                 ,THE USER TYPED CONTROL G?)
 7732
 7733
```

```
                                        ,,**********************************************************************
                                        ,*TEST 66       DESTINATION MODES, MODE 6 (FL=0), TEST
                                        ,*
                                        ;* THIS IS A TEST OF DESTINATION MODE 6 USING
                                        ;* THE STFPS INSTRUCTION
                                        ,*
                                        ,,**********************************************************************
033534  000004                        TST66:  SCOPE

033536                                  SSC1:
033536  104413                              LPERR                   ;SET UP THE LOOP ON ERROR ADDRESS
033540  012700  033650                      MOV     #SSCTB0,R0      ,SET UP THE DATA BUFFER
033544  012701  000006                      MOV     #6,R1
033550  012720  177777                1$    MOV     #-1,(R0)+
033554  077103                            SOB     R1,1$
033556  012700  102514                      MOV     #102514,R0
033562  012737  033606  001236              MOV     #SSC2,@#$TMP2
033570  012737  033750  000004              MOV     #SSC25,@#ERRVECT  ,SET UP FOR TRAPS TO VECTOR 4
033576  170100                            LDFPS   R0              ;SET UP FPS
033600  005001                            CLR     R1
033602  012700  026453                    MOV     #SSCTB1-5201,R0

033606  170260  005201                SSC2.   STFPS   5201(R0)                ,TEST INSTRUCTION
033612  020127  000000                      CMP     R1,#0           ;WAS PC CORRECT AFTER EXECUTION?
033616  001070                            BNE     SSC30           ;BRANCH IF NOT CORRECT
033620  020027  026453                    CMP     R0,#SSCTB1-5201 ;IS R0 CORRECT?
033624  001017                            BNE     SSC10           ;BRANCH IF NOT CORRECT
033626  023727  033654  102514              CMP     @#SSCTB1,#102514  ;IS THE RESULT CORRECT?
033634  001023                            BNE     SSC15           ;BRANCH IF NOT CORRECT
033636  023727  033656  177777              CMP     @#SSCTB1+2,#-1  ;IS THE RESULT CORRECT?
033644  001030                            BNE     SSC20           ;BRANCH IF NOT CORRECT
033646  000456                            BR      SSCDONE

                                        ;TEST DATA BUFFER:
033650  177777  177777                SSCTB0: .WORD   -1,-1
033654  177777  177777  177777        SSCTB1: .WORD   -1,-1,-1,-1
033662  177777

                                        ;REPORT R0 INCORRECT.
033664  010037  001242                SSC10:  MOV     R0,@#$TMP4
033670  012737  026453  001240              MOV     #SSCTB1-5201,@#$TMP3
033676                                  1$:
033676  104377                            ERROR   377
033700  000025                              WORD    25
```

```
                                                                        ,R0 BAD
 033702  000440                                 BR      SSCDONE

                                        ;REPORT RESULT INCORRECT
 033704  012737  102534  001240         SSC15:  MOV     #102534,@#$TMP3
 033712  013737  033654  001242                 MOV     @#SSCTB1,@#$TMP4
 033720                                 1$:
 033720  104377                                 ERROR   377
 033722  000026                                 .WORD   26
                                                                        ;BAD DATA
 033724  000427                                 BR      SSCDONE


                                        ;REPORT RESULT INCORRECT.
 033726  012737  177777  001240         SSC20:  MOV     #-1,@#$TMP3
 033734  013737  033656  001242                 MOV     @#SSCTB1+2,@#$TMP4
 033742                                 1$:
 033742  104377                                 ERROR   377
 033744  000027                                 .WORD   27
                                                                        ,(BUT GR7,FL)
 033746  000416                                 BR      SSCDONE         ;ST 357 TO 416
                                                                        ;INTO 417

                                        ;IF A TRAP TO VECTOR 4 OCCURS COME HERE TO SEE IF THE TRAP OCCURRED
                                        ;DURING EXECUTION OF THE FPP INSTRUCTION BEING TESTED, IF NOT GO
                                        ;TO THE SPURIOUS TRAP TO 4 HANDLER.
 033750  011604                         SSC25:  MOV     (SP),R4
 033752  020427  033610                         CMP     R4,#SSC2+2
 033756  001402                                 BEQ     1$
 033760  000137  042610                         JMP     @#CPSPUR

 033764  011637  001236                 1$:     MOV     (SP),@#$TMP2
 033770  022626                                 CMP     (SP)+,(SP)+
 033772                                 2$.
 033772  104377                                 ERROR   377
 033774  000030                                 .WORD   30
                                                                        ,(BUT FDST)+ ST634
 033776  000402                                 BR      SSCDONE

                                        ;REPORT PC NOT INCREMENTED BY 2 DURING EXECUTION.
 034000                                 SSC30:
 034000                                 1$.
 034000  104377                                 ERROR   377
 034002  000031                                 .WORD   31
                                                                        ,PC NOT
                                                                        ;INCREMENTED
                                                                        ,BY 2

 034004                                 SSCDONE
 034004  104412                                 RSETUP                  ,GO INITIALIZE THE FPS AND STACK, AND
                                                                        ,SEE IF THE USER HAS EXPRESSED
                                                                        ,THE DESIRE TO CHANGE THE SOFTWARE
                                                                        ,VIRTUAL CONSOLE SWITCH REGISTER (HAS
                                                                        ,THE USER TYPED CONTROL G?)
```

```
                                ;;**********************************************************************
                                ;*TEST 67       DESTINATION MODES. MODE 7 (FL=0), TEST
                                ;*
                                ;* THIS IS A TEST OF DESTINATION MODE 7 USING
                                ;* THE STFPS INSTRUCTION
                                ;*
                                ;;**********************************************************************
034006  000004                  TST67   SCOPE

034010                          TTC1
034010  104413                          LPERR                   ;SET UP THE LOOP ON ERROR ADDRESS
034012  012700  034130                   MOV     #TTCTB0,R0      ;SET UP THE DATA BUFFER
034016  012701  000010                   MOV     #10.,R1
034022  012720  177777          1$      MOV     #-1,(R0)+
034026  077103                          SOB     R1,1$
034030  012700  103747                   MOV     #103747,R0
034034  012737  034066  001236           MOV     #TTC2,@#$TMP2
034042  012737  034234  000004           MOV     #TTC25,@#ERRVECT  ;SET UP FOR TRAPS TO VECTOR 4
034050  170100                          LDFPS   R0              ;SET UP FPS
034052  005001                          CLR     R1
034054  012700  026743                   MOV     #TTCTB2-5201,R0
034060  012760  034134  005201           MOV     #TTCTB1,5201(R0)

034066  170270  005201          TTC2    STFPS   @5201(R0)               ;TEST INSTRUCTION
034072  022701  000000                   CMP     #0,R1           ;WAS PC CORRECT AFTER EXECUTION?
034076  001072                          BNE     TTC30           ;BRANCH IF NOT CORRECT
034100  020027  026743                   CMP     R0,#TTCTB2-5201 ;IS R0 CORRECT?
034104  001021                          BNE     TTC10           ;BRANCH IF NOT CORRECT
034106  023727  034134  103747           CMP     @#TTCTB1,#103747  ;IS THE RESULT CORRECT?
034114  001025                          BNE     TTC15           ;BRANCH IF NOT CORRECT.
034116  023727  034136  177777           CMP     @#TTCTB1+2,#-1  ;IS THE RESULT CORRECT?
034124  001032                          BNE     TTC20           ;BRANCH IF NOT CORRECT
034126  000460                          BR      TTCDONE

                                ;TEST DATA BUFFER:
034130  177777  177777          TTCTB0: .WORD   -1,-1
034134  177777  177777  177777  TTCTB1:  WORD   -1,-1,-1,-1
034142  177777
034144  177777  177777          TTCTB2: .WORD   -1,-1

                                ;REPORT R0 INCORRECT
034150  010037  001242          TTC10:  MOV     R0,@#$TMP4
034154  012737  026743  001240           MOV     #TTCTB2-5201,@#$TMP3
034162                          1$
034162  104377                          ERROR   377
034164  000032                           WORD   32
                                                                ;R0 BAD
034166  000440                          BR      TTCDONE

                                ;REPORT RESULT INCORRECT
034170  012737  103747  001240  TTC15   MOV     #103747,@#$TMP3
034176  013737  034134  001242           MOV     @#TTCTB1,@#$TMP4
034204                          1$
034204  104377                          ERROR   377
034206  000033                           WORD   33
```

```
7891                                                                    ;BAD DATA
7892  034210  000427                        BR      TTCDONE
7893
7894
7895                                ;REPORT RESULT INCORRECT
7896  034212  012737  177777  001240  TTC20   MOV     #-1,@#$TMP3
7897  034220  013737  034136  001242          MOV     @#TTCTB1+2,@#$TMP4
7898  034226                        1$
7899  034226  104377                        ERROR   377
7900  034230  000034                         WORD   34
7901                                                                    ;(BUT GR7,FL)
7902  034232  000416                        BR      TTCDONE           ;ST 357 TO 416
7903                                                                    ;INTO 417
7904
7905                                ;IF A TRAP TO VECTOR 4 OCCURS COME HERE TO SEE IF THE TRAP OCCURRED
7906                                ;DURING EXECUTION OF THE FPP INSTRUCTION BEING TESTED, IF NOT GO
7907                                ;TO THE SPURIOUS TRAP TO 4 HANDLER
7908  034234  011604                TTC25   MOV     (SP),R4
7909  034236  020427  034070               CMP     R4,#TTC2+2
7910  034242  001402                        BEQ     1$
7911  034244  000137  042610               JMP     @#CPSPUR
7912  034250  011637  001236        1$     MOV     (SP),@#$TMP2
7913  034254  022626                        CMP     (SP)+,(SP)+
7914  034256                        2$
7915  034256  104377                        ERROR   377
7916  034260  000035                         WORD   35
7917                                                                    ;(BUT FSDT)+ ST634
7918  034262  000402                        BR      TTCDONE
7919
7920                                ;REPORT PC NOT INCREMENTED BY 2 DURING EXECUTION
7921  034264                        TTC30:
7922  034264                        1$
7923  034264  104377                        ERROR   377
7924  034266  000036                        .WORD   36
7925                                                                    ;PC NOT
7926                                                                    ;INCREMENTED
7927  034270                        TTCDONE
7928  034270  104412                        RSETUP                    ;GO INITIALIZE THE FPS AND STACK, AND
7929                                                                    ;SEE IF THE USER HAS EXPRESSED
7930                                                                    ;THE DESIRE TO CHANGE THE SOFTWARE
7931                                                                    ;VIRTUAL CONSOLE SWITCH REGISTER (HAS
7932                                                                    ;THE USER TYPED CONTROL G?)
7933
7934                                ;;*****************************************************************
7935                                ;*TEST 70        DESTINATION MODES, MODE 2 (FL=1), TEST
7936                                ;*
7937                                ;* THIS IS A TEST OF DESTINATION MODE
7938                                ;* 2 USING STCOL WITH REGISTER 0
7939                                ;*
7940                                ;;*****************************************************************
7941  034272  000004                TST70   SCOPE
7942  034274                        UUC1
7943  034274  104413                        LPERR                     ;SET UP THE LOOP ON ERROR ADDRESS
7944  034276  012700  000300               MOV     #300,R0           ;SET UP FPS
7945  034302  170100                        LDFPS   R0
7946  034304  012700  034354               MOV     #UUCTP1,R0        ;SET UP THE ACO OPERAND
```

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7947  034310  172410                          LDD     (R0),AC0
7948  034312  012737  034324  001236          MOV     #UUC2,@#$TMP2
7949  034320  012700  034366                  MOV     #UUCBF0,R0
7950
7951  034324  175420                  UUC2    STCDL   AC0,(R0)+       ;TEST INSTRUCTION
7952
7953  034326  020027  034372                  CMP     R0,#UUCBF0+4    ;IS R0 CORRECT?
7954  034332  001420                          BEQ     UUCDONE         ;BRANCH IF CORRECT
7955
7956                                  ;REPORT R0 INCORRECT
7957  034334  010037  001242          UUC3    MOV     R0,@#$TMP4
7958  034340  012737  034372  001240          MOV     #UUCBF0+4,@#$TMP3
7959  034346                          1$
7960  034346  104377                          ERROR   377
7961  034350  000037                           WORD   37
7962                                                                  ;R0 NOT INCR BY 4
7963  034352  000410                          BR      UUCDONE
7964                                  ;TEST DATA BUFFER
7965  034354  000000  000000  000000  UUCTP1  .WORD   0,0,0,0
7966  034362  000000
7967  034364  177777                          -1
7968  034366  177777  177777  177777  UUCBF0. .WORD   -1,-1,-1
7969
7970  034374                          UUCDONE.
7971  034374  104412                          RSETUP                  ;GO INITIALIZE THE FPS AND STACK, AND
7972                                                                  ;SEE IF THE USER HAS EXPRESSED
7973                                                                  ;THE DESIRE TO CHANGE THE SOFTWARE
7974                                                                  ;VIRTUAL CONSOLE SWITCH REGISTER (HAS
7975                                                                  ;THE USER TYPED CONTROL G?)
7976
7977                                  ;;**********************************************************************
7978                                  ;*TEST 71        DESTINATION MODES, MODE 4 (FL=1), TEST
7979                                  ;*
7980                                  ;* THIS IS A TEST OF DESTINATION MODE
7981                                  ;* 4 USING STCDL WITH REGISTER 0
7982                                  ;*
7983                                  ;;**********************************************************************
7984  034376  000004                  TST71   SCOPE
7985
7986  034400                          VVC1
7987  034400  104413                          LPERR                   ;SET UP THE LOOP ON ERROR ADDRESS
7988  034402  012700  000300                  MOV     #300,R0         ;SET UP FPS
7989  034406  170100                          LDFPS   R0
7990  034410  012700  034460                  MOV     #VVCTP1,R0      ;SET UP THE AC0 OPERAND
7991  034414  172410                          LDD     (R0),AC0
7992  034416  012737  034430  001236          MOV     #VVC2,@#$TMP2
7993  034424  012700  034476                  MOV     #VVCBF0+4,R0
7994
7995  034430  175440                  VVC2    STCDL   AC0,-(R0)               ;TEST INSTRUCTION
7996
7997  034432  020027  034472                  CMP     R0,#VVCBF0      ;IS R0 CORRECT?
7998  034436  001420                          BEQ     VVCDONE
7999
8000                                  ;REPORT R0 INCORRECT
8001  034440  010037  001242          VVC3    MOV     R0,@#$TMP4
8002  034444  012737  034472  001240          MOV     #VVCBF0,@#$TMP3
```

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8003  034452                          1$
8004  034452  104377                  ERROR   377
8005  034454  000040                   WORD   40
8006                                                        ,R0 NOT DECR BY 4
8007  034456  000410                  BR      VVCDONE
8008                                ,TEST DATA BUFFER
8009  034460  000000  000000  000000  VVCTP1   WORD   0,0,0,0
8010  034466  000000
8011  034470  177777                  -1
8012  034472  177777  177777  177777  VVCBF0   WORD   -1,-1,-1
8013
8014  034500                          VVCDONE
8015  034500  104412                  RSETUP                  ,GO INITIALIZE THE FPS AND STACK, AND
8016                                                          ,SEE IF THE USER HAS EXPRESSED
8017                                                          ,THE DESIRE TO CHANGE THE SOFTWARE
8018                                                          ,VIRTUAL CONSOLE SWITCH REGISTER (HAS
8019                                                          ,THE USER TYPED CONTROL G?)
8020
8021                                ,,**********************************************************************
8022                                ,*TEST 72       STCDI AND STCDL TEST
8023                                ,*
8024                                ,* THIS IS A TEST OF THE STCDI AND
8025                                ,* STCDL INSTRUCTIONS.  NOTE THAT A
8026                                ,* SUBROUTINE, STCSUB, IS USED TO
8027                                ,* SET UP THE OPERANDS, EXECUTE THE STC
8028                                ,* INSTRUCTION AND CHECK THE RESULT
8029                                ,*
8030                                ,,**********************************************************************
8031  034502  000004                TST72   SCOPE
8032
8033                                ,FIRST TEST STC WITH EXP=100 (EXCESS 200)
8034  034504                        WWC1
8035  034504  104413                  LPERR                   ,SET UP THE LOOP ON ERROR ADDRESS
8036  034506  004737  035652          JSR     PC,@#STCSUB     ,GO EXECUTE THE INSTRUCTION
8037  034512  020000  000000  000000  1$       WORD   20000,0,0,0      ,AC0 OPERAND
8038  034520  000000
8039  034522  000000  000000          2$       WORD   0,0              ,EXPECTED RESULT
8040  034526  177777  177777          3$       WORD   -1,-1            ,ERROR RES
8041  034532  040300                  4$      40300                    ;FPS BEFORE EXECUTION
8042  034534  040304                          40304                    ,FPS AFTER EXECUTION
8043  034536  140304                          140304                   ,ANTICIPATED ERRONEOUS FPS
8044  034540  177777                          -1              ,REPORT RESULT INCORRECT
8045  034542  104322                  5$      ERROR   322             ,RESULT INCORP
8046  034544  000401                          BR      6$
8047  034546  104325                          ERROR   325             ,EITHER (BUT FLAG)
8048  034550                          6$                              ,ST 662
8049                                                                  ,OR CLEAR FLAG
8050                                                                  ,ST 774
8051
8052                                ,EXP=0 (OCT)    FL=1     FIC=0
8053  034550                        WWC2
8054  034550  104413                  LPERR                   ,SET UP THE LOOP ON ERROR ADDRESS
8055  034552  004737  035652          JSR     PC,@#STCSUB     ,GO EXECUTE THE INSTRUCTION
8056  034556  040000  000000  000000  1$       WORD   40000,0,0,0      ,AC     ,AC0 OPERAND
8057  034564  000000
8058  034566  000000  000000          2$       WORD   0,0              ,EXPECTED RESULT
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8059  034572  177777  177777        3$      WORD    -1,-1           ;ANTICIPATED ERRONEOUS RESULT
8060  034576  040313                4$      40313                   ;FPS BEFORE EXECUTION
8061  034600  040304                        40304                   ;FPS AFTER EXECUTION
8062  034602  140304                        140304                  ;ANTICIPATED ERRONEOUS FPS
8063  034604  177777                        -1              ;EXPECTED FEC
8064  034606  104322                5$      ERROR   322             ;REPORT RESULT INCORRECT
8065  034610  000401                        BR      6$
8066  034612  104326                        ERROR   326             ;REPORT FPS INCORRECT
8067  034614                        6$
8068
8069                                ;EXP=37 (OCT)   FL=1    FIC=1
8070  034614                        WWC4
8071  034614  104413                        LPERR                   ;SET UP THE LOOP ON ERROR ADDRESS
8072  034616  004737  035652                JSR     PC,@#STCSUB     ;GO EXECUTE THE INSTRUCTION
8073  034622  047667  075757  157737  1$      WORD    47667,75757,157737,167773       ;ACO OPERAND
8074  034630  167773
8075  034632  055675  173757        2$      WORD    55675,173757            ;EXPECTED RESULT
8076  034636  122102  004021        3$      WORD    122102,004021           ;ANTICIPATED ERRONEOUS RESULT
8077  034642  040717                4$      40717                   ;FPS BEFORE EXECUTION
8078  034644  040700                        40700                   ;FPS AFTER EXECUTION
8079  034646  140705                        140705                  ;ANTICIPATED ERRONEOUS FPS
8080  034650  177777                        -1              ;EXPECTED FEC
8081  034652  104327                5$      ERROR   327             ;(BUT ENBT) ST 632
8082  034654  000401                        BR      6$
8083  034656  104326                        ERROR   326             ;REPORT FPS INCORRECT
8084  034660                        6$
8085
8086                                ;EXP=40 (OCT)   FL=1    FIC=1
8087  034660                        WWC5
8088  034660  104413                        LPERR                   ;SET UP THE LOOP ON ERROR ADDRESS
8089  034662  004737  035652                JSR     PC,@#STCSUB     ;GO EXECUTE THE INSTRUCTION
8090  034666  050000  000000  000000  1$      WORD    50000,0,0,0     ;ACO OPERAND.
8091  034674  000000
8092  034676  000000  000000        2$      WORD    0,0             ;EXPECTED RESULT
8093  034702  177777  177777        3$      WORD    -1,-1           ;ANTICIPATED ERRONEOUS RESULT
8094  034706  040700                4$      40700                   ;FPS BEFORE EXECUTION
8095  034710  140705                        140705                  ;FPS AFTER EXECUTION
8096  034712  040705                        40705                   ;ANTICIPATED ERRONEOUS FPS
8097  034714  000006                        6               ;EXPECTED FEC
8098  034716  104322                5$      ERROR   322             ;REPORT RESULT INCORRECT
8099  034720  000401                        BR      6$
8100  034722  104330                        ERROR   330             ;(BUT FIC) ST 004               ;REPORT FPS INCORRECT
8101                                                                ;TO 305 INTO
8102  034724                        6$                              ;315
8103
8104                                ;EXP=40 (OCT)    FL=1   FIC=0
8105  034724                        WWC6
8106  034724  104413                        LPERR                   ;SET UP THE LOOP ON ERROR ADDRESS
8107  034726  004737  035652                JSR     PC,@#STCSUB     ;GO EXECUTE THE INSTRUCTION
8108  034732  050000  000000  000000  1$      WORD    50000,0,0,0     ;ACO OPERAND
8109  034740  000000
8110  034742  000000  000000        2$      WORD    0,0             ;EXPECTED RESULT
8111  034746  177777  177777        3$      WORD    -1,-1           ;ANTICIPATED ERRONEOUS RESULT
8112  034752  040312                4$      40312                   ;FPS BEFORE EXECUTION
8113  034754  040305                        40305                   ;FPS AFTER EXECUTION
8114  034756  140305                        140305                  ;ANTICIPATED ERRONEOUS FPS
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8115  034760  177777                          -1                  ,EXPECTED FEC
8116  034762  104322                  5$      ERROR   322         ,REPORT RESULT INCORRECT
8117  034764  000401                          BR      6$
8118  034766  104331                          ERROR   331         ,(BUT FIC) ST 004 TO
8119  034770                          6$                                ,315 INTO 305
8120
8121                                  ,EXP=30 (OCT)   FL=1    FIC=1
8122  034770                          WWC7
8123  034770  104413                          LPERR               ,SET UP THE LOOP ON ERROR ADDRESS
8124  034772  004737  035652                  JSR     PC,@#STCSUB ,GO EXECUTE THE INSTRUCTION
8125  034776  046000  000001  000000  1$       WORD   46000,1,0,0 ,ACO OPERAND
8126  035004  000000
8127  035006  000200  000001          2$       WORD   200,1       ,EXPECTED RESULT
8128  035012  177777  177777          3$       WORD   -1,-1       ,ANTICIPATED ERRONEOUS RESULT
8129  035016  040700                  4$      40700                FPS BEFORE EXECUTION
8130  035020  040700                          40700               ,FPS AFTER EXECUTION
8131  035022  177777                          -1                  ,ANTICIPATED ERRONEOUS FPS
8132  035024  177777                          -1                  ,EXPECTED FEC
8133  035026  104322                  5$      ERROR   322         ,REPORT RESULT INCORRECT
8134  035030  000401                          BR      6$
8135  035032  104323                          ERROR   323         ,REPORT FPS INCORRECT
8136  035034                          6$
8137
8138                                  ,EXP=27 (OCT)   FL=1    FIC=1
8139  035034                          WWC8
8140  035034  104413                          LPERR               ,SET UP THE LOOP ON ERROR ADDRESS
8141  035036  004737  035652                  JSR     PC,@#STCSUB ,GO EXECUTE THE INSTRUCTION
8142  035042  045600  000001  000000  1$       WORD   45600,1,0,0 ,ACO OPERAND
8143  035050  000000
8144  035052  000100  000000          2$       WORD   100,0       ,EXPECTED RESULT
8145  035056  177777  177777          3$       WORD   -1,-1       ,ANTICIPATED ERRONEOUS RESULT
8146  035062  040707                  4$      40707                ,FPS BEFORE EXECUTION
8147  035064  040700                          40700               ,FPS AFTER EXECUTION
8148  035066  177777                          -1                  ,ANTICIPATED ERRONEOUS FPS
8149  035070  177777                          -1                  ,EXPECTED FEC
8150  035072  104322                  5$      ERROR   322         ,REPORT RESULT INCORRECT
8151  035074  000401                          BR      6$
8152  035076  104323                          ERROR   323         ,REPORT FPS INCORRECT
8153  035100                          6$
8154
8155                                  ,EXP=17 (OCT)   FL=0    FIC=1
8156  035100                          WWC9
8157  035100  104413                          LPERR               ,SET UP THE LOOP ON ERROR ADDRESS
8158  035102  004737  035652                  JSR     PC,@#STCSUB ,GO EXECUTE THE INSTRUCTION
8159  035106  043600  000000  000000  1$       WORD   43600,0,0,0 ,ACO OPERAND
8160  035114  000000
8161  035116  040000  177777          2$       WORD   40000,-1                ,EXPECTED RESULT
8162  035122  000000  177777          3$       WORD   0,-1        ,ANTICIPATED ERRONEOUS RESULT
8163  035126  040600                  4$      40600                ,FPS BEFORE EXECUTION
8164  035130  040600                          40600               ,FPS AFTER EXECUTION
8165  035132  140604                          140604              ,ANTICIPATED ERRONEOUS FPS
8166  035134  177777                          -1                  ,EXPECTED FEC
8167  035136  104332                  5$      ERROR   332         ,BAD CONSTANT ST 066
8168  035140  000401                          BR      6$
8169  035142  104333                          ERROR   333         ,REPORT FPS INCORRECT
8170  035144                          6$
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                                      ,EXP=20 (OCT)   FL=0    FIC=1
035144                                WWC10
035144  104413                               LPERR                      ,SET UP THE LOOP ON ERROR ADDRESS
035146  004737  035652                       JSR     PC,@#STCSUB        ,GO EXECUTE THE INSTRUCTION
035152  044000  000000  000000  1$            WORD    44000,0,0,0        ,AC0 OPERAND
035160  000000
035162  000000  177777          2$            WORD    0,-1               ,EXPECTED RESULT
035166  177777  177777          3$            WORD    -1,-1              ,ANTICIPATED ERRONEOUS RESULT
035172  040600                  4$           40600                      ,FPS BEFORE EXECUTION
035174  140605                               140605                     ,FPS AFTER EXECUTION
035176  040600                               40600                      ,ANTICIPATED ERRONEOUS FPS
035200  000006                               6                  ,EXPECTED FEC
035202  104322                  5$           ERROR   322                ,REPORT RESULT INCORRECT
035204  000401                               BR      6$
035206  104334                               ERROR   334                ,BAD CONSTANT ST 066
035210                          6$

                                      ,EXP=10 (OCT), AC NEGATIVE, FL=0, FIC=1
035210                                WWC11
035210  104413                               LPERR                      ,SET UP THE LOOP ON ERROR ADDRESS
035212  004737  035652                       JSR     PC,@#STCSUB        ,GO EXECUTE THE INSTRUCTION
035216  142000  000000  000000  1$            WORD    142000,0,0,0       ,AC0 OPERAND
035224  000000
035226  177600  177777          2$            WORD    177600,-1                    ,EXPECTED RESULT
035232  000200  000000          3$            WORD    200,0              ,ANTICIPATED ERRONEOUS RESULT
035236  040600                  4$           40600                      ,FPS BEFORE EXECUTION
035240  040610                               40610                      ,FPS AFTER EXECUTION
035242  040600                               40600                      ,ANTICIPATED ERRONEOUS FPS
035244  177777                               -1                 ,EXPECTED FEC
035246  104335                  5$           ERROR   335        ,(BUT ENBT) ST 632
035250  000401                               BR      6$
035252  104336                               ERROR   336        ,(SET FN) ST 473
035254                          6$

                                      ,EXP=37 (OCT), FL=1, FIC=1, AC NEG
035254                                WWC12
035254  104413                               LPERR                      ,SET UP THE LOOP ON ERROR ADDRESS
035256  004737  035652                       JSR     PC,@#STCSUB        ,GO EXECUTE THE INSTRUCTION
035262  147600  000000  000000  1$            WORD    147600,0,0,0       ,AC0 OPERAND
035270  000000
035272  140000  000000          2$            WORD    140000,0                     ,EXPECTED RESULT
035276  137777  000000          3$            WORD    137777,0                     ,ANTICIPATED ERRONEOUS RESULT
035302  040700                  4$           40700                      ,FPS BEFORE EXECUTION
035304  040710                               40710                      ,FPS AFTER EXECUTION
035306  177777                               -1                         ,ANTICIPATED ERRONEOUS FPS
035310  177777                               -1                 ,EXPECTED FEC
035312  104337                  5$           ERROR   337                ,(BUT COUT) ST 375
035314  000401                               BR      6$                 ,ST 275 TO 074
035316  104323                               ERROR   323                ,INTO 274
035320                          6$

                                      ,EXP=37  (OCT),   FL=1,  FIC=1,   AC  NEG
035320                                WWC13
035320  104413                               LPERR                      ,SET UP THE LOOP ON ERROR ADDRESS
035322  004737  035652                       JSR     PC,@#STCSUB        ,GO EXECUTE THE INSTRUCTION
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8227  035326  147600  000000  001000  1$      WORD   147600,0,1000,0 ,ACO OPERAND
8228  035334  000000
8229  035336  137777  177777          2$      WORD   137777,177777          ,EXPECTED RESULT
8230  035342  140000  177777          3$      WORD   140000,177777          ,ANTICIPATED ERRONEOUS RESULT
8231  035346  040707                  4$      40707                  ,FPS BEFORE EXECUTION
8232  035350  040710                          40710                  ,FPS AFTER EXECUTION
8233  035352  177777                          -1                     ,ANTICIPATED ERRONEOUS FPS
8234  035354  177777                          -1             ,EXPECTED FEC
8235  035356  104340                  5$      ERROR  340             ,(BUT COUT) ST 375
8236  035360  000401                          BR     6$              ,TO 274 INTO 074
8237  035362  104323                          ERROR  323             ,REPORT FPS INCORRECT
8238  035364                          6$
8239
8240                                  ,EXP=41 (OCT),  AC NEG, FL=1, FIC=1
8241  035364                          WWC14
8242  035364  104413                          LPERR                  ,SET UP THE LOOP ON ERROR ADDRESS
8243  035366  004737  035652                  JSR    PC,@#STCSUB     ,GO EXECUTE THE INSTRUCTION
8244  035372  150200  000000  000000  1$      WORD   150200,0,0,0    ,ACO OPERAND
8245  035400  000000
8246  035402  000000  000000          2$      WORD   0,0             ,EXPECTED RESULT
8247  035406  177777  177777          3$      WORD   -1,-1           ,ANTICIPATED ERRONEOUS RESULT
8248  035412  040700                  4$      40700                  ,FPS BEFORE EXECUTION
8249  035414  140705                          140705                 ,FPS AFTER EXECUTION
8250  035416  177777                          -1                     ,ANTICIPATED ERRONEOUS FPS
8251  035420  000006                          6              ,EXPECTED FEC
8252  035422  104322                  5$      ERROR  322             ,REPORT RESULT INCORRECT
8253  035424  000401                          BR     6$
8254  035426  104341                          ERROR  341             ,(BUT EZBT) ST 377
8255  035430                          6$
8256                                  ,EXP=40 (OCT),  AC NEG,  FL=1,  FIC=1
8257  035430                          WWC15
8258  035430  104413                          LPERR                  ,SET UP THE LOOP ON ERROR ADDRESS
8259  035432  004737  035652                  JSR    PC,@#STCSUB     ,GO EXECUTE THE INSTRUCTION
8260  035436  150000  000001  000000  1$      WORD   150000,1,0,0    ,ACO OPERAND
8261  035444  000000
8262  035446  000000  000000          2$      WORD   0,0             ,EXPECTED RESULT
8263  035452  100000  177600          3$      WORD   100000,-200             ,ANTICIPATED ERRONEOUS RESULT
8264  035456  040700                  4$      40700                  ,FPS BEFORE EXECUTION
8265  035460  140705                          140705                 ,FPS AFTER EXECUTION
8266  035462  040700                          40700                  ,ANTICIPATED ERRONEOUS FPS
8267  035464  000006                          6              ,EXPECTED FEC.
8268  035466  104342                  5$      ERROR  342             ,(BUT COUT) ST 360
8269  035470  000401                          BR     6$              ,TO 654 INTO 454
8270  035472  104323                          ERROR  323             ,REPORT FPS INCORRECT
8271  035474                          6$
8272
8273                                  ,EXP=40, AC NEGATIVE, FL=1, FIC=1
8274  035474                          WWC16
8275  035474  104413                          LPERR                  ,SET UP THE LOOP ON ERROR ADDRESS
8276  035476  004737  035652                  JSR    PC,@#STCSUB     ,GO EXECUTE THE INSTRUCTION
8277  035502  150001  000000  000000  1$      WORD   150001,0,0,0    ,ACO OPERAND
8278  035510  000000
8279  035512  000000  000000          2$      WORD   0,0             ,EXPECTED RESULT
8280  035516  077400  000000          3$      WORD   77400,0         ,ANTICIPATED ERRONEOUS RESULT
8281  035522  040700                  4$      40700                  ,FPS BEFORE EXECUTION
8282  035524  140705                          140705                 ,FPS AFTER EXECUTION
```

```
8283  035526  177777                        -1                      ,ANTICIPATED ERRONEOUS FPS
8284  035530  000006                        6                   ,EXPECTED FEC
8285  035532  104343                5$      ERROR   343             ,REPORT RESULT INCORRECT
8286  035534  000401                        BR      6$
8287  035536  104323                        ERROR   323             ,REPORT FPS INCORRECT
8288  035540                        6$
8289
8290
8291                                ,EXP 40    (OCT), AC MOST NEG LONG INT, FL=1
8292                                ,FIC=1
8293  035540                        WWC17
8294  035540  104413                        LPERR                   ,SET UP THE LOOP ON ERROR ADDRESS
8295  035542  004737  035652                JSR     PC,@#STCSUB     ,GO EXECUTE THE INSTRUCTION
8296  035546  150000  000000  000000  1$     WORD    150000,0,0,0    ,AC0 OPERAND.
8297  035554  000000
8298  035556  100000  000000        2$      WORD    100000,0                ,EXPECTED RESULT
8299  035562  000000  000000        3$      WORD    0,0             ,ANTICIPATED ERRONEOUS RESULT
8300  035566  040700                4$      40700                   ,FPS BEFORE EXECUTION
8301  035570  040710                        40710                   ,FPS AFTER EXECUTION
8302  035572  140705                        140705                  ,ANTICIPATED ERRONEOUS FPS
8303  035574  177777                        -1                  ,EXPECTED FEC
8304  035576  104344                5$      ERROR   344                     ,(BUT NBIT) ST 654
8305  035600  000401                        BR      6$                      ,OR (BUT COUT) ST 454
8306  035602  104323                        ERROR   323             ,REPORT FPS INCORRECT
8307  035604                        6$
8308
8309                                ,EXP=20, AC = MOST NEG INTEGER, FL=0, FIC=1
8310
8311  035604                        WWC18
8312  035604  104413                        LPERR                   ,SET UP THE LOOP ON ERROR ADDRESS
8313  035606  004737  035652                JSR     PC,@#STCSUB     ,GO EXECUTE THE INSTRUCTION
8314  035612  144000  000001  000000  1$     WORD    144000,1,0,0    ,AC0 OPERAND
8315  035620  000000
8316  035622  100000  177777        2$      WORD    100000,-1               ,EXPECTED RESULT
8317  035626  100000  177400        3$      WORD    100000,177400           ,ANTICIPATED ERRONEOUS RESULT
8318  035632  040600                4$      40600                   ,FPS BEFORE EXECUTION
8319  035634  040610                        40610                   ,FPS AFTER EXECUTION
8320  035636  140605                        140605                  ,ANTICIPATED ERRONEOUS FPS
8321  035640  177777                        -1                  ,EXPECTED FEC
8322  035642  104345                5$      ERROR   345                     ,(BUT FL) ST 633
8323  035644  000401                        BR      6$                      ,TO 655 INTO 654
8324  035646  104323                        ERROR   323             ,REPORT FPS INCORRECT
8325
8326  035650  000534                6$.     BR      WWCDONE
8327
8328                                ,THIS SUBROUTINE, STCSUB, IS USED TO SET UP THE OPERANDS, EXECUTE
8329                                ,THE STCDI OR STCDL INSTRUCTION AND CHECK THE RESULTS  A CALL
8330                                ,TO IT IS MADE THUS.
8331                                ,
8332                                ,               JSR     PC,@#STCSUB
8333                                ,               ACARG.  WORD    X,X,Y,X         ,AC OPERAND
8334                                ,               RES.    WORD    X,X             ,EXPECTED RESULT
8335                                ,               ERRES   WORD    X,X             ,ERROR RESULT
8336                                ,               FPSB    WORD    X               ,FPS BEFORE EXECUTION
8337                                ,               FPSA    WORD    X               ,FPS AFTER EXECUTION
8338                                ,               ERFPS   WORD    X               ,ERROR FPS
```

```
                                        ;               FEC     WORD    X               ;EXPECTED FEC
                                        ;               ERR1    ERROR   X               ;DATA ERROR
                                        ;                       BR      CONT
                                        ;               ERR2    ERROR   X               ;FPS ERROR
                                        ;               CONT                            ;RETURN ADDRESS
                                        ;
                                        ;THE OPERANDS ARE SET UP (USING AC0 AS THE ACCUMULATOR)  THEN
                                        ;THE STCDI OR STCDL INSTRUCTION IS EXECUTED
                                        ;THE RESULT IS CHECKED AGAINST RES  IF THE RESULT IS CORRECT THEN THE FPS IS
                                        ;COMPARED WITH FPSA IF THIS TOO IS CORRECT STCSUB RETURNS CONTROL
                                        ;TO THE CALLING ROUTINE AT CONT  IF THE FPS IS BAD STCSUB
                                        ;COMPARE IT TO ERROR FPS  IF THIS MATCHES THEN STCSUB WILL RETURN
                                        ;TO THE ERROR CALL AT ERR2, OTHERWISE STCSUB ITSELF
                                        ;REPORTS THIS FAILURE AND THEN RETURNS TO CONT  IF THE RESULT OF THE
                                        ;STCDI OR STCDL IS INCORRECT, THE INCORRECT RESULT IS COMPARED WITH THE
                                        ;ANTICIPATED FAILING DATA PATTERN, ERRES  IF THE FAILURE IN
                                        ;THE RESULT WAS ANTICIPATED CORRECTLY TO BE ERRES THEN STCSUB
                                        ;WILL TRANSFER CONTROL TO THE ERROR CALL AT ERR1  OTHERWISE THE
                                        ;RESULT WAS INCORRECT BUT WAS NOT ANTICIPATED AND STCSUB WILL
                                        ;REPORT THE FAILURE AFTER WHICH CONTROL WILL BE PASSED TO CONT

035652  012601                          STCSUB  MOV     (SP)+,R1        ;GET A POINTER TO THE ARGUMENTS
035654  012700  000200                          MOV     #200,R0         ;SET UP THE AC0 OPERAND
035660  170100                                  LDFPS   R0
035662  010100                                  MOV     R1,R0
035664  172410                                  LDD     (R0),AC0
035666  012702  036132                          MOV     #STCIBF,R2      ;INITIALIZE THE OUT PUT BUFFER
035672  012700  000004                          MOV     #4,R0
035676  012722  177777                  1$      MOV     #-1,(R2)+
035702  077003                                  SOB     R0,1$
035704  016100  000020                          MOV     20(R1),R0       ;SET THE FPS
035710  170100                                  LDFPS   R0
035712  012737  035724  001236                  MOV     #2$,@#$TMP2
035720  012700  036132                          MOV     #STCIBF,R0
035724  175410                          2$      STCDL   AC0,(R0)        ;TEST INSTRUCTION

035726  170204                                  STFPS   R4              ;GET THE FPS
035730  170305                                  STST    R5              ;GET THE FEC
035732  010102                                  MOV     R1,R2
035734  010237  001240                          MOV     R2,@#$TMP3
035740  062702  000010                          ADD     #10,R2
035744  010237  001244                          MOV     R2,@#$TMP5
035750  012737  036132  001242                  MOV     #STCIBF,@#$TMP4
035756  010437  001250                          MOV     R4,@#$TMP7
035762  016137  000022  001252                  MOV     22(R1),@#$TMP10
035770  010102                                  MOV     R1,R2
035772  062702  000010                          ADD     #10,R2
035776  012700  036132                          MOV     #STCIBF,R0      ;SEE IF THE RESULT IS CORRECT
036002  012703  000002                          MOV     #2,R3
036006  022022                          3$      CMP     (R0)+,(R2)+
036010  001014                                  BNE     15$
036012  077303                                  SOB     R3,3$
036014  016102  000022                          MOV     22(R1),R2
036020  020204                                  CMP     R2,R4           ;SEE IF THE FPS IS CORRECT
036022  001025                                  BNE     20$             ;BRANCH IF INCORRECT
036024  005702                                  TST     R2
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8395  036026  100003                        BPL     4$
8396  036030  026105  000026                CMP     26(R1),R5       ,SEE IF THE FEC IS CORRECT
8397  036034  001027                        BNE     25$             ,BRANCH IF INCORRECT
8398
8399  036036  000161  000036          4$    JMP     36(R1)          ,RETURN
8400                                  ,DATA ERROR.
8401                                  ,SEE IF THE FAILURE WAS ANTICIPATED
8402  036042  010102                  15$   MOV     R1,R2
8403  036044  062702  000014                ADD #14,R2
8404  036050  012700  036132                MOV     #STCIBF,R0
8405  036054  012703  000002                MOV     #2,R3
8406  036060  022022                  16$   CMP     (R0)+,(R2)+
8407  036062  001003                        BNE     17$
8408  036064  077303                        SOB     R3,16$
8409  036066  000161  000030                JMP     30(R1)
8410  036072                          17$
8411                                  ,FAILURE WAS NOT ANTICIPATED SO REPORT INCORRECT RESULT HERE
8412  036072  104322                  18$   ERROR   322                             ,DATA BAD
8413  036074  000760                        BR      4$
8414
8415                                  ,FPS INCORRECT, SO SEE IF FAILURE WAS ANTICIPATED
8416  036076  020461  000024          20$   CMP     R4,24(R1)
8417  036102  001002                        BNE     21$
8418  036104  000161  000034                JMP     34(R1)
8419  036110                          21$:
8420                                  ,NOT ANTICIPATED SO REPORT BAD FPS HERE
8421  036110  104323                  22$   ERROR   323                             ,FPS BAD
8422  036112  000751                        BR      4$
8423
8424                                  ,REPORT INCORRECT FEC
8425  036114  016137  000026  001256  25$:   MOV     26(R1),@#$TMP12
8426  036122  010537  001254                MOV     R5,@#$TMP11
8427  036126  104324                  26$:  ERROR   324
8428  036130  000742                        BR      4$
8429
8430                                  ,DATA BUFFER
8431  036132  177777  177777  177777  STCIBF: .WORD   -1,-1,-1,-1
8432  036140  177777
8433
8434  036142                          WWCDONE
8435  036142  104412                          RSETUP                  ,GO INITIALIZE THE FPS AND STACK, AND
8436                                                                  ,SEE IF THE USER HAS EXPRESSED
8437                                                                  ,THE DESIRE TO CHANGE THE SOFTWARE
8438                                                                  ,VIRTUAL CONSOLE SWITCH REGISTER (HAS
8439                                                                  ,THE USER TYPED CONTROL G?)
8440
8441
8442                                  ,,**********************************************************************
8443                                  ,*TEST 73       STCFL AND STCFI TEST
8444                                  ,*
8445                                  ,* THIS IS A TEST OF STCFL AND STCFI   IT
8446                                  ,* MAKES USE OF THE SAME SUBROUTINE, STCSUB,
8447                                  ;* WHICH WAS USED TO TEST STCDL AND STCDI
8448                                  ,*
8449                                  ;,**********************************************************************
8450  036144  000004                  TST73:  SCOPE
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8451
8452
8453                                    ,EXPONENT=37, FL=1
8454  036146                            XXC1.
8455  036146  104413                            LPERR                   ,SET UP THE LOOP ON ERROR ADDRESS
8456  036150  004737  035652                    JSR     PC,@#STCSUB      GO EXECUTE THE INSTRUCTION
8457  036154  047777  177777  177777  1$        WORD    47777,-1,-1,-1  ,AC0 OPERAND
8458  036162  177777
8459  036164  077777  177600          2$        .WORD   77777,177600            ;EXPECTED RESULT.
8460  036170  077777  177777          3$        WORD    77777,177777            ,ANTICIPATED ERRONEOUS RESULT
8461  036174  040100                  4$        40100                   ,FPS BEFORE EXECUTION
8462  036176  040100                            40100                   ,FPS AFTER EXECUTION
8463  036200  177777                            -1                      ,ANTICIPATED ERRONEOUS FPS
8464  036202  177777                            -1              ,EXPECTED FEC
8465  036204  104346                  5$        ERROR   346                     ,X11(1,0)+0 ST 773X
8466  036206  000401                            BR      6$
8467  036210  104323                            ERROR   323             ,REPORT FPS INCORRECT
8468  036212                            6$.
8469
8470  036212                            XXCDONE
8471  036212  104412                            RSETUP                  ,GO INITIALIZE THE FPS AND STACK, AND
8472                                                                    ;SEE IF THE USER HAS EXPRESSED
8473                                                                    ;THE DESIRE TO CHANGE THE SOFTWARE
8474                                                                    ,VIRTUAL CONSOLE SWITCH REGISTER (HAS
8475                                                                    ,THE USER TYPED CONTROL G?)
8476
8477
8478                                    ,,**********************************************************************
8479                                    ,*TEST 74       STEXP TEST
8480                                     *
8481                                    ,* THIS IS A TEST OF THE STEXP
8482                                    ,* INSTRUCTION
8483                                    ,*
8484                                    ,;**********************************************************************
8485  036214  000004                    TST74:  SCOPE
8486
8487                                    , EXP = 100 (EXCESS 200)
8488  036216                            YYC1·
8489  036216  104413                            LPERR                   ,SET UP THE LOOP ON ERROR ADDRESS
8490  036220  004737  036504                    JSR     PC,@#STXSUB
8491  036224  020000  000000  000000  1$·       .WORD   20000,0,0,0                     ,AC
8492  036232  000000
8493  036234  177700                  2$·       -100                            ,EXP RES
8494  036236  052525                  3$        52525                           ,ERROR EXP
8495  036240  040000                  4$        40000                           ;FPSB
8496  036242  040010                            40010                           ,FPSA
8497  036244  040000                            40000                           ,ERROR FPS
8498  036246  104347                  5$.       ERROR   347                     ,BAD EXP
8499  036250  000401                            BR      6$
8500  036252  104352                            ERROR   352                     ,+(BUT ENBT) ST 376
8501  036254                            6$
8502
8503                                    , EXP = 200 (EXCESS 200)
8504  036254                            YYC2
8505  036254  104413                            LPERR                   ,SET UP THE LOOP ON ERROR ADDRESS
8506  036256  004737  036504                    JSR     PC,@#STXSUB     ;GO EXECUTE THE INSTRUCTION
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 8507  036262  040000  000000  000000  1$      WORD   40000,0,0,0      ,AC0 OPERAND
 8508  036270  000000
 8509  036272  000000                  2$      0                       ,EXPECTED EXPONENT RESULT
 8510  036274  052525                  3$      52525           ,ANTICIPATED ERRONEOUS RESULT
 8511  036276  040000                  4$      40000                   ,FPS BEFORE EXECUTION
 8512  036300  040004                          40004                   ,FPS AFTER EXECUTION
 8513  036302  040000                          40000                   ,ANTICIPATED ERRONEOUS FPS
 8514  036304  104347                  5$      ERROR  347              ,REPORT RESULT INCORRECT
 8515  036306  000401                          BR     6$
 8516  036310  104353                          ERROR  353                      ,(BUT EZBT) ST 071
 8517                                                                        ,TO 072 INT 272
 8518  036312                          6$
 8519
 8520                                  , EXP = 201  (EXCESS 200)
 8521
 8522  036312                          YYC3.
 8523  036312  104413                          LPERR                   ,SET UP THE LOOP ON ERROR ADDRESS
 8524  036314  004737  036504                  JSR    PC,@#STXSUB      ;GO EXECUTE THE INSTRUCTION
 8525  036320  040200  000000  000000  1$      WORD   40200,0,0,0      ,AC0 OPERAND.
 8526  036326  000000
 8527  036330  000001                  2$      1                       ,EXPECTED EXPONENT RESULT
 8528  036332  052525                  3$      52525           ,ANTICIPATED ERRONEOUS RESULT
 8529  036334  040000                  4$.     40000                   ;FPS BEFORE EXECUTION
 8530  036336  040000                          40000                   ,FPS AFTER EXECUTION.
 8531  036340  040004                          40004                   ,ANTICIPATED ERRONEOUS FPS
 8532  036342  104347                  5$      ERROR  347              ,REPORT RESULT INCORRECT
 8533  036344  000401                          BR     6$
 8534  036346  104354                          ERROR  354                      ,(BUT EZBT) ST 071
 8535  036350                          6$.                                     ,TO 272 INTO 072
 8536
 8537                                  , EXP = 375  (EXCESS 200)
 8538
 8539  036350                          YYC4
 8540  036350  104413                          LPERR                   ,SET UP THE LOOP ON ERROR ADDRESS
 8541  036352  004737  036504                  JSR    PC,@#STXSUB      ,GO EXECUTE THE INSTRUCTION
 8542  036356  077200  000000  000000  1$      .WORD  77200,0,0,0      ,AC0 OPERAND.
 8543  036364  000000
 8544  036366  000175                  2$      175                     ;EXPECTED EXPONENT RESULT
 8545  036370  052525                  3$      52525           ;ANTICIPATED ERRONEOUS RESULT
 8546  036372  040000                  4$.     40000                   ,FPS BEFORE EXECUTION.
 8547  036374  040000                          40000                   ;FPS AFTER EXECUTION.
 8548  036376  040010                          40010                   ;ANTICIPATED ERRONEOUS FPS
 8549  036400  104347                  5$      ERROR  347              ;REPORT RESULT INCORRECT
 8550  036402  000401                          BR     6$
 8551  036404  104355                          ERROR  355                      ;(BUT ENBT) ST 376
 8552  036406                          6$                                      ;TO 471 INTO 071
 8553
 8554                                  , EXP = 1  (EXCESS 200)
 8555
 8556  036406                          YYC5.
 8557  036406  104413                          LPERR                   ;SET UP THE LOOP ON ERROR ADDRESS
 8558  036410  004737  036504                  JSR    PC,@#STXSUB      ,GO EXECUTE THE INSTRUCTION
 8559  036414  000200  000000  000000  1$      .WORD  200,0,0,0        ;AC0 OPERAND.
 8560  036422  000000
 8561  036424  177601                  2$      -177                    ;EXPECTED EXPONENT RESULT
 8562  036426  052525                  3$      52525           ,ANTICIPATED ERRONEOUS RESULT
```

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8563  036430  040000                    4$    40000                    ,FPS BEFORE EXECUTION
8564  036432  040010                          40010                    ,FPS AFTER EXECUTION
8565  036434  040000                          40000                    ,ANTICIPATED ERRONEOUS FPS
8566  036436  104347                    5$    ERROR   347              ,REPORT RESULT INCORRECT
8567  036440  000401                          BR      6$
8568  036442  104352                          ERROR   352              ,REPORT FPS INCORRECT
8569  036444                            6$
8570
8571                                    , EXP = 156  (EXCESS 200)
8572
8573  036444                            YYC6
8574  036444  104413                          LPERR                    ,SET UP THE LOOP ON ERROR ADDRESS
8575  036446  004737  036504                  JSR     PC,@#STXSUB      ,GO EXECUTE THE INSTRUCTION
8576  036452  033400  000000  000000  1$       WORD   33400,0,0,0      ,AC0 OPERAND.
8577  036460  000000
8578  036462  177756                    2$    -22                      ;EXPECTED EXPONENT RESULT
8579  036464  052525                    3$    52525           ,ANTICIPATED ERRONEOUS RESULT
8580  036466  047707                    4$    47707                    ;FPS BEFORE EXECUTION
8581  036470  047710                          47710                    ;FPS AFTER EXECUTION.
8582  036472  177777                          -1                       ,ANTICIPATED ERRONEOUS FPS
8583  036474  104347                    5$    ERROR   347              ,REPORT RESULT INCORRECT
8584  036476  000401                          BR      6$
8585  036500  104350                          ERROR   350              ,REPORT FPS INCORRECT
8586
8587  036502  000510                    6$    BR      YYCDONE
8588
8589                                    ,THIS SUBROUTINE, STXSUB, IS USED TO SET UP THE OPERANDS, EXECUTE
8590                                    ;THE STEXP INSTRUCTION AND CHECK THE RESULTS  A CALL
8591                                    ,TO IT IS MADE THUS.
8592                                    ;
8593                                    ,               JSR     PC,@#STXSUB
8594                                    ,               ACARG:  .WORD   X,X,X,X          ,AC OPERAND
8595                                    ,               RES:    .WORD   X                ,EXPECTED RESULT
8596                                    ,               ERRES:  .WORD   X                ,ERROR RESULT
8597                                    ,               FPSB:   .WORD   X                ,FPS BEFORE EXECUTION
8598                                    ,               FPSA:   .WORD   X                ,FPS AFTER EXECUTION
8599                                    ,               ERFPS:   WORD   X                ,ERROR FPS
8600                                    ,               ERR1:   ERROR   X                ;DATA ERROR
8601                                    ,                       BR      CONT
8602                                    ,               ERR2:   ERROR   X                ,FPS ERROR
8603                                    ,               CONT:                            ,RETURN ADDRESS
8604                                    ,
8605                                    ,THE OPERANDS ARE SET UP (USING AC0 AS THE ACCUMULATOR)  THEN
8606                                    ,THE STEXP INSTRUCTION IS EXECUTED.
8607                                    ,THE RESULT IS CHECKED AGAINST RES.  IF THE RESULT IS CORRECT THEN THE FPS  S
8608                                    ,COMPARED WITH FPSA IF THIS TOO IS CORRECT STXSUB RETURNS CONTROL
8609                                    ,TO THE CALLING ROUTINE AT CONT.  IF THE FPS IS BAD STXSUB
8610                                    ,COMPARE IT TO ERROR FPS.  IF THIS MATCHES THEN STXSUB WILL RETURN
8611                                    ,TO THE ERROR CALL AT ERR2, OTHERWISE STXSUB ITSELF
8612                                    ;REPORTS THIS FAILURE AND THEN RETURNS TO CONT  IF THE RESULT OF THE
8613                                    ;STEXP IS INCORRECT, THE INCORRECT RESULT IS COMPARED WITH THE
8614                                    ,ANTICIPATED FAILING DATA PATTERN, ERRES.  IF THE FAILURE IN
8615                                    ,THE RESULT WAS ANTICIPATED CORRECTLY TO BE ERRES THEN STXSUB
8616                                    ,WILL TRANSFER CONTROL TO THE ERROR CALL AT ERR1  OTHERWISE THE
8617                                    ,RESULT WAS INCORRECT BUT WAS NOT ANTICIPATED AND STXSUB WILL
8618                                    ,REPORT THE FAILURE AFTER WHICH CONTROL WILL BE PASSED TO CONT
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 8619
 8620  036504  012601                  STXSUB  MOV     (SP)+,R1        ,GET A POINTER TO THE ARGUMENTS
 8621  036506  010102                          MOV     R1,R2
 8622  036510  010237  001240                  MOV     R2,@#$TMP3
 8623  036514  062702  000010                  ADD     #10,R2
 8624  036520  012237  001244                  MOV     (R2)+,@#$TMP5
 8625  036524  012737  036572  001236          MOV     #1$,@#$TMP2
 8626  036532  012737  123456  036712          MOV     #123456,@#STXBF
 8627  036540  012737  076543  036714          MOV     #76543,@#STXBF+2
 8628  036546  012700  000200                  MOV     #200,R0
 8629  036552  170100                          LDFPS   R0
 8630  036554  010100                          MOV     R1,R0           ,SET UP THE AC0 OPERAND
 8631  036556  172410                          LDD     (R0),AC0
 8632  036560  016100  000016                  MOV     16(R1),R0       ,SET THE FPS
 8633  036564  170100                          LDFPS   R0
 8634  036566  012700  036712                  MOV     #STXBF,R0
 8635  036572  175010                  1$      STEXP   AC0,(R0)        ,TEST INSTRUCTION
 8636  036574  170204                          STFPS   R4              ,GET FPS
 8637  036576  010437  001250                  MOV     R4,@#$TMP7
 8638  036602  016137  000016  001252          MOV     16(R1),@#$TMP10
 8639  036610  013737  036712  001242          MOV     @#STXBF,@#$TMP4
 8640  036616  026137  000010  036712          CMP     10(R1),@#STXBF  ;WAS RESULT CORRECT?
 8641  036624  001411                          BEQ     5$              ;BRANCH IF CORRECT
 8642  036626  026137  000012  036712          CMP     12(R1),@#STXBF  ,OTHERWISE SEE IF THE FAILURE WAS ANTICIPATED
 8643  036634  001002                          BNE     2$
 8644  036636  000161  000022                  JMP     22(R1)
 8645
 8646                                  ,IF NOT ANTICIPATED REPORT ERROR HERE
 8647  036642                          2$
 8648  036642  104347                  3$      ERROR   347                             ,EXP BAD
 8649  036644  000161  000030          4$      JMP     30(R1)
 8650
 8651  036650  020461  000016          5$      CMP     R4,16(R1)       ,SEE IF THE FPS IS CORRECT
 8652  036654  001407                          BEQ     10$             ,BRANCH IF CORRECT
 8653  036656  020461  000020                  CMP     R4,20(R1)       ,SEE IF THE FAILURE WAS ANTICIPATED
 8654  036662  001002                          BNE     6$
 8655  036664  000161  000026                  JMP     26(R1)
 8656
 8657                                  ,FPS ERROR WAS NOT ANTICIPATED SO REPORT ERROR HERE
 8658  036670                          6$
 8659  036670  104350                  7$      ERROR   350                             ,FPS BAD
 8660  036672  000764                          BR      4$
 8661
 8662                                  ,SEE IF MORE THAN ONE WORD WAS WRITTEN IN THE OUTPUT BUFFER
 8663  036674  022737  076543  036714  10$     CMP     #76543,@#STXBF+2
 8664  036702  001760                          BEQ     4$
 8665  036704  104351                  11$     ERROR   351                               FDFL+0 ST 347X
 8666  036706  000756                          BR      4$
 8667
 8668  036710  177777                          -1
 8669  036712  177777  177777  177777  STXBF    WORD   -1,-1,-1,-1,-1
 8670  036720  177777  177777
 8671
 8672  036724                          YYCDONE
 8673  036724  104412                          RSETUP                  ,GO INITIALIZE THE FPS AND STACK, AND
 8674                                                                  ,SEE IF THE USER HAS EXPRESSED
```

```
                                                        ;THE DESIRE TO CHANGE THE SOFTWARE
                                                        ;VIRTUAL CONSOLE SWITCH REGISTER (HAS
                                                        ;THE USER TYPED CONTROL G?)

                        ;;*****************************************************************
                        ;*TEST 75       STST TEST
                        ;*
                        ;* THIS IS A TEST OF THE STST
                        ;* INSTRUCTION.  FIRST AN ILLEGAL FPS OP CODE
                        ;* (INSTRUCTION) IS USED TO ENTER AN
                        ;* ERROR CONDITION IN THE FEC AND
                        ;* FEA.  THE STST IS EXECUTED AND
                        ;* THE FEC AND FEA ARE CHECKED
                        ;*
                        ;;*****************************************************************
036726  000004          TST75:  SCOPE

036730                  ZZC1
036730  104413                  LPERR                   ;SET UP THE LOOP ON ERROR ADDRESS
036732  012700  040000          MOV     #40000,R0       ;SET FPS.  FID=1
036736  170100                  LDFPS   R0

036740  170003          ZZC2    .WORD   170003                  ;ILLEGAL FPP
                                                                ;OP CODE
036742  012700  037116          MOV     #ZZCBF,R0       ;SET UP THE OUTPUT BUFFER
036746  012710  177777          MOV     #-1,(R0)
036752  012760  177777  000002  MOV     #-1,2(R0)
036760  012737  036766  001236  MOV     #ZZC3,@#$TMP2
036766  170310          ZZC3    STST    (R0)                    ;GET FEC AND
                                                                ;FEA
036770  170204                  STFPS   R4              ;GET FPS
036772  012700  037116          MOV     #ZZCBF,R0
036776  011037  001240          MOV     (R0),@#$TMP3
037002  016037  000002  001242  MOV     2(R0),@#$TMP4
037010  012737  000002  001244  MOV     #2,@#$TMP5
037016  012737  036740  001246  MOV     #ZZC2,@#$TMP6
037024  010437  001250          MOV     R4,@#$TMP7
037030  012737  140000  001252  MOV     #140000,@#$TMP10

037036  022710  000002          CMP     #2,(R0) ;SEE IF FEC IS CORRECT
037042  001010                  BNE     ZZC5            ;BRANCH IF INCORRECT
037044  022760  036740  000002  CMP     #ZZC2,2(R0)     ;SEE IF FEA, ADDRESS, IS CORRECT
037052  001006                  BNE     ZZC10           ;BRANCH IF INCORRECT
037054  022704  140000          CMP     #140000,R4      ;SEE IF FPS IS CORRECT
037060  001013                  BNE     ZZC15           ;BRANCH IF INCORRECT
037062  000422                  BR      ZZCDONE

                        ;REPORT FEC INCORRECT
037064                  ZZC5
037064  104356          1$      ERROR   356                             ;STST BAD
037066  000420                  BR      ZZCDONE                 ;FECX

                        ;REPORT FEA INCORRECT
037070  022760  177777  000002  ZZC10   CMP     #-1,2(R0)
037076  001402                  BEQ     ZZC12
037100  104357          1$      ERROR   357                             ;STST BAD FEA
```

```
 8731  037102  000412                        BR      ZZCDONE
 8732  037104                          ZZC12
 8733  037104  104360                  1$      ERROR   360                     ,SET FD FL ST 636
 8734  037106  000410                        BR      ZZCDONE
 8735
 8736                                  ,REPORT FPS INCORRECT
 8737  037110                          ZZC15
 8738  037110  104361                  1$      ERROR   361                     ,FPS X AFTER ST ST
 8739  037112  000406                        BR      ZZCDONE
 8740
 8741                                  ,DATA BUFFER
 8742  037114  177777                        -1
 8743  037116  177777  177777  177777  ZZCBF   WORD   -1,-1,-1,-1
 8744  037124  177777
 8745  037126  177777                        -1
 8746
 8747  037130                          ZZCDONE
 8748  037130  104412                        RSETUP                  ,GO INITIALIZE THE FPS AND STACK, AND
 8749                                                                  ,SEE IF THE USER HAS EXPRESSED
 8750                                                                  ,THE DESIRE TO CHANGE THE SOFTWARE
 8751                                                                  ,VIRTUAL CONSOLE SWITCH REGISTER (HAS
 8752                                                                  ,THE USER TYPED CONTROL G?)
 8753
 8754  037132                          TST76
 8755
 8756
 8757
 8758                                   SBTTL  END OF PASS ROUTINE
 8759
 8760                                  ,,**********************************************************************
 8761                                  ,*INCREMENT THE PASS NUMBER ($PASS)
 8762                                  ,*INDICATE END-OF-PROGRAM AFTER 1 PASSES THRU THE PROGRAM
 8763                                  ,*IF SW12=1 INHIBIT TRACE TRAP
 8764                                  ,*IF THERES A MONITOR GO TO IT
 8765                                  ,*IF THERE ISN'T JUMP TO LOOP
 8766
 8767  037132                          $EOP
 8768  037132  000004                        SCOPE
 8769  037134  005067  141742                CLR     $TSTNM          ,,ZERO THE TEST NUMBER
 8770  037140  005067  142136                CLR     $TIMES          ,,ZERO THE NUMBER OF ITERATIONS
 8771  037144  005267  142154                INC     $PASS           ,,INCREMENT THE PASS NUMBER
 8772  037150  042767  100000  142146       BIC     #100000,$PASS   ,,DON'T ALLOW A NEG  NUMBER
 8773  037156  005327                        DEC     (PC)+           ,,LOOP?
 8774  037160  000001                  $EOPCT  WORD   1
 8775  037162  003074                        BGT     $DOAGN          ,,YES
 8776  037164  012737                        MOV     (PC)+,@(PC)+    ,,RESTORE COUNTER
 8777  037166  000001                  $ENDCT  .WORD   1
 8778  037170  037160                        $EOPCT
 8779  037172  104401  037200                TYPE    ,65$            ,,TYPE ASCIZ STRING
 8780  037176  000407                        BR      64$             ,,GET OVER THE ASCIZ
 8781                                  ,,65$   ASCIZ  <12><15>/END PASS #/
 8782  037216                          64$
 8783  037216  016746  142102                MOV     $PASS,-(SP)     ,,SAVE $PASS FOR TYPEOUT
 8784                                                                  ,,TYPE PASS NUMBER IN OCTAL
 8785  037222  104403                        TYPOS                   ,,GO TYPE--OCTAL ASCII
 8786  037224     006                         BYTE   6               ,,TYPE 6 DIGITS
```

```
037225     000                                   .BYTE   0                  ;;SUPPRESS LEADING ZEROS
037226  104401  037234                           TYPE    ,67$               ;;TYPE ASCIZ STRING
037232  000421                                   BR      66$                ;;GET OVER THE ASCIZ
                                     ;;67$:     .ASCIZ  / TOTAL ERRORS SINCE LAST REPORT /
037276                               66$:
037276  016746  141610                           MOV     $ERTTL,-(SP)       ;;SAVE $ERTTL FOR TYPEOUT
                                                                            ;;TOTAL NUMBER OF ERRORS IN OCTAL
037302  104403                                   TYPOS                      ;;GO TYPE--OCTAL ASCII
037304     006                                   .BYTE   6                  ;;TYPE 6 DIGITS
037305     000                                   .BYTE   0                  ;;SUPPRESS LEADING ZEROS
037306  104401  001313                           TYPE    ,$CRLF             ;;TYPE CARRIAGE RETURN, LINE FEED
037312  005067  141574                           CLR     $ERTTL             ;;CLEAR ERROR TOTAL
037316  013700  000042               $GET42:     MOV     @#42,R0            ;;GET MONITOR ADDRESS
037322  001414                                   BEQ     $DOAGN             ;;BRANCH IF NO MONITOR
037324  005046                                   CLR     -(SP)              ;;INSURE THE "T" BIT IS CLEAR
037326  012746  037334                           MOV     #$CLR.T,-(SP)      ;;SETUP FOR AN RTI OR RTT
037332  000426                                   BR      $RTRN              ;;GO DO AN RTI OR RTT TO LOAD THE PSW
                                                                            ;;WITH A CLEARED 'T' BIT
037334                               $CLR.T:
037334  013700  000042                           MOV     @#42,R0            ;;INSURE R0 CONTAINS THE MONITORS
037340  001405                                   BEQ     $DOAGN             ;;RETURN ADDRESS
037342  000005                                   RESET                      ;;CLEAR THE WORLD
037344  004710                       $ENDAD:     JSR     PC,(R0)            ;;GO TO MONITOR
037346  000240                                   NOP                        ;;SAVE ROOM
037350  000240                                   NOP                        ;;FOR
037352  000240                                   NOP                        ;;ACT11
037354                               $DOAGN:
037354  104400                                   TRAP                       ;;PUSH OLD PSW AND PC ON STACK
037356  042716  000020                           BIC     #20,(SP)           ;;CLEAR THE "T" BIT
037362  032777  010000  141550                   BIT     #BIT12,@SWR        ;;RUN WITH TRACE TRAP?
037370  001005                                   BNE     1$                 ;;BR IF NO
037372  005167  000020                           COM     $TBIT              ;;IS IT TIME FOR TRACE TRAP
037376  100402                                   BMI     1$                 ;;BR IF NO
037400  052716  000020                           BIS     #20,(SP)           ;;SET TRACE TRAP
037404  012746  037412               1$:         MOV     #$LOOP,-(SP)       ;;JUMP TO START OF TEST
037410  000002                       $RTRN:      RTI                        ;;RETURN--THIS IS CHANGED TO
                                                                            ;;AN "RTT" IF "RTT" IS A LEGAL
                                                                            ;;INSTRUCTION
037412                               $LOOP:
037412  000137                                   JMP     @(PC)+             ;;RETURN
037414  006566                       $RTNAD:     .WORD   LOOP
037416  000000                       $TBIT:      .WORD   0                  ;;"T" BIT STATE INDICATOR
037420     377     377     000       $ENULL:     .BYTE   -1,-1,0            ;;NULL CHARACTER STRING
        037424                                   .EVEN

                                      .SBTTL  SCOPE HANDLER ROUTINE

                                     ;;*****************************************************************
                                     ;*THIS ROUTINE CONTROLS THE LOOPING OF SUBTESTS. IT WILL INCREMENT
                                     ;*AND LOAD THE TEST NUMBER($TSTNM) INTO THE DISPLAY REG.(DISPLAY<7:0>)
                                     ;*AND LOAD THE ERROR FLAG ($ERFLG) INTO DISPLAY<15:08>
                                     ;*THE SWITCH OPTIONS PROVIDED BY THIS ROUTINE ARE:
                                     ;*SW14=1          LOOP ON TEST
                                     ;*SW11=1          INHIBIT ITERATIONS
                                     ;*SW09=1          LOOP ON ERROR
                                     ;*SW08=1          LOOP ON TEST IN SWR<7:0>
```

```
8843                                    ;*CALL
8844                                    ;*      SCOPE           ;;SCOPE=IOT
8845
8846  037424                            $SCOPE
8847  037424  104406                            CKSWR                   ;;TEST  FOR CHANGE IN SOFT-SWR
8848  037426  032777  040000  141504    1$      BIT     #BIT14,@SWR     ;;LOOP ON PRESENT TEST?
8849  037434  001114                            BNE     $OVER           ;;YES IF SW14=1
8850                                    ;*****START OF CODE FOR THE XOR TESTER******
8851  037436  000416                    $XTSTR  BR      6$              ;;IF RUNNING ON THE "XOR" TESTER CHANGE
8852                                                                    ;;THIS INSTRUCTION TO A "NOP" (NOP=240)
8853  037440  013746  000004                    MOV     @#ERRVEC,-(SP)  ;;SAVE THE CONTENTS OF THE ERROR VECTOR
8854  037444  012737  037464  000004          MOV     #5$,@#ERRVEC    ;;SET FOR TIMEOUT
8855  037452  005737  177060                    TST     @#177060        ;;TIME OUT ON XOR?
8856  037456  012637  000004                    MOV     (SP)+,@#ERRVEC  ;;RESTORE THE ERROR VECTOR
8857  037462  000463                            BR      $SVLAD          ;;GO TO THE NEXT TEST
8858  037464  022626                    5$      CMP     (SP)+,(SP)+     ;;CLEAR THE STACK AFTER A TIME OUT
8859  037466  012637  000004                    MOV     (SP)+,@#ERRVEC  ;;RESTORE THE ERROR VECTOR
8860  037472  000423                            BR      7$              ;;LOOP ON THE PRESENT TEST
8861  037474                            6$  ;*****END OF CODE FOR THE XOR TESTER*****
8862  037474  032777  000400  141436            BIT     #BIT08,@SWR     ;;LOOP ON SPEC  TEST?
8863  037502  001404                            BEQ     2$              ;;BR IF NO
8864  037504  127767  141430  141370            CMPB    @SWR,$TSTNM     ;;ON THE RIGHT TEST?    SWR<7 0>
8865  037512  001465                            BEQ     $OVER           ;;BR IF YES
8866  037514  105767  141363          2$        TSTB    $ERFLG          ;;HAS AN ERROR OCCURRED?
8867  037520  001421                            BEQ     3$              ;;BR IF NO
8868  037522  126767  141367  141353            CMPB    $ERMAX,$ERFLG   ;;MAX  ERRORS FOR THIS TEST OCCURRED?
8869  037530  101015                            BHI     3$              ;;BR IF NO
8870  037532  032777  001000  141400            BIT     #BIT09,@SWR     ;;LOOP ON ERROR?
8871  037540  001404                            BEQ     4$              ;;BR IF NO
8872  037542  016767  141342  141336  7$        MOV     $LPERR,$LPADR   ;;SET LOOP ADDRESS TO LAST SCOPE
8873  037550  000446                            BR      $OVER
8874  037552  105067  141325          4$        CLRB    $ERFLG          ;;ZERO THE ERROR FLAG
8875  037556  005067  141520                    CLR     $TIMES          ;;CLEAR THE NUMBER OF ITERATIONS TO MAKE
8876  037562  000415                            BR      1$              ;;ESCAPE TO THE NEXT TEST
8877  037564  032777  004000  141346  3$        BIT     #BIT11,@SWR     ;;INHIBIT ITERATIONS?
8878  037572  001011                            BNE     1$              ;;BR IF YES
8879  037574  005767  141524                    TST     $PASS           ;;IF FIRST PASS OF PROGRAM
8880  037600  001406                            BEQ     1$              ;;      INHIBIT ITERATIONS
8881  037602  005267  141276                    INC     $ICNT           ;;INCREMENT ITERATION COUNT
8882  037606  026767  141470  141270            CMP     $TIMES,$ICNT    ;;CHECK THE NUMBER OF ITERATIONS MADE
8883  037614  002024                            BGE     $OVER           ;;BR IF MORE ITERATION REQUIRED
8884  037616  012767  000001  141260  1$        MOV     #1,$ICNT        ;;REINITIALIZE THE ITERATION COUNTER
8885  037624  016767  000052  141450            MOV     $MXCNT,$TIMES   ;;SET NUMBER OF ITERATIONS TO DO
8886  037632  105267  141244          $SVLAD    INCB    $TSTNM          ;;COUNT TEST NUMBERS
8887  037636  116767  141240  141456            MOVB    $TSTNM,$TESTN   ;;SET TEST NUMBER IN APT MAILBOX
8888  037644  011667  141236                    MOV     (SP),$LPADR     ;;SAVE SCOPE LOOP ADDRESS
8889  037650  011667  141234                    MOV     (SP),$LPERR     ;;SAVE ERROR LOOP ADDRESS
8890  037654  005067  141424                    CLR     $ESCAPE         ;;CLEAR THE ESCAPE FROM ERROR ADDRESS
8891  037660  112767  000001  141227            MOVB    #1,$ERMAX       ;;ONLY ALLOW ONE(1) ERROR ON NEXT TEST
8892  037666  016777  141210  141246  $OVER     MOV     $TSTNM,@DISPLAY ;;DISPLAY TEST NUMBER
8893  037674  016716  141206                    MOV     $LPADR,(SP)     ;;FUDGE RETURN ADDRESS
8894  037700  000002                            RTI                     ;;FIXES PS
8895  037702  000001                    $MXCNT  1                       ;;MAX  NUMBER OF ITERATIONS
8896
8897                                     .SBTTL  ERROR HANDLER ROUTINE
8898
```

```
                                        ,,**********************************************************************
                                        ,*THIS ROUTINE WILL INCREMENT THE ERROR FLAG AND THE ERROR COUNT,
                                        ,*SAVE THE ERROR ITEM NUMBER AND THE ADDRESS OF THE ERROR CALL
                                        ,*AND GO TO ERTYPE ON ERROR
                                        ,*THE SWITCH OPTIONS PROVIDED BY THIS ROUTINE ARE
                                        ,*SW15=1        HALT ON ERROR
                                        ,*SW13=1        INHIBIT ERROR TYPEOUTS
                                        ,*SW10=1        BELL ON ERROR
                                        ,*SW09=1        LOOP ON ERROR
                                        ,*CALL
                                        ,*      ERROR   N       ,,ERROR=EMT AND N=ERROR ITEM NUMBER

037704                                  $ERROR
037704  104406                                  CKSWR                   ,,TEST FOR CHANGE IN SOFT-SWR
037706  105267  141171                  7$      INCB    $ERFLG          ,,SET THE ERROR FLAG
037712  001775                                  BEQ     7$              ,,DON'T LET THE FLAG GO TO ZERO
037714  016777  141162  141220                  MOV     $TSTNM,@DISPLAY ,,DISPLAY TEST NUMBER AND ERROR FLAG
037722  032777  002000  141210                  BIT     #BIT10,@SWR     ,,BELL ON ERROR?
037730  001402                                  BEQ     1$              ,,NO - SKIP
037732  104401  001306                          TYPE    ,$BELL          ,,RING BELL
037736  005267  141150                  1$      INC     $ERTTL          ,,COUNT THE NUMBER OF ERRORS
037742  011667  141150                          MOV     (SP),$ERRPC     ,,GET ADDRESS OF ERROR INSTRUCTION
037746  162767  000002  141142                  SUB     #2,$ERRPC
037754  117767  141136  141132                  MOVB    @$ERRPC,$ITEMB  ,,STRIP AND SAVE THE ERROR ITEM CODE
037762  032777  020000  141150                  BIT     #BIT13,@SWR     ,,SKIP TYPEOUT IF SET
037770  001004                                  BNE     20$             ,,SKIP TYPEOUTS
037772  004767  002124                          JSR     PC,ERTYPE       ,,GO TO USER ERROR ROUTINE
037776  104401  001313                          TYPE    ,$CRLF
040002                                  20$
040002  122767  000001  141326                  CMPB    #APTENV,$ENV    ,,RUNNING IN APT MODE
040010  001007                                  BNE     2$              ,,NO,SKIP APT ERROR REPORT
040012  116767  141076  000004                  MOVB    $ITEMB,21$      ,,SET ITEM NUMBER AS ERROR NUMBER
040020  004767  000740                          JSR     PC,$ATY4        ,,REPORT FATAL ERROR TO APT
040024     000                  21$             BYTE    0
040025     000                                  BYTE    0
040026  000777                  22$             BR      22$             ,,APT ERROR LOOP
040030  005777  141104                  2$      TST     @SWR            ,,HALT ON ERROR
040034  100002                                  BPL     3$              ,,SKIP IF CONTINUE
040036  000000                                  HALT                    ,,HALT ON ERROR!
040040  104406                                  CKSWR                   ,,TEST FOR CHANGE IN SOFT-SWR
040042  032777  001000  141070          3$      BIT     #BIT09,@SWR     ,,LOOP ON ERROR SWITCH SET?
040050  001402                                  BEQ     4$              ,,BR IF NO
040052  016716  141032                          MOV     $LPERR,(SP)     ,,FUDGE RETURN FOR LOOPING
040056  005767  141222                  4$      TST     $ESCAPE         ,,CHECK FOR AN ESCAPE ADDRESS
040062  001402                                  BEQ     5$              ,,BR IF NONE
040064  016716  141214                          MOV     $ESCAPE,(SP)    ,,FUDGE RETURN ADDRESS FOR ESCAPE
040070                                  5$
040070  022737  037344  000042                  CMP     #$ENDAD,@#42    ,,ACT-11 AUTO-ACCEPT?
040076  001001                                  BNE     6$              ,,BRANCH IF NO
040100  000000                                  HALT                    ,,YES
040102                                  6$
040102  032777  001000  141030                  BIT     #BIT09,@SWR
040110  001013                                  BNE     ERM10
040112  011637  001162                          MOV     (SP),@#$REGO            ;SEE IF ERROR #377
040116  062737  177776  001162                  ADD     #-2,@#$REGO
040124  122777  000377  141030                  CMPB    #377,@$REGO
```

```
040132  001002                          BNE     ERM10
040134  062716  000002                  ADD     #2,(SP)
040140  000002                  ERM10   RTI


                                 SBTTL  SAVE AND RESTORE RO-R5 ROUTINES

                                ,,**************************************************************
                                ,*SAVE RO-R5
                                ,*CALL
                                ,*      SAVREG
                                ,*UPON RETURN FROM $SAVREG THE STACK WILL LOOK LIKE
                                ,*
                                ,*TOP---(+16)
                                ,* +2---(+18)
                                ,* +4---R5
                                ,* +6---R4
                                ,* +8---R3
                                ,*+10---R2
                                ,*+12---R1
                                ,*+14---RO

040142                          $SAVREG
040142  010046                          MOV     RO,-(SP)        ,,PUSH RO ON STACK
040144  010146                          MOV     R1,-(SP)        ,,PUSH R1 ON STACK
040146  010246                          MOV     R2,-(SP)        ,,PUSH R2 ON STACK
040150  010346                          MOV     R3,-(SP)        ,,PUSH R3 ON STACK
040152  010446                          MOV     R4,-(SP)        ,,PUSH R4 ON STACK
040154  010546                          MOV     R5,-(SP)        ,,PUSH R5 ON STACK
040156  016646  000022                  MOV     22(SP),-(SP)    ,,SAVE PS OF MAIN FLOW
040162  016646  000022                  MOV     22(SP),-(SP)    ,,SAVE PC OF MAIN FLOW
040166  016646  000022                  MOV     22(SP),-(SP)    ,,SAVE PS OF CALL
040172  016646  000022                  MOV     22(SP),-(SP)    ,,SAVE PC OF CALL
040176  000002                          RTI

                                ,*RESTORE RO-R5
                                ,*CALL
                                ,*      RESREG
040200                          $RESREG
040200  012666  000022                  MOV     (SP)+,22(SP)    ,,RESTORE PC OF CALL
040204  012666  000022                  MOV     (SP)+,22(SP)    ,,RESTORE PS OF CALL
040210  012666  000022                  MOV     (SP)+,22(SP)    ,,RESTORE PC OF MAIN FLOW
040214  012666  000022                  MOV     (SP)+,22(SP)    ,,RESTORE PS OF MAIN FLOW
040220  012605                          MOV     (SP)+,R5        ,,POP STACK INTO R5
040222  012604                          MOV     (SP)+,R4        ,,POP STACK INTO R4
040224  012603                          MOV     (SP)+,R3        ,,POP STACK INTO R3
040226  012602                          MOV     (SP)+,R2        ,,POP STACK INTO R2
040230  012601                          MOV     (SP)+,R1        ,,POP STACK INTO R1
040232  012600                          MOV     (SP)+,RO        ,,POP STACK INTO RO
040234  000002                          RTI
                                 SBTTL  TYPE ROUTINE

                                ,,**************************************************************
                                ,*ROUTINE TO TYPE ASCIZ MESSAGE  MESSAGE MUST TERMINATE WITH A 0 BYTE
                                ,*THE ROUTINE WILL INSERT A NUMBER OF NULL CHARACTERS AFTER A LINE FEED
```

```
 9011                                   ,*NOTE1          $NULL CONTAINS THE CHARACTER TO BE USED AS THE FILLER CHARACTER
 9012                                   ,*NOTE2          $FILLS CONTAINS THE NUMBER OF FILLER CHARACTERS REQUIRED
 9013                                   ,*NOTE3          $FILLC CONTAINS THE CHARACTER TO FILL AFTER
 9014                                   ,*
 9015                                   ,*CALL
 9016                                   ,*1) USING A TRAP INSTRUCTION
 9017                                   ,*       TYPE    ,MESADR          ,,MESADR IS FIRST ADDRESS OF AN ASCIZ STRING
 9018                                   ,*OR
 9019                                   ,*       TYPE
 9020                                   ,*       MESADR
 9021                                   ,*
 9022
 9023  040236  105767  140715          $TYPE   TSTB    $TPFLG           ,,IS THERE A TERMINAL?
 9024  040242  100002                          BPL     1$               ,,BR IF YES
 9025  040244  000000                          HALT                     ,,HALT HERE IF NO TERMINAL
 9026  040246  000430                          BR      3$               ,;LEAVE
 9027  040250  010046                  1$      MOV     R0,-(SP)         ;;SAVE R0
 9028  040252  017600  000002                  MOV     @2(SP),R0        ,,GET ADDRESS OF ASCIZ STRING
 9029  040256  122767  000001  141052          CMPB    #APTENV,$ENV     ;,RUNNING IN APT MODE
 9030  040264  001011                          BNE     62$              ;,NO,GO CHECK FOR APT CONSOLE
 9031  040266  132767  000100  141043          BITB    #APTSPOOL,$ENVM  ,;SPOOL MESSAGE TO APT
 9032  040274  001405                          BEQ     62$              ,;NO,GO CHECK FOR CONSOLE
 9033  040276  010067  000004                  MOV     R0,61$           ,;SETUP MESSAGE ADDRESS FOR APT
 9034  040302  004767  000446                  JSR     PC,$ATY3         ,,SPOOL MESSAGE TO APT
 9035  040306  000000                  61$      WORD    0                ,;MESSAGE ADDRESS
 9036  040310  132767  000040  141021  62$     BITB    #APTCSUP,$ENVM   ,,APT CONSOLE SUPPRESSED
 9037  040316  001003                          BNE     60$              ,,YES,SKIP TYPE OUT
 9038  040320  112046                  2$      MOVB    (R0)+,-(SP)      ,,PUSH CHARACTER TO BE TYPED ONTO STACK
 9039  040322  001005                          BNE     4$               ,,BR IF IT ISN'T THE TERMINATOR
 9040  040324  005726                          TST     (SP)+            ,,IF TERMINATOR POP IT OFF THE STACK
 9041  040326  012600                  60$     MOV     (SP)+,R0         ,,RESTORE R0
 9042  040330  062716  000002          3$      ADD     #2,(SP)          ,,ADJUST RETURN PC
 9043  040334  000002                          RTI                      ,,RETURN
 9044  040336  122716  000011          4$      CMPB    #HT,(SP)         ,,BRANCH IF <HT>
 9045  040342  001430                          BEQ     8$
 9046  040344  122716  000200                  CMPB    #CRLF,(SP)       ,,BRANCH IF NOT <CRLF>
 9047  040350  001006                          BNE     5$
 9048  040352  005726                          TST     (SP)+            ,,POP  <CR><LF> EQUIV
 9049  040354  104401                          TYPE                     ,,TYPE A CR AND LF
 9050  040356  001313                          $CRLF
 9051  040360  105067  000130                  CLRB    $CHARCNT         ,,CLEAR CHARACTER COUNT
 9052  040364  000755                          BR      2$               ,,GET NEXT CHARACTER
 9053  040366  004767  000056          5$      JSR     PC,$TYPEC        ,,GO TYPE THIS CHARACTER
 9054  040372  126726  140560          6$      CMPB    $FILLC,(SP)+     ,,IS IT TIME FOR FILLER CHARS ?
 9055  040376  001350                          BNE     2$               ,,IF NO GO GET NEXT CHAR
 9056  040400  016746  140550                  MOV     $NULL,-(SP)      ,,GET # OF FILLER CHARS  NEEDED
 9057                                                                   ,,AND THE NULL CHAR
 9058  040404  105366  000001          7$      DECB    1(SP)            ,,DOES A NULL NEED TO BE TYPED?
 9059  040410  002770                          BLT     6$               ,,BR IF NO--GO POP THE NULL OFF OF STACK
 9060  040412  004767  000032                  JSR     PC,$TYPEC        ,,GO TYPE A NULL
 9061  040416  105367  000072                  DECB    $CHARCNT         ,,DO NOT COUNT AS A COUNT
 9062  040422  000770                          BR      7$               ,,LOOP
 9063
 9064                                   ,HORIZONTAL TAB PROCESSOR
 9065
 9066  040424  112716  000040          8$      MOVB    #' ,(SP)         ,,REPLACE TAB WITH SPACE
```

```
 9067  040430  004767  000014          9$      JSR     PC,$TYPEC       ;;TYPE A SPACE
 9068  040434  132767  000007  000052          BITB    #7,$CHARCNT     ;;BRANCH IF NOT AT
 9069  040442  001372                          BNE     9$              ;;TAB STOP
 9070  040444  005726                          TST     (SP)+           ;;POP SPACE OFF STACK
 9071  040446  000724                          BR      2$              ;;GET NEXT CHARACTER
 9072  040450  105777  140474          $TYPEC  TSTB    @$TPS           ;;WAIT UNTIL PRINTER IS READY
 9073  040454  100375                          BPL     $TYPEC
 9074  040456  116677  000002  140466          MOVB    2(SP),@$TPB     ;;LOAD CHAR TO BE TYPED INTO DATA REG
 9075  040464  122766  000015  000002          CMPB    #CR,2(SP)       ;;IS CHARACTER A CARRIAGE RETURN?
 9076  040472  001003                          BNE     1$              ;;BRANCH IF NO
 9077  040474  105067  000014                  CLRB    $CHARCNT        ;;YES--CLEAR CHARACTER COUNT
 9078  040500  000406                          BR      $TYPEX          ;;EXIT
 9079  040502  122766  000012  000002  1$      CMPB    #LF,2(SP)       ;;IS CHARACTER A LINE FEED?
 9080  040510  001402                          BEQ     $TYPEX          ;;BRANCH IF YES
 9081  040512  105227                          INCB    (PC)+           ;;COUNT THE CHARACTER
 9082  040514  000000                  $CHARCNT  WORD  0               ;;CHARACTER COUNT STORAGE
 9083  040516  000207                  $TYPEX  RTS     PC
 9084
 9085
 9086                                   .SBTTL  BINARY TO OCTAL (ASCII) AND TYPE
 9087
 9088                                   ;;**********************************************************************
 9089                                   ;*THIS ROUTINE IS USED TO CHANGE A 16-BIT BINARY NUMBER TO A 6-DIGIT
 9090                                   ;*OCTAL (ASCII) NUMBER AND TYPE IT
 9091                                   ;*$TYPOS---ENTER HERE TO SETUP SUPPRESS ZEROS AND NUMBER OF DIGITS TO TYPE
 9092                                   ;*CALL:
 9093                                   ;*      MOV     NUM,-(SP)       ;;NUMBER TO BE TYPED
 9094                                   ;*      TYPOS                   ;;CALL FOR TYPEOUT
 9095                                   ;*       .BYTE  N               ;;N=1 TO 6 FOR NUMBER OF DIGITS TO TYPE
 9096                                   ;*       .BYTE  M               ;;M=1 OR 0
 9097                                   ;*                                      ;;1=TYPE LEADING ZEROS
 9098                                   ;*                                      ;;0=SUPPRESS LEADING ZEROS
 9099                                   ;*
 9100                                   ;*$TYPON----ENTER HERE TO TYPE OUT WITH THE SAME PARAMETERS AS THE LAST
 9101                                   ;*$TYPOS OR $TYPOC
 9102                                   ;*CALL.
 9103                                   ;*      MOV     NUM,-(SP)       ;;NUMBER TO BE TYPED
 9104                                   ;*      TYPON                   ;;CALL FOR TYPEOUT
 9105                                   ;*
 9106                                   ;*$TYPOC---ENTER HERE FOR TYPEOUT OF A 16 BIT NUMBER
 9107                                   ;*CALL:
 9108                                   ;*      MOV     NUM,-(SP)       ;;NUMBER TO BE TYPED
 9109                                   ;*      TYPOC                   ;;CALL FOR TYPEOUT
 9110
 9111  040520  017646  000000          $TYPOS  MOV     @(SP),-(SP)     ;;PICKUP THE MODE
 9112  040524  116667  000001  000211          MOVB    1(SP),$OFILL    ;;LOAD ZERO FILL SWITCH
 9113  040532  112667  000207                  MOVB    (SP)+,$OMODE+1  ;;NUMBER OF DIGITS TO TYPE
 9114  040536  062716  000002                  ADD     #2,(SP)         ;;ADJUST RETURN ADDRESS
 9115  040542  000406                          BR      $TYPON
 9116  040544  112767  000001  000171  $TYPOC  MOVB    #1,$OFILL       ;;SET THE ZERO FILL SWITCH
 9117  040552  112767  000006  000165          MOVB    #6,$OMODE+1     ;;SET FOR SIX(6) DIGITS
 9118  040560  112767  000005  000154  $TYPON  MOVB    #5,$OCNT        ;;SET THE ITERATION COUNT
 9119  040566  010346                          MOV     R3,-(SP)        ;;SAVE R3
 9120  040570  010446                          MOV     R4,-(SP)        ;;SAVE R4
 9121  040572  010546                          MOV     R5,-(SP)        ;;SAVE R5
 9122  040574  116704  000145                  MOVB    $OMODE+1,R4     ;;GET THE NUMBER OF DIGITS TO TYPE
```

```
 9123  040600  005404                        NEG     R4
 9124  040602  062704  000006                ADD     #6,R4           ;;SUBTRACT IT FOR MAX  ALLOWED
 9125  040606  110467  000132                MOVB    R4,$OMODE       ;;SAVE IT FOR USE
 9126  040612  116704  000125                MOVB    $OFILL,R4       ;;GET THE ZERO FILL SWITCH
 9127  040616  016605  000012                MOV     12(SP),R5       ;;PICKUP THE INPUT NUMBER
 9128  040622  005003                        CLR     R3              ;;CLEAR THE OUTPUT WORD
 9129  040624  006105                1$      ROL     R5              ;;ROTATE MSB INTO "C"
 9130  040626  000404                        BR      3$              ;;GO DO MSB
 9131  040630  006105                2$      ROL     R5              ;;FORM THIS DIGIT
 9132  040632  006105                        ROL     R5
 9133  040634  006105                        ROL     R5
 9134  040636  010503                        MOV     R5,R3
 9135  040640  006103                3$      ROL     R3              ;;GET LSB OF THIS DIGIT
 9136  040642  105367  000076                DECB    $OMODE          ;;TYPE THIS DIGIT?
 9137  040646  100016                        BPL     7$              ;;BR IF NO
 9138  040650  042703  177770                BIC     #177770,R3      ;;GET RID OF JUNK
 9139  040654  001002                        BNE     4$              ;;TEST FOR 0
 9140  040656  005704                        TST     R4              ;;SUPPRESS THIS 0?
 9141  040660  001403                        BEQ     5$              ;;BR IF YES
 9142  040662  005204                4$.     INC     R4              ;;DON'T SUPPRESS ANYMORE 0'S
 9143  040664  052703  000060                BIS     #'0,R3          ;;MAKE THIS DIGIT ASCII
 9144  040670  052703  000040          5$    BIS     #' ,R3          ;;MAKE ASCII IF NOT ALREADY
 9145  040674  110367  000040                MOVB    R3,8$           ;;SAVE FOR TYPING
 9146  040700  104401  040740                TYPE    ,8$             ;;GO TYPE THIS DIGIT
 9147  040704  105367  000032          7$    DECB    $OCNT           ;;COUNT BY 1
 9148  040710  003347                        BGT     2$              ;;BR IF MORE TO DO
 9149  040712  002402                        BLT     6$              ;;BR IF DONE
 9150  040714  005204                        INC     R4              ;;INSURE LAST DIGIT ISN'T A BLANK
 9151  040716  000744                        BR      2$              ;;GO DO THE LAST DIGIT
 9152  040720  012605                6$      MOV     (SP)+,R5        ;;RESTORE R5
 9153  040722  012604                        MOV     (SP)+,R4        ;;RESTORE R4
 9154  040724  012603                        MOV     (SP)+,R3        ;;RESTORE R3
 9155  040726  016666  000002  000004        MOV     2(SP),4(SP)     ;;SET THE STACK FOR RETURNING
 9156  040734  012616                        MOV     (SP)+,(SP)
 9157  040736  000002                        RTI                     ;;RETURN
 9158  040740     000                8$      .BYTE   0               ;;STORAGE FOR ASCII DIGIT
 9159  040741     000                        .BYTE   0               ;;TERMINATOR FOR TYPE ROUTINE
 9160  040742     000                $OCNT:  .BYTE   0               ;;OCTAL DIGIT COUNTER
 9161  040743     000                $OFILL: .BYTE   0               ;;ZERO FILL SWITCH
 9162  040744  000000                $OMODE: .WORD   0               ;;NUMBER OF DIGITS TO TYPE
 9163
 9164                                .SBTTL  APT COMMUNICATIONS ROUTINE
 9165
 9166                                ;;**************************************************************
 9167  040746  112767  000001  000236 $ATY1   MOVB    #1,$FFLG        ;;TO REPORT FATAL ERROR
 9168  040754  112767  000001  000226 $ATY3:  MOVB    #1,$MFLG        ;;TO TYPE A MESSAGE
 9169  040762  000403                        BR      $ATYC
 9170  040764  112767  000001  000220 $ATY4:  MOVB    #1,$FFLG        ;;TO ONLY REPORT FATAL ERROR
 9171  040772                        $ATYC.
 9172  040772  010046                        MOV     R0,-(SP)        ;;PUSH R0 ON STACK
 9173  040774  010146                        MOV     R1,-(SP)        ;;PUSH R1 ON STACK
 9174  040776  105767  000206                TSTB    $MFLG           ;;SHOULD TYPE A MESSAGE?
 9175  041002  001450                        BEQ     5$              ;;IF NOT:  BR
 9176  041004  122767  000001  140324        CMPB    #APTENV,$ENV    ;;OPERATING UNDER APT?
 9177  041012  001031                        BNE     3$              ;;IF NOT:  BR
 9178  041014  132767  000100  140315        BITB    #APTSPOOL,$ENVM ;;SHOULD SPOOL MESSAGES?
```

```
 9179  041022  001425                          BEQ     3$              ;;IF NOT   BR
 9180  041024  017600  000004                  MOV     @4(SP),R0       ;;GET MESSAGE ADDR
 9181  041030  062766  000002  000004          ADD     #2,4(SP)                ;;BUMP RETURN ADDR
 9182  041036  005767  140254          1$      TST     $MSGTYPE        ;;SEE IF DONE W/ LAST XMISSION?
 9183  041042  001375                          BNE     1$              ;;IF NOT.  WAIT
 9184  041044  010067  140262                  MOV     R0,$MSGAD       ;;PUT ADDR IN MAILBOX
 9185  041050  105720                  2$      TSTB    (R0)+           ;;FIND END OF MESSAGE
 9186  041052  001376                          BNE     2$
 9187  041054  166700  140252                  SUB     $MSGAD,R0       ;;SUB START OF MESSAGE
 9188  041060  006200                          ASR     R0              ;;GET MESSAGE LNGTH IN WORDS
 9189  041062  010067  140246                  MOV     R0,$MSGLGT      ;;PUT LENGTH IN MAILBOX
 9190  041066  012767  000004  140222          MOV     #4,$MSGTYPE     ;;TELL APT TO TAKE MSG
 9191  041074  000413                          BR      5$
 9192  041076  017667  000004  000016  3$      MOV     @4(SP),4$       ;;PUT MSG ADDR IN JSR LINKAGE
 9193  041104  062766  000002  000004          ADD     #2,4(SP)                ;;BUMP RETURN ADDRESS
 9194  041112  016746  136660                  MOV     177776,-(SP)    ;;PUSH 177776 ON STACK
 9195  041116  004767  177114                  JSR     PC,$TYPE        ;;CALL TYPE MACRO
 9196  041122  000000                  4$:     .WORD   0
 9197  041124                          5$:
 9198  041124  105767  000062          10$     TSTB    $FFLG           ;;SHOULD REPORT FATAL ERROR?
 9199  041130  001416                          BEQ     12$             ;;IF NOT:  BR
 9200  041132  005767  140200                  TST     $ENV            ;;RUNNING UNDER APT?
 9201  041136  001413                          BEQ     12$             ;;IF NOT:  BR
 9202  041140  005767  140152          11$:    TST     $MSGTYPE        ;;FINISHED LAST MESSAGE?
 9203  041144  001375                          BNE     11$             ;;IF NOT:  WAIT
 9204  041146  017667  000004  140144          MOV     @4(SP),$FATAL   ;;GET ERROR #
 9205  041154  062766  000002  000004          ADD     #2,4(SP)                ;;BUMP RETURN ADDR
 9206  041162  005267  140130                  INC     $MSGTYPE        ;;TELL APT TO TAKE ERROR
 9207  041166  105067  000020          12$:    CLRB    $FFLG           ;;CLEAR FATAL FLAG
 9208  041172  105067  000013                  CLRB    $LFLG           ;;CLEAR LOG FLAG
 9209  041176  105067  000006                  CLRB    $MFLG           ;;CLEAR MESSAGE FLAG
 9210  041202  012601                          MOV     (SP)+,R1        ;;POP STACK INTO R1
 9211  041204  012600                          MOV     (SP)+,R0        ;;POP STACK INTO R0
 9212  041206  000207                          RTS     PC              ;;RETURN
 9213  041210     000          $MFLG:  .BYTE   0               ;;MESSG  FLAG
 9214  041211     000          $LFLG:  .BYTE   0               ;;LOG FLAG
 9215  041212     000          $FFLG:  .BYTE   0               ;;FATAL FLAG
 9216          041214                  .EVEN
 9217          000200          APTSIZE=200
 9218          000001          APTENV=001
 9219          000100          APTSPOOL=100
 9220          000040          APTCSUP=040
 9221
 9222                           $BTTL   TTY INPUT ROUTINE
 9223
 9224                           ;;**********************************************************************
 9225                           .ENABL  LSB
 9226
 9227                           ;;**********************************************************************
 9228                           ;*SOFTWARE SWITCH REGISTER CHANGE ROUTINE.
 9229                           ;*ROUTINE IS ENTERED FROM THE TRAP HANDLER, AND WILL
 9230                           ;*SERVICE THE TEST FOR CHANGE IN SOFTWARE SWITCH REGISTER TRAP CALL
 9231                           ;*WHEN OPERATING IN TTY FLAG MODE.
 9232  041214  022767  000176  137716  $CKSWR:  CMP     #SWREG,SWR      ;;IS THE SOFT-SWR SELECTED?
 9233  041222  001074                          BNE     15$             ;;BRANCH IF NO
 9234  041224  105777  137714                  TSTB    @$TKS           ;;CHAR THERE?
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 9235  041230  100071                        BPL     15$             ;;IF NO, DON'T WAIT AROUND
 9236  041232  117746  137710                MOVB    @$TKB,-(SP)     ;;SAVE THE CHAR
 9237  041236  042716  177600                BIC     #^C177,(SP)     ;;STRIP-OFF THE ASCII
 9238  041242  022726  000007                CMP     #7,(SP)+        ;;IS IT A CONTROL G?
 9239  041246  001062                        BNE     15$             ;;NO, RETURN TO USER
 9240  041250  126727  137660  000001        CMPB    $AUTOB,#1       ;;ARE WE RUNNING IN AUTO-MODE?
 9241  041256  001456                        BEQ     15$             ;;BRANCH IF YES
 9242
 9243  041260  104401  041623                TYPE    ,$CNTLG         ;;ECHO THE CONTROL-G ( G)
 9244  041264  104401  041630        $GTSWR: TYPE    ,$MSWR          ;;TYPE CURRENT CONTENTS
 9245  041270  016746  136702                MOV     SWREG,-(SP)     ;;SAVE SWREG FOR TYPEOUT
 9246  041274  104402                        TYPOC                   ;;GO TYPE--OCTAL ASCII(ALL DIGITS)
 9247  041276  104401  041641                TYPE    ,$MNEW          ;;PROMPT FOR NEW SWR
 9248  041302  005046                19$.    CLR     -(SP)           ;;CLEAR COUNTER
 9249  041304  005046                        CLR     -(SP)           ;;THE NEW SWR
 9250  041306  105777  137632        7$      TSTB    @$TKS           ;;CHAR THERE?
 9251  041312  100375                        BPL     7$              ;;IF NOT TRY AGAIN
 9252
 9253  041314  117746  137626                MOVB    @$TKB,-(SP)     ;;PICK UP CHAR
 9254  041320  042716  177600                BIC     #^C177,(SP)     ;;MAKE IT 7-BIT ASCII
 9255
 9256
 9257
 9258  041324  021627  000025        9$      CMP     (SP),#25        ;;IS IT A CONTROL-U?
 9259  041330  001005                        BNE     10$             ;;BRANCH IF NOT
 9260  041332  104401  041616                TYPE    ,$CNTLU         ;;YES, ECHO CONTROL-U ( U)
 9261  041336  062706  000006        20$:    ADD     #6,SP           ;;IGNORE PREVIOUS INPUT
 9262  041342  000757                        BR      19$             ;;LET'S TRY IT AGAIN
 9263
 9264
 9265  041344  021627  000015        10$.    CMP     (SP),#15        ;;IS IT A <CR>?
 9266  041350  001022                        BNE     16$             ;;BRANCH IF NO
 9267  041352  005766  000004                TST     4(SP)           ;;YES, IS IT THE FIRST CHAR?
 9268  041356  001403                        BEQ     11$             ;;BRANCH IF YES
 9269  041360  016677  000002  137552        MOV     2(SP),@SWR      ;;SAVE NEW SWR
 9270  041366  062706  000006        11$:    ADD     #6,SP           ;;CLEAR UP STACK
 9271  041372  104401  001313        14$:    TYPE    ,$CRLF          ;;ECHO <CR> AND <LF>
 9272  041376  126727  137533  000001        CMPB    $INTAG,#1       ;;RE-ENABLE TTY KBD INTERRUPTS?
 9273  041404  001003                        BNE     15$             ;;BRANCH IF NOT
 9274  041406  012777  000100  137530        MOV     #100,@$TKS      ;;RE-ENABLE TTY KBD INTERRUPTS
 9275  041414  000002                15$.    RTI                     ;;RETURN
 9276  041416  004767  177026        16$.    JSR     PC,$TYPEC       ;;ECHO CHAR
 9277  041422  021627  000060                CMP     (SP),#60        ;;CHAR < 0?
 9278  041426  002420                        BLT     18$             ;;BRANCH IF YES
 9279  041430  021627  000067                CMP     (SP),#67        ;;CHAR > 7?
 9280  041434  003015                        BGT     18$             ;;BRANCH IF YES
 9281  041436  042726  000060                BIC     #60,(SP)+       ;;STRIP-OFF ASCII
 9282  041442  005766  000002                TST     2(SP)           ;;IS THIS THE FIRST CHAR
 9283  041446  001403                        BEQ     17$             ;;BRANCH IF YES
 9284  041450  006316                        ASL     (SP)            ;;NO, SHIFT PRESENT
 9285  041452  006316                        ASL     (SP)            ;;    CHAR OVER TO MAKE
 9286  041454  006316                        ASL     (SP)            ;;    ROOM FOR NEW ONE
 9287  041456  005266  000002        17$     INC     2(SP)           ;;KEEP COUNT OF CHAR
 9288  041462  056616  177776                BIS     -2(SP),(SP)     ;;SET IN NEW CHAR
 9289  041466  000707                        BR      7$              ;;GET THE NEXT ONE
 9290  041470  104401  001312        18$     TYPE    ,$QUES          ;;TYPE ?<CR><LF>
```

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 9291  041474  000720                          BR      20$             ;;SIMULATE CONTROL-U
 9292                                  DSABL   LSB
 9293
 9294
 9295                                  ;;*****************************************************************
 9296                                  ;*THIS ROUTINE WILL INPUT A SINGLE CHARACTER FROM THE TTY
 9297                                  ;*CALL:
 9298                                  ;*      RDCHR                   ;;INPUT A SINGLE CHARACTER FROM THE TTY
 9299                                  ;*      RETURN HERE             ;;CHARACTER IS ON THE STACK
 9300                                  ;*                              ;;WITH PARITY BIT STRIPPED OFF
 9301                                  ;
 9302
 9303  041476  011646                  $RDCHR  MOV     (SP),-(SP)      ;;PUSH DOWN THE PC
 9304  041500  016666  000004  000002          MOV     4(SP),2(SP)     ;;SAVE THE PS
 9305  041506  105777  137432          1$      TSTB    @$TKS           ;;WAIT FOR
 9306  041512  100375                          BPL     1$              ;;A CHARACTER
 9307  041514  117766  137426  000004          MOVB    @$TKB,4(SP)     ;;READ THE TTY
 9308  041522  042766  177600  000004          BIC     #^C(177),4(SP)  ;;GET RID OF JUNK IF ANY
 9309  041530  026627  000004  000023          CMP     4(SP),#23       ;;IS IT A CONTROL-S?
 9310  041536  001013                          BNE     3$              ;;BRANCH IF NO
 9311  041540  105777  137400          2$:     TSTB    @$TKS           ;;WAIT FOR A CHARACTER
 9312  041544  100375                          BPL     2$              ;;LOOP UNTIL ITS THERE
 9313  041546  117746  137374                  MOVB    @$TKB,-(SP)     ;;GET CHARACTER
 9314  041552  042716  177600                  BIC     #^C177,(SP)     ;;MAKE IT 7-BIT ASCII
 9315  041556  022627  000021                  CMP     (SP)+,#21       ;;IS IT A CONTROL-Q?
 9316  041562  001366                          BNE     2$              ;;IF NOT DISCARD IT
 9317  041564  000750                          BR      1$              ;;YES, RESUME
 9318  041566  026627  000004  000140  3$:     CMP     4(SP),#140      ;;IS IT UPPER CASE?
 9319  041574  002407                          BLT     4$              ;;BRANCH IF YES
 9320  041576  026627  000004  000175          CMP     4(SP),#175      ;;IS IT A SPECIAL CHAR?
 9321  041604  003003                          BGT     4$              ;;BRANCH IF YES
 9322  041606  042766  000040  000004          BIC     #40,4(SP)       ;;MAKE IT UPPER CASE
 9323  041614  000002                  4$:     RTI                     ;;GO BACK TO USER
 9324  041616  052536  005015     000  $CNTLU: .ASCIZ  / U/<15><12>    ;;CONTROL "U"
 9325  041623     136  006507  000012  $CNTLG: .ASCIZ  / G/<15><12>    ;;CONTROL "G"
 9326  041630  005015  053523  020122  $MSWR:  .ASCIZ  <15><12>/SWR = /
 9327  041636  020075     000
 9328  041641     040  047040  053505  $MNEW.   ASCIZ  /  NEW = /
 9329  041646  036440  000040
 9330
 9331                                   SBTTL  TRAP DECODER
 9332
 9333                                  ;;*****************************************************************
 9334                                  ;*THIS ROUTINE WILL PICKUP THE LOWER BYTE OF THE "TRAP" INSTRUCTION
 9335                                  ;*AND USE IT TO INDEX THROUGH THE TRAP TABLE FOR THE STARTING ADDRESS
 9336                                  ;*OF THE DESIRED ROUTINE.  THEN USING THE ADDRESS OBTAINED IT WILL
 9337                                  ;*GO TO THAT ROUTINE
 9338
 9339  041652  010046                  $TRAP   MOV     R0,-(SP)        ;;SAVE R0
 9340  041654  016600  000002                  MOV     2(SP),R0        ;;GET TRAP ADDRESS
 9341  041660  005740                          TST     -(R0)           ;;BACKUP BY 2
 9342  041662  111000                          MOVB    (R0),R0         ;;GET RIGHT BYTE OF TRAP
 9343  041664  006300                          ASL     R0              ;;POSITION FOR INDEXING
 9344  041666  016000  041706                  MOV     $TRPAD(R0),R0   ;;INDEX TO TABLE
 9345  041672  000200                          RTS     R0              ;;GO TO ROUTINE
 9346
```

```
 9347
 9348                                   ;;THIS IS USE TO HANDLE THE "GETPRI" MACRO
 9349
 9350  041674  011646                   $TRAP2  MOV     (SP),-(SP)      ;;MOVE THE PC DOWN
 9351  041676  016666  000004  000002           MOV     4(SP),2(SP)     ;;MOVE THE PSW DOWN
 9352  041704  000002                           RTI                     ;;RESTORE THE PSW
 9353
 9354                                    SBTTL  TRAP TABLE
 9355
 9356                                   ;*THIS TABLE CONTAINS THE STARTING ADDRESSES OF THE ROUTINES CALLED
 9357                                   ;*BY THE "TRAP" INSTRUCTION
 9358
 9359                                   ;       ROUTINE
 9360                                   ;       -------
 9361  041706  041674                   $TRPAD   WORD   $TRAP2
 9362  041710  040236                           $TYPE   ;;CALL=TYPE     TRAP+1(104401)  TTY TYPEOUT ROUTINE
 9363  041712  040544                           $TYPOC  ;;CALL=TYPOC    TRAP+2(104402)  TYPE OCTAL NUMBER (WITH LEADING ZEROS)
 9364  041714  040520                           $TYPOS  ;;CALL=TYPOS    TRAP+3(104403)  TYPE OCTAL NUMBER (NO LEADING ZEROS)
 9365  041716  040560                           $TYPON  ;;CALL=TYPON    TRAP+4(104404)  TYPE OCTAL NUMBER (AS PER LAST CALL)
 9366
 9367  041720  041264                           $GTSWR  ;;CALL=GTSWR    TRAP+5(104405)  GET SOFT-SWR SETTING
 9368
 9369  041722  041214                           $CKSWR  ;;CALL=CKSWR    TRAP+6(104406)  TEST FOR CHANGE IN SOFT-SWR
 9370  041724  041476                           $RDCHR  ;;CALL=RDCHR    TRAP+7(104407)  TTY TYPEIN CHARACTER ROUTINE
 9371  041726  040142                           $SAVREG ;;CALL=SAVREG   TRAP+10(104410) SAVE R0-R5 ROUTINE
 9372  041730  040200                           $RESREG ;;CALL=RESREG   TRAP+11(104411) RESTORE R0-R5 ROUTINE
 9373  041732  042656                           .RSET   ;;CALL=RSETUP   TRAP+12(104412) ROUTINE TO INITIALIZE AT END OF EACH TES
 9374  041734  042650                           LPER    ;;CALL=LPERR    TRAP+13(104413) ROUTINE TO SET UP LOOP ON ERROR ADDRESS
 9375           000030                   $TERM= -$TRPAD
 9376
 9377                                    SBTTL  POWER DOWN AND UP ROUTINES
 9378
 9379                                   ;;**************************************************************************
 9380                                   ;POWER DOWN ROUTINE
 9381  041736  012737  042114  000024   $PWRDN.  MOV     #$ILLUP,@#PWRVEC ;;SET FOR FAST UP
 9382  041744  012737  000340  000026           MOV     #340,@#PWRVEC+2 ;;PRIO.7
 9383  041752  010046                           MOV     R0,-(SP)        ;;PUSH R0 ON STACK
 9384  041754  010146                           MOV     R1,-(SP)        ;;PUSH R1 ON STACK
 9385  041756  010246                           MOV     R2,-(SP)        ;;PUSH R2 ON STACK
 9386  041760  010346                           MOV     R3,-(SP)        ;;PUSH R3 ON STACK
 9387  041762  010446                           MOV     R4,-(SP)        ;;PUSH R4 ON STACK
 9388  041764  010546                           MOV     R5,-(SP)        ;;PUSH R5 ON STACK
 9389  041766  017746  137146                   MOV     @SWR,-(SP)      ;;PUSH @SWR ON STACK
 9390  041772  010667  000122                   MOV     SP,$SAVR6       ;;SAVE SP
 9391  041776  012737  042010  000024           MOV     #$PWRUP,@#PWRVEC ;;SET UP VECTOR
 9392  042004  000000                           HALT
 9393  042006  000776                           BR       -2             ;;HANG UP
 9394
 9395                                   ;;**************************************************************************
 9396                                   ;POWER UP ROUTINE
 9397  042010  012737  042114  000024   $PWRUP  MOV     #$ILLUP,@#PWRVEC ;;SET FOR FAST DOWN
 9398  042016  016706  000076                   MOV     $SAVR6,SP       ;;GET SP
 9399  042022  005067  000072                   CLR     $SAVR6          ;;WAIT LOOP FOR THE TTY
 9400  042026  005267  000066           1$      INC     $SAVR6          ;;WAIT FOR THE INC
 9401  042032  001375                           BNE     1$              ;;OF  WORD
 9402  042034  012677  137100                   MOV     (SP)+,@SWR      ;;POP STACK INTO @SWR
```

```
 9403  042040  012605                          MOV     (SP)+,R5        ;;POP STACK INTO R5
 9404  042042  012604                          MOV     (SP)+,R4        ;;POP STACK INTO R4
 9405  042044  012603                          MOV     (SP)+,R3        ;;POP STACK INTO R3
 9406  042046  012602                          MOV     (SP)+,R2        ;;POP STACK INTO R2
 9407  042050  012601                          MOV     (SP)+,R1        ;;POP STACK INTO R1
 9408  042052  012600                          MOV     (SP)+,R0        ;POP STACK INTO R0
 9409  042054  012737  041736  000024          MOV     #$PWRDN,@#PWR'  ;;SET UP THE POWER DOWN VECTOR
 9410  042062  012737  000340  000026          MOV     #340,@#PWRVEC   ;PRIO.7
 9411  042070  104401                          TYPE                    ;REPORT THE POWER FAILURE
 9412  042072  042726                $PWRMG    WORD    POWERM          ;;POWER FAIL MESSAGE POINTER
 9413  042074  012716                          MOV     (PC)+,(SP)      ;;RESTART AT START
 9414  042076  006106                $PWRAD    WORD    START           ;;RESTART ADDRESS
 9415  042100  042766  000020  000002          BIC     #20,2(SP)       ;;CLEAR "T" BIT
 9416  042106  005067  175304                  CLR     $TBIT           ;;CLEAR THE "T" BIT FLAG
 9417  042112  000002                          RTI
 9418  042114  000000                $ILLUP    HALT                    ;;THE POWER UP SEQUENCE WAS STARTED
 9419  042116  000776                          BR      -2              ;; BEFORE THE POWER DOWN WAS COMPLETE
 9420  042120  000000                $SAVR6    0                       ;;PUT THE SP HERE
 9421
 9422
 9423                                          .SBTTL  ERROR TYPE OUT ROUTINE
 9424                                  ;;**************************************************************************
 9425                                  ;;**************************************************************************
 9426                                  ;*THIS ROUTINE IS CALLED TO TYPE AN ERROR MESSAGE WHICH IS INCLUDED
 9427                                  ;*IN THE ERROR MESSAGE DATA TABLE  IT IS CALLED BY THE $ERROR ROUTINE
 9428                                  ;*OR BY FIRST SETTING $ITEMB EQUAL TO THE ERROR TABLE ITEM TO BE PRINTED
 9429                                  ;*OUT AND THEN ECECUTING A
 9430                                  ;*              JSR     PC,ERTYPE
 9431                                  ;*
 9432  042122  104401                $ERTYPE   TYPE                                    ;TYPE A CRLF
 9433  042124  001313                          WORD    $CRLF
 9434  042126  113737  001102  001232          MOVB    @#$TSTNM,@#$TMP0
 9435  042134  042737  177400  001232          BIC     #177400,@#$TMP0
 9436  042142  013737  001116  001234          MOV     @#$ERRPC,@#$TMP1        ;GET PC OF CALL
 9437  042150  010046                          MOV     R0,-(SP)                ;SAVE R0
 9438
 9439  042152  113700  001114                  MOVB    @#$ITEMB,R0             ;GET THE ITEM NUMBER
 9440  042156  042700  177400                  BIC     #177400,R0
 9441  042162  001005                          BNE     1$
 9442
 9443  042164  013746  001116                  MOV     @#$ERRPC,-(SP)          ;IF ZERO THEN JUST
 9444  042170  104402                          TYPOC                           ;PRINT THE PC
 9445  042172  000137  042550                  JMP     @#ERT5
 9446
 9447  042176  022700  000377          1$      CMP     #377,R0
 9448  042202  001005                          BNE     20$
 9449  042204  016600  000004                  MOV     4(SP),R0
 9450  042210  011000                          MOV     (R0),R0
 9451  042212  062700  000400                  ADD     #400,R0
 9452  042216  005300                20$       DEC     R0                      ;OTHERWISE MAKE R0 AN
 9453  042220  006300                          ASL     R0                      ;INDEX FOR THE TABLE
 9454  042222  006300                          ASL     R0
 9455  042224  006300                          ASL     R0
 9456  042226  062700  001442                  ADD     #$ERRTB,R0
 9457
 9458  042232  012037  042242                  MOV     (R0)+,@#2$              ;PICK UP THE ADDRESS
```

```
 9459  042236  001404                      BEQ     3$                      ,OF THE EM, ERROR MESSAGE
 9460  042240  104401                      TYPE
 9461  042242  000000              2$       WORD    0
 9462  042244  104401                      TYPE
 9463  042246  001313                       WORD    $CRLF
 9464
 9465  042250  012037  042260      3$      MOV     (R0)+,@#4$              ,GET THE DH,DATA HEADER
 9466  042254  001404                      BEQ     5$
 9467  042256  104401                      TYPE
 9468  042260  000000              4$       WORD    0
 9469  042262  104401                      TYPE
 9470  042264  001313                       WORD    $CRLF
 9471
 9472  042266  010146              5$      MOV     R1,-(SP)                ,SAVE R1,R2 AND R3
 9473  042270  010246                      MOV     R2,-(SP)
 9474  042272  010346                      MOV     R3,-(SP)
 9475
 9476  042274  012001                      MOV     (R0)+,R1                ,GET THE ADDRESS OF THE
 9477                                                                      ,DATA TABLE
 9478  042276  001001                      BNE     6$
 9479  042300  000516                      BR      ERT4                    ,RETURN IF NO DATA
 9480
 9481  042302  011000              6$      MOV     (R0),R0                 ,GET A POINTER TO THE DATA
 9482                                                                      ,FORMAT TABLE
 9483  042304  105710              ERT1    TSTB    (R0)                    ,FORMAT ZERO?
 9484  042306  001003                      BNE     7$
 9485
 9486  042310  013146                      MOV     @(R1)+,-(SP)            ,FORMAT ZERO SO TYPE
 9487  042312  104402                      TYPOC                           ,AN OCTAL NUMBER
 9488  042314  000502                      BR      ERT2
 9489
 9490  042316                      7$
 9491  042316  122710  000002      8$      CMPB    #2,(R0)                 ,FORMAT TWO?
 9492  042322  001010                      BNE     9$
 9493
 9494  042324  013102                      MOV     @(R1)+,R2               ,FORMAT TWO SO TYPE TWO
 9495  042326  012246                      MOV     (R2)+,-(SP)             ,OCTAL NUMBERS
 9496  042330  104402                      TYPOC
 9497  042332  104401                      TYPE
 9498  042334  042772                       WORD    SPACE
 9499  042336  011246                      MOV     (R2),-(SP)
 9500  042340  104402                      TYPOC
 9501  042342  000467                      BR      ERT2
 9502
 9503  042344  122710  000003      9$      CMPB    #3,(R0)                 ,FORMAT THREE?
 9504  042350  001020                      BNE     10$
 9505
 9506  042352  013102                      MOV     @(R1)+,R2               ,FORMAT THREE SO TYPE
 9507  042354  012246                      MOV     (R2)+,-(SP)             ,FOUR OCTAL NUMBERS
 9508  042356  104402                      TYPOC
 9509  042360  104401                      TYPE
 9510  042362  042772                       WORD    SPACE
 9511  042364  012246                      MOV     (R2)+,-(SP)
 9512  042366  104402                      TYPOC
 9513  042370  104401                      TYPE
 9514  042372  042772                       WORD    SPACE
```

```
 9515  042374  012246                      MOV     (R2)+,-(SP)
 9516  042376  104402                      TYPOC
 9517  042400  104401                      TYPE
 9518  042402  042772                       WORD   SPACE
 9519  042404  011246                      MOV     (R2),-(SP)
 9520  042406  104402                      TYPOC
 9521  042410  000444                      BR      ERT2
 9522
 9523  042412  122710  000004      10$     CMPB    #4,(R0)          ;FORMAT FOUR?
 9524  042416  001004                      BNE     11$
 9525
 9526  042420  013146                      MOV     @(R1)+,-(SP)     ;FORMAR FOUR SO TYPE
 9527  042422  104403                      TYPOS                    ;AN OCTAL NUMBER
 9528  042424     016                       BYTE   16               ;SUPPRESSING LEADING ZEROES
 9529  042425     000                       BYTE   0
 9530  042426  000435                      BR      ERT2
 9531
 9532  042430  122710  000005      11$     CMPB    #5,(R0)          ;FORMAT FIVE?
 9533  042434  001005                      BNE     13$
 9534
 9535  042436  012137  042444              MOV     (R1)+,@#12$      ;FORMAT FIVE SO TYPE AN
 9536  042442  104401                      TYPE                     ;ASCIZ STRING
 9537  042444  000000              12$      WORD   0
 9538  042446  000427                      BR      ERT3
 9539
 9540  042450  122710  000011      13$     CMPB    #11,(R0)         ;FORMAT ELEVEN?
 9541  042454  001005                      BNE     15$
 9542
 9543  042456  013137  042464              MOV     @(R1)+,@#14$     ;FORMAT ELEVEN SO PICK
 9544  042462  104401                      TYPE                     ;A POINTER TO AN ASCIZ
 9545  042464  000000              14$      WORD   0                ;STRING
 9546  042466  000417                      BR      ERT3
 9547
 9548  042470  122710  000012      15$     CMPB    #12,(R0)         ;FORMAT TWELVE?
 9549  042474  001011                      BNE     17$
 9550
 9551  042476  013102                      MOV     @(R1)+,R2        ;FORMAT TWELVE SO TYPE
 9552  042500  012703  000006              MOV     #6,R3            ;TYPE SIX OCTAL NUMBERS
```

```
9553  042504  012246              16$     MOV     (R2)+,-(SP)
9554  042506  104402                      TYPOC
9555  042510  104401                      TYPE
9556  042512  042772                       WORD   SPACE
9557  042514  077305                      SOB     R3,16$
9558  042516  000401                      BR      ERT2
9559
9560  042520  000000              17$     HALT                            ;UNDEFINED FORMAT FOR DATA?????
9561
9562  042522  104401              ERT2    TYPE                            ;PRINT A TAB AFTER TYPING
9563  042524  042775                       WORD   STAB                    ;AN DATA TABLE ENTRY
9564                                                                       ;OF ALL FORMATS EXCEPT
9565                                                                       ;ASCIZ, FORMATS 5 OR 11
9566
9567  042526  005200              ERT3    INC     R0                      ;POINT TO THE NEXT FORMAT
9568  042530  005711                      TST     (R1)                    ;END OF DATA TABLE
9569  042532  001401                      BEQ     ERT4
9570  042534  000663                      BR      ERT1
9571
9572  042536  104401              ERT4    TYPE                            ;DONE
9573  042540  001313                       WORD   $CRLF
9574  042542  012603                      MOV     (SP)+,R3                ;RESTORE R1,R2 AND R3
9575  042544  012602                      MOV     (SP)+,R2
9576  042546  012601                      MOV     (SP)+,R1
9577  042550  012600              ERT5    MOV     (SP)+,R0                ;RESTORE R0
9578  042552  000207                      RTS     PC                      ;AND RETURN
9579
9580
9581
9582
9583                                          .SBTTL  FPP SPURIOUS TRAP TO 244 HANDLER
9584                                  ;;*******************************************************************
9585                                  ;;*******************************************************************
9586                                  ;*THIS ROUTINE HANDLES UNEXPECTED TRAPS TO THE FPP TRAP VECTOR AT 244
9587                                  ;*THE LAST FPP INSTRUCTION EXECUTED AND ITS ADDRESS HAS BEEN RECORDED
9588                                  ;*THESE ALONG WITH THE FEC, FPS AND PC OF TRAP ARE REPORTED
9589                                  ;*
9590  042554  011637  001236      FPSPUR  MOV     (SP),@#$TMP2            ;SAVE PC OF TRAP
9591  042560  022626                      CMP     (SP)+,(SP)+             ;RESTORE SP
9592  042562  170200                      STFPS   R0                      ;GET FPS
9593  042564  010037  001240              MOV     R0,@#$TMP3
9594  042570  170300                      STST    PC                       GET FEC
9595  042572  010037  001242              MOV     R0,@#$TMP4
9596  042576  104377              1$      ERROR   377
9597  042600  000441                       WORD   441
9598  042602  104412                      RSETUP                  ;GO INITIALIZE THE FPS AND STACK, AND
9599                                                              ;SEE IF THE USER HAS EXPRESSED
9600                                                              ;THE DESIRE TO CHANGE THE SOFTWARE
9601                                                              ;VIRTUAL CONSOLE SWITCH REGISTER (HAS
9602                                                              ;THE USER TYPED CONTROL G?)
9603  042604  000137  037132              JMP     @#$EOP
9604
9605
9606                                          .SBTTL  CPU SPURIOUS TRAP TO 4 HANDLER
9607                                  ;;*******************************************************************
9608                                  ;;*******************************************************************
```

```
 9609                                   ;*THIS ROUTINE REPORTS UNEXPECTED CPU TRAPS TO VECTOR 4
 9610                                   ;*
 9611  042610  011637  001236          CPSPUR  MOV     (SP),@#$TMP2            ;SAVE PC OF TRAP
 9612  042614  022626                          CMP     (SP)+,(SP)+
 9613  042616  104377                  1$      ERROR   377
 9614  042620  000442                           WORD    442
 9615  042622  104412                          RSETUP                          ;GO INITIALIZE THE FPS AND STACK, AND
 9616                                                                          ;SEE IF THE USER HAS EXPRESSED
 9617                                                                          ;THE DESIRE TO CHANGE THE SOFTWARE
 9618                                                                          ;VIRTUAL CONSOLE SWITCH REGISTER (HAS
 9619                                                                          ;THE USER TYPED CONTROL G?)
 9620  042624  000137  037132                  JMP     @#$EOP
 9621
 9622
 9623                                    .SBTTL  CPU SPURIOUS TRAP TO 10 HANDLER
 9624                                   ;;*******************************************************************
 9625                                   ;;*******************************************************************
 9626                                   ;*THIS ROUTINE REPORTS UNEXPECTED CPU TRAPS TO VECTOR 10
 9627                                   ;*
 9628  042630  011637  001236          CPTWO   MOV     (SP),@#$TMP2            ;SAVE PC OF TRAP
 9629  042634  022626                          CMP     (SP)+,(SP)+
 9630  042636  104377                  1$      ERROR   377
 9631  042640  000443                           WORD    443
 9632  042642  104412                          RSETUP                          ;GO INITIALIZE THE FPS AND STACK, AND
 9633                                                                          ;SEE IF THE USER HAS EXPRESSED
 9634                                                                          ;THE DESIRE TO CHANGE THE SOFTWARE
 9635                                                                          ;VIRTUAL CONSOLE SWITCH REGISTER (HAS
 9636                                                                          ;THE USER TYPED CONTROL G?)
 9637  042644  000137  037132                  JMP     @#$EOP
 9638
 9639
 9640
 9641
 9642
 9643                                    .SBTTL  SET LOOP ON ERROR ADDRESS ROUTINE
 9644                                   ;;*******************************************************************
 9645                                   ;;*******************************************************************
 9646                                   ;*
 9647  042650  011637  001110           LPER:   MOV     (SP),@#$LPERR
 9648  042654  000002                          RTI
 9649
 9650                                    .SBTTL  FLAG RESET AND CONSOLE TEST ROUTINE
 9651                                   ;;*******************************************************************
 9652                                   ;;*******************************************************************
 9653                                   ;*THIS ROUTINE WILL BE CALLED AT THE END OF EACH TEST TO
 9654                                   ;*RESET THE STACK, CLEAR THE FPS AND SEE IF THE USER HAS TYPED
 9655                                   ;* CONTROL G ON THE TERMINAL.  IF THE USER HAS TYPED CONTROL G AND
 9656                                   ;*THERE IS NO PHYSICAL CONSOLE SWITCH REGISTER THEN THE CONTENTS
 9657                                   ;*OF THE SOFTWARE SWITCH REGISTER WILL BE TYPED IN OCTAL ON THE
 9658                                   ;*TELETYPE AND THE USER CAN MODIFY IT
 9659                                   ;*
 9660  042656  023727  001140  177570   RSET    CMP     @#SWR,#177570           ;SEE IF THERE IS A PHYSICAL
 9661                                                                          ;CONSOLE SWITCH REGISTER
 9662  042664  001001                          BNE     1$                      ;BRANCH IF NO
 9663  042666  104406                          CKSWR                           ; OTHERWISE TYPE THE CONTENTS
 9664                                                                          ;OF THE PROGRAM VIRTUAL SWITCH REGISTER
```

```
9665                                                                        ,AND GIVE THE USER A CHANCE TO
9666                                                                        ,MODIFY IT
9667  042670  012737  042554  000244  1$        MOV     #FPSPUR,@#FPVECT
9668  042676  012737  042610  000004            MOV     #CPSPUR,@#ERRVECT
9669  042704  012737  042630  000010            MOV     #CPTWO,@#10
9670  042712  011600                            MOV     (SP),R0              ,SAVE RETURN ADDRESS
9671  042714  012706  001100                    MOV     #STACK,SP            ,RESET THE STACK POINTER
9672  042720  005004                            CLR     R4                   ,CLEAR THE FPS
9673  042722  170104                            LDFPS   R4
9674  042724  000110                            JMP     (R0)                 ,RETURN
9675
9676
9677                                            NLIST   BEX

                                      ,THESE ARE SPECIAL MESSAGES

      042726  050200  053517  051105  POWERM    ASCIZ   <CRLF>'POWER FAILURE  PROGRAM RESTARTING '
      042772  020040     000          SPACE     ASCIZ   '  '
      042775     011     000          $TAB      ASCIZ   <TAB>

      042777     107  052117  051040  MS1       ASCIZ   'GOT RESULT '<TAB><TAB>
      043015     105  050130  041505  MS2       ASCIZ   'EXPECTED RESULT '<TAB>
      043037     101  020103  050117  MS3       ASCIZ   'AC OPERAND  <TAB><TAB>
      043055     123  052517  041522  MS4       ASCIZ   'SOURCE OPERAND  '<TAB>
              043037                  MS10=MS3
      043077     105  050130  047117  MS11      ASCIZ   'EXPONENT OPERAND '<TAB>

                                      ;THESE ARE ERROR MESSAGES

      043122  052123  020106  026101  EM1.      ASCIZ   'STF A,AC7 DID NOT TRAP  FID=0 '
      043161     123  043124  040440  EM2       ASCIZ   'STF A,AC7  FPS BAD  FID=0 '
      043214  052123  020106  026101  EM3       ASCIZ   'STF A,AC7  FEC BAD  FID=0 '
 (0)  043247                          EM4
 (1)  043247     123  043124  040440            ASCIZ    STF A,(R)  R0 BAD  FDST FAILED
 (0)  043307                          EM5.
 (1)  043307     123  043124  040440            ASCII    STF A,(R) FAILED
      043330     000                            BYTE    0
 (0)  043331                          EM6·
 (1)  043331     123  043124  040440            ASCII    STF A,(R)  FDST FAILED
 (1)  043360  024200  052502  020124            ASCIZ   <CRLF> (BUT FD) ST 707 WENT TO 245 INSTEAD OF 244
 (0)  043435                          EM7
 (1)  043435     123  043124  040440           .ASCIZ    STF A,(R)+  R0 BAD  FDST FAILED
 (0)  043476                          EM10·
 (1)  043476  052123  020106  026101            ASCII    STF A,(R)+ FAILED
      043520     000                           .BYTE    0
 (0)  043521                          EM11:
 (1)  043521     123  042124  040440           .ASCIZ    STD A,(R)+  R0 BAD  FDST FAILED
 (0)  043562                          EM12.
 (1)  043562  052123  020104  026101            ASCII    STD A,(R)+ FAILED
      043604     000                           .BYTE    0
      043605     123  042124  040440  EM13:    .ASCIZ   'STD A,#N TRAP TO 4 IN FDST '
              043605                  EM14=EM13
 (0)  043641                          EM15·
 (1)  043641     123  042124  040440            ASCII    STD A,#N FAILED
      043661     000                            BYTE    0
      043662  041520  041040  042101  EM16      ASCIZ   'PC BAD AFTER STD A,#N '
```

```
(0)  043711                                    EM17
(1)  043711     123  042124  040440                ASCIZ   STD A,-(R) TRAP TO 4 IN FDST
(0)  043747                                    EM20
(1)  043747     123  042124  040440                ASCIZ   STD A,-(R)  RO BAD  FDST FAILED
(0)  044010                                    EM21
(1)  044010  052123  020104  026101                ASCII   STD A,-(R) FAILED
     044032     000                                BYTE    0
               044010                          EM22=EM21
(0)  044033                                    EM23
(1)  044033     123  042124  040440                ASCIZ   STD A,@(R)+ TRAP TO 4 IN FDST
(0)  044072                                    EM24
(1)  044072  052123  020104  026101                ASCIZ   STD A,@(R)+  RO BAD  FDST FAILED
(0)  044134                                    EM25
(1)  044134  052123  020104  026101                ASCII   STD A,@(R)+ FAILED
     044157     000                                BYTE    0
(0)  044160                                    EM26
(1)  044160  052123  020104  026101                ASCIZ   STD A,@-(R) TRAP TO 4 IN FDST
(0)  044217                                    EM27
(1)  044217     123  042124  040440                ASCIZ   STD A,@-(R)  RO BAD  FDST FAILED
(0)  044261                                    EM30
(1)  044261     123  042124  040440                ASCII   STD A,@-(R) FAILED
     044304     000                                BYTE    0
(0)  044305                                    EM31
(1)  044305     123  042124  040440                ASCIZ   STD A,N(R) TRAP TO 4 IN FDST
(0)  044343                                    EM32.
(1)  044343     123  042124  040440                ASCIZ   STD A,N(R)  RO BAD  FDST FAILED
(0)  044404                                    EM33
(1)  044404  052123  020104  026101                ASCII   STD A,N(R) FAILED
     044426     000                                BYTE    0
(0)  044427                                    EM34:
(1)  044427     123  042124  040440            .ASCIZ   STD A,@N(R) TRAP TO 4 IN FDST
(0)  044466                                    EM35:
(1)  044466  052123  020104  026101            .ASCIZ   STD A,@N(R)  RO BAD  FDST FAILED
(0)  044530                                    EM36:
(1)  044530  052123  020104  026101                ASCII   STD A,@N(R) FAILED
     044553     000                            .BYTE    0
(0)  044554                                    EM37:
(1)  044554  052123  043103  020104            .ASCII   'STCFD A,(R) FAILED '
     044577     000                            .BYTE    0
(0)  044600                                    EM40:
(1)  044600  052123  043103  020104                ASCII   STCFD A,(R)  FPS BAD
     044625     000                                BYTE    0
(0)  044626                                    EM41:
(1)  044626  052123  043103  020104                ASCII   STCFD A,(R)  FEC BAD
     044653     000                            .BYTE    0
(0)  044654                                    EM42.
(1)  044654  052123  043103  020104                ASCII   ' TCFD A,(R) FAILED '
     044677     200  047111  042526                ASCIZ   <CRLF>'INVERT FDFL ST 767 FAILED '
(0)  044733                                    EM43
(1)  044733     123  041524  042106                ASCII   STCFD A,(R)  FPS BAD
(1)  044760  024200  052502  020124                ASCIZ   <CRLF> (BUT EZBT) ST 560 WENT TO 061 INSTEAD OF 261
(0)  045037                                    EM44
(1)  045037     123  041524  042106                ASCII   'STCFD A,(R) FAILED '
     045062  046200  053517  047440                ASCIZ   <CRLF>'LOW ORDER BITS OF X11 DID NOT GET 0 ST 766 '
(0)  045137                                    EM45
(1)  045137     123  041524  042106                ASCII   'STCFD A,(R) FAILED '
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        045162  024200  052502  020124          ASCIZ  <CRLF>'(BUT OP1C) ST 251 FAILED '
   (0)  045215                          EM46
   (1)  045215     123  041524  042106          ASCII   STCFD A,(R)  FPS BAD
   (1)  045242  024200  052502  020124          ASCIZ  <CRLF> (BUT EZBT) ST 421 WENT TO 262 INSTEAD OF 062
   (0)  045321                          EM47
   (1)  045321     123  041524  042106          ASCII  'STCFD A,(R) FAILED '
   (1)  045344  024200  052502  020124          ASCIZ  <CRLF> (BUT FD) ST 113 WENT TO 415 INSTEAD OF 414
   (0)  045421                          EM50
   (1)  045421     123  041524  042106          ASCII  'STCFD A,(R) FAILED '
        045444  051440  043511  020116          ASCII  ' SIGN BAD.'
   (1)  045456  024200  052502  020124          ASCIZ  <CRLF> (BUT ENBT) ST 567 WENT TO 060 INSTEAD OF 460
   (0)  045535                          EM51
   (1)  045535     123  041524  043104          ASCII  'STCDF A,(R) FAILED '
        045560     000                          BYTE   0
   (0)  045561                          EM52
   (1)  045561     123  042124  040440          ASCII   STD A,(R)  FPS BAD
        045604     000                          BYTE   0
   (0)  045605                          EM53
   (1)  045605     123  042124  040440          ASCII   STD A,(R)  FEC BAD
        045630     000                          BYTE   0
   (0)  045631                          EM54
   (1)  045631     123  041524  043104          ASCII  'STCDF A,(R) FAILED '
        045654  044600  053116  051105          ASCIZ  <CRLF>'INVERT FDFL ST 767 FAILED '
   (0)  045710                          EM55
   (1)  045710  052123  042103  020106          ASCII  'STCDF A,(R) FAILED '
        045733     200  047522  047125          ASCII  <CRLF>'ROUND ERROR, OR'
   (1)  045753     200  041050  052125          ASCIZ  <CRLF> (BUT BREAKOUT) ST 400 WENT TO 766 INSTEAD OF 767
   (0)  046036                          EM56
   (1)  046036  052123  020104  026101          ASCII   STD A,(R)  FPS BAD
   (1)  046061     200  041050  052125          ASCIZ  <CRLF> (BUT EZBT) ST 421 WENT TO 062 INSTEAD OF 262
   (0)  046140                          EM57
   (1)  046140  052123  020104  026101          .ASCII   STD A,(R).  FPS BAD
        046163     040  044506  036526          ASCII  ' FIV=0 '
   (1)  046172  024200  052502  020124          .ASCIZ  <CRLF> (BUT FIV) ST 262 WENT TO 123 INSTEAD OF 103
   (0)  046250                          EM60:
   (1)  046250  052123  042103  020106          ASCII  'STCDF A,(R) FAILED '
        046273     040  044506  036526          .ASCII  ' FIV=1.'
   (1)  046302  024200  052502  020124          ASCIZ  <CRLF> (BUT FIV) ST 262 WENT TO 103 INSTEAD OF 123
   (0)  046360                          EM61.
   (1)  046360  052123  020104  026101          .ASCII   STD A,(R)  FPS BAD.
   (1)  046403     200  041050  052125          .ASCIZ  <CRLF> (BUT FLAG) ST 147 WENT TO 361 INSTEAD OF 365
        046462  052123  043103  020104  EM62:   .ASCII  'STCFD A,AC6.  FPS BAD.'
   (1)  046507     200  041050  052125          .ASCIZ  <CRLF> (BUT FDST) ST 767 WENT TO 567 INSTEAD OF 577
        046566  052123  043103  020104  EM63:   .ASCIZ  'STCFD A,AC6.  FEC BAD '
   (0)  046614                          EM64:
   (1)  046614  046103  042122  024040          .ASCII   CLRD (R) FAILED.
        046634  055200  051105  020117          ASCIZ  <CRLF>'ZERO X11 AT ST 770 FAILED '
   (0)  046670                          EM65:
   (1)  046670  046103  042122  024040          ASCII   CLRD (R)  FPS BAD
        04e712     000                          BYTE   0
   (0)  046713                          EM66
   (1)  046713     103  051114  020104          ASCIZ   CLRD (R)  R0 BAD  FDST FAILED
   (0)  046752                          EM67.
   (1)  046752  046103  042122  040440          ASCII   CLRD AC7  FPS BAD
   (1)  046774  024200  052502  020124          ASCIZ  <CRLF> (BUT FDST) ST 770 WENT TO 607 INSTEAD OF 617
   (0)  047053                          EM70
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   (1)  047053   103  051114  020104          ASCII   CLRD AC7  FEC BAD
        047075   000                          BYTE    0
        047076 042516  043107  040440  EM176   .ASCIZ  'NEGF AC7  FPS BAD '
        047121   116  043505  020106  EM177    ASCIZ  'NEGF AC7  FEC BAD '
   (0)  047144                          EM71
   (1)  047144 042516  043107  040440          ASCIZ  NEGF A FAILED
   (0)  047163                          EM72.
   (1)  047163   116  043505  020106          ASCIZ  NEGF A  FPS BAD
   (0)  047204                          EM107
   (1)  047204 042516  042107  024040          ASCIZ  NEGD (R) TRAP TO 4 IN SRC MODE
   (0)  047244                          EM73
   (1)  047244 042516  042107  024040          ASCIZ  NEGD (R) FAILED
   (0)  047265                          EM74
   (1)  047265   116  043505  020104          ASCIZ  NEGD (R)  RO BAD
   (0)  047307                          EM75
   (1)  047307   116  043505  020104         .ASCIZ  NEGD (R)  FPS BAD
   (0)  047332                          EM76
   (1)  047332 041101  042123  024040          ASCIZ  ABSD (R)+ TRAP TO 4 IN SRC MODE
   (0)  047373                          EM77:
   (1)  047373   101  051502  020104         .ASCIZ  ABSD (R)+ FAILED
   (0)  047415                          EM100:
   (1)  047415   101  051502  020104          ASCIZ  ABSD (R)+. RO BAD
   (0)  047440                          EM101:
   (1)  047440 041101  042123  024040         .ASCIZ  ABSD (R)+. FPS BAD
   (0)  047464                          EM102:
   (1)  047464 041101  042123  026440         .ASCIZ  ABSD -(R) TRAP TO 4 IN SRC MODE
   (0)  047525                          EM103:
   (1)  047525   101  051502  020104         .ASCIZ  ABSD -(R) FAILED
   (0)  047547                          EM104:
   (1)  047547   101  051502  020104         .ASCIZ  ABSD -(R). RO BAD
   (0)  047572                          EM105:
   (1)  047572 041101  042123  026440         .ASCIZ  ABSD -(R). FPS BAD
   (0)  047616                          EM106:
   (1)  047616 041101  042123  040040         .ASCIZ  ABSD @(R)+ TRAP TO 4 IN SRC MODE
   (0)  047660                          EM110:
   (1)  047660 041101  042123  040040         .ASCIZ  ABSD @(R)+ FAILED
   (0)  047703                          EM111:
   (1)  047703   101  051502  020104          ASCIZ  ABSD @(R)+. RO BAD
   (0)  047727                          EM112:
   (1)  047727   101  051502  020104         .ASCIZ  ABSD @(R)+  FPS BAD
   (0)  047754                          EM113:
   (1)  047754 042516  042107  040040         .ASCIZ  NEGD @-(R) TRAP TO 4 IN SRC MODE
   (0)  050016                          EM114:
   (1)  050016 042516  042107  040040         .ASCIZ  NEGD @-(R) FAILED
   (0)  050041                          EM115:
   (1)  050041   116  043505  020104         .ASCIZ  NEGD @-(R). RO BAD
   (0)  050065                          EM116:
   (1)  050065   116  043505  020104          ASCIZ  NEGD @-(R)  FPS BAD
   (0)  050112                          EM117:
   (1)  050112 041101  042123  047040         .ASCIZ  ABSD N(R) TRAP TO 4 IN SRC MODE
   (0)  050153                          EM120:
   (1)  050153   101  051502  020104         .ASCIZ  ABSD N(R) FAILED
   (0)  050175                          EM121:
   (1)  050175   101  051502  020104          ASCIZ  ABSD N(R)  RO BAD
   (0)  050220                          EM122
   (1)  050220 041101  042123  047040          ASCIZ  ABSD N(R)  FPS BAD
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(0)  050244                             EM123.
(1)  050244  042516  042107  040040              ASCIZ   NEGD @N(R) TRAP TO 4 IN SRC MODE
(0)  050306                             EM124
(1)  050306  042516  042107  040040              ASCIZ   NEGD @N(R) FAILED
(0)  050331                             EM125
(1)  050331     116  043505  020104              ASCIZ   NEGD @N(R)  RO BAD
(0)  050355                             EM126:
(1)  050355     116  043505  020104             .ASCIZ   NEGD @N(R).  FPS BAD
(0)  050402                             EM127:
(1)  050402  042516  042107  047040              ASCIZ   NEGD N(R7) TRAP TO 4 IN SRC MODE
(0)  050444                             EM130:
(1)  050444  042516  042107  047040             .ASCIZ   NEGD N(R7) FAILED
(0)  050467                             EM131:
(1)  050467     116  043505  020104             .ASCIZ   NEGD N(R7).  FPS BAD
(0)  050514                             EM132:
(1)  050514  041101  042123  040040             .ASCIZ   ABSD @N(R7) TRAP TO 4 IN SRC MODE
(0)  050557                             EM133:
(1)  050557     101  051502  020104             .ASCIZ   ABSD @N(R7) FAILED
(0)  050603                             EM134.
(1)  050603     101  051502  020104             .ASCIZ   ABSD @N(R7)  FPS BAD
     050631     116  043505  020104     EM135:  .ASCII  'NEGD A FAILED. '
     050647     200  047530  020122             .ASCIZ  <CRLF>'XOR SIGN BIT ST 336 FAILED '
(0)  050704                             EM136:
(1)  050704  042516  042107  040440             .ASCIZ   NEGD A FAILED.
(0)  050723                             EM137
(2)  050723     116  043505  020104             .ASCIZ   NEGD A.  FPS BAD.
(0)  050744                             EM140:
(1)  050744  042516  042107  024040             .ASCIZ   NEGD (R) FAILED.
(0)  050765                             EM141:
(1)  050765     116  043505  020104             .ASCIZ   NEGD (R).  RO BAD.  SPECIAL DEST FAILED
(0)  051034                             EM142:
(2)  051034  042516  042107  024040             .ASCIZ   NEGD (R).  FPS BAD.
(0)  051057                             EM143:
(1)  051057     116  043505  020104             .ASCIZ   NEGD (R)+ FAILED
(0)  051101                             EM144
(1)  051101     116  043505  020104             .ASCIZ   NEGD (R)+.  RO BAD  SPECIAL DEST FAILED
(0)  051151                             EM145.
(2)  051151     116  043505  020104              ASCIZ   NEGD (R)+.  FPS BAD.
(0)  051175                             EM146:
(1)  051175     116  043505  020104              ASCIZ   NEGD -(R) FAILED
(0)  051217                             EM147:
(1)  051217     116  043505  020104             .ASCIZ   NEGD -(R)  RO BAD.  SPECIAL DEST FAILED
(0)  051267                             EM150·
(2)  051267     116  043505  020104             .ASCIZ   NEGD -(R).  FPS BAD.
(0)  051313                             EM151·
(1)  051313     116  043505  020104             .ASCIZ   NEGD @(R)+ FAILED.
(0)  051336                             EM152:
(1)  051336  042516  042107  040040             .ASCIZ   NEGD @(R)+.  RO BAD  SPECIAL DEST FAILED
(0)  051407                             EM153·
(2)  051407     116  043505  020104             .ASCIZ   NESD @(R)+  FPS BAD.
(0)  051434                             EM154:
(1)  051434  042516  042107  040040             .ASCIZ   NEGD @-(R) FAILED
(0)  051457                             EM155:
(1)  051457     116  043505  020104              ASCIZ   NEGD @-(R).  RO BAD  SPECIAL DEST FAILED
(0)  051530                             EM156·
(2)  051530  042516  042107  040040              ASCIZ   NEGD @-(R)  FPS BAD
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 (0)  051555                          EM157
 (1)  051555     116  043505  020106          ASCIZ   NEGF (R)+ FAILED
      051577     116  043505  020106  EM160   ASCII   'NEGF (R)+  RO BAD '
      051621     102  042101  041440          ASCIZ   'BAD CONSTANT USED  SPECIAL DEST FAILED
 (0)  051671                          EM161
 (2)  051671     116  043505  020106         .ASCIZ   NEGF (R)+  FPS BAD
 (0)  051715                          EM162:
 (1)  051715     116  043505  020104          ASCIZ   NEGD (R7)+ FAILED
 (0)  051740                          EM163:
 (2)  051740  042516  042107  024040          ASCIZ   NEGD (R7)+. FPS BAD.
      051765     120  020103  040502  EM164  .ASCIZ   'PC BAD AFTER NEGD (R7)+  BAD CONSTANT USED '
 (0)  052041                          EM215.
 (1)  052041     120  020103  040502          ASCII   PC BAD AFTER NEGD N(R)  BAD CONSTANT USED 746 746
 (1)  052123     200  051117  024040          ASCIZ   <CRLF>'OR (BUT FDST) IN SPECIAL DEST FAILED '
 (0)  052172                          EM216
 (1)  052172  042516  042107  047040          ASCIZ   NEGD N(R) FAILED.
 (0)  052214                          EM217.
 (1)  052214  042516  042107  047040          ASCIZ   NEGD N(R)  RO BAD.  SPECIAL DEST FAILED
 (0)  052264                          EM220:
 (2)  052264  042516  042107  047040         .ASCIZ   NEGD N(R)  FPS BAD
 (0)  052310                          EM221·
 (1)  052310  041520  041040  042101          ASCII   PC BAD AFTER NEGD @N(R)  BAD CONSTANT USED 747 747
 (1)  052373     200  051117  024040          ASCIZ   <CRLF>'OR (BUT FDST) IN SPECIAL DEST FAILED '
 (0)  052442                          EM222:
 (1)  052442  042516  042107  040040         .ASCIZ   NEGD @N(R) FAILED
 (0)  052465                          EM223·
 (1)  052465     116  043505  020104         .ASCIZ   NEGD @N(R)  RO BAD  SPECIAL DEST FAILED
 (0)  052536                          EM224.
 (2)  052536  042516  042107  040040         .ASCIZ   NEGD @N(R).  FPS BAD
 (0)  052563                          EM165:
 (1)  052563     116  043505  020104         .ASCIZ   NEGD (R) FAILED
 (0)  052604                          EM166:
 (1)  052604  041101  042123  024040         .ASCIZ   ABSD (R) FAILED
 (0)  052625                          EM167:
 (1)  052625     124  052123  020104         .ASCIZ   TSTD (R) FAILED.
 (0)  052646                          EM170:
 (1)  052646  042516  042107  024040         .ASCIZ   NEGD (R).  FPS BAD
 (0)  052671                          EM171:
 (1)  052671     101  051502  020104         .ASCIZ   ABSD (R).  FPS BAD
 (0)  052714                          EM172:
 (1)  052714  051524  042124  024040         .ASCIZ   TSTD (R)   FPS BAD
 (0)  052737                          EM173
 (1)  052737     116  043505  020104         .ASCIZ   NEGD (R)   FEC BAD
 (0)  052762                          EM174:
 (1)  052762  041101  042123  024040         .ASCIZ   ABSD (R).  FEC BAD.
 (0)  053005                          EM175:
 (1)  053005     124  052123  020104         .ASCIZ   TSTD (R)   FEC BAD.
 (0)  053030                          EM200:
 (1)  053030  042516  042107  024040         .ASCII   NEGD (R) FAILED.
      053060  054200  051117  051440          ASCIZ   <CRLF>'XOR SIGN BIT FAILED ST 336 '
 (0)  053105                          EM201·
 (1)  053105     116  043505  020104         .ASCII   NEGD (R)  FPS BAD.
 (1)  053127     200  041050  052125          ASCIZ   <CRLF> (BUT ENBT) ST 336 WENT TO 053 INSTEAD OF 453
 (0)  053206                          EM202
 (1)  053206  042516  042107  024040         .ASCII   NEGD (R)  FPS BAD
 (1)  053230  024200  052502  020124          ASCIZ   <CRLF> (BUT ENBT) ST 336 WENT TO 453 INSTEAD OF 053
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(0)  053307                           EM203
(1)  053307     101  051502  020104           ASCII   ABSD (R) FAILED
     053327     200  041050  052125           ASCII   <CRLF>'(BUT OP1B) ST 055 WENT TO 336 INSTEAD OF 335, OR
(1)  053410  024200  052502  020124           ASCIZ   <CRLF> (BUT ENBT) ST 335 WENT TO 452 INSTEAD OF 052
(0)  053467                           EM204
(1)  053467     101  051502  020104           ASCII   ABSD (R) FAILED
     053507     200  047530  020122           ASCIZ   <CRLF>'XOR SIGN BIT FAILED ST 452 '
(0)  053544                           EM205
(1)  053544  051524  042124  024040           ASCII   TSTD (R) FAILED
(1)  053564  024200  052502  020124           ASCIZ   <CRLF> (BUT OP1B) ST 055 WENT TO 336 INSTEAD OF 334
(0)  053643                           EM206
(1)  053643     124  052123  020104           ASCII   TSTD (R)  FPS BAD
(1)  053665     200  041050  052125           ASCIZ   <CRLF> (BUT ENBT) ST 334 WENT TO 453 INSTEAD OF 053
(0)  053744                           EM207
(1)  053744  051524  042124  024040           ASCII   TSTD (R) FAILED
(1)  053764  024200  052502  020124           ASCIZ   <CRLF> (BUT OP1B) ST 057 WENT TO 335 INSTEAD OF 334
(0)  054043                           EM210
(1)  054043     124  052123  020104          .ASCII   TSTD (R) FAILED
(1)  054063     200  041050  052125          .ASCIZ   <CRLF> (BUT ENBT) ST 334 WENT TO 053 INSTEAD OF 453
(0)  054142                           EM211
(1)  054142  051524  042124  024040           ASCII   TSTD (R) FAILED
(1)  054162  024200  052502  020124           ASCIZ   <CRLF> (BUT OP1B) ST 255 WENT TO 311 OR 312 INSTEAD OF 310
(0)  054250                           EM212.
(1)  054250  051524  042124  024040          .ASCII   TSTD (R)  FPS BAD
(1)  054272  024200  052502  020124           ASCIZ   <CRLF> (BUT ENBT) ST 310 WENT TO 402 INSTEAD OF 002
(0)  054351                           EM213
(1)  054351     124  052123  020104          .ASCII   TSTD (R)  FPS BAD
     054373     040  044506  053125           ASCII   ' FIUV=0, OPERAND=-0 '
(1)  054417     200  041050  052125          .ASCIZ   <CRLF> (BUT FIUV) ST 257 WENT TO 355 INSTEAD OF 255
(0)  054476                           EM214
(1)  054476  051524  042124  024040          .ASCII   TSTD (R)  FPS BAD
     054520  043040  052511  036526           ASCII   ' FIUV=1, OPERAND=-0 '
(1)  054544  024200  052502  020124          .ASCIZ   <CRLF> (BUT FIUV) ST 257 WENT TO 255 INSTEAD OF 355


(0)  054623                           EM225.
(1)  054623     114  043104  051520           ASCIZ   LDFPS (R)  R0 BAD
(0)  054646                           EM226
(1)  054646  042114  050106  020123           ASCIZ   LDFPS (R).  FPS BAD
(0)  054672                           EM227.
(1)  054672  042114  050106  020123          .ASCIZ   LDFPS (R) TRAPPED TO 4

(0)  054722                           EM230.
(1)  054722  042114  050106  020123           ASCIZ   LDFPS (R)+  R0 BAD
(0)  054746                           EM231.
(1)  054746  042114  050106  020123           ASCIZ   LDFPS (R)+  FPS BAD
(0)  054773                           EM232.
(1)  054773     114  043104  051520           ASCIZ   LDFPS (R)+ TRAPPED TO 4

(0)  055024                           EM233:
(1)  055024  042114  050106  020123           ASCIZ   LDFPS -(R)  R0 BAD
(0)  055050                           EM234
(1)  055050  042114  050106  020123           ASCIZ   LDFPS -(R)  FPS BAD
(0)  055075                           EM235
(1)  055075     114  043104  051520           ASCIZ   LDFPS -(R) TRAPPED TO 4
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(0)  055126                          EM236
(1)  055126  042114  050106  020123          ASCIZ   LDFPS @(R)+  RO BAD
(0)  055153                          EM237
(1)  055153     114  043104  051520          ASCIZ   LDFPS @(R)+  FPS BAD
(0)  055201                          EM240
(1)  055201     114  043104  051520          ASCIZ   LDFPS @(R)+ TRAPPED TO 4

(0)  055233                          EM241
(1)  055233     114  043104  051520          ASCIZ   LDFPS @-(R)  RO BAD.
(0)  055260                          EM242
(1)  055260  042114  050106  020123          ASCIZ   LDFPS @-(R).  FPS BAD
(0)  055306                          EM243
(1)  055306  042114  050106  020123          ASCIZ   LDFPS @-(R) TRAPPED TO 4


(0)  055340                          EM244
(1)  055340  042114  050106  020123          ASCIZ   LDFPS N(R)  RO BAD
(0)  055364                          EM245.
(1)  055364  042114  050106  020123          ASCIZ   LDFPS N(R)  FPS BAD
(0)  055411                          EM246
(1)  055411     120  020103  040502          ASCIZ   PC BAD AFTER LDFPS N(R)
(0)  055442                          EM247
(1)  055442  042114  050106  020123          ASCIZ   LDFPS N(R) TRAPPED TO 4

(0)  055473                          EM250
(1)  055473     114  043104  051520          ASCIZ   LDFPS @N(R)  RO BAD
(0)  055520                          EM251
(1)  055520  042114  050106  020123          ASCIZ   LDFPS @N(R).  FPS BAD
(0)  055546                          EM252.
(1)  055546  041520  041040  042101          ASCIZ   PC BAD AFTER LDFPS @N(R)
(0)  055600                          EM253
(1)  055600  042114  050106  020123          ASCIZ   LDFPS @N(R) TRAPPED TO 4

(0)  055632                          EM254
(1)  055632  041520  041040  042101          .ASCIZ  PC BAD AFTER LDCLD (R7)+,A
(0)  055666                          EM255
(1)  055666  042114  046103  020104          ASCIZ   LDCLD (R7)+,A TRAPPED TO 4

(0)  055722                          EM256
(1)  055722  042114  046103  020104          ASCIZ   LDCLD (R)+,A  RO BAD
(0)  055750                          EM257
(1)  055750  042114  046103  020104          ASCIZ   LDCLD (R)+,A  FPS BAD


(0)  055777                          EM260·
(1)  055777     114  041504  043111          ASCII   LDCIF OR LDCLF (R),A FAILED
     056033     000                          BYTE    0
(0)  056034                          EM261
(1)  056034  042114  044503  020106          ASCII   LDCIF OR LDCLF (R),A  FPS BAD
     056072     000                          BYTE    0

(0)  056073                          EM262
(1)  056073     114  041504  043111          ASCII   LDCIF (R),A FAILED
(1)  056116  024200  052502  020124          ASCIZ   <CRLF> (BUT FL) ST 277 WENT TO 300 INSTEAD OF 301

(0)  056173                          EM263
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(1)  056173    114   041504  043114          ASCII   LDCLF (R),A  FPS BAD
     056220    000                           BYTE   0

(0)  056221                                  EM264
(1)  056221    114   041504  043111          ASCII   LDCIF (R),A FAILED
     056244  052600  042523  020104          ASCIZ  <CRLF>'USED CONSTANT 237 INSTEAD OF 217 ST 107 '

(0)  056316                                  EM265
(1)  056316  042114  044503  020106          ASCII   LDCIF OR LDCLF (R),A FAILED
     056352  051600  052105  051440          ASCIZ  <CRLF>'SET SIGN BIT FAILED ST 146 '

(0)  056407                                  EM266
(1)  056407    114   041504  043111          ASCII   LDCIF OR LDCLF (R),A FAILED
(1)  056443    200   041050  052125          ASCIZ  <CRLF> (BUT XNBT) ST 372 WENT TO 152 INSTEAD OF 112

(0)  056522                                  EM267
(1)  056522  042114  046103  020106          ASCII   LDCLF (R),A FAILED
     056545    200   051525  042105          ASCIZ  <CRLF>'USED CONSTANT 217 INSTEAD OF 237 ST 107 '

(0)  056617                                  EM270
(1)  056617    114   041504  043114          ASCII   LDCLF (R),A FAILED
     056642  051040  052517  042116          ASCIZ  ' ROUND ERROR '

(0)  056660                                  EM271
(1)  056660  042114  046103  020106          ASCII   LDCLF (R),A FAILED
     056703    040   051124  047125          ASCIZ  ' TRUNCATION ERROR '

(0)  056726                                  EM272
(1)  056726  042114  044503  020106          ASCII   LDCIF OR LDCLF (R),A FAILED
     056762  051200  032061  047040          ASCIZ  <CRLF>'R14 NOT INCREMENTED ST 630 '

(0)  057017                                  EM273
(1)  057017    114   041504  042111          ASCII   LDCID OR LDCLD (R),A FAILED
     057053    000                           BYTE   0
(0)  057054                                  EM274
(1)  057054  042114  044503  020104          ASCII   LDCID OR LDCLD (R),A  FPS BAD
     057112    000                           BYTE   0

(0)  057113                                  EM275
(1)  057113    114   041504  042111          ASCII   LDCID (R),A FAILED
(1)  057136  024200  052502  020124          ASCIZ  <CRLF> (BUT FL) ST 277 WENT TO 300 INSTEAD OF 301

(0)  057213                                  EM276
(1)  057213    114   041504  042111          ASCII   LDCID (R),A FAILED
     057236  052600  042523  020104          ASCIZ  <CRLF>'USED CONSTANT 237 INSTEAD OF 217 ST 107 '

(0)  057310                                  EM277
(1)  057310  042114  044503  020104          ASCII   LDCID (R),A FAILED
     057333    200   042523  020124          ASCIZ  <CRLF>'SET SIGN FAILED ST 146 '

(0)  057364                                  EM300.
(1)  057364  042114  046103  020104          ASCII   LDCLD (R),A FAILED
     057407    200   051525  042105          ASCIZ  <CRLF>'USED CONSTANT 217 INSTEAD OF 237 ST 107 '

(0)  057461                                  EM301
(1)  057461    114   042504  050130          ASCII   LDEXP (R),A FAILED
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        057504     000                              BYTE   0
   (0)  057505                            EM302
   (1)  057505     114   042504  050130             ASCII   LDEXP (R),A  FPS BAD
        057532     000                              BYTE   0
        057533     114   042504  050130   EM303     ASCIZ  'LDEXP (R),A  FEC BAD '

   (0)  057561                            EM304
   (1)  057561     114   042504  050130             ASCII   LDEXP (R),A FAILED
        057604  042600   041530  051505             ASCIZ  <CRLF>'EXCESS 200 CALCULATION ST 624 BAD '

   (0)  057650                            EM305
   (1)  057650  042114   054105  020120             ASCII   LDEXP (R),A. FPS BAD
        057675     050   052502  020124             ASCII  '(BUT ENBT,EZBT,XNBT) ST 625 DID NOT GO TO 304 '

   (0)  057753                            EM306
   (1)  057753     114   042504  050130             ASCII   LDEXP (R),A. FPS BAD
        060000  024200   052502  020124             ASCII  <CRLF>'(BUT EZBT) ST 544 WENT TO 504 INSTEAD OF 704, OR'
   (1)  060061     200   041050  052125             ASCIZ  <CRLF> (BUT EZBT) ST 704 WENT TO 264 INSTEAD OF 064

   (0)  060140                            EM307
   (1)  060140  042114   054105  020120             ASCII   LDEXP (R),A FAILED
   (1)  060163     200   041050  052125             ASCIZ  <CRLF> (BUT EZBT) ST 704 WENT TO 064 INSTEAD OF 264

   (0)  060242                            EM310
   (1)  060242  042114   054105  020120             ASCII   LDEXP (R),A  FPS BAD
   (1)  060267     200   041050  052125             ASCIZ  <CRLF> (BUT FIU) ST 264 WENT TO 115 INSTEAD OF 155

   (0)  060345                            EM311
   (1)  060345     114   042504  050130             ASCII   LDEXP (R),A FAILED
   (1)  060370  024200   052502  020124             ASCIZ  <CRLF> (BUT FIU) ST 264 WENT TO 155 INSTEAD OF 115

   (0)  060446                            EM312
   (1)  060446  042114   054105  020120             ASCII   LDEXP (R),A FAILED
   (1)  060471     200   041050  052125             ASCIZ  <CRLF> (BUT EZBT) ST 544 WENT TO 704 INSTEAD OF 504

   (0)  060550                            EM313.
   (1,  060550  042114   054105  020120             ASCII   LDEXP (R),A FAILED
   (1)  060573     200   041050  052125             ASCIZ  <CRLF> (BUT FIU) ST 504 WENT TO 155 INSTEAD OF 115

   (0)  060651                            EM314
   (1)  060651     114   042504  050130             ASCII   LDEXP (R),A FAILED
   (1)  060674  024200   052502  020124             ASCIZ  <CRLF> (BUT FIV) ST 104 WENT TO 116 INSTEAD OF 136

   (0)  060752                            EM315
   (1)  060752  042114   054105  020120             ASCII   LDEXP (R),A FAILED
   (1)  060775     200   041050  052125             ASCIZ  <CRLF> (BUT FIV) ST 104 WENT TO 136 INSTEAD OF 116

   (0)  061053                            EM316
   (1)  061053     114   042504  050130             ASCII   LDEXP (R),A FAILED
   (1)  061076  024200   052502  020124             ASCIZ  <CRLF> (BUT FIV) ST 144 WENT TO 116 INSTEAD OF 136

   (0)  061154                            EM317
   (1)  061154  042114   054105  020120             ASCII   LDEXP (R),A FAILED
   (1)  061177     200   041050  052125             ASCIZ  <CRLF> (BUT FIV) ST 144 WENT TO 136 INSTEAD OF 116

   (0,  061255                            EM320
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(1)  061255     114  042504  050130          ASCII   LDEXP (R),A FAILED
(1)  061300  024200  052502  020124          ASCIZ  <CRLF> (BUT FIV) ST 344 WENT TO 116 INSTEAD OF 136

(0)  061356                                 EM321
(1)  061356  042114  054105  020120          ASCII   LDEXP (R),A FAILED
(1)  061401     200  041050  052125          ASCIZ  <CRLF> (BUT FIV) ST 344 WENT TO 136 INSTEAD OF 116

(0)  061457                                 EM322
(1)  061457     123  041524  044504          ASCII   STCDI OR STCDL (R),A FAILED
     061513     000                          BYTE   0

(0)  061514                                 EM323
(1)  061514  052123  042103  020111          ASCII   STCDI OR STCDL (R),A  FPS BAD
     061552     000                          BYTE   0

     061553     123  041524  044504  EM324   ASCIZ  'STCDI OR STCDL (R),A  FEC BAD '

(0)  061612                                 EM325
(1)  061612  052123  042103  020114          ASCII   STCDL (R),A  FPS BAD
     061637     200  046103  040505          ASCII  <CRLF>'CLEAR FLAG ST 774 FAILED, OR'
(1)  061674  024200  052502  020124          ASCIZ  <CRLF> (BUT FLAG) ST 662 WENT TO 365 INSTEAD OF 361

             061612                         EM326=EM325

(0)  061753                                 EM327
(1)  061753     123  041524  046104          ASCII   STCDL (R),A FAILED
(1)  061776  024200  052502  020124          ASCIZ  <CRLF> (BUT ENBT) ST 632 WENT TO 473 INSTEAD OF 073

(0)  062055                                 EM330
(1)  062055     123  041524  046104          ASCII   STCDL (R),A  FPS BAD
(1)  062102  024200  052502  020124          ASCIZ  <CRLF> (BUT FIC) ST 004 WENT TO 305 INSTEAD OF 315

(0)  062160                                 EM331
(1)  062160  052123  042103  020114          ASCII   STCDL (R),A  FPS BAD
(1)  062205     200  041050  052125          ASCIZ  <CRLF> (BUT FIC) ST 004 WENT TO 315 INSTEAD OF 305

             061514                         EM333=EM323

(0)  062263                                 EM334
(1)  062263     123  041524  044504          ASCII   STCDI (R),A  FPS BAD
     062310  052600  042523  020104          ASCIZ  <CRLF>'USED CONSTANT 37 INSTEAD OF 17 ST 66 '

(0)  062357                                 EM335
(1)  062357     123  041524  044504          ASCII   STCDI (R),A FAILED
(1)  062402  024200  052502  020124          ASCIZ  <CRLF> (BUT ENBT) ST 632 WENT TO 073 INSTEAD OF 473

(0)  062461                                 EM336
(1)  062461     123  041524  044504          ASCII   STCDI (R),A  FPS BAD
     062506  051600  052105  043040          ASCIZ  <CRLF>'SET FN ST 473 FAILED '

(0)  062535                                 EM337
(1)  062535     123  041524  046104          ASCII   STCDL (R),A FAILED
(1)  062560  024200  052502  020124          ASCIZ  <CRLF> (BUT COUT) ST 275 WENT TO 074 INSTEAD OF 274

(0)  062637                                 EM340
(1)  062637     123  041524  046104          ASCII   STCDL (R),A FAILED
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(1)  062662  024200  052502  020124          ASCIZ  <CRLF> (BUT COUT) ST 275 WENT TO 274 INSTEAD OF 074

(0)  062741                          EM341
(1)  062741     123  041524  046104          ASCII   STCDL (R),A  FPS BAD
(1)  062766  024200  052502  020124          ASCIZ  <CRLF> (BUT EZBT) ST 377 WENT TO 633 INSTEAD OF 433

(0)  063045                          EM342
(1)  063045     123  041524  046104          ASCII   STCDL (R),A FAILED
(1)  063070  024200  052502  020124          ASCIZ  <CRLF> (BUT COUT) ST 360 WENT TO 654 INSTEAD OF 454

(0)  063147                          EM343
(1)  063147     123  041524  046104          ASCII   STCDL (R),A FAILED
(1)  063172  024200  052502  020124          ASCIZ  <CRLF> (BUT NBIT) ST 654 WENT TO 531 INSTEAD OF 431

(0)  063251                          EM344
(1)  063251     123  041524  046104          ASCII   STCDL (R),A FAILED
     063274  024200  052502  020124          ASCII  <CRLF>'(BUT COUT) ST 360 WENT TO 454 INSTEAD OF 654, OR'
(1)  063355     200  041050  052125          ASCIZ  <CRLF> (BUT NBIT) ST 654 WENT TO 431 INSTEAD OF 531

(0)  063434                          EM332
(1)  063434  052123  042103  020111          ASCII   STCDI (R),A FAILED
     063457     200  051525  042105          ASCIZ  <CRLF>'USED CONSTANT 37 INSTEAD OF 17 ST 66 '

(0)  063526                          EM345
(1)  063526  052123  042103  020111          ASCII   STCDI (R),A FAILED
(1)  063551     200  041050  052125          ASCIZ  <CRLF> (BUT FL) ST 633 WENT TO 655 INSTEAD OF 654

(0)  063626                          EM346
(1)  063626  052123  043103  020114          ASCII   STCFL (R),A FAILED
     063651     200  042532  047522          ASCIZ  <CRLF>'ZERO LOW ORDER PART OF X11 FAILED ST 773 '


(0)  063724                          EM347
(1)  063724  052123  054105  020120          ASCII   STEXP A,(R) FAILED
     063747     000                          BYTE   0

(0)  063750                          EM350
(1)  063750  052123  054105  020120          ASCII   STEXP A,(R)  FPS BAD
     063775     000                          BYTE   0

     063776  047515  042522  052040  EM351   ASCII  'MORE THAN ONE WORD '
     064021     127  044522  052124          ASCIZ  'WRITTEN BY STEXP A,(R) '<CRLF>'ZERO FDFL ST 347 FAILED '

(0)  064102                          EM352
(1)  064102  052123  054105  020120          ASCII   STEXP A,(R)  FPS BAD
(1)  064127     200  041050  052125          ASCIZ  <CRLF> (BUT ENBT) ST 376 WENT TO 071 INSTEAD OF 471

(0)  064206                          EM353
(1)  064206  052123  054105  020120          ASCII   STEXP A,(R)  FPS BAD
(1)  064233     200  041050  052125          ASCIZ  <CRLF> (BUT EZBT) ST 071 WENT TO 072 INSTEAD OF 272

(0)  064312                          EM354
(1)  064312  052123  054105  020120          ASCII   STEXP A,(R)  FPS BAD
(1)  064337     200  041050  052125          ASCIZ  <CRLF> (BUT EZBT) ST 071 WENT TO 272 INSTEAD OF 072

(0)  064416                          EM355
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(1)  064416  052123  054105  020120          ASCII  STEXP #,(R)  FPS BAD
(1)  064443     200  041050  052125          ASCIZ  <CRLF> (BUT ENBT) ST 376 WENT TO 471 INSTEAD OF 071

     064522  052123  052123  024040  EM356   ASCII  'STST (R) GOT BAD FEC '<CRLF>
     064550  043101  042524  020122          ASCIZ  'AFTER EXECUTING AN ILLEGAL FPP OP CODE '

     064620  052123  052123  024040  EM357   ASCII  'STST (R) GOT BAD FEA '<CRLF>
     064646  043101  042524  020122          ASCIZ  'AFTER EXECUTING AN ILLEGAL FPP OP CODE '

     064716  047117  054514  047440  EM360   ASCII  'ONLY ONE WORD WRITTEN BY STST (R)  '
     064761     123  052105  043040          ASCIZ  'SET FDFL ST 636 FAILED '


(0)  065011                          EM401
(1)  065011     123  043124  051520          ASCIZ  STFPS (R)  R0 BAD
(0)  065034                          EM402
(1)  065034  052123  050106  020123          ASCIZ  STFPS (R) FAILED
     065056  047515  042522  052040  EM403   ASCII  'MORE THAN ONE WORD WRITTEN BY STFPS (R) '
(1)  065126  024200  052502  020124          ASCIZ  <CRLF> (BUT GR7,-FL) ST 357 WENT TO 416 INSTEAD OF 417
(0)  065210                          EM404
(1)  065210  052123  050106  020123          ASCIZ  STFPS (R) TRAPPED TO 4

(0)  065240                          EM405
(1)  065240  052123  050106  020123          ASCIZ  STFPS (R)+  R0 BAD.
(0)  065264                          EM406
(1)  065264  052123  050106  020123          ASCIZ  STFPS (R)+ FAILED
     065307     115  051117  020105  EM407   ASCII  'MORE THAN ONE WORD WRITTEN BY STFPS (R)+ '
(1)  065360  024200  052502  020124          ASCIZ  <CRLF> (BUT GR7,-FL) ST 357 WENT TO 416 INSTEAD OF 417
(0)  065442                          EM410
(1)  065442  052123  050106  020123          ASCIZ  STFPS (R)+ TRAPPED TO 4

(0)  065473                          EM411
(1)  065473     123  043124  051520          ASCIZ  STFPS -(R)  R0 BAD
(0)  065517                          EM412
(1)  065517     123  043124  051520          ASCIZ  STFPS -(R) FAILED
     065542  047515  042522  052040  EM413   ASCII  'MORE THAN ONE WORD WRITTEN BY STFPS -(R) '
(1)  065613     200  041050  052125          ASCIZ  <CRLF> (BUT GR7,-FL) ST 357 WENT TO 416 INSTEAD OF 417
(0)  065675                          EM414
(1)  065675     123  043124  051520          ASCIZ  STFPS -(R) TRAPPED TO 4

(0)  065726                          EM415
(1)  065726  052123  050106  020123          ASCIZ  STFPS @(R)+  R0 BAD
(0)  065753                          EM416
(1)  065753     123  043124  051520          ASCIZ  STFPS @(R)+ FAILED
     065777     123  043124  051520  EM417   ASCIZ  'STFPS @(R)+ DID NOT DEFFER THE WRITE '
(0)  066045                          EM420
(1)  066045     123  043124  051520          ASCIZ  STFPS @(R)+ TRAPPED TO 4

(0)  066077                          EM421
(1)  066077     123  043124  051520          ASCIZ  STFPS @-(R)  R0 BAD
(0)  066124                          EM422
(1)  066124  052123  050106  020123          ASCIZ  STFPS @-(R) FAILED
     066150  052123  050106  020123  EM423   ASCIZ  'STFPS @-(R) DID NOT DEFFER THE WRITE '
(0)  066216                          EM424
(1)  066216  052123  050106  020123          ASCIZ  STFPS @-(R) TRAPPED TO 4
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 (0)  066250                           EM425
 (1)  066250  052123  050106  020123           ASCIZ   STFPS N(R)  RO BAD
 (0)  066274                           EM426
 (1)  066274  052123  050106  020123           ASCIZ   STFPS N(R) FAILED
      066317     115  051117  020105   EM427   ASCII  'MORE THAN ONE WORD WRITTEN BY STFPS N(R) '
 (1)  066370  024200  052502  020124           ASCIZ  <CRLF> (BUT GR7,-FL) ST 357 WENT TO 416 INSTEAD OF 417
 (0)  066452                           EM430
 (1)  066452  052123  050106  020123           ASCIZ   STFPS N(R) TRAPPED TO 4
      066503     120  020103  040502   EM431   ASCII  'PC BAD AFTER STFPS N(R)  BAD CONSTANT USED '

 (0)  066556                           EM432
 (1)  066556  052123  050106  020123           ASCIZ   STFPS @N(R)  RO BAD
 (0)  066603                           EM433
 (1)  066603     123  043124  051520           ASCIZ   STFPS @N(R) FAILED
      066627     115  051117  020105   EM434   ASCII   MORE THAN ONE WORD WRITTEN BY STFPS @N(R)
 (1)  066701     200  041050  052125           ASCIZ  <CRLF> (BUT GR7,-FL) ST 357 WENT TO 416 INSTEAD OF 417
 (0)  066763                           EM435
 (1)  066763     123  043124  051520           ASCIZ   STFPS @N(R) TRAPPED TO 4                          '
      067015     120  020103  040502   EM436   ASCIZ  'PC BAD AFTER STFPS @N(R)  BAD CONSTANT USED '

 (0)  067072                           EM437
 (1)  067072  052123  042103  020114           ASCIZ   STCDL A,(R)+  RO BAD

 (0)  067120                           EM440
 (1)  067120  052123  042103  020114           ASCIZ   STCDL A,-(R)  RO BAD

      067146  052123  052123  024040   EM361   ASCIZ  'STST (R)  FPS BAD '

              000000                   EM362=0
              000000                   EM363=0
              000000                   EM364=0
              000000                   EM365=0
              000000                   EM366=0
              000000                   EM367=0
              000000                   EM370=0
              000000                   EM371=0
              000000                   EM372=0
              000000                   EM373=0
              000000                   EM374=0
              000000                   EM375=0
              000000                   EM376=0
              000000                   EM377=0
              000000                   EM400=0

      067171     125  042516  050130   EM441  .ASCIZ  'UNEXPECTED FPP TRAP TO 244 '
      067225     125  042516  050130   EM442:  ASCIZ  'UNEXPECTED CPU TRAP TO 4 '
      067257     125  042516  050130   EM443  .ASCIZ  'UNEXPECTED CPU TRAP TO 10 '

                                       ,THESE ARE DATA TABLE HEADERS

      067312  020040  042524  052123   DH1     ASCII  '  TEST '<TAB>'PC OF CALL '<TAB>'PC OF ERROR '
      067352  043011  051520  004456           ASCIZ  <TAB>'FPS '<TAB>'FEC '
 (0)  067365                           DH2
 (1)  067365     040  052040  051505           ASCII  '  TEST '<TAB>'PC OF CALL  <TAB>'PC OF ERROR '
      067425     011  047507  020124           ASCIZ  <TAB>'GOT FPS '<TAB>'EXPECTED FPS '
 (0)  067455                           DH3
```

```
(1) 067455  040  052040  051505          ASCII  '  TEST '<TAB>'PC OF CALL '<TAB>'PC OF ERROR '
    067515  011  047507  020124          ASCIZ  <TAB>'GOT FEC '<TAB>'EXPECTED FEC '
(0) 067545                        DH4
(1) 067545  040  052040  051505          ASCII  '  TEST '<TAB>'PC OF CALL '<TAB>'PC OF ERROR '
    067605  011  047507  020124          ASCIZ  <TAB>'GOT RG  '<TAB>'EXPECTED RO '
(0) 067634                        DH5
(1) 067634  020040  042524  052123          ASCII  '  TEST '<TAB>'PC OF CALL '<TAB>'PC OF ERROR '
    067674  000                           BYTE   0
            067634                DH6=DH5
            067545                DH7=DH4
            067634                DH10=DH5
            067545                DH11=DH4
            067634                DH12=DH5
    067675  040  052040  051505  DH13    ASCIZ     TEST '<TAB> PC OF CALL '<TAB>'PC OF TRAP
            067675                DH14=DH13
            067634                DH15=DH5
(0) 067735                        DH16
(1) 067735  040  052040  051505          ASCII  '  TEST '<TAB>'PC OF CALL '<TAB>'PC OF ERROR '
    067775  011  047507  020124          ASCIZ  <TAB>'GOT PC  '<TAB>'EXPECTED PC '
            067675                DH17=DH13
            067545                DH20=DH4
            067634                DH21=DH5
            067634                DH22=DH5
            067675                DH23=DH13
            067545                DH24=DH4
            067634                DH25=DH5
            067675                DH26=DH13
            067545                DH27=DH4
            067634                DH30=DH5
            067675                DH31=DH13
            067545                DH32=DH4
            067634                DH33=DH5
            067675                DH34=DH13
            067545                DH35=DH4
            067634                DH36=DH5
    070024  020040  042524  052123  DH37.   .ASCIZ  '  TEST '<TAB>'PC OF CALL '<TAB>'PC OF ERROR '<TAB>'GOT FPS '<TAB>'EXPEC
            070024                DH40=DH37
    070114  020040  042524  052123  DH41.    ASCIZ  '  TEST '<TAB>'PC OF CALL '<TAB>'PC OF ERROR '<TAB>'FPS '<TAB>'GOT FEC
            070024                DH42=DH37
            070024                DH43=DH37
            070024                DH44=DH37
            070024                DH45=DH37
            070024                DH46=DH37
            070024                DH47=DH37
            070024                DH50=DH37
            070024                DH51=DH37
            070024                DH52=DH37
            070114                DH53=DH41
            070024                DH54=DH37
            070024                DH55=DH37
            070024                DH56=DH37
            070024                DH57=DH37
            070024                DH60=DH37
            070024                DH61=DH37
            067365                DH62=DH2
            067455                DH63=DH3
```

```
067634                  DH64=DH5
067365                  DH65=DH2
067545                  DH66=DH4
067365                  DH67=DH2
067455                  DH70=DH3
067365                  DH176=DH2
067455                  DH177=DH3
067634                  DH71=DH5
067365                  DH72=DH2
067675                  DH107=DH13
067634                  DH73=DH5
067545                  DH74=DH4
067365                  DH75=DH2
067675                  DH76=DH107
067634                  DH77=DH5
067545                  DH100=DH4
067365                  DH101=DH2
067675                  DH102=DH107
067634                  DH103=DH5
067545                  DH104=DH4
067365                  DH105=DH2
067675                  DH106=DH107
067634                  DH110=DH5
067545                  DH111=DH4
067365                  DH112=DH2
067675                  DH113=DH107
067634                  DH114=DH5
067545                  DH115=DH4
067365                  DH116=DH2
067675                  DH117=DH107
067634                  DH120=DH5
067545                  DH121=DH4
067365                  DH122=DH2
067675                  DH123=DH107
067634                  DH124=DH5
067545                  DH125=DH4
067365                  DH126=DH2
067675                  DH127=DH107
067634                  DH130=DH5
067365                  DH131=DH2
067675                  DH132=DH107
067634                  DH133=DH5
067365                  DH134=DH2
067634                  DH135=DH5
067634                  DH136=DH5
067365                  DH137=DH2
067634                  DH140=DH5
067545                  DH141=DH4
067365                  DH142=DH2
067634                  DH143=DH5
067545                  DH144=DH4
067365                  DH145=DH2
067634                  DH146=DH5
067545                  DH147=DH4
067365                  DH150=DH2
067634                  DH151=DH5
```

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                067545                  DH152=DH4
                067365                  DH153=DH2
                067634                  DH154=DH5
                067545                  DH155=DH4
                067365                  DH156=DH2
                067634                  DH157=DH5
                067545                  DH160=DH4
                067365                  DH161=DH2
                067634                  DH162=DH5
                067365                  DH163=DH2
                067735                  DH164=DH16
                067735                  DH215=DH16
                067634                  DH216=DH5
                067545                  DH217=DH4
                067365                  DH220=DH2
                067735                  DH221=DH16
                067634                  DH222=DH5
                067545                  DH223=DH4
                067365                  DH224=DH2
                070024                  DH165=DH37
                070024                  DH166=DH37
                070024                  DH167=DH37
                070024                  DH170=DH37
                070024                  DH171=DH37
                070024                  DH172=DH37
                070114                  DH173=DH41
                070114                  DH174=DH41
                070114                  DH175=DH41
                070024                  DH200=DH37
                070024                  DH201=DH37
                070024                  DH202=DH37
                070024                  DH203=DH37
                070024                  DH204=DH37
                070024                  DH205=DH37
                070024                  DH206=DH37
                070024                  DH207=DH37
                070024                  DH210=DH37
                070024                  DH211=DH37
                070024                  DH212=DH37
                070024                  DH213=DH37
                070024                  DH214=DH37

                067545                  DH225=DH4
                067365                  DH226=DH2
     070211      040  052040  051505    DH227:  .ASCIZ  '  TEST '<TAB>'PC OF CALL '<TAB>'PC OF TRAP '
                067545                  DH230=DH4
                067365                  DH231=DH2
                070211                  DH232=DH227
                067545                  DH233=DH4
                067365                  DH234=DH2
                070211                  DH235=DH227
                067545                  DH236=DH4
                067365                  DH237=DH2
                070211                  DH240=DH227
                067545                  DH241=DH4
                067365                  DH242=DH2
```

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070211                  DH243=DH227
067545                  DH244=DH4
067365                  DH245=DH2
067735                  DH246=DH16
070211                  DH247=DH227
067545                  DH250=DH4
067365                  DH251=DH2
067735                  DH252=DH16
070211                  DH253=DH227
067735                  DH254=DH16
070211                  DH255=DH227
067545                  DH256=DH4
067365                  DH257=DH2
070024                  DH260=DH37
070024                  DH261=DH37
070024                  DH262=DH37
070024                  DH263=DH37
070024                  DH264=DH37
070024                  DH265=DH37
070024                  DH266=DH37
070024                  DH267=DH37
070024                  DH270=DH37
070024                  DH271=DH37
070024                  DH272=DH37
070024                  DH273=DH37
070024                  DH274=DH37
070024                  DH275=DH37
070024                  DH276=DH37
070024                  DH277=DH37
070024                  DH300=DH37
070024                  DH301=DH37
070024                  DH302=DH37
070114                  DH303=DH41
070024                  DH304=DH37
070024                  DH305=DH37
070024                  DH306=DH37
070024                  DH307=DH37
070024                  DH310=DH37
070024                  DH311=DH37
070024                  DH312=DH37
070024                  DH313=DH37
070024                  DH314=DH37
070024                  DH315=DH37
070024                  DH316=DH37
070024                  DH317=DH37
070024                  DH320=DH37
070024                  DH321=DH37
070024                  DH322=DH37
070024                  DH323=DH37
070114                  DH324=DH41
070024                  DH325=DH37
070024                  DH326=DH37
070024                  DH327=DH37
070024                  DH330=DH37
070024                  DH331=DH37
070024                  DH332=DH37
```

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                070024                  DH333=DH37
                070024                  DH334=DH37
                070024                  DH335=DH37
                070024                  DH336=DH37
                070024                  DH337=DH37
                070024                  DH340=DH37
                070024                  DH341=DH37
                070024                  DH342=DH37
                070024                  DH343=DH37
                070024                  DH344=DH37
                070024                  DH345=DH37
                070024                  DH346=DH37
                070024                  DH347=DH37
                070024                  DH350=DH37
                067675                  DH351=DH13
                070024                  DH352=DH37
                070024                  DH353=DH37
                070024                  DH354=DH37
                070024                  DH355=DH37
                067545                  DH356=DH11
      070251      040  052040  051505  DH357:   .ASCII   '  TEST '<TAB>'PC OF CALL '<TAB>'PC OF ERROR '
      070311      011  047507  020124           .ASCIZ  <TAB>'GOT FEA '<TAB>'EXPECTED FEA '
                067675                  DH360=DH13
                067365                  DH361=DH2

                000000                  DH362=0
                000000                  DH363=0
                000000                  DH364=0
                000000                  DH365=0
                000000                  DH366=0
                000000                  DH367=0
                000000                  DH370=0
                000000                  DH371=0
                000000                  DH372=0
                000000                  DH373=0
                000000                  DH374=0
                000000                  DH375=0
                000000                  DH376=0
                000000                  DH377=0
                000000                  DH400=0
```

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                067545                  DH401=DH4
                067365                  DH402=DH2
                067675                  DH403=DH13
                070211                  DH404=DH227
                067545                  DH405=DH4
                067365                  DH406=DH2
                067675                  DH407=DH13
                070211                  DH410=DH227
                067545                  DH411=DH4
                067365                  DH412=DH2
                067675                  DH413=DH13
                070211                  DH414=DH227
                067545                  DH415=DH4
                067365                  DH416=DH2
                067675                  DH417=DH13
                070211                  DH420=DH227
                067545                  DH421=DH4
                067365                  DH422=DH2
                067675                  DH423=DH13
                070211                  DH424=DH227
                067545                  DH425=DH4
                067365                  DH426=DH2
                067675                  DH427=DH13
                070211                  DH430=DH227
                067675                  DH431=DH13
                067545                  DH432=DH4
                067365                  DH433=DH2
                067675                  DH434=DH13
                070211                  DH435=DH227
                067675                  DH436=DH13
                067545                  DH437=DH4
                067545                  DH440=DH4
070341             040  052040  051505  DH441:   .ASCIZ  '  TEST.'<TAB>'PC OF CALL '<TAB>'PC OF ERROR '<TAB>'FEC '
070407             040  052040  051505  DH442:   .ASCIZ  '  TEST '<TAB>'PC OF CALL '<TAB>'PC OF ERROR '
                070407                  DH443=DH442



                                        ;THESE ARE FORMAT SPECIFICATIONS FOR THE DATA TABLES
070450             004       000       005  DF1:     .BYTE   4,0,5,0,5,0,0
070457             004       000       005  DF2:      BYTE   4,0,5,0,5,0,5,0
                070457                  DF3=DF2
                070457                  DF4=DF2
070467             004       000       005  DF5:     .BYTE   4,0,5,0,5,5,2,5,5,2
070501             004       000       005  DF6:     .BYTE   4,0,5,0
                070457                  DF7=DF4
                070467                  DF10=DF5
                070457                  DF11=DF4
070505             004       000       005  DF12:     BYTE   4,0,5,0,5,5,3,5,5,3
                070501                  DF13=DF6
                070501                  DF14=DF6
                070505                  DF15=DF12
                070457                  DF16=DF2
                070501                  DF17=DF6
                070457                  DF20=DF2
                070505                  DF21=DF12
```

```
                070505                  DF22=DF12
                070501                  DF23=DF6
                070457                  DF24=DF2
                070505                  DF25=DF12
                070501                  DF26=DF6
                070457                  DF27=DF2
                070505                  DF30=DF12
                070501                  DF31=DF6
                070457                  DF32=DF2
                070505                  DF33=DF12
                070501                  DF34=DF6
                070457                  DF35=DF2
                070505                  DF36=DF12
        070517    004     000     005   DF37:    .BYTE   4,0,5,0,5,0,5,0,5,5,3,5,5,3,5,5,3
                070517                  DF40=DF37
        070540    004     000     005   DF41:    .BYTE   4,0,5,0,5,0,0,0,5,5,3,5,5,3,5,5,3
                070517                  DF42=DF37
                070517                  DF43=DF37
                070517                  DF44=DF37
                070517                  DF45=DF37
                070517                  DF46=DF37
                070517                  DF47=DF37
                070517                  DF50=DF37
                070517                  DF51=DF37
                070517                  DF52=DF37
                070517                  DF53=DF37
                070517                  DF54=DF37
                070517                  DF55=DF37
                070517                  DF56=DF37
                070517                  DF57=DF37
                070517                  DF60=DF37
                070517                  DF61=DF37
                070457                  DF62=DF2
                070457                  DF63=DF2
                070467                  DF64=DF5
                070457                  DF65=DF2
                070457                  DF66=DF2
                070457                  DF67=DF2
                070457                  DF70=DF2
                070457                  DF176=DF2
                070457                  DF177=DF2
        070561    004     000     005   DF71:    .BYTE   4,0,5,0,5,5,3,5,5,3,5,5,3
                070457                  DF72=DF2
                070501                  DF107=DF6
                070561                  DF73=DF71
                070457                  DF74=DF2
                070457                  DF75=DF2
                070501                  DF76=DF6
                070561                  DF77=DF71
                070457                  DF100=DF2
                070457                  DF101=DF2
                070501                  DF102=DF6
                070561                  DF103=DF71
                070457                  DF104=DF2
                070457                  DF105=DF2
                070501                  DF106=DF6
```

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070561                  DF110=DF71
070457                  DF111=DF2
070457                  DF112=DF2
070501                  DF113=DF6
070561                  DF114=DF71
070457                  DF115=DF2
070457                  DF116=DF2
070501                  DF117=DF6
070561                  DF120=DF71
070457                  DF121=DF2
070457                  DF122=DF2
070501                  DF123=DF6
070561                  DF124=DF71
070457                  DF125=DF2
070457                  DF126=DF2
070501                  DF127=DF6
070561                  DF130=DF71
070457                  DF131=DF2
070501                  DF132=DF6
070561                  DF133=DF71
070457                  DF134=DF2
070505                  DF135=DF12
070505                  DF136=DF12
070457                  DF137=DF2
070505                  DF140=DF12
070457                  DF141=DF2
070457                  DF142=DF2
070505                  DF143=DF12
070457                  DF144=DF2
070457                  DF145=DF2
070505                  DF146=DF12
070457                  DF147=DF2
070457                  DF150=DF2
070505                  DF151=DF12
070457                  DF152=DF2
070457                  DF153=DF2
070505                  DF154=DF12
070457                  DF155=DF2
070457                  DF156=DF2
070505                  DF157=DF12
070457                  DF160=DF2
070457                  DF161=DF2
070505                  DF162=DF12
070457                  DF163=DF2
070457                  DF164=DF2
070457                  DF215=DF2
070505                  DF216=DF12
070457                  DF217=DF2
070457                  DF220=DF2
070457                  DF221=DF2
070505                  DF222=DF12
070457                  DF223=DF2
070457                  DF224=DF2
070517                  DF165=DF37
070517                  DF166=DF37
070517                  DF167=DF37
```

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                070517                  DF170=DF37
                070517                  DF171=DF37
                070517                  DF172=DF37
                070540                  DF173=DF41
                070540                  DF174=DF41
                070540                  DF175=DF41
                070517                  DF200=DF37
                070517                  DF201=DF37
                070517                  DF202=DF37
                070517                  DF203=DF37
                070517                  DF204=DF37
                070517                  DF205=DF37
                070517                  DF206=DF37
                070517                  DF207=DF37
                070517                  DF210=DF37
                070517                  DF211=DF37
                070517                  DF212=DF37
                070517                  DF213=DF37
                070517                  DF214=DF37
        070576     004      000     005 DF225:    .BYTE   4,0,5,0,5,0,5,0
                070576                  DF226=DF225
        070606     004      000     005 DF227:    .BYTE   4,0,5,0
                070576                  DF230=DF225
                070576                  DF231=DF225
                070606                  DF232=DF227
                070576                  DF233=DF225
                070576                  DF234=DF225
                070606                  DF235=DF227
                070576                  DF236=DF225
                070576                  DF237=DF225
                070606                  DF240=DF227
                070576                  DF241=DF225
                070576                  DF242=DF225
                070606                  DF243=DF227
                070576                  DF244=DF225
                070576                  DF245=DF225
                070576                  DF246=DF225
                070606                  DF247=DF227
                070576                  DF250=DF225
                070576                  DF251=DF225
                070576                  DF252=DF225
                070606                  DF253=DF227
                070576                  DF254=DF225
                070606                  DF255=DF227
                070576                  DF256=DF225
                070576                  DF257=DF225

        070612     004      000     005 DF260:    BYTE    4,0,5,0,5,0,5,0,5,5,2,5,5,2,5,5,2
                070612                  DF261=DF260
                070612                  DF262=DF260
                070612                  DF263=DF260
                070612                  DF264=DF260
                070612                  DF265=DF260
                070612                  DF266=DF260
                070612                  DF267=DF260
                070612                  DF270=DF260
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                070612                  DF271=DF260
                070612                  DF272=DF260

        070633      004     000     005 DF273:    .BYTE   4,0,5,0,5,0,5,0,5,5,2,5,5,3,5,5,3
                070633                  DF274=DF273
                070633                  DF275=DF273
                070633                  DF276=DF273
                070633                  DF277=DF273
                070633                  DF300=DF273
        070654      004     000     005 DF301:    .BYTE   4,0,5,0,5,0,5,0,5,5,3,5,5,0,5,5,3,5,5,3
                070654                  DF302=DF301
        070700      004     000     005 DF303:    .BYTE   4,0,5,0,5,0,0,0,5,5,3,5,5,0,5,5,3,5,5,3
                070654                  DF304=DF301
                070654                  DF305=DF301
                070654                  DF306=DF301
                070654                  DF307=DF301
                070654                  DF310=DF301
                070654                  DF311=DF301
                070654                  DF312=DF301
                070654                  DF313=DF301
                070654                  DF314=DF301
                070654                  DF315=DF301
                070654                  DF316=DF301
                070654                  DF317=DF301
                070654                  DF320=DF301
                070654                  DF321=DF301

        070724      004     000     005 DF322:    .BYTE   4,0,5,0,5,0,5,0,5,5,3,5,5,2,5,5,2
                070724                  DF323=DF322
        070745      004     000     005 DF324:    .BYTE   4,0,5,0,5,0,0,0,5,5,3,5,5,2,5,5,2
                070724                  DF325=DF322
                070724                  DF326=DF322
                070724                  DF327=DF322
                070724                  DF330=DF322
                070724                  DF331=DF322
                070724                  DF332=DF322
                070724                  DF333=DF322
                070724                  DF334=DF322
                070724                  DF335=DF322
                070724                  DF336=DF322
                070724                  DF337=DF322
                070724                  DF340=DF322
                070724                  DF341=DF322
                070724                  DF342=DF322
                070724                  DF343=DF322
                070724                  DF344=DF322
                070724                  DF345=DF322
                070724                  DF346=DF322

        070766      004     000     005 DF347:    .BYTE   4,0,5,0,5,0,5,0,5,5,3,5,5,0,5,5,0
                070766                  DF350=DF347
                070606                  DF351=DF227
                070766                  DF352=DF347
                070766                  DF353=DF347
                070766                  DF354=DF347
                070766                  DF355=DF347
```

```
               070576                        DF356=DF225
               070576                        DF357=DF225
               070606                        DF360=DF227
               070576                        DF361=DF225

               000000                        DF362=0
               000000                        DF363=0
               000000                        DF364=0
               000000                        DF365=0
               000000                        DF366=0
               000000                        DF367=0
               000000                        DF370=0
               000000                        DF371=0
               000000                        DF372=0
               000000                        DF373=0
               000000                        DF374=0
               000000                        DF375=0
               000000                        DF376=0
               000000                        DF377=0
               000000                        DF400=0

               070576                        DF401=DF225
               070576                        DF402=DF225
               070606                        DF403=DF227
               070606                        DF404=DF227
               070576                        DF405=DF225
               070576                        DF406=DF225
               070606                        DF407=DF227
               070606                        DF410=DF227
               070576                        DF411=DF225
               070576                        DF412=DF225
               070606                        DF413=DF227
               070606                        DF414=DF227
               070576                        DF415=DF225
               070576                        DF416=DF225
               070606                        DF417=DF227
               070606                        DF420=DF227
               070576                        DF421=DF225
               070576                        DF422=DF225
               070606                        DF423=DF227
               070606                        DF424=DF227
               070576                        DF425=DF225
               070576                        DF426=DF225
               070606                        DF427=DF227
               070606                        DF430=DF227
               070606                        DF431=DF227
               070576                        DF432=DF225
               070576                        DF433=DF225
               070606                        DF434=DF227
               070606                        DF435=DF227
               070606                        DF436=DF227
               070576                        DF437=DF225
               070576                        DF440=DF225
      07100-      004        000        005  DF441     BYTE    4,0,5,0,5,0
               071007                        DF442=DF441
               071007                        DF443=DF441
```

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                071016                          EVEN

                                        ;THESE ARE THE ERROR MESSAGE DATA TABLES

        071016  001232  001234  042775  DT1:    .WORD   $TMP0,$TMP1,$TAB,$TMP2,$TAB,$TMP3,$TMP4,0
        071036  001232  001234  042775  DT2:    .WORD   $TMP0,$TMP1,$TAB,$TMP2,$TAB,$TMP3,$TAB,$TMP5,0
        071060  001232  001234  042775  DT3:    .WORD   $TMP0,$TMP1,$TAB,$TMP2,$TAB,$TMP4,$TAB,$TMP6,0
        071102  001232  001234  042775  DT4:    .WORD   $TMP0,$TMP1,$TAB,$TMP2,$TAB,$TMP4,$TAB,$TMP3,0
        071124  001232  001234  042775  DT5:    .WORD   $TMP0,$TMP1,$TAB,$TMP2,$CRLF,MS1,$TMP3
        071142  001313  043015  001242          .WORD   $CRLF,MS2,$TMP4,0
        071152  001232  001234  042775  DT6:    .WORD   $TMP0,$TMP1,$TAB,$TMP2,0
                071102                  DT7=DT4
                071124                  DT10=DT5
                071102                  DT11=DT4
                071124                  DT12=DT5
                071152                  DT13=DT6
                071152                  DT14=DT6
                071124                  DT15=DT5
        071164  001232  001234  042775  DT16:   .WORD   $TMP0,$TMP1,$TAB,$TMP2,$TAB,$TMP4,$TAB,$TMP3,0
                071152                  DT17=DT6
                071164                  DT20=DT16
                071124                  DT21=DT5
                071124                  DT22=DT5
                071152                  DT23=DT6
                071164                  DT24=DT16
                071124                  DT25=DT5
                071152                  DT26=DT6
                071164                  DT27=DT16
                071124                  DT30=DT5
                071152                  DT31=DT6
                071164                  DT32=DT16
                071124                  DT33=DT5
                071152                  DT34=DT6
                071164                  DT35=DT16
                071124                  DT36=DT5
        071206  001232  001234  042775  DT37:   .WORD   $TMP0,$TMP1,$TAB,$TMP2,$TAB,$TMP7,$TAB,$TMP10,$CRLF
        071230  043055  001240  001313          .WORD   MS4,$TMP3,$CRLF,MS1,$TMP4,$CRLF,MS2,$TMP5,0
                071206                  DT40=DT37
        071252  001232  001234  042775  DT41:   .WORD   $TMP0,$TMP1,$TAB,$TMP2,$TAB,$TMP7,$TMP11,$TMP12
        071272  001313  043055  001240          .WORD   $CRLF,MS4,$TMP3,$CRLF,MS1,$TMP4,$CRLF,MS2,$TMP5,0
                071206                  DT42=DT37
                071206                  DT43=DT37
                071206                  DT44=DT37
                071206                  DT45=DT37
                071206                  DT46=DT37
                071206                  DT47=DT37
                071206                  DT50=DT37
                071206                  DT51=DT37
                071206                  DT52=DT37
                071252                  DT53=DT41
                071206                  DT54=DT37
                071206                  DT55=DT37
                071206                  DT56=DT37
                071206                  DT57=DT37
```

```
              071206                      DT60=DT37
              071206                      DT61=DT37
              071164                      DT62=DT16
              071164                      DT63=DT16
              071124                      DT64=DT5
              071164                      DT65=DT16
              071102                      DT66=DT4
              071102                      DT67=DT4
              071102                      DT70=DT4
              071102                      DT176=DT4
              071102                      DT177=DT4
      071316  001232  001234  042775      DT71:    .WORD    $TMP0,$TMP1,$TAB,$TMP2,$CRLF,MS3,$TMP3,$CRLF,MS1
      071340  001244  001313  043015               .WORD    $TMP5,$CRLF,MS2,$TMP4,0
              071102                      DT72=DT4
              071152                      DT107=DT6
      071352  001232  001234  042775      DT73:    .WORD    $TMP0,$TMP1,$TAB,$TMP2,$CRLF,MS4,$TMP4
      071370  001313  042777  001244               .WORD    $CRLF,MS1,$TMP5,$CRLF,MS2,$TMP3,0
              071102                      DT74=DT4
              071036                      DT75=DT2
              071152                      DT76=DT6
              071352                      DT77=DT73
              071102                      DT100=DT4
              071036                      DT101=DT2
              071152                      DT102=DT6
              071352                      DT103=DT73
              071102                      DT104=DT4
              071036                      DT105=DT2
              071152                      DT106=DT6
              071352                      DT110=DT73
              071102                      DT111=DT4
              071036                      DT112=DT2
              071152                      DT113=DT6
              071352                      DT114=DT73
              071102                      DT115=DT4
              071036                      DT116=DT2
              071152                      DT117=DT6
              071352                      DT120=DT73
              071102                      DT121=DT4
              071036                      DT122=DT2
              071152                      DT123=DT6
              071352                      DT124=DT73
              071102                      DT125=DT4
              071036                      DT126=DT2
              071152                      DT127=DT6
              071352                      DT130=DT73
              071036                      DT131=DT2
              071152                      DT132=DT6
              071352                      DT133=DT73
              071036                      DT134=DT2
              071124                      DT135=DT5
              071124                      DT136=DT5
              071164                      DT137=DT16
              071124                      DT140=DT5
              071102                      DT141=DT4
              071102                      DT142=DT4
              071124                      DT143=DT5
```

```
071102                  DT144=DT4
071102                  DT145=DT4
071124                  DT146=DT5
071102                  DT147=DT4
071102                  DT150=DT4
071124                  DT151=DT5
071102                  DT152=DT4
071102                  DT153=DT4
071124                  DT154=DT5
071102                  DT155=DT4
071102                  DT156=DT4
071124                  DT157=DT5
071102                  DT160=DT4
071102                  DT161=DT4
071124                  DT162=DT5
071102                  DT163=DT4
071102                  DT164=DT4
071102                  DT215=DT4
071124                  DT216=DT5
071102                  DT217=DT4
071102                  DT220=DT4
071102                  DT221=DT4
071124                  DT222=DT5
071102                  DT223=DT4
071102                  DT224=DT4
071206                  DT165=DT37
071206                  DT166=DT37
071206                  DT167=DT37
071206                  DT170=DT37
071206                  DT171=DT37
071206                  DT172=DT37
071252                  DT173=DT41
071252                  DT174=DT41
071252                  DT175=DT41
071206                  DT200=DT37
071206                  DT201=DT37
071206                  DT202=DT37
071206                  DT203=DT37
071206                  DT204=DT37
071206                  DT205=DT37
071206                  DT206=DT37
071206                  DT207=DT37
071206                  DT210=DT37
071206                  DT211=DT37
071206                  DT212=DT37
071206                  DT213=DT37
071206                  DT214=DT37

071102                  DT225=DT4
071102                  DT226=DT4
071152                  DT227=DT6
071102                  DT230=DT4
071102                  DT231=DT4
071152                  DT232=DT6
071102                  DT233=DT4
071102                  DT234=DT4
```

```
                071152                  DT235=DT6
                071102                  DT236=DT4
                071102                  DT237=DT4
                071152                  DT240=DT6
                071102                  DT241=DT4
                071102                  DT242=DT4
                071152                  DT243=DT6
                071102                  DT244=DT4
                071102                  DT245=DT4
                071102                  DT246=DT4
                071152                  DT247=DT6
                071102                  DT250=DT4
                071102                  DT251=DT4
                071102                  DT252=DT4
                071152                  DT253=DT6
                071102                  DT254=DT4
                071152                  DT255=DT6
                071102                  DT256=DT4
                071102                  DT257=DT4

                071206                  DT260=DT37
                071206                  DT261=DT37
                071206                  DT262=DT37
                071206                  DT263=DT37
                071206                  DT264=DT37
                071206                  DT265=DT37
                071206                  DT266=DT37
                071206                  DT267=DT37
                071206                  DT270=DT37
                071206                  DT271=DT37
                071206                  DT272=DT37
                071206                  DT273=DT37
                071206                  DT274=DT37
                071206                  DT275=DT37
                071206                  DT276=DT37
                071206                  DT277=DT37
                071206                  DT300=DT37

071406  001232  001234  042775  DT301:  .WORD   $TMP0,$TMP1,$TAB,$TMP2,$TAB,$TMP7,$TAB,$TMP10
071426  001313  043037  001240          .WORD   $CRLF,MS10,$TMP3,$CRLF,MS11,$TMP4
071442  001313  042777  001246          .WORD   $CRLF,MS1,$TMP6,$CRLF,MS2,$TMP5,0
                071406                  DT302=DT301
071460  001232  001234  042775  DT303:  .WORD   $TMP0,$TMP1,$TAB,$TMP2,$TAB,$TMP7,$TMP11,$TMP12
071500  001313  043037  001240          .WORD   $CRLF,MS10,$TMP3,$CRLF,MS11,$TMP4
071514  001313  042777  001246          .WORD   $CRLF,MS1,$TMP6,$CRLF,MS2,$TMP5,0
                071406                  DT304=DT301
                071406                  DT305=DT301
                071406                  DT306=DT301
                071406                  DT307=DT301
                071406                  DT310=DT301
                071406                  DT311=DT301
                071406                  DT312=DT301
                071406                  DT313=DT301
                071406                  DT314=DT301
                071406                  DT315=DT301
                071406                  DT316=DT301
```

```
                071406                  DT317=DT301
                071406                  DT320=DT301
                071406                  DT321=DT301

        071532  001232  001234  042775  DT322   .WORD   $TMP0,$TMP1,$TAB,$TMP2,$TAB,$TMP7,$TAB,$TMP10
        071552  001313  043037  001240          .WORD   $CRLF,MS10,$TMP3,$CRLF,MS1,$TMP4,$CRLF,MS2,$TMP5,0
                071532                  DT323=DT322
        071576  001232  001234  042775  DT324:  .WORD   $TMP0,$TMP1,$TAB,$TMP2,$TAB,$TMP7,$TMP11,$TMP12
        071616  001313  043037  001240          .WORD   $CRLF,MS10,$TMP3,$CRLF,MS1,$TMP4,$CRLF,MS2,$TMP5,0
                071532                  DT325=DT322
                071532                  DT326=DT322
                071532                  DT327=DT322
                071532                  DT330=DT322
                071532                  DT331=DT322
                071532                  DT332=DT322
                071532                  DT333=DT322
                071532                  DT334=DT322
                071532                  DT335=DT322
                071532                  DT336=DT322
                071532                  DT337=DT322
                071532                  DT340=DT322
                071537                  DT341=DT322
                071532                  DT342=DT322
                071532                  DT343=DT322
                071532                  DT344=DT322
                071532                  DT345=DT322
                071532                  DT346=DT322

                071532                  DT347=DT322
                071532                  DT350=DT322
                071152                  DT351=DT6
                071532                  DT352=DT322
                071532                  DT353=DT322
                071532                  DT354=DT322
                071532                  DT355=DT322
                071036                  DT356=DT2
                071060                  DT357=DT3
                071152                  DT360=DT6
                071406                  DT361=DT302

                000000                  DT362=0
                000000                  DT363=0
                000000                  DT364=0
                000000                  DT365=0
                000000                  DT366=0
                000000                  DT367=0
                000000                  DT370=0
                000000                  DT371=0
                000000                  DT372=0
                000000                  DT373=0
                000000                  DT374=0
                000000                  DT375=0
                000000                  DT376=0
                000000                  DT377=0
                000000                  DT400=0
```

```
                071102                  DT401=DT4
                071102                  DT402=DT4
                071152                  DT403=DT6
                071152                  DT404=DT6
                071102                  DT405=DT4
                071102                  DT406=DT4
                071152                  DT407=DT6
                071152                  DT410=DT6
                071102                  DT411=DT4
                071102                  DT412=DT4
                071152                  DT413=DT6
                071152                  DT414=DT6
                071102                  DT415=DT4
                071102                  DT416=DT4
                071152                  DT417=DT6
                071152                  DT420=DT6
                071102                  DT421=DT4
                071102                  DT422=DT4
                071152                  DT423=DT6
                071152                  DT424=DT6
                071102                  DT425=DT4
                071102                  DT426=DT4
                071152                  DT427=DT6
                071152                  DT430=DT6
                071152                  DT431=DT6
                071102                  DT432=DT4
                071102                  DT433=DT4
                071152                  DT434=DT6
                071152                  DT435=DT6
                071152                  DT436=DT6
                071102                  DT437=DT4
                071102                  DT440=DT4
        071642  001232  001234  042775  DT441:    .WORD   $TMP0,$TMP1,$TAB,$TMP2,$TAB,$TMP3,0
        071660  001232  001234  042775  DT442:    .WORD   $TMP0,$TMP1,$TAB,$TMP2,0
                071660                  DT443=DT442



                                        ;12345
                000001                          END
```

```
AABBF0  013600          3415    3419    3427    3433    3438    3451    3456#
AABDON  013630          3435    3441    3447    3453    3470#
AABTP1  013610          3414    3461#
AABTP2  013620          3439    3466#
AAB1    013522          3412#
AAB2    013524          3429    3438#
AAB3    013544          3432    3444#
AAB4    013562          3434    3450#
AACDON  023752          5606    5617    5623    5638    5640#
AACTP1  023656          5593    5602    5610#   5614
AAC1    023576          5590#
AAC10   023662          5603    5614#
AAC11   023700          5605    5620#
AAC2    023632          5596    5593#   5630    5632
AAC20   023716          5597    5623#
ABASE = 000000          1042    1083
ACDW1 = 000000          1042    1085
ACDW2 = 000000          1042    1086
ACPUOP= 000000          1042    1057
ADDW0 = 000000          1042    1087
ADDW1 = 000000          1042    1088
ADDW10= 000000          1042    1097
ADDW11= 000000          1042    1098
ADDW12= 000000          1042    1099
ADDW13= 000000          1042    1100
ADDW14= 000000          1042    1101
ADDW15= 000000          1042    1102
ADDW2 = 000000          1042    1089
ADDW3 = 000000          1042    1090
ADDW4 = 000000          1042    1091
ADDW5 = 000000          1042    1092
ADDW6 = 000000          1042    1093
ADDW7 = 000000          1042    1094
ADDW8 = 000000          1042    1095
ADDW9 = 000000          1042    1096
ADEVCT= 000000          1042    1048
ADEVM = 000000          1042    1084
AENV  = 000000          1042    1053
AENVM = 000000          1042    1054
AFATAL= 000000          1042    1045
AMADR1= 000000          1042    1070
AMADR2= 000000          1042    1074
AMADR3= 000000          1042    1077
AMADR4= 000000          1042    1080
AMAMS1= 000000          1042    1064
AMAMS2= 000000          1042    1072
AMAMS3= 000000          1042    1075
AMAMS4= 000000          1042    1078
AMSBRD= 000000          1042    1050
AMSBLB= 000000          1042    1051
AMSBTY= 000000          1042    1044
AMTYP1= 000000          1042    1065
AMTYP2= 000000          1042    1073
AMTYP3= 000000          1042    1076
AMTYP4= 000000          1042    1079
APASS = 000000          1042    1047
```

```
APRIOR= 000000          1042
APTCSU= 000040          9036    9220#
APTENV= 000001          8928    9029    9176    9218#
APTSIZ= 000200          2085    9217#
APTSP0= 000100          9031    9178    9219#
ASWREG= 000000          1042    1055
ATESTM= 000000          1042    1046
AUNIT = 000000          1042    1049
AUSWR = 000000          1042    1056
AVECT1= 000000          1042    1081
AVECT2= 000000          1042    1082
BBCDON  024130          5674    5687    5693    5710#
BBCTP1  024036          5660    5670    5679#   5684
BBC1    023756          5657#
BBC10   024042          5671    5684#
BBC11   024060          5673    5690#
BBC2    024012          5663    5666#   5700    5702
BBC20   024076          5664    5698#
BIT0  = 000001           917#
BIT00 = 000001           907#    917
BIT01 = 000002           906#    916
BIT02 = 000004           905#    915
BIT03 = 000010           904#    914
BIT04 = 000020           903#    913
BIT05 = 000040           902#    912
BIT06 = 000100           901#    911
BIT07 = 000200           900#    910
BIT08 = 000400           899#    909     8862
BIT09 = 001000           898#    908     8870    8939    8950
BIT1  = 000002           916#
BIT10 = 002000           897#    8916
BIT11 = 004000           896#    8877
BIT12 = 010000           895#    8816
BIT13 = 020000           894#    8923
BIT14 = 040000           893#    8848
BIT15 = 100000           892#
BIT2  = 000004           915#
BIT3  = 000010           914#
BIT4  = 000020           913#
BIT5  = 000040           912#
BIT6  = 000100           911#
BIT7  = 000200           910#
BIT8  = 000400           909#
BIT9  = 001000           908#
BPTVEC= 000014           924#
CCBDON  013730          3497    3503    3509#
CCB1    013634          3484#
CCB10   013676          3494    3500#
CCB15   013714          3496    3506#
CCB2    013662          3488    3489#
CKSWR = 104406          8847    8912    8938    9369#   9663
CNT   = 000444          1122#   1125#   1128#   1131#   1134#   1137#   1140#   1143#   1146#   1149#   1152#   1155#   1158#
                        1161#   1164#   1167#   1170#   1173#   1176#   1179#   1182#   1185#   1188#   1191#   1194#   1197#
                        1200#   1203#   1206#   1209#   1212#   1215#   1218#   1221#   1224#   1227#   1230#   1233#   1236#
                        1239#   1242#   1245#   1248#   1251#   1254#   1257#   1260#   1263#   1266#   1269#   1272#   1275#
                        1278#   1281#   1284#   1287#   1290#   1293#   1296#   1299#   1302#   1305#   1308#   1311#   1314#
```

```
                    1317#  1320#  1323#  1326#  1329#  1332#  1335#  1338#  1341#  1344#  1347#  1350#  1353#
                    1356#  1359#  1362#  1365#  1368#  1371#  1374#  1377#  1380#  1383#  1386#  1389#  1392#
                    1395#  1398#  1401#  1404#  1407#  1410#  1413#  1416#  1419#  1422#  1425#  1428#  1431#
                    1434#  1437#  1440#  1443#  1446#  1449#  1452#  1455#  1458#  1461#  1464#  1467#  1470#
                    1473#  1476#  1479#  1482#  1485#  1488#  1491#  1494#  1497#  1500#  1503#  1506#  1509#
                    1512#  1515#  1518#  1521#  1524#  1527#  1530#  1533#  1536#  1539#  1542#  1545#  1548#
                    1551#  1554#  1557#  1560#  1563#  1566#  1569#  1572#  1575#  1578#  1581#  1584#  1587#
                    1590#  1593#  1596#  1599#  1602#  1605#  1608#  1611#  1614#  1617#  1620#  1623#  1626#
                    1629#  1632#  1635#  1638#  1641#  1644#  1647#  1650#  1653#  1656#  1659#  1662#  1665#
                    1668#  1671#  1674#  1677#  1680#  1683#  1686#  1689#  1692#  1695#  1698#  1701#  1704#
                    1707#  1710#  1713#  1716#  1719#  1722#  1725#  1728#  1731#  1734#  1737#  1740#  1743#
                    1746#  1749#  1752#  1755#  1758#  1761#  1764#  1767#  1770#  1773#  1776#  1779#  1782#
                    1785#  1788#  1791#  1794#  1797#  1800#  1803#  1806#  1809#  1812#  1815#  1818#  1821#
                    1824#  1827#  1830#  1833#  1836#  1839#  1842#  1845#  1848#  1851#  1854#  1857#  1860#
                    1863#  1866#  1869#  1872#  1875#  1878#  1881#  1884#  1887#  1890#  1893#  1896#  1899#
                    1902#  1905#  1908#  1911#  1914#  1917#  1920#  1923#  1926#  1929#  1932#  1935#  1938#
                    1941#  1944#  1947#  1950#  1953#  1956#  1959#  1962#  1965#  1968#  1971#  1974#  1977#
                    1980#  1983#  1986#  1989#  1992#  1995#
CPSPUR  042610      2432   2539   2624   2705   3703   3797   3890   3981   4073   4165   4256   4343   4426
                    5634   5704   5762   5825   5887   5955   6025   7361   7449   7537   7626   7717   7808
                    7911   9611#  9668
CPTWO   042630      9628#  9669
CR    = 000015       832#  9075   9085
CRLF  = 000200       820#   833#  2109   9046   9085   9677
DOBBFO  014226      3592   3606   3626#
DOBDON  014246      3601   3608   3614   3635#
DOBTP1  014206      3576   3617#
DOBTP2  014216      3580   3604   3621#
DOBTP3  014236      3605   3630#
DOB1    014034      3572#
DOB2    014100      3585   3587#
DOB5    014142      3597   3604#
DOB6    014170      3600   3611#
DOCDON  024324      5741   5752   5756   5766#
DOCTP1  024224      5730   5737   5745#  5749
DOC1    024134      5727#
DOC10   024236      5738   5749#
DOC11   024254      5740   5753#
DOC2    024172      5733   5735#  5758   5760
DOC20   024272      5734   5757#
DOISP = 177570       839#   981   2073
DF1     070450      1123   9677#
DF10  - 070467      1144   9677#
DF100 = 070457      1312   9677#
DF101 = 070457      1315   9677#
DF102 = 070501      1318   9677#
DF103 = 070561      1321   9677#
DF104 = 070457      1324   9677#
DF105 = 070457      1327   9677#
DF106 = 070501      1330   9677#
DF107 = 070501      1333   9677#
DF11  = 070457      1147   9677#
DF110 = 070561      1336   9677#
DF111 = 070457      1339   9677#
DF112 = 070457      1342   9677#
DF113 = 070501      1345   9677#
```

```
DF114 = 070561          1348    9677#
DF115 = 070457          1351    9677#
DF116 = 070457          1354    9677#
DF117 = 070501          1357    9677#
DF12    070505          1150    9677#
DF120 = 070561          1360    9677#
DF121 = 070457          1363    9677#
DF122 = 070457          1366    9677#
DF123 = 070501          1369    9677#
DF124 = 070561          1372    9677#
DF125 = 070457          1375    9677#
DF126 = 070457          1378    9677#
DF127 = 070501          1381    9677#
DF13  = 070501          1153    9677#
DF130 = 070561          1384    9677#
DF131 = 070457          1387    9677#
DF132 = 070501          1390    9677#
DF133 = 070561          1393    9677#
DF134 = 070457          1396    9677#
DF135 = 070505          1399    9677#
DF136 = 070505          1402    9677#
DF137 = 070457          1405    9677#
DF14  = 070501          1156    9677#
DF140 = 070505          1408    9677#
DF141 = 070457          1411    9677#
DF142 = 070457          1414    9677#
DF143 = 070505          1417    9677#
DF144 = 070457          1420    9677#
DF145 = 070457          1423    9677#
DF146 = 070505          1426    9677#
DF147 = 070457          1429    9677#
DF15  = 070505          1159    9677#
DF150 = 070457          1432    9677#
DF151 = 070505          1435    9677#
DF152 = 070457          1438    9677#
DF153 = 070457          1441    9677#
DF154 = 070505          1444    9677#
DF155 = 070457          1447    9677#
DF156 = 070457          1450    9677#
DF157 = 070505          1453    9677#
DF16  = 070457          1162    9677#
DF160 = 070457          1456    9677#
DF161 = 070457          1459    9677#
DF162 = 070505          1462    9677#
DF163 = 070457          1465    9677#
DF164 = 070457          1468    9677#
DF165 = 070517          1471    9677#
DF166 = 070617          1474    9677#
DF167 = 070617          1477    9677#
DF17  = 070601          1165    9677#
DF170 = 070517          1480    9677#
DF171 = 070617          1483    9677#
DF172 = 070517          1486    9677#
DF173 = 070640          1489    9677#
DF174 = 070640          1492    9677#
DF175 = 070640          1495    9677#
```

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DF176 = 070457          1498    9677#
DF177 = 070457          1501    9677#
DF2     070457          1126    9677#
DF20  = 070457          1168    9677#
DF200 = 070517          1504    9677#
DF201 = 070517          1507    9677#
DF202 = 070517          1510    9677#
DF203 = 070517          1513    9677#
DF204 = 070517          1516    9677#
DF205 = 070517          1519    9677#
DF206 = 070517          1522    9677#
DF207 = 070517          1525    9677#
DF21  = 070505          1171    9677#
DF210 = 070517          1528    9677#
DF211 = 070517          1531    9677#
DF212 = 070517          1534    9677#
DF213 = 070517          1537    9677#
DF214 = 070517          1540    9677#
DF215 = 070457          1543    9677#
DF216 = 070505          1546    9677#
DF217 = 070457          1549    9677#
DF22  = 070505          1174    9677#
DF220 = 070457          1552    9677#
DF221 = 070457          1555    9677#
DF222 = 070505          1558    9677#
DF223 = 070457          1561    9677#
DF224 = 070457          1564    9677#
DF225   070576          1567    9677#
DF226 = 070576          1570    9677#
DF227   070606          1573    9677#
DF23  = 070501          1177    9677#
DF230 = 070576          1576    9677#
DF231 = 070576          1579    9677#
DF232 = 070606          1582    9677#
DF233 = 070576          1585    9677#
DF234 = 070576          1588    9677#
DF235 = 070606          1591    9677#
DF236 = 070576          1594    9677#
DF237 = 070576          1597    9677#
DF24  = 070457          1180    9677#
DF240 = 070606          1600    9677#
DF241 = 070576          1603    9677#
DF242 = 070576          1606    9677#
DF243 = 070606          1609    9677#
DF244 = 070576          1612    9677#
DF245 = 070576          1615    9677#
DF246 = 070576          1618    9677#
DF247 = 070606          1621    9677#
DF25  = 070505          1183    9677#
DF250 = 070576          1624    9677#
DF251 = 070576          1627    9677#
DF252 = 070576          1630    9677#
DF253 = 070606          1633    9677#
DF254 = 070576          1636    9677#
DF255 = 070606          1639    9677#
DF256 = 070576          1642    9677#
```

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DF257 = 070576          1645    9677#
DF26  = 070501          1186    9677#
DF260   070612          1648    9677#
DF261 = 070612          1651    9677#
DF262 = 070612          1654    9677#
DF263 = 070612          1657    9677#
DF264 = 070612          1660    9677#
DF265 = 070612          1663    9677#
DF266 = 070612          1666    9677#
DF267 = 070612          1669    9677#
DF27  = 070457          1189    9677#
DF270 = 070612          1672    9677#
DF271 = 070612          1675    9677#
DF272 = 070612          1678    9677#
DF273   070633          1681    9677#
DF274 = 070633          1684    9677#
DF275 = 070633          1687    9677#
DF276 = 070633          1690    9677#
DF277 = 070633          1693    9677#
DF3   = 070457          1129    9677#
DF30  = 070505          1192    9677#
DF300 = 070633          1696    9677#
DF301   070654          1699    9677#
DF302 = 070654          1702    9677#
DF303   070700          1705    9677#
DF304 = 070654          1708    9677#
DF305 = 070654          1711    9677#
DF306 = 070654          1714    9677#
DF307 = 070654          1717    9677#
DF31  = 070501          1195    9677#
DF310 = 070654          1720    9677#
DF311 = 070654          1723    9677#
DF312 = 070654          1726    9677#
DF313 = 070654          1729    9677#
DF314 = 070654          1732    9677#
DF315 = 070654          1735    9677#
DF316 = 070654          1738    9677#
DF317 = 070654          1741    9677#
DF32  = 070457          1198    9677#
DF320 = 070654          1744    9677#
DF321 = 070654          1747    9677#
DF322   070724          1750    9677#
DF323 - 070724          1753    9677#
DF324   070745          1756    9677#
DF325 = 070724          1759    9677#
DF326 = 070724          1762    9677#
DF327 = 070724          1765    9677#
DF33  = 070505          1201    9677#
DF330 = 070724          1768    9677#
DF331 = 070724          1771    9677#
DF332 = 070724          1774    9677#
DF333 = 070724          1777    9677#
DF334 = 070724          1780    9677#
DF335 = 070724          1783    9677#
DF336 = 070724          1786    9677#
DF337 = 070724          1789    9677#
```

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DF34   = 070501          1204    9677#
DF340  = 070724          1792    9677#
DF341  = 070724          1795    9677#
DF342  = 070724          1798    9677#
DF343  = 070724          1801    9677#
DF344  = 070724          1804    9677#
DF345  = 070724          1807    9677#
DF346  = 070724          1810    9677#
DF347    070766          1813    9677#
DF35   = 070457          1207    9677#
DF350  = 070766          1816    9677#
DF351  = 070606          1819    9677#
DF352  = 070766          1822    9677#
DF353  = 070766          1825    9677#
DF354  = 070766          1828    9677#
DF355  = 070766          1831    9677#
DF356  = 070576          1834    9677#
DF357  = 070576          1837    9677#
DF36   = 070505          1210    9677#
DF360  = 070606          1840    9677#
DF361  = 070576          1843    9677#
DF362  = 000000          1846    9677#
DF363  = 000000          1849    9677#
DF364  = 000000          1852    9677#
DF365  = 000000          1855    9677#
DF366  = 000000          1858    9677#
DF367  = 000000          1861    9677#
DF37     070517          1213    9677#
DF370  = 000000          1864    9677#
DF371  = 000000          1867    9677#
DF372  = 000000          1870    9677#
DF373  = 000000          1873    9677#
DF374  = 000000          1876    9677#
DF375  = 000000          1879    9677#
DF376  = 000000          1882    9677#
DF377  = 000000          1885    9677#
DF4    = 070457          1132    9677#
DF40   = 070517          1216    9677#
DF400  = 000000          1888    9677#
DF401  = 070576          1891    9677#
DF402  = 070576          1894    9677#
DF403  = 070606          1897    9677#
DF404  - 070606          1900    9677#
DF405  = 070576          1903    9677#
DF406  = 070576          1906    9677#
DF407  = 070606          1909    9677#
DF41     070540          1219    9677#
DF410  = 070606          1912    9677#
DF411  = 070576          1915    9677#
DF412  = 070576          1918    9677#
DF413  = 070606          1921    9677#
DF414  = 070606          1924    9677#
DF415  = 070576          1927    9677#
DF416  = 070576          1930    9677#
DF417  = 070606          1933    9677#
DF42   = 070517          1222    9677#
```

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DF420 = 070606          1936    9677#
DF421 = 070576          1939    9677#
DF422 = 070576          1942    9677#
DF423 = 070606          1945    9677#
DF424 = 070606          1948    9677#
DF425 = 070576          1951    9677#
DF426 = 070576          1954    9677#
DF427 = 070606          1957    9677#
DF43  = 070517          1225    9677#
DF430 = 070606          1960    9677#
DF431 = 070606          1963    9677#
DF432 = 070576          1966    9677#
DF433 = 070576          1969    9677#
DF434 = 070606          1972    9677#
DF435 = 070606          1975    9677#
DF436 = 070606          1978    9677#
DF437 = 070576          1981    9677#
DF44  = 070517          1228    9677#
DF440 = 070576          1984    9677#
DF441   071007          1987    9677#
DF442 = 071007          1990    9677#
DF443 = 071007          1993    9677#
DF45  = 070517          1231    9677#
DF46  = 070517          1234    9677#
DF47  = 070517          1237    9677#
DF5     070467          1135    9677#
DF50  = 070517          1240    9677#
DF51  = 070517          1243    9677#
DF52  = 070517          1246    9677#
DF53  = 070517          1249    9677#
DF54  = 070517          1252    9677#
DF55  = 070517          1255    9677#
DF56  = 070517          1258    9677#
DF57  = 070517          1261    9677#
DF6     070501          1138    9677#
DF60  = 070517          1264    9677#
DF61  = 070517          1267    9677#
DF62  = 070457          1270    9677#
DF63  = 070457          1273    9677#
DF64  = 070467          1276    9677#
DF65  = 070457          1279    9677#
DF66  = 070457          1282    9677#
DF67  - 070457          1285    9677#
DF7   = 070457          1141    9677#
DF70  = 070457          1288    9677#
DF71    070561          1291    9677#
DF72  = 070457          1294    9677#
DF73  = 070561          1297    9677#
DF74  = 070457          1300    9677#
DF75  = 070457          1303    9677#
DF76  = 070501          1306    9677#
DF77  = 070561          1309    9677#
DH1     067312          1123    9677#
DH10  = 067634          1144    9677#
DH100 = 067545          1312    9677#
DH101 = 067365          1315    9677#
```

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DH102 = 067675          1318    9677#
DH103 = 067634          1321    9677#
DH104 = 067545          1324    9677#
DH105 = 067365          1327    9677#
DH106 = 067675          1330    9677#
DH107 = 067675          1333    9677#
DH11  = 067545          1147    9677#
DH110 = 067634          1336    9677#
DH111 = 067545          1339    9677#
DH112 = 067365          1342    9677#
DH113 = 067675          1345    9677#
DH114 = 067634          1348    9677#
DH115 = 067545          1351    9677#
DH116 = 067365          1354    9677#
DH117 = 067675          1357    9677#
DH12  = 067634          1150    9677#
DH120 = 067634          1360    9677#
DH121 = 067545          1363    9677#
DH122 = 067365          1366    9677#
DH123 = 067675          1369    9677#
DH124 = 067634          1372    9677#
DH125 = 067545          1375    9677#
DH126 = 067365          1378    9677#
DH127 = 067675          1381    9677#
DH13    067675          1153    9677#
DH130 = 067634          1384    9677#
DH131 = 067365          1387    9677#
DH132 = 067675          1390    9677#
DH133 = 067634          1393    9677#
DH134 = 067365          1396    9677#
DH135 = 067634          1399    9677#
DH136 = 067634          1402    9677#
DH137 = 067365          1405    9677#
DH14  = 067675          1156    9677#
DH140 = 067634          1408    9677#
DH141 = 067545          1411    9677#
DH142 = 067365          1414    9677#
DH143 = 067634          1417    9677#
DH144 = 067545          1420    9677#
DH145 = 067365          1423    9677#
DH146 = 067634          1426    9677#
DH147 = 067545          1429    9677#
DH15  - 067634          1159    9677#
DH150 = 067365          1432    9677#
DH151 = 067634          1435    9677#
DH152 = 067545          1438    9677#
DH153 = 067365          1441    9677#
DH154 = 067634          1444    9677#
DH155 = 067545          1447    9677#
DH156 = 067365          1450    9677#
DH157 = 067634          1453    9677#
DH16    067735          1162    9677#
DH160 = 067545          1456    9677#
DH161 = 067365          1459    9677#
DH162 = 067634          1462    9677#
DH163 = 067365          1465    9677#
```

```
DH164 = 067735          1468    9677#
DH165 = 070024          1471    9677#
DH166 = 070024          1474    9677#
DH167 = 070024          1477    9677#
DH17  = 067675          1165    9677#
DH170 = 070024          1480    9677#
DH171 = 070024          1483    9677#
DH172 = 070024          1486    9677#
DH173 = 070114          1489    9677#
DH174 = 070114          1492    9677#
DH175 = 070114          1495    9677#
DH176 = 067365          1498    9677#
DH177 = 067455          1501    9677#
DH2     067365          1126    9677#
DH20  = 067545          1168    9677#
DH200 = 070024          1504    9677#
DH201 = 070024          1507    9677#
DH202 = 070024          1510    9677#
DH203 = 070024          1513    9677#
DH204 = 070024          1516    9677#
DH205 = 070024          1519    9677#
DH206 = 070024          1522    9677#
DH207 = 070024          1525    9677#
DH21  = 067634          1171    9677#
DH210 = 070024          1528    9677#
DH211 = 070024          1531    9677#
DH212 = 070024          1534    9677#
DH213 = 070024          1537    9677#
DH214 = 070024          1540    9677#
DH215 = 067735          1543    9677#
DH216 = 067634          1546    9677#
DH217 = 067545          1549    9677#
DH22  = 067634          1174    9677#
DH220 = 067365          1552    9677#
DH221 = 067735          1555    9677#
DH222 = 067634          1558    9677#
DH223 = 067545          1561    9677#
DH224 = 067365          1564    9677#
DH225 = 067545          1567    9677#
DH226 = 067365          1570    9677#
DH227   070211          1573    9677#
DH23  = 067675          1177    9677#
DH230 = 067545          1576    9677#
DH231 = 067365          1579    9677#
DH232 = 070211          1582    9677#
DH233 = 067545          1585    9677#
DH234 = 067365          1588    9677#
DH235 = 070211          1591    9677#
DH236 = 067545          1594    9677#
DH237 = 067365          1597    9677#
DH24  = 067545          1180    9677#
DH240 = 070211          1600    9677#
DH241 = 067545          1603    9677#
DH242 = 067365          1606    9677#
DH243 = 070211          1609    9677#
DH244 = 067545          1612    9677#
```

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DH245 = 067365          1615    9677#
DH246 = 067735          1618    9677#
DH247 = 070211          1621    9677#
DH25  = 067634          1183    9677#
DH250 = 067545          1624    9677#
DH251 = 067365          1627    9677#
DH252 = 067735          1630    9677#
DH253 = 070211          1633    9677#
DH254 = 067735          1636    9677#
DH255 = 070211          1639    9677#
DH256 = 067545          1642    9677#
DH257 = 067365          1645    9677#
DH26  = 067675          1186    9677#
DH260 = 070024          1648    9677#
DH261 = 070024          1651    9677#
DH262 = 070024          1654    9677#
DH263 = 070024          1657    9677#
DH264 = 070024          1660    9677#
DH265 = 070024          1663    9677#
DH266 = 070024          1666    9677#
DH267 = 070024          1669    9677#
DH27  = 067545          1189    9677#
DH270 = 070024          1672    9677#
DH271 = 070024          1675    9677#
DH272 = 070024          1678    9677#
DH273 = 070024          1681    9677#
DH274 = 070024          1684    9677#
DH275 = 070024          1687    9677#
DH276 = 070024          1690    9677#
DH277 = 070024          1693    9677#
DH3     067455          1129    9677#
DH30  = 067634          1192    9677#
DH300 = 070024          1696    9677#
DH301 = 070024          1699    9677#
DH302 = 070024          1702    9677#
DH303 = 070114          1705    9677#
DH304 = 070024          1708    9677#
DH305 = 070024          1711    9677#
DH306 = 070024          1714    9677#
DH307 = 070024          1717    9677#
DH31  = 067675          1195    9677#
DH310 = 070024          1720    9677#
DH311 = 070024          1723    9677#
DH312 = 070024          1726    9677#
DH313 = 070024          1729    9677#
DH314 = 070024          1732    9677#
DH315 = 070024          1735    9677#
DH316 = 070024          1738    9677#
DH317 = 070024          1741    9677#
DH32  = 067545          1198    9677#
DH320 = 070024          1744    9677#
DH321 = 070024          1747    9677#
DH322 = 070024          1750    9677#
DH323 = 070024          1753    9677#
DH324 = 070114          1756    9677#
DH325 = 070024          1759    9677#
```

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DH326 = 070024          1762    9677#
DH327 = 070024          1765    9677#
DH33  = 067634          1201    9677#
DH330 = 070024          1768    9677#
DH331 = 070024          1771    9677#
DH332 = 070024          1774    9677#
DH333 = 070024          1777    9677#
DH334 = 070024          1780    9677#
DH335 = 070024          1783    9677#
DH336 = 070024          1786    9677#
DH337 = 070024          1789    9677#
DH34  = 067675          1204    9677#
DH340 = 070024          1792    9677#
DH341 = 070024          1795    9677#
DH342 = 070024          1798    9677#
DH343 = 070024          1801    9677#
DH344 = 070024          1804    9677#
DH345 = 070024          1807    9677#
DH346 = 070024          1810    9677#
DH347 = 070024          1813    9677#
DH35  = 067545          1207    9677#
DH350 = 070024          1816    9677#
DH351 = 067675          1819    9677#
DH352 = 070024          1822    9677#
DH353 = 070024          1825    9677#
DH354 = 070024          1828    9677#
DH355 = 070024          1831    9677#
DH356 = 067545          1834    9677#
DH357   070251          1837    9677#
DH36  = 067634          1210    9677#
DH360 = 067675          1840    9677#
DH361 = 067365          1843    9677#
DH362 = 000000          1846    9677#
DH363 = 000000          1849    9677#
DH364 = 000000          1852    9677#
DH365 = 000000          1855    9677#
DH366 = 000000          1858    9677#
DH367 = 000000          1861    9677#
DH37    070024          1213    9677#
DH370 = 000000          1864    9677#
DH371 = 000000          1867    9677#
DH372 = 000000          1870    9677#
DH373 = 000000          1873    9677#
DH374 = 000000          1876    9677#
DH375 = 000000          1879    9677#
DH376 = 000000          1882    9677#
DH377 = 000000          1885    9677#
DH4     067545          1132    9677#
DH40  = 070024          1216    9677#
DH400 = 000000          1888    9677#
DH401 = 067545          1891    9677#
DH402 = 067365          1894    9677#
DH403 = 067675          1897    9677#
DH404 = 070211          1900    9677#
DH405 = 067545          1903    9677#
DH406 = 067365          1906    9677#
```

DH40	= 067675	1909	9677#
DH41	070114	1219	9677#
DH410	= 070211	1912	9677#
DH411	= 067545	1915	9677#
DH412	= 067365	1918	9677#
DH413	= 067675	1921	9677#
DH414	= 070211	1924	9677#
DH415	= 067545	1927	9677#
DH416	= 067365	1930	9677#
DH417	= 067675	1933	9677#
DH42	= 070024	1222	9677#
DH420	= 070211	1936	9677#
DH421	= 067545	1939	9677#
DH422	= 067365	1942	9677#
DH423	= 067675	1945	9677#
DH424	= 070211	1948	9677#
DH425	= 067545	1951	9677#
DH426	= 067365	1954	9677#
DH427	= 067675	1957	9677#
DH43	= 070024	1225	9677#
DH430	= 070211	1960	9677#
DH431	= 067675	1963	9677#
DH432	= 067545	1966	9677#
DH433	= 067365	1969	9677#
DH434	= 067675	1972	9677#
DH435	= 070211	1975	9677#
DH436	= 067675	1978	9677#
DH437	= 067545	1981	9677#
DH44	= 070024	1228	9677#
DH440	= 067545	1984	9677#
DH441	070341	1987	9677#
DH442	070407	1990	9677#
DH443	= 070407	1993	9677#
DH45	= 070024	1231	9677#
DH46	= 070024	1234	9677#
DH47	= 070024	1237	9677#
DH5	067634	1135	9677#
DH50	= 070024	1240	9677#
DH51	= 070024	1243	9677#
DH52	= 070024	1246	9677#
DH53	= 070114	1249	9677#
DH54	= 070024	1252	9677#
DH55	= 070024	1255	9677#
DH56	= 070024	1258	9677#
DH57	= 070024	1261	9677#
DH6	= 067634	1138	9677#
DH60	= 070024	1264	9677#
DH61	= 070024	1267	9677#
DH62	= 067365	1270	9677#
DH63	= 067455	1273	9677#
DH64	= 067634	1276	9677#
DH65	= 067365	1279	9677#
DH66	= 067545	1282	9677#
DH67	= 067365	1285	9677#
DH7	= 067545	1141	9677#
DH70	= 067455	1288	9677#

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DM72  = 067365          1294    9677#
DM73  = 067634          1297    9677#
DM74  = 067545          1300    9677#
DM75  = 067365          1303    9677#
DM76  = 067675          1306    9677#
DM77  = 067634          1309    9677#
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DISPRE  000174           949#   2081
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DT102 = 071152          1318    9677#
DT103 = 071352          1321    9677#
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DT112 = 071036          1342    9677#
DT113 = 071152          1345    9677#
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DT117 = 071152          1357    9677#
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DT123 = 071152          1369    9677#
DT124 = 071352          1372    9677#
DT125 = 071102          1375    9677#
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DT127 = 071152          1381    9677#
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DT132 = 071152          1390    9677#
DT133 = 071352          1393    9677#
DT134 = 071036          1396    9677#
DT135 = 071124          1399    9677#
DT136 = 071124          1402    9677#
DT137 = 071164          1405    9677#
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DT142 = 071102          1414    9677#
DT143 = 071124          1417    9677#
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DT145 = 071102          1423    9677#
DT146 = 071124          1426    9677#
DT147 = 071102          1429    9677#
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DT151 = 071124          1435    9677#
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DT154 = 071124          1444    9677#
DT155 = 071102          1447    9677#
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DT157 = 071124          1453    9677#
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DT161 = 071102          1459    9677#
DT162 = 071124          1462    9677#
DT163 = 071102          .465    9677#
DT164 = 071102          1468    9677#
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DT171 = 071206          1483    9677#
DT172 = 071206          1486    9677#
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DT174 = 071252          1492    9677#
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DT213 = 071206          1537    9677#
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DT215 = 071102          1543    9677#
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DT217 = 071102          1549    9677#
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DT227 = 071152          1573    9677#
DT23  = 071152          1177    9677#
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DT306 =	071406	1714	9677#
DT307 =	071406	1717	9677#
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DT310 =	071406	1720	9677#

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DT372 = 000000          1870    9677#
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DT47  = 071206          1237    9677#
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DT54  = 071206          1252    9677#
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EEB8F1  014412          3655    3661    3667    3673    3692#   3713    3718
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EEBTP2  014372          3684#   3711
EEB1    014252          3652#
EEB10   014422          3663    3698#
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EEB2    014322          3662    3664#   3699    3701
EEB20   014504          3674    3718#
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EM355    064416            1831    9677#
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EM357    064620            1837    9677#
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EM40     044600            1216    9677#
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EM403    065056            1897    9677#
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EM406    065264            1906    9677#
EM407    065307            1909    9677#
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EM411    065473            1915    9677#
EM412    065517            1918    9677#
EM413    065542            1921    9677#
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EM415    065726            1927    9677#
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EM417    065777            1933    9677#
EM42     044654            1222    9677#
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EM43	044733	1225	9677#										
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		6050#	7308#	7396#	7484#	7572#	7662#	7752#	7852#	8853	8854#	8856#	8859#	9668#

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ERT2    042522          9488    9501    9521    9530    9558    9562#
ERT3    042526          9538    9546    9567#
ERT4    042536          9479    9569    9572#
ERT5    042550          9445    9577#
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FFBBF1  014702          3748    3754    3761    3767    3786#   3807    3812
FFBDON  015026          3771    3802    3809    3815    3822#
FFBTP1  014652          3747    3774#   3806
FFBTP2  014662          3778#   3805
FFB1    014542          3745#
FFB10   014712          3756    3792#
FFB15   014746          3764    3805#
FFB2    014612          3755    3758#   3793    3795
FFB20   014774          3768    3812#
FFB25   015012          3770    3818#
FFCDON  024736          5857    5872    5878    5891#
FFCTP1  024630          5846    5847*   5862#   5864
FFCTP2  024640          5845    5853    5864#   5869
FFC1    024540          5843#   5849
FFC10   024650          5854    5869#
FFC11   024666          5856    5875#
FFC2    024604          5851#   5883    5885
FFC20   024704          5850    5882#
FPSPUR  042554          2150    2778    2856    9590#   9667
FPVECT= 000244           816#   2130*   9667*
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GGBBF1  015172          3847    3879#
GGBDON  015316          3864    3895    3902    3908    3915#
GGBTP1  015142          3840    3867#   3899
GGBTP2  015152          3871#   3898
GGB1    015032          3838#
GGB10   015202          3849    3885#
GGB15   015236          3857    3898#
GGB2    015102          3848    3851#   3886    3888
GGB20   015264          3861    3905#
GGB25   015302          3863    3911#
GGCDON  025154          5921    5934    5940    5946    5959#
GGCTP1  025034          5907    5908*   5917    5926#   5931
GGC1    024742          5905#
GGC10   026046          5918    5931#
GGC11   026064          5920    5937#
GGC2    025002          5910    5913#   5943    5944    5951    5953
GGC20   025122          5912    5950#
GGC25   025102          5916    5943#
GNS   = ****** U         948    2108    8781    8790    9362    9363    9364    9365    9367    9369    9370    9371    9372
                        9373    9374
GTSWR = 104405          2103    9367#
HHBBF0  015462          3934    3947    3962    3966#   3991
HHBBF1  015472          3940    3952    3970#   3996
HHBDON  015616          3956    3986    3993    3999    4005#
HHBTP1  015432          3933    3959#   3990
HHBTP2  015452          3964#   3989
HHB1    015322          3931#
HHB10   015502          3942    3976#
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MMB15   015536          3950    3989#
MMB2    015372          3941    3944#   3977    3979
MMB20   015564          3953    3996#
MMB25   015602          3955    4001#
MMCDON  025406          5990    6004    6010    6016    6029#
MMCTP1  025260          5976    5977*   5995#
MMCTP2  025270          5975    5986    5997#   6001
MMC1    025160          5973#
MMC10   025300          5987    6001#
MMC11   025316          5989    6007#
MMC2    025226          5979    5982#   6013    6014    6021    6023
MMC20   025354          5981    6020#
MMC25   025334          5985    6013#
MT    = 000011           830#   9044    9085
IIBBF0  015762          4024    4037    4052    4058#   4083
IIBBF1  015772          4030    4042    4062#   4088
IIBDON  016116          4046    4078    4085    4091    4097#
IIBTP1  015732          4023    4049#   4082
IIBTP2  015752          4054#   4081
IIB1    015622          4021#
IIB10   016002          4032    4068#
IIB15   016036          4040    4081#
IIB2    015672          4031    4034#   4069    4071
IIB20   016064          4043    4088#
IIB25   016102          4045    4093#
IIC.    025522          6062    6073    6081#
IIC1    025412          6047#
IIC2    025440          6049    6055#   6066    6071
IIC20   025512          6050    6077#
IIC3    025460          6066#
IOTVEC= 000020           925#   2040*   2041*
JJBBF0  016256          4117    4123    4130    4135    4150#   4175    4180
JJBBF1  016266          4154#
JJBDON  016412          4139    4170    4177    4183    4188#
JJBTP1  016234          4116    4142#   4174
JJBTP2  016246          4146#   4173
JJB1    016122          4114#
JJB10   016276          4125    4160#
JJB15   016332          4133    4136    4173#
JJB2    016172          4124    4127#   4161    4163
JJB20   016360          4138    4180#
JJB25   016376          4185#
KKBBF0  016560          4207    4220    4235    4241#   4266
KKBBF1  016570          4213    4225    4245#   4271
KKBDON  016714          4229    4261    4268    4274    4280#
KKBTP1  016530          4206    4232#   4265
KKBTP2  016550          4237#   4264
KKB1    016416          4204#
KKB10   016600          4215    4251#
KKB15   016634          4223    4264#
KKB2    016466          4214    4217#   4252    4254
KKB20   016662          4226    4228    4271#
KKB25   016700          4276#
KKCDON  027232          6454    6551#
KKC1    025664          6156#
KKC10   026302          6293#
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KKC12   026376          6323#
KKC13   026434          6338#
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KKC16   026566          6383#
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KKC2    025722          6172#
KKC20   026756          6442#
KKC3    025760          6188#
KKC4    026016          6203#
KKC5    026054          6217#
KKC6    026112          6233#
KKC7    026150          6248#
KKC8    026206          6263#
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LDCFSU  027016          6158    6174    6190    6205    6219    6235    6250    6265    6280    6295    6310    6325    6340
                        6355    6370    6385    6400    6415    6429    6444    6487#
LDCT    027222          6496    6501    6521    6548#   6775    6781    6801
LDXSUB  031606          6846    6865    6885    6905    6926    6946    6967    6987    7006    7026    7046    7066    7087
                        7108    7129    7150    7201#
LDXT    032076          7218    7230    7231    7248    7278#
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LLBTP1  017020          4297    4320#   4352
LLBTP2  017030          4324#   4351
LLB1    016720          4295#
LLB10   017060          4305    4338#
LLB15   017114          4313    4351#
LLB2    016764          4304    4307#   4339    4341
LLB25   017142          4316    4357#
LLCDON  030240          6734    6824#
LLC1    027236          6567#
LLC10   027764          6720#
LLC2    027304          6583#
LLC3    027352          6600#
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LLC5    027466          6634#
LLC6    027534          6651#
LLC7    027602          6668#
LLC8    027650          6685#
LLC9    027716          6703#
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LPERR = 104413          2126    2193    2273    2328    2374    2481    2575    2658    2738    2811    2890    2914    2938
                        2962    2986    3135    3159    3183    3207    3231    3374    3413    3485    3528    3573    3653
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                        4816    4887    4956    5028    5110    5190    5215    5240    5265    5290    5315    5340    5365
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                        6204    6218    6234    6249    6264    6279    6294    6309    6324    6339    6354    6369    6384
                        6399    6414    6428    6443    6568    6584    6601    6618    6635    6652    6669    6686    6704
                        6721    6845    6864    6884    6904    6925    6945    6966    6986    7005    7025    7045    7065
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		8035	8054	8071	8088	8106	8123	8140	8157	8174	8191	8208	8225	8242
		8258	8275	8294	8312	8455	8489	8505	8523	8540	8557	8574	8693	9374#
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MM1DON	017430	4399	4431	4438	4444#									
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MM1TP2	017302	4407#	4434											
MM1	017162	4377#												
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MM12	017226	4386	4389#	4422	4424									
MM125	017414	4398	4440#											
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MS2	043015	9677#												
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NATBF1	023560	5454	5460	5481	5486	5508	5568#							
NATER1	023510	5505	5544#											
NATER2	023526	5531	5552#											
NATER3	023542	5540	5560#											
NATINS	023236	5464	5468#											
NATRET	023522	5545	5547	5549#	5553	5555	5557	5561	5563	5565				
NATSUB	023156	5191	5216	5241	5266	5291	5316	5341	5366	5391	5451#			
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NMBTP1	017532	4463	4485#	4501										
NMBTP2	017542	4475	4489#	4500										
NMB1	017434	4459#												
NMB10	017562	4478	4499#											
NMB11	017612	4502	4507#											
NMB15	017616	4481	4512#											
NMB2	017460	4465	4467#											
NMCDON	032340	7319	7333	7342	7352	7370#								
NMCTB0	032212	7302	7322#											
NMCTB1	032216	7310	7313	7315	7317	7323#	7328	7337	7347					

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NNC10   032226          7314    7327#
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NNC2    032160          7307    7312#   7359
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NNC25   032312          7308    7358#
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00BTP1  017750          4533    4538    4546    4552    4559#   4569    4575
00BTP2  017760          4534    4547    4563#   4570
00B1    017636          4531#
00B10   017770          4550    4569#
00B15   020010          4553    4575#
00B2    017704          4540    4544#
00B20   020026          4555    4581#
00CDON  032572          7407    7421    7430    7440    7458#
00CTB0  032444          7390    7410#
00CTB1  032450          7398    7401    7403    7405    7411#   7416    7425    7435
00C1    032344          7388#
00C10   032460          7402    7415#
00C15   032500          7404    7424#
00C2    032412          7395    7400#   7447
00C20   032522          7406    7434#
00C25   032544          7396    7446#
000DON  006724          2144    2167    2170    2174#
000T    006634          2130    2147#
0001    006570          2125#
0002    006614          2137#   2148
0003    006650          2149    2153#
0004    006716          2164    2169#
PIRQ  = 177772           837#
PIRQVE= 000240           931#
POWERM  042726          9412    9677#
PPBDON  020252          4626    4642    4648    4655#
PPBTP1  020160          4602    4607    4616    4622    4629#   4639    4645
PPBTP2  020170          4603    4617    4633#   4640
PPB1    020046          4599#
PPB10   020200          4620    4639#
PPB15   020220          4623    4645#
PPB2    020114          4609    4613#
PPB20   020236          4625    4651#
PPCDON  033024          7495    7509    7518    7528    7546#
PPCTB0  032676          7478    7498#
PPCTB1  032702          7486    7489    7491    7493    7499#   7504    7513    7523
PPC1    032576          7476#
PPC10   032712          7490    7503#
PPC15   032732          7492    7512#
PPC2    032644          7483    7488#   7535
PPC20   032754          7494    7522#
PPC25   032776          7484    7534#
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PPPBF1  007102          2206    2214    2221    2236#   2244    2250
PPPDON  007164          2219    2231    2246    2253#
PPPTP1  007116          2203    2222    2239#   2243    2249
PPP1    006730          2192#
PPP10   007126          2224    2226    2243#
PPP15   007146          2228    2230    2249#
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PPP4     007030          2215    2221#
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PRO    = 000000           854#
PR1    = 000040           855#
PR2    = 000100           856#
PR3    = 000140           857#
PR4    = 000200           858#
PR5    = 000240           859#
PR6    = 000300           860#
PR7    = 000340           861#
PS     = 177776           834#    835
PSW    = 177776           835#
PWRVEC= 000024            926#   2046*   2047*   9381*   9382*   9391*   9397*   9409*   9410*
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QQBTP1   020372          4671    4676    4685    4691    4698#   4710    4716
QQBTP2   020412          4672    4686    4704#   4711
QQB1     020256          4669#
QQB10    020422          4689    4710#
QQB15    020442          4692    4716#
QQB2     020326          4678    4682#
QQB20    020460          4694    4723#
QQCDON   033266          7584    7599    7608    7617    7635#
QQCTB0   033134          7566    7587#
QQCTB1   033140          7575    7580    7582    7588#   7603    7613
QQCTB2   033150          7574    7578    7582    7590#   7594    7612
QQC1     033030          7564#
QQC10    033154          7579    7593#
QQC15    033174          7581    7602#
QQC2     033102          7571    7577#   7624
QQC20    033216          7583    7612#
QQC25    033240          7572    7623#
QQQBF0   007330          2276    2311#   2329
QQQBF1   007344          2286    2293    2297    2300    2313#   2321    2338    2341    2344    2347    2356
QQQDON   007546          2299    2323    2346    2353    2358#
QQQTP1   007360          2283    2301    2315#   2320    2336    2348    2355
QQQ1     007170          2272#
QQQ10    007370          2303    2305    2307    2309    2320#
QQQ2     007206          2278#   2279
QQQ20    007410          2310    2327#
QQQ22    007424          2332#   2333
QQQ23    007456          2339    2340#
QQQ24    007504          2342    2347#
QQQ25    007530          2351    2355#
QQQ3     007244          2289    2291#
QQQ4     007272          2295    2300#
RDCHR  = 104407          9370#
RESREG= 104411           9372#
RLSVEC= 000010            921#   2057*   2064*
RRBDON   020714          4770    4787    4793    4800#
RRBTP1   020620          4745    4751    4752*   4760    4773#   4781    4784
RRBTP2   020630          4746    4761    4777#   4785
RRBTP3   020640          4750    4766    4781#   4790
RRB1     020500          4743#
RRB10    020642          4764    4784#
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RRB20   020700          4769    4796#
RRCDON  033532          7674    7689    7698    7708    7726#
RRCTB0  033400          7656    7677#
RRCTB1  033404          7665    7670    7672    7678#   7693    7703
RRCTB2  033414          7664    7668    7672    7680#   7684    7702
RRC1    033272          7654#
RRC10   033420          7669    7683#
RRC15   033440          7671    7692#
RRC2    033346          7661    7667#   7715
RRC20   033462          7673    7702#
RRC25   033504          7662    7714#
RRRDON  010070          2409    2438    2442    2448    2465#
RRREXP  007720          2399    2421#   2446
RRRTP1  007700          2376    2411#
RRRTP2  007710          2382    2416#
RRR1    007552          2373#
RRR10   007730          2384    2427#
RRR11   007752          2429    2434#
RRR12   007772          2431    2439#
RRR15   010024          2406    2408    2453#
RRR2    007630          2385    2394#
RRR25   010004          2403    2445#
RRR3    007632          2375    2395#   2400    2430    2435    2445    2453    2456    2458
RRR4    007656          2402#   2404
RSETUP= 104412          2175    2254    2359    2466    2560    2643    2723    2796    2874    3119    3360    3399    3471
                        3510    3556    3636    3729    3823    3916    4006    4098    4189    4281    4362    4445    4517
                        4586    4656    4728    4801    4873    4942    5014    5094    5176    5572    5641    5711    5767
                        5830    5892    5960    6030    6082    6136    6552    6825    7282    7371    7459    7547    7636
                        7727    7828    7928    7971    8015    8435    8471    8673    8748    9373#   9598    9615    9632
SAVREG= 104410          9371#
SPACE   042772          9498    9510    9514    9518    9556    9677#
SSBDON  021136          4842    4859    4865    4872#
SSBTP1  021042          4817    4823    4824#   4832    4845#   4853    4856
SSBTP2  021052          4818    4833    4849#   4857
SSBTP3  021062          4822    4838    4853#   4862
SSB1    020720          4815#
SSB10   021064          4836    4856#
SSB15   021104          4839    4862#
SSB2    020776          4825    4829#
SSB20   021122          4841    4868#
SSCDON  034004          7766    7780    7789    7799    7816    7827#
SSCTB0  033650          7746    7769#
SSCTB1  033654          7755    7760    7762    7764    7770#   7775    7784    7794
SSC1    033536          7744#
SSC10   033664          7761    7774#
SSC15   033704          7763    7783#
SSC2    033606          7751    7757#   7806
SSC20   033726          7765    7793#
SSC25   033750          7752    7805#
SSC30   034000          7759    7819#
SSSA1   010242          2493    2506    2518#   2556
SSSBF0  010232          2483    2497    2499    2514#   2547    2552
SSSDON  010400          2511    2543    2549    2555    2559#
SSSTP1  010252          2489    2500    2524#   2553
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SSSTP2  010262          2528#   2557
SSS1    010074          2480#
SSS10   010272          2491    2534#
SSS11   010314          2536    2538    2541#
SSS15   010324          2498    2546#
SSS2    010152          2492    2495#   2535    2537
SSS20   010342          2503    2552#
SSS25   010362          2509    2556#
STACK = 001100           825#   2038    9671
START   006106           952    2031#   9414
STCDFS  013024          3136    3160    3184    3208    3232    3285#
STCDT   013306          3291    3298    3307    3313    3331    3357#
STCFDS  012170          2891    2915    2939    2963    2987    3044#
STCFT   012452          3050    3057    3066    3072    3090    3116#
STCIBF  036132          8365    8372    8381    8386    8404    8431#
STCSUB  035652          8036    8055    8072    8089    8107    8124    8141    8158    8175    8192    8209    8226    8243
                        8259    8276    8295    8313    8360#   8456
STKLMT= 177774           836#
STXBF   036712          8626*   8627*   8634    8639    8640    8642    8663    8669#
STXSUB  036504          8490    8506    8524    8541    8558    8575    8620#
SWR     001140           980#   2036    2072*   2074    2080*   2087*   2101    8816    8848    8862    8864    8870    8877
                        8916    8923    8935    8939    8950    9232    9269*   9389    9402*   9660
SWREG   000176           950#   2080    2101    9232    9245
SW0   = 000001           889#
SW00  = 000001           879#    889
SW01  = 000002           878#    888
SW02  = 000004           877#    887
SW03  = 000010           876#    886
SW04  = 000020           875#    885
SW05  = 000040           874#    884
SW06  = 000100           873#    883
SW07  = 000200           872#    882
SW08  = 000400           871#    881
SW09  = 001000           870#    880
SW1   = 000002           888#
SW10  = 002000           869#
SW11  = 004000           868#
SW12  = 010000           867#
SW13  = 020000           866#
SW14  = 040000           865#
SW15  = 100000           864#
SW2   = 000004           887#
SW3   = 000010           886#
SW4   = 000020           885#
SW5   = 000040           884#
SW6   = 000100           883#
SW7   = 000200           882#
SW8   = 000400           881#
SW9   = 001000           880#
TAB   = 000011           819#   9677
TBITVE= 000014           922#   2054*   2055*
TCCBF0  025640          6103    6111    6115    6130#
TCCBF1  025660          6107    6132#
TCCDON  025660          6117    6120    6126    6135#
TCC1    025526          6098#
TCC2    025550          6100    6104#
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TCC3     025614            6112    6119#
TKVEC  = 000060             929#
TPVEC  = 000064             930#
TRAPVE= 000034              928#    2044#   2045#
TRTVEC= 000014              923#
TST1     006566            2123#
TST10    011122            2735#
TST11    011356            2808#
TST12    011630            2886#
TST13    012464            3131#
TST14    013320            3371#
TST15    013420            3411#
TST16    013632            3483#
TST17    013732            3525#
TST2     007726            2190#
TST20    014032            3570#
TST21    014250            3650#
TST22    014540            3743#
TST23    015030            3836#
TST24    015320            3929#
TST25    015620            4019#
TST26    016120            4112#
TST27    016414            4202#
TST3     007166            2269#
TST30    016716            4294#
TST31    017160            4375#
TST32    017432            4457#
TST33    017634            4529#
TST34    020044            4598#
TST35    020254            4668#
TST36    020476            4741#
TST37    020716            4814#
TST4     007550            2371#
TST40    021140            4885#
TST41    021350            4954#
TST42    021576            5026#
TST43    022040            5107#
TST44    022312            5187#
TST45    023574            5587#
TST46    023754            5655#
TST47    024132            5725#
TST5     010072            2478#
TST50    024326            5779#
TST51    024536            5842#
TST52    024740            5904#
TST53    025156            5972#
TST54    025410            6045#
TST56    025524            6096#
TST56    025662            6151#
TST57    027234            6565#
TST6     010402            2572#
TST60    030242            6841#
TST61    032110            7297#
TST62    032342            7385#
TST63    032574            7474#
TST64    033026            7562#
```

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TST65   033270          7651#
TST66   033534          7741#
TST67   034006          7842#
TST7    010652          2655#
TST70   034272          7941#
TST71   034376          7984#
TST72   034502          8031#
TST73   036144          8450#
TST74   036214          8485#
TST75   036726          8690#
TST76   037132          8754#
TTBDON  021346          4912    4928    4934    4941#
TTBTP1  021254          4888    4893    4902    4908    4915#   4925    4931
TTBTP2  021264          4889    4903    4919#   4926
TTB1    021142          4886#
TTB10   021274          4906    4925#
TTB15   021314          4909    4931#
TTB2    021210          4895    4899#
TTB20   021332          4911    4937#
TTCDON  034270          7867    7882    7892    7902    7918    7927#
TTCTB0  034130          7846    7870#
TTCTB1  034134          7856    7863    7865    7871#   7887    7897
TTCTB2  034144          7855    7861    7873#   7877
TTC1    034010          7844#
TTC10   034150          7862    7876#
TTC15   034170          7864    7886#
TTC2    034066          7851    7858#   7909
TTC20   034212          7866    7896#
TTC25   034234          7852    7908#
TTC30   034264          7860    7921#
TTTA1   010536          2608#
TTTA2   010540          2581*   2588    2592    2609#   2634
TTTA3   010542          2610#
TTTBF0  010524          2576    2581    2594    2603#   2609    2639
TTTDON  010650          2600    2630    2636    2642#
TTTTP1  010550          2584    2595    2613#   2640
TTT1    010404          2574#
TTT10   010560          2586    2619#
TTT11   010602          2621    2623    2627#
TTT15   010614          2593    2633#
TTT2    010470          2587    2590#   2620    2622
TTT20   010632          2598    2639#
TTT3    010514          2597#   2599
TYPE  = 104401          2095    8779    8788    8797    8918    8926    9049    9146    9243    9244    9247    9260    9271
                        9290    9362#   9411    9432    9460    9462    9467    9469    9497    9509    9513    9517    9536
                        9544    9555    9562    9572
TYPOC = 104402          9246    9363#   9444    9487    9496    9500    9508    9512    9516    9520    9554
TYPON = 104404          9365#
TYPOS = 104403          8785    8794    9364#   9527
UUBDON  021574          4984    4996    5002    5013#
UUBTP1  021426          4958    4962    4963*   4970#   4974    4993    5007
UUBTP2  021500          4957    4975    4987#   4994
UUB1    021352          4955#
UUB10   021510          4978    4993#
UUB15   021546          4981    5005#
UUB2    021424          4964    4969#
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UUB20	021530	4983	4999#					
UUCBF0	034366	7949	7953	7958	7968#			
UUCDON	034374	7954	7963	7970#				
UUCTP1	034354	7946	7965#					
UUC1	034274	7942#						
UUC2	034324	7948	7951#					
UUC3	034334	7957#						
UUUA1	011006	2664*	2689#					
UUUA2	011010	2671	2673	2690#	2714			
UUUA3	011012	2691#						
UUUBF0	010774	2659	2664	2675	2684#	2689	2719	
UUUDON	011120	2681	2710	2716	2722#			
UUUTP1	011020	2667	2676	2694#	2720			
UUU1	010654	2657#						
UUU10	011030	2669	2700#					
UUU11	011052	2702	2704	2707#				
UUU15	011064	2674	2713#					
UUU2	010740	2670	2672#	2701	2703			
UUU20	011102	2679	2719#					
UUU3	010764	2678#	2680					
VVBDON	014030	3542	3548	3555#				
VVB1	013734	3527#						
VVB10	013776	3539	3545#					
VVB15	014014	3541	3551#					
VVB2	013752	3531	3533#					
VVCBF0	034472	7993	7997	8002	8012#			
VVCDON	034500	7998	8007	8014#				
VVCTP1	034460	7990	8009#					
VVC1	034400	7986#						
VVC2	034430	7992	7995#					
VVC3	034440	8001#						
VVVBF0	011244	2741	2750	2754	2756	2763#	2787	2792
VVVDON	011354	2762	2783	2789	2795#			
VVVTP1	011254	2747	2757	2767#	2793			
VVV1	011124	2737#						
VVV10	011264	2746	2773#					
VVV11	011306	2775	2777	2780#				
VVV15	011320	2755	2786#					
VVV2	011206	2749	2752#	2774	2776			
VVV20	011336	2760	2792#					
WWBDON	023572	5413	5571#					
WWB1	022314	5189#						
WWB2	022372	5214#						
WWB3	022450	5239#						
WWB4	022526	5264#						
WWB5	022604	5289#						
WWB6	022662	5314#						
WWB7	022740	5339#						
WWB8	023016	5364#						
WWB9	023074	5389#						
WWCDON	036142	8326	8434#					
WWC1	034604	8034#						
WWC10	035144	8173#						
WWC11	035210	8190#						
WWC12	035254	8207#						
WWC13	035320	8224#						

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WWC14   035364          8241#
WWC15   035430          8257#
WWC16   035474          8274#
WWC17   035540          8293#
WWC18   035604          8311#
WWC2    034550          8053#
WWC4    034614          8070#
WWC5    034660          8087#
WWC6    034724          8105#
WWC7    034770          8122#
WWC8    035034          8139#
WWC9    035100          8156#
WWWBF0  011506          2814    2825    2830    2837#   2865    2870
WWWBF1  011526          2823    2825*   2828    2845#
WWWDON  011626          2836    2861    2867    2873#
WWWTP1  011516          2820    2831    2841#   2871
WWW1    011360          2810#
WWW10   011536          2819    2851#
WWW11   011560          2853    2855    2858#
WWW15   011572          2829    2864#
WWW2    011450          2822    2826#   2852    2854
WWW20   011610          2834    2870#
XXBDON  022036          5056    5073    5079    5085    5093#
XXBTP1  021724          5029    5034    5035*   5046    5052    5059#   5076    5082
XXBTP2  021734          5030    5047    5063#   5077
XXB1    021600          5027#
XXB10   021764          5050    5076#
XXB15   022004          5053    5082#
XXB2    021652          5036    5041#   5070    5071
XXB20   022022          5055    5089#
XXB25   021744          5045    5070#
XXCDON  036212          8470#
XXC1    036146          8454#
XXXDON  012462          3007    3118#
XXX1    011632          2889#
XXX2    011706          2913#
XXX3    011762          2937#
XXX4    012036          2961#
XXX5    012112          2985#
YYBDON  022310          5139    5156    5162    5168    5175#
YYBTP1  022174          5111    5117    5118*   5129    5142#   5150    5159
YYBTP2  022204          5112    5130    5146#   5160
YYBTP3  022214          5116    5135    5150#   5165
YYB1    022042          5109#
YYB10   022236          5133    5159#
YYB15   022256          5136    5165#
YYB2    022122          5119    5124#   5153    5154
YYB20   022274          5138    5171#
YYB25   022216          5128    5153#
YYCDON  036724          8587    8672#
YYC1    036216          8488#
YYC2    036254          8504#
YYC3    036312          8522#
YYC4    036350          8539#
YYC5    036406          8556#
YYC6    036444          8573#
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YYYDON  013316          3252    3359#
YYY1    012466          3134#
YYY2    012542          3158#
YYY3    012616          3182#
YYY4    012672          3206#
YYY5    012746          3230#
ZZCBF   037116          8699    8706    8743#
ZZCDON  037130          8720    8725    8731    8734    8739    8747#
ZZC1    036730          8692#
ZZC10   037070          8717    8728#
ZZC12   037104          8729    8732#
ZZC15   037110          8719    8737#
ZZC2    036740          8697#   8710    8716
ZZC3    036766          8702    8703#
ZZC5    037064          8715    8723#
ZZZDON  013416          3386    3392    3398#
ZZZ1    013322          3373#
ZZZ10   013364          3383    3389#
ZZZ15   013402          3385    3395#
ZZZ2    013340          3377    3378#
$APTHD  006072          2016    2022#
$ASTAT= ******  U       9178    9213
$ATYC   040772          9169    9171#
$ATY1   040746          9167#
$ATY3   040754          9034    9168#
$ATY4   040764          8931    9170#
$AUTOB  001134           977#   2105#   9240    9330
$BASE   001372          1083#
$BDADR  001122           972#
$BDDAT  001126           974#
$BELL   001306          1034#   8918    8959
$CDW1   001376          1085#
$CDW2   001400          1086#
$CHARC  040514          9051#   9061#   9068    9077#   9082#
$CKSWR  041214          9232#   9369
$CLR.T  037334          8802    8805#
$CMTAG  001100           960#   2033    2034    2042    2048    2049    2050
$CM1  = 000024           992#    993#    994#    995#    996#    997#    998#    999#   1000#   1001#   1002#   1003#   1004#
                        1005#   1006#   1007#   1008#   1009#   1010#   1011#   1012#
$CM2  = 000050           992#    993#    994#    995#    996#    997#    998#    999#   1000#   1001#   1002#   1003#   1004#
                        1005#   1006#   1007#   1008#   1009#   1010#   1011#   1012#
$CM3  = 000024           990#    992
$CM4  - 000024          1012#   1013#   1014#   1015#   1016#   1017#   1018#   1019#   1020#   1021#   1022#   1023#   1024#
                        1025#   1026#   1027#   1028#   1029#   1030#   1031#   1032#
$CNTLG  041623          9243    9325#
$CNTLU  041616          9260    9324#
$CPUOP  001344          1057#
$CRLF   001313          1036#   8797    8926    8959    9050    9085    9271    9433    9463    9470    9573    9677
$DDW0   001402          1087#
$DDW1   001404          1088#
$DDW10  001426          1097#
$DDW11  001430          1098#
$DDW12  001432          1099#
$DDW13  001434          1100#
$DDW14  001436          1101#
$DDW15  001440          1102#
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$DDW2   001406          1089#
$DDW3   001410          1090#
$DDW4   001412          1091#
$DDW5   001414          1092#
$DDW6   001416          1093#
$DDW7   001420          1094#
$DDW8   001422          1095#
$DDW9   001424          1096#
$DEVCT  001326          1048#
$DEVM   001374          1084#
$DORGN  037354          8775    8800    8807    8813#
$ENDRD  037344          2003    2093    8809#   8946
$ENDCT  037166          2048    8777#
$ENULL  037420          8829#
$ENV    001336          1053#   2099    8928    9029    9176    9200
$ENVM   001337          1054#   2085    9031    9036    9178
$EOP    037132          8767#   9603    9620    9637
$EOPCT  037160          2048*   8774#   8778
$ERFLG  001103           963#   8837    8866    8868    8874*   8896    8913*   8959
$ERMAX  001115           969#   2051*   8868    8891*   8896
$ERROR  037704          2042    8911#
$ERRPC  001116           970#   8920*   8921*   8922    8959    9436    9443
$ERRTB  001442          1121#   9456
$ERTTL  001112           967#   8792    8798*   8919*   8959
$ESCAP  001304          1033#   2050*   8890*   8942    8944    8959
$ETABL  001336          1052#
$ETEND  001442          1105#   2028
$FATAL  001320          1045#   9204*
$FFLG   041212          9167*   9170*   9198    9207*   9215#
$FILLC  001156           988#   9054    9085
$FILLS  001155           987#   9085
$GOADR  001120           971#
$GOOAT  001124           973#
$GET42  037316          8799#
$GTSWR  041264          9244#   9367
%HD   = 000003           812     813
$HIBTS  006072          2023#
$ICNT   001104           964#   8881*   8882    8884*   8895
$ILLUP  042114          9381    9397    9418#
$INTAG  001135           978#   9272    9330
$ITEMB  001114           968#   8922*   8930    8959    9439
$LF     001314          1037#   8959    9085
$LFLG   041211          9208*   9214#
$LOOP   037412          8821    8825#
$LPADR  001106           965#   2066*   8872*   8888*   8893    8895
$LPERR  001110           966#   2067*   8872    8889*   8895    8941    9647*
$MADR1  001350          1070#
$MADR2  001354          1074#
$MADR3  001360          1077#
$MADR4  001364          1080#
$MAIL   001316          1043#   2024    2028    2084    2099    8887    8928    9029
$MAMS1  001346          1064#
$MAMS2  001352          1072#
$MAMS3  001366          1075#
$MAMS4  001362          1078#
$MBADP  006074          2024#
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$MFLG   041210          9168#  9174   9209#  9213#
$MNEW   041641          9247   9328#
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$MSGLG  001334          1051#  9189#
$MSGTY  001316          1044#  9182   9190#  9202   9206#
$MSWR   041630          9244   9326#
$MTYP1  001347          1065#
$MTYP2  001353          1073#
$MTYP3  001357          1076#
$MTYP4  001363          1079#
$MXCNT  037702          8885   8895#
$NULL   001154           986#  9056   9085
$NWTST= 000001          2117#  2119   2184#  2186   2263#  2265   2365#  2367   2472#  2474   2566#  2568   2649#
                        2651   2729#  2731   2802#  2804   2880#  2882   3125#  3127   3365#  3367   3405#  3407
                        3477#  3479   3516#  3518   3562#  3564   3642#  3644   3735#  3737   3828#  3830   3921#
                        3923   4011#  4013   4104#  4106   4194#  4196   4286#  4288   4367#  4369   4450#  4452
                        4522#  4524   4591#  4593   4661#  4663   4734#  4736   4807#  4809   4878#  4880   4947#
                        4949   5019#  5021   5100#  5102   5181#  5183   5580#  5582   5648#  5650   5718#  5720
                        5772#  5774   5835#  5837   5897#  5899   5965#  5967   6038#  6040   6089#  6091   6144#
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        3525   3570  3650  3743  3836  3929  4019  4112  4202  4294  4375  4457  4529  4598  4668
        4741   4814  4885  4954  5026  5107  5187  5587  5655  5725  5779  5842  5904  5972  6045
        6096   6151  6565  6841  7297  7385  7474  7562  7651  7741  7842  7941  7984  8031  8450
        8485   8690  8768
SETPRI     1#   932#
SETTRA  9354#  9363  9364  9365  9367  9369  9370  9371  9372  9373  9374
SETUP      1#   932#  2031
SKIP       1#   932#
SLASH      1#   932#
SPACE    932#
SRM1    9677#
SSKAD    793#
STARS      1#   932#   955  1038  1041  1999  2009  2011  2018  2117  2122  2184  2189  2263  2268
        2365   2370  2472  2477  2566  2571  2649  2654  2729  2734  2802  2807  2880  2885  3125
        3130   3365  3370  3405  3410  3477  3482  3516  3524  3562  3569  3642  3649  3735  3742
        3828   3835  3921  3928  4011  4018  4104  4111  4194  4201  4286  4293  4367  4374  4450
        4456   4522  4528  4591  4597  4661  4667  4734  4740  4807  4813  4878  4884  4947  4953
        5019   5025  5100  5106  5181  5186  5580  5586  5648  5654  5718  5724  5772  5778  5835
        5841   5897  5903  5965  5971  6038  6044  6089  6095  6144  6150  6559  6564  6832  6840
        7290   7296  7378  7384  7467  7473  7555  7561  7644  7650  7734  7740  7835  7841  7934
        7940   7977  7983  8021  8030  8442  8449  8478  8484  8679  8689  8760  8834  8899  8962
        9008   9098  9166  9224  9227  9295  9333  9379  9395  9424  9584  9607  9624  9644  9651
STCDM1  9677#
STCDM2  9677#
STCFM1  9677#
STCFM2  9677#
STFM1   9677#
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STM1	9677#														
STM2	9677#														
STM3	9677#														
STM4	9677#														
SUMMAC	792#														
SWRSU	1#	932#	2068#												
TMAC	780#	8754													
TRM	9677#														
TRMTRP	9354#	9375													
TYPBIN	1#	932#													
TYPDEC	1#	932#													
TYPNAM	1#	932#	2089												
TYPNUM	1#	932#													
TYPOCS	1#	932#	8783	8792											
TYPOCT	1#	932#	9245												
TYPTXT	1#	932#	8779	8788											
$$CMRE	953#	992	993	994	995	996	997	998	999	1000	1001	1002	1003	1004	1005
	1006	1007	1008	1009	1010	1011									
$$CMTM	953#	1012	1013	1014	1015	1016	1017	1018	1019	1020	1021	1022	1023	1024	1025
	1026	1027	1028	1029	1030	1031									
$$ESCA	1#	932#													
$$NEWT	1#	932#	2117	2184	2263	2365	2472	2566	2649	2729	2802	2880	3125	3365	3405
	3477	3516	3562	3642	3735	3828	3921	4011	4104	4194	4286	4367	4450	4522	4591
	4661	4734	4807	4878	4947	5019	5100	5181	5580	5648	5718	5772	5835	5897	5965
	6038	6089	6144	6559	6832	7290	7378	7467	7555	7644	7734	7835	7934	7977	8021
	8442	8478	8679												
$$SET	9354#	9363	9364	9365	9367	9369	9370	9371	9372	9373	9374				
$$SETM	2084#														
$$SETU	2052#														
$$SKIP	1#	932#													
EQUAT	1#	800#	822												
HEADE	1#	800#	802												
KT11	1#														
SETUP	1#	800#	941												
SWRHI	1#	800#													
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$APTY	1#	800#	9164												
$ASTA	1#														
$CATC	1#	800#	942												
$CMTA	1#	800#	953												
$DB2D	1#														
$DB2O	1#														
$DIV	1#														
$EOP	1#	800#	8758												
$ERRO	1#	800#	8897												
$ERRT	1#														
$MULT	1#														
$POWE	1#	800#	9377												
$RAND	1#														
$RDOE	1#														
$RDOC	1#														
$READ	1#	800#	9222												
$R2AZ	1#														
$SAVE	1#	800#	8960												

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 $SB2D       1#
 $SB2O       1#
 $SCOP       1#     800#    8832
 $SIZE       1#
 $SUPR       1#
 $TRAP       1#     800#    9331
 $TYPB       1#
 $TYPD       1#     800#
 $TYPE       1#     800#    9006
 $TYPO       1#     800#    9086
 $4OCA       1#
 1170        1#


  ABS   071672      000


ERRORS DETECTED   0

CFFPCB.BIN,CFFPCB LST/CRF/SOL/NL TOC=CFFPCB SML,CFFPCB P11
RUN-TIME   31 39 7 SECONDS
RUN-TIME RATIO  248/78=3 1
CORE USED   40K  (79 PAGES)
```