LSI

EIS INSTRUCTION TEST

MD-11-DVKAB-A

EP DVKAB A DL A

OCT 1976

FICHE 1 OF 1

digital

Made In U.S.A.

[illegible].SRC TABLE OF CONTENTS

4943

D01


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4945
4946                                    .ABS
4947                                    .NLIST  MD,MC,CND
4948                                    .LIST   ME
4949                                    .MCALL  .$EOP,.$ACT11,.$APTBLS,.$APTHDR,.HEADER,.SETUP,FJSH,POP
4950                                    .MCALL  STARS
4951                                    .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-DZGAC-B),JULY 11,1975.
 (1)                                    ;*
 (1)          000001                    $TN=1
 (1)          160000                    $SWR=160000     ;;HALT ON ERROR, LOOP ON TEST, INHIBIT ERROR TYPOUT
4952
4953
```

```
                                ;*****************************************************************
                                ;*****************************************************************
                                ;*****************************************************************
                                .SBTTL  ACT11 HOOKS
                                ;HOOKS REQUIRED BY ACT11
                        001000          $SVPC=.                 ;SAVE PC
                        000046          .=46
000046  017026                          $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  017274                  $TYPE
```

```
                                .=400
                                ;*****************************************************************

                                .SBTTL  APT MAILBOX-ETABLE


                                        .EVEN
000400                          $MAIL:                          ;;APT MAILBOX
000400  000000                  $MSGTY: .WORD   AMSGTY          ;;MESSAGE TYPE CODE
000402  000000                  $FATAL: .WORD   AFATAL          ;;FATAL ERROR NUMBER
000404  000000                  $TESTN: .WORD   ATESTN          ;;TEST NUMBER
000406  000000                  $PASS:  .WORD   APASS           ;;PASS COUNT
000410  000000                  $DEVCT: .WORD   ADEVCT          ;;DEVICE COUNT
000412  000000                  $UNIT:  .WORD   AUNIT           ;;I/O UNIT NUMBER
000414  000000                  $MSGAD: .WORD   AMSGAD          ;;MESSAGE ADDRESS
000416  000000                  $MSGLG: .WORD   AMSGLG          ;;MESSAGE LENGTH
000420                          $ETABLE:                        ;;APT ENVIRONMENT TABLE
000420     000                  $ENV:   .BYTE   AENV            ;;ENVIRONMENT BYTE
000421     000                  $ENVM:  .BYTE   AENVM           ;;ENVIRONMENT MODE BITS
000422  000000                  $SWREG: .WORD   ASWREG          ;;APT SWITCH REGISTER
000424  000000                  $USWR:  .WORD   AUSWR           ;;USER SWITCHES
000426  000000                  $CPUOP: .WORD   ACPUOP          ;;CPU TYPE,OPTIONS
                                :*                              BITS 15-11=CPU TYPE
                                :*                                      11/04=01,11/05=02,11/20=03,11/40=04,11/45=05
                                :*                                      11/70=06,PDQ=07,Q=10
                                :*                              BIT 10=REAL TIME CLOCK
                                :*                              BIT  9=FLOATING POINT PROCESSOR
                                :*                              BIT  8=MEMORY MANAGEMENT
000430                          $ETEND:
                                        .MEXIT

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

                                .SBTTL  APT PARAMETER BLOCK
                                ;SET LOCATIONS 24 AND 44 AS REQUIRED FOR APT
                                ;*****************************************************************
                                        .$X=.   ;;SAVE CURRENT LOCATION
000024                                  .=24    ;;SET POWER FAIL TO POINT TO START OF PROGRAM
000024  000200                          200     ;;FOR APT START UP
000044                                  .=44    ;;POINT TO APT INDIRECT ADDRESS PNTR.
000044  000430                          $APTHDR ;;POINT TO APT HEADER BLOCK
000430                                  .=.$X   ;;RESET LOCATION COUNTER
                                ;*****************************************************************
                                ;SETUP APT PARAMETER BLOCK AS DEFINED IN THE APT-PDP11 DIAGNOSTIC
                                ;INTERFACE SPEC.

000430                          $APTHD:
000430  000000                  $HIBTS: .WORD   0               ;;TWO HIGH BITS OF 18 BIT MAILBOX ADDR.
000432  000400                  $MBADR: .WORD   $MAIL           ;;ADDRESS OF APT MAILBOX (BITS 0-15)
000434  000003                  $TSTM:  .WORD   3               ;;RUN TIM OF LONGEST TEST
000436  000005                  $PASTM: .WORD   5               ;;RUN TIME IN SECS. OF 1ST PASS ON 1 UNIT (QUICK VERIFY)
000440  000000                  $UNITM: .WORD                   ;;ADDITIONAL RUN TIME (SECS) OF A PASS FOR EACH ADDITIONAL UNIT
000442  000014                          .WORD   $ETEND-$MAIL/2 ;;LENGTH MAILBOX-ETABLE(WORDS)

000430                                  .=$APTHD
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```
 4995  000430                          COUNT:
 4996                000432                  .=COUNT+2
 4997  000432                          PSWORD:
 4998                000434                  .=PSWORD+2
 4999  000434                          TEMP1:
 5000                000436                  .=TEMP1+2
 5001  000436                          TEMP2:
 5002                000440                  .=TEMP2+2
 5003  000440                          TEMP3:
 5004                000442                  .=TEMP3+2
 5005  000442                          TEMP4:
 5006                000444                  .=TEMP4+2
 5007  000444  000000                  TEMP5:  .WORD
 5008  000446  000000                  TEMP6:  .WORD
 5009  000450     000                  TYPCNT: .BYTE
 5010  000451     000                  $TPCNT: .BYTE
 5011  000452  000007                  S0:     7
 5012  000454  177771                  S1:     -7
 5013  000456  000454                  S2:     S1
 5014  000460  177772                  S3:     -6
 5015  000462  177777                  S4:     -1
 5016  000464  040000                  S5:     40000
 5017  000466  000464                  S6:     S5
 5018  000470  040000                  S7:     40000
 5019  000472  177776                  S8:     -2
 5020  000474  000002                  S9:     2
 5021  000476  000474                  S10:    S9
 5022  000500  000002                  S11:    2
 5023  000502  000064                  TTYOUT: 64
 5024  000504  177566                  $TPB:   177566
 5025  000506  177564                  $TPS:   177564
 5026  000510  005015  020040  000040  $CR_F:  .ASCIZ  <15><12>/   /
 5027  000516  006412  047520  042527  POWER:  .ASCIZ  <12><15>/POWER/
       000524  000122
 5028
 5030
 5031
 5045
 5046
 5066
 5067
 5073
 5074
 5075
 5076
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5342                    000200                          .=200
5343    000200  012737  017060  000024                  MOV     #$PWRDN,@#24    ;PREPARE TO SERVICE POWER DOWN ROUTINE
5344    000206  012700  000410                          MOV     #$DEVCT,R0      ;PREPARE TO INITIALIZE THE STACK
5345    000212  005040                          2$:     CLR     -(R0)
5346    000214  022700  000400                          CMP     #$MAIL,R0
5347    000220  001374                          BNE     2$
5348    000222  000167  000352                  RESTRT: JMP     BEGIN
5349
5350                    000600                          .=600
5351
5352    000600  012705  000404                  BEGIN:  MOV     #$TESTN,R5      ;MAKE R5 POINT TO THE LOCATION $TESTN
5353    000604  005037  000430                          CLR     @#COUNT         ;CLEAR THE COUNTER
5354    000610  012715  000001                          MOV     #1,(R5)         ;INITIALIZE TEST NUMBER
5355    000614  012706  000600                          MOV     #BEGIN,SP       ;** STACK AT BEGIN **
5359    000620                                          MTPS    #0              ;PLACE #0 IN PSW
(1)     000620  106427                                  .WORD   106400!...C
5363    000624  132737  000001  000420                  BITB    #1,@#$ENV       ;ARE WE UNDER APT ?
5364    000632  001410                                  BEQ     2$              ;IF NOT THEN GO TO 2$
5365    000634  012700  000510                          MOV     #$TPS+2,R0      ;OTHERWISE SET FOR OTHER SLU
5366    000640  012740  176564                          MOV     #176564,-(R0)
5367    000644  012740  176566                          MOV     #176566,-(R0)
5368    000650  012740  000074                          MOV     #74,-(R0)
5369    000654  012737  000001  000434  2$:     MOV     #1,@#TEMP1      ;TEMP1=1
5370    000662  005037  000436                          CLR     @#TEMP2         ;TEMP2=0
5371    000666  012737  000001  000440                  MOV     #1,@#TEMP3      ;TEMP3=1
5372    000674  005037  000442                          CLR     @#TEMP4         ;TEMP4=0
5373
5374
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```
                                        ;**********************************
                                        ;     ASH INSTRUCTION TESTS
                                        ;**********************************



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

001700  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
000732  106737                          .WORD   106700!..C
000736  123737  000442  000432          CMPB    @#TEMP4,@#PSWORD;IS THE PS = TEMP4 ?
000744  001403                          BEQ     .+10
000746  004767  016136                  JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
                                                                ;THE PS IS NOT EQUAL TO 0
000752  000001                  1
000754  005237  000430                  INC     @#COUNT         ;INCREMENT THE COUNTER
000760  023700  000440                  CMP     @#TEMP3,%0      ;IS THE RESULT IN R0 EQUAL TO TEMP3?
000764  001403                          BEQ     .+10
000766                          6$:
000766  004767  016116                  JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
                                                                ;EITHER INCORRECT R0 OR INCORRECT SEQUENCE
000772  000002                  2
000774  021537  000430                  CMP     (R5),@#COUNT    ;IS THE TEST NUMBER EQUAL TO THE
                                                                ;COUNTER?
001000  001372                          BNE     6$              ;IF NOT GO TO THE HLT ABOVE
001002  005215                          INC     (R5)
001004  010701                          SCOPE1
001006  021527  000037                  CMP     (R5),#37        ;HAS THE CONTENTS OF REGISTERS BEEN SHIFTED LEFT
                                                                ;BY 14. AND RIGHT BY 14.?
001012  002011                          BGE     8$
001014  005237  000436                  INC     @#TEMP2
001020  006367  177414                  ASL     TEMP3           ;SHIFT TEMP3 LEFT.
001024  021527  000020                  CMP     (R5),#20        ;HAS THE CONTENTS OF REGISTERS BEEN SHIFTED LEFT BY 14.?
001030  001004                          BNE     REG1
001032  000167  000764                  JMP     NEGAT           ;IF SO GO TO NEGAT AND INITIATE RIGHT SHIFT
001036  004767  001006          8$:     JSR     PC,TST37        ;IF SO GO AND CONTINUE THE REST OF THE PROGRAM
001042  010703                  REG1:   SCOPE3
001044  013701  000434                  MOV     @#TEMP1,%1      ;LOAD R1 WITH THE CONTENTS OF TEMP1
001050  032737  000001  000406          BIT     #1,@#$PASS      ;IS IT AN EVEN PASS ?
001056  001004                          BNE     2$              ;IF NOT THEN GO TO 2$
001060  013702  000436                  MOV     @#TEMP2,R2      ;OTHERWISE EXECUTE ASH INSTRUCTION IN MODE 0
001064  072102                          ASH     R2,R1           ;USING R1
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 5435  001066  000402                        BR      4$
 5436  001070  072167  177342          2$:   ASH     TEMP2,%1        ;SHIFT R1 BY THE NUMBER SPECIFIED BY TEMP2
 5440  001074                          4$:   MFPS    @#PSWORD        ;SAVE PS
   (1) 001074  106737                        .WORD   106700!..C
 5444  001100  123737  000442  000432        CMPB    @#TEMP4,@#PSWORD;IS THE PS = TEMP4 ?
 5445  001106  001403                        BEQ     .+10
 5446  001110  004767  015774                JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
                                                                      ;THE PS IS NOT EQUAL TO 0
       001114  000003                        3
 5447  001116  005237  000430                INC     @#COUNT         ;INCREMENT THE COUNTER
 5448  001122  023701  000440                CMP     @#TEMP3,%1      ;IS THE RESULT IN R1 EQUAL TO TEMP3?
 5449  001126  001403                        BEQ     .+10
 5450  001130                          6$:
       001130  004767  015754                JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
                                                                      ;EITHER INCORRECT R1 OR INCORRECT SEQUENCE
       001134  000004                        4
 5451  001136  021537  000430                CMP     (R5),@#COUNT    ;IS THE TEST NUMBER EQUAL TO THE COUNTER?
 5452  001142  001372                        BNE     6$              ;IF NOT GO TO THE HLT ABOVE
 5453  001144  005215                        INC     (R5)
 5454  001146  010703                        SCOPE3
 5455  001150  021527  000037                CMP     (R5),#37        ;HAS THE CONTENTS OF REGISTERS BEEN SHIFTED LEFT
                                                                      ;BY 14. AND RIGHT BY 14.?
       001154  002011                        BGE     8$
 5456  001156  005237  000436                INC     @#TEMP2
 5460  001162  006367  177252                ASL     TEMP3           ;SHIFT TEMP3 LEFT
 5461  001166  021527  000020                CMP     (R5),#20        ;HAS THE CONTENTS OF REGISTERS BEEN SHIFTED LEFT BY 14.?
 5462  001172  001004                        BNE     REG2
 5463  001174  000167  000622                JMP     NEGAT           ;IF SO GO TO NEGAT AND INITIATE RIGHT SHIFT
 5464  001200  004767  000644          8$:   JSR     PC,TST37        ;IF SO GO AND CONTINUE THE RES' OF THE PROGRAM
 5465  001204  010701                  REG2: SCOPE1
 5466  001206  013702  000434                MOV     @#TEMP1,%2      ;LOAD R2 WITH THE CONTENTS OF TEMP1
 5467  001212  032737  000001  000406        BIT     #1,@#$PASS      ;IS IT AN EVEN PASS ?
 5470  001220  001004                        BNE     2$              ;IF NOT THEN GO TO 2$
 5471  001222  013703  000436                MOV     @#TEMP2,R3      ;OTHERWISE EXECUTE ASH INSTRUCTION IN MODE 0
 5472  001226  072203                        ASH     R3,R2           ;USING R2
 5473  001230  000402                        BR      4$
 5474  001232  072267  177200          2$:   ASH     TEMP2,%2        ;SHIFT R2 BY THE NUMBER SPECIFIED BY TEMP2
 5475  001236                          4$:   MFPS    @#PSWORD        ;SAVE PS
       001236  106737                        .WORD   106700!..C
 5476  001242  123737  000442  000432        CMPB    @#TEMP4,@#PSWORD;IS THE PS = TEMP4 ?
 5477  001250  001403                        BEQ     .+10
 5500  001252  004767  015632                JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
                                                                      ;THE PS IS NOT EQUAL TO 0
       001256  000005                        5
 5501  001260  005237  000430                INC     @#COUNT
 5502  001264  023702  000440                CMP     @#TEMP3,%2      ;IS THE RESULT IN R2 EQUAL TO TEMP3?
 5503  001270  001403                        BEQ     .+10
 5504  001272                          6$:
       001272  004767  015612                JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
                                                                      ;EITHER INCORRECT R2 OR INCORRECT SEQUENCE
       001276  000006                        6
 5505  001300  021537  000430                CMP     (R5),@#COUNT    ;IS THE TEST NUMBER EQUAL TO THE COUNTER?
 5506  001304  001372                        BNE     6$              ;IF NOT GO TO THE HLT ABOVE
 5507  001306  005215                        INC     (R5)
 5510  001310  010701                        SCOPE1
 5511  001312  021527  000037                CMP     (R5),#37        ;HAS THE CONTENTS OF REGISTERS BEEN SHIFTED
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                                                                        ;LEFT BY 14, AND RIGHT BY 14.?
001316  002011                          BGE     8$
001320  005237  000436                  INC     @#TEMP2
001324  006367  177110                  ASL     TEMP3                   ;SHIFTED TEMP3 LEFT
001330  021527  000020                  CMP     (PS),#20                ;HAS THE CONTENTS OF REGISTERS BEEN SHIFTED LEFT BY 14.?
001334  001004                          BNE     REG3
001336  000167  000460                  JMP     NEGAT                   ;IF SO GO TO NEGAT AND INITIATE RIGHT SHIFT
001342  004767  000502          8$:     JSR     PC,TST37                ;IF SO GO AND CONTINUE THE REST OF THE PROGRAM
001346  010701                  REG3:   SCOPE1
001350  013703  000434                  MOV     @#TEMP1,%3              ;LOAD R3 WITH THE CONTENTS OF TEMP1
001354  032737  000001  000406          BIT     #1,@#$PASS              ;IS IT AN EVEN PASS ?
001362  001004                          BNE     2$                      ;IF NOT THEN GO TO 2$
001364  013704  000436                  MOV     @#TEMP2,R4              ;OTHERWISE EXECUTE ASH INSTRUCTION IN MODE 0
001370  072304                          ASH     R4,R3                   ;USING R3
001372  000402                          BR      4$
001374  072367  177036          2$:     ASH     TEMP2,%3                ;SHIFT R3 BY THE NUMBER SPECIFIED BY TEMP2
001400                          4$:     MFPS    @#PSWORD                ;SAVE PS
001400  106737                          .WORD   106700!..C
001404  123737  000442  000432          CMPB    @#TEMP4,@#PSWORD;IS THE PS = TEMP4 ?
001412  001403                          BEQ     .+10
001414  004767  015470                  JSR     PC,$HLT                 ;SEEN AN ERROR, GO TO TH HALT ROUTINE
                                                                        ;THE PS IS NOT EQUAL TO 0.
001420  000007                          7
001422  005237  000430                  INC     @#COUNT
001426  023703  000440                  CMP     @#TEMP3,%3              ;IS THE RESULT IN R3 EQUAL TO TEMP3?
001432  001403                          BEQ     .+10
001434                          6$:
001434  004767  015450                  JSR     PC,$HLT                 ;SEEN AN ERROR, GO TO TH HALT ROUTINE
                                                                        ;EITHER INCORRECT R3 OR INCORRECT SEQUENCE
001440  000010                          10
001442  021537  000430                  CMP     (R5),@#COUNT            ;IS THE TEST NUMBER EQUAL TO THE COUNTER?
001446  001372                          BNE     6$                      ;IF NOT GO TO THE HLT ABOVE
001450  005215                          INC     (R5)
001452  010701                          SCOPE1
001454  021527  000037                  CMP     (R5),#37                ;HAS THE CONTENTS OF REGISTERS BEEN SHIFTED
                                                                        ;LEFT BY 14, AND RIGHT BY 14.?
001460  002010                          BGE     8$
001462  005237  000436                  INC     @#TEMP2
001466  006367  176746                  ASL     TEMP3                   ;SHIFT TEMP3 LEFT?
001472  021527  000020                  CMP     (R5),#20                ;HAS THE CONTENTS OF REGISTERS BEEN SHIFTED LEFT BY 14.?
001476  001003                          BNE     REG4
001500  000550                          BR      NEGAT                   ;IF SO GO TO NEGAT AND INITIATE RIGHT SHIFT
001502  004767  000342          8$:     JSR     PC,TST37                ;IF SO GO AND CONTINUE THE REST OF THE PROGRAM
001506  010703                  REG4:   SCOPE3
001510  013704  000434                  MOV     @#TEMP1,%4              ;LOAD R4 WITH THE CONTENTS OF TEMP1
001514  010501                          MOV     R5,R1                   ;SAVE R5
001516  032737  000001  000406          BIT     #1,@#$PASS              ;IS IT AN EVEN PASS ?
001524  001004                          BNE     2$                      ;IF NOT THEN GO TO 2$
001526  013705  000436                  MOV     @#TEMP2,R5              ;OTHERWISE EXECUTE ASH INSTRUCTION IN MODE 0
001532  072405                          ASH     R5,R4                   ;USING R4
001534  000402                          BR      4$
001536  072467  176674          2$:     ASH     TEMP2,%4                ;SHIFT R4 BY THE NUMBER SPECIFIED BY TEMP2
001542                          4$:     MFPS    @#PSWORD                ;SAVE PS
001542  106737                          .WORD   106700!..C
001546  123737  000442  000432          CMPB    @#TEMP4,@#PSWORD;IS PS = TEMP4 ?
001554  001403                          BEQ     .+10
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5552  001556  004767  015326                      JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
                                                                          ;THE PS IS NOT EQUAL TO 0
      001562  000011                              11
5553  001564  005237  000430                      INC     @#COUNT
5554  001570  023704  000440                      CMP     @#TEMP3,%4      ;IS THE RESULT IN R4 EQUAL TO TEMP3?
5555  001574  001403                              BEQ     .+10
5556  001576                          6$:
      001576  004767  015306                      JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
                                                                          ;EITHER INCORRECT R4 OR INCORRECT SEQUENCE
      001602  000012                              12
5557  001604  010105                              MOV     R1,R5           ;RESTORE R5
5558  001606  021537  000430                      CMP     (R5),@#COUNT    ;IS THE TEST NUMBER EQUAL TO THE COUNTER?
5559  001612  001371                              BNE     6$              ;IF NOT GO TO THE HLT ABOVE
5560  001614  005215                              INC     (R5)
5561  001616  010701                              SCOPE1
5562  001620  021527  000037                      CMP     (R5),#37        ;HAS THE CONTENTS OF REGISTERS BEEN
5563                                                                      ;SHIFTED LEFT BY 14. AND RIGHT BY 14.?
5564  001624  002010                              BGE     8$
5565  001626  005237  000436                      INC     @#TEMP2
5566  001632  006367  176602                      ASL     TEMP3           ;SHIFT TEMP3 LEFT
5567  001636  021527  000020                      CMP     (R5),#20        ;HAS THE CONTENTS OF REGISTER BEEN SHIFTED BY 14.?
5568  001642  001003                              BNE     REG5
5569  001644  000466                              BR      NEGAT           ;IF SO GO TO NEGAT AND INITIATE RIGHT SHIFT
5570  001646  004767  000176          8$:         JSR     PC,TST37        ;IF SO GO AND CONTINUE THE REST OF THE PROGRAM
5571  001652  010701                  REG5:       SCOPE1
5572  001654  010501                              MOV     R5,R1           ;SAVE R5
5573  001656  013705  000434                      MOV     @#TEMP1,%5      ;LOAD R5 WITH THE CONTENTS OF TEMP1
5574  001662  032737  000001  000406              BIT     #1,@#$PASS      ;IS IT AN EVEN PASS ?
5575  001670  001004                              BNE     2$              ;IF NOT THEN GO TO 2$
5576  001672  013700  000436                      MOV     @#TEMP2,R0      ;OTHERWISE EXECUTE ASH INSTRUCTION IN MODE 0
5577  001676  072500                              ASH     R0,R5           ;USING R5
5578  001700  000402                              BR      4$
5579  001702  072567  176530          2$:         ASH     TEMP2,%5        ;SHIFT R5 BY THE NUMBER SPECIFIED BY TEMP2
5583  001706                          4$:         MFPS    @#PSWORD        ;SAVE PS
      001706  106737                              .WORD   106700!.C
5587  001712  123737  000442  000432              CMPB    @#TEMP4,@#PSWORD;IS PS = TEMP4 ?
5588  001720  001403                              BEQ     .+10
5589  001722  004767  015162                      JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
                                                                          ;THE PS IS NOT EQUAL TO 0.
      001726  000013                              13
5590  001730  005237  000430                      INC     @#COUNT
5591  001734  023705  000440                      CMP     @#TEMP3,%5      ;IS THE RESULT IN R5 EQUAL TO TEMP3?
5592  001740  001403                              BEQ     .+10
5593  001742                          6$:
      001742  004767  015142                      JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
                                                                          ;EITHER INCORRECT R5 OR INCORRECT SEQUENCE
      001746  000014                              14
5594  001750  021137  000430                      CMP     (R1),@#COUNT    ;IS THE TEST NUMBER EQUAL TO THE COUNTER?
5595  001754  001372                              BNE     6$              ;IF NOT GO TO THE HLT ABOVE
5596  001756  010105                              MOV     R1,R5           ;RESTORE R5
5597  001760  005215                              INC     (R5)
5598  001762  010701                              SCOPE1
5599  001764  021527  000037                      CMP     (R5),#37        ;HAS THE CONTENTS OF REGISTERS BEEN SHIFTED
5600                                                                      ;LEFT BY 14. AND RIGHT BY 14.?
5601  001770  002010                              BGE     8$              ;IF SO GO AND CONTINUE THE REST OF THE PROGRAM
5602  001772  005237  000436                      INC     @#TEMP2
```

```
5623  002176  006367  176436                ASL     TEMP3           ;SHIFT TEMP3 LEFT
5624  002202  021527  000020                CMP     (R5),#20        ;HAS THE CONTENTS OF REGISTERS BEEN SHIFTED LEFT BY 14.?
5625  002206  001405                        BEQ     NEGAT           ;IF SO GO TO NEGAT AND INITIATE RIGHT SHIFT
5626  002210  000402                        BR      10$
5627  002212  004767  000032          8$:   JSR     PC,TST37
5628  002216  000167  176656          10$:  JMP     START           ;GO BACK TO START
5629  002222  012737  040000  000434  NEGAT: MOV     #40000,@#TEMP1  ;TEMP1=40000
5630  002230  012737  177762  000436        MOV     #177762,@#TEMP2 ;TEMP2=177762
5631  002236  012737  000001  000440        MOV     #1,@#TEMP3      ;TEMP3=1
5632  002244  000167  176630                JMP     START
5633  002250  021527  000037          TST37: CMP    (R5),#37        ;IS IT TEST 37?
5634  002254  001013                        BNE     TST40           ;IF NOT THEN TRY TEST 40
5635  002256  005037  000434                CLR     @#TEMP1         ;0
5636  002262  012737  000020  000436        MOV     #16.,@#TEMP2    ;SHIFTED BY 16
5637  002270  005037  000440                CLR     @#TEMP3         ;IS=0
5638  002274  012737  000004  000442        MOV     #4,@#TEMP4      ;AND PS=4
5639  002302  000207                        RTS     PC
5640  002304  021527  000040          TST40: CMP    (R5),#40        ;IS IT TEST 40?
5641  002310  001003                        BNE     TST41           ;IF NOT THEN TRY TEST 41
5642  002312  005037  000436                CLR     @#TEMP2         ;0 SHIFTED BY 0=0 AND PS=4
5643  002316  000207                        RTS     PC
5644  002320  021527  000041          TST41: CMP    (R5),#41        ;IS IT TEST 41?
5645  002324  001004                        BNE     TST42           ;IF NOT THEN TRY TEST 42
5646  002326  012737  177760  000436        MOV     #-16.,@#TEMP2   ;0 SHIFTED BY -16.=0 AND PS=4
5647  002334  000207                        RTS     PC
5648  002336  021527  000042          TST42: CMP    (R5),#42        ;IS IT TEST 42?
5649  002342  001013                        BNE     TST43           ;IF NOT THEN TRY TEST 43
5650  002344  012737  100000  000434        MOV     #100000,@#TEMP1 ;100000
5651  002352  005237  000436                INC     @#TEMP2         ;SHIFTED BY -15
5652  002356  005337  000440                DEC     @#TEMP3         ;IS=-1
5653  002362  012737  000010  000442        MOV     #10,@#TEMP4             ;AND PS=10
5654  002370  000207                        RTS     PC
5655  002372  021527  000043          TST43: CMP    (R5),#43        ;IS IT TEST 43?
5656  002376  001012                        BNE     TST44           ;IF NOT THEN IF NOT THEN TRY TEST 44
5657  002400  012737  125252  000434        MOV     #125252,@#TEMP1 ;125252
5658  002406  012737  177777  000436        MOV     #-1,@#TEMP2     ;SHIFTED BY -1
5659  002414  012737  152525  000440        MOV     #152525,@#TEMP3 ;IS=152525 AND PS=10
5660  002422  000207                        RTS     PC
5661  002424  021527  000044          TST44: CMP    (R5),#44        ;IS IT TEST 44?
5662  002430  001012                        BNE     TST45           ;IF NOT THEN TRY TEST 45
5663  002432  012737  000001  000436        MOV     #1,@#TEMP2      ;125252 SHIFTED BY 1
5664  002440  012737  052524  000440        MOV     #52524,@#TEMP3  ;IS=52524
5665  002446  012737  000003  000442        MOV     #3,@#TEMP4      ;AND PS=3
5666  002454  000207                        RTS     PC
5667  002456  021527  000045          TST45: CMP    (R5),#45        ;IS IT TEST 45?
5668  002462  001012                        BNE     TST46           ;IF NOT THEN TRY TEST 46
5669  002464  012737  177776  000436        MOV     #-2,@#TEMP2     ;125252 SHIFTED BY -2
5670  002472  012737  165252  000440        MOV     #165252,@#TEMP3 ;IS=165252
5671  002500  012737  000011  000442        MOV     #11,@#TEMP4     ;AND PS=11
5672  002506  000207                        RTS     PC
5673  002510  021527  000046          TST46: CMP    (R5),#46        ;IS IT TEST 46?
5674  002514  001014                        BNE     TST47           ;IF NOT THEN TRY TEST 47
5675  002516  012737  177777  000434        MOV     #-1,@#TEMP1     ;-1
5676  002524  012737  000020  000436        MOV     #16.,@#TEMP2    ;SHIFTED BY 15.
5677  002532  005037  000440                CLR     @#TEMP3         ;IS=0
5678  002536  012737  000007  000442        MOV     #7,@#TEMP4      ;AND PS=7
```

NO1


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 5659  002344  000207                          RTS     PC
 5660  002346  021527  000047          TST47:  CMP     (R5),#47        ;IS IT TEST 47?
 5661  002352  001011                          BNE     TST50           ;IF NOT THEN TRY TEST 50
 5662  002354  005337  000436                  DEC     @#TEMP2         ;-1 SHIFTED BY 15
 5663  002360  012737  100000  000440          MOV     #100000,@#TEMP3 ;IS=100000
 5664  002366  012737  000011  000442          MOV     #11,@#TEMP4     ;AND PS=11
 5665  002374  000207                          RTS     PC
 5666  002376  021527  000050          TST50:  CMP     (R5),#50        ;IS IT TEST 50
 5667  002402  001007                          BNE     ENT51           ;IF NOT THEN TRY TEST 51
 5669  002404  012737  137777  000434          MOV     #137777,@#TEMP1 ;137777 SHIFTED BY 15. IS=100000
 5669  002412  012737  000013  000442          MOV     #13,@#TEMP4     ;AND PS=13
 5670  002420  000207                          RTS     PC
 5671  002422  021527  000051          ENT51:  CMP     (R5),#51        ;IS IT ENTERING TEST 51?
 5672  002426  001403                          BEQ     .+10
 5673  002430  004767  014454                  JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
   2)                                                                   ;TEST NUMBER GOOFED
  (2)  002434  000015                          15
 5674
 5675  002436  005726                          TST     (SP)+           ;RESTORE STACK POINTER
 5676  002440  012704  177771                  MOV     #-7,%4
 5677  002444  012702  000454                  MOV     #S1,%2
 5678  002450  012703  000456                  MOV     #S2,%3
```

```
5679                                    ;*****************************************************************
(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
(2)  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
(1)  002502  004767  014402                     JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
                                                                        ;THE PS IS NOT EQUAL TO 3
(3)  002506  000016                             16
(1)  002510  022701  052500                     CMP     #52500,%1       ;IS THE RESULT 52500?
(1)  002514  001403                             BEQ     .+10
(2)  002516                             1$:
(3)  002516  004767  014366                     JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
(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)

5690                                    ;*****************************************************************
(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
(2)  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  014322                     JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
(3)                                                                     ;THE PS IS NOT EQUAL TO 10
(3)  002566  000020                             20
(1)  002570  022700  177525                     CMP     #177525,%0      ;IS THE RESULT 177525?
(1)  002574  001403                             BEQ     .+10
(2)  002576                             1$:
(3)  002576  004767  014306                     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)
```

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5681                                    ;*****************************************************************************
 (1)                                    ;TEST:53  LSI-11  ASH    125252 SHIFTED BY @#S1 = 177525  PS = 10
 (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
 (2)  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  014242                    JSR     PC,$HLT         ;SEEN AN ERPOR, GO TO TH HALT ROUTINE
 (3)                                                                    ;THE PS IS NOT EQUAL TO 10
 (3)  002646  000022                            22
 (1)  002650  022700  177525                    CMP     #177525,%0      ;IS THE RESULT 177525?
 (1)  002654  001403                            BEQ     .+10
 (2)  002656                            1$:
 (3)  002656  004767  014226                    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)

5682                                    ;*****************************************************************************
 (1)                                    ;TEST:54  LSI-11  ASH    125252 SHIFTED BY (2) = 177525  PS = 10
 (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 R0 BY (2)
 (2)  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  014164                    JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
 (3)                                                                    ;THE PS IS NOT EQUAL TO 10
 (3)  002724  000024                            24
 (1)  002726  022700  177525                    CMP     #177525,%0      ;IS THE RESULT 177525?
 (1)  002732  001403                            BEQ     .+10
 (2)  002734                            1$:
 (3)  002734  004767  014150                    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  00005-                    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)
```

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5683                                    ;*************************************************************************
 (1)                                    ;TEST:55   LSI-11   ASH     125252 SHIFTED BY (2)+ = 177525  PS = 10
 (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)+
 (2)  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  014106                    JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
 (3)                                                                    ;THE PS IS NOT EQUAL TO 10
 (3)  003002  000026                            26
 (1)  003004  022700  177525                    CMP     #177525,%0      ;IS THE RESULT 177525?
 (1)  003010  001403                            BEQ     .+10
 (2)  003012                            1$:
 (3)  003012  004767  014072                    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     (PS),#55                ;IS $TESTN = #55
 (1)  003024  001372                            BNE     1$              ;IF NOT THEN GO TO HLT ABOVE
 (1)  003026  005215                            INC     (R5)
 (1)
 (1)
 (1)

5684                                    ;*************************************************************************
 (1)                                    ;TEST:56   LSI-11   ASH     125252 SHIFTED BY -(2) = 177525  PS = 10
 (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)
 (2)  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  014030                    JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
 (3)                                                                    ;THE PS IS NOT EQUAL TO 10
 (3)  003060  000030                            30
 (1)  003062  022700  177525                    CMP     #177525,%0      ;IS THE RESULT 177525?
 (1)  003066  001403                            BEQ     .+10
 (2)  003070                            1$:
 (3)  003070  004767  014014                    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)
```

```
5685                                    ;*****************************************************************
 (1)                                    ;TEST:57  LSI-11  ASH    125252 SHIFTED BY 2(3) = 177252  PS = 11
 (1)                                    ;*****************************************************************
 (1)
 (1)  003106  010701                    TST57:  SCOPE1
 (1)  003110  012700  125252                    MOV     #125252,%0      ;LOAD R0 WITH 125252
 (1)  003114  072063  000002                    ASH     2(3),%0         ;SHIFT R0 BY 2(3)
 (2)  003120                                    MFPS    @#PSWORD        ;SAVE PS
 (2)  003120  106737                            .WORD   106700!..C
 (1)  003124  122737  000011  000432            CMPB    #11,@#PSWORD    ;IS THE PS 11?
 (1)  003132  001403                            BEQ     .+10
 (3)  003134  004767  013752                    JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
 (3)                                            ;THE PS IS NOT EQUAL TO 11
 (3)  003140  000032                            32
 (1)  003142  022700  177252                    CMP     #177252,%0      ;IS THE RESULT 177252?
 (1)  003146  001403                            BEQ     .+10
 (2)  003150                            1$:
 (3)  003150  004767  013734                    JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
 (3)                                            ;R0 IS NOT EQUAL TO 177252 OR INCORRECT SEQUENCE
 (3)  003154  000033                            33
 (1)  003156  021527  000057                    CMP     (R5),#57                ;IS $TESTN = #57
 (1)  003162  001372                            BNE     1$              ;IF NOT THEN GO TO HLT ABOVE
 (1)  003164  005215                            INC     (R5)
 (1)
 (1)
 (1)

5686                                    ;*****************************************************************
 (1)                                    ;TEST:60  LSI-11  ASH    125252 SHIFTED BY @(3) = 177525  PS = 10
 (1)                                    ;*****************************************************************
 (1)
 (1)  003166  010701                    TST60:  SCOPE1
 (1)  003170  012700  125252                    MOV     #125252,%0      ;LOAD R0 WITH 125252
 (1)  003174  072073  000000                    ASH     @(3),%0         ;SHIFT R0 BY @(3)
 (2)  003200                                    MFPS    @#PSWORD        ;SAVE PS
 (2)  003200  106737                            .WORD   106700!..C
 (1)  003204  122737  000010  000432            CMPB    #10,@#PSWORD    ;IS THE PS 10?
 (1)  003212  001403                            BEQ     .+10
 (3)  003214  004767  013670                    JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
 (3                                             ;THE PS IS NOT EQUAL TO 10
 (3)  003220  000034                            34
 (1)  003222  022700  177525                    CMP     #177525,%0      ;IS THE RESULT 177525?
 (1)  003226  001403                            BEQ     .+10
 (2)  003230                            1$:
 (3)  003230  004767  013654                    JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
 (3)                                            ;R0 IS NOT EQUAL TO 177525 OR INCORRECT SEQUENCE
 (3)  003234  000035                            35
 (1)  003236  021527  000060                    CMP     (R5),#60                ;IS $TESTN = #60
 (1)  003242  001372                            BNE     1$              ;IF NOT THEN GO TO HLT ABOVE
 (1)  003244  005215                            INC     (R5)
 (1)
 (1)
 (1)
```

```
5687                                    ;*****************************************************************************
 (1)                                    ;TEST:61   LSI-11   ASH     125252 SHIFTED BY @(3)+ = 177525  PS = 10
 (1)                                    ;*****************************************************************************
 (1)
 (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)+
 (2)  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  013612                    JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
 (3)                                            ;THE PS IS NOT EQUAL TO 10
 (3)  003276  000036                            36
 (1)  003300  022700  177525                    CMP     #177525,%0      ;IS THE RESULT 177525?
 (1)  003304  001403                            BEQ     .+10
 (2)  003306                            1$:
 (3)  003306  004767  013576                    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)

5688                                    ;*****************************************************************************
 (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)
 (2)  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  013534                    JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
 (3)                                            ;THE PS IS NOT EQUAL TO 10
 (3)  003354  000040                            40
 (1)  003356  022700  177525                    CMP     #177525,%0      ;IS THE RESULT 177525?
 (1)  003362  001403                            BEQ     .+10
 (2)  003364                            1$:
 (3)  003364  004767  013520                    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
                                        ;*********************************



                                            ;************
                                            ;TESTS 63-157
                                            ;************

003402  012737  000062  000430     MOV     #62,@#COUNT
003410  005037  000434             CLR     @#TEMP1         ;TEMP1=0
003414  012737  000001  000436     MOV     #1,@#TEMP2      ;TEMP2=1
003422  005037  000440             CLR     @#TEMP3         ;TEMP3=0
003426  005037  000442             CLR     @#TEMP4         ;TEMP4=0
003432  012737  000001  000444     MOV     #1,@#TEMP5      ;TEMP5=1
003440  005037  000446             CLR     @#TEMP6         ;0 1 SHIFTED BY 0=0 1, PS=0

003444  010703                 REG01: SCOPE3
003446  010502                     MOV     R5,R2           ;SAVE R5
003450  013700  000434             MOV     @#TEMP1,%0      ;PLACE THE CONTENTS OF TEMP1 IN REGISTER 0
003454  013701  000436             MOV     @#TEMP2,%0!1    ;PLACE THE CONTENTS OF TEMP2 IN REGISTER 1
003460  000241                     CLC
003462  032737  000001  000406     BIT     #1,@#$PASS      ;IS IT AN EVEN PASS ?
003470  001004                     BNE     2$              ;IF NOT THEN GO TO 2$
003472  013705  000440             MOV     @#TEMP3,R5      ;OTHERWISE EXECUTE ASHC INSTRUCTION IN MODE 0
003476  073005                     ASHC    R5,R0           ;USING R0
003500  000402                     BR      4$
003502  073067  174732         2$: ASHC    TEMP3,%0        ;ASHC REGISTER 0 BY THE CONTENTS OF TEMP3
003506                       4$: MFPS    @#PSWORD        ;SAVE PS
(1)     003506  106737             .WORD   106700!..C
003512  123737  000446  000432     CMPB    @#TEMP6,@#PSWORD;COMPARE PS WITH THE CONTENTS OF TEMP6
003520  001403                     BEQ     .+10
003522  004767  013362             JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
(2)                                                      ;WRONG PS
(2)     003526  000042             42
003530  005237  000430             INC     @#COUNT
003534  023700  000442             CMP     @#TEMP4,%0      ;IS THE RESULT IN R0 SAME AS TEMP4?
003540  001403                     BEQ     .+10
003542  004767  013342             JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
(2)                                                      ;WRONG RESULT IN R0
(2)     003546  000043             43
003550  023701  000444             CMP     @#TEMP5,%1      ;IS THE RESULT IN R1 SAME AS TEMP5?
003554  001403                     BEQ     .+10            ;TEMP1 TEMP2 SHIFTED BY TEMP3=TEMP4 TEMP5
                                                         ;AND PS=TEMP6
003556  004767  013326             JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
(2)                                                      ;WRONG RESULT IN R1
(2)     003562  000044             44
003564  010205                     MOV     R2,R5           ;RESTORE R5
003566  021537  000430             CMP     (R5),@#COUNT    ;IS TEST NUMBER=COUNTER?
003572  001403                     BEQ     .+10
003574  004767  013310             JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
(2)                                                      ;NO
(2)     003600  000045             45
```

```
 5746  003602  005215                          INC     (R5)
 5747  003604  021527  000160                  CMP     (R5),#160       ;HAVE THE FIRST 159 TEST BEEN EXECUTED?
 5748  003610  002014                          BGE     6$              ;YES
 5749  003612  005237  000440                  INC     @#TEMP3
 5750  003616  000241                          CLC
 5751  003620  006137  000444                  ROL     @#TEMP5         ;ROTATE TEMP5 LEFT BY 1 PLACE
 5752  003624  006137  000442                  ROL     @#TEMP4         ;INTRODUCE CARRY FROM TEMP4 IN TEMP5
 5753  003630  021527  000121                  CMP     (R5),#121       ;IS IT TEST 121?
 5754  003634  001004                          BNE     REG23
 5755  003636  004467  000410                  JSR     R4,RITSH        ;IF SO THEN GO AND INITIATE RIGHT SHIFT
 5756  003642  004767  000440          6$:     JSR     %7,TST160
 5757  003646  010701                REG23:  SCOPE1
 5758  003650  013702  000434                  MOV     @#TEMP1,%2      ;PLACE THE CONTENTS OF TEMP1 IN REGISTER 2
 5759  003654  013703  000436                  MOV     @#TEMP2,%2!1    ;PLACE THE CONTENTS OF TEMP2 IN REGISTER 3
 5760  003660  000241                          CLC
 5761  003662  032737  000001  000406          BIT     #1,@#$PASS      ;IS IT AN EVEN PASS ?
 5762  003670  001004                          BNE     2$              ;IF NOT THEN GO TO 2$
 5763  003672  013704  000440                  MOV     @#TEMP3,R4      ;OTHERWISE EXECUTE ASHC INSTRUCTION IN MODE 0
 5764  003676  073204                          ASHC    R4,R2           ;USING R2
 5765  003700  000402                          BR      4$
 5766  003702  073267  174532          2$:     ASHC    TEMP3,%2        ;ASHC REGISTER 2 BY THE CONTETNS OF TEMP3
 5770  003706                          4$:     MFPS    @#PSWORD        ;SAVE PS
   (1) 003706  106737                          .WORD   106700!..C
 5774  003712  123737  000446  000432          CMPB    @#TEMP6,@#PSWORD;COMPARE PS WITH THE CONTENTS OF TEMP6
 5775  003720  001403                          BEQ     .+10
 5776  003722  004767  013162                  JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
   (2)                                                                 ;WRONG PS
   (2) 003726  000046                          46
 5777  003730  005237  000430                  INC     @#COUNT
 5778  003734  023702  000442                  CMP     @#TEMP4,%2      ;IS THE RESULT IN R2 SAME AS TEMP4?
 5779  003740  001403                          BEQ     .+10
 5780  003742  004767  013142                  JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
   (2)                                                                 ;WRONG RESULT IN R2
   (2) 003746  000047                          47
 5781  003750  023703  000444                  CMP     @#TEMP5,%3      ;IS THE RESULT IN R3 SAME AS TEMP5?
 5782  003754  001403                          BEQ     .+10            ;TEMP1 TEMP2 SHIFTED BY TEMP3=TEMP4 TEMP5
 5783                                                                  ;AND PS=TEMP6
 5784  003756  004767  013126                  JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
   (2)                                                                 ;WRONG RESULT IN R1
   (2) 003762  000050                          50
 5785  003764  021537  000430                  CMP     (R5),@#COUNT    ;IS TEST NUMBER=COUNTER?
 5786  003770  001403                          BEQ     .+10
 5787  003772  004767  013112                  JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
   (2)                                                                 ;NO
   (2) 003776  000051                          51
 5788  004000  005215                          INC     (R5)
 5789  004002  021527  000160                  CMP     (R5),#160       ;HAVE THE FIRST 159 TEST BEEN EXECUTED?
 5790  004006  002014                          BGE     6$              ;YES
 5791  004010  005237  000440                  INC     @#TEMP3
 5792  004014  000241                          CLC
 5793  004016  006137  000444                  ROL     @#TEMP5         ;ROTATE TEMP5 LEFT BY 1 PLACE
 5794  004022  006137  000442                  ROL     @#TEMP4         ;INTRODUCE CARRY FROM TEMP5 IN TEMP4
 5795  004026  021527  000121                  CMP     (R5),#121       ;IS IT TEST 121?
 5796  004032  001004                          BNE     REG45
 5797  004034  004467  000212                  JSR     R4,RITSH        ;IF SO THEN GO AND INITIATE RIGHT SHIFT
 5798  004040  004767  000242          6$:     JSR     %7,TST160
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 5799  004044  010701                    REG45:  SCOPE1
 5800  004046  010501                            MOV     R5,R1           ;SAVE R5
 5801  004050  013704  000434                    MOV     @#TEMP1,%4      ;PLACE THE CONTENTS OF TEMP1 IN REGISTER 4
 5802  004054  013705  000436                    MOV     @#TEMP2,%4!1    ;PLACE THE CONTENTS OF TEMP2 IN REGISTER 5
 5803  004060  000241                            CLC
 5804  004062  032737  000001  000406            BIT     #1,@#$PASS      ;IS IT AN EVEN PASS ?
 5805  004070  001004                            BNE     2$              ;IF NOT THEN GO TO 2$
 5806  004072  013700  000440                    MOV     @#TEMP3,R0      ;OTHERWISE EXECUTE ASHC INSTRUCTION IN MODE 0
 5807  004076  073400                            ASHC    R0,R4           ;USING R4
 5808  004100  000402                            BR      4$
 5809  004102  073467  174332            2$:     ASHC    TEMP3,%4        ;ASHC REGISTER 4 BY THE CONTENTS OF TEMP3
 5813  004106                              4$:     MFPS    @#PSWORD        ;SAVE PS
   1)  004106  106737                            .WORD   106700!..C
 5817  004112  123737  000446  000432            CMPB    @#TEMP6,@#PSWORD;COMPARE PS WITH THE CONTENTS OF TEMP6
 5818  004120  001403                            BEQ     .+10
 5819  004122  004767  012762                    JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
  (2)                                                                    ;WRONG PS
  (2)  004126  000052                            52
 5820  004130  005237  000430                    INC     @#COUNT
 5821  004134  023704  000442                    CMP     @#TEMP4,%4      ;IS THE RESULT IN R4 SAME AS TEMP4?
 5822  004140  001403                            BEQ     .+10
 5823  004142  004767  012742                    JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
  (2)                                                                    ;WRONG RESULT IN R4
  (2)  004146  000053                            53
 5824  004150  023705  000444                    CMP     @#TEMP5,%5      ;IS THE RESULT IN R5 SAME AS TEMP5?
 5825  004154  001403                            BEQ     .+10            ;TEMP1 TEMP2 SHIFTED BY TEMP3=TEMP4 TEMP5
 5826                                                                    ;AND PS=TEMP6
 5827  004156  004767  012726                    JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
  (2)                                                                    ;WRONG RESULT IN R5
  (2)  004162  000054                            54
 5828  004164  021137  000430                    CMP     (R1),@#COUNT    ;IS TEST NUMBER=COUNTER?
 5829  004170  001403                            BEQ     .+10
 5830  004172  004767  012712                    JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
  (2)                                                                    ;NO
  (2)  004176  000055                            55
 5831  004200  010105                            MOV     R1,R5           ;RESTORE R5
 5832  004202  005215                            INC     (R5)
 5833  004204  021527  000160                    CMP     (R5),#160       ;HAVE THE FIRST 159 TEST BEEN EXECUTED?
 5834  004210  002014                            BGE     6$              ;YES
 5835  004212  005237  000440                    INC     @#TEMP3
 5836  004216  000241                            CLC
 5837  004220  006137  000444                    ROL     @#TEMP5         ;ROTATE TEMP5 LEFT BY 1 PLACE
 5838  004224  006137  000442                    ROL     @#TEMP4         ;INTRODUCE CARRY FROM TEMP5 IN TEMP4
 5839  004230  021527  000121                    CMP     (R5),#121       ;IS IT TEST 121?
 5840  004234  001004                            BNE     8$
 5841  004236  004467  000010                    JSR     R4,RITSH        ;IF SO THEN GO AND INITIATE RIGHT SHIFT
 5842  004242  004767  000040            6$:     JSR     %7,TST160
 5843  004246  000167  177172            8$:     JMP     REG01
 5844  004252  022424                    RITSH:  CMP     (R4)+,(R4)+     ;MAKE R4 POINT TO THE NEXT REG TAG
 5845  004254  012737  040000  000434            MOV     #40000,@#TEMP1  ;TEMP1=4000
 5846  004262  005037  000436                    CLR     @#TEMP2         ;TEMP2=0
 5847  004266  012737  177742  000440            MOV     #-30.,@#TEMP3   ;TEMP3=-30
 5848  004274  005037  000442                    CLR     @#TEMP4         ;TEMP4=0
 5849  004300  005237  000444                    INC     @#TEMP5         ;TEMP5=1
 5850  004304  000204                            RTS     R4
 5851  004306  021527  000160            TST160: CMP     (R5),#160       ;IS IT TEST 160
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5852  004312  001010                          BNE     TST161          ;IF NOT THEN TRY TEST 161
5853  004314  005037  000434                  CLR     @#TEMP1         ;0 0 SHIFTED BY 0
5854  004320  005037  000442                  CLR     @#TEMP4         ;IS EQUAL TO 0 0
5855  004324  012737  000004  000446          MOV     #4,@#TEMP6      ;AND PS=4
5856  004332  000207                          RTS     %7
5857  004334  021527  000161          TST161: CMP     (R5),#161       ;IS IT TEST 161
5858  004340  001004                          BNE     TST162
5859  004342  012737  177746  000440          MOV     #-32.,@#TEMP3   ;0 0 SHIFTED BY -32=0 0, PS=4
5860  004350  000207                          RTS     %7
5861  004352  021527  000162          TST162: CMP     (R5),#162       ;IS IT TEST 162
5862  004356  001004                          BNE     TST163          ;IF NOT THEN TRY TEST 163
5863  004360  012737  000032  000440          MOV     #32.,@#TEMP3    ;0 0 SHIFTED BY 32=0 0, PS=4
5864  004366  000207                          RTS     %7
5865  004370  021527  000163          TST163: CMP     (R5),#163       ;IS IT TEST 163?
5866  004374  001016                          BNE     TST164          ;IF NOT THEN TRY TEST 164
5867  004376  012737  052525  000434          MOV     #52525,@#TEMP1  ;52525 0
5868  004404  012737  177760  000440          MOV     #-16.,@#TEMP3   ;SHIFTED BY -16.
5869  004412  005037  000442                  CLR     @#TEMP4
5870  004416  012737  052525  000444          MOV     #52525,@#TEMP5  ;IS EQUAL TO 0 52525
5871  004424  005037  000446                  CLR     @#TEMP6         ;AND PS = 0
5872  004430  000207                          RTS     %7
5873  004432  021527  000164          TST164: CMP     (R5),#164       ;IS IT TEST 164?
5874  004436  001014                          BNE     TST165          ;IF NOT THEN TRY TEST 165
5875  004440  012737  125252  000434          MOV     #125252,@#TEMP1 ;125252 0 SHIFTED BY -16.
5876  004446  005337  000442                  DEC     @#TEMP4
5877  004452  012737  125252  000444          MOV     #125252,@#TEMP5 ;IS EQUAL TO -1 125252
5878  004460  012737  000010  000446          MOV     #10,@#TEMP6     ;AND PS=10
5879  004466  000207                          RTS     %7
5880  004470  021527  000165          TST165: CMP     (R5),#165       ;IS IT TEST 165?
5881  004474  001007                          BNE     TST166          ;IF NOT THEN TRY TEST 166
5882  004476  012737  177777  000434          MOV     #-1,@#TEMP1     ;-1 0 SHIFTED BY -16
5883  004504  012737  177777  000444          MOV     #-1,@#TEMP5     ;IS EQUAL TO -1 -1, AND PS=10
5884  004512  000207                          RTS     %7
5885  004514  021527  000166          TST166: CMP     (R5),#166       ;IS IT TEST 166?
5886  004520  001011                          BNE     TST167          ;IF NOT THEN TRY TEST 167
5887  004522  012737  100000  000434          MOV     #100000,@#TEMP1 ;100000 0
5888  004530  012737  177740  000440          MOV     #-32.,@#TEMP3   ;SHIFTED BY -32 IS EQUAL TO -1 -1
5889  004536  005237  000446                  INC     @#TEMP6         ;AND PS=11
5890  004542  000207                          RTS     %7
5891  004544  021527  000167          TST167: CMP     (R5),#167       ;IS IT TEST 167?
5892  004550  001014                          BNE     TST170          ;IF NOT THEN TRY TEST 170
5893  004552  005037  000434                  CLR     @#TEMP1
5894  004556  005337  000436                  DEC     @#TEMP2         ;0 -1
5895  004562  012737  000020  000440          MOV     #16.,@#TEMP3    ;SHIFTED BY 16.
5896  004570  005037  000444                  CLR     @#TEMP5         ;IS EQUAL TO -1 0
5897  004574  005237  000446                  INC     @#TEMP6         ;AND PS=12
5898  004600  000207                          RTS     %7
5899  004602  021527  000170          TST170: CMP     (R5),#170       ;IS IT TEST 170?
5900  004606  001007                          BNE     TST171          ;IF NOT THEN TRY TEST 171
5901  004610  012737  125252  000436          MOV     #125252,@#TEMP2 ;0 125252 SHIFTED BY 16
5902  004616  012737  125252  000442          MOV     #125252,@#TEMP4 ;IS EQUAL TO 125252 0, AND PS=12
5903  004624  000207                          RTS     %7
5904  004626  021527  000171          TST171: CMP     (R5),#171       ;IS IT TEST 171?
5905  004632  001010                          BNE     TST172          ;IF NOT THEN TRY TEST 172
5906  004634  005337  000440                  DEC     @#TEMP3         ;0 125252 SHIFTED BY 15
5907  004640  012737  052525  000442          MOV     #52525,@#TEMP4  ;IS EQUAL TO 52525 0
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 5908  004646  005037  000446                    CLR     @#TEMP6         ;AND PS=0
 5909  004652  000207                            RTS     %7
 5910  004654  021527  000172          TST172:   CMP     (R5),#172       ;IS IT TEST 172?
 5911  004660  001006                            BNE     TST173          ;IF NOT THEN TRY TEST 173
 5912  004662  012737  052525  000436            MOV     #52525,@#TEMP2  ;0 52525
 5913  004670  005237  000440                    INC     @#TEMP3         ;SHIFTED BY 16. IS EQUAL TO 52525 0, AND PS=0
 5914  004674  000207                            RTS     %7
 5915  004676  021527  000173          TST173:   CMP     (R5),#173       ;IS IT TEST 173?
 5916  004702  001014                            BNE     TST174          ;IF NOT THEN TRY TEST 174
 5917  004704  012737  177777  000436            MOV     #-1,@#TEMP2     ;0 -1
 5918  004712  005337  000440                    DEC     @#TEMP3         ;SHIFTED BY 15.
 5919  004716  012737  077777  000442            MOV     #77777,@#TEMP4
 5920  004724  012737  100000  000444            MOV     #100000,@#TEMP5 ;IS EQUAL TO 77777 100000, AND PS=0
 5921  004732  000207                            RTS     %7
 5922  004734  021527  000174          TST174:   CMP     (R5),#174       ;IS IT TEST 174?
 5923  004740  001013                            BNE     TST175          ;IF NOT THEN TRY TEST 175
 5924  004742  012737  100000  000434            MOV     #100000,@#TEMP1
 5925  004750  005337  000436                    DEC     @#TEMP2         ;100000 -2 SHIFTED BY 15.
 5926  004754  005037  000444                    CLR     @#TEMP5         ;IS EQUAL TO 77777 0
 5927  004760  012737  000002  000446            MOV     #2,@#TEMP6      ;AND PS=2
 5928  004766  000207                            RTS     %7
 5929  004770  021527  000175          TST175:   CMP     (R5),#175       ;IS IT TEST 175?
 5930  004774  001015                            BNE     ENT176          ;IF NOT THEN TRY TEST 176
 5931  004776  012737  177777  000434            MOV     #-1,@#TEMP1
 5932  005004  005037  000436                    CLR     @#TEMP2         ;-1 0
 5933  005010  005237  000440                    INC     @#TEMP3         ;SHIFTED BY 16.
 5934  005014  005037  000442                    CLR     @#TEMP4         ;IS EQUAL TO 0 0
 5935  005020  012737  000007  000446            MOV     #7,@#TEMP6      ;AND PS=7
 5936  005026  000207                            RTS     %7
 5937  005030  021527  000176          ENT176:   CMP     (R5),#176       ;IS THE PROGRM ENTERING TEST 176?
 5938  005034  001403                            BEQ     .+10
 5939  005036  004767  012046                    JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
 (2)                                                                       ;TEST NUMBER GOOFED
 (2)   005042  000056                            56
 5940
 5941  005044  005726                            TST     (SP)+           ;RESTORE STACK POINTER
 5942
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5943                                    ;*****************************************************************************
 (1)                                    ;TEST:176       1 SHIFTED BY 8. = 400  PS = 0
 (1)                                    ;*****************************************************************************
 (1)
 (1)  005046  010701                    TST176: SCOPE1
 (1)  005050  012701  000000                    MOV     #DUMMY,%1       ;LOAD R1 WITH DUMMY
 (1)  005054  012701  000001                    MOV     #1,%1!1         ;LOAD R1!1 WITH 1
 (1)  005060  000241                            CLC
 (1)  005062  073127  000010                    ASHC    #8.,%1          ;SHIFT R1,R1!1 BY 8.
 (2)  005066                                    MFPS    @#PSWORD        ;SAVE PS
 (2)  005066  106737                            .WORD   106700!..C
 (1)  005072  122737  000000  000432            CMPB    #0,@#PSWORD     ;IS THE PS 0?
 (1)  005100  001403                            BEQ     .+10
 (3)  005102  004767  012002                    JSR     PC,$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  011766                    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 $TESTN = #176?
 (1)  005130  001403                            BEQ     .+10            ;IF NOT THEN GO TO HLT
 (3)  005132  004767  011752                    JSR     PC,$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)
5944                                    ;*****************************************************************************
 (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.
 (2)  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  011706                    JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
 (3)                                                                    ;THE PS IS NOT EQUAL TO 11
 (3)  005202  000062                            62
 (1)  005204  022703  100000                    CMP     #100000,%3      ;IS THE RESULT 100000?
 (1)  005210  001403                            BEQ     .+10
 (3)  005212  004767  011672                    JSR     PC,$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 $TESTN = #177?
 (1)  005224  001403                            BEQ     .+10            ;IF NOT THEN GO TO HLT
 (3)  005226  004767  011656                    JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
 (3)                                                                    ;TEST IS IN WRONG SEQUENCE
 (3)  005232  000064                            64
 (1)  005234  005215                            INC     (R5)
```

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        (1)
        (1)
```

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5945                                    ;*****************************************************************
 (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,R5       ;LOAD R5 WITH DUMMY
 (1)  005246  012705  052525                    MOV     #52525,R5!1     ;LOAD R5!1 WITH 52525
 (1)  005252  000241                            CLC
 (1)  005254  073527  000000                    ASHC    #0,R5           ;SHIFT R5,R5!1 BY 0
 (2)  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  011610                    JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
 (3)                                                                    ;THE PS IS NOT EQUAL TO 0
 (3)  005300  000065                            65
 (1)  005302  022705  052525                    CMP     #52525,R5       ;IS THE RESULT 52525?
 (1)  005306  001403                            BEQ     .+10
 (3)  005310  004767  011574                    JSR     PC,$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 $TESTN = #200?
 (1)  005324  001403                            BEQ     .+10            ;IF NOT THEN GO TO HLT
 (2)  005326  004767  011556                    JSR     PC,$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)
 (1)
5946                                    ;*****************************************************************
 (1)                                    ;TEST:201       20010 SHIFTED BY -13. = 101  PS = 0
 (1)                                    ;*****************************************************************
 (1)
 (1)  005336  010701                    TST201: SCOPE1
 (1)  005340  012701  000000                    MOV     #DUMMY,R1       ;LOAD R1 WITH DUMMY
 (1)  005344  012701  020010                    MOV     #20010,R1!1     ;LOAD R1!1 WITH 20010
 (1)  005350  000241                            CLC
 (1)  005352  073127  177763                    ASHC    #-13.,R1        ;SHIFT R1,R1!1 BY -13.
 (2)  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  011512                    JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
 (3)                                                                    ;THE PS IS NOT EQUAL TO 0
 (3)  005376  000070                            70
 (1)  005400  022701  000101                    CMP     #101,R1         ;IS THE RESULT 101?
 (1)  005404  001403                            BEQ     .+10
 (3)  005406  004767  011476                    JSR     PC,$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 $TESTN = #201?
 (1)  005420  001403                            BEQ     .+10            ;IF NOT THEN GO TO HLT
 (2)  005422  004767  011462                    JSR     PC,$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)
```

```
5947                                    ;*****************************************************************
 (1)                                    ;TST202       -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.
 (2)  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  011416                    JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
 (3)                                                                    ;THE PS IS NOT EQUAL TO 11
 (3)  005472  000073                            73
 (1)  005474  022703  000000                    CMP     #0,%3           ;IS THE RESULT 0?
 (1)  005500  001403                            BEQ     .+10
 (3)  005502  004767  011402                    JSR     PC,$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 $TESTN = #202?
 (1)  005514  001403                            BEQ     .+10            ;IF NOT THEN GO TO HLT
 (3   005516  004767  011366                    JSR     PC,$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)
5948                                    ;*****************************************************************
 (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
 (2)  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  011320                    JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
 (3)                                                                    ;THE PS IS NOT EQUAL TO 1
 (3)  005570  000076                            76
 (1)  005572  022705  100000                    CMP     #100000,%5      ;IS THE RESULT 100000?
 (1)  005576  001403                            BEQ     .+10
 (3)  005600  004767  011304                    JSR     PC,$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 $TESTN = #203?
 (1)  005614  001403                            BEQ     .+10            ;IF NOT THEN GO TO HLT
 (3)  005616  004767  011266                    JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
 (3)                                                                    ;TEST IS IN WRONG SEQUENCE
```

D03


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

```
5949                                    ;*****************************************************************
 (1)                                    ;TEST:204       125252 SHIFTED BY -16. = 125252  PS = 11
 (1)                                    ;*****************************************************************
 (1)
 (1)  005626  010701                    TST204: SCOPE1
 (1)  005630  012701  000000                    MOV     #DUMMY,%1       ;LOAD R1 WITH DUMMY
 (1)  005634  012701  125252                    MOV     #125252,%1!1    ;LOAD R1!1 WITH 125252
 (1)  005640  000241                            CLC
 (1)  005642  073127  177760                    ASHC    #-16.,%1        ;SHIFT R1,R1!1 BY -16.
 (2)  005646                                    MFPS    @#PSWORD        ;SAVE PS
 (2)  005646  106737                            .WORD   106700!..C
 (1)  005652  122737  000011  000432            CMPB    #11,@#PSWORD    ;IS THE PS 11?
 (1)  005660  001403                            BEQ     .+10
 (3)  005662  004767  011222                    JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
 (3)                                                                    ;THE PS IS NOT EQUAL TO 11
 (3)  005666  000101                            101
 (1)  005670  022701  125252                    CMP     #125252,%1      ;IS THE RESULT 125252?
 (1)  005674  001403                            BEQ     .+10
 (3)  005676  004767  011206                    JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
 (3)                                                                    ;R1 IS NOT EQUAL TO 125252
 (3)  005702  000102                            102
 (1)  005704  021527  000204                    CMP     (R5),#204               ;IS $TESTN = #204?
 (1)  005710  001403                            BEQ     .+10
 (3)  005712  004767  011172                    JSR     PC,$HLT         ;IF NOT THEN GO TO HLT
 (3)                                                                    ;SEEN AN ERROR, GO TO TH HALT ROUTINE
 (3)  005716  000103                            103                     ;TEST IS IN WRONG SEQUENCE
 (1)  005720  005215                            INC     (R5)
 (1)
 (1)
5950                                    ;*****************************************************************
 (1)                                    ;TEST:205       125252 125252 SHIFTED BY 21. = 52500 000000  PS = 3
 (1)                                    ;*****************************************************************
 (1)
 (1)  005722  010701                    TST205: SCOPE1
 (1)  005724  012702  125252                    MOV     #125252,%2      ;LOAD R2 WITH 125252
 (1)  005730  012703  125252                    MOV     #125252,%2!1    ;LOAD R2!1 WITH 125252
 (1)  005734  000241                            CLC
 (1)  005736  073227  000025                    ASHC    #21.,%2         ;SHIFT R2,R2!1 BY 21.
 (2)  005742                                    MFPS    @#PSWORD        ;SAVE PS
 (2)  005742  106737                            .WORD   106700!..C
 (1)  005746  122737  000003  000432            CMPB    #3,@#PSWORD     ;IS THE PS 3?
 (1)  005754  001403                            BEQ     .+10
 (3)  005756  004767  011126                    JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
 (3)                                                                    ;THE PS IS NOT EQUAL TO 3
 (3)  005762  000104                            104
 (1)  005764  022702  052500                    CMP     #52500,%2       ;IS THE RESULT 52500?
 (1)  005770  001403                            BEQ     .+10
 (3)  005772  004767  011112                    JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
 (3)                                                                    ;R2 IS NOT EQUAL TO 52500
 (3)  005776  000105                            105
 (1)  006000  022703  000000                    CMP     #000000,%2!1    ;IS THE RESULT 000000?
 (1)  006004  001403                            BEQ     .+10
 (3)  006006  004767  011076                    JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
 (3)                                                                    ;R2!1 IS NOT EQUAL TO 000000
 (3)  006012  000106                            106
 (1)  006014  021527  000205                    CMP     (R5),#205               ;IS $TESTN = #205?
```

```
(1)  006020  001403                        BEQ     .+10            ;IF NOT THEN GO TO HLT
(3)  006022  004767  011062                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)
5951
5952  006032  012702  177771               MOV     #-7,%2
5953  006036  012703  000454               MOV     #S1,%3
5954  006042  012704  000456               MOV     #S2,%4
5955
```

```
5956                                    ;*****************************************************************************
 (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  172356                    ASHC    S1,%0           ;SHIFT R0,R0!1 BY S1
 (2)  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  011002                    JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
 (3)                                                                    ;THE PS IS NOT EQUAL TO 10
 (3)  006106  000110                            110
 (1)  006110  022700  177525                    CMP     #177525,%0      ;IS THE RESULT 177525?
 (1)  006114  001403                            BEQ     .+10
 (3)  006116  004767  010766                    JSR     PC,$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
 (2)  006132                            1$:
 (3)  006132  004767  010752                    JSR     PC,$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)
5957                                    ;*****************************************************************************
 (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
 (2)  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  010700                    JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
 (3)                                                                    ;THE PS IS NOT EQUAL TO 10
 (3)  006210  000113                            113
 (1)  006212  022700  177525                    CMP     #177525,%0      ;IS THE RESULT 177525?
 (1)  006216  001403                            BEQ     .+10
 (3)  006220  004767  010664                    JSR     PC,$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
 (2)  006234                            1$:
```

```
(3)  006234  004767  010650                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)
```

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5958                                    ;*****************************************************************************
 (1)                                    ;TEST:210       125252 125252 SHIFTED BY @#S1 = 177525 52525  PS = 10
 (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
 (2)  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  010576                    JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
 (3)                                            ;THE PS IS NOT EQUAL TO 10
 (3)  006312  000116                            116
 (1)  006314  022700  177525                    CMP     #177525,%0      ;IS THE RESULT 177525?
 (1)  006320  001403                            BEQ     .+10
 (3)  006322  004767  010562                    JSR     PC,$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
 (2)  006336                            1$:
 (3)  006336  004767  010546                    JSR     PC,$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)
 (1)
5959                                    ;*****************************************************************************
 (1)                                    ;TEST:211       125252 125252 SHIFTED BY (3) = 177525 52525  PS = 10
 (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)
 (2)  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  010476                    JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
 (3)                                            ;THE PS IS NOT EQUAL TO 10
 (3)  006412  000121                            121
 (1)  006414  022700  177525                    CMP     #177525,%0      ;IS THE RESULT 177525?
 (1)  006420  001403                            BEQ     .+10
 (3)  006422  004767  010462                    JSR     PC,$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
 (2)  006436                            1$:
```

```
(3)  006436  004767  010446              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)
```

```
5960                                    ;*****************************************************************************
 (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)+
 (2)  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  010376                    JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
 (3)                                                                    ;THE PS IS NOT EQUAL TO 10
 (3)  006512  000124                            124
 (1)  006514  022700  177525                    CMP     #177525,%0      ;IS THE RESULT 177525?
 (1)  006520  001403                            BEQ     .+10
 (3)  006522  004767  010362                    JSR     PC,$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
 (2)  006536                            1$:
 (3)  006536  004767  010346                    JSR     PC,$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)
5961                                    ;*****************************************************************************
 (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)
 (2)  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  010276                    JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
 (3)                                                                    ;THE PS IS NOT EQUAL TO 10
 (3)  006612  000127                            127
 (1)  006614  022700  177525                    CMP     #177525,%0      ;IS THE RESULT 177525?
 (1)  006620  001403                            BEQ     .+10
 (3)  006622  004767  010262                    JSR     PC,$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
 (2)  006636                            1$:
```

L03


```
(3)  006636  004767  010246                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)
```

```
5962                                    ;*************************************************************************
 (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)
 (2)  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  010174                    JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
 (3)                                                                    ;THE PS IS NOT EQUAL TO 11
 (3)  006714  000132                            132
 (1)  006716  022700  177252                    CMP     #177252,%0      ;IS THE RESULT 177252?
 (1)  006722  001403                            BEQ     .+10
 (3)  006724  004767  010160                    JSR     PC,$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
 (2)  006740                            1$:
 (3)  006740  004767  010144                    JSR     PC,$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)
 (1)
5963                                    ;*************************************************************************
 (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)
 (2)  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  010072                    JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
 (3)                                                                    ;THE PS IS NOT EQUAL TO 10
 (3)  007016  000135                            135
 (1)  007020  022700  177525                    CMP     #177525,%0      ;IS THE RESULT 177525?
 (1)  007024  001403                            BEQ     .+10
 (3)  007026  004767  010056                    JSR     PC,$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
 (2)  007042                            1$:
```

N03


```
(3)  007042  004767  010042                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)
```

```
5964                                    ;*************************************************************************
 (1)                                    ;TEST:216       125252 125252 SHIFTED BY @(4)+ = 177525 52525  PS = 10
 (1)                                    ;*************************************************************************
 (1)
 (1)  007060  010701                    TST216: SCOPE
 (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)+
 (2)  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  007772                    JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
 (3)                                            ;THE PS IS NOT EQUAL TO 10
 (3)  007116  000140                            140
 (1)  007120  022700  177525                    CMP     #177525,%0      ;IS THE RESULT 177525?
 (1)  007124  001403                            BEQ     .+10
 (3)  007126  004767  007756                    JSR     PC,$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
 (2)  007142                            1$:
 (3)  007142  004767  007742                    JSR     PC,$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)
5965                                    ;*************************************************************************
 (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)
 (2)  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  007672                    JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
 (3)                                            ;THE PS IS NOT EQUAL TO 10
 (3)  007216  000143                            143
 (1)  007220  022700  177525                    CMP     #177525,%0      ;IS THE RESULT 177525?
 (1)  007224  001403                            BEQ     .+10
 (3)  007226  004767  007656                    JSR     PC,$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
 (2)  007242                            1$:
```

```
    (3)  007242  004767  007642              JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
    (3)                                                             ;R0!1 IS NOT EQUAL TO 52525 OR INCORRECT SEQUENCE
    (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     (P5)
    (1)
    (1)
 5966
 5967
 5968
 5969
 5970
 5971
 5972
```

```
                                        ;*********************************
                                        ;       MUL INSTRUCTION TESTS
                                        ;*********************************




                        ;*************************************************************************
                        ;TEST:220       MUL     1 * #0 = 0 0        PS = 4
                        ;*************************************************************************

007260  010701                  TST220: SCOPE
007262  012700  000001                  MOV     #1,%0           ;LOAD MULTIPLICAND WITH 1
007266  070027  000000                  MUL     #0,%0           ;MULTIPLY 1 * #0
007272                                  MFPS    @#PSWORD        ;SAVE PS
007272  106737                          .WORD   106700!..C
007276  122737  000004  000432          CMPB    #4,@#PSWORD     ;IS PS = 4
007304  001403                          BEQ     .+10
007306  004767  007576                  JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
                                                                ;FS IS WRONG
007312  000146                          146
007314  022700  000000                  CMP     #0,%0           ;IS HIGH ORDER = 0
007320  001403                          BEQ     .+10
007322  004767  007562                  JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
                                                                ;HIGH ORDER IS WRONG
007326  000147                          147
007330  022701  000000                  CMP     #0,%0!1         ;IS LOW ORDER = 0
007334  001403                          BEQ     .+10
007336                          1$:
007336  004767  007546                  JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
                                                                ;LOW ORDER IS WRONG OR WRONG SEQUENCE
007342  000150                          150
007344  021527  000220                  CMP     (R5),#220
007350  001372                          BNE     1$              ;IF IN WRONG SEQUENCE GO TO THE HLT ABOVE
007352  005215                          INC     (R5)
```

```
 6079                                   ;*****************************************************************
  (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
  (2)  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  007502                   JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
  (3)                                                                   ;PS IS WRONG
  (3)  007406  000151                           151
  (1)  007410  022700  177777                   CMP     #-1,%0          ;IS HIGH ORDER = -1
  (1)  007414  001403                           BEQ     .+10
  (3)  007416  004767  007466                   JSR     PC,$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
  (2)  007432                           1$:
  (3)  007432  004767  007452                   JSR     PC,$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)
  (1)
```

F04


```
6080
 (1)                                    ;*****************************************************************
 (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
 (2)  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  007406                    JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
 (3)                                            ;PS IS WRONG
 (3)  007502  000154                            154
 (1)  007504  022702  000000                    CMP     #0,%2           ;IS HIGH ORDER = 0
 (1)  007510  001403                            BEQ     .+10
 (3)  007512  004767  007372                    JSR     PC,$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
 (2)  007526                            1$:
 (3)  007526  004767  007356                    JSR     PC,$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)
 (1)
```

```
6081                                    ;*****************************************************************************
 (1)                                    ;TEST:223       MUL     1000 * #200 = 1 0       PS = 1
 (1)                                    ;*****************************************************************************
 (1)
 (1)  007544  010701                    TST223: 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
 (2)  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  007310                    JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
 (3)                                            ;PS IS WRONG
 (3)  007600  000157                            157
 (1)  007602  022704  000001                    CMP     #1,%4           ;IS HIGH ORDER = 1
 (1)  007606  001403                            BEQ     .+10
 (3)  007610  004767  007274                    JSR     PC,$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
 (2)  007624                            1$:
 (3)  007624  004767  007260                    JSR     PC,$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)
 (1)
```

```
 6082
  (1)                                   ;*****************************************************************************
  (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
  (2)  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  007212                   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  007176                   JSR     PC $HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
  (3)                                                                   ;HIGH ORDER IS WRONG
  (3)  007712  000163                           163
  (1)  007714  022701  177776                   CMP     #177776,%0!1    ;IS LOW ORDER = 177776
  (1)  007720  001403                           BEQ     .+10
  (2)  007722                           1$:
  (3)  007722  004767  007162                   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)
  (1)
```

```
6083                                    ;*****************************************************************************
 (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
 (2)  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  007116                    JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
 (3)                                            ;PS IS WRONG
 (3)  007772  000165                            165
  1)  007774  022702  000000                    CMP     #0,%2           ;IS HIGH ORDER = 0
 (1)  010000  001403                            BEQ     .+10
 (3)  010002  004767  007102                    JSR     PC,$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
 (2)  010016                            1$:
 (3)  010016  004767  007066                    JSR     PC,$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)
 (1)
 (1)
```

```
6084
                                ;*****************************************************************
                                ;TEST:226       MUL     77777 * #77777 = 37777 1        PS = 1
                                ;*****************************************************************

010034  010701                  TST226: SCOPE
010036  010501                          MOV     R5,R1           ;SAVE R5
010040  012704  077777                  MOV     #77777,R4       ;LOAD MULTIPLICAND WITH 77777
010044  070427  077777                  MUL     #77777,R4       ;MULTIPLY 77777 * #77777
010050                                  MFPS    @#PSWORD        ;SAVE PS
010050  106737                          .WORD   106700!..C
010054  122737  000001  000432          CMPB    #1,@#PSWORD     ;IS PS = 1
010062  001403                          BEQ     .+10
010064  004767  007020                  JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
                                                                ;PS IS WRONG
010070  000170                          170
010072  022704  037777                  CMP     #37777,R4       ;IS HIGH ORDER = 37777
010076  001403                          BEQ     .+10
010100  004767  007004                  JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
                                                                ;HIGH ORDER IS WRONG
010104  000171                          171
010106  022705  000001                  CMP     #1,R4!1         ;IS LOW ORDER = 1
010112  001403                          BEQ     .+10
010114                          1$:
010114  004767  006770                  JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
                                                                ;LOW ORDER IS WRONG OR WRONG SEQUENCE
010120  000172                          172
010122  021127  000226                  CMP     (R1),#226               ;CHECK THE TEST NUMBER
010126  001372                          BNE     1$              ;IF IN WRONG SEQUENCE GO TO THE HLT ABOVE
010130  010105                          MOV     R1,R5           ;RESTORE R5
010132  005215                          INC     (R5)
```

```
6085
 (1)                                    ;*****************************************************************
 (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
 (2)  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  006722                    JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
 (3)                                            ;PS IS WRONG
 (3)  010166  000173                            173
 (1)  010170  022702  177777                    CMP     #-1,%2          ;IS HIGH ORDER = -1
 (1)  010174  001403                            BEQ     .+10
 (3)  010176  004767  006706                    JSR     PC,$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
 (2)  010212                            1$:
 (3)  010212  004767  006672                    JSR     PC,$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)
 (1)
```

```
6086
 (1)                                    ;*****************************************************************************
 (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
 (2)  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  006626                    JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
 (3)                                                                    ;PS IS WRONG
 (3)  010262  000176                            176
 (1)  010264  022700  177777                    CMP     #-1,%0          ;IS HIGH ORDER = -1
 (1)  010270  001403                            BEQ     .+10
 (3)  010272  004767  006612                    JSR     PC,$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
 (2)  010306                            1$:
 (3)  010306  004767  006576                    JSR     PC,$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)
 (1)
 (1)
```

```
6087
 (1)                                ;*****************************************************************
 (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
 (2)  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  006532                JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
 (3)                                                                ;PS IS WRONG
 (3)  010356  000201                        201
 (1)  010360  022702  177777                CMP     #-1,%2          ;IS HIGH ORDER = -1
 (1)  010364  001403                        BEQ     .+10
 (3)  010366  004767  006516                JSR     PC,$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
 (2)  010402                        1$:
 (3)  010402  004767  006502                JSR     PC,$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)
 (1)
 (1)
```

```
 6088                                   ;*************************************************************************
  (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 071027 040000                      MUL     #40000,%4       ;MULTIPLY 125252 * #40000
  (2) 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 006434                      JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
  (3)                                                                   ;PS IS WRONG
  (3) 010454 000204                             204
  (1) 010456 022704 165252                      CMP     #165252,%4      ;IS HIGH ORDER = 165252
  (1) 010462 001403                             BEQ     .+10
  (3) 010464 004767 006420                      JSR     PC,$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
  (2) 010500                            1$:
  (3) 010500 004767 006404                      JSR     PC,$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)
  (1)
  (1)
```

```
 6089                                   ;*****************************************************************
  .1)                                   ;TEST:233       MUL     107070 * #107070 = 31222 26100      PS = 1
  .1)                                   ;*****************************************************************
  .1)
  (1) 010520  010701                    TST233: SCOPE
   1) 010522  012700  107070                    MOV     #107070,%0      ;LOAD MULTIPLICAND WITH 107070
  .1) 010526  070027  107070                    MUL     #107070,%0      ;MULTIPLY 107070 * #107070
  .2) 010532                                    MFPS    @#PSWORD        ;SAVE PS
  .2) 010532  106737                            .WORD   106700!..C
  .1) 010536  122737  000001  000432            CMPB    #1,@#PSWORD     ;IS PS = 1
  .1) 010544  001403                            BEQ     .+10
  .3) 010546  004767  006336                    JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
  .3)                                                                   ;PS IS WRONG
  .3) 010552  000207                            207
  .1) 010554  022700  031222                    CMP     #31222,%0       ;IS HIGH ORDER = 31222
  .1) 010560  001403                            BEQ     .+10
  .3) 010562  004767  006322                    JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
  .3)                                                                   ;HIGH ORDER IS WRONG
  (3) 010566  000210                            210
  (1) 010570  022701  026100                    CMP     #26100,%0!1     ;IS LOW ORDER = 26100
  (1) 010574  001403                            BEQ     .+10
  (2) 010576                            1$:
  (3) 010576  004767  006306                    JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
  .3)                                                                   ;LOW ORDER IS WRONG OR WRONG SEQUENCE
  (3) 010602  000211                            211
  .1) 010604  021527  000233                    CMP     (R5),#233
  (1) 010610  001372                            BNE     1$              ;IF IN WRONG SEQUENCE GO TO THE HLT ABOVE
  .1) 010612  005215                            INC     (R5)
```

```
 6090                                   ;*****************************************************************
                                        ;TEST:234       MUL     -1 * #1 = -1 -1         PS = 10
                                        ;*****************************************************************

 010614  010701                         TST234: SCOPE
 010616  012701  177777                         MOV     #-1,%1          ;LOAD MULTIPLICAND WITH -1
 010622  070127  000001                         MUL     #1,%1           ;MULTIPLY -1 * #1
 010626                                         MFPS    @#PSWORD        ;SAVE PS
 010626  106737                                 .WORD   106700!..C
 010632  122737  000010  000432                 CMPB    #10,@#PSWORD    ;IS PS = 10
 010640  001403                                 BEQ     .+10
 010642  004767  006242                         JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
                                                                        ;PS IS WRONG
 010646  000212                                 212
 010650  022701  177777                         CMP     #-1,%1          ;IS HIGH ORDER = -1
 010654  001403                                 BEQ     .+10
 010656  004767  006226                         JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
                                                                        ;HIGH ORDER IS WRONG
 010662  000213                                 213
 010664  022701  177777                         CMP     #-1,%1!1        ;IS LOW ORDER = -1
 010670  001403                                 BEQ     .+10
 010672                                 1$:
 010672  004767  006212                         JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
                                                                        ;LOW ORDER IS WRONG OR WRONG SEQUENCE
 010676  000214                                 214
 010700  021527  000234                         CMP     (R5),#234
 010704  001372                                 BNE     1$              ;IF IN WRONG SEQUENCE GO TO THE HLT ABOVE
 010706  005215                                 INC     (R5)
```

```
6091
 (1)                                    ;*****************************************************************
 (1)                                    ;TEST:235       MUL     -1 * #0 = 0 0        PS = 4
 (1)                                    ;*****************************************************************
 (1)
 (1)  010710  010701                    TST235: SCOPE
 (1)  010712  012703  177777                    MOV     #-1,%3          ;LOAD MULTIPLICAND WITH -1
 (1)  010716  070327  000000                    MUL     #0,%3           ;MULTIPLY -1 * #0
 (2)  010722                                    MFPS    @#PSWORD        ;SAVE PS
 (2)  010722  106737                            .WORD   106700!..C
 (1)  010726  122737  000004  000432            CMPB    #4,@#PSWORD     ;IS PS = 4
 (1)  010734  001403                            BEQ     .+10
 (3)  010736  004767  006146                    JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
 (3)                                            ;PS IS WRONG
 (3)  010742  000215                            215
 (1)  010744  022703  000000                    CMP     #0,%3           ;IS HIGH ORDER = 0
 (1)  010750  001403                            BEQ     .+10
 (3)  010752  004767  006132                    JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
 (3)                                            ;HIGH ORDER IS WRONG
 (3)  010756  000216                            216
 (1)  010760  022703  000000                    CMP     #0,%3!1         ;IS LOW ORDER = 0
 (1)  010764  001403                            BEQ     .+10
 (2)  010766                            1$:
 (3)  010770  004767  006116                    JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
 (3)                                            ;LOW ORDER IS WRONG OR WRONG SEQUENCE
 (3)  010772  000217                            217
 (1)  010774  021527  000235                    CMP     (R5),#235
 (1)  011000  001372                            BNE     1$              ;IF IN WRONG SEQUENCE GO TO THE HLT ABOVE
 (1)  011002  005215                            INC     (R5)
 (1)
```

```
 6092                                   ;*****************************************************************************
  (1)                                   ;TEST:236       MUL     77777 * #100000 = 100000 100000       PS = 11
  (1)                                   ;*****************************************************************************
  (1)
  (1)  011004  010701                   TST236: SCOPE
  (1)  011006  010501                           MOV     R5,R1           ;SAVE R5
  (1)  011010  012705  077777                   MOV     #77777,%5       ;LOAD MULTIPLICAND WITH 77777
  (1)  011014  070527  100000                   MUL     #100000,%5      ;MULTIPLY 77777 * #100000
  (2)  011020                                   MFPS    @#PSWORD        ;SAVE PS
  (2)  011020  106737                           .WORD   106700!..C
  (1)  011024  122737  000011  000432           CMPB    #11,@#PSWORD    ;IS PS = 11
  (1)  011032  001403                           BEQ     .+10
  (3)  011034  004767  005050                   JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
  (3)                                           ;PS IS WRONG
  (3)  011040  000220                           220
  (1)  011042  022705  100000                   CMP     #100000,%5      ;IS HIGH ORDER = 100000
  (1)  011046  001403                           BEQ     .+10
  (3)  011050  004767  006034                   JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTI E
  (3)                                           ;HIGH ORDER IS WRONG
  (3)  011054  000221                           221
  (1)  011056  022705  100000                   CMP     #100000,%5!1    ;IS LOW ORDER = 100000
  (1)  011062  001403                           BEQ     .+10
  (2)  011064                           1$:
  (3)  011064  004767  006020                   JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
  (3)                                           ;LOW ORDER IS WRONG OR WRONG SEQUENCE
  (3)  011070  000222                           222
  (1)  011072  021127  000236                   CMP     (R1),#236               ;CHECK THE TEST NUMBER
  (1)  011076  001372                           BNE     1$              ;IF IN WRONG SEQUENCE GO TO THE HLT ABOVE
  (1)  011100  010105                           MOV     R1,R5           ;RESTORE R5
  (1)  011102  005215                           INC     (R5)
  (1)
  (1)
```

```
6093                                    ;*****************************************************************************
 (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
 (2)  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  005752                    JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
 (3)                                            ;PS IS WRONG
 (3)  011136  000223                            223
 (1)  011140  022701  100001                    CMP     #100001,%1      ;IS HIGH ORDER = 100001
 (1)  011144  001403                            BEQ     .+10
 (3)  011146  004767  005736                    JSR     PC,$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
 (2)  011162                            1$:
 (3)  011162  004767  005722                    JSR     PC,$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)
 (1)
 (1)
```

```
6094                                    ;*****************************************************************************
 (1)                                    ;TEST:240       MUL     77777 * 177777 = 1 1        PS = 1
 (1)                                    ;*****************************************************************************
 (1)
 (1)  011200  010701                    TST240: SCOPE
 (1)  011202  012703  077777                    MOV     #77777,R3       ;LOAD MULTIPLICAND WITH 77777
 (1)  011206  070327  077777                    MUL     #77777,R3       ;MULTIPLY 77777 * 177777
 (2)  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  005656                    JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
 (3)                                            ;PS IS WRONG
 (3)  011232  000226                            226
 (1)  011234  022703  000001                    CMP     #1,R3           ;IS HIGH ORDER = 1
 (1)  011240  001403                            BEQ     .+10
 (3)  011242  004767  005642                    JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
 (3)                                            ;HIGH ORDER IS WRONG
 (3)  011246  000227                            227
 (1)  011250  022703  000001                    CMP     #1,R3!1         ;IS LOW ORDER = 1
 (1)  011254  001403                            BEQ     .+10
 (2)  011256                            1$:
 (3)  011256  004767  005626                    JSR     PC,$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)
```

```
6095
 (1)                                ;*****************************************************************
 (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
 (2)  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  005560                JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
 (3)                                                                ;PS IS WRONG
 (3)  011330  000231                        231
 (1)  011332  022705  000004                CMP     #4,%5           ;IS HIGH ORDER = 4
 (1)  011336  001403                        BEQ     .+10
 (3)  011340  004767  005544                JSR     PC,$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
 (2)  011354                        1$:
 (3)  011354  004767  005530                JSR     PC,$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)
 (1)
 (1)
```

```
 6096  011374  012702  040000                MOV     #40000,%2
 6097  011400  012703  000464                MOV     #S5,%3
 6098  011404  012704  000466                MOV     #S6,%4
 6099
 6100
  (1)                           ;*************************************************************************
  (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
  (2)  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  005446           JSR     PC,$HLT         ;SEEN AN ERPOR, GO TO TH HALT ROUTINE
  (3)                                                           ;PS IS WRONG
  (3)  011442  000234                   234
  (1)  011444  022700  165252           CMP     #165252,%0      ;IS HIGH ORDER = 165252
  (1)  011450  001403                   BEQ     .+10
  (3)  011452  004767  005432           JSR     PC,$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
  (2)  011466                   1$:
  (3)  011466  004767  005416           JSR     PC,$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)
  (1)
  (1)
```

```
6101
 (1)                                    ;*****************************************************************
 (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
 (2)  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  005352                    JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
 (3)                                            ;PS IS WRONG
 (3)  011536  000237                            237
 (1)  011540  022700  165252                    CMP     #165252,%0      ;IS HIGH ORDER = 165252
 (1)  011544  001403                            BEQ     .+10
 (3)  011546  004767  005336                    JSR     PC,$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
 (2)  011562                            1$:
 (3)  011562  004767  005322                    JSR     PC,$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 WRONG SEQUENCE GO TO THE HLT ABOVE
 (1)  011576  005215                            INC     (R5)
 (1)
 (1)
```

```
6102
 (1)                                    ;*****************************************************************
 (1)                                    ;TEST:244       MUL     125252 * 2#55 = 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     2#55,%0         ;MULTIPLY 125252 * 2#55
 (2)  011612                                    MFPS    2#PSWORD        ;SAVE PS
 (2)  011612  106737                            .WORD   106700!..C
 (1)  011616  122737  000011  000432            CMPB    #11,2#PSWORD    ;IS PS = 11
 (1)  011624  001403                            BEQ     .+10
 (3)  011626  004767  005256                    JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
 (3)                                            ;PS IS WRONG
 (3)  011632  000242                            242
 (1)  011634  022700  165252                    CMP     #165252,%0      ;IS HIGH ORDER = 165252
 (1)  011640  001403                            BEQ     .+10
 (3)  011642  004767  005242                    JSR     PC,$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
 (2)  011656                            1$:
 (3)  011656  004767  005226                    JSR     PC,$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)
 (1)
 (1)
```

```
6103
 (1)                                ;*****************************************************************
 (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
 (2)  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  005164                JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
 (3)                                                                ;PS IS WRONG
 (3)  011724  000245                        245
 (1)  011726  022700  165252                CMP     #165252,%0      ;IS HIGH ORDER = 165252
 (1)  011732  001403                        BEQ     .+10
 (3)  011734  004767  005150                JSR     PC,$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
 (2)  011750                        1$:
 (3)  011750  004767  005134                JSR     PC,$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)
 (1)
```

```
 6104                                   ;*****************************************************************
  (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)+
  (2)  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  005072                   JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
  (3)                                                                   ;PS IS WRONG
  (3)  012016  000250                           250
  (1)  012020  022700  165252                   CMP     #165252,%0      ;IS HIGH ORDER = 165252
  (1)  012024  001403                           BEQ     .+10
  (3)  012026  004767  005056                   JSR     PC,$HLT         ;SEEN AN ERROR, GO TC 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
  (2)  012042                           1$:
  (3)  012042  004767  005042                   JSR     PC,$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)
  (1)
  (1)
```

```
6105
 (1)                                ;**********************************************************************
 (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)
 (2)  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  005000                JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
 (3)                                                                ;PS IS WRONG
 (3)  012110  000253                        253
 (1)  012112  022700  165252                CMP     #165252,%0      ;IS HIGH ORDER = 165252
 (1)  012116  001403                        BEQ     .+10
 (3)  012120  004767  004764                JSR     PC,$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
 (2)  012134                        1$:
 (3)  012134  004767  004750                JSR     PC,$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)
 (1)
 (1)
```

```
6106                                    ;*****************************************************************
 (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)
 (2)  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  004704                    JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
 (3)                                            ;PS IS WRONG
 (3)  012204  000256                            256
 (1)  012206  022700  165252                    CMP     #165252,%0      ;IS HIGH ORDER = 165252
 (1)  012212  001403                            BEQ     .+10
 (3)  012214  004767  004670                    JSR     PC,$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
 (2)  012230                            1$:
 (3)  012230  004767  004654                    JSR     PC,$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     (PS),#250
 (1)  012242  001372                            BNE     1$              ;IF IN WRONG SEQUENCE GO TO THE HLT ABOVE
 (1)  012244  005215                            INC     (PS)
```

```
6107
 (1)                                    ;*****************************************************************************
 (1)                                    ;TEST:251       MUL     125252 * @(4) = 165252 100300       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)
 (2)  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  004610                    JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
 (3)                                                                    ;PS IS WRONG
 (3)  012300  000261                            261
 (1)  012302  022700  165252                    CMP     #165252,%0      ;IS HIGH ORDER = 165252
 (1)  012306  001403                            BEQ     .+10
 (3)  012310  004767  004574                    JSR     PC,$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
 (2)  012324                            1$:
 (3)  012324  004767  004560                    JSR     PC,$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)
```

```
6108                                    ;*****************************************************************
 (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)+
 (2)  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  004516                    JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
 (3)                                            ;PS IS WRONG
 (3)  012372  000264                            264
 (1)  012374  022700  165252                    CMP     #165252,%0      ;IS HIGH ORDER = 165252
 (1)  012400  001403                            BEQ     .+10
 (3)  012402  004767  004502                    JSR     PC,$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
 (2)  012416                            1$:
 (3)  012416  004767  004466                    JSR     PC,$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)
 (1)
 (1)
```

```
6109                                    ;*****************************************************************
 (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)
 (2)  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  004424                    JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
 (3)                                            ;PS IS WRONG
 (3)  012464  000267                            267
 (1)  012466  022700  165252                    CMP     #165252,%0      ;IS HIGH ORDER = 165252
 (1)  012472  001403                            BEQ     .+10
 (3)  012474  004767  004410                    JSR     PC,$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
 (2)  012510                            1$:
 (3)  012510  004767  004374                    JSR     PC,$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)
```

```
                                        ;*********************************
                                        ;     DIV INSTRUCTION TESTS
                                        ;*********************************



                        ;******* ************************************************************
                        ;TEST:254      DIV     0 4 / #2 = 2       REM = 0      PS = 0
                        ;********,*************************************************************
012526  010701                  TST254: SCOPE
012530  012700  000000                  MOV     #0,%0           ;LOAD HIGH ORDER WITH 0
012534  012701  000004                  MOV     #4,%0+1         ;LOAD LOW ORDER WITH 4
012540  071027  000002                  DIV     #2,%0           ;DIVIDE BY #2
012544                                  MFPS    @#PSWORD        ;SAVE PS
012544  106737                          .WORD   106700!..C

012550  122737  000000  000432          CMPB    #0,@#PSWORD     ;IS PS = 0
012556  001403                          BEQ     .+10
012560  004767  004324                  JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
                                                                ;PS IS WRONG
012564  000272                          272

012566  022700  000002                  CMP     #2,%0           ;IS QUOTIENT = 2
012572  001403                          BEQ     .+10
012574  004767  004310                  JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
                                                                ;QUOTIENT IS WRONG
012600  000273                          273

012602  022701  000000                  CMP     #0,%0+1         ;IS REMAINDER = 0
012606  001403                          BEQ     .+10
012610  004767  004274                  JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
                                                                ;WRONG REMAINDER
012614  000274                          274
012616  021527  000254                  CMP     (R5),#254
012622  001403                          BEQ     .+10            ;IF IN WRONG SEQUENCE GO TO THE HLT
012624  004767  004260                  JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
                                                                ;TEST IS IN WRONG SEQUENCE
012630  000275                          275
012632  005215                          INC     (R5)
```

```
6121                                    ;*****************************************************************************
 (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
 (2)  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  004216                    JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
 (3)                                                                    ;PS IS WRONG
 (3)  012672  000276                            276
 (1)
 (1)  012674  022702  177775                    CMP     #-3,%2          ;IS QUOTIENT = -3
 (1)  012700  001403                            BEQ     .+10
 (3)  012702  004767  004202                    JSR     PC,$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  004166                    JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
 (3)                                                                    ;WRONG REMAINDER
 (3)  012722  000300                            300
 (1)  012724  021527  000255                    CMP     (R5),#255
 (1)  012730  001403                            BEQ     .+10            ;IF IN WRONG SEQUENCE GO TO THE HLT
 (3)  012732  004767  004152                    JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
 (2)                                                                    ;TEST IS IN WRONG SEQUENCE
 (3)  012736  000301                            30:
 (1)  012740  005215                            INC     R5
 (1)
```

```
6122
                                ;*****************************************************************
                                ;TEST:256      DIV     0 9. / #2 = 4       REM = 1      PS = 0
                                ;*****************************************************************

012742  010701                  TST256: SCOPE
012744  010501                          MOV     R5,R1           ;SAVE R5
012746  012704  000000                  MOV     #0,%4           ;LOAD HIGH ORDER WITH 0
012752  012705  000011                  MOV     #9.,%4+1        ;LOAD LOW ORDER WITH 9.
012756  071427  000002                  DIV     #2,%4           ;DIVIDE BY #2
012762                                  MFPS    @#PSWORD        ;SAVE PS
012764  106737                          .WORD   106700!..C

012766  122737  000000  000432          CMPB    #0,@#PSWORD     ;IS PS = 0
012774  001403                          BEQ     .+10
012776  004767  004106                  JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
                                                                ;PS IS WRONG
013002  000302                          302

013004  022704  000004                  CMP     #4,%4           ;IS QUOTIENT = 4
013010  001403                          BEQ     .+10
013012  004767  004072                  JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
                                                                ;QUOTIENT IS WRONG
013016  000303                          303

013020  022705  000001                  CMP     #1,%4+1         ;IS REMAINDER = 1
013024  001403                          BEQ     .+10
013026  004767  004056                  JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
                                                                ;WRONG REMAINDER
013032  000304                          304
013034  010105                  MOV     R1,R5           ;RESTORE R5
013036  021527  000256          CMP     (R5),#256
013042  001403                  BEQ     .+10            ;IF IN WRONG SEQUENCE GO TO THE HLT
013044  004767  004040          JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
                                                        ;TEST IS IN WRONG SEQUENCE
013050  000305                  305
013052  005215                  INC     (R5)
```

```
6123                                    ;*****************************************************************
                                        ;TEST:257      DIV     -1 -9. / #2 = -4       REP = -1      PS = 10
                                        ;*****************************************************************

013054  010701                  TST257: SCOPE
013056  012700  177777                  MOV     #-1,%0          ;LOAD HIGH ORDER WITH -1
013062  012701  177767                  MOV     #-9.,%0+1       ;LOAD LOW ORDER WITH -9.
013066  071027  000002                  DIV     #2,%0           ;DIVIDE BY #2
013072                                  MFPS    @#PSWORD        ;SAVE PS
013072  106737                          .WORD   106700!..C

013076  122737  000010  000432          CMPB    #10,@#PSWORD    ;IS PS = 10
013104  001403                          BEQ     .+10
013106  004767  003776                  JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
                                                                ;PS IS WRONG
013112  000306                          306

013114  022700  177774                  CMP     #-4,%0          ;IS QUOTIENT = -4
013120  001403                          BEQ     .+10
013122  004767  003762                  JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
                                                                ;QUOTIENT IS WRONG
013126  000307                          307

013130  022701  177777                  CMP     #-1,%0+1        ;IS REMAINDER = -1
013134  001403                          BEQ     .+10
013136  004767  003746                  JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
                                                                ;WRONG REMAINDER
013142  000310                          310
013144  021527  000257                  CMP     (R5),#257
013150  001403                          BEQ     .+10            ;IF IN WRONG SEQUENCE GO TO THE HLT
013152  004767  003732                  JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
                                                                ;TEST IS IN WRONG SEQUENCE
013156  000311                          311
013160  005215                          INC     (R5)
```

```
 6124                                   ;*****************************************************************************
  (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
  (2)  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  003670                   JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
  (3)                                           ;PS IS WRONG
  (3)  013220  000312                           312
  (1)
  (1)  013222  022702  000000                   CMP     #0,%2           ;IS QUOTIENT = 0
  (1)  013226  001403                           BEQ     .+10
  (3)  013230  004767  003654                   JSR     PC,$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  003640                   JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
  (3)                                           ;WRONG REMAINDER
  (3)  013250  000314                           314
  (1)  013252  021527  000260                   CMP     (R5),.#260
  (1)  013256  001403                           BEQ     .+10            ;IF IN WRONG SEQUENCE GO TO THE HLT
  (3)  013260  004767  003624                   JSR     PC,$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)
```

```
6125
 (1)                                ;*****************************************************************
 (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
 (2)  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  003560                JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
 (3)                                                                ;PS IS WRONG
 (3)  013330  000316                        316
 (1)
 (1)  013332  022704  000000                CMP     #0,%4           ;IS QUOTIENT = 0
 (1)  013336  001403                        BEQ     .+10
 (3)  013340  004767  003544                JSR     PC,$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  003530                JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
 (3)                                                                ;WRONG REMAINDER
 (3)  013360  000320                        320
 (1)  013362  010105                        MOV     R1,R5           ;RESTORE R5
 (1)  013364  021527  000261                CMP     (R5),#261
 (1)  013370  001403                        BEQ     .+10            ;IF IN WRONG SEQUENCE GO TO THE HLT
 (3)  013372  004767  003512                JSR     PC,$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)
```

```
 6126                                ;*****************************************************************
  (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
  (2)  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  003450               JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
  (3)                                                               ;PS IS WRONG
  (3)  013440  000322                       322
  (1)
  (1)  013442  022700  177777               CMP     #-1,%0          ;IS QUOTIENT = -1
  (1)  013446  001403                       BEQ     .+10
  (3)  013450  004767  003434               JSR     PC,$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  003420               JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
  (3)                                                               ;WRONG REMAINDER
  (3)  013470  000324                       324
  (1)  013472  021527  000262               CMP     (R5),#262
  (1)  013476  001403                       BEQ     .+10            ;IF IN WRONG SEQUENCE GO TO THE HLT
  (3)  013500  004767  003404               JSR     PC,$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)
```

```
6127                                    ;*****************************************************************************
 (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
 (2)  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  003342                    JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
 (3)                                                                    ;PS IS WRONG
 (3)  013546  000326                            326
 (1)
 (1)  013550  022700  000000                    CMP     #0,%0           ;IS QUOTIENT = 0
 (1)  013554  001403                            BEQ     .+10
 (3)  013556  004767  003326                    JSR     PC,$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  003312                    JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
 (3)                                                                    ;WRONG REMAINDER
 (3)  013576  000330                            330
 (1)  013600  021527  000263                    CMP     (R5),#263
 (1)  013604  001403                            BEQ     .+10            ;IF IN WRONG SEQUENCE GO TO THE HLT
 (3)  013606  004767  003276                    JSR     PC,$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)
```

```
6128                                    ;*********************************************************************
 (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
 (2)  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  003234                    JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
 (3)                                                                    ;PS IS WRONG
 (3)  013654  000332                            332
 (1)
 (1)  013656  022702  152525                    CMP     #152525,%2      ;IS QUOTIENT = 152525
 (1)  013662  001403                            BEQ     .+10
 (3)  013664  004767  003220                    JSR     PC,$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  003204                    JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
 (3)                                                                    ;WRONG REMAINDER
 (3)  013704  000334                            334
 (1)  013706  021527  000264                    CMP     (R5),#264
 (1)  013712  001403                            BEQ     .+10            ;IF IN WRONG SEQUENCE GO TO THE HLT
 (3)  013714  004767  003170                    JSR     PC,$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)
```

```
6129                                    ;*****************************************************************
 (1)                                    ;TEST:265      DIV     -1 -1 / 8-1 = 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
 (2)  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  003124                    JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
 (3)                                                                    ;PS IS WRONG
 (3)  013764  000336                            336
 (1)
 (1)  013766  022704  000001                    CMP     #1,%4           ;IS QUOTIENT = 1
 (1)  013772  001403                            BEQ     .+10
 (3)  013774  004767  003110                    JSR     PC,$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  003074                    JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
 (3)                                                                    ;WRONG REMAINDER
 (3)  014014  000340                            340
 (1)  014016  010105                            MOV     R1,R5           ;RESTORE R5
 (1   014020  021527  000265                    CMP     (R5),#265
 (1)  014024  001403                            BEQ     .+10            ;IF IN WRONG SEQUENCE GO TO THE HLT
 (3)  014026  004767  003056                    JSR     PC,$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)
```

```
6130                                    ;*****************************************************************************
 (1)                                    ;TEST:266      DIV      25253 1 / #125252 = 100000       PEM = 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     #25252,%0       ;DIVIDE BY #125252
 (2)  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  003014                    JSR     PC,$HLT          ;EEN AN ERROR, GO TO TH HALT ROUTINE
 (3)                                                                     ;PS IS WRONG
 (3)  014074  000342                            342
 (1)
 (1)  014076  022700  100000                    CMP     #100000,%0      ;IS QUOTIENT = 100000
 (1)  014102  001403                            BEQ     .+10
 (3)  014110  004767  003000                    JSR     PC,$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  002764                    JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
 (3)                                                                     ;WRONG REMAINDER
 (3)  014124  000344                            344
 (1)  014126  021527  000266                    CMP     (R5),#266
 (1)  014132  001403                            BEQ     .+10
 (3)  014134  004767  002750                    JSR     PC,$HLT         ;IF IN WRONG SEQUENCE GO TO THE HLT
 (3)                                                                     ;SEEN AN ERROR, GO TO TH HALT ROUTINE
 (3)                                                                     ;TEST IS IN WRONG SEQUENCE
 (3)  014140  000345                            345
 (1)  014142  005215                            INC     (R5)
 (1)
```

```
6131
 (1)                                    ;*****************************************************************************
 (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
 (2)  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  002706                    JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
 (3)                                                                    ;PS IS WRONG
 (3)  014202  000346                            346
 (1)
 (1)  014204  022702  077777                    CMP     #77777,%2       ;IS QUOTIENT = 77777
 (1)  014210  001403                            BEQ     .+10
 (3)  014212  004767  002672                    JSR     PC,$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  002656                    JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
 (3)                                                                    ;WRONG REMAINDER
 (3)  014232  000350                            350
 (1)  014234  021527  000267                    CMP     (R5),#267
 (1)  014240  001403                            BEQ     .+10            ;IF IN WRONG SEQUENCE GO TO THE HLT
 (3)  014242  004767  002642                    JSR     PC,$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)
```

E07


```
6132
(1)                                     ;*****************************************************************
(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
(2)  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  002576                     JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
(3)                                             ;PS IS WRONG
(3)  014312  000352                             352
(1)
(1)  014314  022704  040000                     CMP     #40000,%4       ;IS QUOTIENT = 40000
(1)  014320  001403                             BEQ     .+10
(3)  014322  004767  002562                     JSR     PC,$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  002546                     JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
(3)                                             ;WRONG REMAINDER
(3)  014342  000354                             354
(1)  014344  010105                             MOV     R1,R5           ;RESTORE R5
(1)  014346  021527  000270                     CMP     (R5),#270
(1)  014352  001403                             BEQ     .+10            ;IF IN WRONG SEQUENCE GO TO THE HLT
(3)  014354  004767  002530                     JSR     PC,$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)
```

F07


```
 6133                                   ;*****************************************************************************
  (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
  (2)  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  002466                   JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
  (3)                                           ;PS IS WRONG
  (3)  014422  000356                           356
  (1)
  (1)  014424  022700  040000                   CMP     #40000,%0       ;IS QUOTIENT = 40000
  (1)  014430  001403                           BEQ     .+10
  (3)  014432  004767  002452                   JSR     PC,$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  002436                   JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
  (3)                                           ;WRONG REMAINDER
  (3)  014452  000360                           360
  (1)  014454  021527  000271                   CMP     (R5),#271
  (1)  014460  001403                           BEQ     .+10            ;IF IN WRONG SEQUENCE GO TO THE HALT
  (3)  014462  004767  002422                   JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
  (3)                                           ;TEST IS IN WRONG SEQUENCE
  (3)  014466  000361                           361
  (1)  014470  005215                           INC     (R5)
```

```
6134
 (1)                                ;*****************************************************************
 (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
 (2)  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  002360                JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
 (3)                                                                ;PS IS WRONG
 (3)  014530  000362                        362
 (1)
 (1)  014532  022702  000001                CMP     #1,%2           ;IS QUOTIENT = 1
 (1)  014536  001403                        BEQ     .+10
 (3)  014540  004767  002344                JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
 (3)                                                                ;QUOTIENT IS WRONG
 (3)  014544  000363                        363
 (1)
 (1)  014546  022703  000000                CMP     #0,%2+1         ;IS REMAINDER = 0
 (1)  014552  001403                        BEQ     .+10
 (3)  014554  004767  002330                JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
 (3)                                                                ;WRONG REMAINDER
 (3)  014560  000364                        364
 (1)  014562  021527  000272                CMP     (R5),#272
 (1)  014566  001403                        BEQ     .+10            ;IF IN WRONG SEQUENCE GO TO THE HLT
 (3)  014570  004767  002314                JSR     PC,$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)
```

```
6135
 (1)                                    ;*****************************************************************************
 (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
 (2)  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  002242                    JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
 (3)                                            ;PS IS WRONG
 (3)  014646  000366                            366
 (1)
 (1)  014650  010105                            MOV     R1,R5           ;RESTORE R5
 (1)  014652  021527  000273                    CMP     R5,,#273
 (1)  014656  001403                            BEQ     .+10            ;IF IN WRONG SEQUENCE GO TO THE HLT
 (3)  014660  004767  002224                    JSR     PC,$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)
```

```
5136                                    ;*****************************************************************
 (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
 (2)  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  002154                    JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
 (3)                                                                    ;PS IS WRO'NG
 (3)  014734  000370                            370
 (1)
 (1)  014736  021527  000274                    CMP     (R5),#274
 (1)  014742  001403                            BEQ     .+10            ;IF IN WRONG SEQUENCE GO TO THE HLT
 (3)  014744  004767  002140                    JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
 (3)                                                                    ;TEST IS IN WRONG SEQUENCE
 (1)  014750  000371                            371
 (1)  014752  005215                            INC     (R5)
 (1)
```

```
 6137  014754  012702  000002                MOV     #2,%2
 6138  014760  012703  000474                MOV     #S9,%3
 6139  014764  012704  000476                MOV     #S10,%4
 6140
 6141                                ;*****************************************************************
  (1)                                ;TEST:275      DIV     0 52525 / S9 = 25252       REM = 1      PS = C
  (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
  (2)  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  002062                JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
  (3)                                                                ;PS IS WRONG
  (3)  015026  000372                        372
  (1)
  (1)  015030  022700  025252                CMP     #25252,%0       ;IS QUOTIENT = 25252
  (1)  015034  001403                        BEQ     .+10
  (3)  015036  004767  002046                JSR     PC,$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  002032                JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
  (3)                                                                ;WRONG REMAINDER
  (3)  015056  000374                        374
  (1)  015060  021527  000275                CMP     (R5),#275
  (1)  015064  001403                        BEQ     .+10            ;IF IN WRONG SEQUENCE GO TO THE HLT
  (3)  015066  004767  002016                JSR     PC,$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)
```

```
6142
 (1)                                ;*****************************************************************************
 (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
 (2)  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  001754                JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
 (3)                                                                ;PS IS WRONG
 (3)  015134  000376                        376
 (1)
 (1)  015136  022700  025252                CMP     #25252,%0       ;IS QUOTIENT = 25252
 (1)  015142  001403                        BEQ     .+10
 (3)  015144  004767  001740                JSR     PC,$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  001724                JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
 (3)                                                                ;WRONG REMAINDER
 (3)  015164  000400                        400
 (1)  015166  021527  000276                CMP     (R5),#276
 (1)  015172  001403                        BEQ     .+10            ;IF IN WRONG SEQUENCE GO TO THE HLT
 (3)  015174  004767  001710                JSR     PC,$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)
```

```
6143                                    ;*****************************************************************
 (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
 (2)  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  001646                    JSR     PC,$HLT         ;SEEN AN ERROR. GO TO TH HALT ROUTINE
 (3)                                                                    ;PS IS WRONG
 (3)  015242  000402                            402
 (1)
 (1)  015244  022700  025252                    CMP     #25252,%0       ;IS QUOTIENT = 25252
 (1)  015250  001403                            BEQ     .+10
 (3)  015252  004767  001632                    JSR     PC,$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  001616                    JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
 (3)                                                                    ;WRONG REMAINDER
 (3)  015272  000404                            404
 (1)  015274  021527  000277                    CMP     (R5),#277
 (1)  015300  001403                            BEQ     .+10            ;IF IN WRONG SEQUENCE GO TO THE HLT
 (3)  015302  004767  001602                    JSR     PC,$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)
```

```
 6144                                ;*****************************************************************************
  (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
  (2)  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  001542                JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
  (3)                                                                ;PS IS WRONG
  (3)  015346  000406                        406
  (1)
  (1)  015350  022700  025252                CMP     #25252,%0       ;IS QUOTIENT = 25252
  (1)  015354  001403                        BEQ     .+10
  (3)  015356  004767  001526                JSR     PC,$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  001512                JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
  (3)                                                                ;WRONG REMAINDER
  (3)  015376  000410                        410
  (1)  015400  021527  000300                CMP     (R5),#300
  (1)  015404  001403                        BEQ     .+10            ;IF IN WRONG SEQUENCE GO TO THE HLT
  (3)  015406  004767  001476                JSR     PC,$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)
```

```
6145
 (1)                                ;*****************************************************************
 (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)+
 (2)  015432                                MFPS    @#PSWORD        ;SAVE PS
 (2)  015432  106737                        .WORD   106700!..C
 (1)
 (1)  015436  122737  000000  000432        CMPB    #0,@#PSWORD     ;IS PS = 0
 (1)  015444  001403                        BEQ     .+10
 (3)  015446  004767  001436                JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
 (3)                                                                ;PS IS WRONG
 (3)  015452  000412                        412
 (1)
 (1)  015454  022700  025252                CMP     #25252,%0       ;IS QUOTIENT = 25252
 (1)  015460  001403                        BEQ     .+10
 (3)  015462  004767  001422                JSR     PC,$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  001406                JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
 (3)                                                                ;WRONG REMAINDER
 (3)  015502  000414                        414
 (1)  015504  021527  000301                CMP     (R5),#301
 (1)  015510  001403                        BEQ     .+10            ;IF IN WRONG SEQUENCE GO TO THE HLT
 (3)  015512  004767  001372                JSR     PC,$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)
```

```
                                ;*****************************************************************
                                ;TEST:302     DIV     0 52525 / -(3) = 25252     REM = 1     PS = 0
                                ;*****************************************************************

015522  010701                  TST302: SCOPE
015524  012700  000000                  MOV     #0,%0           ;LOAD HIGH ORDER WITH 0
015530  012701  052525                  MOV     #52525,%0+1     ;LOAD LOW ORDER WITH 52525
015534  071043                          DIV     -(3),%0         ;DIVIDE BY -(3)
015536                                  MFPS    @#PSWORD        ;SAVE PS
015536  106737                          .WORD   106700!..C

015542  122737  000000  000432          CMPB    #0,@#PSWORD     ;IS PS = 0
015550  001403                          BEQ     .+10
015552  004767  001322                  JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
                                                                ;PS IS WRONG
015556  000416                          416

015560  022700  025252                  CMP     #25252,%0       ;IS QUOTIENT = 25252
015564  001403                          BEQ     .+10
015566  004767  001316                  JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
                                                                ;QUOTIENT IS WRONG
015572  000417                          417

015574  022701  000001                  CMP     #1,%0+1         ;IS REMAINDER = 1
015600  001403                          BEQ     .+10
015602  004767  001302                  JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
                                                                ;WRONG REMAINDER
015606  000420                          420

015610  021527  000302                  CMP     (R5),#302
015614  001403                          BEQ     .+10            ;IF IN WRONG SEQUENCE GO TO THE HLT
015616  004767  001266                  JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
                                                                ;TEST IS IN WRONG SEQUENCE
015622  000421                          421
015624  005215                          INC     (R5)
```

```
E147
 (1)                                    ;*****************************************************************
 (1)                                    ;TEST:303     DIV     0 52525 / 2'4) = 25252      REM = 1     PS = 0
 (1)                                    ;*****************************************************************
 (1)
 (1)  015626  010701                    TST303: SCOPE
 (1)  015630  012700  000000                    MOV     #0,%0           ;LOAD HIGH ORDER WITH 0
 (1)  015634  012701  052525                    MOV     #52525,%0+1     ;LOAD LOW ORDER WITH 52525
 (1)  015640  071064  000002                    DIV     2(4),%0         ;DIVIDE BY 2(4)
 (2)  015644                                    MFPS    @#PSWORD        ;SAVE PS
 (2)  015644  106737                            .WORD   106700!..C
 (1)
 (1)  015650  122737  000000  000432            CMPB    #0,@#PSWORD     ;IS PS = 0
 (1)  015656  001403                            BEQ     .+10
 (3)  015660  004767  001224                    JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
 (3)                                                                    ;PS IS WRONG
 (3)  015664  000422                            422
 (1)
 (1)  015666  022700  025252                    CMP     #25252,%0       ;IS QUOTIENT = 25252
 (1)  015672  001403                            BEQ     .+10
 (3)  015674  004767  001210                    JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
 (3)                                                                    ;QUOTIENT IS WRONG
 (3)  015700  000423                            423
 (1)
 (1)  015702  022701  000001                    CMP     #1,%0+1         ;IS REMAINDER = 1
 (1)  015706  001403                            BEQ     .+10
 (3)  015710  004767  001174                    JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
 (3)                                                                    ;WRONG REMAINDER
 (3)  015714  000424                            424
 (1)  015716  021527  000303                    CMP     (R5),#303
 (1)  015722  001403                            BEQ     .+10            ;IF IN WRONG SEQUENCE GO TO THE HLT
 (3)  015724  004767  001160                    JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
 (3)                                                                    ;TEST IS IN WRONG SEQUENCE
 (3)  015730  000425                            425
 (1)  015732  005215                            INC     (R5)
 (1)
```

```
6148
 (1)                                    ;*****************************************************************
 (1)                                    ;TEST:304      DIV     0 52525 / @(4) = 25252       REM = 1      PS = 0
 (1)                                    ;*****************************************************************
 (1)
 (1)  015734  010701                    TST304: SCOPE
 (1)  015736  012700  000000                    MOV     #0,%0           ;LOAD HIGH ORDER WITH 0
 (1)  015742  012701  052525                    MOV     #52525,%0+1     ;LOAD LOW ORDER WITH 52525
 (1)  015746  071074  000000                    DIV     @(4),%0         ;DIVIDE BY @(4)
 (2)  015752                                    MFPS    @#PSWORD        ;SAVE PS
 (2)  015752  106737                            .WORD   106700!..C
 (1)
 (1)  015756  122737  000000  000432            CMPB    #0,@#PSWORD     ;IS PS = 0
 (1)  015764  001403                            BEQ     .+10
 (3)  015766  004767  001116                    JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
 (3)                                                                    ;PS IS WRONG
 (3)  015772  000426                            426
 (1)
 (1)  015774  022700  025252                    CMP     #25252,%0       ;IS QUOTIENT = 25252
 (1)  016000  001403                            BEQ     .+10
 (3)  016002  004767  001102                    JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
 (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  001066                    JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
 (3)                                                                    ;WRONG REMAINDER
 (3)  016022  000430                            430
 (1)  016024  021527  000304                    CMP     (R5),#304
 (1)  016030  001403                            BEQ     .+10            ;IF IN WRONG SEQUENCE GO TO THE HLT
 (3)  016032  004767  001052                    JSR     PC,$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)
```

```
6149                                    ;*****************************************************************************
 (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)+
 (2)  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  001012                    JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
 (3)                                                                    ;PS IS WRONG
 (3)  016076  000432                            432
 (1)
 (1)  016100  022700  025252                    CMP     #25252,%0       ;IS QUOTIENT = 25252
 (1)  016104  001403                            BEQ     .+10
 (3)  016106  004767  00.776                    JSR     PC,$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  000762                    JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
 (3)                                                                    ;WRONG REMAINDER
 (3)  016126  000434                            434
 (1)  016130  021527  000305                    CMP     (R5),#305
 (1)  016134  001403                            BEQ     .+10
 (3)  016136  004767  000746                    JSR     PC,$HLT         ;IF IN WRONG SEQUENCE GO TO THE HLT
 (3)                                                                    ;SEEN AN ERROR, GO TO TH HALT ROUTINE
 (3)                                                                    ;TEST IS IN WRONG SEQUENCE
 (3)  016142  000435                            435
 (1)  016144  005215                            INC     (R5
 (1)
```

```
 6150                                   ;*****************************************************************
  (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)
  (2)  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  000706                   JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
  (3)                                           ;PS IS WRONG
  (3)  016202  000436                           436
  (1)
  (1)  016204  022700  025252                   CMP     #25252,%0       ;IS QUOTIENT = 25252
  (1)  016210  001403                           BEQ     .+10
  (3)  016212  004767  000672                   JSR     PC,$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  000656                   JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
  (3)                                           ;WRONG REMAINDER
  (3)  016232  000440                           440
  (1)  016234  021527  000306                   CMP     (R5),.#306
  (1)  016240  001403                           BEQ     .+10            ;IF IN WRONG SEQUENCE GO TO THE HLT
  (3)  016242  004767  000642                   JSR     PC,$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)
```

```
6154                                    ;*************************************************************
                                        ;TEST:307       TEST THAT EIS ABORTS PROPERLY WHEN INTERUPTED
                                        ;*************************************************************

016252  132737  000040  000421  TST307: BITB    #40,@#SENVM     ;IF TYPE OUTS HAS BEEN SUPPRESSED
016260  001100                          BNE     EASH+2          ;THEN SKIP THIS TEST
016262  013702  000502                  MOV     @#TTYOUT,R2
016266  012722  016340                  MOV     #RTA307,(R2)+   ;SET INTERUPT VECTOR TO RTA307
016272  012712  000340                  MOV     #340,(R2)       ;AND THE INTERUPT PSW AS 340
016276                                  MTPS    #0
016276  106427                          .WORD   106400!..C
016302  012737  000030  000434          MOV     #30.,@#TEMP1    ;PREPARE TO EXECUTE THIS SUB TEST 30 TIMES
016310  005004                          CLR     R4
016312  112777  000015  162164          MOVB    #15,@$TPB       ;OUT PUT A "CR"
016320  112777  000100  162160          MOVB    #100,@$TPS      ;ENABLE TTY INTERUPT
016326  052704  000001          RTASH:  BIS     #1,R4           ;PLACE A 1 IN R4
016332  072427  000020          ASHA:   ASH     #16.,R4         ;SHIFT R4 FOR 16 TIMES
016336  000773                          BR      RTASH           ;STAY IN THE LOOP UNTIL INTERUPTED
016340  105077  162142          RTA307: CLRB    @$TPS           ;CLEAR TTY INTERUPT
016344  022716  016332                  CMP     #ASHA,(SP)      ;IS THE RETURN ADDRESS = ASHA
016350  001415                          BEQ     4$              ;IF SO THEN GO TO 4$
016352  012777  000015  162124  1$:     MOV     #15,@$TPB       ;OTHERWISE OUT PUT A "CR"
016360  105777  162122          2$:     TSTB    @$TPS           ;LOOP HERE UNTIL DONE COMES ON
016364  100375                          BPL     2$
016366  012777  000015  162110          MOV     #15,@$TPB       ;OUT PUT ANOTHER "CR"
016374  012777  000100  162104          MOV     #100,@$TPS      ;ENABLE TTY INTERUPT
016402  000002                          RTI
016404  020427  000001          4$:     CMP     R4,#1           ;CHECK R4 TO CONTAIN PROPER DATA
016410  001403                          BEQ     6$
016412  004767  000472                  JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
                                        ;R4 WAS CHANGED DURING THE EXECUTION OF
016416  000442                          442
                                        ;THE INSTRUCTION
016420  032766  000360  000002  6$:     BIT     #360,2(SP)      ;CHECK THE PSW BEFORE INTERUPT
016426  001406                          BEQ     8$
016430  004767  000454                  JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
                                        ;PSW IS WRONG
016434  000443                          443
016436  042766  000020  000002          BIC     #20,2(SP)       ;CLEAR THE T-BIT IF IT IS SET
016444  005337  000434          8$:     DEC     @#TEMP1
016450  001340                          BNE     1$              ;IF THE SUB TEST HAS BEEN EXECUTED 30 TIMES
                                        ;THEN GO TO THE END OF THE TEST

016452  010277  162024                  MOV     R2,@TTYOUT      ;RESTORE TTY INTERUPT VECTOR
016456  005012                          CLR     (R2)
016460  022626                  EASH:   CMP     (SP)+,(SP)+     ;RESTORE THE STACK POINTER
016462  021527  000307                  CMP     (R5),#307       ;CHECK THE TEST NUMBER
016466  001403                          BEQ     .+10
016470  004767  000414                  JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
                                        ;TEST IS IN WRONG SEQUENCE
016474  000444                          444
016476  005215                          INC     (R5)
```

```
 6156                                   ;*****************************************************************
  (1)                                   ;TEST:310       TEST THAT EIS ABORTS PROPERLY WHEN INTERUPTED
  (2)                                   ;*****************************************************************
  (1)
  (1)  016500  132737  000040  000421  TST310: BITB    #40,@#$ENVM     ;IF TYPE OUTS HAS BEEN SUPPRESSED
  (1)  016506  001116                         BNE     EMUL+2          ;THEN SKIP THIS TEST
  (1)  016510  013702  000502                 MOV     @#TTYOUT,R2
  (1)  016514  012722  016572                 MOV     #RTA310,(R2)+   ;SET INTERUPT VECTOR TO RTA310
  (1)  016520  012712  000340                 MOV     #340,(R2)       ;AND THE INTERUPT PSW AS 340
  (2)  016524                                 MTPS    #10
  (2)  016524  106427                         .WORD   106400!..C
  (1)  016530  012737  000030  000434         MOV     #30,@#TEMP1     ;PREPARE TO EXECUTE THIS SUB TEST 30 TIMES
  (1)  016536  012704  077777                 MOV     #77777,R4       ;PLACE THE MULTIPLIER IN R4
  (1)  016542  012700  177777                 MOV     #-1,R0          ;AND THE MULTIPLICAND IN R0
  (1)  016546  012701  100001                 MOV     #100001,R1      ;AND THE LOWER PART OF THE RESULT IN R1
  (1)  016552  112777  000015  161724         MOVB    #15,@#TPB       ;OUT PUT A "CR"
  (1)  016560  112777  000100  161720         MOVB    #100,@#TPS      ;ENABLE TTY INTERUPT
  (1)  016566  070004                 RTMUL:  MUL     R4,R0           ;MULTIPLY R0 BY R4
  (1)  016570  000776                         BR      RTMUL           ;STAY IN THE LOOP UNTIL INTERUPTED
  (1)  016572  105077  161710         RTA310: CLRB    @#TPS           ;CLEAR TTY INTERUPT
  (1)  016576  022716  016566                 CMP     #RTMUL,(SP)     ;IS THE RETURN ADDRESS = RTMUL
  (1)  016602  001415                         BEQ     4$              ;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  000240                 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  000224                 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  000210                 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  000172                 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  000132              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)
```

```
 6158                                   ;*****************************************************************
  (1)
  (1)                                   .SBTTL  END OF PASS ROUTINE
  (1)
  (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  003015                           BGT     $DOAGN          ;;YES
  (1)  017004  012737                           MOV     (PC)+,@(PC)+    ;;RESTORE COUNTER
  (1)  017006  000001                   $ENDCT: .WORD   1
  (1)  017010  017000                           $EOPCT
  (1)  017012  000004  017042                   TYPE    ,$ENDMG         ;;TYPE "END PASS"
  (1)  017016                           $GET42:
  (1)
  (1)  017016  013700  000042                   MOV     @#42,R0         ;;GET MONITOR ADDRESS
  (1)  017022  001405                           BEQ     $DOAGN          ;;BRANCH IF NO MONITOR
  (1)  017024  000005                           RESET                   ;;CLEAR THE WORLD
  (1)  017026  004710                   $ENDAD: JSR     PC,(R0)         ;;GO TO MONITOR
  (1)  017030  000240                           NOP                     ;;SAVE ROOM
  (1)  017032  000240                           NOP                     ;;FOR
  (1)  017034  000240                           NOP                     ;;ACT11
  (1)  017036                           $DOAGN:
  (1)  017036  000137  000600                   JMP     @#BEGIN         ;;RETURN
  (1)  017042  005015  047105  020104   $ENDMG: .ASCII  <15><12>/END PASS/
  (1)  017050  040520  051523
  (1)  017054     377     377     000   $ENULL: .BYTE   -1,-1,0         ;;NULL CHARACTER STRING
  (1)          017060                           .EVEN
 6159
 6164  017006  000004                   ENDCT:  4
 6168
 6169
 6170                                   ;*****************************************************************
 6171
 6172                                   .SBTTL  POWER FAIL ROUTINE
 6173
 6174  017060  012737  017070  000024   $PWRDN: MOV     #$PWRUP,@#24
 6175  017066  000000                           HALT
 6176
 6177  017070  012706  000600           $PWRUP: MOV     #BEGIN,SP       ;RESTORE THE SP
 6178  017074  012737  017060  000024           MOV     #$PWRDN,@#24
 6179  017102  000004  000516                   TYPE    ,POWER          ;GO AND TYPE "POWER"
 6180  017106  000753                           BR      $DOAGN
```

```
                                        ;*      HALT ROUTINE
                                        ;*      ------------
                                        ;*
                                        ;*
                                        ;*      PROGRAM COMES HERE ON ENCOUNTERING ANY ERROR
                                        ;*
017110  017637  000000  000402  $HLT:   MOV     @(SP),@#$FATAL  ;PLACE THE ERROR NUMBER AT LOCATION $FATAL
017116  032737  020000  000422          BIT     #20000,@#$SWREG ;HAS THE OPERATOR ASKED TO SUPRESS ERROR TYPE OUTS
017124  001046                          BNE     6$
017126  000004  000510                  TYPE    ,$CRLF          ;GO AND TYPE A CR, LF, FOLLOWED BY 3 SPACES
017132  010046                          MOV     R0,-(SP)        ;SAVE R0
017134  112767  000002  161307          MOVB    #2,$TPCNT       ;ALLOW TYPE OUTS OF PC AND ERROR NUMBER
017142  016600  000002                  MOV     2(SP),R0        ;BRING THE RETURN PC IN R0
017146  162700  000004                  SUB     #4,R0
017152  112737  000006  000450  2$:     MOVB    #6,@#TYPCNT     ;ALLOW TYPE OUT OF 6 DIGITS
017160  005046                          CLR     -(SP)
017162  000241                  4$:     CLC
017164  006100                          ROL     R0
017166  006116                          ROL     (SP)            ;BRING THE C BIT FROM R0 IN (SP)
017170  052716  000060                  BIS     #60,(SP)        ;PREPARE TO TYPE IT OUT
017174  004767  000130                  JSR     PC,$TPCHR       ;AND GO TO OUT PUT A CHARACTER
017200  005016                          CLR     (SP)
017202  006100                          ROL     R0
017204  006116                          ROL     (SP)
017206  006100                          ROL     R0
017210  006116                          ROL     (SP)
017212  105367  161232                  DECB    TYPCNT          ;HAS ALL THE SIX CHARACTERS BEEN TYPED ?
017216  001361                          BNE     4$              ;IF NOT THEN REPEAT FROM 4$
017220  005726                          TST     (SP)+           ;RESTORE STACK POINTER
017222  017600  000002                  MOV     @2(SP),R0       ;PREPARE TO OUT PUT THE ERROR NUMBER
017226  000004  000512                  TYPE    ,$CRLF+2        ;GO AND TYPE 3 SPACES
017232  105367  161213                  DECB    $TPCNT          ;IF BOTH PC AND ERROR NUMBER HAS NOT BEEN
017236  001345                          BNE     2$              ;REPORTED THEN REPEAT FROM 2$
017240  012600                          MOV     (SP)+,R0        ;RESTORE R0
017242  105767  161152          6$:     TSTB    $ENV            ;IF WE ARE NOT UNDER APT. THEN GO TO
017246  001403                          BEQ     8$              ;8$
017250  005237  000400                  INC     @#$MSGTY        ;OTHERWISE INFORM APT. ABOUT SEEING THE ERROR
017254  000777                          BR      .               ;AND LOOP
017256  005737  000422          8$:     TST     @#$SWREG        ;IS IT REQUIRED TO HALT ON ERROR ?
017262  100001                          BPL     10$             ;IF NOT THEN GO TO 10$
017264  000000                          HALT
017266  062716  000002          10$:    ADD     #2,(SP)         ;ADJUST THE RETURN ADDRESS
017272  000207                          RTS     PC              ;AND RETURN
```

```
                                        ;*      TYPE OUT ROUTINE
                                        ;*      ---------------
                                        ;*
                                        ;*
                                        ;*      THIS ROUTINE IS USED TO TYPE ASCIZ MESSAGES
                                        ;*
017274  010046                 $TYPE:  MOV     R0,-(SP)        ;SAVE R0
017276  017600  000002                 MOV     @2(SP),R0       ;GET THE ADDRESS OF THE ASSCIZ STRING
017302  112046                 2$:     MOVB    (R0)+,-(SP)     ;PUSH THE CHARACTER TO BE TYPED ONTO STACK
017304  001005                         BNE     4$              ;BRANCH IF IT IS NOT THE TERMINATOR
017306  005726                         TST     (SP)+
017310  012600                         MOV     (SP)+,R0        ;OTHERWISE RESTORE THE STACK AND R0
017312  062716  000002         3$:     ADD     #2,(SP)         ;ADJUST THE RETURN PC
017316  000002                         RTI                     ;AND RETURN

017320  004767  000004         4$:     JSR     PC,$TPCHR       ;GO TO TYPE A CHARACTER
017324  005726                         TST     (SP)+           ;RESTORE THE STACK POINTER
017326  000765                         BR      2$              ;AND RETURN TO 2$

017330  132737  000040  000421 $TPCHR: BITB    #40,@#$ENVM     ;HAS THE CONSOLE OUTPUTS BEEN SUPPRESSED?
017336  001006                         BNE     4$              ;IF SO THEN RETURN FROM THE SUBROUTINE VIA 4$
017340  105777  161142         2$:     TSTB    @$TPS           ;IS THE PRINTER AVAILABLE?
017344  100375                         BPL     2$              ;IF NOT THEN LOOP HERE
017346  116677  000002  161130         MOVB    2(SP),@$TPB     ;OUT PUT THE CHARACTER
017354  000207                 4$:     RTS     PC
                000001                 .END
```

```
A      = 017060            6161#   6166
ABASE  = 000000            4990
ACDW1  = 000000            4990
ACDW2  = 000000            4990
ACPUOP= 000000             4990
ADDW0  = 000000            4990
ADDW1  = 000000            4990
ADDW10= 000000             4990
ADDW11= 000000             4990
ADDW12= 000000             4990
ADDW13= 000000             4990
ADDW14= 000000             4990
ADDW15= 000000             4990
ADDW2  = 000000            4990
ADDW3  = 000000            4990
ADDW4  = 000000            4990
ADDW5  = 000000            4990
ADDW6  = 000000            4990
ADDW7  = 000000            4990
ADDW8  = 000000            4990
ADDW9  = 000000            4990
ADEVCT= 000000             4990
ADEVM  = 000000            4990
AENV   = 000000            4990
AENVM  = 000000            4990
AFATAL= 000000             4990
AMADR1= 000000             4990
AMADR2= 000000             4990
AMADR3= 000000             4990
AMADR4= 000000             4990
AMAMS1= 000000             4990
AMAMS2= 000000             4990
AMAMS3= 000000             4990
AMAMS4= 000000             4990
AMSGAD= 000000             4990
AMSGLG= 000000             4990
AMSGTY= 000000             4990
AMTYP1= 000000             4990
AMTYP2= 000000             4990
AMTYP3= 000000             4990
AMTYP4= 000000             4990
APASS  = 000000            4990
APRIOR= 000000             4990
ASHA     016332            6154#
ASWREG= 000000             4990
ATESTN= 000000             4990
AUNIT  = 000000            4990
AUSWR  = 000000            4990
AVECT1= 000000             4990
AVECT2= 000000             4990
BEGIN    000600            5348    5352#   5355    6158    6177
COUNT    000430            4995#   4996    5353*   5411*   5415    5447*   5451    5482*   5486    5517*   5521    5553*   5558
                           5590*   5594    5705*   5734*   5743    5777*   5785    5820*   5828
DUMMY  = 000000            4970#   5943    5944    5945    5946    5947    5948    5949
EASH     016460            6154#
EMUL     016742            6156#
```

```
ENDCT   017006          6164#
ENT176  005030          5930    5937#
ENT51   C32422          5667    5671#
ERRNM = 000452          4971#   5410#   5414#   5446#   5450#   5481#   5485#   5516#   5520#   5552#   5556#   5589#   5593#
                        5673#   5679#   5680#   5681#   5682#   5683#   5684#   5685#   5686#   5687#   5688#   5733#   5737#
                        5741#   5745#   5776#   5780#   5784#   5787#   5819#   5823#   5827#   5830#   5939#   5943#   5944#
                        5945#   5946#   5947#   5948#   5949#   5950#   5956#   5957#   5958#   5959#   5960#   5961#   5962#
                        5963#   5964#   5965#   6078#   6079#   6080#   6081#   6082#   6083#   6084#   6085#   6086#   6087#
                        6088#   6089#   6090#   6091#   6092#   6093#   6094#   6095#   6100#   6101#   6102#   6103#   6104#
                        6105#   6106#   6107#   6108#   6109#   6120#   6121#   6122#   6123#   6124#   6125#   6126#   6127#
                        6128#   6129#   6130#   6131#   6132#   6133#   6134#   6135#   6136#   6141#   6142#   6143#   6144#
                        6145#   6146#   6147#   6148#   6149#   6150#   6154#   6156#

F       = 000063        4972#   5679#   5680#   5681#   5682#   5683#   5684#   5685#   5686#   5687#   5688#
N       = 000311        4973#   5943#   5944#   5945#   5946#   5947#   5948#   5949#   5950#   5956#   5957#   5958#   5959#
                        5960#   5961#   5962#   5963#   5964#   5965#   6078#   6079#   6080#   6081#   6082#   6083#   6084#
                        6085#   6086#   6087#   6088#   6089#   6090#   6091#   6092#   6093#   6094#   6095#   6100#   6101#
                        6102#   6103#   6104#   6105#   6106#   6107#   6108#   6109#   6120#   6121#   6122#   6123#   6124#
                        6125#   6126#   6127#   6128#   6129#   6130#   6131#   6132#   6133#   6134#   6135#   6136#   6141#
                        6142#   6143#   6144#   6145#   6146#   6147#   6148#   6149#   6150#   6154#   6156#

NEGAT   002022          5427    5462    5497    5532    5569    5605    5609#
PC      =%000007        4974#   5410*   5414*   5428*   5446*   5450*   5463*   5481*   5485*   5498*   5516*   5520*   5533*
                        5552*   5556*   5570*   5589*   5593*   5607*   5619*   5623*   5627*   5634*   5640*   5646*   5652*
                        5659*   5665*   5670*   5673*   5679*   5680*   5681*   5682*   5683*   5684*   5685*   5686*   5687*
                        5688*   5733*   5737*   5741*   5745*   5776*   5780*   5784*   5787*   5819*   5823*   5827*   5830*
                        5939*   5943*   5944*   5945*   5946*   5947*   5948*   5949*   5950*   5956*   5957*   5958*   5959*
                        5960*   5961*   5962*   5963*   5964*   5965*   6078*   6079*   6080*   6081*   6082*   6083*   6084*
                        6085*   6086*   6087*   6088*   6089*   6090*   6091*   6092*   6093*   6094*   6095*   6100*   6101*
                        6102*   6103*   6104*   6105*   6106*   6107*   6108*   6109*   6120*   6121*   6122*   6123*   6124*
                        6125*   6126*   6127*   6128*   6129*   6130*   6131*   6132*   6133*   6134*   6135*   6136*   6141*
                        6142*   6143*   6144*   6145*   6146*   6147*   6148*   6149*   6150*   6154*   6156*   6158*   6207*
                        6229*   6251*   6260*

POWER   000516          5027#   6179
PSWORD  000432          4997#   4998    5404*   5408    5440*   5444    5475*   5479    5510*   5514    5546*   5550    5583*
                        5587    5679*   5680*   5681*   5682*   5683*   5684*   5685*   5686*   5687*   5688*   5727*   5731
                        5770*   5774    5813*   5817    5943*   5944*   5945*   5946*   5947*   5948*   5949*   5950*   5956*
                        5957*   5958*   5959*   5960*   5961*   5962*   5963*   5964*   5965*   6078*   6079*   6080*   6081*
                        6082*   6083*   6084*   6085*   6086*   6087*   6088*   6089*   6090*   6091*   6092*   6093*   6094*
                        6095*   6100*   6101*   6102*   6103*   6104*   6105*   6106*   6107*   6108*   6109*   6120*   6121*
                        6122*   6123*   6124*   6125*   6126*   6127*   6128*   6129*   6130*   6131*   6132*   6133*   6134*
                        6135*   6136*   6141*   6142*   6143*   6144*   6145*   6146*   6147*   6148*   6149*   6150*

REG01   003444          5713#   5843
REG1    001042          5426    5429#
REG2    001204          5461    5464#
REG23   003646          5754    5757#
REG3    001346          5496    5499#
REG4    001506          5531    5534#
REG45   004044          5796    5799#
REG5    001652          5568    5571#
RESTRT  000222          5348#
RITSH   004252          5755    5797    5841    5844#
RTASH   016326          6154#
RTA307  016340          6154#
RTA310  016572          6156#
RTMUL   016566          6156#
R0      =%000000        5344*   5345*   5346    5365*   5366*   5367*   5363*   5398*   5576*   5577    5721*   5806*   5807
                        6156*   6158*   6197    6199*   6200*   6204*   6209*   6211*   6216*   6220*   6242    6243*   6244
```

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                        6247#
R1      =%000001        5396#   5398    5434#   5536#   5557    5572#   5594    5596    5800#   5828    5831    5945#   5948#
                        6081#   6084#   6088#   6092#   6095#   6122#   6125#   6129#   6132#   6135#   6156#
R2      =%000002        5433#   5434    5469#   5714#   5742    5764#   6154#   6156#
R3      =%000003        5468#   5469    5504#
R4      =%000004        5503#   5504    5540#   5755#   5763#   5764    5797#   5807#   5841#   5844    5850#   6154#   6156#
R5      =%000005        5352#   5354#   5415    5418#   5420    5425    5451    5453#   5455    5460    5486    5488#   5490
                        5495    5521    5523#   5525    5530    5536    5539#   5540    5557#   5558    5560#   5562    5567
                        5572    5577#   5596#   5597#   5599    5604    5613    5620    5624    5628    5635    5641    5647
                        5653    5660    5666    5671    5679#   5630#   5681#   5682#   5683#   5694#   5685#   5686#   5687#
                        5688#   5714    5720#   5721    5742#   5743    5746#   5747    5753    5785    5738#   5789    5795
                        5800    5831#   5832#   5833    5839    5851    5857    5861    5865    5873    5880    5885    5891
                        5899    5904    5910    5915    5922    5929    5937    5943#   5944#   5945#   5946#   5947#   5949#
                        5949#   5950#   5956#   5957#   5958#   5959#   5960#   5961#   5962#   5963#   5964#   5965#   6078#
                        6079#   6080#   6081#   6082#   6083#   6084#   6085#   6086#   6087#   6088#   6089#   6090#   6091#
                        6092#   6093#   6094#   6095#   6100#   6101#   6102#   6103#   6104#   6105#   6106#   6107#   6108#
                        6109#   6120#   6121#   6122#   6123#   6124#   6125#   6126#   6127#   6129#   6129#   6130#   6131#
                        6132#   6133#   6134#   6135#   6136#   6141#   6142#   6143#   6144#   6145#   6146#   6147#   6148#
                        6149#   6150#   6154#   6156#
SCOPE   = 010701        4976#   6078    6079    6080    6081    6082    6083    6084    6085    6086    6087    6089    6089
                        6090    6091    6092    6093    6094    6095    6100    6101    6102    6103    6104    6105    6106
                        6107    6108    6109    6120    6121    6122    6123    6124    6125    6126    6127    6128    6129
                        6130    6131    6132    6133    6134    6135    6136    6141    6142    6143    6144    6145    6146
                        6147    6148    6149    6150    6158
SCOPE1= 010701          4977#   5392    5419    5464    5489    5499    5524    5561    5571    5598    5679    5690    5681
                        5682    5683    5684    5685    5686    5687    5688    5757    5799    5943    5944    5945    5946
                        5947    5948    594     5950    5956    5957    5958    5959    5960    5961    5962    5963    5964
                        5965
SCOPE3= 010703          4978#   5429    5454    5534    5713
SP      =%000006        4975#   5355#   5675    5941    6154#   6156#   6177#   6193    6197#   6199    6202#   6205#   6206#
                        6208#   6210#   6212#   6215    6216    6220    6228#   6242#   6243    6244#   6246    6247    6248#
                        6252    6259
START   000700          5392#   5608    5612
SWR9    = 001000        4979#
SWR10   = 002000        4980#
SWR11   = 004000        4981#
SWR12   = 010000        4982#
S0      000452          5011#
S1      000454          5012#   5013    5677    5681    5953    5956    5958
S10     000476          5021#   6139    6142
S11     000500          5022#
S2      000456          5013#   5678    5680    5954    5957
S3      000460          5014#
S4      000462          5015#
S5      000464          5016#   5017    6097    6100    6102
S6      000466          5017#   6098    6101
S7      000470          5018#
S8      000472          5019#
S9      000474          5020#   5021    6138    6141    6143
TEMP1   000434          4999#   5000    5369#   5393    5430    5465    5500    5535    5573    5609#   5615#   5630#   5637#
                        5655#   5668#   5706#   5715    5758    5801    5845#   5853#   5867#   5875#   5882#   5887#   5893#
                        5924#   5931#   6154#   6156#
TEMP2   000436          5001#   5002    5370#   5396    5400    5423#   5433    5436    5458#   5468    5471    5493#   5503
                        5506    5528#   5539    5542    5565#   5576    5579    5602#   5610#   5616#   5622#   5626#   5631#
                        5638#   5643#   5649#   5656#   5662#   5707#   5716    5759    5802    5846#   5894#   5901#   5912#
                        5917#   5925#   5932#
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TEMP3   000440          5003#  5004   5371#  5412   5424#  5448   5459#  5483   5494#  5518   5529#  5554   5566#
                        5591   5603#  5611#  5617#  5632#  5639#  5644#  5550#  5657#  5663#  5708#  5720   5723
                        5749#  5763   5766   5791#  5806   5809   5835#  5847#  5859#  5863#  5868#  5888#  5895#
                        5906#  5913#  5918#  5933#
TEMP4   000442          5005#  5006   5372#  5408   5444   5479   5514   5550   5587   5618#  5633#  5645#  5651#
                        5658#  5664#  5669#  5709#  5735   5752#  5778   5794#  5821   5838#  5948#  5854#  5869#
                        5876#  5902#  5907#  5919#  5934#
TEMP5   000444          5007#  5710#  5738   5751#  5781   5793#  5824   5837#  5849#  5870#  5877#  5883#  5896#
                        5920#  5926#
TEMP6   000446          5008#  5711#  5731   5774   5817   5855#  5871#  5878#  5889#  5897#  5908#  5927#  5935#
TST160  004306          5756   5798   5842   5851#
TST161  004334          5852   5857#
TST162  004352          5858   5861#
TST163  004370          5862   5865#
TST164  004432          5866   5873#
TST165  004470          5874   5880#
TST166  004514          5881   5885#
TST167  004544          5886   5891#
TST170  004602          5892   5899#
TST171  004626          5900   5904#
TST172  004654          5905   5910#
TST173  004676          5911   5915#
TST174  004734          5916   5922#
TST175  004770          5923   5929#
TST176  005046          5943#
TST177  005142          5944#
TST200  005236          5945#
TST201  005336          5946#
TST202  005432          5947#
TST203  005526          5948#
TST204  005626          5949#
TST205  005722          5950#
TST206  006046          5956#
TST207  006150          5957#
TST210  006252          5958#
TST211  006354          5959#
TST212  006454          5960#
TST213  006554          5961#
TST214  006654          5962#
TST215  006756          5963#
TST216  007060          5964#
TST217  007160          5965#
TST220  007260          6078#
TST221  007354          6079#
TST222  007450          6080#
TST223  007544          6081#
TST224  007644          6082#
TST225  007740          6083#
TST226  010034          6084#
TST227  010134          6085#
TST230  010230          6086#
TST231  010324          6087#
TST232  010420          6088#
TST233  010520          6089#
TST234  010614          6090#
TST235  010710          6091#
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TST236 011004 6092#
TST237 011104 6093#
TST240 011200 6094#
TST241 011274 6095#
TST242 011410 6100#
TST243 011504 6101#
*ST244 011600 6102#
TST245 011674 6103#
TST246 011766 6104#
*ST247 012060 6105#
*ST250 012152 6106#
TST251 012246 6107#
*ST252 012342 6108#
TST253 012434 6109#
TST254 012526 6120#
TST255 012634 6121#
TST256 012742 6122#
TST257 013054 6123#
TST260 013162 6124#
*ST261 013270 6125#
TST262 013402 6126#
TST263 013510 6127#
TST264 013616 6128#
TST265 013724 6129#
TST266 014036 6130#
TST267 014144 6131#
TST270 014252 6132#
TST271 014364 6133#
TST272 014472 6134#
TST273 014600 6135#
TST274 014670 6136#
TST275 014770 6141#
TST276 015076 6142#
TST277 015204 6143#
TST300 015312 6144#
TST301 015416 6145#
TST302 015522 6146#
TST303 015626 6147#
TST304 015734 6148#
TST305 016042 6149#
TST306 016146 6150#
TST307 016252 6154#
TST310 016500 6156#
TST37 002050 5428 5463 5498 5533 5570 5607 5613#
TST40 002104 5614 5620#
TST41 002120 5621 5624#
TST42 002136 5625 5628#
TST43 002172 5629 5635#
TST44 002224 5636 5641#
TST45 002256 5642 5647#
TST46 002310 5648 5653#
TST47 002346 5654 5660#
TST50 002376 5661 5666#
TST51 002454 5679#
*ST52 002534 5680#
*ST53 002614 5681#

E09


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TST54   002674          5682#
TST55   002752          5683#
TST56   003030          5684#
TST57   003106          5685#
TST60   003166          5686#
TST61   003246          5687#
TST62   003324          5688#
TTYOUT  000502          5023#   6154#   6156#
TYPCNT  000450          5009#   6201#   6213#
TYPE  = 000004          4983#   6158    6179    6196    6217
$APTHD  000430          4992#   4994
$CPJOP  000426          4990#
$CRLF   000510          5026#   6196    6217
$DEVCT  000410          4990#   5344
$DORGN  017036          6158#   6180
$ENDAD  017026          4968    6158#
$ENDCT  017006          6158#   6162
$ENDMG  017042          6158#
$ENULL  017054          6158#
$ENV    000420          4990#   5363    6221
$ENVM   000421          4990#   6154    6156    6255
$EOP    016762          6158#
$EOPCT  017000          6158#
$ETABL  000420          4990#
$ETEND  000430          4990#   4992
$FATAL  000402          4990#   6193#
$GET42  017016          6158#
$HD   = 000003          4951
$HIBTS  000430          4992#
$HLT    017110          5410    5414    5446    5450    5481    5485    5516    5520    5552    5556    5589    5593    5673
                        5679    5680    5681    5682    5683    5684    5685    5686    5687    5688    5733    5737    5744
                        5745    5776    5780    5784    5787    5819    5823    5827    5830    5939    5943    5944    5947
                        5946    5947    5948    5949    5950    5956    5957    5958    5959    5962    5963    5962    5963
                        5964    5965    6078    6079    6080    6081    6082    6083    6084    6085    6086    6087    6088
                        6089    6090    6091    6092    6093    6094    6095    6100    6101    6102    6103    6104    6105
                        6106    6107    6108    6109    6120    6121    6122    6123    6124    6125    6126    6127    6133
                        6129    6130    6131    6132    6133    6134    6135    6136    6141    6142    6143    6144    5145
                        6146    6147    6148    6149    6150    6154    6156    6193#
$MAIL   000400          4990#   4992    5346
$MBADP  000432          4992#
$MSGAD  000414          4990#
$MSGLG  000416          4990#
$MSGTY  000400          4990#   6223#
$PASS   000406          4990#   5394    5431    5466    5501    5537    5574    5718    5761    5804    6159#
$PASTM  000436          4992#
$PWRDN  017060          5343    6174#   6178
$PWRUP  017070          6174    6177#
$SETUP= 000020          5029#   6158
$STUP = 177777          5029#
$SVPC = 001000          4968#
$SWR  = 160000          4951#   6158
$SWREG  000422          4990#   6194    6225
$TEST   000404          4990#   5352
$TN   = 000001          4951#
$TPB    000504          5024#   6154#   6156#   6259#
$TPCHR  017330          6207    6251    6255#
```

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$TPCNT  000451          5010#  6198*  6218#
$TPS    000506          5025#  5365   6154#  6156*  6257
$TSTM   000434          4992#
$TYPE   017274          4987   6242#
$UNIT   000412          4990#
$UNITM  000440          4992#
$USWR   000424          4990#
.       = 017356        4958#  4965   4968#  4986#  4989#  4992#  4994#  4996#  4998#  5000#  5002#  5004#  5006#
                        5342#  5350#  5359#  5404#  5409   5413   5440#  5445   5449   5475#  5480   5484   5510#
                        5515   5519   5546#  5551   5555   5583#  5588   5592   5672   5679#  5680#  5681#  5682#
                        5683#  5684#  5685#  5686#  5687#  5688#  5727#  5732   5736   5739   5744   5770#  5775
                        5779   5782   5786   5813#  5818   5822   5825   5829   5938   5943#  5944#  5945#  5946#
                        5947#  5948#  5949#  5950#  5956#  5957#  5958#  5959#  5960#  5961#  5962#  5963#  5964#
                        5965#  6078#  6079#  6080#  6081#  6082#  6083#  6084#  6085#  6086#  6087#  6088#  6089#
                        6090#  6091#  6092#  6093#  6094#  6095#  6100#  6101#  6102#  6103#  6104#  6105#  6106#
                        6107#  6108#  6109#  6120#  6121#  6122#  6123#  6124#  6125#  6126#  6127#  6128#  6129#
                        6130#  6131#  6132#  6133#  6134#  6135#  6136#  6141#  6142#  6143#  6144#  6145#  6146#
                        6147#  6148#  6149#  6150#  6154#  6156#  6158#  6161   6162#  6166#  6224
.$X     = 000430        4992#
..A     = 016524        5359#  5404#  5440#  5475#  5510#  5546#  5583#  5679#  5680#  5681#  5682#  5683#  5684#
                        5685#  5686#  5687#  5688#  5727#  5770#  5813#  5943#  5944#  5945#  5946#  5947#  5948#
                        5949#  5950#  5956#  5957#  5958#  5959#  5960#  5961#  5962#  5963#  5964#  5965#  6078#
                        6079#  6080#  6081#  6082#  6083#  6084#  6085#  6086#  6087#  6088#  6089#  6090#  6091#
                        6092#  6093#  6094#  6095#  6100#  6101#  6102#  6103#  6104#  6105#  6106#  6107#  6108#
                        6109#  6120#  6121#  6122#  6123#  6124#  6125#  6126#  6127#  6128#  6129#  6130#  6131#
                        6132#  6133#  6134#  6135#  6136#  6141#  6142#  6143#  6144#  6145#  6146#  6147#  6148#
                        6149#  6150#  6154#  6156#
..B     = 016530        5359#  5404#  5440#  5475#  5510#  5546#  5583#  5679#  5680#  5681#  5682#  5683#  5684#
                        5685#  5686#  5687#  5688#  5727#  5770#  5813#  5943#  5944#  5945#  5946#  5947#  5948#
                        5949#  5950#  5956#  5957#  5958#  5959#  5960#  5961#  5962#  5963#  5964#  5965#  6078#
                        6079#  6080#  6081#  6082#  6083#  6084#  6085#  6086#  6087#  6088#  6089#  6090#  6091#
                        6092#  6093#  6094#  6095#  6100#  6101#  6102#  6103#  6104#  6105#  6106#  6107#  6108#
                        6109#  6120#  6121#  6122#  6123#  6124#  6125#  6126#  6127#  6128#  6129#  6130#  6131#
                        6132#  6133#  6134#  6135#  6136#  6141#  6142#  6143#  6144#  6145#  6146#  6147#  6148#
                        6149#  6150#  6154#  6156#
..C     = 000027        5359#  5404#  5440#  5475#  5510#  5546#  5583#  5679#  5680#  5681#  5682#  5683#  5684#
                        5685#  5686#  5687#  5688#  5727#  5770#  5813#  5943#  5944#  5945#  5946#  5947#  5948#
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                        6149#  6150#  6154#  6156#
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ENDCOM    986#
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         6148   6149  6150
MTPS     5032#  5359  6154  6156
MULT     3466#
NEWTST   1030#
POP      1483#  4949#
PUSH     1475#  4949#
REPORT   4437#
SETUP     801#
SKIP     1131#
SLASH     926#
STARS     895#  4950#  4956  4960  4968  4990  4992  6154  6156  6158  6170
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TYPDEC   1389#
TYPNAM   1177#
TYPNUM   1356#
TYPOCS   1309#
TYPOCT   1272#
TYPTXT   1226#
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$SESCA   1110#
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$SNEWT   1064#
$SSKIP   1144#
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ASHC    5721  5723  5764  5766  5807  5809  5943  5944  5945  5946  5947  5948  5949  5950  5956
        5957  5958  5959  5960  5961  5962  5963  5964  5965
ASL     5424  5459  5494  5529  5536  5603
BEQ     5364  5409  5413  5445  5449  5480  5484  5515  5519  5551  5555  5588  5592  5605  5672
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BGE     5422  5457  5492  5527  5564  5601  5748  5790  5834
BGT     6158
BIC     6135  6136  6154  6156  6158
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BIT     5394  5431  5466  5501  5537  5574  5718  5761  5804  6154  6156  6194
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BNE     5347  5395  5417  5426  5432  5452  5461  5467  5487  5496  5502  5522  5531  5538  5559
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BPL     6154  6156  6226  6258
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CLRB    6154  6156
CMP     5346  5412  5415  5420  5425  5448  5451  5455  5460  5483  5486  5490  5495  5518  5521
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JO9

DVKABA.SRC CROSS REFERENCE TABLE -- PERMANENT SYMBOLS

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DIV     6120  6121  6122  6123  6124  6125  6126  6127  6128  6129  6130  6131  6132  6133  6134
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JMP     5348  5427  5462  5497  5608  5612  5843  6158
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RESET   6158
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K09

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.TITLE  4951
.WORD   4968    4990    4992    5007    5008    5359    5404    5440    5443    5510    5546    5583    5679    5680    5681
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        6143    6144    6145    6146    6147    6148    6149    6150    6154    6156    6158

ERRORS DETECTED:  0
DEFAULT GLOBALS GENERATED:  0

*,DVKABA/CRF=DVKABA.SML,DVKABA.SRC
RUN-TIME: 41 54 6 SECONDS
RUN-TIME RATIO: 330/102=3.2
CORE USED:  31K  (61 PAGES)
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M09

Spooler runtime 13 Seconds, 56 KCS, 373 disk reads, 1 disk writes, 115 pages

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