11/03 LSI-11 EIS INST TEST AH-S366B-MC
CVKABB0 FICHE 1 OF 1

digital

```
        000000                  .REPT   0
```

IDENTIFICATION

PRODUCT CODE: AC-8190B-MC

PRODUCT NAME: CVKABB0 LSI-11 EIS INST TEST

DATE CREATED: JULY, 1981

MAINTAINER: DIAGNOSTIC GROUP

CONTENTS

```
                                1.      ABSTRACT

                                        THIS PROGRAM TESTS THE LSI-11 EXTENDED INSTRUCTION SET
                                        <ASH, ASHC, MUL, AND DIV> OPTION USING REGISTERS 0-5 AT-
                                        LEAST ONCE WITH EACH INSTRUCTION. IT IS ALSO CHECKED THAT
                                        EXTENDED INSTRUCTIONS CAN BE INTERRUPTED (BY THE CONSOLE
                                        TELETYPE) [HOWEVER THIS TEST WILL NOT BE EXECUTED WHEN BIT
                                        5 OF $ENVM BYTE IS HIGH ]. THE PROGRAM SHOULD BE RUN FOR
                                        AT LEAST 2 PASSES WITH ALL SWITCHES LOW. THE PROGRAM IS
                                        DESIGNED TO RUN UNDER APT. AND ACT. SYSTEMS. WHEN RUNNING
                                        UNDER APT WITH BIT 5 OF $ENVM LOW IT WILL BE REQUIRED TO
                                        HAVE A SLU WITH TTY REGISTERS HAVING ADDRESSES OF 176560-66
                                        AND INTERUPT VECTORS OF 70 FOR RECEIVER AND 74 FOR TRANS-
                                        MITTER



                                2.      REQUIREMENTS


                                2.1     EQUIPMENT

                                        LSI-11 STANDARD COMPUTER WITH EIS OPTION
                                        AND 4K OF MEMORY



                                2.2     STORAGE

                                        PROGRAM STORAGE - THE ROUTINES USE MEMORY 0 - 17500



                                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 (ALL LOW FOR WORST CASE TESTING)
```

```
159
160
161
162
163
164
165
166
167
168
169
170
171
172
173
174
175
176
177
178
179
180
181
182
183
184
185
186
187
188
189
190
191
192
193
194
195
196
197
198
199
200
201
202
203
204
205
206
207
208
209
210
211
```

4.2 STARTING ADDRESS

AFTER LOADING THE PROGRAM IT SHOULD ALWAYS BE STARTED AT 200.
IF IT IS DESIRED TO SAVE THE PASS COUNTER THEN THE PROGRAM
SHOULD BE RESTARTED AT LOCATION RESTRT [I.E. 222] OTHERWISE THE
PROGRAM CAN BE RESTARTED AT 200

4.3 PROGRAM AND/OR OPERATOR ACTION

4.3.1 STAND ALONE

1) PLACE LTC SWITCH IN OFF POSITION (IF APPLICABLE).
2) LOAD PROGRAM INTO MEMORY USING ABS LOADER OR XXDP+ (.R VKAB??).
3) SET SWITCHES (SEE SEC 5.1) ALL LOW FOR WORST CASE.
4) TYPE 200G IF USING ABS LOADER.
5) THE PROGRAM WILL LOOP AND "END PASS" WILL BE TYPED AFTER
   COMPLETION OF FIRST PASS AND EVERY 4TH PASS. HOWEVER TYPE
   OUT WILL BE SUPPRESSED IF BIT 5 OF LOCATION $ENVM IS HIGH
6) A MINIMUM OF TWO PASSES SHOULD ALWAYS BE RUN.

4.3.2 UNDER APT

LOAD THE PROGRAM AND START AFTER SETTING THE DESIRED SWITCHES
(SEE SEC. 5.1). HOWEVER IF THE DIAGNOSTIC IS RUN UNDER APT.
WITH BIT 5 OF $ENVM LOW THEN IT WILL BE REQUIRED THAT A SLU
WITH TTY REGISTERS HAVING ADDRESSES OF 176560-66, AND INTERUPT
VECTORS OF 70 FOR RECEIVER AND 74 FOR TRANSMITTER BE PRESENT,
IT WILL ALSO BE REQUIRED TO CHANGE THE PASS TIME FROM 5 SEC.
TO 15 SECONDS AND THE TEST TIME FROM 3 TO 10 SECONDS

5. OPERATING PROCEDURE

5.1 SWITCH SETTINGS

A 16 BIT LOCATION CALLED $SWREG (I.E. LOCATION 422) HAS BEEN
USED TO GIVE THE FOLLOWING OPTIONS BY INSERTING A 1 IN THEIR
RESPECTIVE POSITIONS

BIT #	OCTAL VALUE	FUNCTION
15	100000.....	HALT ON ERROR
13	020000.....	INHIBIT PRINTOUT

AN 8 BIT BYTE $ENVM [I.E. LOCATION 421] HAS BEEN USED TO DEFINE
THE OPERATING MODE. ALL TYPEOUTS CAN BE SUPPRESSED BY MAKING
BIT 5 OF BYTE $ENVM HIGH, IN OTHER WORDS BY PLCING A 20000 IN
LOCATION 420

5.2 SUBROUTINE ABSTRACTS

5.2.1 HALT ROUTINE

THIS ROUTINE CALLED VIA JSR INSTRUCTION IS USED EACH TIME AN ERROR IS SEEN AND AN ERROR MESSAGE OF THE FORMAT GIVEN IN SEC. 6.1 IS TYPED OUT UNLESS SUPRESSED BY THE SWITCHES DEFINED IN SEC. 5.1

5.2.2 TRAP CATCHER

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

6. ERRORS

6.1 ERROR PRINTOUT

THE FORMAT IS AS FOLLOWS:

ADR ERRNM

WHERE:

ADR = ADDRESS OF ERROR
ERRNM = ERROR NUMBER
IN MOST CASES THE COMMENT BESIDE THE CALL FOR HALT SUBROUTINE TELLS WHAT WAS BEING CHECKED AND WHAT WAS EXPECTED. ALL PRINTOUTS WILL BE SUPPRESSED WHEN BIT 5 OF LOCATION $ENVM IS HIGH. WHILE RUNNING UNDER APT THE DIAGNOSTIC WILL NOT SUPPORT SPOOLING OF CONSOLE OUTPUTS.

6.2 ERROR RECOVERY

RESTART AT 200 OR 222 (SEE SEC 4.2)

7. RESTRICTIONS

NONE

8. MISCELLANEOUS

```
269
270
271                             8.1     EXECUTION TIME
272
273                                     DUE TO THE RANDOM CHARACTERISTIC OF THE INTERRUPT TESTS, THE
274                                     EXECUTION TIME CAN BE 5 SECONDS OR MORE PER PASS.  HOWEVER,
275                                     NORMALLY FIRST "END PASS" WILL BE TYPED WITHIN 5 SECONDS AND
276                                     WITHIN 50 SECONDS FOR EVERY CONSECUTIVE 10 PASSES
277
278
279                             8.2     STACK POINTER
280
281                                     STACK IS INITIALLY SET TO 600
282
283
284
285                             8.3     PASS COUNT
286
287.                                    A 16 BIT LOCATION "$PASS" (I.E. LOCATION 406) IS USED TO KEEP
288                                     PASS COUNT. IT CAN BE CLEARED BY RESTARTING THE PROGRAM AT 200
289
290
291
292                             8.4     TEST NUMBER
293
294                                     A 16 BIT LOCATION "$TESTN" (I.E. LOCATION 404) IS USED TO KEEP TRACK
295                                     OF THE TEST NUMBER, UPPER BYTE OF THIS LOCATION GIVES THE ITERATION
296                                     NUMBER AND THE LOWER BYTE THE TEST THAT WAS BEING EXECUTED
297
298
299                             8.5     POWER FAIL
300
301                                     THE DIAGNOSTIC CAN BE POWER FAILED WITH NO ERRORS. TO USE,
302                                     START THE TEST AS USUAL AND POWER DOWN THEN UP AT ANY TIME.
303                                     THE PROGRAM SHOULD RESTART FROM TEST 0 AFTER TYPING 'POWER"
304                                     WITH NO ERRORS. HOWEVER IF THE PROGRAM IS STORED IN A MOS
305                                     MEMORY THAT CAN NOT HOLD DATA WITH POWER DOWN THEN THE PROGRAM
306                                     WILL NOT RECOVER FROM A POWER FAIL
307
308
309
310                             9.      PROGRAM DESCRIPTION
311
312                                     THIS PROGRAM TESTS ALL THE EIS INSTRUCTIONS OF THE LSI-11
313                                     FOR ASH AND ASHC INSTRUCTIONS EVERY EVEN PASS IS EXECUTED
314                                     WITH DESTINATION MODE 0 FOR ALL REGISTERS AND EVERY ODD PASS
315                                     WITH DESTINATION MODE OF 67. THE DIAGNOSTIC DOES NOT MAKE A
316                                     PASS WITH T BIT SET.
317                     .ENDR
```

```
                                .ABS
                                .NLIST  MD,MC,CND
                                .LIST   ME
                                .TITLE  DVKABA
(1)                             ;*COPYRIGHT (C) AUGUST 1975
(1)                             ;*DIGITAL EQUIPMENT CORP.
(1)                             ;*MAYNARD, MASS. 01754
(1)                             ;*
(1)                             ;*PROGRAM BY PERVEZ ZAKI
(1)                             ;*
(1)                             ;*THIS PROGRAM WAS ASSEMBLED USING THE PDP-11 MAINDEC SYSMAC
(1)                             ;*PACKAGE (MAINDEC-11-DZQAC-C5), JAN, 1981.
(1)                             ;*
(1)     000001                  $TN=1
(1)     160000                  $SWR=160000     ;;HALT ON ERROR, LOOP ON TEST, INHIBIT ERROR TYPOUT
```

```
                                ;;*****************************************************************
                                ;;*****************************************************************

        000000                  .=0                             ;TRAP CATCHER 0 - 776

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

                                .SBTTL  ACT11 HOOKS

                                ;;*****************************************************************
                                ;;*****************************************************************
                                ;HOOKS REQUIRED BY ACT11
        001000                          $SVPC=.                 ;SAVE PC
        000046                          .=46
000046  017032                          $ENDAD                  ;;1)SET LOC.46 TO ADDRESS OF $ENDAD IN .$EOP
        000052                          .=52
000052  000000                          .WORD   0               ;;2)SET LOC.52 TO ZERO
        001000                          .=$SVPC                 ;; RESTORE PC

        000000                  DUMMY-  0
        000001                  ERRNM=  1
        000051                  F=      51
        000176                  N=      176
        000007                  PC-     %7
        000006                  SP=     %6
        010701                  SCOPE=  10701
        010701                  SCOPE1= 10701
        010703                  SCOPE3= 10703
        001000                  SW09=   1000
        002000                  SW10=   2000
        004000                  SW11=   4000
        010000                  SW12=   10000
        000004                  TYPE=   IOT


        000020                          .-20
000020  017300                          $TYPE
```

```
363                 000400                  .=400
364                                         .SBTTL  APT MAILBOX-ETABLE
(1)
(2)                                         ;;******************************************************************
(1)                                         .EVEN
(1)   000400                                $MAIL:                          ;;APT MAILBOX
(1)   000400  000000                        $MSGTY: .WORD   AMSGTY   ;;MESSAGE TYPE CODE
(1)   000402  000000                        $FATAL: .WORD   AFATAL   ;;FATAL ERROR NUMBER
(1)   000404  000000                        $TESTN: .WORD   ATESTN   ;;TEST NUMBER
(1)   000406  000000                        $PASS:  .WORD   APASS    ;;PASS COUNT
(1)   000410  000000                        $DEVCT: .WORD   ADEVCT   ;;DEVICE COUNT
(1)   000412  000000                        $UNIT:  .WORD   AUNIT    ;;I/O UNIT NUMBER
(1)   000414  000000                        $MSGAD: .WORD   AMSGAD   ;;MESSAGE ADDRESS
(1)   000416  000000                        $MSGLG: .WORD   AMSGLG   ;;MESSAGE LENGTH
(1)   000420                                $ETABLE:                        ;;APT ENVIRONMENT TABLE
(1)   000420     000                        $ENV:   .BYTE   AENV     ;;ENVIRONMENT BYTE
(1)   000421     000                        $ENVM:  .BYTE   AENVM    ;;ENVIRONMENT MODE BITS
(1)   000422  000000                        $SWREG: .WORD   ASWREG   ;;APT SWITCH REGISTER
(1)   000424  000000                        $USWR:  .WORD   AUSWR    ;;USER SWITCHES
(1)   000426  000000                        $CPUOP: .WORD   ACPUOP   ;;CPU TYPE,OPTIONS
(1)                                         ;*                      BITS 15-11=CPU TYPE
(1)                                         ;*                              11/04=01,11/05=02,11/20=03,11/40=04,11/45=05
(1)                                         ;*                              11/70=06,PDQ=07,Q=10
(1)                                         ;*                      BIT 10=REAL TIME CLOCK
(1)                                         ;*                      BIT  9=FLOATING POINT PROCESSOR
(1)                                         ;*                      BIT  8=MEMORY MANAGEMENT
(1)   000430                                $ETEND:
(1)                                         .MEXIT
365
366                                         .SBTTL  APT PARAMETER BLOCK
(1)
(2)                                         ;;******************************************************************
(1)                                         ;SET LOCATIONS 24 AND 44 AS REQUIRED FOR APT
(2)                                         ;;******************************************************************
(1)                 000430                          .$X=.   ;;SAVE CURRENT LOCATION
(1)                 000024                          .=24    ;;SET POWER FAIL TO POINT TO START OF PROGRAM
(1)   000024  000200                               200     ;;FOR APT START UP
(1)                 000044                          .=44    ;;POINT TO APT INDIRECT ADDRESS PNTR.
(1)   000044  000430                               $APTHDR ;;POINT TO APT HEADER BLOCK
(1)                 000430                          .=.$X   ;;RESET LOCATION COUNTER
(2)                                         ;;******************************************************************
(1)                                         ;SETUP APT PARAMETER BLOCK AS DEFINED IN THE APT-PDP11 DIAGNOSTIC
(1)                                         ;INTERFACE SPEC.
(1)
(1)   000430                                $APTHD:
(1)   000430  000000                        $HIBTS: .WORD   0        ;;TWO HIGH BITS OF 18 BIT MAILBOX ADDR.
(1)   000432  000400                        $MBADR: .WORD   $MAIL    ;;ADDRESS OF APT MAILBOX (BITS 0-15)
(1)   000434  000003                        $TSTM:  .WORD   3        ;;RUN TIM OF LONGEST TEST
(1)   000436  000005                        $PASTM: .WORD   5        ;;RUN TIME IN SECS. OF 1ST PASS ON 1 UNIT (QUICK VERIFY)
(1)   000440  000000                        $UNITM: .WORD            ;;ADDITIONAL RUN TIME (SECS) OF A PASS FOR EACH ADDITIONAL UNIT
(1)   000442  000014                                .WORD   $ETEND-$MAIL/2 ;;LENGTH MAILBOX-ETABLE(WORDS)
367
368                 000430                          .=$APTHD
369   000430                        COUNT:
370                 000432                          .-COUNT+2
371   000432                        PSWORD:
```

```
                000434                          .=PSWORD+2
000434                          TEMP1:
                000436                          .=TEMP1+2
000436                          TEMP2:
                000440                          .=TEMP2+2
000440                          TEMP3:
                000442                          .=TEMP3+2
000442                          TEMP4:
                000444                          .=TEMP4+2
000444  000000                  TEMP5:  .WORD
000446  000000                  TEMP6:  .WORD
000450     000                  TYPCNT: .BYTE
000451     000                  $TPCNT: .BYTE
000452  000007                  S0:     7
000454  177771                  S1:     -7
000456  000454                  S2:     S1
000460  177772                  S3:     -6
000462  177777                  S4:     -1
000464  040000                  S5:     40000
000466  000464                  S6:     S5
000470  040000                  S7:     40000
000472  177776                  S8:     -2
000474  000002                  S9:     2
000476  000474                  S10:    S9
000500  000002                  S11:    2
000502  000064                  TTYOUT: 64
000504  177566                  $TPB:   177566
000506  177564                  $TPS:   177564
000510  005015  020040  000040  $CRLF:  .ASCIZ  <15><12>/   /
000516  006412  047520  042527  POWER:  .ASCIZ  <12><15>/POWER/
        000524  000122
```

```
                    000200                      .=200
000200  012737  017064  000024                  MOV     #$PWRDN,@#24    ;PREPARE TO SERVICE POWER DOWN ROUTINE
000206  012700  000410                          MOV     #$DEVCT,R0      ;PREPARE TO INITIALIZE THE STACK
000212  005040                          2$:     CLR     -(R0)
000214  022700  000400                          CMP     #$MAIL,R0
000220  001374                                  BNE     2$
000222  000167  000352                  RESTRT: JMP     BEGIN

                    000600                      .=600

000600  012705  000404                  BEGIN:  MOV     #$TESTN,R5      ;MAKE R5 POINT TO THE LOCATION $TESTN
000604  005037  000430                          CLR     @#COUNT         ;CLEAR THE COUNTER
000610  012715  000001                          MOV     #1,(R5)         ;INITIALIZE TEST NUMBER
000614  012706  000600                          MOV     #BEGIN,SP       ;** STACK AT BEGIN **
000620                                          MTPS    #0              ;PLACE #0 IN PSW
(1) 000620  106427                              .WORD   106400!..C
000624  132737  000001  000420                  BITB    #1,@#$ENV       ;ARE WE UNDER APT ?
000632  001410                                  BEQ     2$              ;IF NOT THEN GO TO 2$
000634  012700  000510                          MOV     #$TPS+2,R0      ;OTHERWISE SET FOR OTHER SLU
000640  012740  176564                          MOV     #176564,-(R0)
000644  012740  176566                          MOV     #176566,-(R0)
000650  012740  000074                          MOV     #74,-(R0)
000654  012737  000001  000434          2$:     MOV     #1,@#TEMP1      ;TEMP1=1
000662  005037  000436                          CLR     @#TEMP2         ;TEMP2=0
000666  012737  000001  000440                  MOV     #1,@#TEMP3      ;TEMP3=1
000674  005037  000442                          CLR     @#TEMP4         ;TEMP4 0


                                                ;**********************************
                                                ;     ASH INSTRUCTION TESTS
                                                ;**********************************


                                                ;*************
                                                ; TESTS 1-36
                                                ;*************


000700  010701                          START:  SCOPE1
000702  013700  000434                          MOV     @#TEMP1,%0      ;LOAD R0 WITH THE CONTENTS OF TEMP1
000706  032737  000001  000406                  BIT     #1,@#$PASS      ;IS IT AN EVEN PASS ?
000714  001004                                  BNE     2$              ;IF NOT THEN GO TO 2$
000716  013701  000436                          MOV     @#TEMP2,R1      ;OTHERWISE EXECUTE THE INSTRUCTION
                                                                        ;IN MODE 0 USING R1
000722  072001                                  ASH     R1,R0
000724  000402                                  BR      4$
000726  072067  177504                  2$:     ASH     TEMP2,%0        ;SHIFT R0 BY THE NUMBER SPECIFIED BY TEMP2
000732                                  4$:     MFPS    @#PSWORD        ;SAVE PS
(1) 000732  106737                              .WORD   106700!..C
000736  123737  000442  000432                  CMPB    @#TEMP4,@#PSWORD;IS THE PS - TEMP4 ?
000744  001403                                  BEQ     .+10
000746  004767  016142                          JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
(2)                                             ;THE PS IS NOT EQUAL TO 0
```

```
(2)  000752  000001                          1
784  000754  005237  000430                  INC     @#COUNT         ;INCREMENT THE COUNTER
785  000760  023700  000440                  CMP     @#TEMP3,%0      ;IS THE RESULT IN R0 EQUAL TO TEMP3?
786  000764  001403                          BEQ     .+10
787  000766                           6$:
(2)  000766  004767  016122                  JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
(2)                                                                  ;EITHER INCORRECT R0 OR INCORRECT SEQUENCE
(2)  000772  000002                          2
788  000774  021537  000430                  CMP     (R5),@#COUNT    ;IS THE TEST NUMBER EQUAL TO THE
789                                                                  ;COUNTER?
790  001000  001372                          BNE     6$              ;IF NOT GO TO THE HLT ABOVE
791  001002  005215                          INC     (R5)
792  001004  010701                          SCOPE1
793  001006  021527  000037                  CMP     (R5),#37        ;HAS THE CONTENTS OF REGISTERS BEEN SHIFTED LEFT
794                                                                  ;BY 14. AND RIGHT BY 14.?
795  001012  002011                          BGE     8$
796  001014  005237  000436                  INC     @#TEMP2
797  001020  006367  177414                  ASL     TEMP3           ;SHIFT TEMP3 LEFT.
798  001024  021527  000020                  CMP     (R5),#20        ;HAS THE CONTENTS OF REGISTERS BEEN SHIFTED LEFT BY 14.?
799  001030  001004                          BNE     REG1
800  001032  000167  000764                  JMP     NEGAT           ;IF SO GO TO NEGAT AND INITIATE RIGHT SHIFT
801  001036  004767  001006           8$:     JSR     PC,TST37        ;IF SO GO AND CONTINUE THE REST OF THE PROGRAM
802  001042  010703                  REG1:   SCOPE3
803  001044  013701  000434                  MOV     @#TEMP1,%1      ;LOAD R1 WITH THE CONTENTS OF TEMP1
804  001050  032737  000001  000406          BIT     #1,@#$PASS      ;IS IT AN EVEN PASS ?
805  001056  001004                          BNE     2$              ;IF NOT THEN GO TO 2$
806  001060  013702  000436                  MOV     @#TEMP2,R2      ;OTHERWISE EXECUTE ASH INSTRUCTION IN MODE 0
807  001064  072102                          ASH     R2,R1           ;USING R1
808  001066  000402                          BR      4$
809  001070  072167  177342          2$:     ASH     TEMP2,%1        ;SHIFT R1 BY THE NUMBER SPECIFIED BY TEMP2
813  001074                           4$:     MFPS    @#PSWORD        ;SAVE PS
(1)  001074  106737                          .WORD   106700!..C
817  001100  123737  000442  000432          CMPB    @#TEMP4,@#PSWORD;IS THE PS = TEMP4 ?
818  001106  001403                          BEQ     .+10
819  001110  004767  016000                  JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
(2)                                                                  ;THE PS IS NOT EQUAL TO 0
(2)  001114  000003                          3
820  001116  005237  000430                  INC     @#COUNT         ;INCREMENT THE COUNTER
821  001122  023701  000440                  CMP     @#TEMP3,%1      ;IS THE RESULT IN R1 EQUAL TO TEMP3?
822  001126  001403                          BEQ     .+10
823  001130                           6$:
(2)  001130  004767  015760                  JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
(2)                                                                  ;EITHER INCORRECT R1 OR INCORRECT SEQUENCE
(2)  001134  000004                          4
824  001136  021537  000430                  CMP     (R5),@#COUNT    ;IS THE TEST NUMBER EQUAL TO THE COUNTER?
825  001142  001372                          BNE     6$              ;IF NOT GO TO THE HLT ABOVE
826  001144  005215                          INC     (R5)
827  001146  010703                          SCOPE3
828  001150  021527  000037                  CMP     (R5),#37        ;HAS THE CONTENTS OF REGISTERS BEEN SHIFTED LEFT
829                                                                  ;BY 14. AND RIGHT BY 14.?
830  001154  002011                          BGE     8$
831  001156  005237  000436                  INC     @#TEMP2
832  001162  006367  177252                  ASL     TEMP3           ;SHIFT TEMP3 LEFT
833  001166  021527  000020                  CMP     (R5),#20        ;HAS THE CONTENTS OF REGISTERS BEEN SHIFTED LEFT BY 14.?
834  001172  001004                          BNE     REG2
835  001174  000167  000622                  JMP     NEGAT           ;IF SO GO TO NEGAT AND INITIATE RIGHT SHIFT
```

```
836  001200  004767  000644          8$:     JSR     PC,TST37        ;IF SO GO AND CONTINUE THE REST OF THE PROGRAM
837  001204  010701                  REG2:   SCOPE1
838  001206  013702  000434                  MOV     @#TEMP1,%2      ;LOAD R2 WITH THE CONTENTS OF TEMP1
839  001212  032737  000001  000406          BIT     #1,@#$PASS      ;IS IT AN EVEN PASS ?
840  001220  001004                          BNE     2$              ;IF NOT THEN GO TO 2$
841  001222  013703  000436                  MOV     @#TEMP2,R3      ;OTHERWISE EXECUTE ASH INSTRUCTION IN MODE 0
842  001226  072203                          ASH     R3,R2           ;USING R2
843  001230  000402                          BR      4$
844  001232  072267  177200          2$:     ASH     TEMP2,%2        ;SHIFT R2 BY THE NUMBER SPECIFIED BY TEMP2
848  001236                           4$:     MFPS    @#PSWORD        ;SAVE PS
(1)  001236  106737                          .WORD   106700!..C
852  001242  123737  000442  000432          CMPB    @#TEMP4,@#PSWORD;IS THE PS = TEMP4 ?
853  001250  001403                          BEQ     .+10
854  001252  004767  015636                  JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
(2)                                                                  ;THE PS I^ NOT EQUAL TO 0
(2)  001256  000005                          5
855  001260  005237  000430                  INC     @#COUNT
856  001264  023702  000440                  CMP     @#TEMP3,%2      ;IS THE RESULT IN R2 EQUAL TO TEMP3?
857  001270  001403                          BEQ     .+10
858  001272                           6$:
(2)  001272  004767  015616                  JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
(2)                                                                  ;EITHER INCORRECT R2 OR INCORRECT SEQUENCE
(2)  001276  000006                          6
859  001300  021537  000430                  CMP     (R5),@#COUNT    ;IS THE TEST NUMBER EQUAL TO THE COUNTER?
860  001304  001372                          BNE     6$              ;IF NOT GO TO THE HLT ABOVE
861  001306  005215                          INC     (R5)
862  001310  010701                          SCOPE1
863  001312  021527  000037                  CMP     (R5),#37        ;HAS THE CONTENTS OF REGISTERS BEEN SHIFTED
864                                                                  ;LEFT BY 14, AND RIGHT BY 14.?
865  001316  002011                          BGE     8$
866  001320  005237  000436                  INC     @#TEMP2
867  001324  006367  177110                  ASL     TEMP3           ;SHIFTED TEMP3 LEFT
868  001330  021527  000020                  CMP     (R5),#20        ;HAS THE CONTENTS OF REGISTERS BEEN SHIFTED LEFT BY 14.?
869  001334  001004                          BNE     REG3
870  001336  000167  000460                  JMP     NEGAT           ;IF SO GO TO NEGAT AND INITIATE RIGHT SHIFT
871  001342  004767  000502          8$:     JSR     PC,TST37        ;IF SO GO AND CONTINUE THE REST OF THE PROGRAM
872  001346  010701                  REG3:   SCOPE1
873  001350  013703  000434                  MOV     @#TEMP1,%3      ;LOAD R3 WITH THE CONTENTS OF TEMP1
874  001354  032737  000001  000406          BIT     #1,@#$PASS      ;IS IT AN EVEN PASS ?
875  001362  001004                          BNE     2$              ;IF NOT THEN GO TO 2$
876  001364  013704  000436                  MOV     @#TEMP2,R4      :OTHERWISE EXECUTE ASH INSTRUCTION IN MODE 0
877  001370  072304                          ASH     R4,R3           ;USING R3
878  001372  000402                          BR      4$
879  001374  072367  177036          2$:     ASH     TEMP2,%3        ;SHIFT R3 BY THE NUMBER SPECIFIED BY TEMP2
883  001400                           4$:     FPS     @#PSWORD        ;SAVE PS
(1)  001400  106737                          .WORD   106700!..C
887  001404  123737  000442  000432          CMPB    @#TEMP4,@#PSWORD;IS THE PS = TEMP4 ?
888  001412  001403                          BEQ     .+10
889  001414  004767  015474                  JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
(2)                                                                  ;THE PS IS NOT EQUAL TO 0.
(2)  001420  000007                          7
890  001422  005237  000430                  INC     @#COUNT
891  001426  023703  000440                  CMP     @#TEMP3,%3      ;IS THE RESULT IN R3 EQUAL TO TEMP3?
892  001432  001403                          BEQ     .+10
893  001434                           6$:
(2)  001434  004767  015454                  JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
```

```
                                                        ;EITHER INCORRECT R3 OR INCORRECT SEQUENCE
(2)
(2)  001440  000010                          10
894  001442  021537  000430                 CMP     (R5),@#COUN     ;IS THE TEST NUMBER EQUAL TO THE COUNTER?
895  001446  001372                          BNE     6$              ;IF NOT GO TO THE HLT ABOVE
896  001450  005215                          INC     (R5)
897  001452  010701                          SCOPE1
898  001454  021527  000037                 CMP     (R5),#37        ;HAS THE CONTENTS OF REGISTERS BEEN SHIFTED
899                                                                  ;LEFT BY 14. AND RIGHT BY 14.?
900  001460  002010                          BGE     8$
901  001462  005237  000436                 INC     @#TEMP2
902  001466  006367  176746                 ASL     TEMP3           ;SHIFT TEMP3 LEFT?
903  001472  021527  000020                 CMP     (R5),#20        ;HAS THE CONTENTS OF REGISTERS BEEN SHIFTED LEFT BY 14.?
904  001476  001003                          BNE     REG4
905  001500  000550                          BR      NEGAT           ;IF SO GO TO NEGAT AND INITIATE RIGHT SHIFT
906  001502  004767  000342        8$:     JSR     PC,TST37        ;IF SO GO AND CONTINUE THE REST OF THE PROGRAM
907  001506  010703                REG4:   SCOPE3
908  001510  013704  000434                 MOV     @#TEMP1,%4      ;LOAD R4 WITH THE CONTENTS OF TEMP1
909  001514  010501                          MOV     R5,R1           ;SAVE R5
910  001516  032737  000001  000406         BIT     #1,@#$PASS      ;IS IT AN EVEN PASS ?
911  001524  001004                          BNE     2$              ;IF NOT THEN GO TO 2$
912  001526  013705  000436                 MOV     @#TEMP2,R5      ;OTHERWISE EXECUTE ASH INSTRUCTION IN MODE 0
913  001532  072405                          ASH     R5,R4           ;USING R4
914  001534  000402                          BR      4$
915  001536  072467  176674        2$:     ASH     TEMP2,%4        ;SHIFT R4 BY THE NUMBER SPECIFIED BY TEMP2
919  001542                        4$:     MFPS    @#PSWORD        ;SAVE PS
(1)  001542  106737                          .WORD   106700!..C
923  001546  123737  000442  000432         CMPB    @#TEMP4,@#PSWORD;IS PS = TEMP4 ?
924  001554  001403                          BEQ     .+10
925  001556  004767  015332                 JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
(2)                                                                  ;THE PS IS NOT EQUAL TO 0
(2)  001562  000011                          11
926  001564  005237  000430                 INC     @#COUNT
927  001570  023704  000440                 CMP     @#TEMP3,%4      ;IS THE RESULT IN R4 EQUAL TO TEMP3?
928  001574  001403                          BEQ     .+10
929  001576                        6$:
(2)  001576  004767  015312                 JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
(2)                                                                  ;EITHER INCORRECT R4 OR INCORRECT SEQUENCE
(2)  001602  000012                          12
930  001604  010105                          MOV     R1,R5           ;RESTORE R5
931  001606  021537  000430                 CMP     (R5),@#COUNT    ;IS THE TEST NUMBER EQUAL TO THE COUNTER?
932  001612  001371                          BNE     6$              ;IF NOT GO TO THE HLT ABOVE
933  001614  005215                          INC     (R5)
934  001616  010701                          SCOPE1
935  001620  021527  000037                 CMP     (R5),#37        ;HAS THE CONTENTS OF REGISTERS BEEN
936                                                                  ;SHIFTED LEFT BY 14. AND RIGHT BY 14.?
937  001624  002010                          BGE     8$
938  001626  005237  000436                 INC     @#TEMP2
939  001632  006367  176602                 ASL     TEMP3           ;SHIFT TEMP3 LEFT
940  001636  021527  000020                 CMP     (R5),#20        ;HAS THE CONTENTS OF REGISTER BEEN SHIFTED BY 14.?
941  001642  001003                          BNE     REG5
942  001644  000466                          BR      NEGAT           ;IF SO GO TO NEGAT AND INITIATE RIGHT SHIFT
943  001646  004767  000176        8$:     JSR     PC,TST37        ;IF SO GO AND CONTINUE THE REST OF THE PROGRAM
944  001652  010701                REG5:   SCOPE1
945  001654  010501                          MOV     R5,R1           ;SAVE R5
946  001656  013705  000434                 MOV     @#TEMP1,%5      ;LOAD R5 WITH THE CONTENTS OF TEMP1
947  001662  032737  000001  000406         BIT     #1,@#$PASS      ;IS IT AN EVEN PASS ?
```

```
 948  001670  001004                        BNE     2$              ;IF NOT THEN GO TO 2$
 949  001672  013700  000436                MOV     @#TEMP2,R0      ;OTHERWISE EXECUTE ASH INSTRUCTION IN MODE 0
 950  001676  072500                        ASH     R0,R5           ;USING R5
 951  001700  000402                        BR      4$
 952  001702  072567  176530        2$:     ASH     TEMP2,%5        ;SHIFT R5 BY THE NUMBER SPECIFIED BY TEMP2
 956  001706                         4$:     MFPS    @#PSWORD        ;SAVE PS
 (1)  001706  106737                        .WORD   106700...C
 960  001712  123737  000442  000432        CMPB    @#TEMP4,@#PSWORD;IS PS = TEMP4 ?
 961  001720  001403                        BEQ     .+10
 962  001722  004767  015166                JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
 (2)                                                                ;THE PS IS NOT EQUAL TO 0.
 (2)  001726  000013                        13
 963  001730  005237  000430                INC     @#COUNT
 964  001734  023705  000440                CMP     @#TEMP3,%5      ;IS THE RESULT IN R5 EQUAL TO TEMP3?
 965  001740  001403                        BEQ     .+10
 966  001742                         6$:
 (2)  001742  004767  015146                JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
 (2)                                                                ;EITHER INCORRECT R5 OR INCORRECT SEQUENCE
 (2)  001746  000014                        14
 967  001750  021137  000430                CMP     (R1),@#COUNT    ;IS THE TEST NUMBER EQUAL TO THE COUNTER?
 968  001754  001372                        BNE     6$              ;IF NOT GO TO THE HLT ABOVE
 969  001756  010105                        MOV     R1,R5           ;RESTORE R5
 970  001760  005215                        INC     (R5)
 971  001762  010701                        SCOPE1
 972  001764  021527  000037                CMP     (R5),#37        ;HAS THE CONTENTS OF REGISTERS BEEN SHIFTED
 973                                                                ;LEFT BY 14. AND RIGHT BY 14.?
 974  001770  002010                        BGE     8$              ;IF SO GO AND CONTINUE THE REST OF THE PROGRAM
 975  001772  005237  000436                INC     @#TEMP2
 976  001776  006367  176436                ASL     TEMP3           ;SHIFT TEMP3 LEFT
 977  002002  021527  000020                CMP     (R5),#20        ;HAS THE CONTENTS OF REGISTERS BEEN SHIFTED LEFT BY 14.?
 978  002006  001405                        BEQ     NEGAT           ;IF SO GO TO NEGAT AND INITIATE RIGHT SHIFT
 979  002010  000402                        BR      10$
 980  002012  004767  000032        8$:     JSR     PC,TST37
 981  002016  000167  176656        10$:    JMP     START           ;GO BACK TO START
 982  002022  012737  040000  000434 NEGAT: MOV     #40000,@#TEMP1  ;TEMP1=40000
 983  002030  012737  177762  000436        MOV     #177762,@#TEMP2 ;TEMP2=177762
 984  002036  012737  000001  000440        MOV     #1,@#TEMP3      ;TEMP3=1
 985  002044  000167  176630                JMP     START
 986  002050  021527  000037        TST37:  CMP     (R5),#37        ;IS IT TEST 37?
 987  002054  001013                        BNE     TST40           ;IF NOT THEN TRY TEST 40
 988  002056  005037  000434                CLR     @#TEMP1         ;0
 989  002062  012737  000020  000436        MOV     #16.,@#TEMP2    ;SHIFTED BY 16
 990  002070  005037  000440                CLR     @#TEMP3         ;IS=0
 991  002074  012737  000004  000442        MOV     #4,@#TEMP4      ;AND PS=4
 992  002102  000207                        RTS     PC
 993  002104  021527  000040        TST40:  CMP     (R5),#40        ;IS IT TEST 40?
 994  002110  001003                        BNE     TST41           ;IF NOT THEN TRY TEST 41
 995  002112  005037  000436                CLR     @#TEMP2         ;0 SHIFTED BY 0=0 AND PS=4
 996  002116  000207                        RTS     PC
 997  002120  021527  000041        TST41:  CMP     (R5),#41        ;IS IT TEST 41?
 998  002124  001004                        BNE     TST42           ;IF NOT THEN TRY TEST 42
 999  002126  012737  177760  000436        MOV     #-16.,@#TEMP2   ;0 SHIFTED BY -16.=0 AND PS=4
1000  002134  000207                        RTS     PC
1001  002136  021527  000042        TST42:  CMP     (R5),#42        ;IS IT TEST 42?
1002  002142  001013                        BNE     TST43           ;IF NOT THEN TRY TEST 43
1003  002144  012737  100000  000434        MOV     #100000,@#TEMP1 ;100000
```

```
1004  002152  005237  000436                    INC     @#TEMP2          ;SHIFTED BY -15
1005  002156  005337  000440                    DEC     @#TEMP3          ;IS=-1
1006  002162  012737  000010  000442            MOV     #10,@#TEMP4              ;AND PS=10
1007  002170  000207                            RTS     PC
1008  002172  021527  000043          TST43:    CMP     (R5),#43         ;IS IT TEST 43?
1009  002176  001012                            BNE     TST44            ;IF NOT THEN IF NOT THEN TRY TEST 44
1010  002200  012737  125252  000434            MOV     #125252,@#TEMP1  ;125252
1011  002206  012737  177777  000436            MOV     #-1,@#TEMP2      ;SHIFTED BY -1
1012  002214  012737  152525  000440            MOV     #152525,@#TEMP3  ;IS=152525 AND PS=10
1013  002222  000207                            RTS     PC
1014  002224  021527  000044          TST44:    CMP     (R5),#44         ;IS IT TEST 44?
1015  002230  001012                            BNE     TST45            ;IF NOT THEN TRY TEST 45
1016  002232  012737  000001  000436            MOV     #1,@#TEMP2       ;125252 SHIFTED BY 1
1017  002240  012737  052524  000440            MOV     #52524,@#TEMP3   ;IS=52524
1018  002246  012737  000003  000442            MOV     #3,@#TEMP4       ;AND PS=3
1019  002254  000207                            RTS     PC
1020  002256  021527  000045          TST45:    CMP     (R5),#45         ;IS IT TEST 45?
1021  002262  001012                            BNE     TST46            ;IF NOT THEN TRY TEST 46
1022  002264  012737  177776  000436            MOV     #-2,@#TEMP2      ;125252 SHIFTED BY -2
1023  002272  012737  165252  000440            MOV     #165252,@#TEMP3  ;IS=165252
1024  002300  012737  000011  000442            MOV     #11,@#TEMP4      ;AND PS=11
1025  002306  000207                            RTS     PC
1026  002310  021527  000046          TST46:    CMP     (R5),#46         ;IS IT TEST 46?
1027  002314  001014                            BNE     TST47            ;IF NOT THEN TRY TEST 47
1028  002316  012737  177777  000434            MOV     #-1,@#TEMP1      ;-1
1029  002324  012737  000020  000436            MOV     #16.,@#TEMP2     ;SHIFTED BY 15.
1030  002332  005037  000440                    CLR     @#TEMP3          ;IS=0
1031  002336  012737  000007  000442            MOV     #7,@#TEMP4       ;AND PS=7
1032  002344  000207                            RTS     PC
1033  002346  021527  000047          TST47:    CMP     (R5),#47         ;IS IT TEST 47?
1034  002352  001011                            BNE     TST50            ;IF NOT THEN TRY TEST 50
1035  002354  005337  000436                    DEC     @#TEMP2          ;-1 SHIFTED BY 15
1036  002360  012737  100000  000440            MOV     #100000,@#TEMP3  ;IS=100000
1037  002366  012737  000011  000442            MOV     #11,@#TEMP4      ;AND PS=11
1038  002374  000207                            RTS     PC
1039  002376  021527  000050          TST50:    CMP     (R5),#50         ;IS IT TEST 50
1040  002402  001007                            BNE     ENT51            ;IF NOT THEN TRY TEST 51
1041  002404  012737  137777  000434            MOV     #137777,@#TEMP1  ;137777 SHIFTED BY 15. IS=100000
1042  002412  012737  000013  000442            MOV     #13,@#TEMP4      ;AND PS=13
1043  002420  000207                            RTS     PC
1044  002422  021527  000051          ENT51:    CMP     (R5),#51         ;IS IT ENTERING TEST 51?
1045  002426  001405                            BEQ     .+10
1046  002430  004767  014460                    JSR     PC,$HLT          ;SEEN AN ERROR, GO TO TH HALT ROUTINE
(2)                                                                      ;TEST NUMBER GOOFED
(2)   002434  000015                            15
1047
1048  002436  005726                            TST     (SP)+            ;RESTORE STACK POINTER
1049  002440  012704  177771                    MOV     #-7,%4
1050  002444  012702  000454                    MOV     #S1,%2
1051  002450  012703  000456                    MOV     #S2,%3
```

```
1052                                    ;*****************************************************************************
 (1)                                    ;TEST:51   LSI-11   ASH     125252 SHIFTED BY #5 = 52500  PS = 3
 (1)                                    ;*****************************************************************************
 (1)
 (1)  002454  010701                    TST51:  SCOPE1
 (1)  002456  012701  125252                    MOV     #125252,%1      ;LOAD R1 WITH 125252
 (1)  002462  072127  000005                    ASH     #5,%1           ;SHIFT R1 BY #5
 (1)  002466                                    MFPS    @#PSWORD        ;SAVE PS
 (2)  002466  106737                            .WORD   106700...C
 (1)  002472  122737  000003  000432            CMPB    #3,@#PSWORD     ;IS THE PS 3?
 (1)  002500  001403                            BEQ     .+10
 (3)  002502  004767  014406                    JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
 (3)                                            ;THE PS IS NOT EQUAL TO 3
 (3)  002506  000016                            16
 (1)  002510  022701  052500                    CMP     #52500,%1       ;IS THE RESULT 52500?
 (1)  002514  001403                            BEQ     .+10
 (1)  002516                            1$:
 (3)  002516  004767  014372                    JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT RCUTINE
 (3)                                            ;R1 IS NOT EQUAL TO 52500 OR INCORRECT SEQUENCE
 (3)  002522  000017                            17
 (1)  002524  021527  000051                    CMP     (R5),#51                ;IS $TESTN - #51
 (1)  002530  001372                            BNE     1$              ;IF NOT THEN GO TO HLT ABOVE
 (1)  002532  005215                            INC     (R5)
 (1)
 (1)
 (1)
1053                                    ;*****************************************************************************
 (1)                                    ;TEST:52   LSI-11   ASH     125252 SHIFTED BY @S2 = 177525  PS = 10
 (1)                                    ;*****************************************************************************
 (1)
 (1)  002534  010701                    TST52:  SCOPE1
 (1)  002536  012700  125252                    MOV     #125252,%0      ;LOAD R0 WITH 125252
 (1)  002542  072077  175710                    ASH     @S2,%0          ;SHIFT R0 BY @S2
 (1)  002546                                    MFPS    @#PSWORD        ;SAVE PS
 (2)  002546  106737                            .WORD   106700!..C
 (1)  002552  122737  000010  000432            CMPB    #10,@#PSWORD    ;IS THE PS 10?
 (1)  002560  001403                            BEQ     .+10
 (3)  002562  004767  014326                    JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
 (3)                                            ;THE PS IS NOT EQUAL TO 10
 (3)  002566  000020                            20
 (1)  002570  022700  177525                    CMP     #177525,%0      ;IS THE RESULT 177525?
 (1)  002574  001403                            BEQ     .+10
 (1)  002576                            1$:
 (3)  002576  004767  014312                    JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
 (3)                                            ;R0 IS NOT EQUAL TO 177525 OR INCORRECT SEQUENCE
 (3)  002602  000021                            21
 (1)  002604  021527  000052                    CMP     (R5),#52                ;IS $TESTN = #52
 (1)  002610  001372                            BNE     1$              ;IF NOT THEN GO TO HLT ABOVE
 (1)  002612  005215                            INC     (R5)
 (1)
 (1)
 (1)
```

```
1054
 (1)
 (1)
 (1)
 (1)  002614  010701                        TST53:  SCOPE1
 (1)  002616  012700  125252                        MOV     #125252,%0      ;LOAD R0 WITH 125252
 (1)  002622  072037  000454                        ASH     @#S1,%0         ;SHIFT R0 BY @#S1
 (1)  002626                                        MFPS    @#PSWORD        ;SAVE PS
 (2)  002626  106737                                .WORD   106700...C
 (1)  002632  122737  000010  000432                CMPB    #10,@#PSWORD    ;IS THE PS 10?
 (1)  002640  001403                                BEQ     .+10
 (3)  002642  004767  014246                        JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
 (3)                                                                        ;THE PS IS NOT EQUAL TO 10
 (3)  002646  000022                                22
 (1)  002650  022700  177525                        CMP     #177525,%0      ;IS THE RESULT 177525?
 (1)  002654  001403                                BEQ     .+10
 (1)  002656                                1$:
 (3)  002656  004767  014232                        JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
 (3)                                                                        ;R0 IS NOT EQUAL TO 177525 OR INCORRECT SEQUENCE
 (3)  002662  000023                                23
 (1)  002664  021527  000053                        CMP     (R5),#53                ;IS $TESTN = #53
 (1)  002670  001372                                BNE     1$              ;IF NOT THEN GO TO HLT ABOVE
 (1)  002672  005215                                INC     (R5)
 (1)
 (1)
 (1)
1055
 (1)
 (1)
 (1)  002674  010701                        TST54:  SCOPE1
 (1)  002676  012700  125252                        MOV     #125252,%0      ;LOAD R0 WITH 125252
 (1)  002702  072012                                ASH     (2),%0          ;SHIFT P0 BY (2)
 (1)  002704                                        MFPS    @#PSWORD        ;SAVE PS
 (2)  002704  106737                                .WORD   106700!..C
 (1)  002710  122737  000010  000432                CMPB    #10,@#PSWORD    ;IS THE PS 10?
 (1)  002716  001403                                BEQ     .+10
 (3)  002720  004767  014170                        JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
 (3)                                                                        ;THE PS IS NOT EQUAL TO 10
 (3)  002724  000024                                24
 (1)  002726  022700  177525                        CMP     #177525,%0      ;IS THE RESULT 177525?
 (1)  002732  001403                                BEQ     .+10
 (1)  002734                                1$:
 (3)  002734  004767  014154                        JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
 (3)                                                                        ;R0 IS NOT EQUAL TO 177525 OR INCORRECT SEQUENCE
 (3)  002740  000025                                25
 (1)  002742  021527  000054                        CMP     (R5),#54                ;IS $TESTN = #54
 (1)  002746  001372                                BNE     1$              ;IF NOT THEN GO TO HLT ABOVE
 (1)  002750  005215                                INC     (R5)
 (1)
 (1)
 (1)
```

ASH INSTRUCTION TESTS

```
1056
 (1)
 (1)
 (1)
 (1)  002752  010701                        TST55:  SCOPE1
 (1)  002754  012700  125252                        MOV     #125252,%0      ;LOAD R0 WITH 125252
 (1)  002760  072022                                ASH     (2)+,%0         ;SHIFT R0 BY (2)+
 (1)  002762                                        MFPS    @#PSWORD        ;SAVE PS
 (2)  002762  106737                                .WORD   106700!..C
 (1)  002766  122737  000010  000432                CMPB    #10,@#PSWORD    ;IS THE PS 10?
 (1)  002774  001403                                BEQ     .+10
 (3)  002776  004767  014112                        JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
 (3)                                                                        ;THE PS IS NOT EQUAL TO 10
 (3)  003002  000026                                26
 (1)  003004  022700  177525                        CMP     #177525,%0      ;IS THE RESULT 177525?
 (1)  003010  001403                                BEQ     .+10
 (1)  003012                                1$:
 (3)  003012  004767  014076                        JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
 (3)                                                                        ;R0 IS NOT EQUAL TO 177525 OR INCORRECT SEQUENCE
 (3)  003016  000027                                27
 (1)  003020  021527  000055                        CMP     (R5),#55                ;IS $TESTN = #55
 (1)  003024  001372                                BNE     1$              ;IF NOT THEN GO TO HLT ABOVE
 (1)  003026  005215                                INC     (R5)
 (1)
 (1)
 (1)
1057
 (1)
 (1)
 (1)  003030  010701                        TST56:  SCOPE1
 (1)  003032  012700  125252                        MOV     #125252,%0      ;LOAD R0 WITH 125252
 (1)  003036  072042                                ASH     -(2),%0         ;SHIFT R0 BY -(2)
 (1)  003040                                        MFPS    @#PSWORD        ;SAVE PS
 (2)  003040  106737                                .WORD   106700!..C
 (1)  003044  122737  000010  000432                CMPB    #10,@#PSWORD    ;IS THE PS 10?
 (1)  003052  001403                                BEQ     .+10
 (3)  003054  004767  014034                        JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
 (3)                                                                        ;THE PS IS NOT EQUAL TO 10
 (3)  003060  000030                                30
 (1)  003062  022700  177525                        CMP     #177525,%0      ;IS THE RESULT 177525?
 (1)  003066  001403                                BEQ     .+10
 (1)  003070                                1$:
 (3)  003070  004767  014020                        JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
 (3)                                                                        ;R0 IS NOT EQUAL TO 177525 OR INCORRECT SEQUENCE
 (3)  003074  000031                                31
 (1)  003076  021527  000056                        CMP     (R5),#56                ;IS $TESTN = #56
 (1)  003102  001372                                BNE     1$              ;IF NOT THEN GO TO HLT ABOVE
 (1)  003104  005215                                INC     (R5)
 (1)
 (1)
 (1)
```

```
                        ;*****************************************************************
                        ;TEST:57   LSI-11   ASH     125252 SHIFTED BY 2(3) = 177252  PS = 11
                        ;*****************************************************************

003106  010701                 TST57:  SCOPE1
003110  012700  125252                  MOV     #125252,%0      ;LOAD R0 WITH 125252
003114  072063  000002                  ASH     2(3),%0         ;SHIFT R0 BY 2(3)
003120                                  MFPS    @#PSWORD        ;SAVE PS
003120  106737                          .WORD   106700!..C
003124  122737  000011  000432          CMPB    #11,@#PSWORD    ;IS THE PS 11?
003132  001403                          BEQ     .+10
003134  004767  013754                  JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
                                                                ;THE PS IS NOT EQUAL TO 11
003140  000032                          32
003142  022700  177252                  CMP     #177252,%0      ;IS THE RESULT 177252?
003146  001403                          BEQ     .+10
003150                          1$:
003150  004767  013740                  JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
                                                                ;R0 IS NOT EQUAL TO 177252 OR INCORRECT SEQUENCE
003154  000033                          33
003156  021527  000057                  CMP     (R5),#57                ;IS $TESTN = #57
003162  001372                          BNE     1$              ;IF NOT THEN GO TO HLT ABOVE
003164  005215                          INC     (R5)


                        ;*****************************************************************
                        ;TEST:60   LSI-11   ASH     125252 SHIFTED BY @(3) - 177525  PS   10
                        ;*****************************************************************

003166  010701                 TST60:  SCOPE1
003170  012700  125252                  MOV     #125252,%0      ;LOAD R0 WITH 125252
003174  072073  000000                  ASH     @(3),%0         ;SHIFT R0 BY @(3)
003200                                  MFPS    @#PSWORD        ;SAVE PS
003200  106737                          .WORD   106700!..C
003204  122737  000010  000432          CMPB    #10,@#PSWORD    ;IS THE PS 10?
003212  001403                          BEQ     .+10
003214  004767  013674                  JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
                                                                ;THE PS IS NOT EQUAL TO 10
003220  000034                          34
003222  022700  177525                  CMP     #177525,%0      ;IS THE RESULT 177525?
003226  001403                          BEQ     .+10
003230                          1$:
003230  004767  013660                  JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
                                                                ;R0 IS NOT EQUAL TO 177525 OR INCORRECT SEQUENCE
003234  000035                          35
003236  021527  000060                  CMP     (R5),#60                ;IS $TESTN = #60
003242  001372                          BNE     1$              ;IF NOT THEN GO TO HLT ABOVE
003244  005215                          INC     (R5)
```

```
                                      ;*************************************************************************
(1)                                   ;TEST:61   LSI-11   ASH    125252 SHIFTED BY @(3)+ = 177525  PS = 10
                                      ;*************************************************************************

(1)  003246  010701                   TST61:  SCOPE1
(1)  003250  012700  125252                   MOV     #125252,%0        ;LOAD R0 WITH 125252
(1)  003254  072033                           ASH     @(3,+,%0          ;SHIFT R0 BY @(3)+
(1)  003256                                   MFPS    @#PSWORD          ;SAVE PS
(2)  003256  106737                           .WORD   106700!..C
(1)  003262  122737  000010  000432           CMPB    #10,@#PSWORD      ;IS THE PS 10?
(1)  003270  001403                           BEQ     .+10
(3)  003272  004767  013616                   JSR     PC,$HLT           ;SEEN AN ERROR, GO TO TH HALT ROUTINE
(3)                                                                     ;THE PS IS NOT EQUAL TO 10
(3)  003276  000036                           36
(1)  003300  022700  177525                   CMP     #177525,%0        ;IS THE RESULT 177525?
(1)  003304  001403                           BEQ     .+10
(1)  003306                           1$:
(3)  003306  004767  013602                   JSR     PC,$HLT           ;SEEN AN ERROR, GO TO TH HALT ROUTINE
(3)                                                                     ;R0 IS NOT EQUAL TO 177525 OR INCORRECT SEQUENCE
(3)  003312  000037                           37
(1)  003314  021527  000061                   CMP     (R5),#61                  ;IS $TESTN = #61
(1)  003320  001372                           BNE     1$                ;IF NOT THEN GO TO HLT ABOVE
(1)  003322  005215                           INC     (R5)
(1)
(1)
(1)
                                      ;*************************************************************************
(1)                                   ;TEST:62   LSI-11   ASH    125252 SHIFTED BY @-(3) = 177525  PS = 10
(1)                                   ;*************************************************************************
(1)
(1)  003324  010701                   TST62:  SCOPE1
(1)  003326  012700  125252                   MOV     #125252,%0        ;LOAD R0 WITH 125252
(1)  003332  072053                           ASH     @-(3),%0          ;SHIFT R0 BY @-(3)
(1)  003334                                   MFPS    @#PSWORD          ;SAVE PS
(2)  003334  106737                           .WORD   106700!..C
(1)  003340  122737  000010  000432           CMPB    #10,@#PSWORD      ;IS THE PS 10?
(1)  003346  001403                           BEQ     .+10
(3)  003350  004767  013540                   JSR     PC,$HLT           ;SEEN AN ERROR, GO TO TH HALT ROUTINE
(3)                                                                     ;THE PS IS NOT EQUAL TO 10
(3)  003354  000040                           40
(1)  003356  022700  177525                   CMP     #177525,%0        ;IS THE RESULT 177525?
(1)  003362  001403                           BEQ     .+10
(1)  003364                           1$:
(3)  003364  004767  013524                   JSR     PC,$HLT           ;SEEN AN ERROR, GO TO TH HALT ROUTINE
(3)                                                                     ;R0 IS NOT EQUAL TO 177525 OR INCORRECT SEQUENCE
(3)  003370  000041                           41
(1)  003372  021527  000062                   CMP     (R5),#62                  ;IS $TESTN = #62
(1)  003376  001372                           BNE     1$                ;IF NOT THEN GO TO HLT ABOVE
(1)  003400  005215                           INC     (R5)
(1)
(1)
(1)
                                                      ;**********************************
                                                      ;      ASHC INSTRUCTION TESTS
                                                      ;**********************************
```

```
1069
1070
1071                                                    ;************
1072                                                    ;TESTS 63-157
1073                                                    ;************
1074
1075
1076
1077  003402  012737  000062  000430          MOV     #62,@#COUNT
1078  003410  005037  000434                  CLR     @#TEMP1         ;TEMP1=0
1079  003414  012737  000001  000436          MOV     #1,@#TEMP2      ;TEMP2=1
1080  003422  005037  000440                  CLR     @#TEMP3         ;TEMP3=0
1081  003426  005037  000442                  CLR     @#TEMP4         ;TEMP4=0
1082  003432  012737  000001  000444          MOV     #1,@#TEMP5      ;TEMP5=1
1083  003440  005037  000446                  CLR     @#TEMP6         ;0 1 SHIFTED BY 0=0 1, PS=0
1084
1085  003444  010703                  REG01:  SCOPE3
1086  003446  010502                          MOV     R5,R2           ;SAVE R5
1087  003450  013700  000434                  MOV     @#TEMP1,%0      ;PLACE THE CONTENTS OF TEMP1 IN REGISTER 0
1088  003454  013701  000436                  MOV     @#TEMP2,%0.1    ;PLACE THE CONTENTS OF TEMP2 IN REGISTER 1
1089  003460  000241                          CLC
1090  003462  032737  000001  000406          BIT     #1,@#$PASS      ;IS IT AN EVEN PASS ?
1091  003470  001004                          BNE     2$              ;IF NOT THEN GO TO 2$
1092  003472  013705  000440                  MOV     @#TEMP3,R5      ;OTHERWISE EXECUTE ASHC INSTRUCTION IN MODE 0
1093  003476  073005                          ASHC    R5,R0           ;USING R0
1094  003500  000402                          BR      4$
1095  003502  073067  174732          2$:     ASHC    TEMP3,%0        ;ASHC REGISTER 0 BY THE CONTENTS OF TEMP3
1099  003506                          4$:     MFPS    @#PSWORD        ;SAVE PS
 (1)  003506  106737                          .WORD   106700!..C
1103  003512  123737  000446  000432          CMPB    @#TEMP6,@#PSWORD;COMPARE PS WITH THE CONTENTS OF TEMP6
1104  003520  001403                          BEQ     .+10
1105  003522  004767  013366                  JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
 (2)                                                                  ;WRONG PS
 (2)  003526  000042                          42
1106  003530  005237  000430                  INC     @#COUNT
1107  003534  023700  000442                  CMP     @#TEMP4,%0      ;IS THE RESULT IN R0 SAME AS TEMP4?
1108  003540  001403                          BEQ     .+10
1109  003542  004767  013346                  JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
 (2)                                                                  ;WRONG RESULT IN R0
 (2)  003546  000043                          43
1110  003550  023701  000444                  CMP     @#TEMP5,%1      ;IS THE RESULT IN R1 SAME AS TEMP5?
1111  003554  001403                          BEQ     .+10            ;TEMP1 TEMP2 SHIFTED BY TEMP3=TEMP4 TEMP5
1112                                                                  ;AND PS=TEMP6
1113  003556  004767  013332                  JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
 (2)                                                                  ;WRONG RESULT IN R1
 (2)  003562  000044                          44
1114  003564  010205                          MOV     R2,R5           ;RESTORE R5
1115  003566  021537  000430                  CMP     (R5),@#COUNT    ;IS TEST NUMBER=COUNTER?
1116  003572  001403                          BEQ     .+10
1117  003574  004767  013314                  JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
 (2)                                                                  ;NO
 (2)  003600  000045                          45
1118  003602  005215                          INC     (R5)
1119  003604  021527  000160                  CMP     (R5),#160       ;HAVE THE FIRST 159 TEST BEEN EXECUTED?
1120  003610  002014                          BGE     6$              ;YES
1121  003612  005237  000440                  INC     @#TEMP3
```

```
1122  003616  000241                          CLC
1123  003620  006137  000444                  ROL     @#TEMP5         ;ROTATE TEMP5 LEFT BY 1 PLACE
1124  003624  006137  000442                  ROL     @#TEMP4         ;INTRODUCE CARRY FROM TEMP4 IN TEMP5
1125  003630  021527  000121                  CMP     (R5),#121       ;IS IT TEST 121?
1126  003634  001004                          BNE     REG23
1127  003636  004467  000410                  JSR     R4,RITSH        ;IF SO THEN GO AND INITIATE RIGHT SHIFT
1128  003642  0047??  000440          6$:     JSR     %7,TST160
1129  003646  0107??                  REG23:  SCOPE1
1130  003650  013702  000434                  MOV     @#TEMP1,%2      ;PLACE THE CONTENTS OF TEMP1 IN REGISTER 2
1131  003654  013703  000436                  MOV     @#TEMP2,%2.1    ;PLACE THE CONTENTS OF TEMP2 IN REGISTER 3
1132  003660  000241                          CLC
1133  003662  032737  000001  000406          BIT     #1,@#$PASS      ;IS IT AN EVEN PASS ?
1134  003670  001004                          BNE     2$              ;IF NOT THEN GO TO 2$
1135  003672  013704  000440                  MOV     @#TEMP3,R4      ;OTHERWISE EXECUTE ASHC INSTRUCTION IN MODE 0
1136  003676  073204                          ASHC    R4,R2           ;USING R2
1137  003700  000402                          BR      4$
1138  003702  073267  174532          2$:     ASHC    TEMP3,%2        ;ASHC REGISTER 2 BY THE CONTETNS OF TEMP3
1142  003706                          4$:     MFPS    @#PSWORD        ;SAVE PS
 (1)  003706  106737                          .WORD   106700!..C
 146  003712  123737  000446  000432          CMPB    @#TEMP6,@#PSWORD;COMPARE PS WITH THE CONTENTS OF TEMP6
1147  003720  001403                          BEQ     .+10
1148  003722  004767  013166                  JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
 (2)                                                                 ;WRONG PS
 (2)  003726  000046                          46
1149  003730  005237  000430                  INC     @#COUNT
1150  003734  023702  000442                  CMP     @#TEMP4,%2      ;IS THE RESULT IN R2 SAME AS TEMP4?
1151  003740  001403                          BEQ     .+10
1152  003742  004767  013146                  JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
 (2)                                                                 ;WRONG RESULT IN R2
 (2)  003746  000047                          47
1153  003750  023703  000444                  CMP     @#TEMP5,%3      ;IS THE RESULT IN R3 SAME AS TEMP5?
1154  003754  001403                          BEQ     .+10            ;TEMP1 TEMP2 SHIFTED BY TEMP3=TEMP4 TEMP5
1155                                                                  ;AND PS=TEMP6
1156  003756  004767  013132                  JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
 (2)                                                                 ;WRONG RESULT IN R1
 (2)  003762  000050                          50
1157  003764  021537  000430                  CMP     (R5),@#COUNT    ;IS TEST NUMBER=COUNTER?
1158  003770  001403                          BEQ     .+10
1159  003772  004767  013116                  JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
 (2)                                                                 ;NO
 (2)  003776  000051                          51
1160  004000  005215                          INC     (R5)
1161  004002  021527  000160                  CMP     (R5),#160       ;HAVE THE FIRST 159 TEST BEEN EXECUTED?
1162  004006  002014                          BGE     6$              ;YES
1163  004010  005237  000440                  INC     @#TEMP3
1164  004014  000241                          CLC
1165  004016  006137  000444                  ROL     @#TEMP5         ;ROTATE TEMP5 LEFT BY 1 PLACE
1166  004022  006137  000442                  ROL     @#TEMP4         ;INTRODUCE CARRY FROM TEMP5 IN TEMP4
1167  004026  021527  000121                  CMP     (R5),#121       ;IS IT TEST 121?
1168  004032  001004                          BNE     REG45
1169  004034  004467  000212                  JSR     R4,RITSH        ;IF SO THEN GO AND INITIATE RIGHT SHIFT
1170  004040  004767  000242          6$:     JSR     %7,TST160
1171  004044  010701                  REG45:  SCOPE1
1172  004046  010501                          MOV     R5,R1           ;SAVE R5
1173  004050  013704  000434                  MOV     @#TEMP1,%4      ;PLACE THE CONTENTS OF TEMP1 IN REGISTER 4
1174  004054  013705  000436                  MOV     @#TEMP2,%4!1    ;PLACE THE CONTENTS OF TEMP2 IN REGISTER 5
```

```
1175  004060  000241                          CLC
1176  004062  032737  000001  000406          BIT     #1,@#$PASS      ;IS IT AN EVEN PASS ?
1177  004070  001004                          BNE     2$              ;IF NOT THEN GO TO 2$
1178  004072  013700  000440                  MOV     @#TEMP3,R0      ;OTHERWISE EXECUTE ASHC INSTRUCTION IN MODE 0
1179  004076  073400                          ASHC    R0,R4           ;USING R4
1180  004100  000402                          BR      4$
1181  004102  073467  174332          2$:     ASHC    TEMP3,%4        ;ASHC REGISTER 4 BY THE CONTENTS OF TEMP3
1185  004106                            4$:     MFPS    @#PSWORD        ;SAVE PS
 (1)  004106  106737                          .WORD   106700!..C
1189  004112  123737  000446  000432          CMPB    @#TEMP6,@#PSWORD;COMPARE PS WITH THE CONTENTS OF TEMP6
1190  004120  001403                          BEQ     .+10
1191  004122  004767  012766                  JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
 (2)                                                                  ;WRONG PS
 (2)  004126  000052                          52
1192  004130  005237  000430                  INC     @#COUNT
1193  004134  023704  000442                  CMP     @#TEMP4,%4      ;IS THE RESULT IN R4 SAME AS TEMP4?
1194  004140  001403                          BEQ     .+10
1195  004142  004767  012746                  JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
 (2)                                                                  ;WRONG RESULT IN R4
 (2)  004146  000053                          53
1196  004150  023705  000444                  CMP     @#TEMP5,%5      ;IS THE RESULT IN R5 SAME AS TEMP5?
1197  004154  001403                          BEQ     .+10            ;TEMP1 TEMP2 SHIFTED BY TEMP3=TEMP4 TEMP5
1198                                                                   ;AND PS=TEMP6
1199  004156  004767  012732                  JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
 (2)                                                                  ;WRONG RESULT IN R5
 (2)  004162  000054                          54
1200  004164  021137  000430                  CMP     (R1),@#COUNT    ;IS TEST NUMBER=COUNTER?
1201  004170  001403                          BEQ     .+10
1202  004172  004767  012716                  JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
 (2)                                                                  ;NO
 (2)  004176  000055                          55
1203  004200  010105                          MOV     R1,R5           ;RESTORE R5
1204  004202  005215                          INC     (R5)
1205  004204  021527  000160                  CMP     (R5),#160       ;HAVE THE FIRST 159 TEST BEEN EXECUTED?
1206  004210  002014                          BGE     6$              ;YES
1207  004212  005237  000440                  INC     @#TEMP3
1208  004216  000241                          CLC
1209  004220  006137  000444                  ROL     @#TEMP5         ;ROTATE TEMP5 LEFT BY 1 PLACE
1210  004224  006137  000442                  ROL     @#TEMP4         ;INTRODUCE CARRY FROM TEMP5 IN TEMP4
1211  004230  021527  000121                  CMP     (R5),#121       ;IS IT TEST 121?
1212  004234  001004                          BNE     8$
1213  004236  004467  000010                  JSR     R4,RITSH        ;IF SO THEN GO AND INITIATE RIGHT SHIFT
1214  004242  004767  000040            6$:     JSR     %7,TST160
1215  004246  000167  177172            8$:     JMP     REG01
1216  004252  022424                    RITSH:  CMP     (R4)+,(R4)+     ;MAKE R4 POINT TO THE NEXT REG TAG
1217  004254  012737  040000  000434          MOV     #40000,@#TEMP1  ;TEMP1=4000
1218  004262  005037  000436                  CLR     @#TEMP2         ;TEMP2=0
1219  004266  012737  177742  000440          MOV     #-30.,@#TEMP3   ;TEMP3=-30
1220  004274  005037  000442                  CLR     @#TEMP4         ;TEMP4=0
1221  004300  005237  000444                  INC     @#TEMP5         ;TEMP5=1
1222  004304  000204                          RTS     R4
1223  004306  021527  000160            TST160: CMP     (R5),#160       ;IS IT TEST 160
1224  004312  001010                          BNE     TST161          ;IF NOT THEN TRY TEST 161
1225  004314  005037  000434                  CLR     @#TEMP1         ;0 0 SHIFTED BY 0
1226  004320  005037  000442                  CLR     @#TEMP4         ;IS EQUAL TO 0 0
1227  004324  012737  000004  000446          MOV     #4,@#TEMP6      ;AND PS=4
```

```
1228  004332  000207                          RTS     %7
1229  004334  021527  000161          TST161: CMP     (R5),#161       ;IS IT TEST 161
1230  004340  001004                          BNE     TST162
1231  004342  012737  177746  000440          MOV     #-32,@#TEMP3    ;0 0 SHIFTED BY -32=0 0, PS=4
1232  004350  000207                          RTS     %7
1233  004352  021527  000162          TST162: CMP     (R5),#162       ;IS IT TEST 162
1234  004356  001004                          BNE     TST163          ;IF NOT THEN TRY TEST 163
1235  004360  012737  000032  000440          MOV     #32,@#TEMP3     ;0 0 SHIFTED BY 32=0 0, PS=4
1236  004366  000207                          RTS     %7
1237  004370  021527  000163          TST163: CMP     (R5),#163       ;IS IT TEST 163?
1238  004374  001016                          BNE     TST164          ;IF NOT THEN TRY TEST 164
1239  004376  012737  052525  000434          MOV     #52525,@#TEMP1  ;52525 0
1240  004404  012737  177760  000440          MOV     #-16.,@#TEMP3   ;SHIFTED BY -16.
1241  004412  005037  000442                  CLR     @#TEMP4
1242  004416  012737  052525  000444          MOV     #52525,@#TEMP5  ;IS EQUAL TO 0 52525
1243  004424  005037  000446                  CLR     @#TEMP6         ;AND PS = 0
1244  004430  000207                          RTS     %7
1245  004432  021527  000164          TST164: CMP     (R5),#164       ;IS IT TEST 164?
1246  004436  001014                          BNE     TST165          ;IF NOT THEN TRY TEST 165
1247  004440  012737  125252  000434          MOV     #125252,@#TEMP1 ;125252 0 SHIFTED BY -16.
1248  004446  005337  000442                  DEC     @#TEMP4
1249  004452  012737  125252  000444          MOV     #125252,@#TEMP5 ;IS EQUAL TO -1 125252
1250  004460  012737  000010  000446          MOV     #10,@#TEMP6     ;AND PS=10
1251  004466  000207                          RTS     %7
1252  004470  021527  000165           ST165: CMP     (R5),#165       ;IS IT TEST 165?
1253  004474  001007                          BNE     TST166          ;IF NOT THEN TRY TEST 166
1254  004476  012737  177777  000434          MOV     #-1,@#TEMP1     ;-1 0 SHIFTED BY -16
1255  004504  012737  177777  000444          MOV     #-1,@#TEMP5     ;IS EQUAL TO -1 -1, AND PS=10
1256  004512  000207                          RTS     %7
1257  004514  021527  000166          TST166: CMP     (R5),#166       ;IS IT TEST 166?
1258  004520  001011                          BNE     TST167          ;IF NOT THEN TRY TEST 167
1259  004522  012737  100000  000434          MOV     #100000,@#TEMP1 ;100000 0
1260  004530  012737  177740  000440          MOV     #-32.,@#TEMP3   ;SHIFTED BY -32 IS EQUAL TO -1 -1
1261  004536  005237  000446                  INC     @#TEMP6         ;AND PS=11
1262  004542  000207                          RTS     %7
1263  004544  021527  000167          TST167: CMP     (R5),#167       ;IS IT TEST 167?
1264  004550  001014                          BNE     TST170          ;IF NOT THEN TRY TEST 170
1265  004552  005037  000434                  CLR     @#TEMP1
1266  004556  005337  000436                  DEC     @#TEMP2         ;0 -1
1267  004562  012737  000020  000440          MOV     #16.,@#TEMP3    ;SHIFTED BY 16.
1268  004570  005037  000444                  CLR     @#TEMP5         ;IS EQUAL TO -1 0
1269  004574  005237  000446                  INC     @#TEMP6         ;AND PS=12
1270  004600  000207                          RTS     %7
1271  004602  021527  000170          TST170: CMP     (R5),#170       ;IS IT TEST 170?
1272  004606  001007                          BNE     TST171          ;IF NOT THEN TRY TEST 171
1273  004610  012737  125252  000436          MOV     #125252,@#TEMP2 ;0 125252 SHIFTED BY 16
1274  004616  012737  125252  000442          MOV     #125252,@#TEMP4 ;IS EQUAL TO 125252 0, AND PS=12
1275  004624  000207                          RTS     %7
1276  004626  021527  000171          TST171: CMP     (R5),#171       ;IS IT TEST 171?
1277  004632  001010                          BNE     TST172          ;IF NOT THEN TRY TEST 172
1278  004634  005337  000440                  DEC     @#TEMP3         ;0 125252 SHIFTED BY 15
1279  004640  012737  052525  000442          MOV     #52525,@#TEMP4  ;IS EQUAL TO 52525 0
1280  004646  005037  000446                  CLR     @#TEMP6         ;AND PS=0
1281  004652  000207                          RTS     %7
1282  004654  021527  000172          TST172: CMP     (R5),#172       ;IS IT TEST 172?
1283  004660  001006                          BNE     TST173          ;IF NOT THEN TRY TEST 173
```

```
1284  004662  012737  052525  000436          MOV     #52525,@#TEMP2  ;0 52525
1285  004670  005237  000440                  INC     @#TEMP3         ;SHIFTED BY 16. IS EQUAL TO 52525 0, AND PS-0
1286  004674  000207                          RTS     %7
1287  004676  021527  000173          TST173: CMP     (R5),#173       ;IS IT TEST 173?
1288  004702  001014                          BNE     TST174          ;IF NOT THEN TRY TEST 174
1289  004704  012737  177777  000436          MOV     #-1,@#TEMP2     ;0 -1
1290  004712  005337  000440                  DEC     @#TEMP3         ;SHIFTED BY 15.
1291  004716  012737  077777  000442          MOV     #77777,@#TEMP4
1292  004724  012737  100000  000444          MOV     #100000,@#TEMP5 ;IS EQUAL TO 77777 100000, AND PS=0
1293  004732  000207                          RTS     %7
1294  004734  021527  000174          TST174: CMP     (R5),#174       ;IS IT TEST 174?
1295  004740  001013                          BNE     TST175          ;IF NOT THEN TRY TEST 175
1296  004742  012737  100000  000434          MOV     #100000,@#TEMP1
1297  004750  005337  000436                  DEC     @#TEMP2         ;100000 -2 SHIFTED BY 15.
1298  004754  005037  000444                  CLR     @#TEMP5         ;IS EQUAL TO 77777 0
1299  004760  012737  000002  000446          MOV     #2,@#TEMP6      ;AND PS=2
1300  004766  000207                          RTS     %7
1301  004770  021527  000175          TST175: CMP     (R5),#175       ;IS IT TEST 175?
1302  004774  001015                          BNE     ENT176          ;IF NOT THEN TRY TEST 176
1303  004776  012737  177777  000434          MOV     #-1,@#TEMP1
1304  005004  005037  000436                  CLR     @#TEMP2         ;-1 0
1305  005010  005237  000440                  INC     @#TEMP3         ;SHIFTED BY 16.
1306  005014  005037  000442                  CLR     @#TEMP4         ;IS EQUAL TO 0 0
1307  005020  012737  000007  000446          MOV     #7,@#TEMP6      ;AND PS=7
1308  005026  000207                          RTS     %7
1309  005030  021527  000176          ENT176: CMP     (R5),#176       ;IS THE PROGRM ENTERING TEST 176?
1310  005034  001403                          BEQ     .+10
1311  005036  004767  012052                  JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
  (2)                                                                 ;TEST NUMBER GOOFED
  (2)   005042  000056                        56
1312
1313  005044  005726                          TST     (SP)+           ;RESTORE STACK POINTER
1314
```

```
1315                                    ;*****************************************************************
 (1)                                    ;TEST:176       1 SHIFTED BY 8. = 400  PS = 0
 (1)                                    ;*****************************************************************
 (1)
 (1)  005046  010701                    TST176: SCOPE1
 (1)  005050  012701  000000                    MOV     #DUMMY,%1       ;LOAD R1 WITH DUMMY
 (1)  005054  012701  000001                    MOV     #1,%1!1         ;LOAD R1!1 WITH 1
 (1)  005060  000241                            CLC
 (1)  005062  073127  000010                    ASHC    #8.,%1          ;SHIFT R1,R1!1 BY 8.
 (1)  005066                                    MFPS    @#PSWORD        ;SAVE PS
 (2)  005066  106737                            .WORD   106700!..C
 (1)  005072  122737  000000  000432            CMPB    #0,@#PSWORD     ;IS THE PS 0?
 (1)  005100  001403                            BEQ     .+10
 (3)  005102  004767  012006                    JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
 (3)                                                                    ;THE PS IS NOT EQUAL TO 0
 (3)  005106  000057                            57
 (1)  005110  022701  000400                    CMP     #400,%1         ;IS THE RESULT 400?
 (1)  005114  001403                            BEQ     .+10
 (3)  005116  004767  011772                    JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
 (3)                                                                    ;R1 IS NOT EQUAL TO 400
 (3)  005122  000060                            60
 (1)  005124  021527  000176                    CMP     (R5),#176               ;IS $TESTN = #176?
 (1)  005130  001403                            BEQ     .+10            ;IF NOT THEN GO TO HLT
 (3)  005132  004767  011756                    JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
 (3)                                                                    ;TEST IS IN WRONG SEQUENCE
 (3)  005136  000061                            61
 (1)  005140  005215                            INC     (R5)
 (1)
 (1)
1316                                    ;*****************************************************************
 (1)                                    ;TEST:177       -1 SHIFTED BY 15. = 100000  PS = 11
 (1)                                    ;*****************************************************************
 (1)
 (1)  005142  010701                    TST177: SCOPE1
 (1)  005144  012703  000000                    MOV     #DUMMY,%3       ;LOAD R3 WITH DUMMY
 (1)  005150  012703  177777                    MOV     #-1,%3!1        ;LOAD R3!1 WITH -1
 (1)  005154  000241                            CLC
 (1)  005156  073327  000017                    ASHC    #15.,%3         ;SHIFT R3,R3!1 BY 15.
 (1)  005162                                    MFPS    @#PSWORD        ;SAVE PS
 (2)  005162  106737                            .WORD   106700!..C
 (1)  005166  122737  000011  000432            CMPB    #11,@#PSWORD    ;IS THE PS 11?
 (1)  005174  001403                            BEQ     .+10
 (3)  005176  004767  011712                    JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
 (3)                                                                    ;THE PS IS NOT EQUAL TO 11
 (3)  005202  000062                            62
 (1)  005204  022703  100000                    CMP     #100000,%3      ;IS THE RESULT 100000?
 (1)  005210  001403                            BEQ     .+10
 (3)  005212  004767  011676                    JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
 (3)                                                                    ;R3 IS NOT EQUAL TO 100000
 (3)  005216  000063                            63
 (1)  005220  021527  000177                    CMP     (R5),#177               ;IS $TESTN = #177?
 (1)  005224  001403                            BEQ     .+10            ;IF NOT THEN GO TO HLT
 (3)  005226  004767  011662                    JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
 (3)                                                                    ;TEST IS IN WRONG SEQUENCE
 (3)  005232  000064                            64
 (1)  005234  005215                            INC     (R5)
```

(1)
(1)

```
1317                                    ;*****************************************************************
 (1)                                    ;TEST:200       52525 SHIFTED BY 0 = 52525  PS   0
 (1)                                    ;*****************************************************************
 (1)                                    ;
 (1)  005236  010701                    TST200: SCOPE1
 (1)  005240  010501                            MOV     R5,R1           ;SAVE R5
 (1)  005242  012705  000000                    MOV     #DUMMY,%5       ;LOAD R5 WITH DUMMY
 (1)  005246  012705  052525                    MOV     #52525,%5!1     ;LOAD R5!1 WITH 52525
 (1)  005252  000241                            CLC
 (1)  005254  073527  000000                    ASHC    #0,%5           ;SHIFT R5,R5!1 BY 0
 (1)  005260                                    MFPS    @#PSWORD        ;SAVE PS
 (2)  005260  106737                            .WORD   106700!..C
 (1)  005264  122737  000000  000432            CMPB    #0,@#PSWORD     ;IS THE PS 0?
 (1)  005272  001403                            BEQ     .+10
 (3)  005274  004767  011614                    JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
 (3)                                                                    ;THE PS IS NOT EQUAL TO 0
 (3)  005300  000065                            65
 (1)  005302  022705  052525                    CMP     #52525,%5       ;IS THE RESULT 52525?
 (1)  005306  001403                            BEQ     .+10
 (3)  005310  004767  011600                    JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
 (3)                                                                    ;R5 IS NOT EQUAL TO 52525
 (3)  005314  000066                            66
 (1)  005316  010105                            MOV     R1,R5           ;RESTORE R5
 (1)  005320  021527  000200                    CMP     (R5),#200               ;IS $TESTN = #200?
 (1)  005324  001403                            BEQ     .+10            ;IF NOT THEN GO TO HLT
 (3)  005326  004767  011562                    JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
 (3)                                                                    ;TEST IS IN WRONG SEQUENCE
 (3)  005332  000067                            67
 (1)  005334  005215                            INC     (R5)
 (1)
1318                                    ;*****************************************************************
 (1)                                    ;TEST:201       20010 SHIFTED BY -13. - 101  PS - 0
 (1)                                    ;*****************************************************************
 (1)                                    ;
 (1)  005336  010701                    TST201: SCOPE1
 ( )  005340  012701  000000                    MOV     #DUMMY,%1       ;LOAD R1 WITH DUMMY
 (1)  005344  012701  020010                    MOV     #20010,%1.1     ;LOAD R1!1 WITH 20010
 (1)  005350  000241                            CLC
 (1)  005352  073127  177763                    ASHC    #-13.,%1        ;SHIFT R1,R1.1 BY -13.
 (1)  005356                                    MFPS    @#PSWORD        ;SAVE PS
 (2)  005356  106737                            .WORD   106700!..C
 (1)  005362  122737  000000  000432            CMPB    #0,@#PSWORD     ;IS THE PS 0?
 (1)  005370  001403                            BEQ     .+10
 (3)  005372  004767  011516                    JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
 (3)                                                                    ;THE PS IS NOT EQUAL TO 0
 (3)  005376  000070                            70
 (1)  005400  022701  000101                    CMP     #101,%1         ;IS THE RESULT 101?
 (1)  005404  001403                            BEQ     .+10
 (3)  005406  004767  011502                    JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
 (3)                                                                    ;R1 IS NOT EQUAL TO 101
 (3)  005412  000071                            71
 (1)  005414  021527  000201                    CMP     (R5),#201               ;IS $TESTN = #201?
 (1)  005420  001403                            BEQ     .+10            ;IF NOT THEN GO TO HLT
 (3)  005422  004767  011466                    JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
 (3)                                                                    ;TEST IS IN WRONG SEQUENCE
```

```
    (3)  005426  000072                        72
    (1)  005430  005215                        INC     (R5)
    (1)
    (1)
    (1)
```

```
1319                                            ;*****************************************************************
 (1)                                            ;TEST:202        -1 SHIFTED BY 16. = 0  PS = 11
 (1)                                            ;*****************************************************************
 (1)
 (1)  005432  010701                            TST202: SCOPE1
 (1)  005434  012703  000000                            MOV     #DUMMY,%3          ;LOAD R3 WITH DUMMY
 (1)  005440  012703  177777                            MOV     #-1,%3.1           ;LOAD R3!1 WITH -1
 (1)  005444  000241                                    CLC
 (1)  005446  073327  000020                            ASHC    #16.,%3            ;SHIFT R3,R3.1 BY 16.
 (1)  005452                                            MFPS    @#PSWORD           ;SAVE PS
 (2)  005452  106737                                    .WORD   106700!..C
 (1)  005456  122737  000011  000432                    CMPB    #11,@#PSWORD       ;IS THE PS 11?
 (1)  005464  001403                                    BEQ     .+10
 (3)  005466  004767  011422                            JSR     PC,$HLT            ;SEEN AN ERROR, GO TO TH HALT ROUTINE
 (3)                                                                               ;THE PS IS NOT EQUAL TO 11
 (3)  005472  000073                                    73
 (1)  005474  022703  000000                            CMP     #0,%3              ;IS THE RESULT 0?
 (1)  005500  001403                                    BEQ     .+10
 (3)  005502  004767  011406                            JSR     PC,$HLT            ;SEEN AN ERROR, GO TO TH HALT ROUTINE
 (3)                                                                               ;R3 IS NOT EQUAL TO 0
 (3)  005506  000074                                    74
 (1)  005510  021527  000202                            CMP     (R5),#202                 ;IS $TESTN - #202?
 (1)  005514  001403                                    BEQ     .+10               ;IF NOT THEN GO TO HLT
 (3)  005516  004767  011372                            JSR     PC,$HLT            ;SEEN AN ERROR, GO TO TH HALT ROUTINE
 (3)                                                                               ;TEST IS IN WRONG SEQUENCE
 (3)  005522  000075                                    75
 (1)  005524  005215                                    INC     (R5)
 (1)
 (1)
1320                                            ;*****************************************************************
 (1)                                            ;TEST:203         1 SHIFTED BY -1 = 100000  PS - 1
 (1)                                            ;*****************************************************************
 (1)
 (1)  005526  010701                            TST203: SCOPE1
 (1)  005530  010501                                    MOV     R5,R1              ;SAVE R5
 (1)  005532  012705  000000                            MOV     #DUMMY,%5          ;LOAD R5 WITH DUMMY
 (1)  005536  012705  000001                            MOV     #1,%5!1            ;LOAD R5!1 WITH 1
 (1)  005542  000241                                    CLC
 (1)  005544  073527  177777                            ASHC    #-1,%5             ;SHIFT R5,R5!1 BY -1
 (1)  005550                                            MFPS    @#PSWORD           ;SAVE PS
 (2)  005550  106737                                    .WORD   106700!..C
 (1)  005554  122737  000001  000432                    CMPB    #1,@#PSWORD        ;IS THE PS 1?
 (1)  005562  001403                                    BEQ     .+10
 (3)  005564  004767  011324                            JSR     PC,$HLT            ;SEEN AN ERROR, GO TO TH HALT ROUTINE
 (3)                                                                               ;THE PS IS NOT EQUAL TO 1
 (3)  005570  000076                                    76
 (1)  005572  022705  100000                            CMP     #100000,%5         ;IS THE RESULT 100000?
 (1)  005576  001403                                    BEQ     .+10
 (3)  005600  004767  011310                            JSR     PC,$HLT            ;SEEN AN ERROR, GO TO TH HALT ROUTINE
 (3)                                                                               ;R5 IS NOT EQUAL TO 100000
 (3)  005604  000077                                    77
 (1)  005606  010105                                    MOV     R1,R5              ;RESTORE R5
 (1)  005610  021527  000203                            CMP     (R5),#203                 ;IS $TESTN = #203?
 (1)  005614  001403                                    BEQ     .+10               ;IF NOT THEN GO TO HLT
 (3)  005616  004767  011272                            JSR     PC,$HLT            ;SEEN AN ERROR, GO TO TH HALT ROUTINE
 (3)                                                                               ;TEST IS IN WRONG SEQUENCE
```

```
(3)  005622  000100                          100
(1)  005624  005215                          INC     (R5)
(1)
(1)
```

```
                                        ;*****************************************************************
                                        ;TEST:204       125252 SHIFTED BY -16. = 125252  PS = 11
                                        ;*****************************************************************

005626  010701                  TST204: SCOPE1
005630  012701  000000                  MOV     #DUMMY,%1       ;LOAD R1 WITH DUMMY
005634  012701  125252                  MOV     #125252,%1.1    ;LOAD R1.1 WITH 125252
005640  000241                          CLC
005642  073127  177760                  ASHC    #-16.,%1        ;SHIFT R1,R1.1 BY -16.
005646                                  MFPS    @#PSWORD        ;SAVE PS
005646  106737                          .WORD   106700!..C
005652  122737  000011  000432          CMPB    #11,@#PSWORD    ;IS THE PS 11?
005660  001403                          BEQ     .+10
005662  004767  011226                  JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
                                                                ;THE PS IS NOT EQUAL TO 11
005666  000101                          101
005670  022701  125252                  CMP     #125252,%1      ;IS THE RESULT 125252?
005674  001403                          BEQ     .+10
005676  004767  011212                  JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
                                                                ;R1 IS NOT EQUAL TO 125252
005702  000102                          102
005704  021527  000204                  CMP     (R5),#204               ;IS $TESTN = #204?
005710  001403                          BEQ     .+10            ;IF NOT THEN GO TO HLT
005712  004767  011176                  JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
                                                                ;TEST IS IN WRONG SEQUENCE
005716  000103                          103
005720  005215                          INC     (R5)


                                        ;*****************************************************************
                                        ;TEST:205       125252 125252 SHIFTED BY 21. = 52500 000000  PS  3
                                        ;*****************************************************************

005722  010701                  TST205: SCOPE1
005724  012702  125252                  MOV     #125252,%2      ;LOAD R2 WITH 125252
005730  012703  125252                  MOV     #125252,%2+1    ;LOAD R2+1 WITH 125252
005734  000241                          CLC
005736  073227  000025                  ASHC    #21.,%2         ;SHIFT R2,R2+1 BY 21.
005742                                  MFPS    @#PSWORD        ;SAVE PS
005742  106737                          .WORD   106700!..C
005746  122737  000003  000432          CMPB    #3,@#PSWORD     ;IS THE PS 3?
005754  001403                          BEQ     .+10
005756  004767  011132                  JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
                                                                ;THE PS IS NOT EQUAL TO 3
005762  000104                          104
005764  022702  052500                  CMP     #52500,%2       ;IS THE RESULT 52500?
005770  001403                          BEQ     .+10
005772  004767  011116                  JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
                                                                ;R2 IS NOT EQUAL TO 52500
005776  000105                          105
006000  022703  000000                  CMP     #000000,%2.1    ;IS THE RESULT 000000?
006004  001403                          BEQ     .+10
006006  004767  011102                  JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
                                                                ;R2+1 IS NOT EQUAL TO 000000
006012  000106                          106
006014  021527  000205                  CMP     (R5),#205               ;IS $TESTN = #205?
```

```
  (1)  006020  001403                    BEQ     .+10            ;IF NOT THEN GO TO HLT
  (3)  006022  004767  011066            JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
   3)                                                            ;TEST IS IN WRONG SEQUENCE
   3)  006026  000107                    107
  (1)  006030  005215                    INC     (R5)
  (1)
  (1)
1323
1324  006032  012702  177771            MOV     #-7,%2
1325  006036  012703  000454            MOV     #S1,%3
1326  006042  012704  000456            MOV     #S2,%4
1327
```

```
1328
 (1)                                    ;*****************************************************************************
 (1)                                    ;TEST:206       125252 125252 SHIFTED BY S1 = 177525 52525  PS = 10
 (1)                                    ;*****************************************************************************
 (1)
(1)  006046  010701                     TST206: SCOPE1
(1)  006050  012700  125252                     MOV     #125252,%0              ;LOAD R0 WITH 125252
(1)  006054  012701  125252                     MOV     #125252,%0.1    ;LOAD R0!1 WITH 125252
(1)  006060  000241                             CLC
(1)  006062  073067  172366                     ASHC    S1,%0           ;SHIFT R0,R0!1 BY S1
(1)  006066                                     MFPS    @#PSWORD        ;SAVE PS
(2)  006066  106737                             .WORD   106700!..C
(1)  006072  122737  000010  000432             CMPB    #10,@#PSWORD    ;IS THE PS 10?
(1)  006100  001403                             BEQ     .+10
(3)  006102  004767  011006                     JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
(3)                                                                     ;THE PS IS NOT EQUAL TO 10
(3)  006106  000110                             110
(1)  006110  022700  177525                     CMP     #177525,%0      ;IS THE RESULT 177525?
(1)  006114  001403                             BEQ     .+10
(3)  006116  004767  010772                     JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
(3)                                                                     ;R0 IS NOT EQUAL TO 177525
(3)  006122  000111                             111
(1)  006124  022701  052525                     CMP     #52525,%0!1     ;IS THE RESULT 52525?
(1)  006130  001403                             BEQ     .+10
(1)  006132                             1$:
(3)  006132  004767  010756                     JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
(3)                                                                     ;R0!1 IS NOT EQUAL TO 52525 OR INCORRECT SEQUENCE
(3)  006136  000112                             112
(1)  006140  021527  000206                     CMP     (R5),#206               ;IS THE $TESTN = #206?
(1)  006144  001372                             BNE     1$              ;IF NOT THEN GO TO HLT ABOVE
(1)  006146  005215                             INC     (R5)
(1)
 (1)
1329                                    ;*****************************************************************************
 (1)                                    ;TEST:207       125252 125252 SHIFTED BY @S2 = 177525 52525  PS - 10
 (1)                                    ;*****************************************************************************
 (1)
(1)  006150  010701                     TST207: SCOPE1
(1)  006152  012700  125252                     MOV     #125252,%0              ;LOAD R0 WITH 125252
(1)  006156  012701  125252                     MOV     #125252,%0!1    ;LOAD R0!1 WITH 125252
(1)  006162  000241                             CLC
(1)  006164  073077  172266                     ASHC    @S2,%0          ;SHIFT R0,R0!1 BY @S2
(1)  006170                                     MFPS    @#PSWORD        ;SAVE PS
(2)  006170  106737                             .WORD   106700!..C
(1)  006174  122737  000010  000432             CMPB    #10,@#PSWORD    ;IS THE PS 10?
(1)  006202  001403                             BEQ     .+10
(3)  006204  004767  010704                     JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
(3)                                                                     ;THE PS IS NOT EQUAL TO 10
(3)  006210  000113                             113
(1)  006212  022700  177525                     CMP     #177525,%0      ;IS THE RESULT 177525?
(1)  006216  001403                             BEQ     .+10
(3)  006220  004767  010670                     JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
(3)                                                                     ;R0 IS NOT EQUAL TO 177525
(3)  006224  000114                             114
(1)  006226  022701  052525                     CMP     #52525,%0 1     ;IS THE RESULT 52525?
(1)  006232  001403                             BEQ     .+10
(1)  006234                             1$:
```

```
(3)  006234  004767  010654                JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
(3)                                                                  ;R0!1 IS NOT EQUAL TO 52525 OR INCORRECT SEQUENCE
(3)  006240  000115                         115
(1)  006242  021527  000207                CMP     (R5),#207               ;IS THE $TESTN = #207?
(1)  006246  001372                        BNE     1$              ;IF NOT THEN GO TO HLT ABOVE
(1)  006250  005215                        INC     (R5)
(1)
(1)
```

```
1330
 (1)
 (1)
 (1)
 (1)  006252  010701                        TST210: SCOPE1
 (1)  006254  012700  125252                        MOV     #125252,%0              ;LOAD R0 WITH 125252
 (1)  006260  012701  125252                        MOV     #125252,%0!1    ;LOAD R0!1 WITH 125252
 (1)  006264  000241                                CLC
 (1)  006266  073037  000454                        ASHC    @#S1,%0         ;SHIFT R0,R0!1 BY @#S1
 (1)  006272                                        MFPS    @#PSWORD        ;SAVE PS
 (2)  006272  106737                                .WORD   106700!..C
 (1)  006276  122737  000010  000432                CMPB    #10,@#PSWORD    ;IS THE PS 10?
 (1)  006304  001403                                BEQ     .+10
 (3)  006306  004767  010602                        JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
 (3)                                                                        ;THE PS IS NOT EQUAL TO 10
 (3)  006312  000116                                116
 (1)  006314  022700  177525                        CMP     #177525,%0      ;IS THE RESULT 177525?
 (1)  006320  001403                                BEQ     .+10
 (3)  006322  004767  010566                        JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
 (3)                                                                        ;R0 IS NOT EQUAL TO 177525
 (3)  006326  000117                                117
 (1)  006330  022701  052525                        CMP     #52525,%0!1     ;IS THE RESULT 52525?
 (1)  006334  001403                                BEQ     .+10
 (1)  006336                                1$:
 (3)  006336  004767  010552                        JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
 (3)                                                                        ;R0!1 IS NOT EQUAL TO 52525 OR INCORRECT SEQUENCE
 (3)  006342  000120                                120
 (1)  006344  021527  000210                        CMP     (R5),#210               ;IS THE $TESTN = #210?
 (1)  006350  001372                                BNE     1$              ;IF NOT THEN GO TO HLT ABOVE
 (1)  006352  005215                                INC     (R5)
 ( )
 (1)
1331
 (1)
 (1)
 (1)
 (1)  006354  010701                        TST211: SCOPE1
 (1)  006356  012700  125252                        MOV     #125252,%0              ;LOAD R0 WITH 125252
 (1)  006362  012701  125252                        MOV     #125252,%0!1    ;LOAD R0!1 WITH 125252
 (1)  006366  000241                                CLC
 (1)  006370  073013                                ASHC    (3),%0          ;SHIFT R0,R0!1 BY (3)
 (1)  006372  -                                     MFPS    @#PSWORD        ;SAVE PS
 (2)  006372  106737                                .WORD   106700!..C
 (1)  006376  122737  000010  000432                CMPB    #10,@#PSWORD    ;IS THE PS 10?
 (1)  006404  001403                                BEQ     .+10
 (3)  006406  004767  010502                        JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
 (3)                                                                        ;THE PS IS NOT EQUAL TO 10
 (3)  006412  000121                                121
 (1)  006414  022700  177525                        CMP     #177525,%0      ;IS THE RESULT 177525?
 (1)  006420  001403                                BEQ     .+10
 (3)  006422  004767  010466                        JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
 (3)                                                                        ;R0 IS NOT EQUAL TO 177525
 (3)  006426  000122                                122
 (1)  006430  022701  052525                        CMP     #52525,%0!1     ;IS THE RESULT 52525?
 (1)  006434  001403                                BEQ     .+10
 (1)  006436                                1$:
```

```
(3)  006436  004767  010452                JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
(3)                                                                  ;R0!1 IS NOT EQUAL TO 52525 OR INCORRECT SEQUENCE
(3)  006442  000123                         123
(1)  006444  021527  000211                CMP     (R5),#211               ;IS THE $TESTN = #211?
(1)  006450  001372                        BNE     1$              ;IF NOT THEN GO TO HLT ABOVE
(1)  006452  005215                        INC     (R5)
(1)
(1)
```

```
1332                                    ;*****************************************************************************
 (1)                                    ;TEST:212       125252 125252 SHIFTED BY (3)+ = 177525 52525  PS = 10
 (1)                                    ;*****************************************************************************
 (1)
 (1)  006454  010701                    TST212: SCOPE1
 (1)  006456  012700  125252                    MOV     #125252,%0              ;LOAD R0 WITH 125252
 (1)  006462  012701  125252                    MOV     #125252,%0!1    ;LOAD R0!1 WITH 125252
 (1)  006466  000241                            CLC
 (1)  006470  073023                            ASHC    (3)+,%0         ;SHIFT R0,R0!1 BY (3)+
 (1)  006472                                    MFPS    @#PSWORD        ;SAVE PS
 (2)  006472  106737                            .WORD   106700!..C
 (1)  006476  122737  000010  000432            CMPB    #10,@#PSWORD    ;IS THE PS 10?
 (1)  006504  001403                            BEQ     .+10
 (3)  006506  004767  010402                    JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
 (3)                                                                    ;THE PS IS NOT EQUAL TO 10
 (3)  006512  000124                            124
 (1)  006514  022700  177525                    CMP     #177525,%0      ;IS THE RESULT 177525?
 (1)  006520  001403                            BEQ     .+10
 (3)  006522  004767  010366                    JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
 (3)                                                                    ;R0 IS NOT EQUAL TO 177525
 (3)  006526  000125                            125
 (1)  006530  022701  052525                    CMP     #52525,%0.1     ;IS THE RESULT 52525?
 (1)  006534  001403                            BEQ     .+10
 (1)  006536                            1$:
 (3)  006536  004767  010352                    JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
 (3)                                                                    ;R0!1 IS NOT EQUAL TO 52525 OR INCORRECT SEQUENCE
 (3)  006542  000126                            126
 (1)  006544  021527  000212                    CMP     (R5),#212               ;IS THE $TESTN = #212?
 (1)  006550  001372                            BNE     1$              ;IF NOT THEN GO TO HLT ABOVE
 (1)  006552  005215                            INC     (R5)
 (1)
 (1)
1333                                    ;*****************************************************************************
 (1)                                    ;TEST:213       125252 125252 SHIFTED BY -(3) = 177525 52525  PS = 10
 (1)                                    ;*****************************************************************************
 (1)
 (1)  006554  010701                    TST213: SCOPE1
 (1)  006556  012700  125252                    MOV     #125252,%0              ;LOAD R0 WITH 125252
 (1)  006562  012701  125252                    MOV     #125252,%0!1    ;LOAD R0!1 WITH 125252
 (1)  006566  000241                            CLC
 (1)  006570  073043                            ASHC    -(3),%0         ;SHIFT R0,R0!1 BY -(3)
 (1)  006572                                    MFPS    @#PSWORD        ;SAVE PS
 (2)  006572  106737                            .WORD   106700!..C
 (1)  006576  122737  000010  000432            CMPB    #10,@#PSWORD    ;IS THE PS 10?
 (1)  006604  001403                            BEQ     .+10
 (3)  006606  004767  010302                    JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
 (3)                                                                    ;THE PS IS NOT EQUAL TO 10
 (3)  006612  000127                            127
 (1)  006614  022700  177525                    CMP     #177525,%0      ;IS THE RESULT 177525?
 (1)  006620  001403                            BEQ     .+10
 (3)  006622  004767  010266                    JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
 (3)                                                                    ;R0 IS NOT EQUAL TO 177525
 (3)  006626  000130                            130
 (1)  006630  022701  052525                    CMP     #52525,%0!1     ;IS THE RESULT 52525?
 (1)  006634  001403                            BEQ     .+10
 (1)  006636                            1$:
```

```
(3)  006636  004767  010252                JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
(3)                                                                  ;R0.1 IS NOT EQUAL TO 52525 OR INCORRECT SEQUENCE
(3)  006642  000131                         131
(1)  006644  021527  000213                CMP     (R5),#213               ;IS THE $TESTN = #213?
(1)  006650  001372                        BNE     1$              ;IF NOT THEN GO TO HLT ABOVE
(1)  006652  005215                        INC     (R5)
(1)
(1)
```

```
1334                                    ;*****************************************************************************
 (1)                                    ;TEST:214       125252 125252 SHIFTED BY 2(4) = 177252 125252  PS = 11
 (1)                                    ;*****************************************************************************
 (1)
 (1)  006654  010701                    TST214: SCOPE1
 (1)  006656  012700  125252                    MOV     #125252,%0              ;LOAD R0 WITH 125252
 (1)  006662  012701  125252                    MOV     #125252,%0!1    ;LOAD R0!1 WITH 125252
 (1)  006666  000241                            CLC
 (1)  006670  073064  000002                    ASHC    2(4),%0         ;SHIFT R0,R0!1 BY 2(4)
 (1)  006674                                    MFPS    @#PSWORD        ;SAVE PS
 (2)  006674  106737                            .WORD   106700!..C
 (1)  006700  122737  000011  000432            CMPB    #11,@#PSWORD    ;IS THE PS 11?
 (1)  006706  001403                            BEQ     .+10
 (3)  006710  004767  010200                    JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
 (3)                                                                    ;THE PS IS NOT EQUAL TO 11
 (3)  006714  000132                            132
 (1)  006716  022700  177252                    CMP     #177252,%0      ;IS THE RESULT 177252?
 (1)  006722  001403                            BEQ     .+10
 (3)  006724  004767  010164                    JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
 (3)                                                                    ;R0 IS NOT EQUAL TO 177252
 (3)  006730  000133                            133
 (1)  006732  022701  125252                    CMP     #125252,%0!1    ;IS THE RESULT 125252?
 (1)  006736  001403                            BEQ     .+10
 (1)  006740                            1$:
 (3)  006740  004767  010150                    JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
 (3)                                                                    ;R0!1 IS NOT EQUAL TO 125252 OR INCORRECT SEQUENCE
 (3)  006744  000134                            134
 (1)  006746  021527  000214                    CMP     (R5),#214               ;IS THE $TESTN = #214?
 (1)  006752  001372                            BNE     1$              ;IF NOT THEN GO TO HLT ABOVE
 (1)  006754  005215                            INC     (R5)
 (1)
1335                                    ;*****************************************************************************
 (1)                                    ;TEST:215       125252 125252 SHIFTED BY @(4) = 177525 52525  PS = 10
 (1)                                    ;*****************************************************************************
 (1)
 (1)  006756  010701                    TST215: SCOPE1
 (1)  006760  012700  125252                    MOV     #125252,%0              ;LOAD R0 WITH 125252
 (1)  006764  012701  125252                    MOV     #125252,%0!1    ;LOAD R0!1 WITH 125252
 (1)  006770  000241                            CLC
 (1)  006772  073074  000000                    ASHC    @(4),%0         ;SHIFT R0,R0!1 BY @(4)
 (1)  006776                                    MFPS    @#PSWORD        ;SAVE PS
 (2)  006776  106737                            .WORD   106700!..C
 (1)  007002  122737  000010  000432            CMPB    #10,@#PSWORD    ;IS THE PS 10?
 (1)  007010  001403                            BEQ     .+10
 (3)  007012  004767  010076                    JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
 (3)                                                                    ;THE PS IS NOT EQUAL TO 10
 (3)  007016  000135                            135
 (1)  007020  022700  177525                    CMP     #177525,%0      ;IS THE RESULT 177525?
 (1)  007024  001403                            BEQ     .+10
 (3)  007026  004767  010062                    JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
 (3)                                                                    ;R0 IS NOT EQUAL TO 177525
 (3)  007032  000136                            136
 (1)  007034  022701  052525                    CMP     #52525,%0.1     ;IS THE RESULT 52525?
 (1)  007040  001403                            BEQ     .+10
 (1)  007042                            1$:
```

```
(3)  007042  004767  010046          JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
(3)                                                          ;R0!1 IS NOT EQUAL TO 52525 OR INCORRECT SEQUENCE
(3)  007046  000137                  137
(1)  007050  021527  000215          CMP     (R5),#215               ;IS THE $TESTN = #215?
(1)  007054  001372                  BNE     1$              ;IF NOT THEN GO TO HLT ABOVE
(1)  007056  005215                  INC     (R5)
(1)
(1)
```

```
1336                                    ;*****************************************************************
 (1)                                    ;TEST:216       125252 125252 SHIFTED BY @(4)+ = 177525 52525  PS = 10
 (1)                                    ;*****************************************************************
 (1)
 (1)  007060  010701                    TST216: SCOPE1
 (1)  007062  012700  125252                    MOV     #125252,%0              ;LOAD R0 WITH 125252
 (1)  007066  012701  125252                    MOV     #125252,%0!1    ;LOAD R0!1 WITH 125252
 (1)  007072  000241                            CLC
 (1)  007074  073034                            ASHC    @(4)+,%0                ;SHIFT R0,R0!1 BY @(4)+
 (1)  007076                                    MFPS    @#PSWORD        ;SAVE PS
 (2)  007076  106737                            .WORD   106700!..C
 (1)  007102  122737  000010  000432            CMPB    #10,@#PSWORD    ;IS THE PS 10?
 (1)  007110  001403                            BEQ     .+10
 (3)  007112  004767  007776                    JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
 (3)                                                                    ;THE PS IS NOT EQUAL TO 10
 (3)  007116  000140                            140
 (1)  007120  022700  177525                    CMP     #177525,%0      ;IS THE RESULT 177525?
 (1)  007124  001403                            BEQ     .+10
 (3)  007126  004767  007762                    JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
 (3)                                                                    ;R0 IS NOT EQUAL TO 177525
 (3)  007132  000141                            141
 (1)  007134  022701  052525                    CMP     #52525,%0.1     ;IS THE RESULT 52525?
 (1)  007140  001403                            BEQ     .+10
 (1)  007142                            1$:
 (3)  007142  004767  007746                    JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
 (3)                                                                    ;R0!1 IS NOT EQUAL TO 52525 OR INCORRECT SEQUENCE
 (3)  007146  000142                            142
 (1)  007150  021527  000216                    CMP     (R5),#216               ;IS THE $TESTN = #216?
 (1)  007154  001372                            BNE     1$              ;IF NOT THEN GO TO HLT ABOVE
 (1)  007156  005215                            INC     (R5)
 (1)
 (1)
1337                                    ;*****************************************************************
 (1)                                    ;TEST:217       125252 125252 SHIFTED BY @-(4) = 177525 52525  PS - 10
 (1)                                    ;*****************************************************************
 (1)
 (1)  007160  010701                    TST217: SCOPE1
 (1)  007162  012700  125252                    MOV     #125252,%0              ;LOAD R0 WITH 125252
 (1)  007166  012701  125252                    MOV     #125252,%0!1    ;LOAD R0!1 WITH 125252
 (1)  007172  000241                            CLC
 (1)  007174  073054                            ASHC    @-(4),%0                ;SHIFT R0,R0!1 BY @-(4)
 (1)  007176                                    MFPS    @#PSWORD        ;SAVE PS
 (2)  007176  106737                            .WORD   106700!..C
 (1)  007202  122737  000010  000432            CMPB    #10,@#PSWORD    ;IS THE PS 10?
 (1)  007210  001403                            BEQ     .+10
 (3)  007212  004767  007676                    JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
 (3)                                                                    ;THE PS IS NOT EQUAL TO 10
 (3)  007216  000143                            143
 (1)  007220  022700  177525                    CMP     #177525,%0      ;IS THE RESULT 177525?
 (1)  007224  001403                            BEQ     .+10
 (3)  007226  004767  007662                    JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
 (3)                                                                    ;R0 IS NOT EQUAL TO 177525
 (3)  007232  000144                            144
 (1)  007234  022701  052525                    CMP     #52525,%0!1     ;IS THE RESULT 52525?
 (1)  007240  001403                            BEQ     .+10
 (1)  007242                            1$:
```

```
  (3)  007242  004767  007646                    JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
  (3)                                                                     ;R0!1 IS NOT EQUAL TO 52525 OR INCORRECT SEQUENCE
  (3)
  (3)  007246  000145                            145
  (1)  007250  021527  000217                    CMP     (R5),#217               ;IS THE $TESTN = #217?
  (1)  007254  001372                            BNE     1$              ;IF NOT THEN GO TO HLT ABOVE
  (1)  007256  005215                            INC     (R5)
  (1)
  (1)
1338
1339
1340
1341
1342
1343
1344
1438                                             ;*********************************
1439                                             ;     MUL INSTRUCTION TESTS
1440                                             ;*********************************
1441
1442
1443
1444
1445                                 ;*****************************************************************************
  (1)                                ;TEST:220       MUL     1 * #0 = 0 0        PS = 4
  (1)                                ;*****************************************************************************
  (1)
  (1)  007260  010701                TST220: SCOPE
  (1)  007262  012700  000001                MOV     #1,%0           ;LOAD MULTIPLICAND WITH 1
  (1)  007266  070027  000000                MUL     #0,%0           ;MULTIPLY 1 * #0
  (1)  007272                                MFPS    @#PSWORD        ;SAVE PS
  (2)  007272  106737                        .WORD   106700!..C
  (1)  007276  122737  000004  000432        CMPB    #4,@#PSWORD     ;IS PS = 4
  (1)  007304  001403                        BEQ     .+10
  (3)  007306  004767  007602                JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
  (3)                                                                ;PS IS WRONG
  (3)  007312  000146                        146
  (1)  007314  022700  000000                CMP     #0,%0           ;IS HIGH ORDER - 0
  (1)  007320  001403                        BEQ     .+10
  (3)  007322  004767  007566                JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
  (3)                                                                ;HIGH ORDER IS WRONG
  (3)  007326  000147                        147
  (1)  007330  022701  000000                CMP     #0,%0!1         ;IS LOW ORDER - 0
  (1)  007334  001403                        BEQ     .+10
  (1)  007336                        1$:
  (3)  007336  004767  007552                JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
  (3)                                                                ;LOW ORDER IS WRONG OR WRONG SEQUENCE
  (3)  007342  000150                        150
  (1)  007344  021527  000220                CMP     (R5),#220
  (1)  007350  001372                        BNE     1$              ;IF IN WRONG SEQUENCE GO TO THE HLT ABOVE
  (1)  007352  005215                        INC     (R5)
1446                                 ;*****************************************************************************
  (1)                                ;TEST:221       MUL     -1 * #1 = -1 -1         PS = 10
  (1)                                ;*****************************************************************************
  (1)
  (1)  007354  010701                TST221: SCOPE
  (1)  007356  012700  177777                MOV     #-1,%0          ;LOAD MULTIPLICAND WITH -1
```

```
(1)  007362  070027  000001                MUL     #1,%0           ;MULTIPLY -1 * #1
(1)  007366                                 MFPS    @#PSWORD        ;SAVE PS
(2)  007366  106737                         .WORD   106700!..C
(1)  007372  122737  000010  000432         CMPB    #10,@#PSWORD    ;IS PS = 10
(1)  007400  001403                         BEQ     .+10
(3)  007402  004767  007506                 JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
(3)                                                                 ;PS IS WRONG
(3)  007406  000151                         151
(1)  007410  022700  177777                 CMP     #-1,%0          ;IS HIGH ORDER = -1
(1)  007414  001403                         BEQ     .+10
(3)  007416  004767  007472                 JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
(3)                                                                 ;HIGH ORDER IS WRONG
(3)  007422  000152                         152
(1)  007424  022701  177777                 CMP     #-1,%0!1        ;IS LOW ORDER = -1
(1)  007430  001403                         BEQ     .+10
(1)  007432                         1$:
(3)  007432  004767  007456                 JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
(3)                                                                 ;LOW ORDER IS WRONG OR WRONG SEQUENCE
(3)  007436  000153                         153
(1)  007440  021527  000221                 CMP     (R5),#221
(1)  007444  001372                         BNE     1$              ;IF IN WRONG SEQUENCE GO TO THE HLT ABOVE
(1)  007446  005215                         INC     (R5)
1447                                ;*****************************************************************
(1)                                 ;TEST:222       MUL     2 * #2 = 0 4        PS - 0
(1)                                 ;*****************************************************************
(1)
(1)  007450  010701                 TST222: SCOPE
(1)  007452  012702  000002                 MOV     #2,%2           ;LOAD MULTIPLICAND WITH 2
(1)  007456  070227  000002                 MUL     #2,%2           ;MULTIPLY 2 * #2
(1)  007462                                 MFPS    @#PSWORD        ;SAVE PS
(2)  007462  106737                         .WORD   106700!..C
(1)  007466  122737  000000  000432         CMPB    #0,@#PSWORD     ;IS PS = 0
(1)  007474  001403                         BEQ     .+10
(3)  007476  004767  007412                 JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
(3)                                                                 ;PS IS WRONG
(3)  007502  000154                         154
(1)  007504  022702  000000                 CMP     #0,%2           ;IS HIGH ORDER = 0
(1)  007510  001403                         BEQ     .+10
(3)  007512  004767  007376                 JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
(3)                                                                 ;HIGH ORDER IS WRONG
(3)  007516  000155                         155
(1)  007520  022703  000004                 CMP     #4,%2!1         ;IS LOW ORDER - 4
(1)  007524  001403                         BEQ     .+10
(1)  007526                         1$:
(3)  007526  004767  007362                 JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
(3)                                                                 ;LOW ORDER IS WRONG OR WRONG SEQUENCE
(3)  007532  000156                         156
(1)  007534  021527  000222                 CMP     (R5),#222
(1)  007540  001372                         BNE     1$              ;IF IN WRONG SEQUENCE GO TO THE HLT ABOVE
(1)  007542  005215                         INC     (R5)
1448                                ;*****************************************************************
(1)                                 ;TEST:223       MUL     1000 * #200   1 0       PS   1
(1)                                 ;*****************************************************************
(1)
(1)  007544  010701                 TST1223: SCOPE
(1)  007546  010501                         MOV     R5,R1           ;SAVE R5
```

```
(1)  007550  012704  001000                    MOV     #1000,%4        ;LOAD MULTIPLICAND WITH 1000
(1)  007554  070427  000200                    MUL     #200,%4         ;MULTIPLY 1000 * #200
(1)  007560                                    MFPS    @#PSWORD        ;SAVE PS
(2)  007560  106737                            .WORD   106700!..C
(1)  007564  122737  000001  000432            CMPB    #1,@#PSWORD     ;IS PS = 1
(1)  007572  001403                            BEQ     .+10
(3)  007574  004767  007314                    JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
(3)                                                                    ;PS IS WRONG
(3)  007600  000157                            157
(3)  007602  022704  000001                    CMP     #1,%4           ;IS HIGH ORDER = 1
(1)  007606  001403                            BEQ     .+10
(3)  007610  004767  007300                    JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
(3)                                                                    ;HIGH ORDER IS WRONG
(3)  007614  000160                            160
(1)  007616  022705  000000                    CMP     #0,%4 1         ;IS LOW ORDER = 0
(1)  007622  001403                            BEQ     .+10
(1)  007624                                1$:
(3)  007624  004767  007264                    JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
(3)                                                                    ;LOW ORDER IS WRONG OR WRONG SEQUENCE
(3)  007630  000161                            161
(1)  007632  021127  000223                    CMP     (R1),#223               ;CHECK THE TEST NUMBER
(1)  007636  001372                            BNE     1$              ;IF IN WRONG SEQUENCE GO TO THE HLT ABOVE
(1)  007640  010105                            MOV     R1,R5           ;RESTORE R5
(1)  007642  005215                            INC     (R5)
1449                                   ;*****************************************************************************
(1)                                    ;TEST:224       MUL     2 * #77777 - 0 177776        PS   1
(1)                                    ;*****************************************************************************
(1)
(1)  007644  010701                    TST224: SCOPE
(1)  007646  012700  000002                    MOV     #2,%0           ;LOAD MULTIPLICAND WITH 2
(1)  007652  070027  077777                    MUL     #77777,%0       ;MULTIPLY 2 * #77777
(1)  007656                                    MFPS    @#PSWORD        ;SAVE PS
(2)  007656  106737                            .WORD   106700!..C
(1)  007662  122737  000001  000432            CMPB    #1,@#PSWORD     ;IS PS = 1
(1)  007670  001403                            BEQ     .+10
(3)  007672  004767  007216                    JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
(3)                                                                    ;PS IS WRONG
(3)  007676  000162                            162
(1)  007700  022700  000000                    CMP     #0,%0           ;IS HIGH ORDER = 0
(1)  007704  001403                            BEQ     .+10
(3)  007706  004767  007202                    JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
(3)                                                                    ;HIGH ORDER IS WRONG
(3)  007712  000163                            163
(1)  007714  022701  177776                    CMP     #177776,%0!1    ;IS LOW ORDER = 177776
(1)  007720  001403                            BEQ     .+10
(1)  007722                                1$:
(3)  007722  004767  007166                    JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
(3)                                                                    ;LOW ORDER IS WRONG OR WRONG SEQUENCE
(3)  007726  000164                            164
(1)  007730  021527  000224                    CMP     (R5),#224
(1)  007734  001372                            BNE     1$              ;IF IN WRONG SEQUENCE GO TO THE HLT ABOVE
(1)  007736  005215                            INC     (R5)
1450                                   ;*****************************************************************************
(1)                                    ;TEST:225       MUL      7777 * #10 = 0 77770        PS = 0
(1)                                    ;*****************************************************************************
(1)
```

```
(1)  007740  010701                    TST225: SCOPE
(1)  007742  012702  007777                    MOV     #7777,%2        ;LOAD MULTIPLICAND WITH 7777
(1)  007746  070227  000010                    MUL     #10,%2          ;MULTIPLY 7777 * #10
(1)  007752                                    MFPS    @#PSWORD        ;SAVE PS
(2)  007752  106737                            .WORD   106700!..C
(1)  007756  122737  000000  000432            CMPB    #0,@#PSWORD     ;IS PS = 0
(1)  007764  001403                            BEQ     .+10
(3)  007766  004767  007122                    JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
(3)                                                                    ;PS IS WRONG
(3)  007772  000165                            165
(1)  007774  022702  000000                    CMP     #0,%2           ;IS HIGH ORDER - 0
(1)  010000  001403                            BEQ     .+10
(3)  010002  004767  007106                    JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
(3)                                                                    ;HIGH ORDER IS WRONG
(3)  010006  000166                            166
(1)  010010  022703  077770                    CMP     #77770,%2.1     ;IS LOW ORDER = 77770
(1)  010014  001403                            BEQ     .+10
(1)  010016                             1$:
(3)  010016  004767  007072                    JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
(3)                                                                    ;LOW ORDER IS WRONG OR WRONG SEQUENCE
(3)  010022  000167                            167
(1)  010024  021527  000225                    CMP     (R5),#225
(1)  010030  001372                            BNE     1$              ;IF IN WRONG SEQUENCE GO TO THE HLT ABOVE
(1)  010032  005215                            INC     (R5)
1451                                    ;*****************************************************************************
(1)                                     ;TEST:226       MUL     77777 * #77777 = 37777 1        PS = 1
(1)                                     ;*****************************************************************************
(1)
(1)  010034  010701                    TST226: SCOPE
(1)  010036  010501                            MOV     R5,R1           ;SAVE R5
(1)  010040  012704  077777                    MOV     #77777,%4       ;LOAD MULTIPLICAND WITH 77777
(1)  010044  070427  077777                    MUL     #77777,%4       ;MULTIPLY 77777 * #77777
(1)  010050                                    MFPS    @#PSWORD        ;SAVE PS
(2)  010050  106737                            .WORD   106700!..C
(1)  010054  122737  000001  000432            CMPB    #1,@#PSWORD     ;IS PS = 1
(1)  010062  001403                            BEQ     .+10
(3)  010064  004767  007024                    JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
(3)                                                                    ;PS IS WRONG
(3)  010070  000170                            170
(1)  010072  022704  037777                    CMP     #37777,%4       ;IS HIGH ORDER = 37777
(1)  010076  001403                            BEQ     .+10
(3)  010100  004767  007010                    JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
(3)                                                                    ;HIGH ORDER IS WRONG
(3)  010104  000171                            171
(1)  010106  022705  000001                    CMP     #1,%4!1         ;IS LOW ORDER = 1
(1)  010112  001403                            BEQ     .+10
(1)  010114                             1$:
(3)  010114  004767  006774                    JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
(3)                                                                    ;LOW ORDER IS WRONG OR WRONG SEQUENCE
(3)  010120  000172                            172
(1)  010122  021127  000226                    CMP     (R1),#226               ;CHECK THE TEST NUMBER
(1)  010126  001372                            BNE     1$              ;IF IN WRONG SEQUENCE GO TO THE HLT ABOVE
(1)  010130  010105                            MOV     R1,R5           ;RESTORE R5
(1)  010132  005215                            INC     (R5)
1452                                    ;*****************************************************************************
(1)                                     ;TEST:227       MUL     -1 * #77777   -1 100001         PS = 10
```

```
(1)
(1)
(1)  010134  010701                    TST227: SCOPE
(1)  010136  012702  177777                    MOV     #-1,%2          ;LOAD MULTIPLICAND WITH -1
(1)  010142  070227  077777                    MUL     #77777,%2       ;MULTIPLY -1 * #77777
(1)  010146                                    MFPS    @#PSWORD        ;SAVE PS
(2)  010146  106737                            .WORD   106700!..C
(1)  010152  122737  000010  000432           CMPB    #10,@#PSWORD    ;IS PS = 10
(1)  010160  001403                            BEQ     .+10
(3)  010162  004767  006726                    JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
(3)                                                                    ;PS IS WRONG
(3)  010166  000173                            173
(1)  010170  022702  177777                    CMP     #-1,%2          ;IS HIGH ORDER = -1
(1)  010174  001403                            BEQ     .+10
(3)  010176  004767  006712                    JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
(3)                                                                    ;HIGH ORDER IS WRONG
(3)  010202  000174                            174
(1)  010204  022703  100001                    CMP     #100001,%2!1    ;IS LOW ORDER = 100001
(1)  010210  001403                            BEQ     .+10
(1)  010212                             1$:
(3)  010212  004767  006676                    JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
(3)                                                                    ;LOW ORDER IS WRONG OR WRONG SEQUENCE
(3)  010216  000175                            175
(1)  010220  021527  000227                    CMP     (R5),#227
(1)  010224  001372                            BNE     1$              ;IF IN WRONG SEQUENCE GO TO THE HLT ABOVE
(1)  010226  005215                            INC     (R5)
1453                                    ;*****************************************************************************
(1)                                     ;TEST:230       MUL     -2 * #77777 = -1 2      PS = 11
(1)                                     ;*****************************************************************************
(1)
(1)  010230  010701                    TST230: SCOPE
(1)  010232  012700  177776                    MOV     #-2,%0          ;LOAD MULTIPLICAND WITH -2
(1)  010236  070027  077777                    MUL     #77777,%0       ;MULTIPLY -2 * #77777
(1)  010242                                    MFPS    @#PSWORD        ;SAVE PS
(2)  010242  106737                            .WORD   106700!..C
(1)  010246  122737  000011  000432           CMPB    #11,@#PSWORD    ;IS PS = 11
(1)  010254  001403                            BEQ     .+10
(3)  010256  004767  006632                    JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
(3)                                                                    ;PS IS WRONG
(3)  010262  000176                            176
(1)  010264  022700  177777                    CMP     #-1,%0          ;IS HIGH ORDER - -1
(1)  010270  001403                            BEQ     .+10
(3)  010272  004767  006616                    JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
(3)                                                                    ;HIGH ORDER IS WRONG
(3)  010276  000177                            177
(1)  010300  022701  000002                    CMP     #2,%0!1         ;IS LOW ORDER = 2
(1)  010304  001403                            BEQ     .+10
(1)  010306                             1$:
(3)  010306  004767  006602                    JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
(3)                                                                    ;LOW ORDER IS WRONG OR WRONG SEQUENCE
(3)  010312  000200                            200
(1)  010314  021527  000230                    CMP     (R5),#230
(1)  010320  001372                            BNE     1$              ;IF IN WRONG SEQUENCE GO TO THE HLT ABOVE
(1)  010322  005215                            INC     (R5)
1454                                    ;*****************************************************************************
(1)                                     ;TEST:231       MUL     125252 * #2 = -1 52524      PS = 11
```

```
(1)
(1)
(1)  010324  010701                        TST231: SCOPE
(1)  010326  012702  125252                        MOV     #125252,%2      ;LOAD MULTIPLICAND WITH 125252
(1)  010332  070227  000002                        MUL     #2,%2           ;MULTIPLY 125252 * #2
(1)  010336                                        MFPS    @#PSWORD        ;SAVE PS
(2)  010336  106737                                .WORD   106700!..C
(1)  010342  122737  000011  000432                CMPB    #11,@#PSWORD    ;IS PS = 11
(1)  010350  001403                                BEQ     .+10
(3)  010352  004767  006536                        JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
(3)                                                                        ;PS IS WRONG
(3)  010356  000201                                201
(1)  010360  022702  177777                        CMP     #-1,%2          ;IS HIGH ORDER = -1
(1)  010364  001403                                BEQ     .+10
(3)  010366  004767  006522                        JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
(3)                                                                        ;HIGH ORDER IS WRONG
(3)  010372  000202                                202
(1)  010374  022703  052524                        CMP     #52524,%2!1     ;IS LOW ORDER = 52524
(1)  010400  001403                                BEQ     .+10
(1)  010402                                 1$:
(3)  010402  004767  006506                        JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
(3)                                                                        ;LOW ORDER IS WRONG OR WRONG SEQUENCE
(3)  010406  000203                                203
(1)  010410  021527  000231                        CMP     (R5),#231
(1)  010414  001372                                BNE     1$              ;IF IN WRONG SEQUENCE GO TO THE HLT ABOVE
(1)  010416  005215                                INC     (R5)
1455                                    ;*************************************************************************
(1)                                     ;TEST:232       MUL     125252 * #40000 = 165252 100000         PS   11
(1)                                     ;*************************************************************************
(1)
(1)  010420  010701                        TST232: SCOPE
(1)  010422  010501                                MOV     R5,R1           ;SAVE R5
(1)  010424  012704  125252                        MOV     #125252,%4      ;LOAD MULTIPLICAND WITH 125252
(1)  010430  070427  040000                        MUL     #40000,%4       ;MULTIPLY 125252 * #40000
(1)  010434                                        MFPS    @#PSWORD        ;SAVE PS
(2)  010434  106737                                .WORD   106700!..C
(1)  010440  122737  000011  000432                CMPB    #11,@#PSWORD    ;IS PS = 11
(1)  010446  001403                                BEQ     .+10
(3)  010450  004767  006440                        JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
(3)                                                                        ;PS IS WRONG
(3)  010454  000204                                204
(1)  010456  022704  165252                        CMP     #165252,%4      ;IS HIGH ORDER = 165252
(1)  010462  001403                                BEQ     .+10
(3)  010464  004767  006424                        JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
(3)                                                                        ;HIGH ORDER IS WRONG
(3)  010470  000205                                205
(1)  010472  022705  100000                        CMP     #100000,%4!1    ;IS LOW ORDER = 100000
(1)  010476  001403                                BEQ     .+10
(1)  010500                                 1$:
(3)  010500  004767  006410                        JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
(3)                                                                        ;LOW ORDER IS WRONG OR WRONG SEQUENCE
(3)  010504  000206                                206
(1)  010506  021127  000232                        CMP     (R1),#232               ;CHECK THE TEST NUMBER
(1)  010512  001372                                BNE     1$              ;IF IN WRONG SEQUENCE GO TO THE HLT ABOVE
(1)  010514  010105                                MOV     R1,R5           ;RESTORE R5
(1)  010516  005215                                INC     (R5)
```

```
1456
 (1)
 (1)
 (1)
 (1)  010520  010701                        ;*****************************************************************************
 (1)  010522  012700  107070                ;TEST:233       MUL      107070 * #107070 = 31222 26100       PS = 1
 (1)  010526  070027  107070                ;*****************************************************************************
 (1)  010532
 (2)  010532  106737                        TST233: SCOPE
 (1)  010536  122737  000001  000432               MOV     #107070,%0      ;LOAD MULTIPLICAND WITH 107070
 (1)  010544  001403                               MUL     #107070,%0      ;MULTIPLY 107070 * #107070
 (3)  010546  004767  006342                       MFPS    @#PSWORD        ;SAVE PS
 (3)                                               .WORD   106700!..C
 (3)  010552  000207                               CMPB    #1,@#PSWORD     ;IS PS = 1
 (1)  010554  022700  031222                       BEQ     .+10
 (1)  010560  001403                               JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
 (3)  010562  004767  006326                                               ;PS IS WRONG
 (3)
 (3)  010566  000210                               207
 (1)  010570  022701  026100                       CMP     #31222,%0       ;IS HIGH ORDER = 31222
 (1)  010574  001403                               BEQ     .+10
 (1)  010576                                       JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
 (3)  010576  004767  006312                                               ;HIGH ORDER IS WRONG
 (3)
 (3)  010602  000211                               210
 (1)  010604  021527  000233                       CMP     #26100,%0!1     ;IS LOW ORDER = 26100
 (1)  010610  001372                               BEQ     .+10
 (1)  010612  005215                       1$:
1457                                               JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
 (1)                                                                       ;LOW ORDER IS WRONG OR WRONG SEQUENCE
 (1)
 (1)  010614  010701                               211
 (1)  010616  012701  177777                       CMP     (R5),#233
 (1)  010622  070127  000001                       BNE     1$              ;IF IN WRONG SEQUENCE GO TO THE HLT ABOVE
 (1)  010626                                       INC     (R5)
 (2)  010626  106737                        ;*****************************************************************************
 (1)  010632  122737  000010  000432        ;TEST:234       MUL      -1 * #1 = -1 -1        PS = 10
 (1)  010640  001403                        ;*****************************************************************************
 (3)  010642  004767  006246
 (3)                                        TST234: SCOPE
 (3)  010646  000212                               MOV     #-1,%1          ;LOAD MULTIPLICAND WITH -1
 (1)  010650  022701  177777                       MUL     #1,%1           ;MULTIPLY -1 * #1
 (1)  010654  001403                               MFPS    @#PSWORD        ;SAVE PS
 (3)  010656  004767  006232                       .WORD   106700!..C
 (3)                                               CMPB    #10,@#PSWORD    ;IS PS = 10
 (3)  010662  000213                               BEQ     .+10
 (1)  010664  022701  177777                       JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
 (1)  010670  001403                                                       ;PS IS WRONG
 (1)  010672
 (3)  010672  004767  006216                       212
 (3)                                               CMP     #-1,%1          ;IS HIGH ORDER = -1
 (3)  010676  000214                               BEQ     .+10
 (1)  010700  021527  000234                       JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
 (1)  010704  001372                                                       ;HIGH ORDER IS WRONG
 (1)  010706  005215
                                                   213
                                                   CMP     #-1,%1.1        ;IS LOW ORDER = -1
                                                   BEQ     .+10
                                           1$:
                                                   JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
                                                                           ;LOW ORDER IS WRONG OR WRONG SEQUENCE
                                                   214
                                                   CMP     (R5),#234
                                                   BNE     1$              ;IF IN WRONG SEQUENCE GO TO THE HLT ABOVE
                                                   INC     (R5)
```

```
1458
 (1)
 (1)
 (1)
 (1)  010710  010701                        ;*****************************************************************
 (1)  010712  012703  177777                ;TEST:235       MUL      -1 * #0 = 0 0        PS = 4
 (1)  010716  070327  000000                ;*****************************************************************
 (1)  010722
 (2)  010722  106737                        TST235: SCOPE
 (1)  010726  122737  000004  000432               MOV     #-1,%3          ;LOAD MULTIPLICAND WITH -1
 (1)  010734  001403                               MUL     #0,%3           ;MULTIPLY -1 * #0
 (3)  010736  004767  006152                       MFPS    @#PSWORD        ;SAVE PS
 (3)                                               .WORD   106700!..C
 (3)  010742  000215                               CMPB    #4,@#PSWORD     ;IS PS - 4
 (1)  010744  022703  000000                       BEQ     .+10
 (1)  010750  001403                               JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
 (3)  010752  004767  006136                                               ;PS IS WRONG
 (3)
 (3)  010756  000216                               215
 (1)  010760  022703  000000                       CMP     #0,%3           ;IS HIGH ORDER = 0
 (1)  010764  001403                               BEQ     .+10
 (1)  010766                                       JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
 (3)  010766  004767  006122                                               ;HIGH ORDER IS WRONG
 (3)
 (3)  010772  000217                               216
 (1)  010774  021527  000235                       CMP     #0,%3.1         ;IS LOW ORDER = 0
 (1)  011000  001372                               BEQ     .+10
 (1)  011002  005215                       1$:
1459                                               JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
 (1)                                                                       ;LOW ORDER IS WRONG OR WRONG SEQUENCE
 (1)
 (1)  011004  010701                               217
 (1)  011006  010501                               CMP     (R5),#235
 (1)  011010  012705  077777                       BNE     1$              ;IF IN WRONG SEQUENCE GO TO THE HLT ABOVE
 (1)  011014  070527  100000                       INC     (R5)
 (1)  011020                               ;*****************************************************************
 (2)  011020  106737                       ;TEST:236       MUL      77777 * #100000 = 100000 100000      PS = 11
 (1)  011024  122737  000011  000432       ;*****************************************************************
 (1)  011032  001403
 (3)  011034  004767  006054               TST236: SCOPE
 (3)                                               MOV     R5,R1           ;SAVE R5
 (3)  011040  000220                               MOV     #77777,%5       ;LOAD MULTIPLICAND WITH 77777
 (1)  011042  022705  100000                       MUL     #100000,%5      ;MULTIPLY 77777 * #100000
 (1)  011046  001403                               MFPS    @#PSWORD        ;SAVE PS
 (3)  011050  004767  006040                       .WORD   106700!..C
 (3)                                               CMPB    #11,@#PSWORD    ;IS PS = 11
 (3)  011054  000221                               BEQ     .+10
 (1)  011056  022705  100000                       JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
 (1)  011062  001403                                                       ;PS IS WRONG
 (1)  011064
 (3)  011064  004767  006024                       220
 (3)                                               CMP     #100000,%5      ;IS HIGH ORDER = 100000
 (3)  011070  000222                               BEQ     .+10
 (1)  011072  021127  000236                       JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
 (1)  011076  001372                                                       ;HIGH ORDER IS WRONG
                                                   221
                                                   CMP     #100000,%5.1    ;IS LOW ORDER - 100000
                                                   BEQ     .+10
                                           1$:
                                                   JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
                                                                           ;LOW ORDER IS WRONG OR WRONG SEQUENCE
                                                   222
                                                   CMP     (R1),#236               ;CHECK THE TEST NUMBER
                                                   BNE     1$              ;IF IN WRONG SEQUENCE GO TO THE HLT ABOVE
```

```
(1)  011100 010105                   MOV   R1,R5           ;RESTORE R5
(1)  011102 005215                   INC   (R5)
1460                          ;*************************************************************
(1)                           ;TEST:237     MUL     -1 * #77777 = 100001 100001       PS = 10
(1)                           ;*************************************************************
(1)
(1)  011104 010701            TST237: SCOPE
(1)  011106 012701 177777            MOV   #-1,%1          ;LOAD MULTIPLICAND WITH -1
(1)  011112 070127 077777            MUL   #77777,%1       ;MULTIPLY -1 * #77777
(1)  011116                          MFPS  @#PSWORD        ;SAVE PS
(2)  011116 106737                   .WORD 106700!..C
(1)  011122 122737 000010 000432     CMPB  #10,@#PSWORD    ;IS PS = 10
(1)  011130 001403                   BEQ   .+10
(3)  011132 004767 005756            JSR   PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
(3)                                                        ;PS IS WRONG
(3)  011136 000223                   223
(1)  011140 022701 100001            CMP   #100001,%1      ;IS HIGH ORDER = 100001
(1)  011144 001403                   BEQ   .+10
(3)  011146 004767 005742            JSR   PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
(3)                                                        ;HIGH ORDER IS WRONG
(3)  011152 000224                   224
(1)  011154 022701 100001            CMP   #100001,%1!1    ;IS LOW ORDER = 100001
(1)  011160 001403                   BEQ   .+10
(1)  011162                   1$:
(3)  011162 004767 005726            JSR   PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
(3)                                                        ;LOW ORDER IS WRONG OR WRONG SEQUENCE
(3)  011166 000225                   225
(1)  011170 021527 000237            CMP   (R5),#237
(1)  011174 001372                   BNE   1$              ;IF IN WRONG SEQUENCE GO TO THE HLT ABOVE
(1)  011176 005215                   INC   (R5)
1461                          ;*************************************************************
(1)                           ;TEST:240     MUL      77777 * #77777 = 1 1          PS = 1
(1)                           ;*************************************************************
(1)
(1)  011200 010701            TST240: SCOPE
(1)  011202 012703 077777            MOV   #77777,%3       ;LOAD MULTIPLICAND WITH 77777
(1)  011206 070327 077777            MUL   #77777,%3       ;MULTIPLY 77777 * #77777
(1)  011212                          MFPS  @#PSWORD        ;SAVE PS
(2)  011212 106737                   .WORD 106700!..C
(1)  011216 122737 000001 000432     CMPB  #1,@#PSWORD     ;IS PS = 1
(1)  011224 001403                   BEQ   .+10
(3)  011226 004767 005662            JSR   PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
(3)                                                        ;PS IS WRONG
(3)  011232 000226                   226
(1)  011234 022703 000001            CMP   #1,%3           ;IS HIGH ORDER = 1
(1)  011240 001403                   BEQ   .+10
(3)  011242 004767 005646            JSR   PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
(3)                                                        ;HIGH ORDER IS WRONG
(3)  011246 000227                   227
(1)  011250 022703 000001            CMP   #1,%3!1         ;IS LOW ORDER = 1
(1)  011254 001403                   BEQ   .+10
(1)  011256                   1$:
(3)  011256 004767 005632            JSR   PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
(3)                                                        ;LOW ORDER IS WRONG OR WRONG SEQUENCE
(3)  011262 000230                   230
(1)  011264 021527 000240            CMP   (R5),#240
```

```
   (1)  011270  001372                        BNE     1$              ;IF IN WRONG SEQUENCE GO TO THE HLT ABOVE
   (1)  011272  005215                        INC     (R5)
 1462                          ;*****************************************************************
   (1)                         ;TEST:241       MUL     2 * #2 = 4 4        PS = 0
   (1)                         ;*****************************************************************
   (1)                         ;
   (1)  011274  010701         TST241: SCOPE
   (1)  011276  010501                 MOV     R5,R1           ;SAVE R5
   (1)  011300  012705  000002        MOV     #2,%5           ;LOAD MULTIPLICAND WITH 2
   (1)  011304  070527  000002        MUL     #2,%5           ;MULTIPLY 2 * #2
   (1)  011310                        MFPS    @#PSWORD        ;SAVE PS
   (2)  011310  106737                .WORD   106700!..C
   (1)  011314  122737  000000  000432  CMPB    #0,@#PSWORD     ;IS PS = 0
   (1)  011322  001403                BEQ     .+10
   (3)  011324  004767  005564        JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
   (3)                                                        ;PS IS WRONG
   (3)  011330  000231                231
   (1)  011332  022705  000004        CMP     #4,%5           ;IS HIGH ORDER = 4
   (1)  011336  001403                BEQ     .+10
   (3)  011340  004767  005550        JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
   (3)                                                        ;HIGH ORDER IS WRONG
   (3)  011344  000232                232
   (1)  011346  022705  000004        CMP     #4,%5!1         ;IS LOW ORDER = 4
   (1)  011352  001403                BEQ     .+10
   (1)  011354                 1$:
   (3)  011354  004767  005534        JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
   (3)                                                        ;LOW ORDER IS WRONG OR WRONG SEQUENCE
   (3)  011360  000233                233
   (1)  011362  021127  000241        CMP     (R1),#241               ;CHECK THE TEST NUMBER
   (1)  011366  001372                BNE     1$              ;IF IN WRONG SEQUENCE GO TO THE HLT ABOVE
   (1)  011370  010105                MOV     R1,R5           ;RESTORE R5
   (1)  011372  005215                INC     (R5)
 1463  011374  012702  040000        MOV     #40000,%2
 1464  011400  012703  000464        MOV     #S5,%3
 1465  011404  012704  000466        MOV     #S6,%4
 1466
 1467                          ;*****************************************************************
   (1)                         ;TEST:242       MUL     125252 * S5 = 165252 100000        PS - 11
   (1)                         ;*****************************************************************
   (1)                         ;
   (1)  011410  010701         TST242: SCOPE
   (1)  011412  012700  125252        MOV     #125252,%0      ;LOAD MULTIPLICAND WITH 125252
   (1)  011416  070067  167042        MUL     S5,%0           ;MULTIPLY 125252 * S5
   (1)  011422                        MFPS    @#PSWORD        ;SAVE PS
   (2)  011422  106737                .WORD   106700!..C
   (1)  011426  122737  000011  000432  CMPB    #11,@#PSWORD    ;IS PS = 11
   (1)  011434  001403                BEQ     .+10
   (3)  011436  004767  005452        JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
   (3)                                                        ;PS IS WRONG
   (3)  011442  000234                234
   (1)  011444  022700  165252        CMP     #165252,%0      ;IS HIGH ORDER = 165252
   (1)  011450  001403                BEQ     .+10
   (3)  011452  004767  005436        JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
   (3)                                                        ;HIGH ORDER IS WRONG
   (3)  011456  000235                235
   (1)  011460  022701  100000        CMP     #100000,%0!1    ;IS LOW ORDER = 100000
```

```
    (1)  011464  001403                          BEQ     .+10
    (1)  011466                                1$:
    (3)  011466  004767  005422                   JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
    (3)                                                                   ;LOW ORDER IS WRONG OR WRONG SEQUENCE
    (3)  011472  000236                           236
    (1)  011474  021527  000242                   CMP     (R5),#242
    (1)  011500  001372                           BNE     1$              ;IF IN WRONG SEQUENCE GO TO THE HLT ABOVE
    (1)  011502  005215                           INC     (R5)
 1468                                     ;*****************************************************************************
    (1)                                   ;TEST:243       MUL     125252 * @S6 = 165252 100000        PS = 11
    (1)                                   ;*****************************************************************************
    (1)
    (1)  011504  010701                   TST243: SCOPE
    (1)  011506  012700  125252                   MOV     #125252,%0      ;LOAD MULTIPLICAND WITH 125252
    (1)  011512  070077  166750                   MUL     @S6,%0          ;MULTIPLY 125252 * @S6
    (1)  011516                                   MFPS    @#PSWORD        ;SAVE PS
    (2)  011516  106737                           .WORD   106700!..C
    (1)  011522  122737  000011  000432           CMPB    #11,@#PSWORD    ;IS PS = 11
    (1)  011530  001403                           BEQ     .+10
    (3)  011532  004767  005356                   JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT RCUTINE
    (3)                                                                   ;PS IS WRONG
    (3)  011536  000237                           237
    (1)  011540  022700  165252                   CMP     #165252,%0      ;IS HIGH ORDER = 165252
    (1)  011544  001403                           BEQ     .+10
    (3)  011546  004767  005342                   JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
    (3)                                                                   ;HIGH ORDER IS WRONG
    (3)  011552  000240                           240
    (1)  011554  022701  100000                   CMP     #100000,%0!1    ;IS LOW ORDER = 100000
    (1)  011560  001403                           BEQ     .+10
    (1)  011562                                1$:
    (3)  011562  004767  005326                      .    JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
    (3)                                                                   ;LOW ORDER IS WRONG OR WRONG SEQUENCE
    (3)  011566  000241                           241
    (1)  011570  021527  000243                   CMP     (R5),#243
    (1)  011574  001372                           BNE     1$              ;IF IN WPONG SEQUENCE GO TO THE HLT ABOVE
    (1)  011576  005215                           INC     (R5)
 1469                                     ;*****************************************************************************
    (1)                                   ;TEST:244       MUL     125252 * @#S5 = 165252 100000        PS - 11
    (1)                                   ;*****************************************************************************
    (1)
    (1)  011600  010701                   TST244: SCOPE
    (1)  011602  012700  125252                   MOV     #125252,%0      ;LOAD MULTIPLICAND WITH 125252
    (1)  011606  070037  000464                   MUL     @#S5,%0         ;MULTIPLY 125252 * @#S5
    (1)  011612                                   MFPS    @#PSWORD        ;SAVE PS
    (2)  011612  106737                           .WORD   106700!..C
    (1)  011616  122737  000011  000432           CMPB    #11,@#PSWORD    ;IS PS = 11
    (1)  011624  001403                           BEQ     .+10
    (3)  011626  004767  005262                   JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
    (3)                                                                   ;PS IS WRONG
    (3)  011632  000242                           242
    (1)  011634  022700  165252                   CMP     #165252,%0      ;IS HIGH ORDER = 165252
    (1)  011640  001403                           BEQ     .+10
    (3)  011642  004767  005246                   JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
    (3)                                                                   ;HIGH ORDER IS WRONG
    (3)  011646  000243                           243
    (1)  011650  022701  100000                   CMP     #100000,%0!1    ;IS LOW ORDER = 100000
```

```
(1)  011654  001403                        BEQ     .+10
(1)  011656                          1$:
(3)  011656  004767  005232                JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
(3)                                                                 ;LOW ORDER IS WRONG OR WRONG SEQUENCE
(3)  011662  000244                        244
(1)  011664  021527  000244                CMP     (R5),#244
(1)  011670  001372                        BNE     1$              ;IF IN WRONG SEQUENCE GO TO THE HLT ABOVE
(1)  011672  005215                        INC     (R5)
1470                                 ;*****************************************************************
(1)                                  ;TEST:245       MUL     125252 * %2 = 165252 100000     PS = 11
(1)                                  ;*****************************************************************
(1)
(1)  011674  010701                  TST245: SCOPE
(1)  011676  012700  125252                MOV     #125252,%0      ;LOAD MULTIPLICAND WITH 125252
(1)  011702  070002                        MUL     %2,%0           ;MULTIPLY 125252 * %2
(1)  011704                                MFPS    @#PSWORD        ;SAVE PS
(2)  011704  106737                        .WORD   106700...C
(1)  011710  122737  000011  000432        CMPB    #11,@#PSWORD    ;IS PS = 11
(1)  011716  001403                        BEQ     .+10
(3)  011720  004767  005170                JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
(3)                                                                 ;PS IS WRONG
(3)  011724  000245                        245
(1)  011726  022700  165252                CMP     #165252,%0      ;IS HIGH ORDER = 165252
(1)  011732  001403                        BEQ     .+10
(3)  011734  004767  005154                JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
(3)                                                                 ;HIGH ORDER IS WRONG
(3)  011740  000246                        246
(1)  011742  022701  100000                CMP     #100000,%0!1    ;IS LOW ORDER = 100000
(1)  011746  001403                        BEQ     .+10
(1)  011750                          1$:
(3)  011750  004767  005140                JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
(3)                                                                 ;LOW ORDER IS WRONG OR WRONG SEQUENCE
(3)  011754  000247                        247
(1)  011756  021527  000245                CMP     (R5),#245
(1)  011762  001372                        BNE     1$              ;IF IN WRONG SEQUENCE GO TO THE HLT ABOVE
(1)  011764  005215                        INC     (R5)
1471                                 ;*****************************************************************
(1)                                  ;TEST:246       MUL     125252 * (3)+ = 165252 100000     PS = 11
(1)                                  ;*****************************************************************
(1)
(1)  011766  010701                  TST246: SCOPE
(1)  011770  012700  125252                MOV     #125252,%0      ;LOAD MULTIPLICAND WITH 125252
(1)  011774  070023                        MUL     (3)+,%0         ;MULTIPLY 125252 * (3)+
(1)  011776                                MFPS    @#PSWORD        ;SAVE PS
(2)  011776  106737                        .WORD   106700!..C
(1)  012002  122737  000011  000432        CMPB    #11,@#PSWORD    ;IS PS = 11
(1)  012010  001403                        BEQ     .+10
(3)  012012  004767  005076                JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
(3)                                                                 ;PS IS WRONG
(3)  012016  000250                        250
(1)  012020  022700  165252                CMP     #165252,%0      ;IS HIGH ORDER = 165252
(1)  012024  001403                        BEQ     .+10
(3)  012026  004767  005062                JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
(3)                                                                 ;HIGH ORDER IS WRONG
(3)  012032  000251                        251
(1)  012034  022701  100000                CMP     #100000,%0!1    ;IS LOW ORDER = 100000
```

```
(1)  012040  001403                        BEQ     .+10
(1)  012042                          1$:
(3)  012042  004767  005046                JSR     PC,$HLT          ;SEEN AN ERROR, GO TO TH HALT ROUTINE
(3)                                                                  ;LOW ORDER IS WRONG OR WRONG SEQUENCE
(3)  012046  000252                        252
(1)  012050  021527  000246                CMP     (R5),#246
(1)  012054  001372                        BNE     1$               ;IF IN WRONG SEQUENCE GO TO THE HLT ABOVE
(1)  012056  005215                        INC     (R5)
1472                                 ;*****************************************************************************
(1)                                  ;TEST:247       MUL      125252 * -(3) = 165252 100000        PS = 11
(1)                                  ;*****************************************************************************
(1)
(1)  012060  010701                  TST247: SCOPE
(1)  012062  012700  125252                 MOV     #125252,%0       ;LOAD MULTIPLICAND WITH 125252
(1)  012066  070043                         MUL     -(3),%0          ;MULTIPLY 125252 * -(3)
(1)  012070                                 MFPS    @#PSWORD         ;SAVE PS
(2)  012070  106737                         .WORD   106700!..C
(1)  012074  122737  000011  000432         CMPB    #11,@#PSWORD     ;IS PS = 11
(1)  012102  001403                         BEQ     .+10
(3)  012104  004767  005004                 JSR     PC,$HLT          ;SEEN AN ERROR, GO TO TH HALT ROUTINE
(3)                                                                  ;PS IS WRONG
(3)  012110  000253                         253
(1)  012112  022700  165252                 CMP     #165252,%0       ;IS HIGH ORDER = 165252
(1)  012116  001403                         BEQ     .+10
(3)  012120  004767  004770                 JSR     PC,$HLT          ;SEEN AN ERROR, GO TO TH HALT ROUTINE
(3)                                                                  ;HIGH ORDER IS WRONG
(3)  012124  000254                         254
(1)  012126  022701  100000                 CMP     #100000,%0!1     ;IS LOW ORDER = 100000
(1)  012132  001403                         BEQ     .+10
(1)  012134                          1$:
(3)  012134  004767  004754                 JSR     PC,$HLT          ;SEEN AN ERROR, GO TO TH HALT ROUTINE
(3)                                                                  ;LOW ORDER IS WRONG OR WRONG SEQUENCE
(3)  012140  000255                         255
(1)  012142  021527  000247                 CMP     (R5),#247
(1)  012146  001372                         BNE     1$               ;IF IN WRONG SEQUENCE GO TO THE HLT ABOVE
(1)  012150  005215                         INC     (R5)
1473                                 ;*****************************************************************************
(1)                                  ;TEST:250       MUL      125252 * 2(4) = 165252 100000        PS   11
(1)                                  ;*****************************************************************************
(1)
(1)  012152  010701                  TST250: SCOPE
(1)  012154  012700  125252                 MOV     #125252,%0       ;LOAD MULTIPLICAND WITH 125252
(1)  012160  070064  000002                 MUL     2(4),%0          ;MULTIPLY 125252 * 2(4)
(1)  012164                                 MFPS    @#PSWORD         ;SAVE PS
(2)  012164  106737                         .WORD   106700!..C
(1)  012170  122737  000011  000432         CMPB    #11,@#PSWORD     ;IS PS = 11
(1)  012176  001403                         BEQ     .+10
(3)  012200  004767  004710                 JSR     PC,$HLT          ;SEEN AN ERROR, GO TO TH HALT ROUTINE
(3)                                                                  ;PS IS WRONG
(3)  012204  000256                         256
(1)  012206  022700  165252                 CMP     #165252,%0       ;IS HIGH ORDER = 165252
(1)  012212  001403                         BEQ     .+10
(3)  012214  004767  004674                 JSR     PC,$HLT          ;SEEN AN ERROR, GO TO TH HALT ROUTINE
(3)                                                                  ;HIGH ORDER IS WRONG
(3)  012220  000257                         257
(1)  012222  022701  100000                 CMP     #100000,%0!1     ;IS LOW ORDER = 100000
```

```
(1)  012226  001403                    BEQ     .+10
(1)  012230                        1$:
(3)  012230  004767  004660            JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
(3)                                                            ;LOW ORDER IS WRONG OR WRONG SEQUENCE
(3)  012234  000260                    260
(1)  012236  021527  000250            CMP     (R5),#250
(1)  012242  001372                    BNE     1$              ;IF IN WRONG SEQUENCE GO TO THE HLT ABOVE
(1)  012244  005215                    INC     (R5)
1474                               ;*****************************************************************
(1)                                ;TEST:251       MUL     125252 * @(4) = 165252 100000       PS = 11
(1)                                ;*****************************************************************
(1)
(1)  012246  010701                TST251: SCOPE
(1)  012250  012700  125252                MOV     #125252,%0      ;LOAD MULTIPLICAND WITH 125252
(1)  012254  070074  000000                MUL     @(4),%0         ;MULTIPLY 125252 * @(4)
(1)  012260                                MFPS    @#PSWORD        ;SAVE PS
(2)  012260  106737                        .WORD   106700!..C
(1)  012264  122737  000011  000432        CMPB    #11,@#PSWORD    ;IS PS = 11
(1)  012272  001403                        BEQ     .+10
(3)  012274  004767  004614                JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
(3)                                                            ;PS IS WRONG
(3)  012300  000261                        261
(1)  012302  022700  165252                CMP     #165252,%0      ;IS HIGH ORDER = 165252
(1)  012306  001403                        BEQ     .+10
(3)  012310  004767  004600                JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
(3)                                                            ;HIGH ORDER IS WRONG
(3)  012314  000262                        262
(1)  012316  022701  100000                CMP     #100000,%0!1    ;IS LOW ORDER = 100000
(1)  012322  001403                        BEQ     .+10
(1)  012324                        1$:
(3)  012324  004767  004564            JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
(3)                                                            ;LOW ORDER IS WRONG OR WRONG SEQUENCE
(3)  012330  000263                    263
(1)  012332  021527  000251            CMP     (R5),#251
(1)  012336  001372                    BNE     1$              ;IF IN WRONG SEQUENCE GO TO THE HLT ABOVE
(1)  012340  005215                    INC     (R5)
1475                               ;*****************************************************************
(1)                                ;TEST:252       MUL     125252 * @(4)+ = 165252 100000       PS = 11
(1)                                ;*****************************************************************
(1)
(1)  012342  010701                TST252: SCOPE
(1)  012344  012700  125252                MOV     #125252,%0      ;LOAD MULTIPLICAND WITH 125252
(1)  012350  070034                        MUL     @(4)+,%0        ;MULTIPLY 125252 * @(4)+
(1)  012352                                MFPS    @#PSWORD        ;SAVE PS
(2)  012352  106737                        .WORD   106700!..C
(1)  012356  122737  000011  000432        CMPB    #11,@#PSWORD    ;IS PS = 11
(1)  012364  001403                        BEQ     .+10
(3)  012366  004767  004522                JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
(3)                                                            ;PS IS WRONG
(3)  012372  000264                        264
(1)  012374  022700  165252                CMP     #165252,%0      ;IS HIGH ORDER = 165252
(1)  012400  001403                        BEQ     .+10
(3)  012402  004767  004506                JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
(3)                                                            ;HIGH ORDER IS WRONG
(3)  012406  000265                        265
(1)  012410  022701  100000                CMP     #100000,%0!1    ;IS LOW ORDER = 100000
```

```
(1)  012414  001403                        BEQ     .+10
(1)  012416                          1$:
(3)  012416  004767  004472                JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
(3)                                                                 ;LOW ORDER IS WRONG OR WRONG SEQUENCE
(3)  012422  000266                        266
(1)  012424  021527  000252                CMP     (R5),#252
(1)  012430  001372                        BNE     1$              ;IF IN WRONG SEQUENCE GO TO THE HLT ABOVE
(1)  012432  005215                        INC     (R5)
1476                                 ;*****************************************************************
(1)                                  ;TEST:253       MUL     125252 * @-(4) = 165252 100000      PS = 11
(1)                                  ;*****************************************************************
(1)
(1)  012434  010701                  TST253: SCOPE
(1)  012436  012700  125252                MOV     #125252,%0      ;LOAD MULTIPLICAND WITH 125252
(1)  012442  070054                        MUL     @-(4),%0        ;MULTIPLY 125252 * @-(4)
(1)  012444                                MFPS    @#PSWORD        ;SAVE PS
(2)  012444  106737                        .WORD   106700!..C
(1)  012450  122737  000011  000432        CMPB    #11,@#PSWORD    ;IS PS = 11
(1)  012456  001403                        BEQ     .+10
(3)  012460  004767  004430                JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
(3)                                                                 ;PS IS WRONG
(3)  012464  000267                        267
(1)  012466  022700  165252                CMP     #165252,%0      ;IS HIGH ORDER = 165252
(1)  012472  001403                        BEQ     .+10
(3)  012474  004767  004414                JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
(3)                                                                 ;HIGH ORDER IS WRONG
(3)  012500  000270                        270
(1)  012502  022701  100000                CMP     #100000,%0+1    ;IS LOW ORDER = 100000
(1)  012506  001403                        BEQ     .+10
(1)  012510                          1$:
(3)  012510  004767  004400                JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
(3)                                                                 ;LOW ORDER IS WRONG OR WRONG SEQUENCE
(3)  012514  000271                        271
(1)  012516  021527  000253                CMP     (R5),#253
(1)  012522  001372                        BNE     1$              ;IF IN WRONG SEQUENCE GO TO THE HLT ABOVE
(1)  012524  005215                        INC     (R5)
1480                                                ;*********************************
1481                                                ;       DIV INSTRUCTION TESTS
1482                                                ;*********************************
1483
1484
1485
1486                                 ;*****************************************************************
(1)                                  ;TEST:254       DIV     0 4 / #2   2        REM = 0       PS   0
(1)                                  ;*****************************************************************
(1)
(1)  012526  010701                  TST254: SCOPE
(1)  012530  012700  000000                MOV     #0,%0           ;LOAD HIGH ORDER WITH 0
(1)  012534  012701  000004                MOV     #4,%0+1         ;LOAD LOW ORDER WITH 4
(1)  012540  071027  000002                DIV     #2,%0           ;DIVIDE BY #2
(1)  012544                                MFPS    @#PSWORD        ;SAVE PS
(2)  012544  106737                        .WORD   106700!..C
(1)
(1)  012550  122737  000000  000432        CMPB    #0,@#PSWORD     ;IS PS = 0
(1)  012556  001403                        BEQ     .+10
(3)  012560  004767  004330                JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
```

```
(3)
(3)  012564  000272                        272
(3)
(1)  012566  022700  000002                CMP     #2,%0           ;IS QUOTIENT = 2
(1)  012572  001403                        BEQ     .+10
(3)  012574  004767  004314                JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
(3)                                                                ;QUOTIENT IS WRONG
(3)  012600  000273                        273
(1)
(1)  012602  022701  000000                CMP     #0,%0+1         ;IS REMAINDER = 0
(1)  012606  001403                        BEQ     .+10
(3)  012610  004767  004300                JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
(3)                                                                ;WRONG REMAINDER
(3)  012614  000274                        274
(1)  012616  021527  000254                CMP     (R5),#254
(1)  012622  001403                        BEQ     .+10            ;IF IN WRONG SEQUENCE GO TO THE HLT
(3)  012624  004767  004264                JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
(3)                                                                ;TEST IS IN WRONG SEQUENCE
(3)  012630  000275                        275
(1)  012632  005215                        INC     (R5)
(1)
1487                            ;*****************************************************************************
(1)                             ;TEST:255       DIV     -1 -9. / #3    -3       REM - 0       PS - 10
(1)                             ;*****************************************************************************
(1)                             ;
(1)  012634  010701             TST255: SCOPE
(1)  012636  012702  177777                MOV     #-1,%2          ;LOAD HIGH ORDER WITH -1
(1)  012642  012703  177767                MOV     #-9.,%2+1       ;LOAD LOW ORDER WITH -9.
(1)  012646  071227  000003                DIV     #3,%2           ;DIVIDE BY #3
(1)  012652                                MFPS    @#PSWORD        ;SAVE PS
(2)  012652  106737                        .WORD   106700!..C
(1)
(1)  012656  122737  000010  000432        CMPB    #10,@#PSWORD    ;IS PS = 10
(1)  012664  001403                        BEQ     .+10
(3)  012666  004767  004222                JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
(3)                                                                ;PS IS WRONG
(3)  012672  000276                        276
(1)
(1)  012674  022702  177775                CMP     #-3,%2          ;IS QUOTIENT = -3
(1)  012700  001403                        BEQ     .+10
(3)  012702  004767  004206                JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
(3)                                                                ;QUOTIENT IS WRONG
(3)  012706  000277                        277
(1)
(1)  012710  022703  000000                CMP     #0,%2+1         ;IS REMAINDER = 0
(1)  012714  001403                        BEQ     .+10
(3)  012716  004767  004172                JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
(3)                                                                ;WRONG REMAINDER
(3)  012722  000300                        300
(1)  012724  021527  000255                CMP     (R5),#255
(1)  012730  001403                        BEQ     .+10            ;IF IN WRONG SEQUENCE GO TO THE HLT
(3)  012732  004767  004156                JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
(3)                                                                ;TEST IS IN WRONG SEQUENCE
(3)  012736  000301                        301
(1)  012740  005215                        INC     (R5)
(1)
```

```
1488                                      ;*****************************************************************
 (1)                                      ;TEST:256      DIV     0 9. / #2 = 4       REM - 1      PS = 0
 (1)                                      ;*****************************************************************
 (1)
 (1)  012742  010701                      TST256: SCOPE
 (1)  012744  010501                              MOV     R5,R1           ;SAVE R5
 (1)  012746  012704  000000                      MOV     #0,%4           ;LOAD HIGH ORDER WITH 0
 (1)  012752  012705  000011                      MOV     #9.,%4+1        ;LOAD LOW ORDER WITH 9.
 (1)  012756  071427  000002                      DIV     #2,%4           ;DIVIDE BY #2
 (1)  012762                                      MFPS    @#PSWORD        ;SAVE PS
 (2)  012762  106737                              .WORD   106700!..C
 (1)
 (1)  012766  122737  000000  000432              CMPB    #0,@#PSWORD     ;IS PS = 0
 (1)  012774  001403                              BEQ     .+10
 (3)  012776  004767  004112                      JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
 (3)                                                                      ;PS IS WRONG
 (3)  013002  000302                              302
 (1)
 (1)  013004  022704  000004                      CMP     #4,%4           ;IS QUOTIENT = 4
 (1)  013010  001403                              BEQ     .+10
 (3)  013012  004767  004076                      JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
 (3)                                                                      ;QUOTIENT IS WRONG
 (3)  013016  000303                              303
 (1)
 (1)  013020  022705  000001                      CMP     #1,%4+1         ;IS REMAINDER = 1
 (1)  013024  001403                              BEQ     .+10
 (3)  013026  004767  004062                      JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
 (3)                                                                      ;WRONG REMAINDER
 (3)  013032  000304                              304
 (1)  013034  010105                              MOV     R1,R5           ;RESTORE R5
 (1)  013036  021527  000256                      CMP     (R5),#256
 (1)  013042  001403                              BEQ     .+10            ;IF IN WRONG SEQUENCE GO TO THE HLT
 (3)  013044  004767  004044                      JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
 (3)                                                                      ;TEST IS IN WRONG SEQUENCE
 (3)  013050  000305                              305
 (1)  013052  005215                              INC     (R5)
 (1)
1489                                      ;*****************************************************************
 (1)                                      ;TEST:257      DIV     -1 -9. / #2 - -4       REM = -1      PS = 10
 (1)                                      ;*****************************************************************
 (1)
 (1)  013054  010701                      TST257: SCOPE
 (1)  013056  012700  177777                      MOV     #-1,%0          ;LOAD HIGH ORDER WITH -1
 (1)  013062  012701  177767                      MOV     #-9.,%0+1       ;LOAD LOW ORDER WITH -9.
 (1)  013066  071027  000002                      DIV     #2,%0           ;DIVIDE BY #2
 (1)  013072                                      MFPS    @#PSWORD        ;SAVE PS
 (2)  013072  106737                              .WORD   106700!..C
 (1)
 (1)  013076  122737  000010  000432              CMPB    #10,@#PSWORD    ;IS PS = 10
 (1)  013104  001403                              BEQ     .+10
 (3)  013106  004767  004002                      JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
 (3)                                                                      ;PS IS WRONG
 (3)  013112  000306                              306
 (1)
 (1)  013114  022700  177774                      CMP     #-4,%0          ;IS QUOTIENT - -4
 (1)  013120  001403                              BEQ     .+10
```

```
 (3)  013122 004767 003766                 JSR    PC,$HLT          ;SEEN AN ERROR, GO TO TH HALT ROUTINE
 (3)                                                               ;QUOTIENT IS WRONG
 (3)  013126 000307                        307
 (1)
 (1)  013130 022701 177777                 CMP    #-1,%0+1         ;IS REMAINDER = -1
 (1)  013134 001403                        BEQ    .+10
 (3)  013136 004767 003752                 JSR    PC,$HLT          ;SEEN AN ERROR, GO TO TH HALT ROUTINE
 (3)                                                               ;WRONG REMAINDER
 (3)  013142 000310                        310
 (1)  013144 021527 000257                 CMP    (R5),#257
 (1)  013150 001403                        BEQ    .+10             ;IF IN WRONG SEQUENCE GO TO THE HLT
 (3)  013152 004767 003736                 JSR    PC,$HLT          ;SEEN AN ERROR, GO TO TH HALT ROUTINE
 (3)                                                               ;TEST IS IN WRONG SEQUENCE
 (3)  013156 000311                        311
 (1)  013160 005215                        INC    (R5)
 (1)
1490                                ;*******************************************************************
 (1)                                ;TEST:260      DIV     0 2 / #-3 - 0       REM = 2      PS - 4
 (1)                                ;*******************************************************************
 (1)
 (1)  013162 010701                 TST260: SCOPE
 (1). 013164 012702 000000                 MOV    #0,%2            ;LOAD HIGH ORDER WITH 0
 (1)  013170 012703 000002                 MOV    #2,%2+1          ;LOAD LOW ORDER WITH 2
 (1)  013174 071227 177775                 DIV    #-3,%2           ;DIVIDE BY #-3
 (1)  013200                               MFPS   @#PSWORD         ;SAVE PS
 (2)  013200 106737                        .WORD  106700!..C
 (1)
 (1)  013204 122737 000004 000432          CMPB   #4,@#PSWORD      ;IS PS = 4
 (1)  013212 001403                        BEQ    .+10
 (3)  013214 004767 003674                 JSR    PC,$HLT          ;SEEN AN ERROR, GO TO TH HALT ROUTINE
 (3)                                                               ;PS IS WRONG
 (3)  013220 000312                        312
 (1)
 (1)  013222 022702 000000                 CMP    #0,%2            ;IS QUOTIENT = 0
 (1)  013226 001403                        BEQ    .+10
 (3)  013230 004767 003660                 JSR    PC,$HLT          ;SEEN AN ERROR, GO TO TH HALT ROUTINE
 (3)                                                               ;QUOTIENT IS WRONG
 (3)  013234 000313                        313
 (1)
 (1)  013236 022703 000002                 CMP    #2,%2+1          ;IS REMAINDER = 2
 (1)  013242 001403                        BEQ    .+10
 (3)  013244 004767 003644                 JSR    PC,$HLT          ;SEEN AN ERROR, GO TO TH HALT ROUTINE
 (3)                                                               ;WRONG REMAINDER
 (3)  013250 000314                        314
 (1)  013252 021527 000260                 CMP    (R5),#260
 (1)  013256 001403                        BEQ    .+10             ;IF IN WRONG SEQUENCE GO TO THE HLT
 (3)  013260 004767 003630                 JSR    PC,$HLT          ;SEEN AN ERROR, GO TO TH HALT ROUTINE
 (3)                                                               ;TEST IS IN WRONG SEQUENCE
 (3)  013264 000315                        315
 (1)  013266 005215                        INC    (R5)
 (1)
1491                                ;*******************************************************************
 (1)                                ;TEST:261      DIV     -1 -2 / #3 = 0      REM = -2     PS = 4
 (1)                                ;*******************************************************************
 (1)
 (1)  013270 010701                 TST261: SCOPE
```

```
(1)  013272  010501                          MOV     R5,R1           ;SAVE R5
(1)  013274  012704  177777                  MOV     #-1,%4          ;LOAD HIGH ORDER WITH -1
(1)  013300  012705  177776                  MOV     #-2,%4+1        ;LOAD LOW ORDER WITH -2
(1)  013304  071427  000003                  DIV     #3,%4           ;DIVIDE BY #3
(1)  013310                                  MFPS    @#PSWORD        ;SAVE PS
(2)  013310  106737                          .WORD   106700!..C
(1)
(1)  013314  122737  000004  000432          CMPB    #4,@#PSWORD     ;IS PS = 4
(1)  013322  001403                          BEQ     .+10
(3)  013324  004767  003564                  JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
(3)                                                                  ;PS IS WRONG
(3)  013330  000316                          316
(1)
(1)  013332  022704  000000                  CMP     #0,%4           ;IS QUOTIENT = 0
(1)  013336  001403                          BEQ     .+10
(3)  013340  004767  003550                  JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
(3)                                                                  ;QUOTIENT IS WRONG
(3)  013344  000317                          317
(1)
(1)  013346  022705  177776                  CMP     #-2,%4+1        ;IS REMAINDER = -2
(1)  013352  001403                          BEQ     .+10
(3)  013354  004767  003534                  JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
(3)                                                                  ;WRONG REMAINDER
(3)  013360  000320                          320
(1)  013362  010105                          MOV     R1,R5           ;RESTORE R5
(1)  013364  021527  000261                  CMP     (R5),#261
(1)  013370  001403                          BEQ     .+10            ;IF IN WRONG SEQUENCE GO TO THE HLT
(3)  013372  004767  003516                  JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
(3)                                                                  ;TEST IS IN WRONG SEQUENCE
(3)  013376  000321                          321
(1)  013400  005215                          INC     (R5)
(1)
1492                                         ;*****************************************************************************
(1)                                          ;TEST:262      DIV     -1 -1 / #1 = -1       REM = 0      PS = 10
(1)                                          ;*****************************************************************************
(1)
(1)  013402  010701                  TST262: SCOPE
(1)  013404  012700  177777                  MOV     #-1,%0          ;LOAD HIGH ORDER WITH -1
(1)  013410  012701  177777                  MOV     #-1,%0+1        ;LOAD LOW ORDER WITH -1
(1)  013414  071027  000001                  DIV     #1,%0           ;DIVIDE BY #1
(1)  013420                                  MFPS    @#PSWORD        ;SAVE PS
(2)  013420  106737                          .WORD   106700!..C
(1)
(1)  013424  122737  000010  000432          CMPB    #10,@#PSWORD    ;IS PS = 10
(1)  013432  001403                          BEQ     .+10
(3)  013434  004767  003454                  JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
(3)                                                                  ;PS IS WRONG
(3)  013440  000322                          322
(1)
(1)  013442  022700  177777                  CMP     #-1,%0          ;IS QUOTIENT = -1
(1)  013446  001403                          BEQ     .+10
(3)  013450  004767  003440                  JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
(3)                                                                  ;QUOTIENT IS WRONG
(3)  013454  000323                          323
(1)
(1)  013456  022701  000000                  CMP     #0,%0+1         ;IS REMAINDER = 0
```

```
  (1)  013462  001403                        BEQ     .+10
  (3)  013464  004767  003424                JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
  (3)                                                                 ;WRONG REMAINDER
  (3)  013470  000324                        324
  (1)  013472  021527  000262                CMP     (R5),#262
  (1)  013476  001403                        BEQ     .+10            ;IF IN WRONG SEQUENCE GO TO THE HLT
  (3)  013500  004767  003410                JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
  (3)                                                                 ;TEST IS IN WRONG SEQUENCE
  (3)  013504  000325                        325
  (1)  013506  005215                        INC     (R5)
  (1)
1493                                ;*****************************************************************
  (1)                               ;TEST:263      DIV     0 0 / #1 = 0       REM = 0      PS = 4
  (1)                               ;*****************************************************************
  (1)
  (1)  013510  010701                TST263: SCOPE
  (1)  013512  012700  000000                MOV     #0,%0           ;LOAD HIGH ORDER WITH 0
  (1)  013516  012701  000000                MOV     #0,%0+1         ;LOAD LOW ORDER WITH 0
  (1)  013522  071027  000001                DIV     #1,%0           ;DIVIDE BY #1
  (1)  013526                                MFPS    @#PSWORD        ;SAVE PS
  (2)  013526  106737                        .WORD   106700...C
  (1)
  (1)  013532  122737  000004  000432        CMPB    #4,@#PSWORD     ;IS PS = 4
  (1)  013540  001403                        BEQ     .+10
  (3)  013542  004767  003346                JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
  (3)                                                                 ;PS IS WRONG
  (3)  013546  000326                        326
  (1)
  (1)  013550  022700  000000                CMP     #0,%0           ;IS QUOTIENT = 0
  (1)  013554  001403                        BEQ     .+10
  (3)  013556  004767  003332                JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
  (3)                                                                 ;QUOTIENT IS WRONG
  (3)  013562  000327                        327
  (1)
  (1)  013564  022701  000000                CMP     #0,%0+1         ;IS REMAINDER = 0
  (1)  013570  001403                        BEQ     .+10
  (3)  013572  004767  003316                JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
  (3)                                                                 ;WRONG REMAINDER
  (3)  013576  000330                        330
  (1)  013600  021527  000263                CMP     (R5),#263
  (1)  013604  001403                        BEQ     .+10            ;IF IN WRONG SEQUENCE GO TO THE HLT
  (3)  013606  004767  003302                JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
  (3)                                                                 ;TEST IS IN WRONG SEQUENCE
  (3)  013612  000331                        331
  (1)  013614  005215                        INC     (R5)
  (1)
1494                                ;*****************************************************************
  (1)                               ;TEST:264      DIV     -1 125252 / #2 = 152525      REM = 0      PS = 10
  (1)                               ;*****************************************************************
  (1)
  (1)  013616  010701                TST264: SCOPE
  (1)  013620  012702  177777                MOV     #-1,%2          ;LOAD HIGH ORDER WITH -1
  (1)  013624  012703  125252                MOV     #125252,%2+1    ;LOAD LOW ORDER WITH 125252
  (1)  013630  071227  000002                DIV     #2,%2           ;DIVIDE BY #2
  (1)  013634                                MFPS    @#PSWORD        ;SAVE PS
  (2)  013634  106737                        .WORD   106700!..C
```

```
(1)
(1)  013640  122737  000010  000432          CMPB    #10,@#PSWORD    ;IS PS = 10
(1)  013646  001403                           BEQ     .+10
(3)  013650  004767  003240                   JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
(3)                                                                   ;PS IS WRONG
(3)  013654  000332                           332
(1)
(1)  013656  022702  152525                   CMP     #152525,%2      ;IS QUOTIENT = 152525
(1)  013662  001403                           BEQ     .+10
(3)  013664  004767  003224                   JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
(3)                                                                   ;QUOTIENT IS WRONG
(3)  013670  000333                           333
(1)
(1)  013672  022703  000000                   CMP     #0,%2+1         ;IS REMAINDER = 0
(1)  013676  001403                           BEQ     .+10
(3)  013700  004767  003210                   JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
(3)                                                                   ;WRONG REMAINDER
(3)  013704  000334                           334
(1)  013706  021527  000264                   CMP     (R5),#264
(1)  013712  001403                           BEQ     .+10            ;IF IN WRONG SEQUENCE GO TO THE HLT
(3)  013714  004767  003174                   JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
(3)                                                                   ;TEST IS IN WRONG SEQUENCE
(3)  013720  000335                           335
(1)  013722  005215                           INC     (R5)
(1)
1495                            ;*************************************************************************
(1)                             ;TEST:265      DIV     -1 -1 / #-1 - 1       REM = 0      PS - 0
(1)                             ;*************************************************************************
(1)
(1)  013724  010701             TST265: SCOPE
(1)  013726  010501                     MOV     R5,R1           ;SAVE R5
(1)  013730  012704  177777             MOV     #-1,%4          ;LOAD HIGH ORDER WITH -1
(1)  013734  012705  177777             MOV     #-1,%4+1        ;LOAD LOW ORDER WITH -1
(1)  013740  071427  177777             DIV     #-1,%4          ;DIVIDE BY #-1
(1)  013744                             MFPS    @#PSWORD        ;SAVE PS
(2)  013744  106737                     .WORD   106700!..C
(1)
(1)  013750  122737  000000  000432          CMPB    #0,@#PSWORD     ;IS PS = 0
(1)  013756  001403                           BEQ     .+10
(3)  013760  004767  003130                   JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
(3)                                                                   ;PS IS WRONG
(3)  013764  000336                           336
(1)
(1)  013766  022704  000001                   CMP     #1,%4           ;IS QUOTIENT = 1
(1)  013772  001403                           BEQ     .+10
(3)  013774  004767  003114                   JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
(3)                                                                   ;QUOTIENT IS WRONG
(3)  014000  000337                           337
(1)
(1)  014002  022705  000000                   CMP     #0,%4+1         ;IS REMAINDER = 0
(1)  014006  001403                           BEQ     .+10
(3)  014010  004767  003100                   JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
(3)                                                                   ;WRONG REMAINDER
(3)  014014  000340                           340
(1)  014016  010105                           MOV     R1,R5           ;RESTORE R5
(1)  014020  021527  000265                   CMP     (R5),#265
```

```
   (1)  014024  001403                          BEQ     .+10            ;IF IN WRONG SEQUENCE GO TO THE HLT
   (3)  014026  004767  003062                  JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
   (3)                                                                  ;TEST IS IN WRONG SEQUENCE
   (3)  014032  000341                          341
   (1)  014034  005215                          INC     (R5)
   (1)
  1496                                  ;*****************************************************************************
   (1)                                  ;TEST:266      DIV     25253 1 / #125252 = 100000      REM = 1      PS = 10
   (1)                                  ;*****************************************************************************
   (1)
   (1)  014036  010701                  TST266: SCOPE
   (1)  014040  012700  025253                  MOV     #25253,%0       ;LOAD HIGH ORDER WITH 25253
   (1)  014044  012701  000001                  MOV     #1,%0+1         ;LOAD LOW ORDER WITH 1
   (1)  014050  071027  125252                  DIV     #125252,%0      ;DIVIDE BY #125252
   (1)  014054                                  MFPS    @#PSWORD        ;SAVE PS
   (2)  014054  106737                          .WORD   106700!..C
   (1)
   (1)  014060  122737  000010  000432          CMPB    #10,@#PSWORD    ;IS PS = 10
   (1)  014066  001403                          BEQ     .+10
   (3)  014070  004767  003020                  JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
   (3)                                                                  ;PS IS WRONG
   (3)  014074  000342                          342
   (1)
   (1)  014076  022700  100000                  CMP     #100000,%0      ;IS QUOTIENT = 100000
   (1)  014102  001403                          BEQ     .+10
   (3)  014104  004767  003004                  JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
   (3)                                                                  ;QUOTIENT IS WRONG
   (3)  014110  000343                          343
   (1)
   (1)  014112  022701  000001                  CMP     #1,%0+1         ;IS REMAINDER = 1
   (1)  014116  001403                          BEQ     .+10
   (3)  014120  004767  002770                  JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
   (3)                                                                  ;WRONG REMAINDER
   (3)  014124  000344                          344
   (1)  014126  021527  000266                  CMP     (R5),#266
   (1)  014132  001403                          BEQ     .+10            ;IF IN WRONG SEQUENCE GO TO THE HLT
   (3)  014134  004767  002754                  JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
   (3)                                                                  ;TEST IS IN WRONG SEQUENCE
   (3)  014140  000345                          345
   (1)  014142  005215                          INC     (R5)
   (1)
  1497                                  ;*****************************************************************************
   (1)                                  ;TEST:267      DIV     37777 77777 / #77777 - 77777      REM = 77776      PS = 0
   (1)                                  ;*****************************************************************************
   (1)
   (1)  014144  010701                  TST267: SCOPE
   (1)  014146  012702  037777                  MOV     #37777,%2       ;LOAD HIGH ORDER WITH 37777
   (1)  014152  012703  077777                  MOV     #77777,%2+1     ;LOAD LOW ORDER WITH 77777
   (1)  014156  071227  077777                  DIV     #77777,%2       ;DIVIDE BY #77777
   (1)  014162                                  MFPS    @#PSWORD        ;SAVE PS
   (2)  014162  106737                          .WORD   106700!..C
   (1)
   (1)  014166  122737  000000  000432          CMPB    #0,@#PSWORD     ;IS PS = 0
   (1)  014174  001403                          BEQ     .+10
   (3)  014176  004767  002712                  JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
   (3)                                                                  ;PS IS WRONG
```

```
   (3)  014202  000346                          346
   (1)
   (1)  014204  022702  077777                  CMP     #77777,%2       ;IS QUOTIENT = 77777
   (1)  014210  001403                          BEQ     .+10
   (3)  014212  004767  002676                  JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
   (3)                                                                  ;QUOTIENT IS WRONG
   (3)  014216  000347                          347
   (1)
   (1)  014220  022703  077776                  CMP     #77776,%2+1     ;IS REMAINDER = 77776
   (1)  014224  001403                          BEQ     .+10
   (3)  014226  004767  002662                  JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
   (3)                                                                  ;WRONG REMAINDER
   (3)  014232  000350                          350
   (1)  014234  021527  000267                  CMP     (R5),#267
   (1)  014240  001403                          BEQ     .+10            ;IF IN WRONG SEQUENCE GO TO THE HLT
   (3)  014242  004767  002646                  JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
   (3)                                                                  ;TEST IS IN WRONG SEQUENCE
   (3)  014246  000351                          351
   (1)  014250  005215                          INC     (R5)
   (1)
  1498                              ;*****************************************************************************
   (1)                              ;TEST:270      DIV     0 100000 / #2 = 40000       REM = 0      PS   0
   (1)                              ;*****************************************************************************
   (1)
   (1)  014252  010701              TST270: SCOPE
   (1)  014254  010501                      MOV     R5,R1           ;SAVE R5
   (1)  014256  012704  000000              MOV     #0,%4           ;LOAD HIGH ORDER WITH 0
   (1)  014262  012705  100000              MOV     #100000,%4+1    ;LOAD LOW ORDER WITH 100000
   (1)  014266  071427  000002              DIV     #2,%4           ;DIVIDE BY #2
   (1)  014272                              MFPS    @#PSWORD        ;SAVE PS
   (2)  014272  106737                      .WORD   106700!..C
   (1)
   (1)  014276  122737  000000  000432      CMPB    #0,@#PSWORD     ;IS PS = 0
   (1)  014304  001403                      BEQ     .+10
   (3)  014306  004767  002602              JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
   (3)                                                              ;PS IS WRONG
   (3)  014312  000352                      352
   (1)
   (1)  014314  022704  040000              CMP     #40000,%4       ;IS QUOTIENT = 40000
   (1)  014320  001403                      BEQ     .+10
   (3)  014322  004767  002566              JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
   (3)                                                              ;QUOTIENT IS WRONG
   (3)  014326  000353                      353
   (1)
   (1)  014330  022705  000000              CMP     #0,%4+1         ;IS REMAINDER = 0
   (1)  014334  001403                      BEQ     .+10
   (3)  014336  004767  002552              JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
   (3)                                                              ;WRONG REMAINDER
   (3)  014342  000354                      354
   (1)  014344  010105                      MOV     R1,R5           ;RESTORE R5
   (1)  014346  021527  000270              CMP     (R5),#270
   (1)  014352  001403                      BEQ     .+10            ;IF IN WRONG SEQUENCE GO TO THE HLT
   (3)  014354  004767  002534              JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
   (3)                                                              ;TEST IS IN WRONG SEQUENCE
   (3)  014360  000355                      355
   (1)  014362  005215                      INC     (R5)
```

```
(1)
1499
(1)                     ;*****************************************************************************
(1)                     ;TEST:271      DIV     177777 77777 / #177776 = 40000      REM = 177777      PS = 0
(1)                     ;*****************************************************************************
(1)
(1)  014364  010701                     TST271: SCOPE
(1)  014366  012700  177777                     MOV     #177777,%0      ;LOAD HIGH ORDER WITH 177777
(1)  014372  012701  077777                     MOV     #77777,%0+1     ;LOAD LOW ORDER WITH 77777
(1)  014376  071027  177776                     DIV     #177776,%0      ;DIVIDE BY #177776
(1)  014402                                     MFPS    @#PSWORD        ;SAVE PS
(2)  014402  106737                             .WORD   106700!..C
(1)
(1)  014406  122737  000000  000432             CMPB    #0,@#PSWORD     ;IS PS = 0
(1)  014414  001403                             BEQ     .+10
(3)  014416  004767  002472                     JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
(3)                                                                     ;PS IS WRONG
(3)  014422  000356                             356
(1)
(1)  014424  022700  040000                     CMP     #40000,%0       ;IS QUOTIENT = 40000
(1)  014430  001403                             BEQ     .+10
(3)  014432  004767  002456                     JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
(3)                                                                     ;QUOTIENT IS WRONG
(3)  014436  000357                             357
(1)
(1)  014440  022701  177777                     CMP     #177777,%0+1    ;IS REMAINDER = 177777
(1)  014444  001403                             BEQ     .+10
(3)  014446  004767  002442                     JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
(3)                                                                     ;WRONG REMAINDER
(3)  014452  000360                             360
(1)  014454  021527  000271                     CMP     (R5),#271
(1)  014460  001403                             BEQ     .+10            ;IF IN WRONG SEQUENCE GO TO THE HLT
(3)  014462  004767  002426                     JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
(3)                                                                     ;TEST IS IN WRONG SEQUENCE
(3)  014466  000361                             361
(1)  014470  005205                             INC     (R5)
(1)
1500                    ;*****************************************************************************
(1)                     ;TEST:272      DIV     0 52525 / #52525 = 1        REM = 0       PS = 0
(1)                     ;*****************************************************************************
(1)
(1)  014472  010701                     TST272: SCOPE
(1)  014474  012702  000000                     MOV     #0,%2           ;LOAD HIGH ORDER WITH 0
(1)  014500  012703  052525                     MOV     #52525,%2+1     ;LOAD LOW ORDER WITH 52525
(1)  014504  071227  052525                     DIV     #52525,%2       ;DIVIDE BY #52525
(1)  014510                                     MFPS    @#PSWORD        ;SAVE PS
(2)  014510  106737                             .WORD   106700!..C
(1)
(1)  014514  122737  000000  000432             CMPB    #0,@#PSWORD     ;IS PS = 0
(1)  014522  001403                             BEQ     .+10
(3)  014524  004767  002364                     JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
(3)                                                                     ;PS IS WRONG
(3)  014530  000362                             362
(1)
(1)  014532  022702  000001                     CMP     #1,%2           ;IS QUOTIENT = 1
(1)  014536  001403                             BEQ     .+10
(3)  014540  004767  002350                     JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
```

```
(3)
(3)  014544  000363                          363
(1)
(1)  014546  022703  000000                  CMP     #0,%2+1         ;IS REMAINDER = 0
(1)  014552  001403                          BEQ     .+10
(3)  014554  004767  002334                  JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
(3)                                                                  ;WRONG REMAINDER
(3)  014560  000364                          364
(1)  014562  021527  000272                  CMP     (R5),#272
(1)  014566  001403                          BEQ     .+10            ;IF IN WRONG SEQUENCE GO TO THE HLT
(3)  014570  004767  002320                  JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
(3)                                                                  ;TEST IS IN WRONG SEQUENCE
(3)  014574  000365                          365
(1)  014576  005215                          INC     (R5)
(1)
1501                                    ;*****************************************************************************
(1)                                     ;TEST:273       DIV     0 77777 / #0 = DUMMY       REM = DUMMY      PS   3
(1)                                     ;*****************************************************************************
(1)
(1)  014600  010701                     TST273: SCOPE
(1)  014602  010501                             MOV     R5,R1           ;SAVE R5
(1)  014604  012704  000000                     MOV     #0,%4           ;LOAD HIGH ORDER WITH 0
(1)  014610  012705  077777                     MOV     #77777,%4+1     ;LOAD LOW ORDER WITH 77777
(1)  014614  071427  000000                     DIV     #0,%4           ;DIVIDE BY #0
(1)  014620                                     MFPS    @#PSWORD        ;SAVE PS
(2)  014620  106737                             .WORD   106700!..C
(1)  014624  042737  000014  000432             BIC     #14,@#PSWORD
(1)
(1)  014632  122737  000003  000432             CMPB    #3,@#PSWORD     ;IS PS = 3
(1)  014640  001403                             BEQ     .+10
(3)  014642  004767  002246                     JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
(3)                                                                     ;PS IS WRONG
(3)  014646  000366                             366
(1)
(1)  014650  010105                             MOV     R1,R5           ;RESTORE R5
(1)  014652  021527  000273                     CMP     (R5),#273
(1)  014656  001403                             BEQ     .+10            ;IF IN WRONG SEQUENCE GO TO THE HLT
(3)  014660  004767  002230                     JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
(3)                                                                     ;TEST IS IN WRONG SEQUENCE
(3)  014664  000367                             367
(1)  014666  005215                             INC     (R5)
(1)
1502                                    ;*****************************************************************************
(1)                                     ;TEST:274       DIV     77777 177777 / #2 = DUMMY       REM = DUMMY      PS = 2
(1)                                     ;*****************************************************************************
(1)
(1)  014670  010701                     TST274: SCOPE
(1)  014672  012700  077777                     MOV     #77777,%0       ;LOAD HIGH ORDER WITH 77777
(1)  014676  012701  177777                     MOV     #177777,%0+1    ;LOAD LOW ORDER WITH 177777
(1)  014702  071027  000002                     DIV     #2,%0           ;DIVIDE BY #2
(1)  014706                                     MFPS    @#PSWORD        ;SAVE PS
(2)  014706  106737                             .WORD   106700!..C
(1)  014712  042737  000014  000432             BIC     #14,@#PSWORD
(1)
(1)  014720  122737  000002  000432             CMPB    #2,@#PSWORD     ;IS PS = 2
(1)  014726  001403                             BEQ     .+10
```

```
   (3)  014730  004767  002160                JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
   (3)                                                                 ;PS IS WRONG
   (3)
   (3)  014734  000370                        370
   (1)
   (1)  014736  021527  000274                CMP     (R5),#274
   (1)  014742  001403                        BEQ     .+10            ;IF IN WRONG SEQUENCE GO TO THE HLT
   (3)  014744  004767  002144                JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
   (3)                                                                 ;TEST IS IN WRONG SEQUENCE
   (3)
   (3)  014750  000371                        371
   (1)  014752  005215                        INC     (R5)
   (1)
1503    014754  012702  000002                MOV     #2,%2
1504    014760  012703  000474                MOV     #S9,%3
1505    014764  012704  000476                MOV     #S10,%4
1506
1507                                ;*****************************************************************************
   (1)                              ;TEST:275      DIV     0 52525 / S9 = 25252       REM = 1      PS   0
   (1)                              ;*****************************************************************************
   (1)
   (1)  014770  010701                TST275: SCOPE
   (1)  014772  012700  000000                MOV     #0,%0           ;LOAD HIGH ORDER WITH 0
   (1)  014776  012701  052525                MOV     #52525,%0+1     ;LOAD LOW ORDER WITH 52525
   (1)  015002  071067  163466                DIV     S9,%0           ;DIVIDE BY S9
   (1)  015006                                MFPS    @#PSWORD        ;SAVE PS
   (2)  015006  106737                        .WORD   106700!..C
   (1)
   (1)  015012  122737  000000  000432        CMPB    #0,@#PSWORD     ;IS PS = 0
   (1)  015020  001403                        BEQ     .+10
   (3)  015022  004767  002066                JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
   (3)                                                                 ;PS IS WRONG
   (3)  015026  000372                        372
   (1)
   (1)  015030  022700  025252                CMP     #25252,%0       ;IS QUOTIENT = 25252
   (1)  015034  001403                        BEQ     .+10
   (3)  015036  004767  002052                JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
   (3)                                                                 ;QUOTIENT IS WRONG
   (3)  015042  000373                        373
   (1)
   (1)  015044  022701  000001                CMP     #1,%0+1         ;IS REMAINDER = 1
   (1)  015050  001403                        BEQ     .+10
   (3)  015052  004767  002036                JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
   (3)                                                                 ;WRONG REMAINDER
   (3)  015056  000374                        374
   (1)  015060  021527  000275                CMP     (R5),#275
   (1)  015064  001403                        BEQ     .+10            ;IF IN WRONG SEQUENCE GO TO THE HLT
   (3)  015066  004767  002022                JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
   (3)                                                                 ;TEST IS IN WRONG SEQUENCE
   (3)  015072  000375                        375
   (1)  015074  005215                        INC     (R5)
   (1)
1508                                ;*****************************************************************************
   (1)                              ;TEST:276      DIV     0 52525 / @S10 = 25252       REM = 1      PS = 0
   (1)                              ;*****************************************************************************
   (1)
   (1)  015076  010701                TST276: SCOPE
   (1)  015100  012700  000000                MOV     #0,%0           ;LOAD HIGH ORDER WITH 0
```

```
(1)  015104  012701  052525                MOV     #52525,%0+1     ;LOAD LOW ORDER WITH 52525
(1)  015110  071077  163362                DIV     @S10,%0         ;DIVIDE BY @S10
(1)  015114                                MFPS    @#PSWORD        ;SAVE PS
(2)  015114  106737                        .WORD   106700!..C
(1)
(1)  015120  122737  000000  000432        CMPB    #0,@#PSWORD     ;IS PS = 0
(1)  015126  001403                        BEQ     .+10
(3)  015130  004767  001760                JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
(3)                                                                ;PS IS WRONG
(3)  015134  000376                        376
(1)
(1)  015136  022700  025252                CMP     #25252,%0       ;IS QUOTIENT = 25252
(1)  015142  001403                        BEQ     .+10
(3)  015144  004767  001744                JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
(3)                                                                ;QUOTIENT IS WRONG
(3)  015150  000377                        377
(1)
(1)  015152  022701  000001                CMP     #1,%0+1         ;IS REMAINDER = 1
(1)  015156  001403                        BEQ     .+10
(3)  015160  004767  001730                JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
(3)                                                                ;WRONG REMAINDER
(3)  015164  000400                        400
(1)  015166  021527  000276                CMP     (R5),#276
(1)  015172  001403                        BEQ     .+10            ;IF IN WRONG SEQUENCE GO TO THE HLT
(3)  015174  004767  001714                JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
(3)                                                                ;TEST IS IN WRONG SEQUENCE
(3)  015200  000401                        401
(1)  015202  005215                        INC     (R5)
(1)
1509                            ;*****************************************************************************
(1)                             ;TEST:277      DIV     0 52525 / @#S9 = 25252       REM = 1      PS = 0
(1)                             ;*****************************************************************************
(1)
(1)  015204  010701            TST277: SCOPE
(1)  015206  012700  000000                MOV     #0,%0           ;LOAD HIGH ORDER WITH 0
(1)  015212  012701  052525                MOV     #52525,%0+1     ;LOAD LOW ORDER WITH 52525
(1)  015216  071037  000474                DIV     @#S9,%0         ;DIVIDE BY @#S9
(1)  015222                                MFPS    @#PSWORD        ;SAVE PS
(2)  015222  106737                        .WORD   106700!..C
(1)
(1)  015226  122737  000000  000432        CMPB    #0,@#PSWORD     ;IS PS = 0
(1)  015234  001403                        BEQ     .+10
(3)  015236  004767  001652                JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
(3)                                                                ;PS IS WRONG
(3)  015242  000402                        402
(1)
(1)  015244  022700  025252                CMP     #25252,%0       ;IS QUOTIENT = 25252
(1)  015250  001403                        BEQ     .+10
(3)  015252  004767  001636                JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
(3)                                                                ;QUOTIENT IS WRONG
(3)  015256  000403                        403
(1)
(1)  015260  022701  000001                CMP     #1,%0+1         ;IS REMAINDER = 1
(1)  015264  001403                        BEQ     .+10
(3)  015266  004767  001622                JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
(3)                                                                ;WRONG REMAINDER
```

```
(3)  015272  000404                        404
(1)  015274  021527  000277                CMP     (R5),#277
(1)  015300  001403                        BEQ     .+10            ;IF IN WRONG SEQUENCE GO TO THE HLT
(3)  015302  004767  001606                JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
(3)                                                                ;TEST IS IN WRONG SEQUENCE
(3)  015306  000405                        405
(1)  015310  005215                        INC     (R5)
(1)
1510                                ;*****************************************************************************
(1)                                 ;TEST:300      DIV     0 52525 / %2 = 25252       REM = 1      PS = 0
(1)                                 ;*****************************************************************************
(1)
(1)  015312  010701                TST300: SCOPE
(1)  015314  012700  000000                MOV     #0,%0           ;LOAD HIGH ORDER WITH 0
(1)  015320  012701  052525                MOV     #52525,%0+1     ;LOAD LOW ORDER WITH 52525
(1)  015324  071002                        DIV     %2,%0           ;DIVIDE BY %2
(1)  015326                                MFPS    @#PSWORD        ;SAVE PS
(2)  015326  106737                        .WORD   106700!..C
(1)
(1)  015332  122737  000000  000432        CMPB    #0,@#PSWORD     ;IS PS = 0
(1)  015340  001403                        BEQ     .+10
(3)  015342  004767  001546                JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
(3)                                                                ;PS IS WRONG
(3)  015346  000406                        406
(1)
(1)  015350  022700  025252                CMP     #25252,%0       ;IS QUOTIENT = 25252
(1)  015354  001403                        BEQ     .+10
(3)  015356  004767  001532                JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
(3)                                                                ;QUOTIENT IS WRONG
(3)  015362  000407                        407
(1)
(1)  015364  022701  000001                CMP     #1,%0+1         ;IS REMAINDER = 1
(1)  015370  001403                        BEQ     .+10
(3)  015372  004767  001516                JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
(3)                                                                ;WRONG REMAINDER
(3)  015376  000410                        410
(1)  015400  021527  000300                CMP     (R5),#300
(1)  015404  001403                        BEQ     .+10            ;IF IN WRONG SEQUENCE GO TO THE HLT
(3)  015406  004767  001502                JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
(3)                                                                ;TEST IS IN WRONG SEQUENCE
(3)  015412  000411                        411
(1)  015414  005215                        INC     (R5)
(1)
1511                                ;*****************************************************************************
(1)                                 ;TEST:301      DIV     0 52525 / (3)+ = 25252       REM = 1      PS = 0
(1)                                 ;*****************************************************************************
(1)
(1)  015416  010701                TST301: SCOPE
(1)  015420  012700  000000                MOV     #0,%0           ;LOAD HIGH ORDER WITH 0
(1)  015424  012701  052525                MOV     #52525,%0+1     ;LOAD LOW ORDER WITH 52525
(1)  015430  071023                        DIV     (3)+,%0         ;DIVIDE BY (3)+
(1)  015432                                MFPS    @#PSWORD        ;SAVE PS
(2)  015432  106737                        .WORD   106700!..C
(1)
(1)  015436  122737  000000  000432        CMPB    #0,@#PSWORD     ;IS PS - C
(1)  015444  001403                        BEQ     .+10
```

```
(3)  015446  004767  001442                JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
(3)                                                                 ;PS IS WRONG
(3)  015452  000412                        412
(1)
(1)  015454  022700  025252                CMP     #25252,%0       ;IS QUOTIENT = 25252
(1)  015460  001403                        BEQ     .+10
(3)  015462  004767  001426                JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
(3)                                                                 ;QUOTIENT IS WRONG
(3)  015466  000413                        413
(1)
(1)  015470  022701  000001                CMP     #1,%0+1         ;IS REMAINDER = 1
(1)  015474  001403                        BEQ     .+10
(3)  015476  004767  001412                JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
(3)                                                                 ;WRONG REMAINDER
(3)  015502  000414                        414
(1)  015504  021527  000301                CMP     (R5),#301
(1)  015510  001403                        BEQ     .+10            ;IF IN WRONG SEQUENCE GO TO THE HLT
(3)  015512  004767  001376                JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
(3)                                                                 ;TEST IS IN WRONG SEQUENCE
(3)  015516  000415                        415
(1)  015520  005215                        INC     (R5)
(1)
1512
(1)                                ;*****************************************************************************
(1)                                ;TEST:302      DIV     0 52525 / -(3) = 25252       REM   1      PS = 0
(1)                                ;*****************************************************************************
(1)
(1)  015522  010701                TST302: SCOPE
(1)  015524  012700  000000                MOV     #0,%0           ;LOAD HIGH ORDER WITH 0
(1)  015530  012701  052525                MOV     #52525,%0+1     ;LOAD LOW ORDER WITH 52525
(1)  015534  071043                        DIV     -(3),%0         ;DIVIDE BY -(3)
(1)  015536                        '       MFPS    @#PSWORD        ;SAVE PS
(2)  015536  106737                        .WORD   106700!..C
(1)
(1)  015542  122737  000000  000432        CMPB    #0,@#PSWORD     ;IS PS = 0
(1)  015550  001403                        BEQ     .+10
(3)  015552  004767  001336                JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
(3)                                                                 ;PS IS WRONG
(3)  015556  000416                        416
(1)
(1)  015560  022700  025252                CMP     #25252,%0       ;IS QUOTIENT = 25252
(1)  015564  001403                        BEQ     .+10
(3)  015566  004767  001322                JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
(3)                                                                 ;QUOTIENT IS WRONG
(3)  015572  000417                        417
(1)
(1)  015574  022701  000001                CMP     #1,%0+1         ;IS REMAINDER = 1
(1)  015600  001403                        BEQ     .+10
(3)  015602  004767  001306                JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
(3)                                                                 ;WRONG REMAINDER
(3)  015606  000420                        420
(1)  015610  021527  000302                CMP     (R5),#302
(1)  015614  001403                        BEQ     .+10            ;IF IN WRONG SEQUENCE GO TO THE HLT
(3)  015616  004767  001272                JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
(3)                                                                 ;TEST IS IN WRONG SEQUENCE
(3)  015622  000421                        421
(1)  015624  005215                        INC     (R5)
```

```
                                ;*****************************************************************************
                                ;TEST:303      DIV     0 52525 / 2(4) = 25252       REM   1      PS = 0
                                ;*****************************************************************************

                        TST303: SCOPE
015626  010701                  MOV     #0,%0           ;LOAD HIGH ORDER WITH 0
015630  012700  000000          MOV     #52525,%0+1     ;LOAD LOW ORDER WITH 52525
015634  012701  052525          DIV     2(4),%0         ;DIVIDE BY 2(4)
015640  071064  000002          MFPS    @#PSWORD        ;SAVE PS
015644                          .WORD   106700!..C
015644  106737
                                CMPB    #0,@#PSWORD     ;IS PS = 0
015650  122737  000000  000432  BEQ     .+10
015656  001403                  JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
015660  004767  001230          ;PS IS WRONG
                                422
015664  000422
                                CMP     #25252,%0       ;IS QUOTIENT = 25252
015666  022700  025252          BEQ     .+10
015672  001403                  JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
015674  004767  001214          ;QUOTIENT IS WRONG
                                423
015700  000423
                                CMP     #1,%0+1         ;IS REMAINDER = 1
015702  022701  000001          BEQ     .+10
015706  001403                  JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH.HALT ROUTINE
015710  004767  001200          ;WRONG REMAINDER
                                424
015714  000424
                                CMP     (R5),#303
015716  021527  000303          BEQ     .+10            ;IF IN WRONG SEQUENCE GO TO THE HLT
015722  001403                  JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
015724  004767  001164          ;TEST IS IN WRONG SEQUENCE
                                425
015730  000425
                                INC     (R5)
015732  005215

                                ;*****************************************************************************
                                ;TEST:304      DIV     0 52525 / @(4) = 25252       REM - 1      PS - 0
                                ;*****************************************************************************

                        TST304: SCOPE
015734  010701                  MOV     #0,%0           ;LOAD HIGH ORDER WITH 0
015736  012700  000000          MOV     #52525,%0+1     ;LOAD LOW ORDER WITH 52525
015742  012701  052525          DIV     @(4),%0         ;DIVIDE BY @(4)
015746  071074  000000          MFPS    @#PSWORD        ;SAVE PS
015752                          .WORD   106700!..C
015752  106737
                                CMPB    #0,@#PSWORD     ;IS PS - 0
015756  122737  000000  000432  BEQ     .+10
015764  001403                  JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
015766  004767  001122          ;PS IS WRONG
                                426
015772  000426
                                CMP     #25252,%0       ;IS QUOTIENT = 25252
015774  022700  025252          BEQ     .+10
016000  001403                  JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
016002  004767  001106
```

```
(3)                                                          ;QUOTIENT IS WRONG
(3)  016006 000427                       427
(1)
(1)  016010 022701 000001                CMP     #1,%0+1     ;IS REMAINDER - 1
(1)  016014 001403                       BEQ     .+10
(3)  016016 004767 001072                JSR     PC,$HLT     ;SEEN AN ERROR, GO TO TH HALT ROUTINE
(3)                                                          ;WRONG REMAINDER
(3)  016022 000430                       430
(1)  016024 021527 000304                CMP     (R5),#304
(1)  016030 001403                       BEQ     .+10        ;IF IN WRONG SEQUENCE GO TO THE HLT
(3)  016032 004767 001056                JSR     PC,$HLT     ;SEEN AN ERROR, GO TO TH HALT ROUTINE
(3)                                                          ;TEST IS IN WRONG SEQUENCE
(3)  016036 000431                       431
(1)  016040 005215                       INC     (R5)
(1)
1515                             ;*************************************************************************
(1)                              ;TEST:305      DIV     0 52525 / @(4)+ = 25252       REM = 1      PS - 0
(1)                              ;*************************************************************************
(1)
(1)  016042 010701               TST305: SCOPE
(1)  016044 012700 000000                MOV     #0,%0           ;LOAD HIGH ORDER WITH 0
(1)  016050 012701 052525                MOV     #52525,%0+1     ;LOAD LOW ORDER WITH 52525
(1)  016054 071034                       DIV     @(4)+,%0        ;DIVIDE BY @(4)+
(1)  016056                              MFPS    @#PSWORD        ;SAVE PS
(2)  016056 106737                       .WORD   106700!..C
(1)
(1)  016062 122737 000000 000432         CMPB    #0,@#PSWORD     ;IS PS = 0
(1)  016070 001403                       BEQ     .+10
(3)  016072 004767 001016                JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
(3)                                                              ;PS IS WRONG
(3)  016076 000432                       432
(1)
(1)  016100 022700 025252                CMP     #25252,%0       ;IS QUOTIENT = 25252
(1)  016104 001403                       BEQ     .+10
(3)  016106 004767 001002                JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
(3)                                                              ;QUOTIENT IS WRONG
(3)  016112 000433                       433
(1)
(1)  016114 022701 000001                CMP     #1,%0+1         ;IS REMAINDER = 1
(1)  016120 001403                       BEQ     .+10
(3)  016122 004767 000766                JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
(3)                                                              ;WRONG REMAINDER
(3)  016126 000434                       434
(1)  016130 021527 000305                CMP     (R5),#305
(1)  016134 001403                       BEQ     .+10            ;IF IN WRONG SEQUENCE GO TO THE HLT
(3)  016136 004767 000752                JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
(3)                                                              ;TEST IS IN WRONG SEQUENCE
(3)  016142 000435                       435
(1)  016144 005215                       INC     (R5)
(1)
1516                             ;*************************************************************************
(1)                              ;TEST:306      DIV     0 52525 / @-(4) = 25252       REM - 1      PS = 0
(1)                              ;*************************************************************************
(1)
(1)  016146 010701               TST306: SCOPE
(1)  016150 012700 000000                MOV     #0,%0           ;LOAD HIGH ORDER WITH 0
```

```
(1)  016154  012701  052525                MOV     #52525,%0+1     ;LOAD LOW ORDER WITH 52525
(1)  016160  071054                        DIV     @-(4),%0        ;DIVIDE BY @-(4)
(1)  016162                                MFPS    @#PSWORD        ;SAVE PS
(2)  016162  106737                        .WORD   106700!..C
(1)
(1)  016166  122737  000000  000432        CMPB    #0,@#PSWORD     ;IS PS = 0
(1)  016174  001403                        BEQ     .+10
(3)  016176  004767  000712                JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
(3)                                                                ;PS IS WRONG
(3)  016202  000436                        436
(1)
(1)  016204  022700  025252                CMP     #25252,%0       ;IS QUOTIENT = 25252
(1)  016210  001403                        BEQ     .+10
(3)  016212  004767  000676                JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
(3)                                                                ;QUOTIENT IS WRONG
(3)  016216  000437                        437
(1)
(1)  016220  022701  000001                CMP     #1,%0+1         ;IS REMAINDER = 1
(1)  016224  001403                        BEQ     .+10
(3)  016226  004767  000662                JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
(3)                                                                ;WRONG REMAINDER
(3)  016232  000440                        440
(1)  016234  021527  000306                CMP     (R5),#306
(1)  016240  001403                        BEQ     .+10            ;IF IN WRONG SEQUENCE GO TO THE HLT
(3)  016242  004767  000646                JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
(3)                                                                ;TEST IS IN WRONG SEQUENCE
(3)  016246  000441                        441
(1)  016250  005215                        INC     (R5)
(1)
1520                            ;;*****************************************************************
 (1)                            ;TEST:307       TEST THAT EIS ABORTS PROPERLY WHEN INTERUPTED
 (2)                            ;;*****************************************************************
(1)
(1)  016252  132737  000040  000421  TST307: BITB    #40,@#$ENVM     ;IF TYPE OUTS HAS BEEN SUPPRESSED
(1)  016260  001100                        BNE     EASH+2          ;THEN SKIP THIS TEST
(1)  016262  013702  000502                MOV     @#TTYOUT,R2
(1)  016266  012722  016340                MOV     #R^A307,(R2)+   ;SET INTERUPT VECTOR TO RTA307
(1)  016272  012712  000340                MOV     #340,(R2)       ;AND THE INTERUPT PSW AS 340
(1)  016276                                MTPS    #0
(2)  016276  106427                        .WORD   106400!..C
(1)  016302  012737  000030  000434        MOV     #30,@#TEMP1     ;PREPARE TO EXECUTE THIS SUB TEST 30 TIMES
(1)  016310  005004                        CLR     R4
(1)  016312  112777  000015  162164        MOVB    #15,@$TPB       ;OUT PUT A ''CR''
(1)  016320  112777  000100  162160        MOVB    #100,@$TPS      ;ENABLE TTY INTERUPT
(1)  016326  052704  000001        RTASH:  BIS     #1,R4           ;PLACE A 1 IN R4
(1)  016332  072427  000020        ASHA:   ASH     #16.,R4         ;SHIFT R4 FOR 16 TIMES
(1)  016336  000773                        BR      RTASH           ;STAY IN THE LOOP UNTIL INTERUPTED
(1)  016340  105077  162142        RTA307: CLRB    @$TPS           ;CLEAR TTY INTERUPT
(1)  016344  022716  016332                CMP     #ASHA,(SP)      ;IS THE RETURN ADDRESS = ASHA
(1)  016350  001415                        BEQ     4$              ;IF SO THEN GO TO 4$
(1)  016352  012777  000015  162124  1$:   MOV     #15,@$TPB       ;OTHERWISE OUT PUT A ''CR''
(1)  016360  105777  162122        2$:   TSTB    @$TPS           ;LOOP HERE UNTIL DONE COMES ON
(1)  016364  100375                        BPL     2$
(1)  016366  012777  000015  162110        MOV     #15,@$TPB       ;OUT PUT ANOTHER ''CR''
(1)  016374  012777  000100  162104        MOV     #100,@$TPS      ;ENABLE TTY INTERUPT
(1)  016402  000002                        RTI
```

```
(1)  016404  020427  000001          4$:     CMP     R4,#1           ;CHECK R4 TO CONTAIN PROPER DATA
(1)  016410  001403                          BEQ     6$
(3)  016412  004767  000476                  JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
(3)                                                                  ;R4 WAS CHANGED DURING THE EXECUTION OF
(3)  016416  000442                          442                     ;THE INSTRUCTION
(1)
(1)  016420  032766  000360  000002  6$:     BIT     #360,2(SP)      ;CHECK THE PSW BEFORE INTERUPT
(1)  016426  001406                          BEQ     8$
(3)  016430  004767  000460                  JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
(3)                                                                  ;PSW IS WRONG
(3)  016434  000443                          443
(1)  016436  042766  000020  000002          BIC     #20,2(SP)       ;CLEAR THE T-BIT IF IT IS SE
(1)  016444  005337  000434          8$:     DEC     @#TEMP1
(1)  016450  001340                          BNE     1$              ;IF THE SUB TEST HAS BEEN EXECUTED 30 TIMES
(1)                                                                  ;THEN GO TO THE END OF THE TEST
(1)
(1)  016452  010277  162024                  MOV     R2,@TTYOUT      ;RESTORE TTY INTERUPT VECTOR
(1)  016456  005012                          CLR     (R2)
(1)  016460  022626                  EASH:   CMP     (SP)+,(SP)+     ;RESTORE THE STACK POINTER
(1)  016462  021527  000307                  CMP     (R5),#307       ;CHECK THE TEST NUMBER
(1)  016466  001403                          BEQ     .+10
(3)  016470  004767  000420                  JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
(3)                                                                  ;TEST IS IN WRONG SEQUENCE
(3)  016474  000444                          444
(1)  016476  005215                          INC     (R5)
1521                                ;;*****************************************************************
(1)                                 ;TEST:310       TEST THAT EIS ABORTS PROPERLY WHEN INTERUPTED
(2)                                 ;;*****************************************************************
(1)
(1)  016500  132737  000040  000421  TST310: BITB    #40,@#$ENVM     ;IF TYPE OUTS HAS BEEN SUPPRESSED
(1)  016506  001116                          BNE     EMUL+2          ;THEN SKIP THIS TEST
(1)  016510  013702  000502                  MOV     @#TTYOUT,R2
(1)  016514  012722  016572                  MOV     #RTA310,(R2)+   ;SET INTERUPT VECTOR TO RTA310
(1)  016520  012712  000340                  MOV     #340,(R2)       ;AND THE INTERUPT PSW AS 340
(1)  016524                                  MTPS    #10
(2)  016524  106427                          .WORD   106400!..C
(1)  016530  012737  000030  000434          MOV     #30,@#TEMP1     ;PREPARE TO EXECUTE THIS SUB TEST 30 TIMES
(1)  016536  012704  077777                  MOV     #77777,R4       ;PLACE THE MULTIPLIER IN R4
(1)  016542  012700  177777                  MOV     #-1,R0          ;AND THE MULTIPLICAND IN R0
(1)  016546  012701  100001                  MOV     #100001,R1      ;AND THE LOWER PART OF THE RESULT IN R1
(1)  016552  112777  000015  161724          MOVB    #15,@$TPB       ;OUT PUT A "CR"
(1)  016560  112777  000100  161720          MOVB    #100,@$TPS      ;ENABLE TTY INTERUPT
(1)  016566  070004                  RTMUL:  MUL     R4,R0           ;MULTIPLY R0 BY R4
(1)  016570  000776                          BR      RTMUL           ;STAY IN THE LOOP UNTIL INTERUPTED
(1)  016572  105077  161710          RTA310: CLRB    @$TPS           ;CLEAR TTY INTERUPT
(1)  016576  022716  016566                  CMP     #RTMUL,(SP)     ;IS THE RETURN ADDRESS - RTMUL
(1)  016602  001415                          BEQ     4$              ;IF SO THEN GO TO 4$
(1)  016604  012777  000015  161672  1$:     MOV     #15,@$TPB       ;OTHERWISE OUT PUT A "CR"
(1)  016612  105777  161670          2$:     TSTB    @$TPS           ;LOOP HERE UNTIL DONE COMES ON
(1)  016616  100375                          BPL     2$
(1)  016620  012777  000015  161656          MOV     #15,@$TPB       ;OUT PUT ANOTHER "CR"
(1)  016626  012777  000100  161652          MOV     #100,@$TPS      ;ENABLE TTY INTERUPT
(1)  016634  000002                          RTI
(1)  016636  020427  077777          4$:     CMP     R4,#77777       ;CHECK R4 TO CONTAIN PROPER DATA
(1)  016642  001403                          BEQ     6$
(3)  016644  004767  000244                  JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
```

```
(3)                                                   ;R4 WAS CHANGED DURING THE EXECUTION OF
(3)  016650  000445                   445
(1)                                                   ;THE INSTRUCTION
(1)  016652  020027  177777      6$:  CMP     R0,#-1         ;CHECK R0 TO CONTAIN PROPER DATA
(1)  016656  001403                   BEQ     8$
(3)  016660  004767  000230           JSR     PC,$HLT        ;SEEN AN ERROR, GO TO TH HALT ROUTINE
(3)                                                   ;R0 CONTAINS WRONG VALUE
(3)  016664  000446                   446
(1)  016666  020127  100001      8$:  CMP     R1,#100001     ;CHECK R1 FOR THE PROPER DATA
(1)  016672  001403                   BEQ     10$
(3)  016674  004767  000214           JSR     PC,$HLT        ;SEEN AN ERROR, GO TO TH HALT ROUTINE
(3)                                                   ;R1 CONTAINS WRONG VALUE
(3)  016700  000447                   447
(1)  016702  032766  000360  000002  10$:  BIT  #360,2(SP)  ;CHECK THE PSW BEFORE INTERUPT
(1)  016710  001406                   BEQ     12$
(3)  016712  004767  000176           JSR     PC,$HLT        ;SEEN AN ERROR, GO TO TH HALT ROUTINE
(3)                                                   ;PSW IS WRONG
(3)  016716  000450                   450
(1)  016720  042766  000020  000002        BIC  #20,2(SP)   ;CLEAR THE T-BIT IF IT IS SET
(1)  016726  005337  000434      12$: DEC     @#TEMP1
(1)  016732  001324                   BNE     1$             ;IF THE SUB TEST HAS BEEN EXECUTED 30 TIMES
(1)                                                   ;THEN GO TO THE END OF THE TEST
(1)
(1)  016734  010277  161542           MOV     R2,@TTYOUT     ;RESTORE TTY INTERUPT VECTOR
(1)  016740  005012                   CLR     (R2)
(1)  016742  022626             EMUL: CMP     (SP)+,(SP)+    ;RESTORE THE STACK POINTER
(1)  016744  021527  000310           CMP     (R5),#310      ;CHECK THE TEST NUMBER
(1)  016750  001403                   BEQ     .+10
(3)  016752  004767  000136           JSR     PC,$HLT        ;SEEN AN ERROR, GO TO TH HALT ROUTINE
(3)                                                   ;TEST IS IN WRONG SEQUENCE
(3)  016756  000451                   451
(1)  016760  005215                   INC     (R5)
                                .SBTTL  END OF PASS ROUTINE
(1)
(2)                             ;;*****************************************************************
(1)                             ;*INCREMENT THE PASS NUMBER ($PASS)
(1)                             ;*TYPE "END PASS"
(1)                             ;*IF THERES A MONITOR GO TO IT
(1)                             ;*IF THERE ISN'T JUMP TO BEGIN
(1)                             ;*IF IT IS DESIRED TO HAVE A BELL INDICATE THE "END OF PASS" LOCATION
(1)                             ;*$ENDMG CAN BE CHANGED TO 7.
(1)
(1)  016762                     $EOP:
(1)  016762  010701                     SCOPE
(1)  016764  005267  161416             INC     $PASS          ;;INCREMENT THE PASS NUMBER
(1)  016770  042767  100000  161410     BIC     #100000,$PASS  ;;DON'T ALLOW A NEG. NUMBER
(1)  016776  005327                     DEC     (PC)+          ;;LOOP?
(1)  017000  000001             $EOPCT: .WORD   1
(1)  017002  003017                     BGT     $DOAGN         ;;YES
(1)  017004  012737                     MOV     (PC)+,@(PC)+   ;;RESTORE COUNTER
(1)  017006  000001             $ENDCT: .WORD   1
(1)  017010  017000                     $EOPCT
(1)  017012  000004  017051             TYPE    ,$ENDMG        ;;TYPE "END PASS"
(1)  017016  000004  017046             TYPE    ,$ENULL        ;;TYPE A NULL CHARACTER
(1)  017022  013700  000042     $GET42: MOV     @#42,R0        ;;GET MONITOR ADDRESS
(1)  017026  001405                     BEQ     $DOAGN         ;;BRANCH IF NO MONITOR
```

```
(1)  017030  000005                            RESET                   ;;CLEAR THE WORLD
(1)  017032  004710                   $ENDAD:  JSR     PC,(R0)         ;;GO TO MONITOR
(1)  017034  000240                            NOP                     ;;SAVE ROOM
(1)  017036  000240                            NOP                     ;;FOR
(1)  017040  000240                            NOP                     ;;ACT11
(1)  017042                           $DOAGN:
(1)  017042  000137                            JMP     @(PC)+          ;;RETURN
(1)  017044  000600                   $RTNAD:  .WORD   BEGIN
(1)  017046     377     377     000   $ENULL:  .BYTE   -1,-1,0         ;;NULL CHARACTER STRING
(1)  017051     015  042412  042116   $ENDMG:  .ASCIZ  <15><12>/END PASS/
(1)  017056  050040  051501  000123

     017006  000004                   ENDCT:   4



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

                                      .SBTTL  POWER FAIL ROUTINE

     017064  012737  017074  000024   $PWRDN:  MOV     #$PWRUP,@#24
     017072  000000                            HALT

     017074  012706  000600           $PWRUP:  MOV     #BEGIN,SP       ;RESTORE THE SP
     017100  012737  017064  000024            MOV     #$PWRDN,@#24
     017106  000004  000516                    TYPE    ,POWER          ;GO AND TYPE ''POWER''
     017112  000753                            BR      $DOAGN

                                      ;*       HALT ROUTINE
                                      ;*       ------------
                                      ;*
                                      ;*
                                      ;*       PROGRAM COMES HERE ON ENCOUNTERING ANY ERROR
                                      ;*

     017114  017637  000000  000402   $HLT:    MOV     @(SP),@#$FATAL  ;PLACE THE ERROR NUMBER AT LOCATION $FATAL
     017122  032737  020000  000422            BIT     #20000,@#$SWREG ;HAS THE OPERATOR ASKED TO SUPRESS ERROR TYPE OUTS
     017130  001046                            BNE     6$
     017132  000004  000510                    TYPE    ,$CRLF          ;GO AND TYPE A CR, LF, FOLLOWED BY 3 SPACES
     017136  010046                            MOV     R0,-(SP)        ;SAVE R0
     017140  112767  000002  161303            MOVB    #2,$TPCNT       ;ALLOW TYPE OUTS OF PC AND ERROR NUMBER
     017146  016600  000002                    MOV     2(SP),R0        ;BRING THE RETURN PC IN R0
     017152  162700  000004                    SUB     #4,R0
     017156  112737  000006  000450   2$:      MOVB    #6,@#TYPCNT     ;ALLOW TYPE OUT OF 6 DIGITS
     017164  005046                            CLR     -(SP)
     017166  000241                   4$:      CLC
     017170  006100                            ROL     R0
     017172  006116                            ROL     (SP)            ;BRING THE C BIT FROM R0 IN (SP)
     017174  052716  000060                    BIS     #60,(SP)        ;PREPARE TO TYPE IT OUT
     017200  004767  000130                    JSR     PC,$TPCHR       ;AND GO TO OUT PUT A CHARACTER
     017204  005016                            CLR     (SP)
     017206  006100                            ROL     R0
     017210  006116                            ROL     (SP)
     017212  006100                            ROL     R0
     017214  006116                            ROL     (SP)
     017216  105367  161226                    DECB    TYPCNT          ;HAS ALL THE SIX CHARACTERS BEEN TYPED ?
     017222  001361                            BNE     4$              ;IF NOT THEN REPEAT FROM 4$
```

```
1578  017224  005726                          TST     (SP)+           ;RESTORE STACK POINTER
1579  017226  017600  000002                  MOV     @2(SP),R0       ;PREPARE TO OUT PUT THE ERROR NUMBER
1580  017232  000004  000512                  TYPE    ,$CRLF+2        ;GO AND TYPE 3 SPACES
1581  017236  105367  161207                  DECB    $TPCNT          ;IF BOTH PC AND ERROR NUMBER HAS NOT BEEN
1582  017242  001345                          BNE     2$              ;REPORTED THEN REPEAT FROM 2$
1583  017244  012600                          MOV     (SP)+,R0        ;RESTORE R0
1584  017246  105767  161146          6$:     TSTB    $ENV            ;IF WE ARE NOT UNDER APT. THEN GO TO
1585  017252  001403                          BEQ     8$              ;8$
1586  017254  005237  000400                  INC     @#$MSGTY        ;OTHERWISE INFORM APT. ABOUT SEEING THE ERROR
1587  017260  000777                          BR      .               ;AND LOOP
1588  017262  005737  000422          8$:     TST     @#$SWREG        ;IS IT REQUIRED TO HALT ON ERROR ?
1589  017266  100001                          BPL     10$             ;IF NOT THEN GO TO 10$
1590  017270  000000                          HALT
1591  017272  062716  000002          10$:    ADD     #2,(SP)         ;ADJUST THE RETURN ADDRESS
1592  017276  000207                          RTS     PC              ;AND RETURN
1596
1597                                  ;*      TYPE OUT ROUTINE
1598                                  ;*      ----------------
1599                                  ;*
1600                                  ;*
1601                                  ;*      THIS ROUTINE IS USED TO TYPE ASCIZ MESSAGES
1602                                  ;*
1603
1604  017300  010046          $TYPE:  MOV     R0,-(SP)        ;SAVE R0
1605  017302  017600  000002                  MOV     @2(SP),R0       ;GET THE ADDRESS OF THE ASSCIZ STRING
1606  017306  112046          2$:     MOVB    (R0)+,-(SP)     ;PUSH THE CHARACTER TO BE TYPED ONTO STACK
1607  017310  001005                          BNE     4$              ;BRANCH IF IT IS NOT THE TERMINATOR
1608  017312  005726                          TST     (SP)+
1609  017314  012600                          MOV     (SP)+,R0        ;OTHERWISE RESTORE THE STACK AND R0
1610  017316  062716  000002          3$:     ADD     #2,(SP)         ;ADJUST THE RETURN PC
1611  017322  000002                          RTI                     ;AND RETURN
1612
1613  017324  004767  000004          4$:     JSR     PC,$TPCHR       ;GO TO TYPE A CHARACTER
1614  017330  005726                          TST     (SP)+           ;RESTORE THE STACK POINTER
1615  017332  000765                          BR      2$              ;AND RETURN TO 2$
1616
1617  017334  132737  000040  000421  $TPCHR: BITB    #40,@#$ENVM     ;HAS THE CONSOLE OUTPUTS BEEN SUPPRESSED?
1618  017342  001006                          BNE     4$              ;IF SO THEN RETURN FROM THE SUBROUTINE VIA 4$
1619  017344  105777  161136          2$:     TSTB    @$TPS           ;IS THE PRINTER AVAILABLE?
1620  017350  100375                          BPL     2$              ;IF NOT THEN LOOP HERE
1621  017352  116677  000002  161124          MOVB    2(SP),@$TPB     ;OUT PUT THE CHARACTER
1622  017360  000207          4$:     RTS     PC
1623          000001          .END
```

```
A      - 017064          1525#   1530
ABASE  = 000000           364
ACDW1  = 000000           364
ACDW2  = 000000           364
ACPUOP= 000000            364
ADDW0  = 000000           364
ADDW1  = 000000           364
ADDW10= 000000            364
ADDW11= 000000            364
ADDW12= 000000            364
ADDW13= 000000            364
ADDW14= 000000            364
ADDW15= 000000            364
ADDW2  = 000000           364
ADDW3  = 000000           364
ADDW4  = 000000           364
ADDW5  = 000000           364
ADDW6  = 000000           364
ADDW7  = 000000           364
ADDW8  = 000000           364
ADDW9  = 000000           364
ADEVCT= 000000            364
ADEVM  = 000000           364
AENV   = 000000           364
AENVM  = 000000           364
AFATAL= 000000            364
AMADR1= 000000            364
AMADR2= 000000            364
AMADR3= 000000            364
AMADR4= 000000            364
AMAMS1= 000000            364
AMAMS2= 000000            364
AMAMS3= 000000            364
AMAMS4= 000000            364
AMSGAD= 000000            364
AMSGLG= 000000            364
AMSGTY= 000000            364
AMTYP1= 000000            364
AMTYP2= 000000            364
AMTYP3= 000000            364
AMTYP4= 000000            364
APASS  = 000000           364
APRIOR= 000000            364
ASHA     016332         1520#
ASWREG= 000000            364
ATESTN= 000000            364
AUNIT  = 000000           364
AUSWR  = 000000           364
AVECT1= 000000            364
AVECT2= 000000            364
BEGIN    000600           722     726#    729     1522    1541
COUNT    000430           369#    370     727*    784*    788     820*    824     855*    859     890*    894     926*    931
                          963*    967     1077*   1106*   1115    1149*   1157    1192*   1200

DUMMY  = 000000           344#    1315    1316    1317    1318    1319    1320    1321
EASH     016460         1520#
EMUL     016742         1521#
```

```
ENDCT   017006  1528#
ENT176  005030  1302    1309#
ENT51   002422  1040    1044#
ERRNM = 000452   345#    783#    787#    819#    823#    854#    858#    889#    893#    925#    929#    962#    966#
                1046#   1052#   1053#   1054#   1055#   1056#   1057#   1058#   1059#   1060#   1061#   1105#   1109#
                1113#   1117#   1148#   1152#   1156#   1159#   1191#   1195#   1199#   1202#   1311#   1315#   1316#
                1317#   1318#   1319#   1320#   1321#   1322#   1328#   1329#   1330#   1331#   1332#   1333#   1334#
                1335#   1336#   1337#   1445#   1446#   1447#   1448#   1449#   1450#   1451#   1452#   1453#   1454#
                1455#   1456#   1457#   1458#   1459#   1460#   1461#   1462#   1467#   1468#   1469#   1470#   1471#
                1472#   1473#   1474#   1475#   1476#   1486#   1487#   1488#   1489#   1490#   1491#   1492#   1493#
                1494#   1495#   1496#   1497#   1498#   1499#   1500#   1501#   1502#   1507#   1508#   1509#   1510#
                1511#   1512#   1513#   1514#   1515#   1516#   1520#   1521#
F       = 000063 346#   1052#   1053#   1054#   1055#   1056#   1057#   1058#   1059#   1060#   1061#
N       = 000311 347#   1315#   1316#   1317#   1318#   1319#   1320#   1321#   1322#   1328#   1329#   1330#   1331#
                1332#   1333#   1334#   1335#   1336#   1337#   1445#   1446#   1447#   1448#   1449#   1450#   1451#
                1452#   1453#   1454#   1455#   1456#   1457#   1458#   1459#   1460#   1461#   1462#   1467#   1468#
                1469#   1470#   1471#   1472#   1473#   1474#   1475#   1476#   1486#   1487#   1488#   1489#   1490#
                1491#   1492#   1493#   1494#   1495#   1496#   1497#   1498#   1499#   1500#   1501#   1502#   1507#
                 08#   1509#   1510#   1511#   1512#   1513#   1514#   1515#   1516#   1520#   1521#
NEGAT   002022   800     835     870     905     942     978     982#
POWER   000516   401#   1543
PSWORD  000432   371#    372     777*    781     813*    817     848*    852     883*    887     919*    923     956*
                 960    1052*   1053*   1054*   1055*   1056*   1057*   1058*   1059*   1060*   1061*   1099*   1103
                1142*   1146    1185*   1189    1315*   1316*   1317*   1318*   1319*   1320*   1321*   1322*   1328*
                1329*   1330*   1331*   1332*   1333*   1334*   1335*   1336*   1337*   1445*   1446*   1447*   1448*
                1449*   1450*   1451*   1452*   1453*   1454*   1455*   1456*   1457*   1458*   1459*   1460*   1461*
                1462*   1467*   1468*   1469*   1470*   1471*   1472*   1473*   1474*   1475*   1476*   1486*   1487*
                1488*   1489*   1490*   1491*   1492*   1493*   1494*   1495*   1496*   1497*   1498*   1499*   1500*
                1501*   1502*   1507*   1508*   1509*   1510*   1511*   1512*   1513*   1514*   1515*   1516*
REG01   003444  1085#   1215
REG1    001042   799     802#
REG2    001204   834     837#
REG23   003646  1126    1129#
REG3    001346   869     872#
REG4    001506   904     907#
REG45   004044  1168    1171#
REG5    001652   941     944#
RESTRT  000222   722#
RITSH   004252  1127    1169    1213    1216#
RTASH   016326  1520#
RTA307  016340  1520#
RTA310  016572  1521#
RTMUL   016566  1521#
SCOPE = 010701   350#   1445    1446    1447    1448    1449    1450    1451    1452    1453    1454    1455    1456
                1457    1458    1459    1460    1461    1462    1467    1468    1469    1470    1471    1472    1473
                1474    1475    1476    1486    1487    1488    1489    1490    1491    1492    1493    1494    1495
                1496    1497    1498    1499    1500    1501    1502    1507    1508    1509    1510    1511    1512
                1513    1514    1515    1516    1522
SCOPE1= 010701   351#    765     792     837     862     872     897     934     944     971    1052    1053    1054
                1055    1056    1057    1058    1059    1060    1061    1129    1171    1315    1316    1317    1318
                1319    1320    1321    1322    1328    1329    1330    1331    1332    1333    1334    1335    1336
                1337
SCOPE3= 010703   352#    802     827     907    1085
START   000700   765#    981     985
SW09  = 001000   353#
SW10  = 002000   354#
```

```
SW11   = 004000          355#
SW12   = 010000          356#
S0       000452          385#
S1       000454          386#   387   1050   1054   1325   1328   1330
S10      000476          395#  1505   1508
S11      000500          396#
S2       000456          387#  1051   1053   1326   1329
S3       000460          388#
S4       000462          389#
S5       000464          390#   391   1464   1467   1469
S6       000466          391#  1465   1468
S7       000470          392#
S8       000472          393#
S9       000474          394#   395   1504   1507   1509
TEMP1    000434          373#   374    743*   766    803    838    873    908    946    982*   988*  1003*  1010*
                        1028*  1041*  1078*  1087   1130   1173   1217*  1225*  1239*  1247*  1254*  1259*  1265*
                        1296*  1303*  1520*  1521*
TEMP2    000436          375#   376    744*   769    773    796*   806    809    831*   841    844    866*   876
                         879   901*   912    915    938*   949    952    975*   983*   989*   995*   999*  1004*
                        1011*  1016*  1022*  1029*  1035*  1079*  1088   1131   1174   1218*  1266*  1273*  1284*
                        1289*  1297*  1304*
TEMP3    000440          377#   378    745*   785    797*   821    832*   856    867*   891    902*   927    939*
                         964   976*   984*   990*  1005*  1012*  1017*  1023*  1030*  1036*  1080*  1092   1095
                        1121*  1135   1138   1163*  1178   1181   1207*  1219*  1231*  1235*  1240*  1260*  1267*
                        1278*  1285*  1290*  1305*
TEMP4    000442          379#   380    746*   781    817    852    887    923    960    991*  1006*  1018*  1024*
                        1031*  1037*  1042*  1081*  1107   1124*  1150   1166*  1193   1210*  1220*  1226*  1241*
                        1248*  1274*  1279*  1291*  1306*
TEMP5    000444          381#  1082*  1110   1123*  1153   1165*  1196   1209*  1221*  1242*  1249*  1255*  1268*
                        1292*  1298*
TEMP6    000446          382#  1083*  1103   1146   1189   1227*  1243*  1250*  1261*  1269*  1280*  1299*  1307*
TST160   004306         1128   1170   1214   1223#
TST161   004334         1224   1229#
TST162   004352         1230   1233#
TST163   004370         1234   1237#
TST164   004432         1238   1245#
TST165   004470         1246   1252#
TST166   004514         1253   1257#
TST167   004544         1258   1263#
TST170   004602         1264   1271#
TST171   004626         1272   1276#
TST172   004654         1277   1282#
TST173   004676         1283   1287#
TST174   004734         1288   1294#
TST175   004770         1295   1301#
TST176   005046         1315#
TST177   005142         1316#
TST200   005236         1317#
TST201   005336         1318#
TST202   005432         1319#
TST203   005526         1320#
TST204   005626         1321#
TST205   005722         1322#
TST206   006046         1328#
TST207   006150         1329#
TST210   006252         1330#
```

```
TST211  006354          1331#
TST212  006454          1332#
TST213  006554          1333#
TST214  006654          1334#
TST215  006756          1335#
TST216  007060          1336#
TST217  007160          1337#
TST220  007260          1445#
TST221  007354          1446#
TST222  007450          1447#
TST223  007544          1448#
TST224  007644          1449#
TST225  007740          1450#
TST226  010034          1451#
TST227  010134          1452#
TST230  010230          1453#
TST231  010324          1454#
TST232  010420          1455#
TST233  010520          1456#
TST234  010614          1457#
TST235  010710          1458#
TST236  011004          1459#
TST237  011104          1460#
TST240  011200          1461#
TST241  011274          1462#
TST242  011410          1467#
TST243  011504          1468#
TST244  011600          1469#
TST245  011674          1470#
TST246  011766          1471#
TST247  012060          1472#
TST250  012152          1473#
TST251  012246          1474#
TST252  012342          1475#
TST253  012434          1476#
TST254  012526          1486#
TST255  012634          1487#
TST256  012742          1488#
TST257  013054          1489#
TST260  013162          1490#
TST261  013270          1491#
TST262  013402          1492#
TST263  013510          1493#
TST264  013616          1494#
TST265  013724          1495#
TST266  014036          1496#
TST267  014144          1497#
TST270  014252          1498#
TST271  014364          1499#
TST272  014472          1500#
TST273  014600          1501#
TST274  014670          1502#
TST275  014770          1507#
TST276  015076          1508#
TST277  015204          1509#
TST300  015312          1510#
```

```
TST301  015416          1511#
TST302  015522          1512#
TST303  015626          1513#
TST304  015734          1514#
TST305  016042          1515#
TST306  016146          1516#
TST307  016252          1520#
TST310  016500          1521#
TST37   002050           801     836     871     906     943     980     986#
TST40   002104           987     993#
TST41   002120           994     997#
TST42   002136           998    1001#
TST43   002172          1002    1008#
TST44   002224          1009    1014#
TST45   002256          1015    1020#
TST46   002310          1021    1026#
TST47   002346          1027    1033#
TST50   002376          1034    1039#
TST51   002454          1052#
TST52   002534          1053#
TST53   002614          1054#
TST54   002674          1055#
TST55   002752          1056#
TST56   003030          1057#
TST57   003106          1058#
TST60   003166          1059#
TST61   003246          1060#
TST62   003324          1061#
TTYOUT  000502           397#   1520*   1521*
TYPCNT  000450           383#   1564*   1576*
TYPE  = 000004           357#   1522    1543    1559    1580
$APTHD  000430           366#    368
$CPUOP  000426           364#
$CRLF   000510           400#   1559    1580
$DEVCT  000410           364#    718
$DOAGN  017042          1522#   1544
$ENDAD  017032           342    1522#
$ENDCT  017006          1522#   1526
$ENDMG  017051          1522#
$ENULL  017046          1522#
$ENV    000420           364#    737    1584
$ENVM   000421           364#   1520    1521    1617
$EOP    016762          1522#
$EOPCT  017000          1522#
$ETABL  000420           364#
$ETEND  000430           364#    366
$FATAL  000402           364#   1556*
$GET42  017022          1522#
$HD   = 000003           325
$HIBTS  000430           366#
$HLT    017114           783     787     819     823     854     858     889     893     925     929     962     966    1046
                        1052    1053    1054    1055    1056    1057    1058    1059    1060    1061    1105    1109    1113
                        1117    1148    1152    1156    1159    1191    1195    1199    1202    1311    1315    1316    1317
                        1318    1319    1320    1321    1322    1328    1329    1330    1331    1332    1333    1334    1335
                        1336    1337    1445    1446    1447    1448    1449    1450    1451    1452    1453    1454    1455
                        1456    1457    1458    1459    1460    1461    1462    1467    1468    1469    1470    1471    1472
```

```
                    1473    1474    1475    1476    1486    1487    1488    1489    1490    1491    1492    1493    1494
                    1495    1496    1497    1498    1499    1500    1501    1502    1507    1508    1509    1510    1511
                    1512    1513    1514    1515    1516    1520    1521    1556#
$MAIL   000400       364#     366     720
$MBADR  000432       366#
$MSGAD  000414       364#
$MSGLG  000416       364#
$MSGTY  000400       364#    1586*
$PASS   000406       364#     767     804     839     874     910     947    1090    1133    1176    1522*
$PASTM  000436       366#
$PWRDN  017064       717    1538#    1542
$PWRUP  017074      1538    1541#
$RTNAD  017044      1522#
$SETUP= 000020       403#    1522
$STUP = 177777       403#
$SVPC = 001000       342#
$SWR  = 160000       325#    1522
$SWREG  000422       364#    1557    1588
$TESTN  000404       364#     726
$TN   = 000001       325#
$TPB    000504       398#    1520*   1521*   1621*
$TPCHR  017334      1570     1613    1617#
$TPCNT  000451       384#    1561*   1581*
$TPS    000506       399#     739    1520*   1521*   1619
$TSTM   000434       366#
$TYPE   017300       361     1604#
$UNIT   000412       364#
$UNITM  000440       366#
$USWR   000424       364#
$$GET4= 000000      1522#
.       - 017362     332#     339     342#    360#    363#    366#    368#    370#    372#    374#    376#    378#    380#
                     716#    724#    733#    777#     782     786     813#    818     822     848#     853     857     883#
                     888     892     919#    924     928     956#    961     965    1045    1052#   1053#   1054#   1055#
                    1056#   1057#   1058#   1059#   1060#   1061#   1099#   1104    1108    1111    1116    1142#   1147
                    1151    1154    1158    1185#   1190    1194    1197    1201    1310    1315#   1316#   1317#   1318#
                    1319#   1320#   1321#   1322#   1328#   1329#   1330#   1331#   1332#   1333#   1334#   1335#   1336#
                    1337#   1445#   1446#   1447#   1448#   1449#   1450#   1451#   1452#   1453#   1454#   1455#   1456#
                    1457#   1458#   1459#   1460#   1461#   1462#   1467#   1468#   1469#   1470#   1471#   1472#   1473#
                    1474#   1475#   1476#   1486#   1487#   1488#   1489#   1490#   1491#   1492#   1493#   1494#   1495#
                    1496#   1497#   1498#   1499#   1500#   1501#   1502#   1507#   1508#   1509#   1510#   1511#   1512#
                    1513#   1514#   1515#   1516#   1520#   1521#   1522    1525    1526#   1530#   1587
.$X     - 000430     366#
..A       016524     733#     777#    813#    848#    883#    919#    956#   1052#   1053#   1054#   1055#   1056#   1057#
                    1058#   1059#   1060#   1061#   1099#   1142#   1185#   1315#   1316#   1317#   1318#   1319#   1320#
                    1321#   1322#   1328#   1329#   1330#   1331#   1332#   1333#   1334#   1335#   1336#   1337#   1445#
                    1446#   1447#   1448#   1449#   1450#   1451#   1452#   1453#   1454#   1455#   1456#   1457#   1458#
                    1459#   1460#   1461#   1462#   1467#   1468#   1469#   1470#   1471#   1472#   1473#   1474#   1475#
                    1476#   1486#   1487#   1488#   1489#   1490#   1491#   1492#   1493#   1494#   1495#   1496#   1497#
                    1498#   1499#   1500#   1501#   1502#   1507#   1508#   1509#   1510#   1511#   1512#   1513#   1514#
                    1515#   1516#   1520#   1521#
..B     - 016530     733#     777#    813#    848#    883#    919#    956#   1052#   1053#   1054#   1055#   1056#   1057#
                    1058#   1059#   1060#   1061#   1099#   1142#   1185#   1315#   1316#   1317#   1318#   1319#   1320#
                    1321#   1322#   1328#   1329#   1330#   1331#   1332#   1333#   1334#   1335#   1336#   1337#   1445#
                    1446#   1447#   1448#   1449#   1450#   1451#   1452#   1453#   1454#   1455#   1456#   1457#   1458#
                    1459#   1460#   1461#   1462#   1467#   1468#   1469#   1470#   1471#   1472#   1473#   1474#   1475#
                    1476#   1486#   1487#   1488#   1489#   1490#   1491#   1492#   1493#   1494#   1495#   1496#   1497#
```

```
                    1498#   1499#   1500#   1501#   1502#   1507#   1508#   1509#   1510#   1511#   1512#   1513#   1514#
                    1515#   1516#   1520#   1521#
...      00002'      733#    777#    813#    848#    883#    919#    956#   1052#   1053#   1054#   1055#   1056#   1057#
                    1058#   1059#   1060#   1061#   1099#   1142#   1185#   1315#   1316#   1317#   1318#   1319#   1320#
                    1321#   1322#   1328#   1329#   1330#   1331#   1332#   1333#   1334#   1335#   1336#   1337#   1445#
                    1446#   1447#   1448#   1449#   1450#   1451#   1452#   1453#   1454#   1455#   1456#   1457#   1458#
                    1459#   1460#   1461#   1462#   1467#   1468#   1469#   1470#   1471#   1472#   1473#   1474#   1475#
                    1476#   1486#   1487#   1488#   1489#   1490#   1491#   1492#   1493#   1494#   1495#   1496#   1497#
                    1498#   1499#   1500#   1501#   1502#   1507#   1508#   1509#   1510#   1511#   1512#   1513#   1514#
                    1515#   1516#   1520#   1521#

. ABS.  017362     000

 ERRORS DETECTED:  0

 CVKABB,CVKABB/CRF:SYM/NL:TOC=SYSMAC.SML/ML,CVKABB.P11
 RUN-TIME: 10 11  .8 SECONDS
 RUN-TIME RATIO: 83/23=3.5
 CORE USED:  15K  (30 PAGES)
```