FP11

LDCJX, STCXJ

MD-11-DCFPJ-B

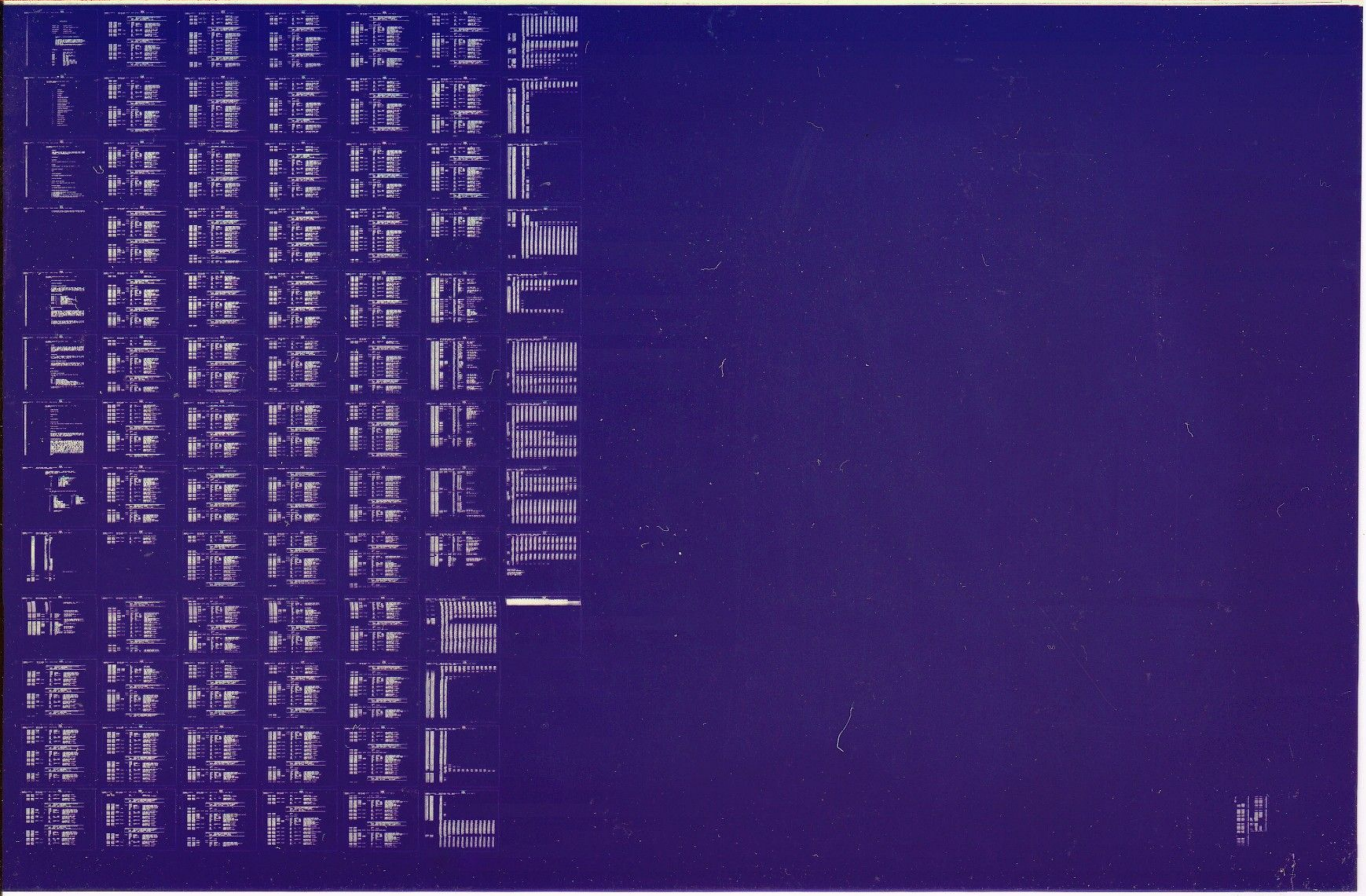
EP-DCFPJ-B-DL-A

OCT 1976

digital

FICHE 1 OF 1

Made in U.S.A.



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IDENTIFICATION

PRODUCT CODE: MAINDEC-11-DCFPJ
PRODUCT NAME: FP11 BASIC INSTRUCTION TESTS
DATE CREATED: MARCH 12, 1973
MAINTAINER: DIAGNOSTIC GROUP
AUTHORS: BOB BRAIN & KEN CHAPMAN

MAINDEC NO.	INSTRUCTIONS TESTED
DCFPA	LDFPS, STFPS, SETI, SETL SETF, SETD, CFCC
DCFPB	STST
DCFPC	LDF, LDD, STF, STD
DCFPD	ADDF, ADDD, SUBF, SUBD
DCFDE	CMDF, CMPD
DCFPF	MULF, MULD
DCFPG	DIVF, DIVD
DCFPH	CLRF, CLRD, TSTF, TSTD ABSF, ABSD, NEGF, NEGD
DCFPI	LDCFD, LCCDF, STCFD, STCDF
DCFPJ	LDCIF, LDCLF, LDCID, LDCLD STCFI, STCFL, STCDI, STCDL
DCFPK	LDEXP, STEXP
DCFPL	MODF, MODD

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DESCRIPTION

1. ABSTRACT

THESE PROGRAMS TEST THE FP11 IN ALL MODES WITH FIXED NUMBER PATTERNS. THE PROGRAMS SHOULD BE RUN IN ORDER FOR AT LEAST 2 PASSES WITH ALL SWITCHES DOWN.

2. REQUIREMENTS

2.1 EQUIPMENT

PDP11/45 STANDARD COMPUTER WITH FP11 OPTION

2.2 STORAGE

PROGRAM STORAGE - THE ROUTINES USE MEMORY 0 - 17776

2.3 PRELIMINARY PROGRAMS

NONE

3. LOADING PROCEDURE

USE STANDARD PROCEDURE FOR ABS TAPES.

4. STARTING PROCEDURE

4.1 CONTROL SWITCH SETTINGS

SEE 5.1.1 (ALL DOWN FOR WORST CASE TESTING)

4.2 STARTING ADDRESS

THE PROGRAM SHOULD ALWAYS BE STARTED AT 200.

4.3 PROGRAM AND/OR OPERATOR ACTION

1) LOAD PROGRAM INTO MEMORY USING ABS LOADER.
2) LOAD ADDRESS 200.
3) SET SWITCHES (SEE SEC 5.1.1) ALL DOWN FOR WORST CASE
4) PRESS START.
5) THE PROGRAM WILL LOOP AND BELL WILL RING ONCE EVERY PASS
6) A MINIMUM OF TWO PASSES SHOULD ALWAYS BE RUN.

```
                        7) THE DISPLAY ON THE 11/45 WILL SHOW THE ITERATION COUNT IN
                        THE LEFT BYTE AND TEST NUMBER IN THE RIGHT.  TO USE, SET THE
```

DESCRIPTION

DATA DISPLAY SWITCH TO THE DISPLAY POSITION.

5. OPERATING PROCEDURE

5.1 OPERATIONAL SWITCH SETTINGS

AT SA 200 .. ALL SWITCHES DOWN IS WORST CASE TESTING. IF AN ERROR OCCURS, THAT TEST WILL BE LOOPED UPON UNTIL COMPLETION OF 256 CONSECUTIVE PASSES WITH NO ERRORS OF THE SUBTEST IF SW<9> SET TO A 1. THE BELL WILL RING UPON COMPLETION OF A PASS.

5.1.1 SWITCH SETTINGS ARE:

```
SW<15> = 1 ..... HALT ON ERROR
SW<14> = 1 ..... SCOPE LOOP
SW<13> = 1 ..... INHIBIT PRINTOUT
SW<12> = 1 ..... INHIBIT TRACE TRAPPING
SW<11> = 1 ..... INHIBIT ITERATIONS OF SUBTEST
SW<10> = 1 ..... BELL ON ERROR
         0 ..... BELL ON PASS COMPLETE
SW<09> = 1 ..... LOOP ON ERROR
SW<08> = 1 ..... LOOP ON TEST IN SW<7:0>
         0 ..... LOAD SW<7:0> INTO UB REGISTER
```

5.2 SUBROUTINE ABSTRACTS

5.2.1 SCOPE

THIS SUBROUTINE CALL IS PLACED BETWEEN EACH SUBTEST IN THE INSTRUCTION SECTION. IT RECORDS THE STARTING ADDRESS OF EACH SUBTEST AS IT IS BEING ENTERED IN LOCATION "LAD". IF A SCOPE LOOP IS REQUESTED, THE CURRENT SUBTEST WILL BE LOOPED UPON. SW<11> ON A 1 INHIBITS ITERATION OF SUBTESTS. THE CONTENTS OF LAD MAY BE USED TO DETERMINE THE LAST SUBTEST SUCCESSFULLY COMPLETED.

5.2.2 HLT

THIS ROUTINE PRINTS OUT AN ERROR MESSAGE (SEE 6.1.) IF A HLT IS EXECUTED. THE SUBTEST WILL BE LOOPED UPON UNTIL 256 CONSECUTIVE GOOD PASSES ARE COMPLETED IF SW<9> IS ON A 1. TO INHIBIT TYPEOUTS, PUT SW<13> ON A 1.

5.2.3 TRTRAP

IF SW(12) IS ON A 0, THE T BIT WILL BE SET ON ALTERNATE PASSES. WHEN SET, IT CAUSES A TRAP AFTER EACH INSTRUCTION. THE FIRST INSTRUCTION EXECUTED UPON TRAPPING IS AN "RTT" WHICH RETURNS TO THE INTERRUPTED SEQUENCE OF INSTRUCTIONS. THIS SEQUENCE IS CONTINUED UNTIL THE END OF THE PROGRAM IS REACHED.

5.2.4 TRAPCATCHER

A ".+2" - "HALT" SEQUENCE IS REPEATED FROM 0 - 776 TO CATCH ANY UNEXPECTED TRAPS. THUS ANY UNEXPECTED TRAPS OR INTERUPTS WILL HALT AT THE VECTOR + 2.

5.2.5 FLOATING POINT TRAP (TO 244)

THE FP11 INTERRUPT DISABLE BIT IS ALWAYS SET IN ALL OF THESE TESTS (EXCEPT DCFPA) SO NO TRAPS TO 244 SHOULD OCCUR. IF AN INTERRUPT OCCURS, THE PROGRAM WILL HALT AT 766 IN THE ROUTINE CALLED FLTERR AND DISPLAY THE FPS REGISTER IN R0.

6. ERRORS

6.1 ERROR PRINTOUT

THE FORMAT IS AS FOLLOWS:

```
ADR  FPS  ANS1 ANS2 ANS3 ANS4 ANS5 ANS6 ANS7 ANS8
  FEC FEA
```

WHERE:

```
ADR    = ADDRESS OF ERROR HLT
FPS    = FLOATING POINT STATUS
FEC    = FLOATING EXCEPTION CODES (ERROR CODES)
FEA    = FLOATING EXCEPTION ADDRESS (ERROR ADDRESS)
ANS1-8 = ERROR DATA READ FROM THE FP11.  FROM 0-8  OF  THESE
         MAY  BE TYPED DEPENDING ON THE NUMBER FOLLOWING THE
         HLT; I.E., HLT+3 WOULD TYPE ANS1-ANS3.
```

TO FIND THE FAILING TEST, LOOK AT THE LISTING ABOVE THE ADDRESS TYPED.

6.2 ERROR RECOVERY

RESTART AT 200

7. RESTRICTIONS

NONE

8. MISCELLANEOUS

8.1 EXECUTION TIME

A BELL WILL RING WITHIN 15 SECONDS WITH ALL SWITCHES DOWN.

8.2 STACK POINTER

STACK IS INITALLY SET TO 600

8.3 POWER FAIL

EACH TEST CAN BE POWER FAILED WITH NO ERRORS EXCEPT ON THE FEC AND FEA. TO USE, START THE TEST AS USUAL AND POWER DOWN THEN UP AT ANY TIME. THE PROGRAM SHOULD TYPE "POWER" AND CONTINUE TO RUN WITH NO OTHER TYPEOUTS.

9. PROGRAM DESCRIPTION

THESE PROGRAMS TEST ALL THE INSTRUCTIONS ON THE FP11 IN ALL MODES. EACH PROGRAM HAS MANY SUBTESTS (THE CODE BETWEEN 2 SCOPE STATEMENTS) WHICH ARE RUN 256 TIMES BEFORE CONTINUING TO THE NEXT. SW<11> ON A 1 CAUSES EACH SUBTEST TO BE RUN ONLY ONCE. SW<9> ON A 1 ENABLES LOOP ON ERROR. THE ADDRESS ICNT (LOC 1000) AND DISPLAY REGISTER ON THE 11/45 EACH CONTAIN THE ITERATION COUNT IN THE LEFT BYTE AND THE TEST NUMBER IN THE RIGHT BYTE. ALL THE SUBTESTS SHOULD BE RUN SEQUENTIALLY BY STARTING AT 200 NOT BY STARTING AT THE BEGINNING OF THE SUBTEST. TO LOOP ON A PARTICULAR SUBTEST, PUT THE TEST NUMBER (SEE LISTING) IN THE RIGHT BYTE OF THE SWITCH REGISTER AND SW<8> ON A 1. THIS TEST WILL BE LOOPED UPON UNTIL SW<8> IS PUT ON A 0 OR THE RIGHT BYTE IS CHANGED. IF THE TEST IS NON-EXISTANT, THE PROGRAM WILL BE RUN AS USUAL.

.ENDR

```
.TITLE  MAINDEC-11-DCFPJ-B      TEST OF LDCJX, STCXJ
;COPYRIGHT 1972, DIGITAL EQUIPMENT CORP., MAYNARD, MASS
;PROGRAM BY KEN CHAPMAN
.REM*
```

SWITCH	USE
8	0 - LOAD UB REGISTER WITH SW<7:0> 1 - LOOP ON TEST IN SW<7:0>
9	LOOP ON ERROR
10	0 - BELL ON PASS COMPLETE 1 - BELL ON ERROR
11	INHIBIT ITERATIONS
12	INHIBIT TRACE TRAP
13	INHIBIT ERROR TYPEOUTS
14	LOOP ON TEST
15	HALT ON ERROR

OUTPUT FORM:

```
ADR  FPS  ANS1 ANS2 ANS3 ANS4 ANS5 ANS6 ANS7 ANS8
   FEC  FEA
```

FPS BIT	REASON	FEC CODE	ERROR
0	CARRY	0	ADDRESS ERROR
1	OVERFLOW	2	OPCODE ERROR
2	ZERO	4	DIVIDE BY ZERO
3	NEGATIVE	6	CONVERSION ERROR
4	MAINTAINANCE MODE	10	OVERFLOW
5	TRUNCATE MODE	12	UNDERFLOW
6	LONG INTEGER MODE	14	UNDEFINED VARIABLE (-0)
7	DOUBLE PRECISION MODE	16	UBREAK TRAP
8	INTERUPT ON CONVERSION ERROR		
9	INTERUPT ON OVERFLOW		
10	INTERUPT ON UNDERFLOW		
11	INTERUPT ON UNDEFINED VARIABLE		
12			
13			
14	INTERUPT DISABLE		
15	ERROR FLAG*		

```
                                .ENABL  ABS
                        000001  N=      1
                        177776  PS=     177776
                        177570  SWR=    177570
                        177570  DISPLAY=SWR
                        104400  SCOPE=  TRAP
                        104000  HLT=    EMT
                        000004  TYPE=   IOT
                        000207  BELL=   207
                        000000  FPS=    %0
                        000000  R0=     %0
                        000001  R1=     %1
                        000002  R2=     %2
                        000003  R3=     %3
                        000004  R4=     %4
                        000005  R5=     %5
                        000005  TTY=    %5
                        000006  SP=     %6
                        000007  PC=     %7
                        000000  AC0=    %0
                        000001  AC1=    %1
                        000002  AC2=    %2
                        000003  AC3=    %3
                        000004  AC4=    %4
                        000005  AC5=    %5
                        100000  SW15=   100000
                        040000  SW14=    40000
                        020000  SW13=    20000
                        010000  SW12=    10000
                        004000  SW11=     4000
                        002000  SW10=     2000
                        001000  SW09=     1000
                        000400  SW08=      400
                        170003  LDUB=   170003
                        170005  STA0=   170005
                        170007  STQ0=   170007
                        170006  MRS=    170006
                        170004  LDSC=   170004

                        000000  .=      0                       ;TRAP CATCHER FROM 0 - 776

                        000200  .=      200

000200  000167  000622                JMP     BEG

                        000760  .=      760
000760  170200          FLTERR: STFPS   FPS
000762  170367  000034          STST    FEC
000766  000000                  HALT
000770  000002                  RTI
```

```
001000                          .=      1000
001000  000000          ICNT:   0               ;ITERATION COUNT - LH   TEST NO. - RH
001002  000000          ANS1:   0               ;FIRST ANSWER (SEE CODE)
001004  000000          ANS2:   0
001006  000000          ANS3:   0
001010  000000          ANS4:   0
001012  000000          ANS5:   0
001014  000000          ANS6:   0
001016  000000          ANS7:   0
001020  000000          ANS8:   0
001022  000000          FEC:    0               ;FLOATING EXCEPTION CODES
001024  000000          FEA:    0               ;FLOATING EXECPTION ADDRESS

001026  012706  000600  BEG:    MOV     #600,SP         ;** STACK AT 600 **
001032  012737  001054  000004         MOV     #M1120,@#4      ;FIND OUT WHICH MACHINE THIS IS
001040  005737  177772         TST     @#177772        ;IS PIRQ THERE?
001044  012767  000006  015206         MOV     #6,YESRT        ;FUDGE IN RTT IF 11/45
001052  000403                 BR      BEGIN

001054  016737  016342  000010  M1120:  MOV     FPTADR,@#10     ;LOAD THE ILLEGAL INSTRUCTION VECTOR
                                                        ;  WITH THE ADDRESS OF THE FPU.
                                                        ;  THE FPU WILL HANDLE THE BAD OPCODES
001062  012737  000006  000004  BEGIN:  MOV     #6,@#4          ;RESET 4
001070  012706  000600         MOV     #600,SP
001074  012737  016260  000014         MOV     #YESRT,@#14     ;SET TRACE TRAP VECTOR
001102  012777  017120  016320         MOV     #POWDWN,@DWNVEC
001110  012777  000340  016314         MOV     #340,@DWNVEC+2
001116  012737  017320  000020         MOV     #.IOT,@#20      ;SET UP VECTOR 20
001124  012700  000030         MOV     #30,R0          ;SET R0 TO VECTOR 30
001130  012720  016422         MOV     #.TRP,(0)+      ;SET EMT VECTOR
001134  012720  000340         MOV     #340,(0)+
001140  012720  016262         MOV     #.EMT,(0)+      ;SET TRAP VECTOR
001144  012710  000340         MOV     #340,(0)
001150  012777  000760  016246         MOV     #FLTERR,@FPVECT ;LOAD INTERUPT VECTOR
001156  012777  000340  016242         MOV     #340,@FPVECT+2  ;LOCK UP PROCESSOR
001164  005067  177610         CLR     ICNT
001170  005067  016250         CLR     LAD
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                        ;*****************************************************************
                        ;TEST 1:        TEST LDCIF (LOAD-CONVERT INTEGER TO FLOATING)
                        ;       LOAD    000000 --> 000000,000000
                        ;       FPS = 047404,   SRC = M2-R7,    AC = AC1
                        ;*****************************************************************

001174  104400                          SCOPE
001176  170127  047400          TST1:   LDFPS   #047400         ;LOAD FLOATING POINT STATUS
001202  177127  000000                  LDCIF   #000000,AC1     ;LOAD-CONVERT 000000 INTO AC1
001206  170200                          STFPS   FPS             ;STORE FLOATING POINT STATUS
001210  022700  047404                  CMP     #047404,FPS     ;CHECK FLOATING POINT STATUS
001214  001401                          BEQ     .+4             ;BRANCH IF OK
001216  104000                          HLT                     ;FPS NOT EQUAL TO 047404

001220  174167  177556                  STF     AC1,    ANS1    ;STORE AC1 IN ANS1, ANS2
001224  022767  000000  177550          CMP     #000000,ANS1    ;DID 000000 GET STORED?
001232  001401                          BEQ     .+4             ;BRANCH IF OK
001234  104002                          HLT+2                   ;ANS1 NOT EQUAL TO 000000

001236  022767  000000  177540          CMP     #000000,ANS2    ;DID 000000 GET STORED?
001244  001401                          BEQ     .+4             ;BRANCH IF OK
001246  104002                          HLT+2                   ;ANS2 NOT EQUAL TO 000000

                        ;*****************************************************************
                        ;TEST 2:        TEST LDCIF (LOAD-CONVERT INTEGER TO FLOATING)
                        ;       LOAD    125252 --> 143652,126000
                        ;       FPS = 047410,   SRC = M2-R7,    AC = AC1
                        ;*****************************************************************

001250  104400                          SCOPE
001252  170127  047400          TST2:   LDFPS   #047400         ;LOAD FLOATING POINT STATUS
001256  177127  125252                  LDCIF   #125252,AC1     ;LOAD-CONVERT 125252 INTO AC1
001262  170200                          STFPS   FPS             ;STORE FLOATING POINT STATUS
001264  022700  047410                  CMP     #047410,FPS     ;CHECK FLOATING POINT STATUS
001270  001401                          BEQ     .+4             ;BRANCH IF OK
001272  104000                          HLT                     ;FPS NOT EQUAL TO 047410

001274  174167  177502                  STF     AC1,    ANS1    ;STORE AC1 IN ANS1, ANS2
001300  022767  143652  177474          CMP     #143652,ANS1    ;DID 143652 GET STORED?
001306  001401                          BEQ     .+4             ;BRANCH IF OK
001310  104002                          HLT+2                   ;ANS1 NOT EQUAL TO 143652

001312  022767  126000  177464          CMP     #126000,ANS2    ;DID 126000 GET STORED?
001320  001401                          BEQ     .+4             ;BRANCH IF OK
001322  104002                          HLT+2                   ;ANS2 NOT EQUAL TO 126000

                        ;*****************************************************************
                        ;TEST 3:        TEST LDCIF (LOAD-CONVERT INTEGER TO FLOATING)
                        ;       LOAD    052525 --> 043652,125000
                        ;       FPS = 047400,   SRC = M2-R7,    AC = AC0
                        ;*****************************************************************

001324  104400                          SCOPE
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```
001326  170127  047400          TST3:   LDFPS   #047400         ;LOAD FLOATING POINT STATUS
001332  177027  052525                  LDCIF   #052525,AC0     ;LOAD-CONVERT 052525 INTO AC0
001336  170200                          STFPS   FPS             ;STORE FLOATING POINT STATUS
001340  022700  047400                  CMP     #047400,FPS     ;CHECK FLOATING POINT STATUS
001344  001401                          BEQ     .+4             ;BRANCH IF OK
001346  104000                          HLT                     ;FPS NOT EQUAL TO 047400

001350  174067  177426                  STF     AC0,    ANS1    ;STORE AC0 IN ANS1, ANS2
001354  022767  043652  177420          CMP     #043652,ANS1    ;DID 043652 GET STORED?
001362  001401                          BEQ     .+4             ;BRANCH IF OK
001364  104002                          HLT+2                   ;ANS1 NOT EQUAL TO 043652

001366  022767  125000  177410          CMP     #125000,ANS2    ;DID 125000 GET STORED?
001374  001401                          BEQ     .+4             ;BRANCH IF OK
001376  104002                          HLT+2                   ;ANS2 NOT EQUAL TO 125000


                        ;*****************************************************************
                        ;TEST 4:        TEST LDCIF (LOAD-CONVERT INTEGER TO FLOATING)
                        ;       LOAD    000001 --> 040200,000000
                        ;       FPS = 047400,   SRC = M2-R7,    AC = AC0
                        ;*****************************************************************

001400  104400                          SCOPE
001402  170127  047400          TST4:   LDFPS   #047400         ;LOAD FLOATING POINT STATUS
001406  177027  000001                  LDCIF   #000001,AC0     ;LOAD-CONVERT 000001 INTO AC0
001412  170200                          STFPS   FPS             ;STORE FLOATING POINT STATUS
001414  022700  047400                  CMP     #047400,FPS     ;CHECK FLOATING POINT STATUS
001420  001401                          BEQ     .+4             ;BRANCH IF OK
001422  104000                          HLT                     ;FPS NOT EQUAL TO 047400

001424  174067  177352                  STF     AC0,    ANS1    ;STORE AC0 IN ANS1, ANS2
001430  022767  040200  177344          CMP     #040200,ANS1    ;DID 040200 GET STORED?
001436  001401                          BEQ     .+4             ;BRANCH IF OK
001440  104002                          HLT+2                   ;ANS1 NOT EQUAL TO 040200

001442  022767  000000  177334          CMP     #000000,ANS2    ;DID 000000 GET STORED?
001450  001401                          BEQ     .+4             ;BRANCH IF OK
001452  104002                          HLT+2                   ;ANS2 NOT EQUAL TO 000000


                        ;*****************************************************************
                        ;TEST 5:        TEST LDCIF (LOAD-CONVERT INTEGER TO FLOATING)
                        ;       LOAD    177777 --> 140200,000000
                        ;       FPS = 047410,   SRC = M2-R7,    AC = AC3
                        ;*****************************************************************

001454  104400                          SCOPE
001456  170127  047400          TST5:   LDFPS   #047400         ;LOAD FLOATING POINT STATUS
001462  177327  177777                  LDCIF   #177777,AC3     ;LOAD-CONVERT 177777 INTO AC3
001466  170200                          STFPS   FPS             ;STORE FLOATING POINT STATUS
001470  022700  047410                  CMP     #047410,FPS     ;CHECK FLOATING POINT STATUS
001474  001401                          BEQ     .+4             ;BRANCH IF OK
001476  104000                          HLT                     ;FPS NOT EQUAL TO 047410

001500  174367  177276                  STF     AC3,    ANS1    ;STORE AC3 IN ANS1, ANS2
```

```
001504  022767  140200  177270          CMP     #140200,ANS1    ;DID 140200 GET STORED?
001512  001401                          BEQ     .+4             ;BRANCH IF OK
001514  104002                          HLT+2                   ;ANS1 NOT EQUAL TO 140200

001516  022767  000000  177260          CMP     #000000,ANS2    ;DID 000000 GET STORED?
001524  001401                          BEQ     .+4             ;BRANCH IF OK
001526  104002                          HLT+2                   ;ANS2 NOT EQUAL TO 000000


                        ;*****************************************************************
                        ;TEST 6:        TEST LDCIF (LOAD-CONVERT INTEGER TO FLOATING)
                        ;       LOAD    100000 --> 144000,000000
                        ;       FPS = 047410,   SRC = M2-R7,    AC = AC0
                        ;*****************************************************************

001530  104400                          SCOPE
001532  170127  047400          TST6:   LDFPS   #047400         ;LOAD FLOATING POINT STATUS
001536  177027  100000                  LDCIF   #100000,AC0     ;LOAD-CONVERT 100000 INTO AC0
001542  170200                          STFPS   FPS             ;STORE FLOATING POINT STATUS
001544  022700  047410                  CMP     #047410,FPS     ;CHECK FLOATING POINT STATUS
001550  001401                          BEQ     .+4             ;BRANCH IF OK
001552  104000                          HLT                     ;FPS NOT EQUAL TO 047410

001554  174067  177222                  STF     AC0,    ANS1    ;STORE AC0 IN ANS1, ANS2
001560  022767  144000  177214          CMP     #144000,ANS1    ;DID 144000 GET STORED?
001566  001401                          BEQ     .+4             ;BRANCH IF OK
001570  104002                          HLT+2                   ;ANS1 NOT EQUAL TO 144000

001572  022767  000000  177204          CMP     #000000,ANS2    ;DID 000000 GET STORED?
001600  001401                          BEQ     .+4             ;BRANCH IF OK
001602  104002                          HLT+2                   ;ANS2 NOT EQUAL TO 000000


                        ;*****************************************************************
                        ;TEST 7:        TEST LDCIF (LOAD-CONVERT INTEGER TO FLOATING)
                        ;       LOAD    077777 --> 043777,177000
                        ;       FPS = 047400,   SRC = M2-R7,    AC = AC2
                        ;*****************************************************************

001604  104400                          SCOPE
001606  170127  047400          TST7:   LDFPS   #047400         ;LOAD FLOATING POINT STATUS
001612  177227  077777                  LDCIF   #077777,AC2     ;LOAD-CONVERT 077777 INTO AC2
001616  170200                          STFPS   FPS             ;STORE FLOATING POINT STATUS
001620  022700  047400                  CMP     #047400,FPS     ;CHECK FLOATING POINT STATUS
001624  001401                          BEQ     .+4             ;BRANCH IF OK
001626  104000                          HLT                     ;FPS NOT EQUAL TO 047400

001630  174267  177146                  STF     AC2,    ANS1    ;STORE AC2 IN ANS1, ANS2
001634  022767  043777  177140          CMP     #043777,ANS1    ;DID 043777 GET STORED?
001642  001401                          BEQ     .+4             ;BRANCH IF OK
001644  104002                          HLT+2                   ;ANS1 NOT EQUAL TO 043777

001646  022767  177000  177130          CMP     #177000,ANS2    ;DID 177000 GET STORED?
001654  001401                          BEQ     .+4             ;BRANCH IF OK
001656  104002                          HLT+2                   ;ANS2 NOT EQUAL TO 177000
```

```
                        ;*****************************************************************
                        ;TEST 10:       TEST LDCIF (LOAD-CONVERT INTEGER TO FLOATING)
                        ;       LOAD    000125 --> 041652,000000
                        ;       FPS = 047400,   SRC = M2-R7,    AC = AC2
                        ;*****************************************************************

001660  104400                  SCOPE
001662  170127  047400  TST10:  LDFPS   #047400          ;LOAD FLOATING POINT STATUS
001666  177227  000125          LDCIF   #000125,AC2     ;LOAD-CONVERT 000125 INTO AC2
001672  170200                  STFPS   FPS             ;STORE FLOATING POINT STATUS
001674  022700  047400          CMP     #047400,FPS     ;CHECK FLOATING POINT STATUS
001700  001401                  BEQ     .+4             ;BRANCH IF OK
001702  104000                  HLT                     ;FPS NOT EQUAL TO 047400

001704  174267  177072          STF     AC2,    ANS1    ;STORE AC2 IN ANS1, ANS2
001710  022767  041652  177064  CMP     #041652,ANS1    ;DID 041652 GET STORED?
001716  001401                  BEQ     .+4             ;BRANCH IF OK
001720  104002                  HLT+2                   ;ANS1 NOT EQUAL TO 041652

001722  022767  000000  177054  CMP     #000000,ANS2    ;DID 000000 GET STORED?
001730  001401                  BEQ     .+4             ;BRANCH IF OK
001732  104002                  HLT+2                   ;ANS2 NOT EQUAL TO 000000

                        ;*****************************************************************
                        ;TEST 11:       TEST LDCIF (LOAD-CONVERT INTEGER TO FLOATING)
                        ;       LOAD    070707 --> 043743,107000
                        ;       FPS = 047400,   SRC = M0-R2,    AC = AC1
                        ;*****************************************************************

001734  104400                  SCOPE
001736  170127  047400  TST11:  LDFPS   #047400          ;LOAD FLOATING POINT STATUS
001742  012702  070707          MOV     #070707,R2      ;LOAD 070707 INTO R2
001746  177102                  LDCIF   R2,     AC1     ;LOAD-CONVERT 070707 INTO AC1
001750  170200                  STFPS   FPS             ;STORE FLOATING POINT STATUS
001752  022700  047400          CMP     #047400,FPS     ;CHECK FLOATING POINT STATUS
001756  001401                  BEQ     .+4             ;BRANCH IF OK
001760  104000                  HLT                     ;FPS NOT EQUAL TO 047400

001762  174167  177014          STF     AC1,    ANS1    ;STORE AC1 IN ANS1, ANS2
001766  022767  043743  177006  CMP     #043743,ANS1    ;DID 043743 GET STORED?
001774  001401                  BEQ     .+4             ;BRANCH IF OK
001776  104002                  HLT+2                   ;ANS1 NOT EQUAL TO 043743

002000  022767  107000  176776  CMP     #107000,ANS2    ;DID 107000 GET STORED?
002006  001401                  BEQ     .+4             ;BRANCH IF OK
002010  104002                  HLT+2                   ;ANS2 NOT EQUAL TO 107000

                        ;*****************************************************************
                        ;TEST 12:       TEST LDCIF (LOAD-CONVERT INTEGER TO FLOATING)
                        ;       LOAD    107070 --> 143743,110000
                        ;       FPS = 047410,   SRC = M6-R7,    AC = AC2
                        ;*****************************************************************
```

```
002012  104400                          SCOPE
002014  000401                          BR      TST12           ;SKIP DATA

002016  107070                  DAT12:  107070

002020  170127  047400          TST12:  LDFPS   #047400         ;LOAD FLOATING POINT STATUS
002024  177267  177766                  LDCIF   DAT12,  AC2     ;LOAD-CONVERT 107070 INTO AC2
002030  170200                          STFPS   FPS             ;STORE FLOATING POINT STATUS
002032  022700  047410                  CMP     #047410,FPS     ;CHECK FLOATING POINT STATUS
002036  001401                          BEQ     .+4             ;BRANCH IF OK
002040  104000                          HLT                     ;FPS NOT EQUAL TO 047410

002042  174267  176734                  STF     AC2,    ANS1    ;STORE AC2 IN ANS1, ANS2
002046  022767  143743  176726          CMP     #143743,ANS1    ;DID 143743 GET STORED?
002054  001401                          BEQ     .+4             ;BRANCH IF OK
002056  104002                          HLT+2                   ;ANS1 NOT EQUAL TO 143743

002060  022767  110000  176716          CMP     #110000,ANS2    ;DID 110000 GET STORED?
002066  001401                          BEQ     .+4             ;BRANCH IF OK
002070  104002                          HLT+2                   ;ANS2 NOT EQUAL TO 110000


                        ;*************************************************************************
                        ;TEST 13:       TEST STCFI (STORE-CONVERT FLOATING TO INTEGER)
                        ;       STORE   000000.000000 --> 000000
                        ;       FPS = 047404,   AC = AC0,       DST = M6-R7
                        ;*************************************************************************

002072  104400                          SCOPE
002074  000402                          BR      TST13

002076  000000  000000          DAT13:  000000.000000

002102  170127  047400          TST13:  LDFPS   #047400         ;LOAD FLOATING POINT STATUS
002106  172467  177764                  LDF     DAT13,  AC0     ;LOAD 000000.000000 INTO AC0
002112  175467  176664          FPI13:  STCFI   AC0,    ANS1    ;STORE-CONVERT AC0 IN ANS1
002116  013767  177776  176660          MOV     @#PS,   ANS2    ;GET CPU STATUS
002124  042767  177760  176652          BIC     #177760,ANS2    ;SAVE CONDITION CODES
002132  170200                          STFPS   FPS             ;STORE FLOATING POINT STATUS
002134  022700  047404                  CMP     #047404,FPS     ;CHECK FLOATING POINT STATUS
002140  001401                          BEQ     .+4             ;BRANCH IF OK
002142  104000                          HLT                     ;FPS NOT EQUAL TO 047404

002144  022767  000000  176630          CMP     #000000,ANS1    ;DID 000000 GET STORED?
002152  001401                          BEQ     .+4             ;BRANCH IF OK
002154  104001                          HLT+1                   ;ANS1 NOT EQUAL TO 000000

002156  022767  000004  176620          CMP     #4,     ANS2    ;CONDITION CODES = 4?
002164  001401                          BEQ     .+4             ;BRANCH IF OK
002166  104002                          HLT+2                   ;WRONG CONDITION CODES!


                        ;*************************************************************************
                        ;TEST 14:       TEST STCFI (STORE-CONVERT FLOATING TO INTEGER)
                        ;       STORE   041252.125252 --> 000025
                        ;       FPS = 047400,   AC = AC0,       DST = M6-R7
```

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                        ;*****************************************************************************

002170  104400                  SCOPE
002172  000402                  BR      TST14

002174  041252  125252  DAT14:  041252,125252

002200  170127  047400  TST14:  LDFPS   #047400          ;LOAD FLOATING POINT STATUS
002204  172467  177764          LDF     DAT14,  AC0     ;LOAD 041252,125252 INTO AC0
002210  175467  176566  FPI14:  STCFI   AC0,    ANS1    ;STORE-CONVERT AC0 IN ANS1
002214  013767  177776  176562  MOV     @#PS,   ANS2    ;GET CPU STATUS
002222  042767  177760  176554  BIC     #177760,ANS2    ;SAVE CONDITION CODES
002230  170200                  STFPS   FPS             ;STORE FLOATING POINT STATUS
002232  022700  047400          CMP     #047400,FPS     ;CHECK FLOATING POINT STATUS
002236  001401                  BEQ     .+4             ;BRANCH IF OK
002240  104000                  HLT                     ;FPS NOT EQUAL TO 047400

002242  022767  000025  176532  CMP     #000025,ANS1    ;DID 000025 GET STORED?
002250  001401                  BEQ     .+4             ;BRANCH IF OK
002252  104001                  HLT+1                   ;ANS1 NOT EQUAL TO 000025

002254  022767  000000  176522  CMP     #0,     ANS2    ;CONDITION CODES = 0?
002262  001401                  BEQ     .+4             ;BRANCH IF OK
002264  104002                  HLT+2                   ;WRONG CONDITION CODES!

                        ;*****************************************************************************
                        ;TEST 15:       TEST STCFI (STORE-CONVERT FLOATING TO INTEGER)
                        ;       STORE   141252,125252 --> 177753
                        ;       FPS = 047410,   AC = AC3,       DST = M6-R7
                        ;*****************************************************************************

002266  104400                  SCOPE
002270  000402                  BR      TST15

002272  141252  125252  DAT15:  141252,125252

002276  170127  047400  TST15:  LDFPS   #047400          ;LOAD FLOATING POINT STATUS
002302  172767  177764          LDF     DAT15,  AC3     ;LOAD 141252,125252 INTO AC3
002306  175767  176470  FPI15:  STCFI   AC3,    ANS1    ;STORE-CONVERT AC3 IN ANS1
002312  013767  177776  176464  MOV     @#PS,   ANS2    ;GET CPU STATUS
002320  042767  177760  176456  BIC     #177760,ANS2    ;SAVE CONDITION CODES
002326  170200                  STFPS   FPS             ;STORE FLOATING POINT STATUS
002330  022700  047410          CMP     #047410,FPS     ;CHECK FLOATING POINT STATUS
002334  001401                  BEQ     .+4             ;BRANCH IF OK
002336  104000                  HLT                     ;FPS NOT EQUAL TO 047410

002340  022767  177753  176434  CMP     #177753,ANS1    ;DID 177753 GET STORED?
002346  001401                  BEQ     .+4             ;BRANCH IF OK
002350  104001                  HLT+1                   ;ANS1 NOT EQUAL TO 177753

002352  022767  000010  176424  CMP     #10.    ANS2    ;CONDITION CODES = 10?
002360  001401                  BEQ     .+4             ;BRANCH IF OK
002362  104002                  HLT+2                   ;WRONG CONDITION CODES!
```

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                        ;*****************************************************************************
                        ;TEST 16:       TEST STCFI (STORE-CONVERT FLOATING TO INTEGER)
                        ;       STORE   040177,177777 --> 000000
                        ;       FPS = 047404,   AC = AC0,       DST = M6-R7
                        ;*****************************************************************************

002364  104400                  SCOPE
002366  000402                  BR      TST16

002370  040177  177777  DAT16:  040177,177777

002374  170127  047400  TST16:  LDFPS   #047400          ;LOAD FLOATING POINT STATUS
002400  172467  177764          LDF     DAT16,  AC0     ;LOAD 040177,177777 INTO AC0
002404  175467  176372  FPI16:  STCFI   AC0,    ANS1    ;STORE-CONVERT AC0 IN ANS1
002410  013767  177776  176366  MOV     @#PS,   ANS2    ;GET CPU STATUS
002416  042767  177760  176360  BIC     #177760,ANS2    ;SAVE CONDITION CODES
002424  170200                  STFPS   FPS             ;STORE FLOATING POINT STATUS
002426  022700  047404          CMP     #047404,FPS     ;CHECK FLOATING POINT STATUS
002432  001401                  BEQ     .+4             ;BRANCH IF OK
002434  104000                  HLT                     ;FPS NOT EQUAL TO 047404

002436  022767  000000  176336  CMP     #000000,ANS1    ;DID 000000 GET STORED?
002444  001401                  BEQ     .+4             ;BRANCH IF OK
002446  104001                  HLT+1                   ;ANS1 NOT EQUAL TO 000000

002450  022767  000004  176326  CMP     #4,     ANS2    ;CONDITION CODES = 4?
002456  001401                  BEQ     .+4             ;BRANCH IF OK
002460  104002                  HLT+2                   ;WRONG CONDITION CODES!


                        ;*****************************************************************************
                        ;TEST 17:       TEST STCFI (STORE-CONVERT FLOATING TO INTEGER)
                        ;       STORE   140177,177777 --> 000000
                        ;       FPS = 047404,   AC = AC2,       DST = M6-R7
                        ;*****************************************************************************

002462  104400                  SCOPE
002464  000402                  BR      TST17

002466  140177  177777  DAT17:  140177,177777

002472  170127  047400  TST17:  LDFPS   #047400          ;LOAD FLOATING POINT STATUS
002476  172667  177764          LDF     DAT17,  AC2     ;LOAD 140177,177777 INTO AC2
002502  175667  176274  FPI17:  STCFI   AC2,    ANS1    ;STORE-CONVERT AC2 IN ANS1
002506  013767  177776  176270  MOV     @#PS,   ANS2    ;GET CPU STATUS
002514  042767  177760  176262  BIC     #177760,ANS2    ;SAVE CONDITION CODES
002522  170200                  STFPS   FPS             ;STORE FLOATING POINT STATUS
002524  022700  047404          CMP     #047404,FPS     ;CHECK FLOATING POINT STATUS
002530  001401                  BEQ     .+4             ;BRANCH IF OK
002532  104000                  HLT                     ;FPS NOT EQUAL TO 047404

002534  022767  000000  176240  CMP     #000000,ANS1    ;DID 000000 GET STORED?
002542  001401                  BEQ     .+4             ;BRANCH IF OK
002544  104001                  HLT+1                   ;ANS1 NOT EQUAL TO 000000

002546  022767  000004  176230  CMP     #4,     ANS2    ;CONDITION CODES = 4?
```

```
002554  001401                          BEQ     .+4             ;BRANCH IF OK
002556  104002                          HLT+2                   ;WRONG CONDITION CODES!


                        ;*************************************************************************
                        ;TEST 20:       TEST STCFI (STORE-CONVERT FLOATING TO INTEGER)
                        ;       STORE   040200,000001 --> 000001
                        ;       FPS = 047400,   AC = AC2,       DST = M6-R7
                        ;*************************************************************************

002560  104400                          SCOPE
002562  000402                          BR      TST20

002564  040200  000001        DAT20:    040200,000001

002570  170127  047400        TST20:    LDFPS   #047400         ;LOAD FLOATING POINT STATUS
002574  172667  177764                  LDF     DAT20,  AC2     ;LOAD 040200,000001 INTO AC2
002600  175667  176176        FPI20:    STCFI   AC2,    ANS1    ;STORE-CONVERT AC2 IN ANS1
002604  013767  177776  176172          MOV     @#PS,   ANS2    ;GET CPU STATUS
002612  042767  177760  176164          BIC     #177760,ANS2    ;SAVE CONDITION CODES
002620  170200                          STFPS   FPS             ;STORE FLOATING POINT STATUS
002622  022700  047400                  CMP     #047400,FPS     ;CHECK FLOATING POINT STATUS
002626  001401                          BEQ     .+4             ;BRANCH IF OK
002630  104000                          HLT                     ;FPS NOT EQUAL TO 047400

002632  022767  000001  176142          CMP     #000001,ANS1    ;DID 000001 GET STORED?
002640  001401                          BEQ     .+4             ;BRANCH IF OK
002642  104001                          HLT+1                   ;ANS1 NOT EQUAL TO 000001

002644  022767  000000  176132          CMP     #0,     ANS2    ;CONDITION CODES = 0?
002652  001401                          BEQ     .+4             ;BRANCH IF OK
002654  104002                          HLT+2                   ;WRONG CONDITION CODES!


                        ;*************************************************************************
                        ;TEST 21:       TEST STCFI (STORE-CONVERT FLOATING TO INTEGER)
                        ;       STORE   140200,000001 --> 177777
                        ;       FPS = 047410,   AC = AC1,       DST = M6-R7
                        ;*************************************************************************

002656  104400                          SCOPE
002660  000402                          BR      TST21

002662  140200  000001        DAT21:    140200,000001

002666  170127  047400        TST21:    LDFPS   #047400         ;LOAD FLOATING POINT STATUS
002672  172567  177764                  LDF     DAT21,  AC1     ;LOAD 140200,000001 INTO AC1
002676  175567  176100        FPI21:    STCFI   AC1,    ANS1    ;STORE-CONVERT AC1 IN ANS1
002702  013767  177776  176074          MOV     @#PS,   ANS2    ;GET CPU STATUS
002710  042767  177760  176066          BIC     #177760,ANS2    ;SAVE CONDITION CODES
002716  170200                          STFPS   FPS             ;STORE FLOATING POINT STATUS
002720  022700  047410                  CMP     #047410,FPS     ;CHECK FLOATING POINT STATUS
002724  001401                          BEQ     .+4             ;BRANCH IF OK
002726  104000                          HLT                     ;FPS NOT EQUAL TO 047410

002730  022767  177777  176044          CMP     #177777,ANS1    ;DID 177777 GET STORED?
```

```
002736  001401                          BEQ     .+4             ;BRANCH IF OK
002740  104001                          HLT+1                   ;ANS1 NOT EQUAL TO 177777

002742  022767  000010  176034          CMP     #10.,   ANS2    ;CONDITION CODES = 10?
002750  001401                          BEQ     .+4             ;BRANCH IF OK
002752  104002                          HLT+2                   ;WRONG CONDITION CODES!


                                ;*************************************************************************
                                ;TEST 22:       TEST STCFI (STORE-CONVERT FLOATING TO INTEGER)
                                ;       STORE   043777,177777 --> 077777
                                ;       FPS = 047400,   AC = AC1,       DST = M6-R7
                                ;*************************************************************************

002754  104400                          SCOPE
002756  000402                          BR      TST22

002760  043777  177777          DAT22:  043777,177777

002764  170127  047400          TST22:  LDFPS   #047400         ;LOAD FLOATING POINT STATUS
002770  172567  177764                  LDF     DAT22,  AC1     ;LOAD 043777,177777 INTO AC1
002774  175567  176002          FPI22:  STCFI   AC1,    ANS1    ;STORE-CONVERT AC1 IN ANS1
003000  013767  177776  175776          MOV     @#PS,   ANS2    ;GET CPU STATUS
003006  042767  177760  175770          BIC     #177760,ANS2    ;SAVE CONDITION CODES
003014  170200                          STFPS   FPS             ;STORE FLOATING POINT STATUS
003016  022700  047400                  CMP     #047400,FPS     ;CHECK FLOATING POINT STATUS
003022  001401                          BEQ     .+4             ;BRANCH IF OK
003024  104000                          HLT                     ;FPS NOT EQUAL TO 047400

003026  022767  077777  175746          CMP     #077777,ANS1    ;DID 077777 GET STORED?
003034  001401                          BEQ     .+4             ;BRANCH IF OK
003036  104001                          HLT+1                   ;ANS1 NOT EQUAL TO 077777

003040  022767  000000  175736          CMP     #0,     ANS2    ;CONDITION CODES = 0?
003046  001401                          BEQ     .+4             ;BRANCH IF OK
003050  104002                          HLT+2                   ;WRONG CONDITION CODES!


                                ;*************************************************************************
                                ;TEST 23:       TEST STCFI (STORE-CONVERT FLOATING TO INTEGER)
                                ;       STORE   044000,000000 --> 000000
                                ;       FPS = 147405,   AC = AC0,       DST = M6-R7
                                ;       FEC = 6,        FEA = FPI23
                                ;*************************************************************************

003052  104400                          SCOPE
003054  000402                          BR      TST23

003056  044000  000000          DAT23:  044000,000000

003062  170127  047400          TST23:  LDFPS   #047400         ;LOAD FLOATING POINT STATUS
003066  172467  177764                  LDF     DAT23,  AC0     ;LOAD 044000,000000 INTO AC0
003072  175467  175704          FPI23:  STCFI   AC0,    ANS1    ;STORE-CONVERT AC0 IN ANS1
003076  013767  177776  175700          MOV     @#PS,   ANS2    ;GET CPU STATUS
003104  042767  177760  175672          BIC     #177760,ANS2    ;SAVE CONDITION CODES
003112  170200                          STFPS   FPS             ;STORE FLOATING POINT STATUS
```

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003114  170367  175702          STST    FEC             ;STORE EXCEPTION CODES
003120  022700  147405          CMP     #147405,FPS     ;CHECK FLOATING POINT STATUS
003124  001401                  BEQ     .+4             ;BRANCH IF OK
003126  104000                  HLT                     ;FPS NOT EQUAL TO 147405

003130  022767  000006  175664  CMP     #6,     FEC     ;CHECK FLOATING EXCEPTION CODE
003136  001401                  BEQ     .+4             ;BRANCH IF OK
003140  104000                  HLT                     ;FEC NOT EQUAL TO 6

003142  022767  003072  175654  CMP     #FPI23, FEA     ;CHECK FLOATING EXCEPTION ADDRESS
003150  001401                  BEQ     .+4             ;BRANCH IF OK
003152  104000                  HLT                     ;FEA NOT EQUAL TO FPI23

003154  022767  000000  175620  CMP     #000000,ANS1    ;DID 000000 GET STORED?
003162  001401                  BEQ     .+4             ;BRANCH IF OK
003164  104001                  HLT+1                   ;ANS1 NOT EQUAL TO 000000

003166  022767  000005  175610  CMP     #5,     ANS2    ;CONDITION CODES = 5?
003174  001401                  BEQ     .+4             ;BRANCH IF OK
003176  104002                  HLT+2                   ;WRONG CONDITION CODES!


                        ;*************************************************************************
                        ;TEST 24:       TEST STCFI (STORE-CONVERT FLOATING TO INTEGER)
                        ;       STORE   144000,000377 --> 100000
                        ;       FPS = 047410,   AC = AC0,       DST = M6-R7
                        ;*************************************************************************

003200  104400                  SCOPE
003202  000402                  BR      TST24

003204  144000  000377  DAT24:  144000,000377

003210  170127  047400  TST24:  LDFPS   #047400          ;LOAD FLOATING POINT STATUS
003214  172467  177764          LDF     DAT24,  AC0     ;LOAD 144000,000377 INTO AC0
003220  175467  175556  FPI24:  STCFI   AC0,    ANS1    ;STORE-CONVERT AC0 IN ANS1
003224  013767  177776  175552  MOV     @#PS,   ANS2    ;GET CPU STATUS
003232  042767  177760  175544  BIC     #177760,ANS2    ;SAVE CONDITION CODES
003240  170200                  STFPS   FPS             ;STORE FLOATING POINT STATUS
003242  022700  047410          CMP     #047410,FPS     ;CHECK FLOATING POINT STATUS
003246  001401                  BEQ     .+4             ;BRANCH IF OK
003250  104000                  HLT                     ;FPS NOT EQUAL TO 047410

003252  022767  100000  175522  CMP     #100000,ANS1    ;DID 100000 GET STORED?
003260  001401                  BEQ     .+4             ;BRANCH IF OK
003262  104001                  HLT+1                   ;ANS1 NOT EQUAL TO 100000

003264  022767  000010  175512  CMP     #10.    ANS2    ;CONDITION CODES = 10?
003272  001401                  BEQ     .+4             ;BRANCH IF OK
003274  104002                  HLT+2                   ;WRONG CONDITION CODES!


                        ;*************************************************************************
                        ;TEST 25:       TEST STCFI (STORE-CONVERT FLOATING TO INTEGER)
                        ;       STORE   144000,000400 --> 000000
                        ;       FPS = 147405,   AC = AC3,       DST = M6-R7
```

```
                                        ;       FEC = 6,        FEA = FPI25
                                        ;*******************************************************************************

003276  104400                                  SCOPE
003300  000402                                  BR      TST25

003302  144000  000400          DAT25:  144000,000400

003306  170127  047400          TST25:  LDFPS   #047400                 ;LOAD FLOATING POINT STATUS
003312  172767  177764                  LDF     DAT25,  AC3             ;LOAD 144000,000400 INTO AC3
003316  175767  175460          FPI25:  STCFI   AC3,    ANS1            ;STORE-CONVERT AC3 IN ANS1
003322  013767  177776  175454          MOV     @#PS,   ANS2            ;GET CPU STATUS
003330  042767  177760  175446          BIC     #177760,ANS2            ;SAVE CONDITION CODES
003336  170200                          STFPS   FPS                     ;STORE FLOATING POINT STATUS
003340  170367  175456                  STST    FEC                     ;STORE EXCEPTION CODES
003344  022700  147405                  CMP     #147405,FPS             ;CHECK FLOATING POINT STATUS
003350  001401                          BEQ     .+4                     ;BRANCH IF OK
003352  104000                          HLT                             ;FPS NOT EQUAL TO 147405

003354  022767  000006  175440          CMP     #6,     FEC             ;CHECK FLOATING EXCEPTION CODE
003362  001401                          BEQ     .+4                     ;BRANCH IF OK
003364  104000                          HLT                             ;FEC NOT EQUAL TO 6

003366  022767  003316  175430          CMP     #FPI25, FEA             ;CHECK FLOATING EXCEPTION ADDRESS
003374  001401                          BEQ     .+4                     ;BRANCH IF OK
003376  104000                          HLT                             ;FEA NOT EQUAL TO FPI25

003400  022767  000000  175374          CMP     #000000,ANS1            ;DID 000000 GET STORED?
003406  001401                          BEQ     .+4                     ;BRANCH IF OK
003410  104001                          HLT+1                           ;ANS1 NOT EQUAL TO 000000

003412  022767  000005  175364          CMP     #5,     ANS2            ;CONDITION CODES = 5?
003420  001401                          BEQ     .+4                     ;BRANCH IF OK
003422  104002                          HLT+2                           ;WRONG CONDITION CODES!


                                        ;*******************************************************************************
                                        ;TEST 26:       TEST STCFI (STORE-CONVERT FLOATING TO INTEGER)
                                        ;       STORE   100000,000000 --> 000000
                                        ;       FPS = 047404,   AC = AC3,       DST = M6-R7
                                        ;*******************************************************************************

003424  104400                                  SCOPE
003426  000402                                  BR      TST26

003430  100000  000000          DAT26:  100000,000000

003434  170127  040000          TST26:  LDFPS   #040000                 ;LOAD FLOATING POINT STATUS
003440  172767  177764                  LDF     DAT26,  AC3             ;LOAD 100000,000000 INTO AC3
003444  170127  047400                  LDFPS   #047400                 ;LOAD FLOATING POINT STATUS
003450  175767  175326                  STCFI   AC3,    ANS1            ;STORE-CONVERT AC3 IN ANS1
003454  013767  177776  175322          MOV     @#PS,   ANS2            ;GET CPU STATUS
003462  042767  177760  175314          BIC     #177760,ANS2            ;SAVE CONDITION CODES
003470  170200                          STFPS   FPS                     ;STORE FLOATING POINT STATUS
003472  022700  047404                  CMP     #047404,FPS             ;CHECK FLOATING POINT STATUS
003476  001401                          BEQ     .+4                     ;BRANCH IF OK
```

```
003500  104000                          HLT                     ;FPS NOT EQUAL TO 047404

003502  022767  000000  175272          CMP     #000000,ANS1    ;DID 000000 GET STORED?
003510  001401                          BEQ     .+4             ;BRANCH IF OK
003512  104001                          HLT+1                   ;ANS1 NOT EQUAL TO 000000

003514  022767  000004  175262          CMP     #4,     ANS2    ;CONDITION CODES = 4?
003522  001401                          BEQ     .+4             ;BRANCH IF OK
003524  104002                          HLT+2                   ;WRONG CONDITION CODES!
```

```
                        ;*************************************************************************
                        ;TEST 27:       TEST STCFI (STORE-CONVERT FLOATING TO INTEGER)
                        ;       STORE   177777,177777 --> 000000
                        ;       FPS = 147405,   AC = AC0,       DST = M0-R1
                        ;       FEC = 6,        FEA = FPI27
                        ;*************************************************************************

003526  104400                  SCOPE
003530  000402                  BR      TST27

003532  177777  177777  DAT27:  177777,177777

003536  170127  047400  TST27:  LDFPS   #047400          ;LOAD FLOATING POINT STATUS
003542  172467  177764          LDF     DAT27,  AC0     ;LOAD 177777,177777 INTO AC0
003546  175401          FPI27:  STCFI   AC0,    R1      ;STORE-CONVERT AC0 IN R1
003550  013767  177776  175226  MOV     @#PS,   ANS2    ;GET CPU STATUS
003556  042767  177760  175220  BIC     #177760,ANS2    ;SAVE CONDITION CODES
003564  010167  175212          MOV     R1,     ANS1    ;SAVE R1
003570  170200                  STFPS   FPS             ;STORE FLOATING POINT STATUS
003572  170367  175224          STST    FEC             ;STORE EXCEPTION CODES
003576  022700  147405          CMP     #147405,FPS     ;CHECK FLOATING POINT STATUS
003602  001401                  BEQ     .+4             ;BRANCH IF OK
003604  104000                  HLT                     ;FPS NOT EQUAL TO 147405

003606  022767  000006  175206  CMP     #6,     FEC     ;CHECK FLOATING EXCEPTION CODE
003614  001401                  BEQ     .+4             ;BRANCH IF OK
003616  104000                  HLT                     ;FEC NOT EQUAL TO 6

003620  022767  003546  175176  CMP     #FPI27, FEA     ;CHECK FLOATING EXCEPTION ADDRESS
003626  001401                  BEQ     .+4             ;BRANCH IF OK
003630  104000                  HLT                     ;FEA NOT EQUAL TO FPI27

003632  022767  000000  175142  CMP     #000000,ANS1    ;DID 000000 GET STORED?
003640  001401                  BEQ     .+4             ;BRANCH IF OK
003642  104001                  HLT+1                   ;ANS1 NOT EQUAL TO 000000

003644  022767  000005  175132  CMP     #5,     ANS2    ;CONDITION CODES = 5?
003652  001401                  BEQ     .+4             ;BRANCH IF OK
003654  104002                  HLT+2                   ;WRONG CONDITION CODES!


                        ;*************************************************************************
                        ;TEST 30:       TEST STCFI (STORE-CONVERT FLOATING TO INTEGER)
                        ;       STORE   000200,000000 --> 000000
                        ;       FPS = 047404,   AC = AC2,       DST = M2-R7
                        ;*************************************************************************

003656  104400                  SCOPE
003660  000402                  BR      TST30

003662  000200  000000  DAT30:  000200,000000

003666  170127  047400  TST30:  LDFPS   #047400          ;LOAD FLOATING POINT STATUS
003672  172667  177764          LDF     DAT30,  AC2     ;LOAD 000200,000000 INTO AC2
003676  175627                  STCFI   AC2,    (PC)+   ;STORE-CONVERT AC2 IN NEXT LOC
```

```
003700  000000                  ANR30:  0
003702  000402                          BR      .+6             ;SKIP HALTS
003704  000000                          HALT                    ;PC FAILURE
003706  000000                          HALT                    ;
003710  013767  177776  175066          MOV     @#PS,   ANS2    ;GET CPU STATUS
003716  042767  177760  175060          BIC     #177760,ANS2    ;SAVE CONDITION CODES
003724  016767  177750  175050          MOV     ANR30,  ANS1    ;SAVE THE ANSWER
003732  170200                          STFPS   FPS             ;STORE FLOATING POINT STATUS
003734  022700  047404                  CMP     #047404,FPS     ;CHECK FLOATING POINT STATUS
003740  001401                          BEQ     .+4             ;BRANCH IF OK
003742  104000                          HLT                     ;FPS NOT EQUAL TO 047404

003744  022767  000000  175030          CMP     #000000,ANS1    ;DID 000000 GET STORED?
003752  001401                          BEQ     .+4             ;BRANCH IF OK
003754  104001                          HLT+1                   ;ANS1 NOT EQUAL TO 000000

003756  022767  000004  175020          CMP     #4,     ANS2    ;CONDITION CODES = 4?
003764  001401                          BEQ     .+4             ;BRANCH IF OK
003766  104002                          HLT+2                   ;WRONG CONDITION CODES!


                        ;*****************************************************************
                        ;TEST 31:       TEST STCFI (STORE-CONVERT FLOATING TO INTEGER)
                        ;       STORE   100177,177777 --> 000000
                        ;       FPS = 047404,   AC = AC1,       DST = M6-R7
                        ;*****************************************************************

003770  104400                          SCOPE
003772  000402                          BR      TST31

003774  100177  177777          DAT31:  100177,177777

004000  170127  040000          TST31:  LDFPS   #040000         ;LOAD FLOATING POINT STATUS
004004  172567  177764                  LDF     DAT31,  AC1     ;LOAD 100177,177777 INTO AC1
004010  170127  047400                  LDFPS   #047400         ;LOAD FLOATING POINT STATUS
004014  175567  174762                  STCFI   AC1,    ANS1    ;STORE-CONVERT AC1 IN ANS1
004020  013767  177776  174756          MOV     @#PS,   ANS2    ;GET CPU STATUS
004026  042767  177760  174750          BIC     #177760,ANS2    ;SAVE CONDITION CODES
004034  170200                          STFPS   FPS             ;STORE FLOATING POINT STATUS
004036  022700  047404                  CMP     #047404,FPS     ;CHECK FLOATING POINT STATUS
004042  001401                          BEQ     .+4             ;BRANCH IF OK
004044  104000                          HLT                     ;FPS NOT EQUAL TO 047404

004046  022767  000000  174726          CMP     #000000,ANS1    ;DID 000000 GET STORED?
004054  001401                          BEQ     .+4             ;BRANCH IF OK
004056  104001                          HLT+1                   ;ANS1 NOT EQUAL TO 000000

004060  022767  000004  174716          CMP     #4,     ANS2    ;CONDITION CODES = 4?
004066  001401                          BEQ     .+4             ;BRANCH IF OK
004070  104002                          HLT+2                   ;WRONG CONDITION CODES!


                        ;*****************************************************************
                        ;TEST 32:       TEST LDCID (LOAD-CONVERT INTEGER TO DOUBLE)
                        ;       LOAD    000000 --> 000000,000000,000000,000000
                        ;       FPS = 047604,   SRC = M2-R7,    AC = AC0
```

```
                        ;*****************************************************************
004072  104400                  SCOPE
004074  170127  047600  TST32:  LDFPS   #047600          ;LOAD FLOATING POINT STATUS
004100  177027  000000          LDCID   #000000,AC0     ;LOAD-CONVERT 000000 INTO AC0
004104  170200                  STFPS   FPS             ;STORE FLOATING POINT STATUS
004106  022700  047604          CMP     #047604,FPS     ;CHECK FLOATING POINT STATUS
004112  001401                  BEQ     .+4             ;BRANCH IF OK
004114  104000                  HLT                     ;FPS NOT EQUAL TO 047604

004116  174067  174660          STD     AC0,    ANS1    ;STORE AC0 IN ANS1 THRU ANS4
004122  022767  000000  174652  CMP     #000000,ANS1    ;DID 000000 GET STORED?
004130  001401                  BEQ     .+4             ;BRANCH IF OK
004132  104004                  HLT+4                   ;ANS1 NOT EQUAL TO 000000

004134  022767  000000  174642  CMP     #000000,ANS2    ;DID 000000 GET STORED?
004142  001401                  BEQ     .+4             ;BRANCH IF OK
004144  104004                  HLT+4                   ;ANS2 NOT EQUAL TO 000000

004146  022767  000000  174632  CMP     #000000,ANS3    ;DID 000000 GET STORED?
004154  001401                  BEQ     .+4             ;BRANCH IF OK
004156  104004                  HLT+4                   ;ANS3 NOT EQUAL TO 000000

004160  022767  000000  174622  CMP     #000000,ANS4    ;DID 000000 GET STORED?
004166  001401                  BEQ     .+4             ;BRANCH IF OK
004170  104004                  HLT+4                   ;ANS4 NOT EQUAL TO 000000

                        ;*****************************************************************
                        ;TEST 33:       TEST LDCID (LOAD-CONVERT INTEGER TO DOUBLE)
                        ;       LOAD    125252 --> 143652,126000,000000,000000
                        ;       FPS = 047610,   SRC = M2-R7,    AC = AC0
                        ;*****************************************************************

004172  104400                  SCOPE
004174  170127  047600  TST33:  LDFPS   #047600          ;LOAD FLOATING POINT STATUS
004200  177027  125252          LDCID   #125252,AC0     ;LOAD-CONVERT 125252 INTO AC0
004204  170200                  STFPS   FPS             ;STORE FLOATING POINT STATUS
004206  022700  047610          CMP     #047610,FPS     ;CHECK FLOATING POINT STATUS
004212  001401                  BEQ     .+4             ;BRANCH IF OK
004214  104000                  HLT                     ;FPS NOT EQUAL TO 047610

004216  174067  174560          STD     AC0,    ANS1    ;STORE AC0 IN ANS1 THRU ANS4
004222  022767  143652  174552  CMP     #143652,ANS1    ;DID 143652 GET STORED?
004230  001401                  BEQ     .+4             ;BRANCH IF OK
004232  104004                  HLT+4                   ;ANS1 NOT EQUAL TO 143652

004234  022767  126000  174542  CMP     #126000,ANS2    ;DID 126000 GET STORED?
004242  001401                  BEQ     .+4             ;BRANCH IF OK
004244  104004                  HLT+4                   ;ANS2 NOT EQUAL TO 126000

004246  022767  000000  174532  CMP     #000000,ANS3    ;DID 000000 GET STORED?
004254  001401                  BEQ     .+4             ;BRANCH IF OK
004256  104004                  HLT+4                   ;ANS3 NOT EQUAL TO 000000

004260  022767  000000  174522  CMP     #000000,ANS4    ;DID 000000 GET STORED?
```

```
004266  001401                          BEQ     .+4             ;BRANCH IF OK
004270  104004                          HLT+4                   ;ANS4 NOT EQUAL TO 000000


                        ;*************************************************************************
                        ;TEST 34:       TEST LDCID (LOAD-CONVERT INTEGER TO DOUBLE)
                        ;       LOAD    052525 --> 043652,125000,000000,000000
                        ;       FPS = 047600,   SRC = M2-R7,    AC = AC3
                        ;*************************************************************************

004272  104400                          SCOPE
004274  170127  047600          TST34:  LDFPS   #047600         ;LOAD FLOATING POINT STATUS
004300  177327  052525                  LDCID   #052525,AC3     ;LOAD-CONVERT 052525 INTO AC3
004304  170200                          STFPS   FPS             ;STORE FLOATING POINT STATUS
004306  022700  047600                  CMP     #047600,FPS     ;CHECK FLOATING POINT STATUS
004312  001401                          BEQ     .+4             ;BRANCH IF OK
004314  104000                          HLT                     ;FPS NOT EQUAL TO 047600

004316  174367  174460                  STD     AC3,    ANS1    ;STORE AC3 IN ANS1 THRU ANS4
004322  022767  043652  174452          CMP     #043652,ANS1    ;DID 043652 GET STORED?
004330  001401                          BEQ     .+4             ;BRANCH IF OK
004332  104004                          HLT+4                   ;ANS1 NOT EQUAL TO 043652

004334  022767  125000  174442          CMP     #125000,ANS2    ;DID 125000 GET STORED?
004342  001401                          BEQ     .+4             ;BRANCH IF OK
004344  104004                          HLT+4                   ;ANS2 NOT EQUAL TO 125000

004346  022767  000000  174432          CMP     #000000,ANS3    ;DID 000000 GET STORED?
004354  001401                          BEQ     .+4             ;BRANCH IF OK
004356  104004                          HLT+4                   ;ANS3 NOT EQUAL TO 000000

004360  022767  000000  174422          CMP     #000000,ANS4    ;DID 000000 GET STORED?
004366  001401                          BEQ     .+4             ;BRANCH IF OK
004370  104004                          HLT+4                   ;ANS4 NOT EQUAL TO 000000


                        ;*************************************************************************
                        ;TEST 35:       TEST LDCID (LOAD-CONVERT INTEGER TO DOUBLE)
                        ;       LOAD    000001 --> 040200,000000,000000,000000
                        ;       FPS = 047600,   SRC = M2-R7,    AC = AC1
                        ;*************************************************************************

004372  104400                          SCOPE
004374  170127  047600          TST35:  LDFPS   #047600         ;LOAD FLOATING POINT STATUS
004400  177127  000001                  LDCID   #000001,AC1     ;LOAD-CONVERT 000001 INTO AC1
004404  170200                          STFPS   FPS             ;STORE FLOATING POINT STATUS
004406  022700  047600                  CMP     #047600,FPS     ;CHECK FLOATING POINT STATUS
004412  001401                          BEQ     .+4             ;BRANCH IF OK
004414  104000                          HLT                     ;FPS NOT EQUAL TO 047600

004416  174167  174360                  STD     AC1,    ANS1    ;STORE AC1 IN ANS1 THRU ANS4
004422  022767  040200  174352          CMP     #040200,ANS1    ;DID 040200 GET STORED?
004430  001401                          BEQ     .+4             ;BRANCH IF OK
004432  104004                          HLT+4                   ;ANS1 NOT EQUAL TO 040200

004434  022767  000000  174342          CMP     #000000,ANS2    ;DID 000000 GET STORED?
```

```
004442  001401                          BEQ     .+4             ;BRANCH IF OK
004444  104004                          HLT+4                   ;ANS2 NOT EQUAL TO 000000

004446  022767  000000  174332          CMP     #000000,ANS3    ;DID 000000 GET STORED?
004454  001401                          BEQ     .+4             ;BRANCH IF OK
004456  104004                          HLT+4                   ;ANS3 NOT EQUAL TO 000000

004460  022767  000000  174322          CMP     #000000,ANS4    ;DID 000000 GET STORED?
004466  001401                          BEQ     .+4             ;BRANCH IF OK
004470  104004                          HLT+4                   ;ANS4 NOT EQUAL TO 000000


                        ;*****************************************************************
                        ;TEST 36:       TEST LDCID (LOAD-CONVERT INTEGER TO DOUBLE)
                        ;       LOAD    177777 --> 140200,000000,000000,000000
                        ;       FPS = 047610,   SRC = M2-R7,    AC = AC1
                        ;*****************************************************************

004472  104400                          SCOPE
004474  170127  047600          TST36:  LDFPS   #047600         ;LOAD FLOATING POINT STATUS
004500  177127  177777                  LDCID   #177777,AC1     ;LOAD-CONVERT 177777 INTO AC1
004504  170200                          STFPS   FPS             ;STORE FLOATING POINT STATUS
004506  022700  047610                  CMP     #047610,FPS     ;CHECK FLOATING POINT STATUS
004512  001401                          BEQ     .+4             ;BRANCH IF OK
004514  104000                          HLT                     ;FPS NOT EQUAL TO 047610
004516  174167  174260                  STD     AC1,    ANS1    ;STORE AC1 IN ANS1 THRU ANS4
004522  022767  140200  174252          CMP     #140200,ANS1    ;DID 140200 GET STORED?
004530  001401                          BEQ     .+4             ;BRANCH IF OK
004532  104004                          HLT+4                   ;ANS1 NOT EQUAL TO 140200

004534  022767  000000  174242          CMP     #000000,ANS2    ;DID 000000 GET STORED?
004542  001401                          BEQ     .+4             ;BRANCH IF OK
004544  104004                          HLT+4                   ;ANS2 NOT EQUAL TO 000000

004546  022767  000000  174232          CMP     #000000,ANS3    ;DID 000000 GET STORED?
004554  001401                          BEQ     .+4             ;BRANCH IF OK
004556  104004                          HLT+4                   ;ANS3 NOT EQUAL TO 000000

004560  022767  000000  174222          CMP     #000000,ANS4    ;DID 000000 GET STORED?
004566  001401                          BEQ     .+4             ;BRANCH IF OK
004570  104004                          HLT+4                   ;ANS4 NOT EQUAL TO 000000


                        ;*****************************************************************
                        ;TEST 37:       TEST LDCID (LOAD-CONVERT INTEGER TO DOUBLE)
                        ;       LOAD    100000 --> 144000,000000,000000,000000
                        ;       FPS = 047610,   SRC = M2-R7,    AC = AC1
                        ;*****************************************************************

004572  104400                          SCOPE
004574  170127  047600          TST37:  LDFPS   #047600         ;LOAD FLOATING POINT STATUS
004600  177127  100000                  LDCID   #100000,AC1     ;LOAD-CONVERT 100000 INTO AC1
004604  170200                          STFPS   FPS             ;STORE FLOATING POINT STATUS
004606  022700  047610                  CMP     #047610,FPS     ;CHECK FLOATING POINT STATUS
004612  001401                          BEQ     .+4             ;BRANCH IF OK
```

```
004614  104000                          HLT                     ;FPS NOT EQUAL TO 047610

004616  174167  174160                  STD     AC1,    ANS1    ;STORE AC1 IN ANS1 THRU ANS4
004622  022767  144000  174152          CMP     #144000,ANS1    ;DID 144000 GET STORED?
004630  001401                          BEQ     .+4             ;BRANCH IF OK
004632  104004                          HLT+4                   ;ANS1 NOT EQUAL TO 144000

004634  022767  000000  174142          CMP     #000000,ANS2    ;DID 000000 GET STORED?
004642  001401                          BEQ     .+4             ;BRANCH IF OK
004644  104004                          HLT+4                   ;ANS2 NOT EQUAL TO 000000

004646  022767  000000  174132          CMP     #000000,ANS3    ;DID 000000 GET STORED?
004654  001401                          BEQ     .+4             ;BRANCH IF OK
004656  104004                          HLT+4                   ;ANS3 NOT EQUAL TO 000000

004660  022767  000000  174122          CMP     #000000,ANS4    ;DID 000000 GET STORED?
004666  001401                          BEQ     .+4             ;BRANCH IF OK
004670  104004                          HLT+4                   ;ANS4 NOT EQUAL TO 000000

                        ;*****************************************************************
                        ;TEST 40:       TEST LDCID (LOAD-CONVERT INTEGER TO DOUBLE)
                        ;       LOAD    077777 --> 043777,177000,000000,000000
                        ;       FPS = 047600.   SRC = MD-R3,    AC = AC2
                        ;*****************************************************************

004672  104400                          SCOPE
004674  170127  047600          TST40:  LDFPS   #047600         ;LOAD FLOATING POINT STATUS
004700  012703  077777                  MOV     #077777,R3      ;LOAD 077777 INTO R3
004704  177203                          LDCID   R3,     AC2     ;LOAD-CONVERT 077777 INTO AC2
004706  170200                          STFPS   FPS             ;STORE FLOATING POINT STATUS
004710  022700  047600                  CMP     #047600,FPS     ;CHECK FLOATING POINT STATUS
004714  001401                          BEQ     .+4             ;BRANCH IF OK
004716  104000                          HLT                     ;FPS NOT EQUAL TO 047600

004720  174267  174056                  STD     AC2,    ANS1    ;STORE AC2 IN ANS1 THRU ANS4
004724  022767  043777  174050          CMP     #043777,ANS1    ;DID 043777 GET STORED?
004732  001401                          BEQ     .+4             ;BRANCH IF OK
004734  104004                          HLT+4                   ;ANS1 NOT EQUAL TO 043777

004736  022767  177000  174040          CMP     #177000,ANS2    ;DID 177000 GET STORED?
004744  001401                          BEQ     .+4             ;BRANCH IF OK
004746  104004                          HLT+4                   ;ANS2 NOT EQUAL TO 177000

004750  022767  000000  174030          CMP     #000000,ANS3    ;DID 000000 GET STORED?
004756  001401                          BEQ     .+4             ;BRANCH IF OK
004760  104004                          HLT+4                   ;ANS3 NOT EQUAL TO 000000

004762  022767  000000  174020          CMP     #000000,ANS4    ;DID 000000 GET STORED?
004770  001401                          BEQ     .+4             ;BRANCH IF OK
004772  104004                          HLT+4                   ;ANS4 NOT EQUAL TO 000000

                        ;*****************************************************************
                        ;TEST 41:       TEST LDCID (LOAD-CONVERT INTEGER TO DOUBLE)
                        ;       LOAD    000125 --> 041652,000000,000000,000000
```

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                                    ;       FPS = 047600,   SRC = M6-R7,    AC = AC1
                                    ;*****************************************************************************

004774  104400                              SCOPE
004776  000401                              BR      TST41

005000  000125                      DAT41:  000125

005002  170127  047600              TST41:  LDFPS   #047600         ;LOAD FLOATING POINT STATUS
005006  177167  177766                      LDCID   DAT41,  AC1     ;LOAD-CONVERT 000125 INTO AC1
005012  170200                              STFPS   FPS             ;STORE FLOATING POINT STATUS
005014  022700  047600                      CMP     #047600,FPS     ;CHECK FLOATING POINT STATUS
005020  001401                              BEQ     .+4             ;BRANCH IF OK
005022  104000                              HLT                     ;FPS NOT EQUAL TO 047600

005024  174167  173752                      STD     AC1,    ANS1    ;STORE AC1 IN ANS1 THRU ANS4
005030  022767  041652  173744              CMP     #041652,ANS1    ;DID 041652 GET STORED?
005036  001401                              BEQ     .+4             ;BRANCH IF OK
005040  104004                              HLT+4                   ;ANS1 NOT EQUAL TO 041652

005042  022767  000000  173734              CMP     #000000,ANS2    ;DID 000000 GET STORED?
005050  001401                              BEQ     .+4             ;BRANCH IF OK
005052  104004                              HLT+4                   ;ANS2 NOT EQUAL TO 000000

005054  022767  000000  173724              CMP     #000000,ANS3    ;DID 000000 GET STORED?
005062  001401                              BEQ     .+4             ;BRANCH IF OK
005064  104004                              HLT+4                   ;ANS3 NOT EQUAL TO 000000

005066  022767  000000  173714              CMP     #000000,ANS4    ;DID 000000 GET STORED?
005074  001401                              BEQ     .+4             ;BRANCH IF OK
005076  104004                              HLT+4                   ;ANS4 NOT EQUAL TO 000000

                                    ;*****************************************************************************
                                    ;TEST 42:       TEST LDCID (LOAD-CONVERT INTEGER TO DOUBLE)
                                    ;       LOAD    070707 --> 043743,107000,000000,000000
                                    ;       FPS = 047600,   SRC = M2-R7,    AC = AC1
                                    ;*****************************************************************************

005100  104400                              SCOPE
005102  170127  047600              TST42:  LDFPS   #047600         ;LOAD FLOATING POINT STATUS
005106  177127  070707                      LDCID   #070707,AC1     ;LOAD-CONVERT 070707 INTO AC1
005112  170200                              STFPS   FPS             ;STORE FLOATING POINT STATUS
005114  022700  047600                      CMP     #047600,FPS     ;CHECK FLOATING POINT STATUS
005120  001401                              BEQ     .+4             ;BRANCH IF OK
005122  104000                              HLT                     ;FPS NOT EQUAL TO 047600

005124  174167  173652                      STD     AC1,    ANS1    ;STORE AC1 IN ANS1 THRU ANS4
005130  022767  043743  173644              CMP     #043743,ANS1    ;DID 043743 GET STORED?
005136  001401                              BEQ     .+4             ;BRANCH IF OK
005140  104004                              HLT+4                   ;ANS1 NOT EQUAL TO 043743

005142  022767  107000  173634              CMP     #107000,ANS2    ;DID 107000 GET STORED?
005150  001401                              BEQ     .+4             ;BRANCH IF OK
005152  104004                              HLT+4                   ;ANS2 NOT EQUAL TO 107000
```

```
005154  022767  000000  173624          CMP     #000000,ANS3    ;DID 000000 GET STORED?
005162  001401                          BEQ     .+4             ;BRANCH IF OK
005164  104004                          HLT+4                   ;ANS3 NOT EQUAL TO 000000

005166  022767  000000  173614          CMP     #000000,ANS4    ;DID 000000 GET STORED?
005174  001401                          BEQ     .+4             ;BRANCH IF OK
005176  104004                          HLT+4                   ;ANS4 NOT EQUAL TO 000000

                        ;*****************************************************************************
                        ;TEST 43:       TEST LDCID (LOAD-CONVERT INTEGER TO DOUBLE)
                        ;       LOAD    107070 --> 143743,110000,000000,000000
                        ;       FPS = 047610,   SRC = M2-R7,    AC = AC0
                        ;*****************************************************************************

005200  104400                          SCOPE
005202  170127  047600          TST43:  LDFPS   #047600         ;LOAD FLOATING POINT STATUS
005206  177027  107070                  LDCID   #107070,AC0     ;LOAD-CONVERT 107070 INTO AC0
005212  170200                          STFPS   FPS             ;STORE FLOATING POINT STATUS
005214  022700  047610                  CMP     #047610,FPS     ;CHECK FLOATING POINT STATUS
005220  001401                          BEQ     .+4             ;BRANCH IF OK
005222  104000                          HLT                     ;FPS NOT EQUAL TO 047610

005224  174067  173552                  STD     AC0,    ANS1    ;STORE AC0 IN ANS1 THRU ANS4
005230  022767  143743  173544          CMP     #143743,ANS1    ;DID 143743 GET STORED?
005236  001401                          BEQ     .+4             ;BRANCH IF OK
005240  104004                          HLT+4                   ;ANS1 NOT EQUAL TO 143743

005242  022767  110000  173534          CMP     #110000,ANS2    ;DID 110000 GET STORED?
005250  001401                          BEQ     .+4             ;BRANCH IF OK
005252  104004                          HLT+4                   ;ANS2 NOT EQUAL TO 110000

005254  022767  000000  173524          CMP     #000000,ANS3    ;DID 000000 GET STORED?
005262  001401                          BEQ     .+4             ;BRANCH IF OK
005264  104004                          HLT+4                   ;ANS3 NOT EQUAL TO 000000

005266  022767  000000  173514          CMP     #000000,ANS4    ;DID 000000 GET STORED?
005274  001401                          BEQ     .+4             ;BRANCH IF OK
005276  104004                          HLT+4                   ;ANS4 NOT EQUAL TO 000000

                        ;*****************************************************************************
                        ;TEST 44:       TEST STCDI (STORE-CONVERT DOUBLE TO INTEGER)
                        ;       STORE   000000,000000,000000,000000 --> 000000
                        ;       FPS = 047604,   AC = AC3,       DST = M6-R7
                        ;*****************************************************************************

005300  104400                          SCOPE
005302  000404                          BR      TST44

005304  000000  000000  000000  DAT44:  000000,000000,000000,000000
005312  000000

005314  170127  047600          TST44:  LDFPS   #047600         ;LOAD FLOATING POINT STATUS
005320  172767  177760                  LDD     DAT44,  AC3     ;LOAD 000000,000000,000000,000000 INTO AC3
005324  175767  173452          FPI44:  STCDI   AC3,    ANS1    ;STORE-CONVERT AC3 IN ANS1
```

```
005330  013767  177776  173446          MOV     @#PS,   ANS2    ;GET CPU STATUS
005336  042767  177760  173440          BIC     #177760,ANS2    ;SAVE CONDITION CODES
005344  170200                          STFPS   FPS             ;STORE FLOATING POINT STATUS
005346  022700  047604                  CMP     #047604,FPS     ;CHECK FLOATING POINT STATUS
005352  001401                          BEQ     .+4             ;BRANCH IF OK
005354  104000                          HLT                     ;FPS NOT EQUAL TO 047604

005356  022767  000000  173416          CMP     #000000,ANS1    ;DID 000000 GET STORED?
005364  001401                          BEQ     .+4             ;BRANCH IF OK
005366  104001                          HLT+1                   ;ANS1 NOT EQUAL TO 000000

005370  022767  000004  173406          CMP     #4,     ANS2    ;CONDITION CODES = 4?
005376  001401                          BEQ     .+4             ;BRANCH IF OK
005400  104002                          HLT+2                   ;WRONG CONDITION CODES!


                        ;*************************************************************************
                        ;TEST 45:       TEST STCDI (STORE-CONVERT DOUBLE TO INTEGER)
                        ;       STORE   041252,125252,125252,125252 --> 000025
                        ;       FPS = 047600,   AC = AC3,       DST = M6-R7
                        ;*************************************************************************

005402  104400                          SCOPE
005404  000404                          BR      TST45

005406  041252  125252  125252  DAT45:  041252,125252,125252,125252
005414  125252

005416  170127  047600          TST45:  LDFPS   #047600         ;LOAD FLOATING POINT STATUS
005422  172767  177760                  LDD     DAT45,  AC3     ;LOAD 041252,125252,125252,125252 INTO AC3
005426  175767  173350          FPI45:  STCDI   AC3,    ANS1    ;STORE-CONVERT AC3 IN ANS1
005432  013767  177776  173344          MOV     @#PS,   ANS2    ;GET CPU STATUS
005440  042767  177760  173336          BIC     #177760,ANS2    ;SAVE CONDITION CODES
005446  170200                          STFPS   FPS             ;STORE FLOATING POINT STATUS
005450  022700  047600                  CMP     #047600,FPS     ;CHECK FLOATING POINT STATUS
005454  001401                          BEQ     .+4             ;BRANCH IF OK
005456  104000                          HLT                     ;FPS NOT EQUAL TO 047600

005460  022767  000025  173314          CMP     #000025,ANS1    ;DID 000025 GET STORED?
005466  001401                          BEQ     .+4             ;BRANCH IF OK
005470  104001                          HLT+1                   ;ANS1 NOT EQUAL TO 000025

005472  022767  000000  173304          CMP     #0,     ANS2    ;CONDITION CODES = 0?
005500  001401                          BEQ     .+4             ;BRANCH IF OK
005502  104002                          HLT+2                   ;WRONG CONDITION CODES!


                        ;*************************************************************************
                        ;TEST 46:       TEST STCDI (STORE-CONVERT DOUBLE TO INTEGER)
                        ;       STORE   141252,125252,125252,125252 --> 177753
                        ;       FPS = 047610,   AC = AC2,       DST = M6-R7
                        ;*************************************************************************

005504  104400                          SCOPE
005506  000404                          BR      TST46
```

```
005510  141252  125252  125252  DAT46:  141252,125252,125252,125252
005516  125252

005520  170127  047600          TST46:  LDFPS   #047600          ;LOAD FLOATING POINT STATUS
005524  172667  177760                  LDD     DAT46,  AC2      ;LOAD 141252,125252,125252,125252 INTO AC2
005530  175667  173246          FPI46:  STCDI   AC2,    ANS1     ;STORE-CONVERT AC2 IN ANS1
005534  013767  177776  173242          MOV     @#PS,   ANS2     ;GET CPU STATUS
005542  042767  177760  173234          BIC     #177760,ANS2     ;SAVE CONDITION CODES
005550  170200                          STFPS   FPS              ;STORE FLOATING POINT STATUS
005552  022700  047610                  CMP     #047610,FPS      ;CHECK FLOATING POINT STATUS
005556  001401                          BEQ     .+4              ;BRANCH IF OK
005560  104000                          HLT                      ;FPS NOT EQUAL TO 047610

005562  022767  177753  173212          CMP     #177753,ANS1     ;DID 177753 GET STORED?
005570  001401                          BEQ     .+4              ;BRANCH IF OK
005572  104001                          HLT+1                    ;ANS1 NOT EQUAL TO 177753

005574  022767  000010  173202          CMP     #10.,   ANS2     ;CONDITION CODES = 10?
005602  001401                          BEQ     .+4              ;BRANCH IF OK
005604  104002                          HLT+2                    ;WRONG CONDITION CODES!

                        ;*****************************************************************************
                        ;TEST 47:       TEST STCDI (STORE-CONVERT DOUBLE TO INTEGER)
                        ;       STORE   040177,177777,177777,177777 --> 000000
                        ;       FPS = 047604,   AC = AC1,       DST = M6-R7
                        ;*****************************************************************************

005606  104400                          SCOPE
005610  000404                          BR      TST47

005612  040177  177777  177777  DAT47:  040177,177777,177777,177777
005620  177777

005622  170127  047600          TST47:  LDFPS   #047600          ;LOAD FLOATING POINT STATUS
005626  172567  177760                  LDD     DAT47,  AC1      ;LOAD 040177,177777,177777,177777 INTO AC1
005632  175567  173144          FPI47:  STCDI   AC1,    ANS1     ;STORE-CONVERT AC1 IN ANS1
005636  013767  177776  173140          MOV     @#PS,   ANS2     ;GET CPU STATUS
005644  042767  177760  173132          BIC     #177760,ANS2     ;SAVE CONDITION CODES
005652  170200                          STFPS   FPS              ;STORE FLOATING POINT STATUS
005654  022700  047604                  CMP     #047604,FPS      ;CHECK FLOATING POINT STATUS
005660  001401                          BEQ     .+4              ;BRANCH IF OK
005662  104000                          HLT                      ;FPS NOT EQUAL TO 047604

005664  022767  000000  173110          CMP     #000000,ANS1     ;DID 000000 GET STORED?
005672  001401                          BEQ     .+4              ;BRANCH IF OK
005674  104001                          HLT+1                    ;ANS1 NOT EQUAL TO 000000

005676  022767  000004  173100          CMP     #4,     ANS2     ;CONDITION CODES = 4?
005704  001401                          BEQ     .+4              ;BRANCH IF OK
005706  104002                          HLT+2                    ;WRONG CONDITION CODES!

                        ;*****************************************************************************
                        ;TEST 50:       TEST STCDI (STORE-CONVERT DOUBLE TO INTEGER)
                        ;       STORE   140177,177777,177777,177777 --> 000000
```

```
                                ;       FPS = 047604,   AC = AC0,       DST = M6-R7
                                ;*************************************************************************

005710  104400                            SCOPE
005712  000404                            BR      TST50

005714  140177  177777  177777  DAT50:  140177,177777,177777,177777
005722  177777

005724  170127  047600          TST50:  LDFPS   #047600         ;LOAD FLOATING POINT STATUS
005730  172467  177760                  LDD     DAT50,  AC0     ;LOAD 140177,177777,177777,177777 INTO AC0
005734  175467  173042          FPI50:  STCDI   AC0,    ANS1    ;STORE-CONVERT AC0 IN ANS1
005740  013767  177776  173036          MOV     @#PS,   ANS2    ;GET CPU STATUS
005746  042767  177760  173030          BIC     #177760,ANS2    ;SAVE CONDITION CODES
005754  170200                          STFPS   FPS             ;STORE FLOATING POINT STATUS
005756  022700  047604                  CMP     #047604,FPS     ;CHECK FLOATING POINT STATUS
005762  001401                          BEQ     .+4             ;BRANCH IF OK
005764  104000                          HLT                     ;FPS NOT EQUAL TO 047604

005766  022767  000000  173006          CMP     #000000,ANS1    ;DID 000000 GET STORED?
005774  001401                          BEQ     .+4             ;BRANCH IF OK
005776  104001                          HLT+1                   ;ANS1 NOT EQUAL TO 000000

006000  022767  000004  172776          CMP     #4,     ANS2    ;CONDITION CODES = 4?
006006  001401                          BEQ     .+4             ;BRANCH IF OK
006010  104002                          HLT+2                   ;WRONG CONDITION CODES!

                                ;*************************************************************************
                                ;TEST 51:       TEST STCDI (STORE-CONVERT DOUBLE TO INTEGER)
                                ;       STORE   040200,000000,000000,000001 --> 000001
                                ;       FPS = 047600,   AC = AC3,       DST = M6-R7
                                ;*************************************************************************

006012  104400                            SCOPE
006014  000404                            BR      TST51

006016  040200  000000  000000  DAT51:  040200,000000,000000,000001
006024  000001

006026  170127  047600          TST51:  LDFPS   #047600         ;LOAD FLOATING POINT STATUS
006032  172767  177760                  LDD     DAT51,  AC3     ;LOAD 040200,000000,000000,000001 INTO AC3
006036  175767  172740          FPI51:  STCDI   AC3,    ANS1    ;STORE-CONVERT AC3 IN ANS1
006042  013767  177776  172734          MOV     @#PS,   ANS2    ;GET CPU STATUS
006050  042767  177760  172726          BIC     #177760,ANS2    ;SAVE CONDITION CODES
006056  170200                          STFPS   FPS             ;STORE FLOATING POINT STATUS
006060  022700  047600                  CMP     #047600,FPS     ;CHECK FLOATING POINT STATUS
006064  001401                          BEQ     .+4             ;BRANCH IF OK
006066  104000                          HLT                     ;FPS NOT EQUAL TO 047600

006070  022767  000001  172704          CMP     #000001,ANS1    ;DID 000001 GET STORED?
006076  001401                          BEQ     .+4             ;BRANCH IF OK
006100  104001                          HLT+1                   ;ANS1 NOT EQUAL TO 000001

006102  022767  000000  172674          CMP     #0,     ANS2    ;CONDITION CODES = 0?
006110  001401                          BEQ     .+4             ;BRANCH IF OK
```

```
006112  104002                          HLT+2                   ;WRONG CONDITION CODES!


                        ;*************************************************************************
                        ;TEST 52:       TEST STCDI (STORE-CONVERT DOUBLE TO INTEGER)
                        ;       STORE   140200,000000,000000,000001 --> 177777
                        ;       FPS = 047610,   AC = AC3,       DST = M6-R7
                        ;*************************************************************************

006114  104400                          SCOPE
006116  000404                          BR      TST52

006120  140200  000000  000000  DAT52:  140200,000000,000000,000001
006126  000001

006130  170127  047600          TST52:  LDFPS   #047600         ;LOAD FLOATING POINT STATUS
006134  172767  177760                  LDD     DAT52,  AC3     ;LOAD 140200,000000,000000,000001 INTO AC3
006140  175767  172636          FPI52:  STCDI   AC3,    ANS1    ;STORE-CONVERT AC3 IN ANS1
006144  013767  177776  172632          MOV     @#PS,   ANS2    ;GET CPU STATUS
006152  042767  177760  172624          BIC     #177760,ANS2    ;SAVE CONDITION CODES
006160  170200                          STFPS   FPS             ;STORE FLOATING POINT STATUS
006162  022700  047610                  CMP     #047610,FPS     ;CHECK FLOATING POINT STATUS
006166  001401                          BEQ     .+4             ;BRANCH IF OK
006170  104000                          HLT                     ;FPS NOT EQUAL TO 047610

006172  022767  177777  172602          CMP     #177777,ANS1    ;DID 177777 GET STORED?
006200  001401                          BEQ     .+4             ;BRANCH IF OK
006202  104001                          HLT+1                   ;ANS1 NOT EQUAL TO 177777
006204  022767  000010  172572          CMP     #10.,   ANS2    ;CONDITION CODES = 10?
006212  001401                          BEQ     .+4             ;BRANCH IF OK
006214  104002                          HLT+2                   ;WRONG CONDITION CODES!


                        ;*************************************************************************
                        ;TEST 53:       TEST STCDI (STORE-CONVERT DOUBLE TO INTEGER)
                        ;       STORE   043777,177777,177777,177777 --> 077777
                        ;       FPS = 047600,   AC = AC2,       DST = M6-R7
                        ;*************************************************************************

006216  104400                          SCOPE
006220  000404                          BR      TST53

006222  043777  177777  177777  DAT53:  043777,177777,177777,177777
006230  177777

006232  170127  047600          TST53:  LDFPS   #047600         ;LOAD FLOATING POINT STATUS
006236  172667  177760                  LDD     DAT53,  AC2     ;LOAD 043777,177777,177777,177777 INTO AC2
006242  175667  172534          FPI53:  STCDI   AC2,    ANS1    ;STORE-CONVERT AC2 IN ANS1
006246  013767  177776  172530          MOV     @#PS,   ANS2    ;GET CPU STATUS
006254  042767  177760  172522          BIC     #177760,ANS2    ;SAVE CONDITION CODES
006262  170200                          STFPS   FPS             ;STORE FLOATING POINT STATUS
006264  022700  047600                  CMP     #047600,FPS     ;CHECK FLOATING POINT STATUS
006270  001401                          BEQ     .+4             ;BRANCH IF OK
006272  104000                          HLT                     ;FPS NOT EQUAL TO 047600
```

```
006274  022767  077777  172500          CMP     #077777,ANS1    ;DID 077777 GET STORED?
006302  001401                          BEQ     .+4             ;BRANCH IF OK
006304  104001                          HLT+1                   ;ANS1 NOT EQUAL TO 077777

006306  022767  000000  172470          CMP     #0,     ANS2    ;CONDITION CODES = 0?
006314  001401                          BEQ     .+4             ;BRANCH IF OK
006316  104002                          HLT+2                   ;WRONG CONDITION CODES!


                                ;*************************************************************************
                                ;TEST 54:       TEST STCDI (STORE-CONVERT DOUBLE TO INTEGER)
                                ;       STORE   044000,000000,000000,000000 --> 000000
                                ;       FPS = 147605,   AC = AC1,       DST = M6-R7
                                ;       FEC = 6,        FEA = FPI54
                                ;*************************************************************************

006320  104400                          SCOPE
006322  000404                          BR      TST54

006324  044000  000000  000000  DAT54:  044000,000000,000000,000000
006332  000000

006334  170127  047600          TST54:  LDFPS   #047600         ;LOAD FLOATING POINT STATUS
006340  172567  177760                  LDD     DAT54,  AC1     ;LOAD 044000,000000,000000,000000 INTO AC1
006344  175567  172432          FPI54:  STCDI   AC1,    ANS1    ;STORE-CONVERT AC1 IN ANS1
006350  013767  177776  172426          MOV     @#PS,   ANS2    ;GET CPU STATUS
006356  042767  177760  172420          BIC     #177760,ANS2    ;SAVE CONDITION CODES
006364  170200                          STFPS   FPS             ;STORE FLOATING POINT STATUS
006366  170367  172430                  STST    FEC             ;STORE EXCEPTION CODES
006372  022700  147605                  CMP     #147605,FPS     ;CHECK FLOATING POINT STATUS
006376  001401                          BEQ     .+4             ;BRANCH IF OK
006400  104000                          HLT                     ;FPS NOT EQUAL TO 147605

006402  022767  000006  172412          CMP     #6,     FEC     ;CHECK FLOATING EXCEPTION CODE
006410  001401                          BEQ     .+4             ;BRANCH IF OK
006412  104000                          HLT                     ;FEC NOT EQUAL TO 6

006414  022767  006344  172402          CMP     #FPI54, FEA     ;CHECK FLOATING EXCEPTION ADDRESS
006422  001401                          BEQ     .+4             ;BRANCH IF OK
006424  104000                          HLT                     ;FEA NOT EQUAL TO FPI54

006426  022767  000000  172346          CMP     #000000,ANS1    ;DID 000000 GET STORED?
006434  001401                          BEQ     .+4             ;BRANCH IF OK
006436  104001                          HLT+1                   ;ANS1 NOT EQUAL TO 000000

006440  022767  000005  172336          CMP     #5,     ANS2    ;CONDITION CODES = 5?
006446  001401                          BEQ     .+4             ;BRANCH IF OK
006450  104002                          HLT+2                   ;WRONG CONDITION CODES!


                                ;*************************************************************************
                                ;TEST 55:       TEST STCDI (STORE-CONVERT DOUBLE TO INTEGER)
                                ;       STORE   144000,000377,177777,177777 --> 100000
                                ;       FPS = 047610,   AC = AC3,       DST = M0-R5
                                ;*************************************************************************
```

```
006452  104400                          SCOPE
006454  000404                          BR      TST55

006456  144000  000377  177777  DAT55:  144000,000377,177777,177777
006464  177777

006466  170127  047600          TST55:  LDFPS   #047600         ;LOAD FLOATING POINT STATUS
006472  172767  177760                  LDD     DAT55,  AC3     ;LOAD 144000,000377,177777,177777 INTO AC3
006476  175705                          STCDI   AC3,    R5      ;STORE-CONVERT AC3 IN R5
006500  013767  177776  172276          MOV     @#PS,   ANS2    ;GET CPU STATUS
006506  042767  177760  172270          BIC     #177760,ANS2    ;SAVE CONDITION CODES
006514  010567  172262                  MOV     R5,     ANS1    ;SAVE R5
006520  170200                          STFPS   FPS             ;STORE FLOATING POINT STATUS
006522  022700  047610                  CMP     #047610,FPS     ;CHECK FLOATING POINT STATUS
006526  001401                          BEQ     .+4             ;BRANCH IF OK
006530  104000                          HLT                     ;FPS NOT EQUAL TO 047610

006532  022767  100000  172242          CMP     #100000,ANS1    ;DID 100000 GET STORED?
006540  001401                          BEQ     .+4             ;BRANCH IF OK
006542  104001                          HLT+1                   ;ANS1 NOT EQUAL TO 100000

006544  022767  000010  172232          CMP     #10,    ANS2    ;CONDITION CODES = 10?
006552  001401                          BEQ     .+4             ;BRANCH IF OK
006554  104002                          HLT+2                   ;WRONG CONDITION CODES!
```

```
;*****************************************************************************
;TEST 56:       TEST STCDI (STORE-CONVERT DOUBLE TO INTEGER)
;       STORE   144000,000400,000000,000000 --> 000000
;       FPS = 147605,   AC = AC2,       DST = M2-R7
;       FEC = 6,        FEA = FPI56
;*****************************************************************************
```

```
006556  104400                          SCOPE
006560  000404                          BR      TST56

006562  144000  000400  000000  DAT56:  144000,000400,000000,000000
006570  000000

006572  170127  047600          TST56:  LDFPS   #047600         ;LOAD FLOATING POINT STATUS
006576  172667  177760                  LDD     DAT56,  AC2     ;LOAD 144000,000400,000000,000000 INTO AC2
006602  175627                  FPI56:  STCDI   AC2,    (PC)+   ;STORE-CONVERT AC2 IN ANS1
006604  000000                  ANR56:  0                       ;LOCATION FOR ANS
006606  000402                          BR      .+6
006610  000000                          HALT                    ;PC FAILURE
006612  000000                          HALT
006614  013767  177776  172162          MOV     @#PS,   ANS2    ;GET CPU STATUS
006622  042767  177760  172154          BIC     #177760,ANS2    ;SAVE CONDITION CODES
006630  016767  177750  172144          MOV     ANR56,  ANS1    ;SAVE THE ANSWER
006636  170200                          STFPS   FPS             ;STORE FLOATING POINT STATUS
006640  170367  172156                  STST    FEC             ;STORE EXCEPTION CODES
006644  022700  147605                  CMP     #147605,FPS     ;CHECK FLOATING POINT STATUS
006650  001401                          BEQ     .+4             ;BRANCH IF OK
006652  104000                          HLT                     ;FPS NOT EQUAL TO 147605

006654  022767  000006  172140          CMP     #6,     FEC     ;CHECK FLOATING EXCEPTION CODE
```

```
006662  001401                          BEQ     .+4             ;BRANCH IF OK
006664  104000                          HLT                     ;FEC NOT EQUAL TO 6

006666  022767  006602  172130          CMP     #FPI56, FEA     ;CHECK FLOATING EXCEPTION ADDRESS
006674  001401                          BEQ     .+4             ;BRANCH IF OK
006676  104000                          HLT                     ;FEA NOT EQUAL TO FPI56

006700  022767  000000  172074          CMP     #000000,ANS1    ;DID 000000 GET STORED?
006706  001401                          BEQ     .+4             ;BRANCH IF OK
006710  104001                          HLT+1                   ;ANS1 NOT EQUAL TO 000000

006712  022767  000005  172064          CMP     #5,     ANS2    ;CONDITION CODES = 5?
006720  001401                          BEQ     .+4             ;BRANCH IF OK
006722  104002                          HLT+2                   ;WRONG CONDITION CODES!

                        ;*****************************************************************
                        ;TEST 57:       TEST STCDI (STORE-CONVERT DOUBLE TO INTEGER)
                        ;       STORE   100000,000000,000000,000000 --> 000000
                        ;       FPS = 047604,   AC = AC1,       DST = M6-R7
                        ;*****************************************************************

006724  104400                          SCOPE
006726  000404                          BR      TST57

006730  100000  000000  000000  DAT57:  100000,000000,000000,000000
006736  000000

006740  170127  040200          TST57:  LDFPS   #040200         ;LOAD FLOATING POINT STATUS
006744  172567  177760                  LDD     DAT57,  AC1     ;LOAD 100000,000000,000000,000000 INTO AC1
006750  170127  047600                  LDFPS   #047600         ;LOAD FLOATING POINT STATUS
006754  175567  172022                  STCDI   AC1,    ANS1    ;STORE-CONVERT AC1 IN ANS1
006760  013767  177776  172016          MOV     @#PS,   ANS2    ;GET CPU STATUS
006766  042767  177760  172010          BIC     #177760,ANS2    ;SAVE CONDITION CODES
006774  170200                          STFPS   FPS             ;STORE FLOATING POINT STATUS
006776  022700  047604                  CMP     #047604,FPS     ;CHECK FLOATING POINT STATUS
007002  001401                          BEQ     .+4             ;BRANCH IF OK
007004  104000                          HLT                     ;FPS NOT EQUAL TO 047604

007006  022767  000000  171766          CMP     #000000,ANS1    ;DID 000000 GET STORED?
007014  001401                          BEQ     .+4             ;BRANCH IF OK
007016  104001                          HLT+1                   ;ANS1 NOT EQUAL TO 000000

007020  022767  000004  171756          CMP     #4,     ANS2    ;CONDITION CODES = 4?
007026  001401                          BEQ     .+4             ;BRANCH IF OK
007030  104002                          HLT+2                   ;WRONG CONDITION CODES!

                        ;*****************************************************************
                        ;TEST 60:       TEST STCDI (STORE-CONVERT DOUBLE TO INTEGER)
                        ;       STORE   177777,177777,177777,177777 --> 000000
                        ;       FPS = 147605,   AC = AC0,       DST = M6-R7
                        ;       FEC = 6,        FEA = FPI60
                        ;*****************************************************************

007032  104400                          SCOPE
```

```
007034  000404                          BR      TST60

007036  177777  177777  177777  DAT60:  177777,177777,177777,177777
007044  177777

007046  170127  047600          TST60:  LDFPS   #047600         ;LOAD FLOATING POINT STATUS
007052  172467  177760                  LDD     DAT60,  AC0     ;LOAD 177777,177777,177777,177777 INTO AC0
007056  175467  171720          FPI60:  STCDI   AC0,    ANS1    ;STORE-CONVERT AC0 IN ANS1
007062  013767  177776  171714          MOV     @#PS,   ANS2    ;GET CPU STATUS
007070  042767  177760  171706          BIC     #177760,ANS2    ;SAVE CONDITION CODES
007076  170200                          STFPS   FPS             ;STORE FLOATING POINT STATUS
007100  170367  171716                  STST    FEC             ;STORE EXCEPTION CODES
007104  022700  147605                  CMP     #147605,FPS     ;CHECK FLOATING POINT STATUS
007110  001401                          BEQ     .+4             ;BRANCH IF OK
007112  104000                          HLT                     ;FPS NOT EQUAL TO 147605

007114  022767  000006  171700          CMP     #6,     FEC     ;CHECK FLOATING EXCEPTION CODE
007122  001401                          BEQ     .+4             ;BRANCH IF OK
007124  104000                          HLT                     ;FEC NOT EQUAL TO 6

007126  022767  007056  171670          CMP     #FPI60, FEA     ;CHECK FLOATING EXCEPTION ADDRESS
007134  001401                          BEQ     .+4             ;BRANCH IF OK
007136  104000                          HLT                     ;FEA NOT EQUAL TO FPI60

007140  022767  000000  171634          CMP     #000000,ANS1    ;DID 000000 GET STORED?
007146  001401                          BEQ     .+4             ;BRANCH IF OK
007150  104001                          HLT+1                   ;ANS1 NOT EQUAL TO 000000

007152  022767  000005  171624          CMP     #5,     ANS2    ;CONDITION CODES = 5?
007160  001401                          BEQ     .+4             ;BRANCH IF OK
007162  104002                          HLT+2                   ;WRONG CONDITION CODES!

                        ;*****************************************************************************
                        ;TEST 61:       TEST STCDI (STORE-CONVERT DOUBLE TO INTEGER)
                        ;       STORE   000200,000000,000000,000000 --> 000000
                        ;       FPS = 047604,   AC = AC3,       DST = M6-R7
                        ;*****************************************************************************

007164  104400                          SCOPE
007166  000404                          BR      TST61

007170  000200  000000  000000  DAT61:  000200,000000,000000,000000
007176  000000

007200  170127  047600          TST61:  LDFPS   #047600         ;LOAD FLOATING POINT STATUS
007204  172767  177760                  LDD     DAT61,  AC3     ;LOAD 000200,000000,000000,000000 INTO AC3
007210  175767  171566          FPI61:  STCDI   AC3,    ANS1    ;STORE-CONVERT AC3 IN ANS1
007214  013767  177776  171562          MOV     @#PS,   ANS2    ;GET CPU STATUS
007222  042767  177760  171554          BIC     #177760,ANS2    ;SAVE CONDITION CODES
007230  170200                          STFPS   FPS             ;STORE FLOATING POINT STATUS
007232  022700  047604                  CMP     #047604,FPS     ;CHECK FLOATING POINT STATUS
007236  001401                          BEQ     .+4             ;BRANCH IF OK
007240  104000                          HLT                     ;FPS NOT EQUAL TO 047604

007242  022767  000000  171532          CMP     #000000,ANS1    ;DID 000000 GET STORED?
```

```
007250  001401                          BEQ     .+4             ;BRANCH IF OK
007252  104001                          HLT+1                   ;ANS1 NOT EQUAL TO 000000

007254  022767  000004  171522          CMP     #4,     ANS2    ;CONDITION CODES = 4?
007262  001401                          BEQ     .+4             ;BRANCH IF OK
007264  104002                          HLT+2                   ;WRONG CONDITION CODES!


                        ;*****************************************************************************
                        ;TEST 62:       TEST STCDI (STORE-CONVERT DOUBLE TO INTEGER)
                        ;       STORE   100177,177777,177777,177777 --> 000000
                        ;       FPS = 047604,   AC = AC2,       DST = M6-R7
                        ;*****************************************************************************

007266  104400                          SCOPE
007270  000404                          BR      TST62

007272  100177  177777  177777  DAT62:  100177,177777,177777,177777
007300  177777

007302  170127  040200          TST62:  LDFPS   #040200         ;LOAD FLOATING POINT STATUS
007306  172667  177760                  LDD     DAT62,  AC2     ;LOAD 100177,177777,177777,177777 INTO AC2
007312  170127  047600                  LDFPS   #047600         ;LOAD FLOATING POINT STATUS
007316  175667  171460                  STCDI   AC2,    ANS1    ;STORE-CONVERT AC2 IN ANS1
007322  013767  177776  171454          MOV     @#PS,   ANS2    ;GET CPU STATUS
007330  042767  177760  171446          BIC     #177760,ANS2    ;SAVE CONDITION CODES
007336  170200                          STFPS   FPS             ;STORE FLOATING POINT STATUS
007340  022700  047604                  CMP     #047604,FPS     ;CHECK FLOATING POINT STATUS
007344  001401                          BEQ     .+4             ;BRANCH IF OK
007346  104000                          HLT                     ;FPS NOT EQUAL TO 047604

007350  022767  000000  171424          CMP     #000000,ANS1    ;DID 000000 GET STORED?
007356  001401                          BEQ     .+4             ;BRANCH IF OK
007360  104001                          HLT+1                   ;ANS1 NOT EQUAL TO 000000

007362  022767  000004  171414          CMP     #4,     ANS2    ;CONDITION CODES = 4?
007370  001401                          BEQ     .+4             ;BRANCH IF OK
007372  104002                          HLT+2                   ;WRONG CONDITION CODES!


                        ;*****************************************************************************
                        ;TEST 63:       TEST LDCLF (LOAD-CONVERT LONG TO FLOATING)
                        ;       LOAD    000000,000000 --> 000000,000000
                        ;       FPS = 047504,   SRC = M6-R7,    AC = AC0
                        ;*****************************************************************************

007374  104400                          SCOPE
007376  000402                          BR      TST63

007400  000000  000000          DAT63:  000000,000000

007404  170127  047500          TST63:  LDFPS   #047500         ;LOAD FLOATING POINT STATUS
007410  177067  177764                  LDCLF   DAT63,  AC0     ;LOAD-CONVERT 000000,000000 INTO AC0
007414  170200                          STFPS   FPS             ;STORE FLOATING POINT STATUS
007416  022700  047504                  CMP     #047504,FPS     ;CHECK FLOATING POINT STATUS
007422  001401                          BEQ     .+4             ;BRANCH IF OK
```

```
007424  104000                          HLT                     ;FPS NOT EQUAL TO 047504

007426  174067  171350                  STF     AC0,    ANS1    ;STORE AC0 IN ANS1, ANS2
007432  022767  000000  171342          CMP     #000000,ANS1    ;DID 000000 GET STORED?
007440  001401                          BEQ     .+4             ;BRANCH IF OK
007442  104002                          HLT+2                   ;ANS1 NOT EQUAL TO 000000

007444  022767  000000  171332          CMP     #000000,ANS2    ;DID 000000 GET STORED?
007452  001401                          BEQ     .+4             ;BRANCH IF OK
007454  104002                          HLT+2                   ;ANS2 NOT EQUAL TO 000000


                        ;*****************************************************************
                        ;TEST 64:       TEST LDCLF (LOAD-CONVERT LONG TO FLOATING)
                        ;       LOAD    125252,125252 --> 147652,125253
                        ;       FPS = 047510,   SRC = M6-R7,    AC = AC3
                        ;*****************************************************************

007456  104400                          SCOPE
007460  000402                          BR      TST64

007462  125252  125252          DAT64:  125252,125252

007466  170127  047500          TST64:  LDFPS   #047500         ;LOAD FLOATING POINT STATUS
007472  177367  177764                  LDCLF   DAT64,  AC3     ;LOAD-CONVERT 125252,125252 INTO AC3
007476  170200                          STFPS   FPS             ;STORE FLOATING POINT STATUS
007500  022700  047510                  CMP     #047510,FPS     ;CHECK FLOATING POINT STATUS
007504  001401                          BEQ     .+4             ;BRANCH IF OK
007506  104000                          HLT                     ;FPS NOT EQUAL TO 047510

007510  174367  171266                  STF     AC3,    ANS1    ;STORE AC3 IN ANS1, ANS2
007514  022767  147652  171260          CMP     #147652,ANS1    ;DID 147652 GET STORED?
007522  001401                          BEQ     .+4             ;BRANCH IF OK
007524  104002                          HLT+2                   ;ANS1 NOT EQUAL TO 147652

007526  022767  125253  171250          CMP     #125253,ANS2    ;DID 125253 GET STORED?
007534  001401                          BEQ     .+4             ;BRANCH IF OK
007536  104002                          HLT+2                   ;ANS2 NOT EQUAL TO 125253


                        ;*****************************************************************
                        ;TEST 65:       TEST LDCLF (LOAD-CONVERT LONG TO FLOATING)
                        ;       LOAD    052525,052525 --> 047652,125253
                        ;       FPS = 047500,   SRC = M6-R7,    AC = AC1
                        ;*****************************************************************

007540  104400                          SCOPE
007542  000402                          BR      TST65

007544  052525  052525          DAT65:  052525,052525

007550  170127  047500          TST65:  LDFPS   #047500         ;LOAD FLOATING POINT STATUS
007554  177167  177764                  LDCLF   DAT65,  AC1     ;LOAD-CONVERT 052525,052525 INTO AC1
007560  170200                          STFPS   FPS             ;STORE FLOATING POINT STATUS
007562  022700  047500                  CMP     #047500,FPS     ;CHECK FLOATING POINT STATUS
007566  001401                          BEQ     .+4             ;BRANCH IF OK
```

```
007570  104000                          HLT                     ;FPS NOT EQUAL TO 047500

007572  174167  171204                  STF     AC1,    ANS1    ;STORE AC1 IN ANS1, ANS2
007576  022767  047652  171176          CMP     #047652,ANS1    ;DID 047652 GET STORED?
007604  001401                          BEQ     .+4             ;BRANCH IF OK
007606  104002                          HLT+2                   ;ANS1 NOT EQUAL TO 047652

007610  022767  125253  171166          CMP     #125253,ANS2    ;DID 125253 GET STORED?
007616  001401                          BEQ     .+4             ;BRANCH IF OK
007620  104002                          HLT+2                   ;ANS2 NOT EQUAL TO 125253


                        ;*************************************************************************
                        ;TEST 66:       TEST LDCLF (LOAD-CONVERT LONG TO FLOATING)
                        ;       LOAD    000000,000001 --> 040200,000000
                        ;       FPS = 047500,   SRC = M6-R7,    AC = AC3
                        ;*************************************************************************

007622  104400                          SCOPE
007624  000402                          BR      TST66

007626  000000  000001          DAT66:  000000,000001

007632  170127  047500          TST66:  LDFPS   #047500         ;LOAD FLOATING POINT STATUS
007636  177367  177764                  LDCLF   DAT66,  AC3     ;LOAD-CONVERT 000000,000001 INTO AC3
007642  170200                          STFPS   FPS             ;STORE FLOATING POINT STATUS
007644  022700  047500                  CMP     #047500,FPS     ;CHECK FLOATING POINT STATUS
007650  001401                          BEQ     .+4             ;BRANCH IF OK
007652  104000                          HLT                     ;FPS NOT EQUAL TO 047500

007654  174367  171122                  STF     AC3,    ANS1    ;STORE AC3 IN ANS1, ANS2
007660  022767  040200  171114          CMP     #040200,ANS1    ;DID 040200 GET STORED?
007666  001401                          BEQ     .+4             ;BRANCH IF OK
007670  104002                          HLT+2                   ;ANS1 NOT EQUAL TO 040200

007672  022767  000000  171104          CMP     #000000,ANS2    ;DID 000000 GET STORED?
007700  001401                          BEQ     .+4             ;BRANCH IF OK
007702  104002                          HLT+2                   ;ANS2 NOT EQUAL TO 000000


                        ;*************************************************************************
                        ;TEST 67:       TEST LDCLF (LOAD-CONVERT LONG TO FLOATING)
                        ;       LOAD    177777 --> 144200,000000
                        ;       FPS = 047510,   SRC = M2-R7,    AC = AC2
                        ;*************************************************************************

007704  104400                          SCOPE
007706  170127  047500          TST67:  LDFPS   #047500         ;LOAD FLOATING POINT STATUS
007712  177227  177777                  LDCLF   #177777,AC2     ;LOAD-CONVERT 177777 INTO AC2
007716  170200                          STFPS   FPS             ;STORE FLOATING POINT STATUS
007720  022700  047510                  CMP     #047510,FPS     ;CHECK FLOATING POINT STATUS
007724  001401                          BEQ     .+4             ;BRANCH IF OK
007726  104000                          HLT                     ;FPS NOT EQUAL TO 047510

007730  174267  171046                  STF     AC2,    ANS1    ;STORE AC2 IN ANS1, ANS2
007734  022767  144200  171040          CMP     #144200,ANS1    ;DID 144200 GET STORED?
```

```
007742  001401                          BEQ     .+4             ;BRANCH IF OK
007744  104002                          HLT+2                   ;ANS1 NOT EQUAL TO 144200

007746  022767  000000  171030          CMP     #000000,ANS2    ;DID 000000 GET STORED?
007754  001401                          BEQ     .+4             ;BRANCH IF OK
007756  104002                          HLT+2                   ;ANS2 NOT EQUAL TO 000000


                        ;*************************************************************************
                        ;TEST 70:       TEST LDCLF (LOAD-CONVERT LONG TO FLOATING)
                        ;       LOAD    100000 --> 150000,000000
                        ;       FPS = 047510,   SRC = M0-R4,    AC = AC0
                        ;*************************************************************************

007760  104400                          SCOPE
007762  170127  047500          TST70:  LDFPS   #047500         ;LOAD FLOATING POINT STATUS
007766  012704  100000                  MOV     #100000,R4      ;"LOAD" 100000 INTO R4
007772  177004                          LDCLF   R4      AC0     ;LOAD-CONVERT 100000 INTO AC0
007774  170200                          STFPS   FPS             ;STORE FLOATING POINT STATUS
007776  022700  047510                  CMP     #047510,FPS     ;CHECK FLOATING POINT STATUS
010002  001401                          BEQ     .+4             ;BRANCH IF OK
010004  104000                          HLT                     ;FPS NOT EQUAL TO 047510

010006  174067  170770                  STF     AC0,    ANS1    ;STORE AC0 IN ANS1, ANS2
010012  022767  150000  170762          CMP     #150000,ANS1    ;DID 150000 GET STORED?
010020  001401                          BEQ     .+4             ;BRANCH IF OK
010022  104002                          HLT+2                   ;ANS1 NOT EQUAL TO 150000

010024  022767  000000  170752          CMP     #000000,ANS2    ;DID 000000 GET STORED?
010032  001401                          BEQ     .+4             ;BRANCH IF OK
010034  104002                          HLT+2                   ;ANS2 NOT EQUAL TO 000000


                        ;*************************************************************************
                        ;TEST 71:       TEST LDCLF (LOAD-CONVERT LONG TO FLOATING)
                        ;       LOAD    077777,177777 --> 050000,000000
                        ;       FPS = 047500,   SRC = M6-R7,    AC = AC2
                        ;*************************************************************************

010036  104400                          SCOPE
010040  000402                          BR      TST71

010042  077777  177777          DAT71:  077777,177777

010046  170127  047500          TST71:  LDFPS   #047500         ;LOAD FLOATING POINT STATUS
010052  177267  177764                  LDCLF   DAT71,  AC2     ;LOAD-CONVERT 077777,177777 INTO AC2
010056  170200                          STFPS   FPS             ;STORE FLOATING POINT STATUS
010060  022700  047500                  CMP     #047500,FPS     ;CHECK FLOATING POINT STATUS
010064  001401                          BEQ     .+4             ;BRANCH IF OK
010066  104000                          HLT                     ;FPS NOT EQUAL TO 047500

010070  174267  170706                  STF     AC2,    ANS1    ;STORE AC2 IN ANS1, ANS2
010074  022767  050000  170700          CMP     #050000,ANS1    ;DID 050000 GET STORED?
010102  001401                          BEQ     .+4             ;BRANCH IF OK
010104  104002                          HLT+2                   ;ANS1 NOT EQUAL TO 050000
```

```
010106  022767  000000  170670          CMP     #000000,ANS2    ;DID 000000 GET STORED?
010114  001401                          BEQ     .+4             ;BRANCH IF OK
010116  104002                          HLT+2                   ;ANS2 NOT EQUAL TO 000000

                                ;*************************************************************************
                                ;TEST 72:       TEST LDCLF (LOAD-CONVERT LONG TO FLOATING)
                                ;       LOAD    000125,000125 --> 045652,000252
                                ;       FPS = 047500,   SRC = M6-R7,    AC = AC0
                                ;*************************************************************************

010120  104400                          SCOPE
010122  000402                          BR      TST72

010124  000125  000125          DAT72:  000125,000125

010130  170127  047500          TST72:  LDFPS   #047500         ;LOAD FLOATING POINT STATUS
010134  177067  177764                  LDCLF   DAT72,  AC0     ;LOAD-CONVERT 000125,000125 INTO AC0
010140  170200                          STFPS   FPS             ;STORE FLOATING POINT STATUS
010142  022700  047500                  CMP     #047500,FPS     ;CHECK FLOATING POINT STATUS
010146  001401                          BEQ     .+4             ;BRANCH IF OK
010150  104000                          HLT                     ;FPS NOT EQUAL TO 047500

010152  174067  170624                  STF     AC0,    ANS1    ;STORE AC0 IN ANS1, ANS2
010156  022767  045652  170616          CMP     #045652,ANS1    ;DID 045652 GET STORED?
010164  001401                          BEQ     .+4             ;BRANCH IF OK
010166  104002                          HLT+2                   ;ANS1 NOT EQUAL TO 045652

010170  022767  000252  170606          CMP     #000252,ANS2    ;DID 000252 GET STORED?
010176  001401                          BEQ     .+4             ;BRANCH IF OK
010200  104002                          HLT+2                   ;ANS2 NOT EQUAL TO 000252

                                ;*************************************************************************
                                ;TEST 73:       TEST LDCLF (LOAD-CONVERT LONG TO FLOATING)
                                ;       LOAD    070707,070707 --> 047743,107344
                                ;       FPS = 047500,   SRC = M6-R7,    AC = AC2
                                ;*************************************************************************

010202  104400                          SCOPE
010204  000402                          BR      TST73

010206  070707  070707          DAT73:  070707,070707

010212  170127  047500          TST73:  LDFPS   #047500         ;LOAD FLOATING POINT STATUS
010216  177267  177764                  LDCLF   DAT73,  AC2     ;LOAD-CONVERT 070707,070707 INTO AC2
010222  170200                          STFPS   FPS             ;STORE FLOATING POINT STATUS
010224  022700  047500                  CMP     #047500,FPS     ;CHECK FLOATING POINT STATUS
010230  001401                          BEQ     .+4             ;BRANCH IF OK
010232  104000                          HLT                     ;FPS NOT EQUAL TO 047500

010234  174267  170542                  STF     AC2,    ANS1    ;STORE AC2 IN ANS1, ANS2
010240  022767  047743  170534          CMP     #047743,ANS1    ;DID 047743 GET STORED?
010246  001401                          BEQ     .+4             ;BRANCH IF OK
010250  104002                          HLT+2                   ;ANS1 NOT EQUAL TO 047743
```

```
010252  022767  107344  170524          CMP     #107344,ANS2    ;DID 107344 GET STORED?
010260  001401                          BEQ     .+4             ;BRANCH IF OK
010262  104002                          HLT+2                   ;ANS2 NOT EQUAL TO 107344


                                ;*************************************************************************
                                ;TEST 74:       TEST LDCLF (LOAD-CONVERT LONG TO FLOATING)
                                ;       LOAD    107070,107070 --> 147743,107344
                                ;       FPS = 047510,   SRC = M6-R7,    AC = AC0
                                ;*************************************************************************

010264  104400                          SCOPE
010266  000402                          BR      TST74

010270  107070  107070          DAT74:  107070,107070

010274  170127  047500          TST74:  LDFPS   #047500         ;LOAD FLOATING POINT STATUS
010300  177067  177764                  LDCLF   DAT74,  AC0     ;LOAD-CONVERT 107070,107070 INTO AC0
010304  170200                          STFPS   FPS             ;STORE FLOATING POINT STATUS
010306  022700  047510                  CMP     #047510,FPS     ;CHECK FLOATING POINT STATUS
010312  001401                          BEQ     .+4             ;BRANCH IF OK
010314  104000                          HLT                     ;FPS NOT EQUAL TO 047510

010316  174067  170460                  STF     AC0,    ANS1    ;STORE AC0 IN ANS1, ANS2
010322  022767  147743  170452          CMP     #147743,ANS1    ;DID 147743 GET STORED?
010330  001401                          BEQ     .+4             ;BRANCH IF OK
010332  104002                          HLT+2                   ;ANS1 NOT EQUAL TO 147743
010334  022767  107344  170442          CMP     #107344,ANS2    ;DID 107344 GET STORED?
010342  001401                          BEQ     .+4             ;BRANCH IF OK
010344  104002                          HLT+2                   ;ANS2 NOT EQUAL TO 107344


                                ;*************************************************************************
                                ;TEST 75:       TEST STCFL (STORE-CONVERT FLOATING TO LONG)
                                ;       STORE   000000,000000 --> 000000,000000
                                ;       FPS = 047504,   AC = AC2,       DST = M6-R7
                                ;*************************************************************************

010346  104400                          SCOPE
010350  000402                          BR      TST75

010352  000000  000000          DAT75:  000000,000000

010356  170127  047500          TST75:  LDFPS   #047500         ;LOAD FLOATING POINT STATUS
010362  172667  177764                  LDF     DAT75,  AC2     ;LOAD 000000,000000 INTO AC2
010366  175667  170410          FPI75:  STCFL   AC2,    ANS1    ;STORE-CONVERT AC2 IN ANS1, ANS2
010372  013767  177776  170406          MOV     @#PS,   ANS3    ;GET CPU STATUS
010400  042767  177760  170400          BIC     #177760,ANS3    ;SAVE CONDITION CODES
010406  170200                          STFPS   FPS             ;STORE FLOATING POINT STATUS
010410  022700  047504                  CMP     #047504,FPS     ;CHECK FLOATING POINT STATUS
010414  001401                          BEQ     .+4             ;BRANCH IF OK
010416  104000                          HLT                     ;FPS NOT EQUAL TO 047504

010420  022767  000000  170354          CMP     #000000,ANS1    ;DID 000000 GET STORED?
010426  001401                          BEQ     .+4             ;BRANCH IF OK
```

```
010430  104002                          HLT+2                   ;ANS1 NOT EQUAL TO 000000

010432  022767  000000  170344          CMP     #000000,ANS2    ;DID 000000 GET STORED?
010440  001401                          BEQ     .+4             ;BRANCH IF OK
010442  104002                          HLT+2                   ;ANS2 NOT EQUAL TO 000000

010444  022767  000004  170334          CMP     #4,     ANS3    ;CONDITION CODES = 4?
010452  001401                          BEQ     .+4             ;BRANCH IF OK
010454  104003                          HLT+3                   ;WRONG CONDITION CODES!


                        ;*************************************************************************
                        ;TEST 76:       TEST STCFL (STORE-CONVERT FLOATING TO LONG)
                        ;       STORE   041252,125252 --> 000000,000025
                        ;       FPS = 047500,   AC = AC1,       DST = M6-R7
                        ;*************************************************************************

010456  104400                          SCOPE
010460  000402                          BR      TST76

010462  041252  125252          DAT76:  041252,125252

010466  170127  047500          TST76:  LDFPS   #047500         ;LOAD FLOATING POINT STATUS
010472  172567  177764                  LDF     DAT76,  AC1     ;LOAD 041252,125252 INTO AC1
010476  175567  170300          FPI76:  STCFL   AC1,    ANS1    ;STORE-CONVERT AC1 IN ANS1, ANS2
010502  013767  177776  170276          MOV     @#PS,   ANS3    ;GET CPU STATUS
010510  042767  177760  170270          BIC     #177760,ANS3    ;SAVE CONDITION CODES
010516  170200                          STFPS   FPS             ;STORE FLOATING POINT STATUS
010520  022700  047500                  CMP     #047500,FPS     ;CHECK FLOATING POINT STATUS
010524  001401                          BEQ     .+4             ;BRANCH IF OK
010526  104000                          HLT                     ;FPS NOT EQUAL TO 047500

010530  022767  000000  170244          CMP     #000000,ANS1    ;DID 000000 GET STORED?
010536  001401                          BEQ     .+4             ;BRANCH IF OK
010540  104002                          HLT+2                   ;ANS1 NOT EQUAL TO 000000

010542  022767  000025  170234          CMP     #000025,ANS2    ;DID 000025 GET STORED?
010550  001401                          BEQ     .+4             ;BRANCH IF OK
010552  104002                          HLT+2                   ;ANS2 NOT EQUAL TO 000025

010554  022767  000000  170224          CMP     #0,     ANS3    ;CONDITION CODES = 0?
010562  001401                          BEQ     .+4             ;BRANCH IF OK
010564  104003                          HLT+3                   ;WRONG CONDITION CODES!


                        ;*************************************************************************
                        ;TEST 77:       TEST STCFL (STORE-CONVERT FLOATING TO LONG)
                        ;       STORE   141252,125252 --> 177777,177753
                        ;       FPS = 047510,   AC = AC3,       DST = M6-R7
                        ;*************************************************************************

010566  104400                          SCOPE
010570  000402                          BR      TST77

010572  141252  125252          DAT77:  141252,125252
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010576  170127  047500          TST77:  LDFPS   #047500          ;LOAD FLOATING POINT STATUS
010602  172767  177764                  LDF     DAT77,  AC3     ;LOAD 141252,125252 INTO AC3
010606  175767  170170          FPI77:  STCFL   AC3,    ANS1    ;STORE-CONVERT AC3 IN ANS1, ANS2
010612  013767  177776  170166          MOV     @#PS,   ANS3    ;GET CPU STATUS
010620  042767  177760  170160          BIC     #177760,ANS3    ;SAVE CONDITION CODES
010626  170200                          STFPS   FPS             ;STORE FLOATING POINT STATUS
010630  022700  047510                  CMP     #047510,FPS     ;CHECK FLOATING POINT STATUS
010634  001401                          BEQ     .+4             ;BRANCH IF OK
010636  104000                          HLT                     ;FPS NOT EQUAL TO 047510

010640  022767  177777  170134          CMP     #177777,ANS1    ;DID 177777 GET STORED?
010646  001401                          BEQ     .+4             ;BRANCH IF OK
010650  104002                          HLT+2                   ;ANS1 NOT EQUAL TO 177777

010652  022767  177753  170124          CMP     #177753,ANS2    ;DID 177753 GET STORED?
010660  001401                          BEQ     .+4             ;BRANCH IF OK
010662  104002                          HLT+2                   ;ANS2 NOT EQUAL TO 177753

010664  022767  000010  170114          CMP     #10.,   ANS3    ;CONDITION CODES = 10?
010672  001401                          BEQ     .+4             ;BRANCH IF OK
010674  104003                          HLT+3                   ;WRONG CONDITION CODES!


                        ;*****************************************************************
                        ;TEST 100:      TEST STCFL (STORE-CONVERT FLOATING TO LONG)
                        ;       STORE   040177,177777 --> 000000,000000
                        ;       FPS = 047504,   AC = AC1,       DST = M6-R7
                        ;*****************************************************************

010676  104400                          SCOPE
010700  000402                          BR      TST100

010702  040177  177777          DAT100: 040177,177777

010706  170127  047500          TST100: LDFPS   #047500          ;LOAD FLOATING POINT STATUS
010712  172567  177764                  LDF     DAT100, AC1     ;LOAD 040177,177777 INTO AC1
010716  175567  170060          FPI100: STCFL   AC1,    ANS1    ;STORE-CONVERT AC1 IN ANS1, ANS2
010722  013767  177776  170056          MOV     @#PS,   ANS3    ;GET CPU STATUS
010730  042767  177760  170050          BIC     #177760,ANS3    ;SAVE CONDITION CODES
010736  170200                          STFPS   FPS             ;STORE FLOATING POINT STATUS
010740  022700  047504                  CMP     #047504,FPS     ;CHECK FLOATING POINT STATUS
010744  001401                          BEQ     .+4             ;BRANCH IF OK
010746  104000                          HLT                     ;FPS NOT EQUAL TO 047504

010750  022767  000000  170024          CMP     #000000,ANS1    ;DID 000000 GET STORED?
010756  001401                          BEQ     .+4             ;BRANCH IF OK
010760  104002                          HLT+2                   ;ANS1 NOT EQUAL TO 000000

010762  022767  000000  170014          CMP     #000000,ANS2    ;DID 000000 GET STORED?
010770  001401                          BEQ     .+4             ;BRANCH IF OK
010772  104002                          HLT+2                   ;ANS2 NOT EQUAL TO 000000

010774  022767  000004  170004          CMP     #4.,    ANS3    ;CONDITION CODES = 4?
011002  001401                          BEQ     .+4             ;BRANCH IF OK
011004  104003                          HLT+3                   ;WRONG CONDITION CODES!
```

```
                        ;*************************************************************************
                        ;TEST 101:      TEST STCFL (STORE-CONVERT FLOATING TO LONG)
                        ;       STORE   140177,177777 --> 000000,000000
                        ;       FPS = 047504,   AC = AC2,       DST = M6-R7
                        ;*************************************************************************

011006  104400                  SCOPE
011010  000402                  BR      TST101

011012  140177  177777    DAT101: 140177,177777

011016  170127  047500    TST101: LDFPS   #047500         ;LOAD FLOATING POINT STATUS
011022  172667  177764            LDF     DAT101, AC2     ;LOAD 140177,177777 INTO AC2
011026  175667  167750    FPI101: STCFL   AC2,    ANS1    ;STORE-CONVERT AC2 IN ANS1, ANS2
011032  013767  177776  167746        MOV     @#PS,   ANS3    ;GET CPU STATUS
011040  042767  177760  167740        BIC     #177760,ANS3    ;SAVE CONDITION CODES
011046  170200                  STFPS   FPS             ;STORE FLOATING POINT STATUS
011050  022700  047504          CMP     #047504,FPS     ;CHECK FLOATING POINT STATUS
011054  001401                  BEQ     .+4             ;BRANCH IF OK
011056  104000                  HLT                     ;FPS NOT EQUAL TO 047504

011060  022767  000000  167714        CMP     #000000,ANS1    ;DID 000000 GET STORED?
011066  001401                  BEQ     .+4             ;BRANCH IF OK
011070  104002                  HLT+2                   ;ANS1 NOT EQUAL TO 000000

011072  022767  000000  167704        CMP     #000000,ANS2    ;DID 000000 GET STORED?
011100  001401                  BEQ     .+4             ;BRANCH IF OK
011102  104002                  HLT+2                   ;ANS2 NOT EQUAL TO 000000

011104  022767  000004  167674        CMP     #4,     ANS3    ;CONDITION CODES = 4?
011112  001401                  BEQ     .+4             ;BRANCH IF OK
011114  104003                  HLT+3                   ;WRONG CONDITION CODES!


                        ;*************************************************************************
                        ;TEST 102:      TEST STCFL (STORE-CONVERT FLOATING TO LONG)
                        ;       STORE   040200,000001 --> 000000,000001
                        ;       FPS = 047500,   AC = AC0,       DST = M6-R7
                        ;*************************************************************************

011116  104400                  SCOPE
011120  000402                  BR      TST102

011122  040200  000001    DAT102: 040200,000001

011126  170127  047500    TST102: LDFPS   #047500         ;LOAD FLOATING POINT STATUS
011132  172467  177764            LDF     DAT102, AC0     ;LOAD 040200,000001 INTO AC0
011136  175467  167640    FPI102: STCFL   AC0,    ANS1    ;STORE-CONVERT AC0 IN ANS1, ANS2
011142  013767  177776  167636        MOV     @#PS,   ANS3    ;GET CPU STATUS
011150  042767  177760  167630        BIC     #177760,ANS3    ;SAVE CONDITION CODES
011156  170200                  STFPS   FPS             ;STORE FLOATING POINT STATUS
011160  022700  047500          CMP     #047500,FPS     ;CHECK FLOATING POINT STATUS
011164  001401                  BEQ     .+4             ;BRANCH IF OK
011166  104000                  HLT                     ;FPS NOT EQUAL TO 047500
```

```
011170  022767  000000  167604          CMP     #000000,ANS1    ;DID 000000 GET STORED?
011176  001401                          BEQ     .+4             ;BRANCH IF OK
011200  104002                          HLT+2                   ;ANS1 NOT EQUAL TO 000000

011202  022767  000001  167574          CMP     #000001,ANS2    ;DID 000001 GET STORED?
011210  001401                          BEQ     .+4             ;BRANCH IF OK
011212  104002                          HLT+2                   ;ANS2 NOT EQUAL TO 000001

011214  022767  000000  167564          CMP     #0,     ANS3    ;CONDITION CODES = 0?
011222  001401                          BEQ     .+4             ;BRANCH IF OK
011224  104003                          HLT+3                   ;WRONG CONDITION CODES!


                                ;*************************************************************************
                                ;TEST 103:      TEST STCFL (STORE-CONVERT FLOATING TO LONG)
                                ;       STORE   140200,000001 --> 177777,177777
                                ;       FPS = 047510,   AC = AC2,       DST = M6-R7
                                ;*************************************************************************

011226  104400                          SCOPE
011230  000402                          BR      TST103

011232  140200  000001          DAT103: 140200,000001

011236  170127  047500          TST103: LDFPS   #047500         ;LOAD FLOATING POINT STATUS
011242  172667  177764                  LDF     DAT103, AC2     ;LOAD 140200,000001 INTO AC2
011246  175667  167530          FPI103: STCFL   AC2,    ANS1    ;STORE-CONVERT AC2 IN ANS1, ANS2
011252  013767  177776  167526          MOV     @#PS,   ANS3    ;GET CPU STATUS
011260  042767  177760  167520          BIC     #177760,ANS3    ;SAVE CONDITION CODES
011266  170200                          STFPS   FPS             ;STORE FLOATING POINT STATUS
011270  022700  047510                  CMP     #047510,FPS     ;CHECK FLOATING POINT STATUS
011274  001401                          BEQ     .+4             ;BRANCH IF OK
011276  104000                          HLT                     ;FPS NOT EQUAL TO 047510

011300  022767  177777  167474          CMP     #177777,ANS1    ;DID 177777 GET STORED?
011306  001401                          BEQ     .+4             ;BRANCH IF OK
011310  104002                          HLT+2                   ;ANS1 NOT EQUAL TO 177777

011312  022767  177777  167464          CMP     #177777,ANS2    ;DID 177777 GET STORED?
011320  001401                          BEQ     .+4             ;BRANCH IF OK
011322  104002                          HLT+2                   ;ANS2 NOT EQUAL TO 177777

011324  022767  000010  167454          CMP     #10.    ANS3    ;CONDITION CODES = 10?
011332  001401                          BEQ     .+4             ;BRANCH IF OK
011334  104003                          HLT+3                   ;WRONG CONDITION CODES!


                                ;*************************************************************************
                                ;TEST 104:      TEST STCFL (STORE-CONVERT FLOATING TO LONG)
                                ;       STORE   047777,177777 --> 077777
                                ;       FPS = 047500,   AC = AC0,       DST = M2-R7
                                ;*************************************************************************

011336  104400                          SCOPE
011340  000402                          BR      TST104
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```
011342  047777  177777          DAT104: 047777,177777

011346  170127  047500          TST104: LDFPS   #047500             ;LOAD FLOATING POINT STATUS
011352  172467  177764                  LDF     DAT104, AC0         ;LOAD 047777,177777 INTO AC0
011356  175427                  ANR104: STCFL   AC0,    (PC)+       ;STORE-CONVERT AC0 IN +2
011360  000000                          0
011362  000402                          BR      .+6
011364  000000                          HALT                        ;PC FAILURE
011366  000000                          HALT
011370  013767  177776  167406        MOV     @#PS,   ANS2        ;GET CPU STATUS
011376  042767  177760  167400        BIC     #177760,ANS2        ;SAVE CONDITION CODES
011404  016767  177750  167370        MOV     ANR104, ANS1        ;SAVE THE ANSWER
011412  170200                        STFPS   FPS                 ;STORE FLOATING POINT STATUS
011414  022700  047500                CMP     #047500,FPS         ;CHECK FLOATING POINT STATUS
011420  001401                        BEQ     .+4                 ;BRANCH IF OK
011422  104000                        HLT                         ;FPS NOT EQUAL TO 047500

011424  022767  077777  167350        CMP     #077777,ANS1        ;DID 077777 GET STORED?
011432  001401                        BEQ     .+4                 ;BRANCH IF OK
011434  104001                        HLT+1                       ;ANS1 NOT EQUAL TO 077777

011436  022767  000000  167340        CMP     #0,     ANS2        ;CONDITION CODES = 0?
011444  001401                        BEQ     .+4                 ;BRANCH IF OK
011446  104002                        HLT+2                       ;WRONG CONDITION CODES!
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```
;*************************************************************************
;TEST 105:      TEST STCFL (STORE-CONVERT FLOATING TO LONG)
;       STORE   050000,000000 --> 000000
;       FPS = 147505,   AC = AC2,       DST = MO-R5
;       FEC = 6,        FEA = FPI105
;*************************************************************************

011450  104400                        SCOPE
011452  000402                        BR      TST105

011454  050000  000000          DAT105: 050000,000000

011460  170127  047500          TST105: LDFPS   #047500             ;LOAD FLOATING POINT STATUS
011464  172667  177764                  LDF     DAT105, AC2         ;LOAD 050000,000000 INTO AC2
011470  175605                  FPI105: STCFL   AC2,    R5          ;STORE-CONVERT AC2 IN R5
011472  013767  177776  167304        MOV     @#PS,   ANS2        ;GET CPU STATUS
011500  042767  177760  167276        BIC     #177760,ANS2        ;SAVE CONDITION CODES
011506  010567  167270                MOV     R5,     ANS1        ;SAVE R5
011512  170200                        STFPS   FPS                 ;STORE FLOATING POINT STATUS
011514  170367  167302                STST    FEC                 ;STORE EXCEPTION CODES
011520  022700  147505                CMP     #147505,FPS         ;CHECK FLOATING POINT STATUS
011524  001401                        BEQ     .+4                 ;BRANCH IF OK
011526  104000                        HLT                         ;FPS NOT EQUAL TO 147505

011530  022767  000006  167264        CMP     #6,     FEC         ;CHECK FLOATING EXCEPTION CODE
011536  001401                        BEQ     .+4                 ;BRANCH IF OK
011540  104000                        HLT                         ;FEC NOT EQUAL TO 6

011542  022767  011470  167254        CMP     #FPI105, FEA        ;CHECK FLOATING EXCEPTION ADDRESS
011550  001401                        BEQ     .+4                 ;BRANCH IF OK
```

```
011552  104000                          HLT                     ;FEA NOT EQUAL TO FPI105

011554  022767  000000  167220          CMP     #000000,ANS1    ;DID 000000 GET STORED?
011562  001401                          BEQ     .+4             ;BRANCH IF OK
011564  104001                          HLT+1                   ;ANS1 NOT EQUAL TO 000000

011566  022767  000005  167210          CMP     #5,     ANS2    ;CONDITION CODES = 5?
011574  001401                          BEQ     .+4             ;BRANCH IF OK
011576  104002                          HLT+2                   ;WRONG CONDITION CODES!


                        ;*************************************************************************
                        ;TEST 106:      TEST STCFL (STORE-CONVERT FLOATING TO LONG)
                        ;       STORE   150000,000000 --> 100000,000000
                        ;       FPS = 047510,   AC = AC2,       DST = M6-R7
                        ;*************************************************************************

011600  104400                          SCOPE
011602  000402                          BR      TST106

011604  150000  000000          DAT106: 150000,000000

011610  170127  047500          TST106: LDFPS   #047500         ;LOAD FLOATING POINT STATUS
011614  172667  177764                  LDF     DAT106, AC2     ;LOAD 150000,000000 INTO AC2
011620  175667  167156          FPI106: STCFL   AC2,    ANS1    ;STORE-CONVERT AC2 IN ANS1, ANS2
011624  013767  177776  167154          MOV     @#PS,   ANS3    ;GET CPU STATUS
011632  042767  177760  167146          BIC     #177760,ANS3    ;SAVE CONDITION CODES
011640  170200                          STFPS   FPS             ;STORE FLOATING POINT STATUS
011642  022700  047510                  CMP     #047510,FPS     ;CHECK FLOATING POINT STATUS
011646  001401                          BEQ     .+4             ;BRANCH IF OK
011650  104000                          HLT                     ;FPS NOT EQUAL TO 047510

011652  022767  100000  167122          CMP     #100000,ANS1    ;DID 100000 GET STORED?
011660  001401                          BEQ     .+4             ;BRANCH IF OK
011662  104002                          HLT+2                   ;ANS1 NOT EQUAL TO 100000

011664  022767  000000  167112          CMP     #000000,ANS2    ;DID 000000 GET STORED?
011672  001401                          BEQ     .+4             ;BRANCH IF OK
011674  104002                          HLT+2                   ;ANS2 NOT EQUAL TO 000000

011676  022767  000010  167102          CMP     #10,    ANS3    ;CONDITION CODES = 10?
011704  001401                          BEQ     .+4             ;BRANCH IF OK
011706  104003                          HLT+3                   ;WRONG CONDITION CODES!


                        ;*************************************************************************
                        ;TEST 107:      TEST STCFL (STORE-CONVERT FLOATING TO LONG)
                        ;       STORE   150000,000001 --> 000000,000000
                        ;       FPS = 147505,   AC = AC1,       DST = M6-R7
                        ;       FEC = 6,        FEA = FPI107
                        ;*************************************************************************

011710  104400                          SCOPE
011712  000402                          BR      TST107

011714  150000  000001          DAT107: 150000,000001
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011720  170127  047500          TST107: LDFPS   #047500          ;LOAD FLOATING POINT STATUS
011724  172567  177764                  LDF     DAT107, AC1     ;LOAD 150000,000001 INTO AC1
011730  175567  167046          FPI107: STCFL   AC1,    ANS1    ;STORE-CONVERT AC1 IN ANS1, ANS2
011734  013767  177776  167044          MOV     @#PS,   ANS3    ;GET CPU STATUS
011742  042767  177760  167036          BIC     #177760,ANS3    ;SAVE CONDITION CODES
011750  170200                          STFPS   FPS             ;STORE FLOATING POINT STATUS
011752  170367  167044                  STST    FEC             ;STORE EXCEPTION CODES
011756  022700  147505                  CMP     #147505,FPS     ;CHECK FLOATING POINT STATUS
011762  001401                          BEQ     .+4             ;BRANCH IF OK
011764  104000                          HLT                     ;FPS NOT EQUAL TO 147505

011766  022767  000006  167026          CMP     #6,     FEC     ;CHECK FLOATING EXCEPTION CODE
011774  001401                          BEQ     .+4             ;BRANCH IF OK
011776  104000                          HLT                     ;FEC NOT EQUAL TO 6

012000  022767  011730  167016          CMP     #FPI107, FEA    ;CHECK FLOATING EXCEPTION ADDRESS
012006  001401                          BEQ     .+4             ;BRANCH IF OK
012010  104000                          HLT                     ;FEA NOT EQUAL TO FPI107

012012  022767  000000  166762          CMP     #000000,ANS1    ;DID 000000 GET STORED?
012020  001401                          BEQ     .+4             ;BRANCH IF OK
012022  104002                          HLT+2                   ;ANS1 NOT EQUAL TO 000000

012024  022767  000000  166752          CMP     #000000,ANS2    ;DID 000000 GET STORED?
012032  001401                          BEQ     .+4             ;BRANCH IF OK
012034  104002                          HLT+2                   ;ANS2 NOT EQUAL TO 000000

012036  022767  000005  166742          CMP     #5,     ANS3    ;CONDITION CODES = 5?
012044  001401                          BEQ     .+4             ;BRANCH IF OK
012046  104003                          HLT+3                   ;WRONG CONDITION CODES!

                        ;*****************************************************************
                        ;TEST 110:      TEST STCFL (STORE-CONVERT FLOATING TO LONG)
                        ;       STORE   100000,000000 --> 000000,000000
                        ;       FPS = 047504,   AC = AC0,       DST = M6-R7
                        ;*****************************************************************

012050  104400                          SCOPE
012052  000402                          BR      TST110

012054  100000  000000          DAT110: 100000,000000

012060  170127  040000          TST110: LDFPS   #040000         ;LOAD FLOATING POINT STATUS
012064  172467  177764                  LDF     DAT110, AC0     ;LOAD 100000,000000 INTO AC0
012070  170127  047500                  LDFPS   #047500         ;LOAD FLOATING POINT STATUS
012074  175467  166702                  STCFL   AC0,    ANS1    ;STORE-CONVERT AC0 IN ANS1, ANS2
012100  013767  177776  166700          MOV     @#PS,   ANS3    ;GET CPU STATUS
012106  042767  177760  166672          BIC     #177760,ANS3    ;SAVE CONDITION CODES
012114  170200                          STFPS   FPS             ;STORE FLOATING POINT STATUS
012116  022700  047504                  CMP     #047504,FPS     ;CHECK FLOATING POINT STATUS
012122  001401                          BEQ     .+4             ;BRANCH IF OK
012124  104000                          HLT                     ;FPS NOT EQUAL TO 047504

012126  022767  000000  166646          CMP     #000000,ANS1    ;DID 000000 GET STORED?
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012134  001401                          BEQ     .+4             ;BRANCH IF OK
012136  104002                          HLT+2                   ;ANS1 NOT EQUAL TO 000000

012140  022767  000000  166636          CMP     #000000,ANS2    ;DID 000000 GET STORED?
012146  001401                          BEQ     .+4             ;BRANCH IF OK
012150  104002                          HLT+2                   ;ANS2 NOT EQUAL TO 000000

012152  022767  000004  166626          CMP     #4,     ANS3    ;CONDITION CODES = 4?
012160  001401                          BEQ     .+4             ;BRANCH IF OK
012162  104003                          HLT+3                   ;WRONG CONDITION CODES!


                        ;*****************************************************************
                        ;TEST 111:      TEST STCFL (STORE-CONVERT FLOATING TO LONG)
                        ;       STORE   177777,177777 --> 000000,000000
                        ;       FPS = 147505,   AC = AC3,       DST = M6-R7
                        ;       FEC = 6,        FEA = FPI111
                        ;*****************************************************************

012164  104400                          SCOPE
012166  000402                          BR      TST111

012170  177777  177777  DAT111: 177777,177777

012174  170127  047500  TST111: LDFPS   #047500                 ;LOAD FLOATING POINT STATUS
012200  172767  177764          LDF     DAT111, AC3             ;LOAD 177777,177777 INTO AC3
012204  175767  166572  FPI111: STCFL   AC3,     ANS1            ;STORE-CONVERT AC3 IN ANS1, ANS2
012210  013767  177776  166570          MOV     @#PS,   ANS3    ;GET CPU STATUS
012216  042767  177760  166562          BIC     #177760,ANS3    ;SAVE CONDITION CODES
012224  170200                          STFPS   FPS             ;STORE FLOATING POINT STATUS
012226  170367  166570                  STST    FEC             ;STORE EXCEPTION CODES
012232  022700  147505                  CMP     #147505,FPS     ;CHECK FLOATING POINT STATUS
012236  001401                          BEQ     .+4             ;BRANCH IF OK
012240  104000                          HLT                     ;FPS NOT EQUAL TO 147505

012242  022767  000006  166552          CMP     #6,     FEC     ;CHECK FLOATING EXCEPTION CODE
012250  001401                          BEQ     .+4             ;BRANCH IF OK
012252  104000                          HLT                     ;FEC NOT EQUAL TO 6

012254  022767  012204  166542          CMP     #FPI111, FEA    ;CHECK FLOATING EXCEPTION ADDRESS
012262  001401                          BEQ     .+4             ;BRANCH IF OK
012264  104000                          HLT                     ;FEA NOT EQUAL TO FPI111

012266  022767  000000  166506          CMP     #000000,ANS1    ;DID 000000 GET STORED?
012274  001401                          BEQ     .+4             ;BRANCH IF OK
012276  104002                          HLT+2                   ;ANS1 NOT EQUAL TO 000000

012300  022767  000000  166476          CMP     #000000,ANS2    ;DID 000000 GET STORED?
012306  001401                          BEQ     .+4             ;BRANCH IF OK
012310  104002                          HLT+2                   ;ANS2 NOT EQUAL TO 000000

012312  022767  000005  166466          CMP     #5,     ANS3    ;CONDITION CODES = 5?
012320  001401                          BEQ     .+4             ;BRANCH IF OK
012322  104003                          HLT+3                   ;WRONG CONDITION CODES!
```

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                        ;**********************************************************************
                        ;TEST 112:      TEST STCFL (STORE-CONVERT FLOATING TO LONG)
                        ;       STORE   000200,000000 --> 000000,000000
                        ;       FPS = 047504,   AC = AC2,       DST = M6-R7
                        ;**********************************************************************

012324  104400                    SCOPE
012326  000402                    BR      TST112

012330  000200  000000    DAT112: 000200,000000

012334  170127  047500    TST112: LDFPS   #047500         ;LOAD FLOATING POINT STATUS
012340  172667  177764            LDF     DAT112, AC2     ;LOAD 000200,000000 INTO AC2
012344  175667  166432    FPI112: STCFL   AC2,    ANS1    ;STORE-CONVERT AC2 IN ANS1, ANS2
012350  013767  177776  166430    MOV     @#PS,   ANS3    ;GET CPU STATUS
012356  042767  177760  166422    BIC     #177760,ANS3    ;SAVE CONDITION CODES
012364  170200                    STFPS   FPS             ;STORE FLOATING POINT STATUS
012366  022700  047504            CMP     #047504,FPS     ;CHECK FLOATING POINT STATUS
012372  001401                    BEQ     .+4             ;BRANCH IF OK
012374  104000                    HLT                     ;FPS NOT EQUAL TO 047504

012376  022767  000000  166376    CMP     #000000,ANS1    ;DID 000000 GET STORED?
012404  001401                    BEQ     .+4             ;BRANCH IF OK
012406  104002                    HLT+2                   ;ANS1 NOT EQUAL TO 000000

012410  022767  000000  166366    CMP     #000000,ANS2    ;DID 000000 GET STORED?
012416  001401                    BEQ     .+4             ;BRANCH IF OK
012420  104002                    HLT+2                   ;ANS2 NOT EQUAL TO 000000

012422  022767  000004  166356    CMP     #4,     ANS3    ;CONDITION CODES = 4?
012430  001401                    BEQ     .+4             ;BRANCH IF OK
012432  104003                    HLT+3                   ;WRONG CONDITION CODES!


                        ;**********************************************************************
                        ;TEST 113:      TEST STCFL (STORE-CONVERT FLOATING TO LONG)
                        ;       STORE   100177,177777 --> 000000,000000
                        ;       FPS = 047504,   AC = AC2,       DST = M6-R7
                        ;**********************************************************************

012434  104400                    SCOPE
012436  000402                    BR      TST113

012440  100177  177777    DAT113: 100177,177777

012444  170127  040000    TST113: LDFPS   #040000         ;LOAD FLOATING POINT STATUS
012450  172667  177764            LDF     DAT113, AC2     ;LOAD 100177,177777 INTO AC2
012454  170127  047500            LDFPS   #047500         ;LOAD FLOATING POINT STATUS
012460  175667  166316            STCFL   AC2,    ANS1    ;STORE-CONVERT AC2 IN ANS1, ANS2
012464  013767  177776  166314    MOV     @#PS,   ANS3    ;GET CPU STATUS
012472  042767  177760  166306    BIC     #177760,ANS3    ;SAVE CONDITION CODES
012500  170200                    STFPS   FPS             ;STORE FLOATING POINT STATUS
012502  022700  047504            CMP     #047504,FPS     ;CHECK FLOATING POINT STATUS
012506  001401                    BEQ     .+4             ;BRANCH IF OK
012510  104000                    HLT                     ;FPS NOT EQUAL TO 047504
```

```
012512  022767  000000  166262          CMP     #000000,ANS1    ;DID 000000 GET STORED?
012520  001401                          BEQ     .+4             ;BRANCH IF OK
012522  104002                          HLT+2                   ;ANS1 NOT EQUAL TO 000000

012524  022767  000000  166252          CMP     #000000,ANS2    ;DID 000000 GET STORED?
012532  001401                          BEQ     .+4             ;BRANCH IF OK
012534  104002                          HLT+2                   ;ANS2 NOT EQUAL TO 000000

012536  022767  000004  166242          CMP     #4,     ANS3    ;CONDITION CODES = 4?
012544  001401                          BEQ     .+4             ;BRANCH IF OK
012546  104003                          HLT+3                   ;WRONG CONDITION CODES!


                        ;*****************************************************************
                        ;TEST 114:      TEST LDCLD (LOAD-CONVERT LONG TO DOUBLE)
                        ;       LOAD    000000,000000 --> 000000,000000,000000,000000
                        ;       FPS = 047704,   SRC = M6-R7,    AC = AC1
                        ;*****************************************************************

012550  104400                          SCOPE
012552  000402                          BR      TST114

012554  000000  000000        DAT114: 000000,000000

012560  170127  047700        TST114: LDFPS   #047700         ;LOAD FLOATING POINT STATUS
012564  177167  177764                LDCLD   DAT114, AC1     ;LOAD-CONVERT 000000,000000 INTO AC1
012570  170200                        STFPS   FPS             ;STORE FLOATING POINT STATUS
012572  022700  047704                CMP     #047704,FPS     ;CHECK FLOATING POINT STATUS
012576  001401                        BEQ     .+4             ;BRANCH IF OK
012600  104000                        HLT                     ;FPS NOT EQUAL TO 047704

012602  174167  166174                STD     AC1,    ANS1    ;STORE AC1 IN ANS1 THRU ANS4
012606  022767  000000  166166        CMP     #000000,ANS1    ;DID 000000 GET STORED?
012614  001401                        BEQ     .+4             ;BRANCH IF OK
012616  104004                        HLT+4                   ;ANS1 NOT EQUAL TO 000000

012620  022767  000000  166156        CMP     #000000,ANS2    ;DID 000000 GET STORED?
012626  001401                        BEQ     .+4             ;BRANCH IF OK
012630  104004                        HLT+4                   ;ANS2 NOT EQUAL TO 000000

012632  022767  000000  166146        CMP     #000000,ANS3    ;DID 000000 GET STORED?
012640  001401                        BEQ     .+4             ;BRANCH IF OK
012642  104004                        HLT+4                   ;ANS3 NOT EQUAL TO 000000

012644  022767  000000  166136        CMP     #000000,ANS4    ;DID 000000 GET STORED?
012652  001401                        BEQ     .+4             ;BRANCH IF OK
012654  104004                        HLT+4                   ;ANS4 NOT EQUAL TO 000000


                        ;*****************************************************************
                        ;TEST 115:      TEST LDCLD (LOAD-CONVERT LONG TO DOUBLE)
                        ;       LOAD    125252,125252 --> 147652,125252,126000,000000
                        ;       FPS = 047710,   SRC = M6-R7,    AC = AC0
                        ;*****************************************************************

012656  104400                          SCOPE
```

```
012660  000402                          BR      TST115

012662  125252  125252          DAT115: 125252,125252

012666  170127  047700          TST115: LDFPS   #047700         ;LOAD FLOATING POINT STATUS
012672  177067  177764                  LDCLD   DAT115, AC0     ;LOAD-CONVERT 125252,125252 INTO AC0
012676  170200                          STFPS   FPS             ;STORE FLOATING POINT STATUS
012700  022700  047710                  CMP     #047710,FPS     ;CHECK FLOATING POINT STATUS
012704  001401                          BEQ     .+4             ;BRANCH IF OK
012706  104000                          HLT                     ;FPS NOT EQUAL TO 047710

012710  174067  166066                  STD     AC0,    ANS1    ;STORE AC0 IN ANS1 THRU ANS4
012714  022767  147652  166060          CMP     #147652,ANS1    ;DID 147652 GET STORED?
012722  001401                          BEQ     .+4             ;BRANCH IF OK
012724  104004                          HLT+4                   ;ANS1 NOT EQUAL TO 147652

012726  022767  125252  166050          CMP     #125252,ANS2    ;DID 125252 GET STORED?
012734  001401                          BEQ     .+4             ;BRANCH IF OK
012736  104004                          HLT+4                   ;ANS2 NOT EQUAL TO 125252

012740  022767  126000  166040          CMP     #126000,ANS3    ;DID 126000 GET STORED?
012746  001401                          BEQ     .+4             ;BRANCH IF OK
012750  104004                          HLT+4                   ;ANS3 NOT EQUAL TO 126000

012752  022767  000000  166030          CMP     #000000,ANS4    ;DID 000000 GET STORED?
012760  001401                          BEQ     .+4             ;BRANCH IF OK
012762  104004                          HLT+4                   ;ANS4 NOT EQUAL TO 000000

                        ;*****************************************************************
                        ;TEST 116:      TEST LDCLD (LOAD-CONVERT LONG TO DOUBLE)
                        ;       LOAD    052525,052525 --> 047652,125252,125000,000000
                        ;       FPS = 047700,   SRC = M6-R7,    AC = AC3
                        ;*****************************************************************

012764  104400                          SCOPE
012766  000402                          BR      TST116

012770  052525  052525          DAT116: 052525,052525

012774  170127  047700          TST116: LDFPS   #047700         ;LOAD FLOATING POINT STATUS
013000  177367  177764                  LDCLD   DAT116, AC3     ;LOAD-CONVERT 052525,052525 INTO AC3
013004  170200                          STFPS   FPS             ;STORE FLOATING POINT STATUS
013006  022700  047700                  CMP     #047700,FPS     ;CHECK FLOATING POINT STATUS
013012  001401                          BEQ     .+4             ;BRANCH IF OK
013014  104000                          HLT                     ;FPS NOT EQUAL TO 047700

013016  174367  165760                  STD     AC3,    ANS1    ;STORE AC3 IN ANS1 THRU ANS4
013022  022767  047652  165752          CMP     #047652,ANS1    ;DID 047652 GET STORED?
013030  001401                          BEQ     .+4             ;BRANCH IF OK
013032  104004                          HLT+4                   ;ANS1 NOT EQUAL TO 047652

013034  022767  125252  165742          CMP     #125252,ANS2    ;DID 125252 GET STORED?
013042  001401                          BEQ     .+4             ;BRANCH IF OK
013044  104004                          HLT+4                   ;ANS2 NOT EQUAL TO 125252
```

```
013046  022767  125000  165732          CMP     #125000,ANS3    ;DID 125000 GET STORED?
013054  001401                          BEQ     .+4             ;BRANCH IF OK
013056  104004                          HLT+4                   ;ANS3 NOT EQUAL TO 125000

013060  022767  000000  165722          CMP     #000000,ANS4    ;DID 000000 GET STORED?
013066  001401                          BEQ     .+4             ;BRANCH IF OK
013070  104004                          HLT+4                   ;ANS4 NOT EQUAL TO 000000

                        ;*****************************************************************
                        ;TEST 117:      TEST LDCLD (LOAD-CONVERT LONG TO DOUBLE)
                        ;       LOAD    000000,000001 --> 040200,000000,000000,000000
                        ;       FPS = 047700,   SRC = M6-R7,    AC = AC2
                        ;*****************************************************************

013072  104400                          SCOPE
013074  000402                          BR      TST117

013076  000000  000001          DAT117: 000000.000001

013102  170127  047700          TST117: LDFPS   #047700         ;LOAD FLOATING POINT STATUS
013106  177267  177764                  LDCLD   DAT117, AC2     ;LOAD-CONVERT 000000,000001 INTO AC2
013112  170200                          STFPS   FPS             ;STORE FLOATING POINT STATUS
013114  022700  047700                  CMP     #047700,FPS     ;CHECK FLOATING POINT STATUS
013120  001401                          BEQ     .+4             ;BRANCH IF OK
013122  104000                          HLT                     ;FPS NOT EQUAL TO 047700

013124  174267  165652                  STD     AC2,    ANS1    ;STORE AC2 IN ANS1 THRU ANS4
013130  022767  040200  165644          CMP     #040200,ANS1    ;DID 040200 GET STORED?
013136  001401                          BEQ     .+4             ;BRANCH IF OK
013140  104004                          HLT+4                   ;ANS1 NOT EQUAL TO 040200

013142  022767  000000  165634          CMP     #000000,ANS2    ;DID 000000 GET STORED?
013150  001401                          BEQ     .+4             ;BRANCH IF OK
013152  104004                          HLT+4                   ;ANS2 NOT EQUAL TO 000000

013154  022767  000000  165624          CMP     #000000,ANS3    ;DID 000000 GET STORED?
013162  001401                          BEQ     .+4             ;BRANCH IF OK
013164  104004                          HLT+4                   ;ANS3 NOT EQUAL TO 000000

013166  022767  000000  165614          CMP     #000000,ANS4    ;DID 000000 GET STORED?
013174  001401                          BEQ     .+4             ;BRANCH IF OK
013176  104004                          HLT+4                   ;ANS4 NOT EQUAL TO 000000

                        ;*****************************************************************
                        ;TEST 120:      TEST LDCLD (LOAD-CONVERT LONG TO DOUBLE)
                        ;       LOAD    177777,177777 --> 140200,000000,000000,000000
                        ;       FPS = 047710,   SRC = M6-R7,    AC = AC1
                        ;*****************************************************************

013200  104400                          SCOPE
013202  000402                          BR      TST120

013204  177777  177777          DAT120: 177777,177777
```

```
013210  170127  047700          TST120: LDFPS   #047700         ;LOAD FLOATING POINT STATUS
013214  177167  177764                  LDCLD   DAT120, AC1     ;LOAD-CONVERT 177777,177777 INTO AC1
013220  170200                         STFPS   FPS             ;STORE FLOATING POINT STATUS
013222  022700  047710                 CMP     #047710,FPS     ;CHECK FLOATING POINT STATUS
013226  001401                         BEQ     .+4             ;BRANCH IF OK
013230  104000                         HLT                     ;FPS NOT EQUAL TO 047710

013232  174167  165544                 STD     AC1,    ANS1    ;STORE AC1 IN ANS1 THRU ANS4
013236  022767  140200  165536         CMP     #140200,ANS1    ;DID 140200 GET STORED?
013244  001401                         BEQ     .+4             ;BRANCH IF OK
013246  104004                         HLT+4                   ;ANS1 NOT EQUAL TO 140200

013250  022767  000000  165526         CMP     #000000,ANS2    ;DID 000000 GET STORED?
013256  001401                         BEQ     .+4             ;BRANCH IF OK
013260  104004                         HLT+4                   ;ANS2 NOT EQUAL TO 000000

013262  022767  000000  165516         CMP     #000000,ANS3    ;DID 000000 GET STORED?
013270  001401                         BEQ     .+4             ;BRANCH IF OK
013272  104004                         HLT+4                   ;ANS3 NOT EQUAL TO 000000

013274  022767  000000  165506         CMP     #000000,ANS4    ;DID 000000 GET STORED?
013302  001401                         BEQ     .+4             ;BRANCH IF OK
013304  104004                         HLT+4                   ;ANS4 NOT EQUAL TO 000000

                        ;*****************************************************************
                        ;TEST 121:      TEST LDCLD (LOAD-CONVERT LONG TO DOUBLE)
                        ;       LOAD    100000,000000 --> 150000,000000,000000,000000
                        ;       FPS = 047710,   SRC = M6-R7,    AC = AC0
                        ;*****************************************************************

013306  104400                         SCOPE
013310  000402                         BR      TST121

013312  100000  000000         DAT121: 100000,000000

013316  170127  047700         TST121: LDFPS   #047700         ;LOAD FLOATING POINT STATUS
013322  177067  177764                 LDCLD   DAT121, AC0     ;LOAD-CONVERT 100000,000000 INTO AC0
013326  170200                         STFPS   FPS             ;STORE FLOATING POINT STATUS
013330  022700  047710                 CMP     #047710,FPS     ;CHECK FLOATING POINT STATUS
013334  001401                         BEQ     .+4             ;BRANCH IF OK
013336  104000                         HLT                     ;FPS NOT EQUAL TO 047710

013340  174067  165436                 STD     AC0,    ANS1    ;STORE AC0 IN ANS1 THRU ANS4
013344  022767  150000  165430         CMP     #150000,ANS1    ;DID 150000 GET STORED?
013352  001401                         BEQ     .+4             ;BRANCH IF OK
013354  104004                         HLT+4                   ;ANS1 NOT EQUAL TO 150000

013356  022767  000000  165420         CMP     #000000,ANS2    ;DID 000000 GET STORED?
013364  001401                         BEQ     .+4             ;BRANCH IF OK
013366  104004                         HLT+4                   ;ANS2 NOT EQUAL TO 000000

013370  022767  000000  165410         CMP     #000000,ANS3    ;DID 000000 GET STORED?
013376  001401                         BEQ     .+4             ;BRANCH IF OK
013400  104004                         HLT+4                   ;ANS3 NOT EQUAL TO 000000
```

```
013402  022767  000000  165400          CMP     #000000,ANS4    ;DID 000000 GET STORED?
013410  001401                          BEQ     .+4             ;BRANCH IF OK
013412  104004                          HLT+4                   ;ANS4 NOT EQUAL TO 000000

                                ;*************************************************************************
                                ;TEST 122:      TEST LDCLD (LOAD-CONVERT LONG TO DOUBLE)
                                ;       LOAD    077777,177777 --> 047777,177777,177000,000000
                                ;       FPS = 047700,   SRC = M6-R7,    AC = AC3
                                ;*************************************************************************

013414  104400                          SCOPE
013416  000402                          BR      TST122

013420  077777  177777          DAT122: 077777,177777

013424  170127  047700          TST122: LDFPS   #047700         ;LOAD FLOATING POINT STATUS
013430  177367  177764                  LDCLD   DAT122, AC3     ;LOAD-CONVERT 077777,177777 INTO AC3
013434  170200                          STFPS   FPS             ;STORE FLOATING POINT STATUS
013436  022700  047700                  CMP     #047700,FPS     ;CHECK FLOATING POINT STATUS
013442  001401                          BEQ     .+4             ;BRANCH IF OK
013444  104000                          HLT                     ;FPS NOT EQUAL TO 047700

013446  174367  165330                  STD     AC3,    ANS1    ;STORE AC3 IN ANS1 THRU ANS4
013452  022767  047777  165322          CMP     #047777,ANS1    ;DID 047777 GET STORED?
013460  001401                          BEQ     .+4             ;BRANCH IF OK
013462  104004                          HLT+4                   ;ANS1 NOT EQUAL TO 047777

013464  022767  177777  165312          CMP     #177777,ANS2    ;DID 177777 GET STORED?
013472  001401                          BEQ     .+4             ;BRANCH IF OK
013474  104004                          HLT+4                   ;ANS2 NOT EQUAL TO 177777

013476  022767  177000  165302          CMP     #177000,ANS3    ;DID 177000 GET STORED?
013504  001401                          BEQ     .+4             ;BRANCH IF OK
013506  104004                          HLT+4                   ;ANS3 NOT EQUAL TO 177000

013510  022767  000000  165272          CMP     #000000,ANS4    ;DID 000000 GET STORED?
013516  001401                          BEQ     .+4             ;BRANCH IF OK
013520  104004                          HLT+4                   ;ANS4 NOT EQUAL TO 000000

                                ;*************************************************************************
                                ;TEST 123:      TEST LDCLD (LOAD-CONVERT LONG TO DOUBLE)
                                ;       LOAD    000125 --> 045652,000000,000000,000000
                                ;       FPS = 047700,   SC = M2-R7,     AC = AC2
                                ;*************************************************************************

013522  104400                          SCOPE
013524  170127  047700          TST123: LDFPS   #047700         ;LOAD FLOATING POINT STATUS
013530  177227  000125                  LDCLD   #000125,AC2     ;LOAD-CONVERT 000125 INTO AC2
013534  170200                          STFPS   FPS             ;STORE FLOATING POINT STATUS
013536  022700  047700                  CMP     #047700,FPS     ;CHECK FLOATING POINT STATUS
013542  001401                          BEQ     .+4             ;BRANCH IF OK
013544  104000                          HLT                     ;FPS NOT EQUAL TO 047700

013546  174267  165230                  STD     AC2,    ANS1    ;STORE AC2 IN ANS1 THRU ANS4
```

```
013552  022767  045652  165222          CMP     #045652,ANS1    ;DID 045652 GET STORED?
013560  001401                          BEQ     .+4             ;BRANCH IF OK
013562  104004                          HLT+4                   ;ANS1 NOT EQUAL TO 045652

013564  022767  000000  165212          CMP     #000000,ANS2    ;DID 000000 GET STORED?
013572  001401                          BEQ     .+4             ;BRANCH IF OK
013574  104004                          HLT+4                   ;ANS2 NOT EQUAL TO 000000

013576  022767  000000  165202          CMP     #000000,ANS3    ;DID 000000 GET STORED?
013604  001401                          BEQ     .+4             ;BRANCH IF OK
013606  104004                          HLT+4                   ;ANS3 NOT EQUAL TO 000000

013610  022767  000000  165172          CMP     #000000,ANS4    ;DID 000000 GET STORED?
013616  001401                          BEQ     .+4             ;BRANCH IF OK
013620  104004                          HLT+4                   ;ANS4 NOT EQUAL TO 000000

                        ;*****************************************************************
                        ;TEST 124:      TEST LDCLD (LOAD-CONVERT LONG TO DOUBLE)
                        ;       LOAD    070707 --) 047743,107000,000000,000000
                        ;       FPS = 047700,   SRC = M0-R1,    AC = AC1
                        ;*****************************************************************

013622  104400                          SCOPE
013624  170127  047700          TST124: LDFPS   #047700         ;LOAD FLOATING POINT STATUS
013630  012701  070707                  MOV     #070707,R1      ;"LOAD" 070707 INTO R1
013634  177101                          LDCLD   R1,     AC1     ;LOAD-CONVERT 070707 INTO AC1
013636  170200                          STFPS   FPS             ;STORE FLOATING POINT STATUS
013640  022700  047700                  CMP     #047700,FPS     ;CHECK FLOATING POINT STATUS
013644  001401                          BEQ     .+4             ;BRANCH IF OK
013646  104000                          HLT                     ;FPS NOT EQUAL TO 047700

013650  174167  165126                  STD     AC1,    ANS1    ;STORE AC1 IN ANS1 THRU ANS4
013654  022767  047743  165120          CMP     #047743,ANS1    ;DID 047743 GET STORED?
013662  001401                          BEQ     .+4             ;BRANCH IF OK
013664  104004                          HLT+4                   ;ANS1 NOT EQUAL TO 047743

013666  022767  107000  165110          CMP     #107000,ANS2    ;DID 107000 GET STORED?
013674  001401                          BEQ     .+4             ;BRANCH IF OK
013676  104004                          HLT+4                   ;ANS2 NOT EQUAL TO 107000

013700  022767  000000  165100          CMP     #000000,ANS3    ;DID 000000 GET STORED?
013706  001401                          BEQ     .+4             ;BRANCH IF OK
013710  104004                          HLT+4                   ;ANS3 NOT EQUAL TO 000000

013712  022767  000000  165070          CMP     #000000,ANS4    ;DID 000000 GET STORED?
013720  001401                          BEQ     .+4             ;BRANCH IF OK
013722  104004                          HLT+4                   ;ANS4 NOT EQUAL TO 000000

                        ;*****************************************************************
                        ;TEST 125:      TEST LDCLD (LOAD-CONVERT LONG TO DOUBLE)
                        ;       LOAD    107070,107070 --) 147743,107343,110000,000000
                        ;       FPS = 047710,   SRC = M6-R7,    AC = AC3
                        ;*****************************************************************
```

```
013724  104400                          SCOPE
013726  000402                          BR      TST125

013730  107070  107070          DAT125: 107070,107070

013734  170127  047700          TST125: LDFPS   #047700         ;LOAD FLOATING POINT STATUS
013740  177367  177764                  LDCLD   DAT125, AC3     ;LOAD-CONVERT 107070,107070 INTO AC3
013744  170200                          STFPS   FPS             ;STORE FLOATING POINT STATUS
013746  022700  047710                  CMP     #047710,FPS     ;CHECK FLOATING POINT STATUS
013752  001401                          BEQ     .+4             ;BRANCH IF OK
013754  104000                          HLT                     ;FPS NOT EQUAL TO 047710

013756  174367  165020                  STD     AC3,    ANS1    ;STORE AC3 IN ANS1 THRU ANS4
013762  022767  147743  165012          CMP     #147743,ANS1    ;DID 147743 GET STORED?
013770  001401                          BEQ     .+4             ;BRANCH IF OK
013772  104004                          HLT+4                   ;ANS1 NOT EQUAL TO 147743

013774  022767  107343  165002          CMP     #107343,ANS2    ;DID 107343 GET STORED?
014002  001401                          BEQ     .+4             ;BRANCH IF OK
014004  104004                          HLT+4                   ;ANS2 NOT EQUAL TO 107343

014006  022767  110000  164772          CMP     #110000,ANS3    ;DID 110000 GET STORED?
014014  001401                          BEQ     .+4             ;BRANCH IF OK
014016  104004                          HLT+4                   ;ANS3 NOT EQUAL TO 110000

014020  022767  000000  164762          CMP     #000000,ANS4    ;DID 000000 GET STORED?
014026  001401                          BEQ     .+4             ;BRANCH IF OK
014030  104004                          HLT+4                   ;ANS4 NOT EQUAL TO 000000

                        ;*****************************************************************
                        ;TEST 126:      TEST STCDL (STORE-CONVERT DOUBLE TO LONG)
                        ;       STORE   000000,000000,000000,000000 --> 000000,000000
                        ;       FPS = 047704,   AC = AC2,       DST = M6-R7
                        ;*****************************************************************

014032  104400                          SCOPE
014034  000404                          BR      TST126

014036  000000  000000  000000  DAT126: 000000,000000,000000,000000
014044  000000

014046  170127  047700          TST126: LDFPS   #047700         ;LOAD FLOATING POINT STATUS
014052  172667  177760                  LDD     DAT126, AC2     ;LOAD 000000,000000,000000,000000 INTO AC2
014056  175667  164720                  STCDL   AC2,    ANS1    ;STORE-CONVERT AC2 IN ANS1, ANS2
014062  013767  177776  164716          MOV     @#PS,   ANS3    ;GET CPU STATUS
014070  042767  177760  164710          BIC     #177760,ANS3    ;SAVE CONDITION CODES
014076  170200                          STFPS   FPS             ;STORE FLOATING POINT STATUS
014100  022700  047704                  CMP     #047704,FPS     ;CHECK FLOATING POINT STATUS
014104  001401                          BEQ     .+4             ;BRANCH IF OK
014106  104000                          HLT                     ;FPS NOT EQUAL TO 047704

014110  022767  000000  164684          CMP     #000000,ANS1    ;DID 000000 GET STORED?
014116  001401                          BEQ     .+4             ;BRANCH IF OK
014120  104002                          HLT+2                   ;ANS1 NOT EQUAL TO 000000
```

```
014122  022767  000000  164654          CMP     #000000,ANS2    ;DID 000000 GET STORED?
014130  001401                          BEQ     .+4             ;BRANCH IF OK
014132  104002                          HLT+2                   ;ANS2 NOT EQUAL TO 000000

014134  022767  000004  164644          CMP     #4,     ANS3    ;CONDITION CODES = 4?
014142  001401                          BEQ     .+4             ;BRANCH IF OK
014144  104003                          HLT+3                   ;WRONG CONDITION CODES!


                        ;*************************************************************************
                        ;TEST 127:      TEST STCDL (STORE-CONVERT DOUBLE TO LONG)
                        ;       STORE   041252,125252,125252,125252 --> 000000
                        ;       FPS = 047700,   AC = AC1,       DST = M2-R7
                        ;*************************************************************************

014146  104400                          SCOPE
014150  000404                          BR      TST127

014152  041252  125252  125252  DAT127: 041252,125252,125252,125252
014160  125252

014162  170127  047700          TST127: LDFPS   #047700         ;LOAD FLOATING POINT STATUS
014166  172567  177760                  LDD     DAT127, AC1     ;LOAD 041252,125252,125252,125252 INTO AC1
014172  175527                          STCDL   AC1,    (PC)+   ;STORE-CONVERT AC1 IN .+2
014174  000000                  ANR127: 0
014176  000402                          BR      .+6
014200  000000                          HALT                    ;PC FAILURE
014202  000000                          HALT
014204  013767  177776  164572          MOV     @#PS,   ANS2    ;GET CPU STATUS
014212  042767  177760  164564          BIC     #177760,ANS2    ;SAVE CONDITION CODES
014220  016767  177750  164554          MOV     ANR127, ANS1    ;SAVE THE ANSWER
014226  170200                          STFPS   FPS             ;STORE FLOATING POINT STATUS
014230  022700  047700                  CMP     #047700,FPS     ;CHECK FLOATING POINT STATUS
014234  001401                          BEQ     .+4             ;BRANCH IF OK
014236  104000                          HLT                     ;FPS NOT EQUAL TO 047700

014240  022767  000000  164534          CMP     #000000,ANS1    ;DID 000000 GET STORED?
014246  001401                          BEQ     .+4             ;BRANCH IF OK
014250  104001                          HLT+1                   ;ANS1 NOT EQUAL TO 000000

014252  022767  000000  164524          CMP     #0,     ANS2    ;CONDITION CODES = 0?
014260  001401                          BEQ     .+4             ;BRANCH IF OK
014262  104002                          HLT+2                   ;WRONG CONDITION CODES!


                        ;*************************************************************************
                        ;TEST 130:      TEST STCDL (STORE-CONVERT DOUBLE TO LONG)
                        ;       STORE   141252,125252,125252,125252 --> 177777
                        ;       FPS = 047710,   AC = AC3,       DST = M0-R0
                        ;*************************************************************************

014264  104400                          SCOPE
014266  000404                          BR      TST130

014270  141252  125252  125252  DAT130: 141252,125252,125252,125252
014276  125252
```

```
014300  170127  047700          TST130: LDFPS   #047700          ;LOAD FLOATING POINT STATUS
014304  172767  177760                  LDD     DAT130, AC3      ;LOAD 141252,125252,125252,125252 INTO AC3
014310  175700                          STCDL   AC3,    R0       ;STORE-CONVERT AC3 IN R0
014312  013767  177776  164464          MOV     @#PS,   ANS2     ;GET CPU STATUS
014320  042767  177760  164456          BIC     #177760,ANS2     ;SAVE CONDITION CODES
014326  010067  164450                  MOV     R0,     ANS1     ;SAVE R0
014332  170200                          STFPS   FPS              ;STORE FLOATING POINT STATUS
014334  022700  047710                  CMP     #047710,FPS      ;CHECK FLOATING POINT STATUS
014340  001401                          BEQ     .+4              ;BRANCH IF OK
014342  104000                          HLT                      ;FPS NOT EQUAL TO 047710

014344  022767  177777  164430          CMP     #177777,ANS1     ;DID 177777 GET STORED?
014352  001401                          BEQ     .+4              ;BRANCH IF OK
014354  104001                          HLT+1                    ;ANS1 NOT EQUAL TO 177777

014356  022767  000010  164420          CMP     #10.,   ANS2     ;CONDITION CODES = 10?
014364  001401                          BEQ     .+4              ;BRANCH IF OK
014366  104002                          HLT+2                    ;WRONG CONDITION CODES!


                                ;*****************************************************************
                                ;TEST 131:      TEST STCDL (STORE-CONVERT DOUBLE TO LONG)
                                ;       STORE   040177,177777,177777,177777 --> 000000,000000
                                ;       FPS = 047704,   AC = AC2,       DST = M6-R7
                                ;*****************************************************************

014370  104400                          SCOPE
014372  000404                          BR      TST131

014374  040177  177777  177777  DAT131: 040177,177777,177777,177777
014402  177777

014404  170127  047700          TST131: LDFPS   #047700          ;LOAD FLOATING POINT STATUS
014410  172667  177760                  LDD     DAT131, AC2      ;LOAD 040177,177777,177777,177777 INTO AC2
014414  175667  164362                  STCDL   AC2,    ANS1     ;STORE-CONVERT AC2 IN ANS1, ANS2
014420  013767  177776  164360          MOV     @#PS,   ANS3     ;GET CPU STATUS
014426  042767  177760  164352          BIC     #177760,ANS3     ;SAVE CONDITION CODES
014434  170200                          STFPS   FPS              ;STORE FLOATING POINT STATUS
014436  022700  047704                  CMP     #047704,FPS      ;CHECK FLOATING POINT STATUS
014442  001401                          BEQ     .+4              ;BRANCH IF OK
014444  104000                          HLT                      ;FPS NOT EQUAL TO 047704

014446  022767  000000  164326          CMP     #000000,ANS1     ;DID 000000 GET STORED?
014454  001401                          BEQ     .+4              ;BRANCH IF OK
014456  104002                          HLT+2                    ;ANS1 NOT EQUAL TO 000000

014460  022767  000000  164316          CMP     #000000,ANS2     ;DID 000000 GET STORED?
014466  001401                          BEQ     .+4              ;BRANCH IF OK
014470  104002                          HLT+2                    ;ANS2 NOT EQUAL TO 000000

014472  022767  000004  164306          CMP     #4,     ANS3     ;CONDITION CODES = 4?
014500  001401                          BEQ     .+4              ;BRANCH IF OK
014502  104003                          HLT+3                    ;WRONG CONDITION CODES!
```

```
                        ;*************************************************************************
                        ;TEST 132:      TEST STCDL (STORE-CONVERT DOUBLE TO LONG)
                        ;       STORE   140177,177777,177777,177777 --> 000000,000000
                        ;       FPS = 047704,   AC = AC0,       DST = M6-R7
                        ;*************************************************************************

014504  104400                  SCOPE
014506  000404                  BR      TST132

014510  140177  177777  177777  DAT132: 140177,177777,177777,177777
014516  177777

014520  170127  047700          TST132: LDFPS   #047700         ;LOAD FLOATING POINT STATUS
014524  172467  177760                  LDD     DAT132, AC0     ;LOAD 140177,177777,177777,177777 INTO AC0
014530  175467  164246                  STCDL   AC0,    ANS1    ;STORE-CONVERT AC0 IN ANS1, ANS2
014534  013767  177776  164244          MOV     @#PS,   ANS3    ;GET CPU STATUS
014542  042767  177760  164236          BIC     #177760,ANS3    ;SAVE CONDITION CODES
014550  170200                  STFPS   FPS             ;STORE FLOATING POINT STATUS
014552  022700  047704          CMP     #047704,FPS     ;CHECK FLOATING POINT STATUS
014556  001401                  BEQ     .+4             ;BRANCH IF OK
014560  104000                  HLT                     ;FPS NOT EQUAL TO 047704

014562  022767  000000  164212          CMP     #000000,ANS1    ;DID 000000 GET STORED?
014570  001401                  BEQ     .+4             ;BRANCH IF OK
014572  104002                  HLT+2                   ;ANS1 NOT EQUAL TO 000000

014574  022767  000000  164202          CMP     #000000,ANS2    ;DID 000000 GET STORED?
014602  001401                  BEQ     .+4             ;BRANCH IF OK
014604  104002                  HLT+2                   ;ANS2 NOT EQUAL TO 000000

014606  022767  000004  164172          CMP     #4,     ANS3    ;CONDITION CODES = 4?
014614  001401                  BEQ     .+4             ;BRANCH IF OK
014616  104003                  HLT+3                   ;WRONG CONDITION CODES!


                        ;*************************************************************************
                        ;TEST 133:      TEST STCDL (STORE-CONVERT DOUBLE TO LONG)
                        ;       STORE   040200,000001,000001,000001 --> 000000,000001
                        ;       FPS = 047700,   AC = AC3,       DST = M6-R7
                        ;*************************************************************************

014620  104400                  SCOPE
014622  000404                  BR      TST133

014624  040200  000001  000001  DAT133: 040200,000001,000001,000001
014632  000001

014634  170127  047700          TST133: LDFPS   #047700         ;LOAD FLOATING POINT STATUS
014640  172767  177760                  LDD     DAT133, AC3     ;LOAD 040200,000001,000001,000001 INTO AC3
014644  175767  164132                  STCDL   AC3,    ANS1    ;STORE-CONVERT AC3 IN ANS1, ANS2
014650  013767  177776  164130          MOV     @#PS,   ANS3    ;GET CPU STATUS
014656  042767  177760  164122          BIC     #177760,ANS3    ;SAVE CONDITION CODES
014664  170200                  STFPS   FPS             ;STORE FLOATING POINT STATUS
014666  022700  047700          CMP     #047700,FPS     ;CHECK FLOATING POINT STATUS
014672  001401                  BEQ     .+4             ;BRANCH IF OK
014674  104000                  HLT                     ;FPS NOT EQUAL TO 047700
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014676  022767  000000  164076          CMP     #000000,ANS1    ;DID 000000 GET STORED?
014704  001401                          BEQ     .+4             ;BRANCH IF OK
014706  104002                          HLT+2                   ;ANS1 NOT EQUAL TO 000000

014710  022767  000001  164066          CMP     #000001,ANS2    ;DID 000001 GET STORED?
014716  001401                          BEQ     .+4             ;BRANCH IF OK
014720  104002                          HLT+2                   ;ANS2 NOT EQUAL TO 000001

014722  022767  000000  164056          CMP     #0,     ANS3    ;CONDITION CODES = 0?
014730  001401                          BEQ     .+4             ;BRANCH IF OK
014732  104003                          HLT+3                   ;WRONG CONDITION CODES!

                                ;*****************************************************************************
                                ;TEST 134:      TEST STCDL (STORE-CONVERT DOUBLE TO LONG)
                                ;       STORE   140200,000001,000001,000001 --> 177777,177777
                                ;       FPS = 047710,   AC = AC1,       DST = M6-R7
                                ;*****************************************************************************

014734  104400                          SCOPE
014736  000404                          BR      TST134

014740  140200  000001  000001  DAT134: 140200,000001,000001,000001
014746  000001

014750  170127  047700          TST134: LDFPS   #047700         ;LOAD FLOATING POINT STATUS
014754  172567  177760                  LDD     DAT134, AC1     ;LOAD 140200,000001,000001,000001 INTO AC1
014760  175567  164016                  STCDL   AC1,    ANS1    ;STORE-CONVERT AC1 IN ANS1, ANS2
014764  013767  177776  164014          MOV     @#PS,   ANS3    ;GET CPU STATUS
014772  042767  177760  164006          BIC     #177760,ANS3    ;SAVE CONDITION CODES
015000  170200                          STFPS   FPS             ;STORE FLOATING POINT STATUS
015002  022700  047710                  CMP     #047710,FPS     ;CHECK FLOATING POINT STATUS
015006  001401                          BEQ     .+4             ;BRANCH IF OK
015010  104000                          HLT                     ;FPS NOT EQUAL TO 047710

015012  022767  177777  163762          CMP     #177777,ANS1    ;DID 177777 GET STORED?
015020  001401                          BEQ     .+4             ;BRANCH IF OK
015022  104002                          HLT+2                   ;ANS1 NOT EQUAL TO 177777

015024  022767  177777  163752          CMP     #177777,ANS2    ;DID 177777 GET STORED?
015032  001401                          BEQ     .+4             ;BRANCH IF OK
015034  104002                          HLT+2                   ;ANS2 NOT EQUAL TO 177777

015036  022767  000010  163742          CMP     #10,    ANS3    ;CONDITION CODES = 10?
015044  001401                          BEQ     .+4             ;BRANCH IF OK
015046  104003                          HLT+3                   ;WRONG CONDITION CODES!

                                ;*****************************************************************************
                                ;TEST 135:      TEST STCDL (STORE-CONVERT DOUBLE TO LONG)
                                ;       STORE   047777,177777,177777,177777 --> 077777,177777
                                ;       FPS = 047700,   AC = AC0,       DST = M6-R7
                                ;*****************************************************************************

015050  104400                          SCOPE
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015052  000404                          BR      TST135

015054  047777  177777  177777  DAT135: 047777,177777,177777,177777
015062  177777

015064  170127  047700          TST135: LDFPS   #047700         ;LOAD FLOATING POINT STATUS
015070  172467  177760                  LDD     DAT135, AC0     ;LOAD 047777,177777,177777,177777 INTO AC0
015074  175467  163702                  STCDL   AC0,    ANS1    ;STORE-CONVERT AC0 IN ANS1, ANS2
015100  013767  177776  163700          MOV     @#PS,   ANS3    ;GET CPU STATUS
015106  042767  177760  163672          BIC     #177760,ANS3    ;SAVE CONDITION CODES
015114  170200                          STFPS   FPS             ;STORE FLOATING POINT STATUS
015116  022700  047700                  CMP     #047700,FPS     ;CHECK FLOATING POINT STATUS
015122  001401                          BEQ     .+4             ;BRANCH IF OK
015124  104000                          HLT                     ;FPS NOT EQUAL TO 047700

015126  022767  077777  163646          CMP     #077777,ANS1    ;DID 077777 GET STORED?
015134  001401                          BEQ     .+4             ;BRANCH IF OK
015136  104002                          HLT+2                   ;ANS1 NOT EQUAL TO 077777

015140  022767  177777  163636          CMP     #177777,ANS2    ;DID 177777 GET STORED?
015146  001401                          BEQ     .+4             ;BRANCH IF OK
015150  104002                          HLT+2                   ;ANS2 NOT EQUAL TO 177777

015152  022767  000000  163626          CMP     #0,     ANS3    ;CONDITION CODES = 0?
015160  001401                          BEQ     .+4             ;BRANCH IF OK
015162  104003                          HLT+3                   ;WRONG CONDITION CODES!

                        ;*****************************************************************
                        ;TEST 136:      TEST STCDL (STORE-CONVERT DOUBLE TO LONG)
                        ;       STORE   050000,000000,000000,000000 --> 000000,000000
                        ;       FPS = 147705,   AC = AC2,       DST = M6-R7
                        ;*****************************************************************

015164  104400                          SCOPE
015166  000404                          BR      TST136

015170  050000  000000  000000  DAT136: 050000,000000,000000,000000
015176  000000

015200  170127  047700          TST136: LDFPS   #047700         ;LOAD FLOATING POINT STATUS
015204  172667  177760                  LDD     DAT136, AC2     ;LOAD 050000,000000,000000,000000 INTO AC2
015210  175667  163566                  STCDL   AC2,    ANS1    ;STORE-CONVERT AC2 IN ANS1, ANS2
015214  013767  177776  16              MOV     @#PS,   ANS3    ;GET CPU STATUS
015222  042767  177760  16              BIC     #177760,ANS3    ;SAVE CONDITION CODES
015230  170200                          STFPS   FPS             ;STORE FLOATING POINT STATUS
015232  170367  163564                  STST    FEC             ;STORE EXCEPTION CODES
015236  022700  147705                  CMP     #147705,FPS     ;CHECK FLOATING POINT STATUS
015242  001401                          BEQ     .+4             ;BRANCH IF OK
015244  104000                          HLT                     ;FPS NOT EQUAL TO 147705

015246  022767  000006  163546          CMP     #6,     FEC     ;CHECK FLOATING EXCEPTION CODE
015254  001401                          BEQ     .+4             ;BRANCH IF OK
015256  104000                          HLT                     ;FEC NOT EQUAL TO 6

015260  022767  000000  163514          CMP     #000000,ANS1    ;DID 000000 GET STORED?
```

```
015266  001401                          BEQ     .+4             ;BRANCH IF OK
015270  104002                          HLT+2                   ;ANS1 NOT EQUAL TO 000000

015272  022767  000000  163504          CMP     #000000,ANS2    ;DID 000000 GET STORED?
015300  001401                          BEQ     .+4             ;BRANCH IF OK
015302  104002                          HLT+2                   ;ANS2 NOT EQUAL TO 000000

015304  022767  000005  163474          CMP     #5,     ANS3    ;CONDITION CODES = 5?
015312  001401                          BEQ     .+4             ;BRANCH IF OK
015314  104003                          HLT+3                   ;WRONG CONDITION CODES!


                        ;*****************************************************************
                        ;TEST 137:      TEST STCDL (STORE-CONVERT DOUBLE TO LONG)
                        ;       STORE   150000,000000,000377,177777 --> 100000,000000
                        ;       FPS = 047710,   AC = AC0,       DST = M6-R7
                        ;*****************************************************************

015316  104400                          SCOPE
015320  000404                          BR      TST137

015322  150000  000000  000377  DAT137: 150000,000000,000377,177777
015330  177777

015332  170127  047700          TST137: LDFPS   #047700         ;LOAD FLOATING POINT STATUS
015336  172467  177760                  LDD     DAT137, AC0     ;LOAD 150000,000000,000377,177777 INTO AC0
015342  175467  163434                  STCDL   AC0,    ANS1    ;STORE-CONVERT AC0 IN ANS1, ANS2
015346  013767  177776  163432          MOV     @#PS,   ANS3    ;GET CPU STATUS
015354  042767  177760  163424          BIC     #177760,ANS3    ;SAVE CONDITION CODES
015362  170200                          STFPS   FPS             ;STORE FLOATING POINT STATUS
015364  022700  047710                  CMP     #047710,FPS     ;CHECK FLOATING POINT STATUS
015370  001401                          BEQ     .+4             ;BRANCH IF OK
015372  104000                          HLT                     ;FPS NOT EQUAL TO 047710

015374  022767  100000  163400          CMP     #100000,ANS1    ;DID 100000 GET STORED?
015402  001401                          BEQ     .+4             ;BRANCH IF OK
015404  104002                          HLT+2                   ;ANS1 NOT EQUAL TO 100000

015406  022767  000000  163370          CMP     #000000,ANS2    ;DID 000000 GET STORED?
015414  001401                          BEQ     .+4             ;BRANCH IF OK
015416  104002                          HLT+2                   ;ANS2 NOT EQUAL TO 000000

015420  022767  000010  163360          CMP     #10.,   ANS3    ;CONDITION CODES = 10?
015426  001401                          BEQ     .+4             ;BRANCH IF OK
015430  104003                          HLT+3                   ;WRONG CONDITION CODES!


                        ;*****************************************************************
                        ;TEST 140:      TEST STCDL (STORE-CONVERT DOUBLE TO LONG)
                        ;       STORE   150000,000000,000400,000000 --> 000000,000000
                        ;       FPS = 147705,   AC = AC3,       DST = M6-R7
                        ;*****************************************************************

015432  104400                          SCOPE
015434  000404                          BR      TST140
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```
015436  150000  000000  000400  DAT140: 150000,000000,000400,000000
015444  000000

015446  170127  047700          TST140: LDFPS   #047700         ;LOAD FLOATING POINT STATUS
015452  172767  177760                  LDD     DAT140, AC3     ;LOAD 150000,000000,000400,000000 INTO AC3
015456  175767  163320                  STCDL   AC3,    ANS1    ;STORE-CONVERT AC3 IN ANS1, ANS2
015462  013767  177776  163316          MOV     @#PS,   ANS3    ;GET CPU STATUS
015470  042767  177760  163310          BIC     #177760,ANS3    ;SAVE CONDITION CODES
015476  170200                          STFPS   FPS             ;STORE FLOATING POINT STATUS
015500  170367  163316                  STST    FEC             ;STORE EXCEPTION CODES
015504  022700  147705                  CMP     #147705,FPS     ;CHECK FLOATING POINT STATUS
015510  001401                          BEQ     .+4             ;BRANCH IF OK
015512  104000                          HLT                     ;FPS NOT EQUAL TO 147705

015514  022767  000006  163300          CMP     #6,     FEC     ;CHECK FLOATING EXCEPTION CODE
015522  001401                          BEQ     .+4             ;BRANCH IF OK
015524  104000                          HLT                     ;FEC NOT EQUAL TO 6

015526  022767  000000  163246          CMP     #000000,ANS1    ;DID 000000 GET STORED?
015534  001401                          BEQ     .+4             ;BRANCH IF OK
015536  104002      .                   HLT+2                   ;ANS1 NOT EQUAL TO 000000

015540  022767  000000  163236          CMP     #000000,ANS2    ;DID 000000 GET STORED?
015546  001401                          BEQ     .+4             ;BRANCH IF OK
015550  104002                          HLT+2                   ;ANS2 NOT EQUAL TO 000000

015552  022767  000005  163226          CMP     #5,     ANS3    ;CONDITION CODES = 5?
015560  001401                          BEQ     .+4             ;BRANCH IF OK
015562  104003                          HLT+3                   ;WRONG CONDITION CODES!


                                ;#########################################################################
                                ;TEST 141:      TEST STCDL (STORE-CONVERT DOUBLE TO LONG)
                                ;       STORE   100000,000000,000000,000000 --> 000000,000000
                                ;       FPS = 047704,   AC = AC1,       DST = M6-R7
                                ;#########################################################################
015564  104400                          SCOPE
015566  000404                  BR      TST141

015570  100000  000000  000000  DAT141: 100000,000000,000000,000000
015576  000000

015600  170127  040200          TST141: LDFPS   #040200         ;LOAD FLOATING POINT STATUS
015604  172567  177760                  LDD     DAT141, AC1     ;LOAD 100000,000000,000000,000000 INTO AC1
015610  170127  047700                  LDFPS   #047700         ;LOAD FLOATING POINT STATUS
015614  175567  163162                  STCDL   AC1,    ANS1    ;STORE-CONVERT AC1 IN ANS1, ANS2
015620  013767  177776  163160          MOV     @#PS,   ANS3    ;GET CPU STATUS
015626  042767  177760  163152          BIC     #177760,ANS3    ;SAVE CONDITION CODES
015634  170200                          STFPS   FPS             ;STORE FLOATING POINT STATUS
015636  022700  047704                  CMP     #047704,FPS     ;CHECK FLOATING POINT STATUS
015642  001401                          BEQ     .+4             ;BRANCH IF OK
015644  104000                          HLT                     ;FPS NOT EQUAL TO 047704

015646  022767  000000  163126          CMP     #000000,ANS1    ;DID 000000 GET STORED?
015654  001401                          BEQ     .+4             ;BRANCH IF OK
015656  104002                          HLT+2                   ;ANS1 NOT EQUAL TO 000000
```

```
015660  022767  000000  163116          CMP     #000000,ANS2    ;DID 000000 GET STORED?
015666  001401                          BEQ     .+4             ;BRANCH IF OK
015670  104002                          HLT+2                   ;ANS2 NOT EQUAL TO 000000

015672  022767  000004  163106          CMP     #4,     ANS3    ;CONDITION CODES = 4?
015700  001401                          BEQ     .+4             ;BRANCH IF OK
015702  104003                          HLT+3                   ;WRONG CONDITION CODES!

                        ;*****************************************************************
                        ;TEST 142:      TEST STCDL (STORE-CONVERT DOUBLE TO LONG)
                        ;       STORE   177777,177777,177777,177777 --> 000000,000000
                        ;       FPS = 147705,   AC = AC3,       DST = M6-R7
                        ;*****************************************************************

015704  104400                          SCOPE
015706  000404                          BR      TST142

015710  177777  177777  177777  DAT142: 177777,177777,177777,177777
015716  177777

015720  170127  047700          TST142: LDFPS   #047700         ;LOAD FLOATING POINT STATUS
015724  172767  177760                  LDD     DAT142, AC3     ;LOAD 177777,177777,177777,177777 INTO AC3
015730  175767  163046                  STCDL   AC3,    ANS1    ;STORE-CONVERT AC3 IN ANS1, ANS2
015734  013767  177776  163044          MOV     @#PS,   ANS3    ;GET CPU STATUS
015742  042767  177760  163036          BIC     #177760,ANS3    ;SAVE CONDITION CODES
015750  170200                          STFPS   FPS             ;STORE FLOATING POINT STATUS
015752  170367  163044                  STST    FEC             ;STORE EXCEPTION CODES
015756  022700  147705                  CMP     #147705,FPS     ;CHECK FLOATING POINT STATUS
015762  001401                          BEQ     .+4             ;BRANCH IF OK
015764  104000                          HLT                     ;FPS NOT EQUAL TO 147705

015766  022767  000006  163026          CMP     #6,     FEC     ;CHECK FLOATING EXCEPTION CODE
015774  001401                          BEQ     .+4             ;BRANCH IF OK
015776  104000                          HLT                     ;FEC NOT EQUAL TO 6

016000  022767  000000  162774          CMP     #000000,ANS1    ;DID 000000 GET STORED?
016006  001401                          BEQ     .+4             ;BRANCH IF OK
016010  104002                          HLT+2                   ;ANS1 NOT EQUAL TO 000000

016012  022767  000000  162764          CMP     #000000,ANS2    ;DID 000000 GET STORED?
016020  001401                          BEQ     .+4             ;BRANCH IF OK
016022  104002                          HLT+2                   ;ANS2 NOT EQUAL TO 000000

016024  022767  000005  162754          CMP     #5,     ANS3    ;CONDITION CODES = 5?
016032  001401                          BEQ     .+4             ;BRANCH IF OK
016034  104003                          HLT+3                   ;WRONG CONDITION CODES!

                        ;*****************************************************************
                        ;TEST 143:      TEST STCDL (STORE-CONVERT DOUBLE TO LONG)
                        ;       STORE   100177,177777,177777,177777 --> 000000,000000
                        ;       FPS = 047704,   AC = AC3,       DST = M6-R7
                        ;*****************************************************************
016036  104400                          SCOPE
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```
016040  000404                          BR      TST143

016042  100177  177777  177777  DAT143: 100177,177777,177777,177777
016050  177777

016052  170127  040200          TST143: LDFPS   #040200          ;LOAD FLOATING POINT STATUS
016056  172767  177760                  LDD     DAT143, AC3       ;LOAD 100177,177777,177777,177777 INTO AC3
016062  170127  047700                  LDFPS   #047700           ;LOAD FLOATING POINT STATUS
016066  175767  162710                  STCDL   AC3,    ANS1      ;STORE-CONVERT AC3 IN ANS1, ANS2
016072  013767  177776  162706        MOV     @#PS,   ANS3      ;GET CPU STATUS
016100  042767  177760  162700        BIC     #177760,ANS3      ;SAVE CONDITION CODES
016106  170200                        STFPS   FPS               ;STORE FLOATING POINT STATUS
016110  022700  047704                CMP     #047704,FPS       ;CHECK FLOATING POINT STATUS
016114  001401                        BEQ     .+4               ;BRANCH IF OK
016116  104000                        HLT                       ;FPS NOT EQUAL TO 047704

016120  022767  000000  162654        CMP     #000000,ANS1      ;DID 000000 GET STORED?
016126  001401                        BEQ     .+4               ;BRANCH IF OK
016130  104002                        HLT+2                     ;ANS1 NOT EQUAL TO 000000

016132  022767  000000  162644        CMP     #000000,ANS2      ;DID 000000 GET STORED?
016140  001401                        BEQ     .+4               ;BRANCH IF OK
016142  104002                        HLT+2                     ;ANS2 NOT EQUAL TO 000000

016144  022767  000004  162634        CMP     #4,     ANS3      ;CONDITION CODES = 4?
016152  001401                        BEQ     .+4               ;BRANCH IF OK
016154  104003                        HLT+3                     ;WRONG CONDITION CODES!
```

```
016156  104400                  DONE:   SCOPE
016160  032737  002000  177570          BIT     #SW10,@#SWR     ;RING THE BELL?
016166  001005                          BNE     1$              ;NO!
016170  012767  000207  001242          MOV     #BELL,.TYPE     ;TYPE A BELL
016176  000004  017440                  TYPE    ,.TYPE
016202  005046                  1$:     CLR     -(6)            ;CLEAR TRACE TRAP
016204  032737  010000  177570          BIT     #SW12,@#SWR     ;RUN WITH TRT?
016212  001010                          BNE     2$
016214  005167  001222                  COM     TRPB
016220  100005                          BPL     2$
016222  052716  000020                  BIS     #20,(6)         ;SET TRACE TRAP
016226  012746  001062                  MOV     #BEGIN,-(6)     ;JUMP TO START OF TEST
016232  000412                          BR      YESRT
016234  012746  001062          2$:     MOV     #BEGIN,-(6)     ;JUMP TO START OF TEST
016240  013700  000042                  MOV     @#42,R0         ;GET MONITOR ADDRESS
016244  001404                          BEQ     3$              ;IF NONE
016246  004710                          JSR     7,(0)           ;GO TO MONITOR
016250  000240                          NOP
016252  000240                          NOP
016254  000240                          NOP
016256  000002                  3$:     RTI
016260  000002                  YESRT:  RTI                     ;RETURN TO PROGRAM FROM TRAP

016262  032737  000400  177570  .EMT:   BIT     #SW08,@#SWR     ;KILL LDUB OR LOOP ON SPEC. TEST
016270  001404                          BEQ     1$
016272  123767  177570  162500          CMPB    @#SWR,ICNT      ;ON RIGHT TEST?   *SW7-0*
016300  001437                          BEQ     OVER
016302  113703  177570          1$:     MOVB    @#SWR,R3        ;GET UB BITS
016306  170003                          LDUB
016310  032737  040000  177570          BIT     #SW14,@#SWR     ;LOOP ON TEST
016316  001026                          BNE     KIT
016320  032737  004000  177570          BIT     #SW11,@#SWR     ;KILL ITERATIONS
016326  001012                          BNE     SAVLAD
016330  105767  162445                  TSTB    ICNT+1
016334  001404                          BEQ     2$              ;BRANCH IF FIRST
016336  126767  001106  162435          CMPB    TIMES,ICNT+1    ;DONE?
016344  001013                          BNE     KIT             ;BRANCH IF NOT
016346  112767  000001  162425  2$:     MOVB    #1,ICNT+1       ;FIRST ITERATION
016354  105267  162420          SAVLAD: INCB    ICNT            ;COUNT TEST NUMBERS
016360  011667  001060                  MOV     (6),LAD         ;SAVE LOOP ADDRESS
016364  016737  162410  177570          MOV     ICNT,@#DISPLAY  ;DISPLAY TEST NO. AND ITERATION COUNT
016372  000002                          RTI                     ;RETURN

016374  105267  162401          KIT:    INCB    ICNT+1
016400  016737  162374  177570  OVER:   MOV     ICNT,@#DISPLAY  ;SET UP DISPLAY
016406  005767  001032                  TST     LAD             ;FIRST ONE?
016412  001760                          BEQ     SAVLAD
016414  016716  001024                  MOV     LAD,(6)         ;FUDGE RETURN ADDRESS
016420  000002                          RTI                     ;FIXES PS
```

```
016422  032737  002000  177570  .TRP:   BIT     #SW10,@#SWR     ;BELL ON ERROR?
016430  001405                          BEQ     1$              ;NO - SKIP
016432  012767  000207  001000          MOV     #BELL,.TYPE     ;TYPE A BELL
016440  000004  017440                  TYPE    .TYPE
016444  004767  000406          1$:     JSR     PC,ERROR        ;COUNT THE NUMBER OF ERRORS
016450  010446                          MOV     R4,-(6)
016452  032737  020000  177570          BIT     #SW13,@#SWR     ;SKIP TYPEOUT IF SET
016460  001072                          BNE     4$
016462  000004  017406                  TYPE    .RETURN
016466  016646  000002                  MOV     2(6),-(6)       ;PUT ADDRESS OF INSTRUCTION ON STACK
016472  162716  000002                  SUB     #2,(6)
016476  011605                          MOV     (6),TTY         ;TYPE (6) IN OCTAL
016500  004767  000212                  JSR     %7,PRINTR       ;TYPE LEADING ZERO'S
016504  000004  017414                  TYPE    .SPACE+3
016510  010005                          MOV     R0,TTY          ;TYPE R0 IN OCTAL
016512  004767  000200                  JSR     %7,PRINTR       ;TYPE LEADING ZERO'S
016516  000004  017415                  TYPE    .SPACE+4
016522  012703  001002                  MOV     #ANS1,R3        ;ADDRESS OF DATA
016526  113604                          MOVB    @(6)+,R4        ;AMOUNT OF DATA IN TABLE
016530  001426                          BEQ     3$
016532  100016                          BPL     2$              ;TYPE STACK?
016534  016667  000006  162240          MOV     6(6),ANS1
016542  016667  000010  162234          MOV     10(6),ANS2
016550  016667  000012  162230          MOV     12(6),ANS3
016556  016667  000014  162224          MOV     14(6),ANS4
016564  042704  177600                  BIC     #177600,R4      ;CLEAR SIGN
016570  000004  017415          2$:     TYPE    .SPACE+4
016574  012305                          MOV     (3)+,TTY        ;TYPE (3)+ IN OCTAL
016576  004767  000114                  JSR     %7,PRINTR       ;TYPE LEADING ZERO'S
016602  005304                          DEC     R4
016604  001371                          BNE     2$
016606  005700                  3$:     TST     FPS
016610  100016                          BPL     4$
016612  000004  017411                  TYPE    .SPACE
016616  170367  162200                  STST    FEC
016622  016705  162174                  MOV     FEC,TTY         ;TYPE FEC IN OCTAL
016626  004767  000064                  JSR     %7,PRINTR       ;TYPE LEADING ZERO'S
016632  000004  017414                  TYPE    .SPACE+3
016636  016705  162162                  MOV     FEA,TTY         ;TYPE FEA IN OCTAL
016642  004767  000050                  JSR     %7,PRINTR       ;TYPE LEADING ZERO'S
016646  012604                  4$:     MOV     (6)+,R4
016650  005737  177570                  TST     @#SWR           ;HALT ON ERROR
016654  100001                          BPL     .+4             ;SKIP IF CONTINUE
016656  000000                          HALT                    ;HALT ON ERROR!
016660  032737  001000  177570          BIT     #SW09,@#SWR     ;CHECK FOR INHIBIT LOOP ON ERROR
016666  001001                          BNE     .+4             ;SKIP IF LOOP ON ERROR
016670  000002                          RTI
016672  105067  162103                  CLRB    ICNT+1
016676  032737  000400  177570          BIT     #SW08,@#SWR     ;CHECK FOR LOAD MICROBREAK
016704  001233                          BNE     KIT             ;BRANCH IF NOT
016706  113703  177570                  MOVB    @#SWR,R3        ;PUT MICROBREAK ADDRESS IN R3
016712  170003                          LDUB                    ;LOAD MICROBREAK
016714  000827                          BR      KIT             ;LOOP ON TEST UNTIL NO ERRORS
```

```
016716  112767  000001  000130  PRINTR: MOVB    #1,A4$          ;SET ZERO FILL SWITCH
016724  000402                  BR      .+6
016726  005067  000122          PRINTS: CLR     A4$             ;SUPRESS LEADING ZERO'S
016732  112767  177772  000115          MOVB    #-6.A4$+1       ;SET COUNT
016740  010446                  MOV     R4,-(6)         ;SAVE R4
016742  012704  017044                  MOV     #3$,R4          ;SET POINTER TO FIRST ASCII CHAR.
016746  105014                  CLRB    (4)             ;CLEAR FIRST BYTE
016750  000405                  BR      2$              ;ROTATE FIRST BIT
016752  105014          1$:     CLRB    (4)             ;CLEAR BYTE OF CHARACTER
016754  006105                  ROL     TTY             ;ROTATE BIT INTO C
016756  106114                  ROLB    (4)             ;PACK IT
016760  006105                  ROL     TTY             ;ROTATE BIT INTO C
016762  106114                  ROLB    (4)             ;PACK IT
016764  006105          2$:     ROL     TTY             ;ROTATE BIT INTO C
016766  106114                  ROLB    (4)             ;PACK IT
016770  105714                  TSTB    (4)
016772  001402                  BEQ     .+6
016774  105267  000054          INCB    A4$
017000  105767  000050          TSTB    A4$             ;CHECK FILL SWITCH
017004  001402                  BEQ     .+6
017006  152724  000060          BISB    #'0,(4)+        ;MAKE INTO ASCII CHAR
017012  105267  000037          INCB    A4$+1
017016  001355                  BNE     1$              ;REPEAT
017020  022704  017044          CMP     #3$,R4
017024  001002                  BNE     .+6
017026  112724  000060          MOVB    #'0,(4)+
017032  105014                  CLRB    (4)
017034  000004  017044          TYPE    ,3$             ;TYPE IT
017040  012604                  MOV     (6)+,R4         ;RESTORE R4
017042  000207                  RTS     PC

017044  000004          3$:     .BLKW   4
017054  000000          A4$:    0

017056  005267  000364  ERROR:  INC     ERRORS          ;COUNT ERRORS
017062  132737  000001  000041  BITB    #1,@#41         ;AUTO MODE?
017070  001412                  BEQ     1$              ;NO!
017072  022767  000010  000346  CMP     #10.,ERRORS     ;TOO MANY?
017100  001006                  BNE     1$              ;NOT YET
017102  013700  000042          MOV     @#42,R0         ;GET ADDRESS
017106  001403                  BEQ     1$              ;FORGET IT IF ZERO
017110  005037  000042          CLR     @#42            ;ZAP 42
017114  004710                  JSR     PC,(0)          ;CALL THE MONITOR
017116  000207          1$:     RTS     PC              ;RETURN
```

```
017120  012777  017314  000306  POWDWN: MOV     #ILLUP,@UPVEC   ;SET FOR FAST UP
017126  012777  000340  000302          MOV     #340,@UPVEC+2   ;PRIO:7
017134  170246                          STFPS   -(6)            ;GET THE FPS
017136  170011                          SETD
017140  174046                          STD     AC0,-(6)        ;SAVE AC'S
017142  174146                          STD     AC1,-(6)
017144  174246                          STD     AC2,-(6)
017146  174346                          STD     AC3,-(6)
017150  172404                          LDD     AC4,AC0
017152  174046                          STD     AC0,-(6)
017154  172405                          LDD     AC5,AC0
017156  174046                          STD     AC0,-(6)
017160  010046                          MOV     R0,-(6)         ;SAVE REGISTERS
017162  010146                          MOV     R1,-(6)
017164  010246                          MOV     R2,-(6)
017166  010346                          MOV     R3,-(6)
017170  010446                          MOV     R4,-(6)
017172  010546                          MOV     R5,-(6)
017174  010667  000220                  MOV     SP,SAVE6        ;SAVE SP
017200  012777  017210  000226          MOV     #POWUP,@UPVEC   ;SET UP VECTOR
017206  000000                          HALT

017210  016706  000204          POWUP:  MOV     SAVE6,SP        ;GET SP
017214  005001                          CLR     R1              ;WAIT LOOP FOR THE TTY
017216  005201                  1$:     INC     R1
017220  001376                          BNE     1$
017222  012605                          MOV     (6)+,R5         ;GET THE REGISTERS
017224  012604                          MOV     (6)+,R4
017226  012603                          MOV     (6)+,R3
017230  012602                          MOV     (6)+,R2
017232  012601                          MOV     (6)+,R1
017234  012600                          MOV     (6)+,R0
017236  170011                          SETD
017240  172426                          LDD     (6)+,AC0        ;RESTORE THE AC'S
017242  174005                          STD     AC0,AC5
017244  172426                          LDD     (6)+,AC0
017246  174004                          STD     AC0,AC4
017250  172726                          LDD     (6)+,AC3
017252  172626                          LDD     (6)+,AC2
017254  172526                          LDD     (6)+,AC1
017256  172426                          LDD     (6)+,AC0
017260  170126                          LDFPS   (6)+            ;RESTORE FPS
017262  012777  017120  000140          MOV     #POWDWN,@DWNVEC ;SET UP THE POWER DOWN VECTOR
017270  012777  000340  000134          MOV     #340,@DWNVEC+2
017276  000004  017302                  TYPE    ..+2            ;.ASCIZ <15><12>"POWER"
017312  000002                          RTI

017314  000000                  ILLUP:  HALT                    ;THE POWER UP SEQUENCE WAS STARTED
017316  000776                          BR      .-2             ; BEFORE THE POWER DOWN WAS COMPLETE
```

```
017320  010546                  .IOT:   MOV     IIY,-(6)        ;SAVE IIY
017322  017605  000002                  MOV     @2(6),TTY       ;GET ADDRESS TO BE TYPED
017326  105715                  1$:     TSTB    (TTY)           ;TERMINATOR?
017330  001406                          BEQ     2$
017332  112537  177566                  MOVB    (TTY)+,@#177566 ;LOAD AND TYPE THE CHARACTER
017336  105737  177564                  TSTB    @#177564        ;IS THE PRINTER READY
017342  100375                          BPL     .-4
017344  000770                          BR      1$              ;GET THE NEXT CHARACTER
017346  017646  000002          2$:     MOV     @2(6),-(6)      ;GET ADDRESS TO BE TYPED
017352  062766  000002  000004          ADD     #2,4(6)         ;ADD 2 TO THE ADDRESS
017360  022666  000002                  CMP     (6)+,2(6)       ;IS IT .+2?
017364  001006                          BNE     3$              ;NO
017366  062705  000002                  ADD     #2,TTY          ;ADD 2 TO THE ADDRESS
017372  042705  000001                  BIC     #1,TTY          ;BACK UP TO AN EVEN BYTE
017376  010566  000002                  MOV     TTY,2(6)        ;RESTORE ADDRESS
017402  012605                  3$:     MOV     (6)+,TTY        ;RESTORE TTY
017404  000002                          RTI                     ;RETURN

017406  005015     000          RETURN: .ASCIZ  <15><12>        ;RETURN AND LINEFEED
017411     015  020012  020040  SPACE:  .ASCIZ  <15><12>"   "   ;RETURN AND 3 SPACES
017416     000
        017420                  .EVEN
017420  000000                  SAVE6:  0
017422  172160                  FPTADR: 172160                  ;FLOATING POINT ADDRESS ON THE 11/20
017424  000244  000246          FPVECT: 244,246                 ;FLOATING POINT VECTOR ADDRESS
017430  000024  000026          DWNVEC: 24,26                   ;POWER DOWN VECTOR ADDRESS
017434  000024  000026          UPVEC:  24,26                   ;POWER UP VECTOR ADDRESS
017440  000000                  .TYPE:  0
017442  000000                  TRPB:   0
017444  000000                  LAD:    0                       ;LOOP ADDRESS
017446  000000                  ERRORS: 0                       ;ERROR COUNT
017450  000377                  TIMES:  377                     ;ITERATION COUNT
        000001                  .END
```

```
AC0     =%000000        391#  517*  523   541*  547   589*  595   718*  719   748*  749   808*  809
                        959*  960   998*  999   1100* 1101  1202* 1208  1234* 1240  1495* 1501  1656*
                        1657  1932* 1933  2034* 2040  2167* 2173  2223* 2229  2279* 2285  2477* 2478
                        2545* 2546  2699* 2701  2883* 2889  3027* 3033  3339* 3340  3444* 3445  3519*
                        3520  3841  3845* 3846  3847* 3848  3870* 3871  3872* 3873  3877*
AC1     =%000001        392#  469*  475   493*  499   662*  668   898*  899   928*  929   1175* 1177
                        1298* 1304  1330* 1336  1362* 1368  1431* 1437  1463* 1469  1625* 1626  1781*
                        1782  1899* 1901  2090* 2096  2341* 2342  2409* 2410  2656* 2657  2847* 2853
                        2991* 2997  3128* 3134  3236* 3237  3409* 3410  3593* 3595  3842  3876*
AC2     =%000002        393#  613*  619   637*  643   690*  696   838*  839   868*  869   1140* 1141
                        1395* 1401  1594* 1595  1749* 1750  1854* 1855  2003* 2005  2142* 2148  2195*
                        2201  2251* 2257  2307* 2308  2443* 2444  2511* 2512  2581* 2582  2621* 2622
                        2778* 2779  2812* 2814  2955* 2961  3095* 3101  3201* 3202  3304* 3305  3479*
                        3480  3843  3875*
AC3     =%000003        394#  565*  571   778*  779   1029* 1030  1068* 1070  1266* 1272  1532* 1533
                        1563* 1564  1687* 1688  1718* 1719  1821* 1822  1972* 1973  2062* 2068  2118*
                        2124  2375* 2376  2735* 2736  2919* 2925  3063* 3069  3164* 3170  3272* 3273
                        3374* 3375  3554* 3555  3629* 3630  3668* 3670  3844  3874*
AC4     =%000004        395#  3845  3873*
AC5     =%000005        396#  3847  3871*
ANR104  011360          2547# 2553
ANR127  014174          3238# 3244
ANR30   003700          1142# 1148
ANR56   006604          1856# 1862
ANS1    001002          425#  475*  476   499*  500   523*  524   547*  548   571*  572   595*  596
                        619*  620   643*  644   668*  669   696*  697   719*  727   749*  757   779*
                        787   809*  817   839*  847   869*  877   899*  907   929*  937   960*  977
                        999*  1007  1030* 1047  1070* 1078  1104* 1119  1148* 1154  1177* 1185  1208*
                        1209  1240* 1241  1272* 1273  1304* 1305  1336* 1337  1368* 1369  1401* 1402
                        1437* 1438  1469* 1470  1501* 1502  1533* 1541  1564* 1572  1595* 1603  1626*
                        1634  1657* 1665  1688* 1696  1719* 1727  1750* 1758  1782* 1799  1825* 1831
                        1862* 1877  1901* 1909  1933* 1950  1973* 1981  2005* 2013  2040* 2041  2068*
                        2069  2096* 2097  2124* 2125  2148* 2149  2173* 2174  2201* 2202  2229* 2230
                        2257* 2258  2285* 2286  2308* 2316  2342* 2350  2376* 2384  2410* 2418  2444*
                        2452  2478* 2486  2512* 2520  2553* 2559  2585* 2600  2622* 2630  2657* 2674
                        2701* 2709  2736* 2753  2779* 2787  2814* 2822  2853* 2854  2889* 2890  2925*
                        2926  2961* 2962  2997* 2998  3033* 3034  3069* 3070  3101* 3102  3134* 3135
                        3170* 3171  3202* 3210  3244* 3250  3276* 3282  3305* 3313  3340* 3348  3375*
                        3383  3410* 3418  3445* 3453  3480* 3493  3520* 3528  3555* 3568  3595* 3603
                        3630* 3643  3670* 3678  3757  3761*
ANS2    001004          426#  480   504   528   552   576   600   624   648   673   701   720*  721*
                        731   750*  751*  761   780*  781*  791   810*  811*  821   840*  841*  851
                        870*  871*  881   900*  901*  911   930*  931*  941   961*  962*  981   1000*
                        1001* 1011  1031* 1032* 1051  1071* 1072* 1082  1102* 1103* 1123  1146* 1147*
                        1158  1178* 1179* 1189  1213  1245  1277  1309  1341  1373  1406  1442  1474
                        1506  1534* 1535* 1545  1565* 1566* 1576  1596* 1597* 1607  1627* 1628* 1638
                        1658* 1659* 1669  1689* 1690* 1700  1720* 1721* 1731  1751* 1752* 1762  1783*
                        1784* 1803  1823* 1824* 1835  1860* 1861* 1881  1902* 1903* 1913  1934* 1935*
                        1954  1974* 1975* 1985  2006* 2007* 2017  2045  2073  2101  2129  2153  2178
                        2206  2234  2262  2290  2320  2354  2388  2422  2456  2490  2524  2551* 2552*
                        2563  2583* 2584* 2604  2634  2678  2713  2757  2791  2826  2858  2894  2930
                        2966  3002  3038  3074  3106  3139  3175  3214  3242* 3243* 3254  3274* 3275*
                        3286  3317  3352  3387  3422  3457  3497  3532  3572  3607  3647  3682  3762*
ANS3    001006          427#  1217  1249  1281  1313  1345  1377  1410  1446  1478  1510  2309* 2310*
                        2324  2343* 2344* 2358  2377* 2378* 2392  2411* 2412* 2426  2445* 2446* 2460
                        2479* 2480* 2494  2513* 2514* 2528  2623* 2624* 2638  2658* 2659* 2682  2702*
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                    2703*  2717   2737*  2738*  2761   2780*  2781*  2795   2815*  2816*  2830   2862   2898
                    2934   2970   3006   3042   3078   3110   3147   3179   3203*  3204*  3218   3306*  3307*
                    3321   3341*  3342*  3356   3376*  3377*  3391   3411*  3412*  3426   3446*  3447*  3461
                    3481*  3482*  3501   3521*  3522*  3536   3556*  3557*  3576   3596*  3597*  3611   3631*
                    3632*  3651   3671*  3672*  3686   3763*
ANS4    001010       428*  1221   1253   1285   1317   1349   1381   1414   1450   1482   1514   2866   2902
                    2938   2974   3010   3046   3082   3114   3147   3183   3764*
ANS5    001012       429*
ANS6    001014       430*
ANS7    001016       431*
ANS8    001020       432*
A4$     017054      3793*  3795*  3796*  3810*  3811   3814*  3825*
BEG     001026       415    436*
BEGIN   001062       440    445*  3702   3704
BELL  = 000207       380*  3694   3742
DAT100  010702      2406*  2409
DAT101  011012      2440*  2443
DAT102  011122      2474*  2477
DAT103  011232      2508*  2511
DAT104  011342      2542*  2545
DAT105  011454      2578*  2581
DAT106  011604      2618*  2621
DAT107  011714      2653*  2656
DAT110  012054      2696*  2699
DAT111  012170      2732*  2735
DAT112  012330      2775*  2778
DAT113  012440      2809*  2812
DAT114  012554      2844*  2847
DAT115  012662      2880*  2883
DAT116  012770      2916*  2919
DAT117  013076      2952*  2955
DAT12   002016       687*   690
DAT120  013204      2988*  2991
DAT121  013312      3024*  3027
DAT122  013420      3060*  3063
DAT125  013730      3161*  3164
DAT126  014036      3197*  3201
DAT127  014152      3232*  3236
DAT13   002076       715*   718
DAT130  014270      3268*  3272
DAT131  014374      3300*  3304
DAT132  014510      3335*  3339
DAT133  014624      3370*  3374
DAT134  014740      3405*  3409
DAT135  015054      3440*  3444
DAT136  015170      3475*  3479
DAT137  015322      3515*  3519
DAT14   002174       745*   748
DAT140  015436      3550*  3554
DAT141  015570      3589*  3593
DAT142  015710      3625*  3629
DAT143  016042      3664*  3668
DAT15   002272       775*   778
DAT16   002370       805*   808
DAT17   002466       835*   838
DAT20   002564       865*   868
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DAT21   002662          895#   898
DAT22   002760          925#   928
DAT23   003056          956#   959
DAT24   003204          995#   998
DAT25   003302         1026#  1029
DAT26   003430         1065#  1068
DAT27   003532         1097#  1100
DAT30   003662         1137#  1140
DAT31   003774         1172#  1175
DAT41   005000         1428#  1431
DAT44   005304         1528#  1532
DAT45   005406         1559#  1563
DAT46   005510         1590#  1594
DAT47   005612         1621#  1625
DAT50   005714         1652#  1656
DAT51   006016         1683#  1687
DAT52   006120         1714#  1718
DAT53   006222         1745#  1749
DAT54   006324         1777#  1781
DAT55   006456         1817#  1821
DAT56   006562         1850#  1854
DAT57   006730         1895#  1899
DAT60   007036         1928#  1932
DAT61   007170         1968#  1972
DAT62   007272         1999#  2003
DAT63   007400         2031#  2034
DAT64   007462         2059#  2062
DAT65   007544         2087#  2090
DAT66   007626         2115#  2118
DAT71   010042         2192#  2195
DAT72   010124         2220#  2223
DAT73   010206         2248#  2251
DAT74   010270         2276#  2279
DAT75   010352         2304#  2307
DAT7E   010462         2338#  2341
DAT77   010572         2372#  2375
DISPLA= 177570          376#  3731*  3735*
DONE    016156         3691#
DWNVEC  017430          448*   449*  3879*  3880*  3911#
ERROR   017056         3744   3827#
ERRORS  017446         3827*  3830   3916#
FEA     001024          434#   973   1043   1115   1795   1873   1946   2596   2670   2749   3778
FEC     001022          419*   433#   964*   969   1034*  1039   1106*  1111   1786*  1791   1864*  1869   1937*
                       1942   2587*  2592   2661*  2666   2740*  2745   3484*  3489   3559*  3564   3634*  3639
                       3774*  3775
FLTERR  000760          418#   456
FPI100  010716         2410#
FPI101  011026         2444#
FPI102  011136         2478#
FPI103  011246         2512#
FPI105  011470         2582#  2596
FPI106  011620         2622#
FPI107  011730         2657#  2670
FPI111  012204         2736#  2749
FPI112  012344         2779#
FPI13   002112          719#
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DCFPJ.P11 CROSS REFERENCE TABLE -- USER SYMBOLS

FPI14 002210 749#
FPI15 002306 779#
FPI16 002404 809#
FPI17 002502 839#
FPI20 002600 869#
FPI21 002676 899#
FPI22 002774 929#
FPI23 003072 960# 973
FPI24 003220 999#
FPI25 003316 1030# 1043
FPI27 003546 1101# 1115
FPI44 005324 1533#
FPI45 005426 1564#
FPI46 005530 1595#
FPI47 005632 1626#
FPI50 005734 1657#
FPI51 006036 1688#
FPI52 006140 1719#
FPI53 006242 1750#
FPI54 006344 1782# 1795
FPI56 006602 1855# 1873
FPI60 007056 1933# 1946
FPI61 007210 1973#
FPI75 010366 2308#
FPI76 010476 2342#
FPI77 010606 2376#
FPS =%000000 381# 418* 470* 471 494* 495 518* 519 542* 543 566* 567 590*
591 614* 615 638* 639 663* 664 691* 692 722* 723 752* 753
782* 783 812* 813 842* 843 872* 873 902* 903 932* 933 963*
965 1002* 1003 1033* 1035 1073* 1074 1105* 1107 1149* 1150 1180* 1181
1203* 1204 1235* 1236 1267* 1268 1299* 1300 1331* 1332 1363* 1364 1396*
1397 1432* 1433 1464* 1465 1496* 1497 1536* 1537 1567* 1568 1598* 1599
1629* 1630 1660* 1661 1691* 1692 1722* 1723 1753* 1754 1785* 1787 1826*
1827 1863* 1865 1904* 1905 1936* 1938 1976* 1977 2008* 2009 2035* 2036
2063* 2064 2091* 2092 2119* 2120 2143* 2144 2168* 2169 2196* 2197 2224*
2225 2252* 2253 2280* 2281 2311* 2312 2345* 2346 2379* 2380 2413* 2414
2447* 2448 2481* 2482 2515* 2516 2554* 2555 2586* 2588 2625* 2626 2660*
2662 2704* 2705 2739* 2741 2782* 2783 2817* 2818 2848* 2849 2884* 2885
2920* 2921 2956* 2957 2992* 2993 3026* 3029 3064* 3065 3096* 3097 3129*
3130 3165* 3166 3205* 3206 3245* 3246 3277* 3278 3308* 3309 3343* 3344
3378* 3379 3413* 3414 3448* 3449 3483* 3485 3523* 3524 3558* 3560 3598*
3599 3633* 3635 3673* 3674 3771
FPTADR 017422 442 3909#
FPVECT 017424 456* 457* 3910#
HLT = 104000 378# 473 478 482 497 502 506 521 526 530 545 550 554
569 574 578 593 598 602 617 622 626 641 646 650 666
671 675 694 699 703 725 729 733 755 759 763 785 789
793 815 819 823 845 849 853 875 879 883 905 909 913
935 939 943 967 971 975 979 983 1005 1009 1013 1037 1041
1045 1049 1053 1076 1080 1084 1109 1113 1117 1121 1125 1152 1156
1160 1183 1187 1191 1206 1211 1215 1219 1223 1238 1243 1247 1251
1255 1270 1275 1279 1283 1287 1302 1307 1311 1315 1319 1334 1339
1343 1347 1351 1366 1371 1375 1379 1383 1399 1404 1408 1412 1416
1435 1440 1444 1448 1452 1467 1472 1476 1480 1484 1499 1504 1508
1512 1516 1539 1543 1547 1570 1574 1578 1601 1605 1609 1632 1636
1640 1663 1667 1671 1694 1698 1702 1725 1729 1733 1756 1760 1764

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                    1789    1793    1797    1801    1805    1809    1833    1837    1867    1871    1875    1879    1883
                    1907    1911    1915    1940    1944    1948    1952    1956    1979    1983    1987    2011    2015
                    2019    2038    2043    2047    2066    2071    2075    2094    2099    2103    2123    2127    2131
                    2146    2151    2155    2171    2176    2180    2199    2204    2208    2227    2327    2331    2335
                    2260    2264    2283    2288    2292    2314    2318    2324    2328    2348    2352    2356    2360
                    2382    2386    2390    2394    2416    2420    2424    2428    2450    2454    2458    2462    2466
                    2488    2492    2496    2518    2522    2526    2530    2557    2561    2565    2590    2594    2598
                    2602    2606    2628    2632    2636    2640    2664    2668    2672    2676    2680    2684    2688
                    2711    2715    2719    2743    2747    2751    2755    2759    2763    2785    2789    2793    2797
                    2820    2824    2828    2832    2851    2856    2860    2864    2868    2887    2892    2896    2900
                    2904    2923    2928    2932    2936    2940    2959    2964    2968    2972    2976    2980    2984
                    3004    3008    3012    3031    3036    3040    3044    3048    3067    3072    3076    3080    3084
                    3099    3104    3108    3112    3116    3132    3137    3141    3145    3149    3168    3173    3177
                    3181    3185    3208    3212    3216    3220    3248    3252    3256    3280    3284    3288    3292
                    3315    3319    3323    3346    3350    3354    3358    3381    3385    3389    3393    3397    3401
                    3424    3428    3451    3455    3459    3463    3487    3491    3495    3499    3503    3507    3511
                    3534    3538    3562    3566    3570    3574    3578    3601    3605    3609    3613    3617    3621
                    3645    3649    3653    3676    3680    3684    3688
ICNT    001000       424#    458#    3716    3724    3726    3728*   3729*   3731    3734*   3735    3787*
ILLUP   017314      3837    3884#
KIT     016374      3721    3727    3734#   3789    3792
LAD     017444       459*   3730*   3736    3738    3915#
LDSC    = 170004     409#
LDUB    = 170003     405#
MAS     = 170006     408#
M1120   001054       437     442#
N       = 000144     373#    460     484#    508#    532#    556#    580#    604#    628#    652#    677#    705#    735#
                     765#    795#    825#    855#    885#    915#    945#    985#   1015#   1055#   1086#   1127#   1168#
                    1193#   1225#   1257#   1289#   1321#   1353#   1385#   1418#   1454#   1486#   1518#   1549#   1580#
                    1611#   1642#   1673#   1704#   1735#   1766#   1807#   1839#   1885#   1917#   1958#   1989#   2021#
                    2049#   2077#   2105#   2133#   2157#   2182#   2210#   2238#   2266#   2294#   2328#   2362#   2396#
                    2430#   2464#   2498#   2532#   2567#   2608#   2642#   2686#   2721#   2765#   2799#   2834#   2870#
                    2906#   2942#   2978#   3014#   3050#   3086#   3118#   3151#   3187#   3222#   3258#   3290#   3325#
                    3360#   3395#   3430#   3465#   3505#   3540#   3580#   3615#   3655#   3690#
OVER    016400      3717    3735#
PC      =%000007     390#   1141*   1855*   2546*   3237*   3744*   3822*   3835*   3836*
POWDWN  017120       448    3837#   3879
POWUP   017210      3856    3859#
PRINTR  016716      3752    3755    3768    3776    3779    3793#
PRINTS  016726      3795#
PS      = 177776     374#    720     750     780     810     840     870     900     930     961    1000    1031    1071
                    1102    1146    1178    1534    1565    1596    1627    1658    1689    1720    1751    1783    1803
                    1860    1902    1934    1974    2006    2309    2343    2377    2411    2445    2479    2513    2547
                    2583    2623    2658    2702    2737    2780    2815    3203    3242    3274    3306    3341    3376
                    3411    3446    3481    3521    3556    3596    3631    3671
                    3748    3904#
RETURN  017406       382#    451#   3273*   3276    3705*   3754    3832*   3849    3868*
R0      =%000000     383#   1101*   1104    3127*   3128    3850    3860*   3861*   3867*
R1      =%000001     384#    661*    662     3851    3866*
R2      =%000002     385#   1394*   1395    3718*   3757*   3790*   3852    3865*
R3      =%000003     386#   2166*   2167    3745    3758*   3765*   3769*   3780*   3797    3798*   3816    3821*   3853
R4      =%000004    3864#
R5      =%000005     387#   1822*   1825    2582*   2585    3854    3863*
SAVE5   017420      3855*   3859    3908#
SAV_AD  016354      3723    3729#   3737
SCOPE   = 104400     377#    467     491     515     539     563     587     611     635     659     684     713     743
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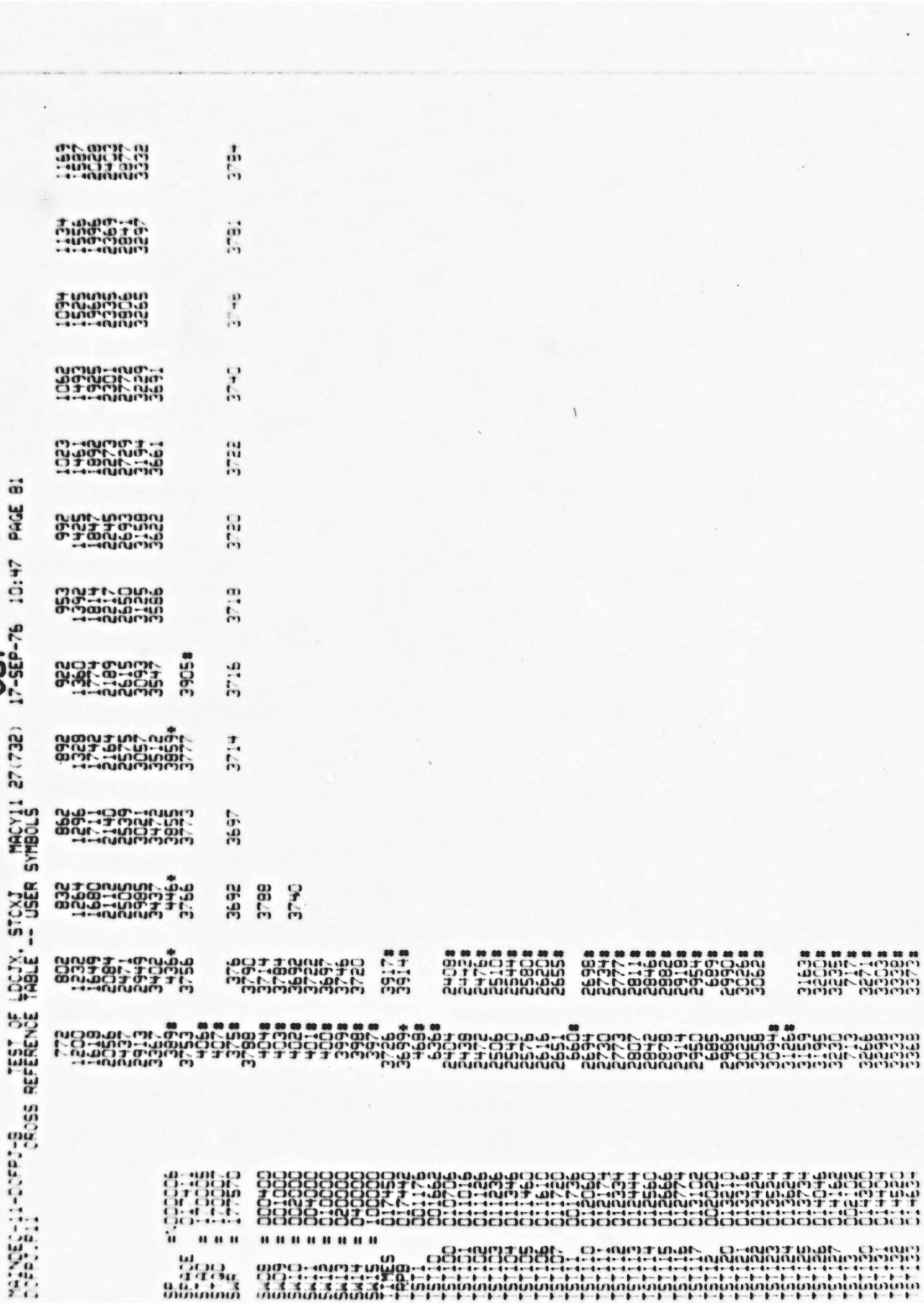

DCFPJ.P11 CROSS REFERENCE TABLE -- USER SYMBOLS

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TST134  014750          3403    3408#
TST135  015064          3433    3443#
TST136  015200          3473    3478#
TST137  015332          3513    3518#
TST14   002200           743     747#
TST140  015446          3543    3553#
TST141  015600          3583    3592#
TST142  015720          3623    3628#
TST143  016050          3663    3667#
TST15   002356           773     777#
TST16   002374           803     807#
TST17   002472           833     837#
TST2    001252           490#
TST20   002570           863     867#
TST21   002666           893     897#
TST22   002764           923     927#
TST23   003062           953     956#
TST24   003210           993     997#
TST25   003306          1023    1028#
TST26   003434          1063    1067#
TST27   003536          1093    1099#
TST3    001326           511#
TST30   003666          1135    1139#
TST31   004000          1170    1174#
TST32   004074          1201#
TST33   004174          1233#
TST34   004274          1265#
TST35   004374          1297#
TST36   004474          1329#
TST37   004574          1361#
TST4    001402           540#
TST40   004674          1393#
TST41   005002          1426    1430#
TST42   005102          1462#
TST43   005202          1494#
TST44   005314          1526    1531#
TST45   005416          1557    1562#
TST46   005520          1588    1593#
TST47   005622          1619    1624#
TST5    001456           564#
TST50   005724          1650    1655#
TST51   006026          1681    1686#
TST52   006130          1712    1717#
TST53   006232          1743    1748#
TST54   006334          1775    1780#
TST55   006466          1815    1820#
TST56   006572          1848    1853#
TST57   006740          1893    1898#
TST6    001532           588#
TST60   007046          1926    1931#
TST61   007200          1966    1971#
TST62   007302          1997    2002#
TST63   007404          2029    2033#
TST64   007466          2057    2061#
TST65   007550          2085    2089#
TST66   007632          2113    2117#
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E07

TST67	007706	2141#												
TST7	001606	612#												
TST70	007762	2165#												
TST71	010046	2190	2194#											
TST72	010130	2218	2222#											
TST73	010212	2246	2250#											
TST74	010274	2274	2278#											
TST75	010356	2302	2306#											
TST76	010466	2336	2340#											
TST77	010576	2370	2374#											
TTY	=%000005	388#	3751*	3754*	3767*	3775*	3778*	3802*	3804*	3806*	3886	3887*	3888	3890
		3898*	3899*	3900	3901*									
TYPE	= 000004	379#	3695	3743	3748	3753	3756	3766	3773	3777	3820	3881		
UPVEC	017434	3837*	3838*	3856*	3912#									
YESRT	016260	439*	447	3703	3712#									
.	= 017452	411#	412	413#	417#	423#	472	477	481	496	501	505	520	525
		529	544	549	553	568	573	577	592	597	601	616	621	625
		640	645	649	665	670	674	693	698	702	724	728	732	754
		758	762	784	788	792	814	818	822	844	848	852	874	878
		892	904	908	912	934	938	942	966	970	974	978	982	1004
		1008	1012	1036	1040	1044	1048	1052	1075	1079	1083	1108	1112	1116
		1120	1124	1143	1151	1155	1159	1182	1186	1190	1205	1210	1214	1218
		1222	1237	1242	1246	1250	1254	1269	1274	1278	1282	1286	1301	1306
		1310	1314	1318	1333	1338	1342	1346	1350	1365	1370	1374	1378	1382
		1398	1403	1407	1411	1415	1434	1439	1443	1447	1451	1466	1471	1475
		1479	1483	1498	1503	1507	1511	1515	1538	1542	1546	1569	1573	1577
		1600	1604	1608	1631	1635	1639	1662	1666	1670	1693	1697	1701	1724
		1728	1732	1755	1759	1763	1788	1792	1796	1800	1804	1828	1832	1836
		1857	1866	1870	1874	1878	1882	1906	1910	1914	1939	1943	1947	1951
		1955	1978	1982	1986	2010	2014	2018	2037	2042	2046	2065	2070	2074
		2093	2098	2102	2121	2126	2130	2145	2150	2154	2170	2175	2179	2198
		2203	2207	2226	2231	2235	2254	2259	2263	2282	2287	2291	2313	2317
		2321	2325	2347	2351	2355	2359	2381	2385	2389	2393	2415	2419	2423
		2427	2449	2453	2457	2461	2483	2487	2491	2495	2517	2521	2525	2529
		2548	2556	2560	2564	2589	2593	2597	2601	2605	2627	2631	2635	2639
		2663	2667	2671	2675	2679	2683	2706	2710	2714	2718	2742	2746	2750
		2754	2758	2762	2784	2788	2792	2796	2819	2823	2827	2831	2850	2855
		2859	2863	2867	2886	2891	2895	2899	2903	2922	2927	2931	2935	2939
		2958	2963	2967	2971	2975	2994	2999	3003	3007	3011	3030	3035	3039
		3043	3047	3066	3071	3075	3079	3083	3098	3103	3107	3111	3115	3131
		3136	3140	3144	3148	3167	3172	3176	3180	3184	3207	3211	3215	3219
		3239	3247	3251	3255	3279	3283	3287	3310	3314	3318	3322	3345	3349
		3353	3357	3380	3384	3388	3392	3415	3419	3423	3427	3450	3454	3458
		3462	3486	3490	3494	3498	3502	3525	3529	3533	3537	3561	3565	3569
		3573	3577	3600	3604	3608	3612	3636	3640	3644	3648	3652	3675	3679
		3683	3687	3782	3785	3794	3809	3812	3817	3824#	3881	3885	3892	3907#
.EMT	016262	454	3714#											
.IOT	017320	450	3886#											
.TRP	016422	452	3740#											
.TYPE	017440	3694*	3695	3742*	3743	3913#								

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DUMP      372#   3751   3754   3767   3775   3778
PRINT     372#   3881
SDUMP     372#
STATUS    372#    470    494    518    542    566    590    614    638    663    691    722    752    782    812
          842     872    902    932    963   1002   1033   1073   1105   1149   1180   1203   1235   1267   1299
         1331    1363   1396   1432   1464   1496   1536   1567   1598   1629   1660   1691   1722   1753   1785
         1826    1863   1904   1936   1976   2008   2035   2063   2091   2119   2143   2168   2196   2224   2252
         2280    2311   2345   2379   2413   2447   2481   2515   2554   2586   2625   2660   2704   2739   2792
         2817    2848   2884   2920   2956   2992   3028   3064   3096   3129   3165   3205   3245   3277   3308
         3343    3378   3413   3448   3483   3523   3558   3598   3633   3673
TYPEM     372#   3694   3742
$LDCID    460#   1193   1225   1257   1289   1321   1353   1454   1486
$LDCIF    460#    484    508    532    556    580    604    628
$LDCLD    460#   2834   2870   2906   2942   2979   3014   3050   3151
$LDCLF    460#   2021   2049   2077   2105   2182   2210   2238   2266
$LID0     460#   1385
$LID67    460#   1418
$LIF0     460#    652
$LIF67    460#    677
$LLD0     460#   3118
$LLD27    460#   3086
$LLF0     460#   2157
$LLF27    460#   2133
$SDI0     460#   1807
$SDI27    460#   1839
$SDI67    460#   1885   1989
$SDL0     460#   3258
$SDL27    460#   3222
$SDL67    460#   3580   3655
$SFI0     460#   1086
$SFI27    460#   1127
$SFI67    460#   1055   1162
$SFL0     460#   2567
$SFL27    460#   2532
$SFL67    460#   2686   2799
$STCDI    460#   1518   1549   1580   1611   1642   1673   1704   1735   1766   1917   1958
$STCDL    460#   3187   3290   3325   3360   3395   3430   3465   3505   3540   3615
$STCFI    460#    705    735    765    795    825    855    885    915    945    985   1015
$STCFL    460#   2294   2328   2362   2396   2430   2464   2498   2608   2642   2721   2765
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ADD     3895  3898
BIC      477   481   496   501   505   520   525   529   544   549   553   568   573   577
BIS      597   601   616   621   625   640   645   649   665   670   674   693   698   702
         728   732   754   758   762   784   788   792   814   818   822   844   848   852
         878   882   904   908   912   934   938   942   966   970   974   978   982  1004
        1012  1036  1040  1044  1048  1052  1075  1079  1083  1108  1112  1116  1120  1124
        1156  1159  1182  1186  1190  1205  1210  1214  1218  1222  1237  1242  1246  1250
        1274  1278  1282  1286  1301  1306  1310  1314  1318  1333  1338  1342  1346
        1370  1374  1378  1382  1398  1403  1407  1411  1415  1434  1439  1443  1447
        1471  1475  1479  1483  1498  1503  1507  1511  1515  1538  1542  1546  1550  1554
        1600  1604  1608  1631  1635  1639  1662  1666  1670  1693  1697  1701  1705  1709
        1755  1759  1763  1788  1792  1796  1800  1804  1828  1832  1836  1866  1870
        1882  1906  1910  1914  1939  1943  1947  1951  1955  1978  1982  2014  2018
        2037  2042  2046  2065  2070  2074  2093  2098  2102  2121  2126  2130  2134
        2170  2175  2179  2198  2203  2207  2226  2231  2235  2254  2259  2263  2267  2271
        2313  2317  2321  2325  2347  2351  2355  2359  2381  2385  2389  2393  2397  2401
        2423  2427  2449  2453  2461  2483  2487  2491  2495  2517  2521  2525  2529  2533
        2560  2564  2589  2593  2597  2601  2605  2627  2631  2635  2639  2643  2647  2651
        2679  2683  2706  2710  2714  2718  2742  2746  2750  2754  2758  2762  2766  2770
        2796  2819  2823  2827  2831  2850  2855  2859  2863  2867  2886  2891  2895  2899
        2922  2927  2931  2935  2939  2958  2963  2967  2971  2975  2994  2999  3003  3007
        3030  3035  3039  3043  3047  3066  3071  3075  3079  3083  3098  3103  3107  3111
        3131  3136  3140  3144  3148  3167  3172  3176  3180  3184  3207  3211  3215  3219
        3251  3255  3279  3283  3287  3310  3314  3318  3322  3345  3349  3353  3357  3380
        3388  3392  3415  3419  3423  3427  3450  3454  3458  3462  3486  3490  3494  3498
        3525  3529  3533  3537  3561  3565  3569  3573  3577  3600  3604  3608  3612  3616
        3644  3648  3652  3675  3679  3683  3687  3706  3715  3717  3725  3737  3741  3759
        3812  3829  3833  3889
 BIC     751   781   811   841   871   901   931   962  1001  1032  1072  1103  1147  1173
        1566  1597  1628  1659  1690  1721  1752  1784  1824  1861  1903  1936  1975  2007
        2344  2378  2412  2446  2480  2514  2552  2584  2624  2659  2703  2738  2781  3016
        3243  3275  3307  3342  3377  3412  3447  3482  3522  3557  3597  3632  3672  3708
 BIS
 BR     3697  3714  3720  3722  3740  3746  3784  3788
 CCL
 CLA
 CLR
 CMA
 CMB
 COM
 DEC
 DIV
 EIS
 FIS
 FPU
 HLT
 INC
 JMP
 JSR
 MARK
 MFPD
 MFPI
 MFPS
 MOV
 MTPD
 MTPI
 MTPS
 MUL
 NEG
 NOP
 RESET
 ROL
 ROR
 RTI
 RTS
 SBC
 SCC
 SEC
 SEN
 SEV
 SEZ
 SUB
 SWAB
 SXT
 TST
 WAIT
 XOR
 $ABS   3698  3721  3723  3727  3747  3770  3785  3789  3815  3817  3831  3862  3897
 $ADDR  3760  3772  3782  3892
 $ADDRT  685   713   743   773   803   833   863   893   923   954   993  1024  1063  1095
 $BADDR 1143  1170  1426  1526  1557  1588  1619  1650  1681  1712  1743  1775  1815  1844
 $BITS  1893  1926  1966  1997  2029  2057  2085  2113  2190  2218  2246  2274  2302  2330
 $BITTB 2404  2438  2472  2506  2540  2568  2576  2616  2651  2694  2730  2773  2807  2841
 $BLKB  2914  2950  2986  3022  3058  3159  3195  3230  3239  3266  3298  3333  3369  3403
 $BLKW  3473  3513  3548  3587  3623  3662  3703  3792  3794  3800  3885  3893
 $BRANC  459  3696  3795  3834  3860
 $BYTE  3799  3801  3819
 $CCODE  476   480   495   500   504   519   524   528   543   548   552   567   572   576
 $CHKAD  596   600   615   620   624   639   644   648   664   669   673   692   697   701
 $CHKBY  727   731   753   757   761   783   787   791   813   817   821   843   847   851
 $CHKWO  877   881   903   907   911   933   937   941   965   969   973   977   981  1003
 $CKADD 1011  1035  1039  1043  1047  1051  1074  1078  1082  1107  1111  1115  1119  1123
 $CKBYT 1154  1180  1185  1189  1204  1209  1213  1217  1221  1247  1252  1256  1260  1264
 $CKWOR 1284  1308  1277  1281  1285  1300  1305  1309  1313  1317  1333  1337  1341  1345
 $CLRBI 1373  1377  1381  1397  1402  1406  1410  1414  1433  1438  1442  1446  1450
 $CLRBY 1474  1478  1482  1497  1502  1506  1510  1514  1537  1541  1545  1549  1553
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                1727    1731    1754    1758    1762    1787    1791    1795    1799    1803    1827    1831    1835    1865    1869
                1873    1877    1881    1905    1909    1913    1938    1942    1946    1950    1954    1977    1981    1985    2009
                2013    2017    2036    2041    2045    2064    2069    2073    2092    2097    2101    2120    2125    2129    2144
                2149    2153    2169    2174    2178    2197    2202    2206    2225    2230    2234    2253    2258    2262    2281
                2286    2290    2312    2316    2320    2324    2346    2350    2354    2358    2380    2384    2388    2392    2414
                2418    2422    2426    2448    2452    2456    2460    2482    2486    2490    2494    2516    2520    2524    2528
                2555    2559    2563    2588    2592    2596    2600    2604    2626    2630    2634    2638    2662    2666    2670
                2674    2678    2682    2705    2709    2713    2717    2741    2745    2749    2753    2757    2761    2783    2787
                2791    2795    2818    2822    2826    2830    2849    2854    2858    2862    2866    2885    2890    2894    2898
                2902    2921    2926    2930    2934    2938    2957    2962    2966    2970    2974    2993    2998    3002    3006
                3010    3029    3034    3038    3042    3046    3065    3070    3074    3078    3082    3097    3102    3106    3110
                3114    3130    3135    3139    3143    3147    3166    3171    3175    3179    3183    3206    3210    3214    3218
                3246    3260    3254    3278    3282    3286    3309    3313    3317    3321    3344    3348    3352    3356    3379
                3383    3387    3391    3414    3418    3422    3426    3449    3453    3457    3461    3485    3489    3493    3497
                3501    3524    3528    3532    3536    3560    3564    3568    3572    3576    3599    3603    3607    3611    3635
                3639    3643    3647    3651    3674    3678    3682    3686    3816    3830    3896
CMPB            3716    3726
COM             3699
DEC             3769
EMT              378
HALT             420    1144    1145    1858    1859    2549    2550    3240    3241    3783    3857    3884
INC             3827    3861
INCB            3729    3734    3810    3814
IOT              379
JMP              415
JSR             3707    3744    3752    3755    3768    3776    3779    3835
LDCID           1202    1234    1266    1298    1330    1362    1395    1431    1463    1495
LDCIF            469     493     517     541     565     589     613     637     662     690
LDCLD           2847    2883    2919    2955    2991    3027    3063    3095    3128    3164
LDCLF           2034    2062    2090    2118    2142    2167    2195    2223    2251    2279
LDD             1532    1563    1594    1625    1656    1687    1718    1749    1781    1821    1854    1899    1932    1972    2003
                3201    3236    3272    3304    3339    3374    3409    3444    3479    3519    3554    3593    3629    3668    3845
                3847    3870    3872    3874    3875    3876    3877
LDF              718     748     778     808     838     868     898     928     959     998    1029    1068    1100    1140    1175
                2307    2341    2375    2409    2443    2477    2511    2545    2581    2621    2656    2699    2735    2778    2813
LDFPS            468     492     516     540     564     588     612     636     660     689     717     747     777     807     837
                 867     897     927     958     997    1028    1067    1089    1099    1139    1174    1176    1201    1233    1265
                1297    1329    1361    1393    1430    1462    1494    1531    1562    1593    1624    1655    1686    1717    1748
                1780    1820    1853    1898    1900    1931    1971    2002    2004    2033    2061    2089    2117    2141    2165
                2194    2222    2250    2278    2306    2340    2374    2408    2442    2476    2510    2544    2580    2620    2655
                2698    2700    2734    2777    2811    2813    2846    2882    2918    2954    2990    3026    3062    3094    3126
                3163    3200    3235    3271    3303    3338    3373    3408    3443    3478    3518    3553    3592    3594    3628
                3667    3669    3878
LDUB            3719    3791
MOV              436     437     439     442     445     446     447     448     449     450     451     452     453     454     455
                 456     457     661     720     750     780     810     840     870     900     930     961    1000    1031    1071
                1100    1103    1146    1148    1178    1394    1534    1565    1596    1627    1658    1689    1720    1751    1783
                1822    1825    1860    1862    1902    1934    1974    2006    2166    2309    2343    2377    2411    2445    2479
                2513    2551    2553    2583    2585    2623    2658    2702    2737    2780    2815    3127    3203    3243    3244
                3274    3276    3306    3341    3376    3411    3446    3481    3521    3556    3596    3631    3671    3694    3702
                3704    3705    3730    3731    3735    3738    3742    3745    3749    3751    3754    3757    3761    3765    3766
                3767    3775    3778    3780    3797    3798    3821    3832    3837    3838    3849    3850    3880    3886    3887
                3888    3889    3900    3901
MOVB            3718    3723    3758    3790    3793    3796    3818    3890
```

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NOP      3708    3709    3710
ROL      3802    3804    3806
ROLB     3803    3805    3807
RTI       421#   3711#   3712    3732    3739    3786    3882    3902
RTS      3802#   3836#
SETD     3840#   3866#
STCDI     1553#   1564#   1595    1626    1657    1688    1719    1750    1782    1822    1855    1901    1933    1973    2005
STCDL     3203#   3237#   3273    3305    3340    3375    3410    3445    3480    3520#   3555    3595    3630    3670
STCDM      729#    779#    809#    839#    869#    899#    929#    960#    999#   1030    1070    1101    1141    1177
STCFL     2308#   2342#   2376    2410    2444    2478    2512    2546    2582    2622    2657    2701    2736    2779    2814
STCFM     1206#   1240#   1272    1304    1336    1368    1401    1437    1469    1501    2853    2889    2905    2961    2997
STCFW     3033#   3069#   3101    3134    3170    3841    3842    3843    3844    3846    3848    3871    3873
STF        475#    499#    523     547     571     595     619     643     668     696    2040    2068    2096    2124    2148
STFPS     2173#   2201#   2229#   2257#   2285#
          4108#    470#    494#    518#    542#    566     590     614     638     663     691     722     752     782     812
          8422#    872#    902#    932#    963#   1002    1033    1073    1105    1149    1180    1203    1235    1267    1298
         13314#   1363#   1396#   1432#   1464#   1496    1536    1567    1598    1629    1660    1691    1722    1753    1785
         18806#   1863#   1904#   1936#   1976#   2008    2035    2063    2091#   2119#   2143    2168    2196    2230    2265
         23806#   2311#   2345    2379    2413    2447    2481    2515    2554#   2586    2626    2660    2704    2738    2780
         28817#   2844#   2884    2920    2956    2992    3028    3064    3096    3129#   3165    3205    3245    3277    3308
         33433#   3370#   3413    3448    3483    3523    3558    3598    3633    3672    3839
STST      4119#    964     1034    1106    1786    1864    1937    2587    2661    2740    3484    3559    3634    3774
SUB      3750#
TRAP      377#
TST       438#   3736    3771    3781
TSTB     3724#   3808    3811    3888    3891
.ASCIZ   3882#   3904    3905
.BLKW    3824#
.ENABL    372#
.END     3918#
.ENDC     471#    475     495     499     519     523     543     547     567     571     591     595     615     639
          643#    665     669     693     696     710     723     727     740     753     757     770     783     795
          808#    817#    830#    843#    847     860     873     877     890     903     907     920     933     951
          964#    977#   1003#   1007    1021    1035    1047    1074    1078    1092    1107    1119    1147
         1181#   1185#   1205#   1208#   1236    1240    1268    1272    1300    1304    1332    1336    1364    1397
         1401#   1433#   1437    1465    1469    1497    1501    1523    1537    1541    1554    1568    1572    1598
         1603#   1616#   1630    1634    1647    1661    1665    1678    1692    1696    1709    1723    1727    1744
         1758#   1772#   1787    1799#   1827    1831    1845    1865    1877    1905    1909    1923    1938    1950
         1977#   1981#   2009    2013    2036    2040    2064    2068    2092    2096    2120    2124    2144    2148
         2173#   2197#   2201    2225    2229    2253    2257    2281    2285    2299    2312    2316    2333    2346
         2367#   2380#   2384    2401    2414    2418    2435    2448    2452    2469    2482    2486    2503    2516
         2565#   2559#   2573    2588    2600    2613    2626    2630    2648    2662    2674    2705    2709    2727
         2763#   2770#   2783    2787#   2818    2822    2849    2853    2885    2889    2921    2925    2957    2961
         2997#   3029#   3033    3065#   3069    3097    3101    3130    3134    3166    3170    3206    3210    3246
         3278#   3282#   3309    3313#   3344    3348    3379    3383    3414    3418    3449    3453    3485    3493
         3643#   3660#   3668    3599#   3603    3635    3643    3674    3678
.EVEN     3907#
.IFNE      495#    519     543     567     591     615     639     664     692     710     723     740     753     770
          783#    813#    830#    843#    860#    873#    890#    903#    920#    933#    950#    964#    990#   1003
         1020#   1074#   1091#   1106#   1150#   1181#   1204#   1236#   1268#   1300#   1332#   1364#   1397#   1433
         1465#   1523#   1537#   1554#   1568#   1585#   1599#   1616#   1630#   1647#   1661#   1678#   1692#   1709
         1723#   1754#   1771#   1786#   1827#   1844#   1864#   1905#   1922#   1937#   1963#   1977#   2009#   2036
         2064#   2120#   2144#   2169#   2197#   2225#   2253#   2281#   2299#   2312#   2333#   2346#   2367#   2380
         2401#   2435#   2448#   2469#   2482#   2503#   2516#   2555#   2572#   2587#   2613#   2626#   2647#   2665
         2726#   2740#   2770#   2783#   2818#   2849#   2885#   2921#   2957#   2993#   3029#   3065#   3097#   3130
         3208#   3246#   3278#   3309#   3344#   3379#   3414#   3449#   3484#   3524#   3559#   3599#   3634#   3674
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DCFPJ.P11 CROSS REFERENCE TABLE -- PERMANENT SYMBOLS

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.IFNZ     475     499     523     547     571     595     619     643     668     696     727     757     787     817     847
          877     907     937     969     973    1007    1039    1043    1078    1111    1115    1154    1185    1208    1240
         1272    1304    1336    1368    1401    1437    1469    1501    1541    1572    1603    1634    1665    1696    1727
         1758    1791    1795    1831    1869    1873    1909    1942    1946    1981    2013    2040    2068    2096    2124
         2148    2173    2201    2229    2257    2285    2316    2350    2384    2418    2452    2486    2520    2559    2592
         2596    2630    2666    2670    2709    2745    2749    2787    2822    2853    2889    2925    2961    2997    3033
         3069    3101    3134    3170    3210    3250    3282    3313    3348    3383    3418    3453    3489    3493    3528
         3564    3568    3603    3639    3643    3678
.LIST     327     372     412     422     460     484     508     532     556     580     604     628     652     677     705
          735     765     795     825     855     885     915     945     985    1015    1055    1086    1127    1162    1193
         1225    1257    1289    1321    1353    1385    1418    1454    1486    1518    1549    1580    1611    1642    1673
         1704    1735    1766    1807    1839    1885    1917    1958    1989    2021    2049    2077    2105    2133    2157
         2182    2210    2238    2266    2294    2328    2362    2396    2430    2464    2498    2532    2567    2608    2642
         2686    2721    2765    2799    2834    2870    2906    2942    2978    3014    3050    3086    3118    3151    3187
         3222    3258    3290    3325    3360    3395    3430    3465    3505    3540    3580    3615    3655    3690    3740
         3793    3837    3882    3886
.MACR     372     460
.MACRO    372
.NLIST    327     372     412     422     460     484     508     532     556     580     604     628     652     677     705
          735     765     795     825     855     885     915     945     985    1015    1055    1086    1127    1162    1193
         1225    1257    1289    1321    1353    1385    1418    1454    1486    1518    1549    1580    1611    1642    1673
         1704    1735    1766    1807    1839    1885    1917    1958    1989    2021    2049    2077    2105    2133    2157
         2182    2210    2238    2266    2294    2328    2362    2396    2430    2464    2498    2532    2567    2608    2642
         2686    2721    2765    2799    2834    2870    2906    2942    2978    3014    3050    3086    3118    3151    3187
         3222    3258    3290    3325    3360    3395    3430    3465    3505    3540    3580    3615    3655    3690    3740
         3793    3837    3882    3886
.PAGE     460    3690
.REM      331
.REPT       2     412
.SBTTL    327     372     422     460    3690    3740    3793    3837    3886
.TITLE    328
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ERRORS DETECTED: 0
DEFAULT GLOBALS GENERATED: 0

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RUN-TIME: 23 35 5 SECONDS
RUN-TIME RATIO: 249/65=3.8
CORE USED:  14K  (27 PAGES)
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Spooler runtime 12 Seconds, 53 KCS, 351 disk reads, 3 disk writes, 87 pages