```
000000                  .REPT   0
```

IDENTIFICATION

PRODUCT CODE: AC-8190B-MC

PRODUCT NAME: CVKABB0 LSI-11 EIS INST TEST

DATE CREATED: JULY, 1981

MAINTAINER: DIAGNOSTIC GROUP

CONTENTS

1. ABSTRACT

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

2. REQUIREMENTS

2.1 EQUIPMENT

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

2.2 STORAGE

PROGRAM STORAGE - THE ROUTINES USE MEMORY 0 - 17500

2.3 PRELIMINARY PROGRAMS

NONE

3. LOADING PROCEDURE

USE STANDARD PROCEDURE FOR ABS TAPES.

4. STARTING PROCEDURE

4.1 CONTROL SWITCH SETTINGS

SEE 5.1 (ALL LOW FOR WORST CASE TESTING)

4.2 STARTING ADDRESS

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

4.3 PROGRAM AND/OR OPERATOR ACTION

4.3.1 STAND ALONE

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

4.3.2 UNDER APT

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

5. OPERATING PROCEDURE

5.1 SWITCH SETTINGS

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

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

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

```
                                5.2     SUBROUTINE ABSTRACTS


                                5.2.1   HALT ROUTINE

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


                                5.2.2   TRAP CATCHER

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


                                6.      ERRORS


                                6.1     ERROR PRINTOUT

                                        THE FORMAT IS AS FOLLOWS:

                                        ADR     ERRNM

                                        WHERE:

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


                                6.2     ERROR RECOVERY

                                        RESTART AT 200 OR 222 (SEE SEC 4.2)


                                7.      RESTRICTIONS

                                        NONE


                                8.      MISCELLANEOUS
```

8.1 EXECUTION TIME

DUE TO THE RANDOM CHARACTERISTIC OF THE INTERRUPT TESTS, THE EXECUTION TIME CAN BE 5 SECONDS OR MORE PER PASS. HOWEVER, NORMALLY FIRST "END PASS" WILL BE TYPED WITHIN 5 SECONDS AND WITHIN 50 SECONDS FOR EVERY CONSECUTIVE 10 PASSES

8.2 STACK POINTER

STACK IS INITIALLY SET TO 600

8.3 PASS COUNT

A 16 BIT LOCATION "$PASS" (I.E. LOCATION 406) IS USED TO KEEP PASS COUNT. IT CAN BE CLEARED BY RESTARTING THE PROGRAM AT 200

8.4 TEST NUMBER

A 16 BIT LOCATION "$TESTN" (I.E. LOCATION 404) IS USED TO KEEP TRACK OF THE TEST NUMBER, UPPER BYTE OF THIS LOCATION GIVES THE ITERATION NUMBER AND THE LOWER BYTE THE TEST THAT WAS BEING EXECUTED

8.5 POWER FAIL

THE DIAGNOSTIC CAN BE POWER FAILED WITH NO ERRORS. TO USE, START THE TEST AS USUAL AND POWER DOWN THEN UP AT ANY TIME. THE PROGRAM SHOULD RESTART FROM TEST 0 AFTER TYPING "POWER" WITH NO ERRORS. HOWEVER IF THE PROGRAM IS STORED IN A MOS MEMORY THAT CAN NOT HOLD DATA WITH POWER DOWN THEN THE PROGRAM WILL NOT RECOVER FROM A POWER FAIL

9. PROGRAM DESCRIPTION

THIS PROGRAM TESTS ALL THE EIS INSTRUCTIONS OF THE LSI-11
FOR ASH AND ASHC INSTRUCTIONS EVERY EVEN PASS IS EXECUTED
WITH DESTINATION MODE 0 FOR ALL REGISTERS AND EVERY ODD PASS
WITH DESTINATION MODE OF 67. THE DIAGNOSTIC DOES NOT MAKE A
PASS WITH T BIT SET.

.ENDR

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

```
                                ;;*************************************************************
                000000          .=0                                   ;TRAP CATCHER 0 - 776

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

                                .SBTTL  ACT11 HOOKS

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

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


                000020          .=20
        000020  017300          $TYPE
```

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

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

```
716             000200                          .=200
717  000200     012737  017064  000024                  MOV     #$PWRDN,@#24    ;PREPARE TO SERVICE POWER DOWN ROUTINE
718  000206     012700  000410                          MOV     #$DEVCT,R0      ;PREPARE TO INITIALIZE THE STACK
719  000212     005040                          2$:     CLR     -(R0)
720  000214     022700  000400                          CMP     #$MAIL,R0
721  000220     001374                                  BNE     2$
722  000222     000167  000352                  RESTRT: JMP     BEGIN
723
724             000600                          .=600
725
726  000600     012705  000404                  BEGIN:  MOV     #$TESTN,R5      ;MAKE R5 POINT TO THE LOCATION $TESTN
727  000604     005037  000430                          CLR     @#COUNT         ;CLEAR THE COUNTER
728  000610     012715  000001                          MOV     #1,(R5)         ;INITIALIZE TEST NUMBER
729  000614     012706  000600                          MOV     #BEGIN,SP       ;** STACK AT BEGIN **
733  000620                                          MTPS    #0              ;PLACE #0 IN PSW
(1)  000620     106427                                  .WORD   106400!..C
737  000624     132737  000001  000420                  BITB    #1,@#$ENV       ;ARE WE UNDER APT ?
738  000632     001410                                  BEQ     2$              ;IF NOT THEN GO TO 2$
739  000634     012700  000510                          MOV     #$TPS+2,R0      ;OTHERWISE SET FOR OTHER SLU
740  000640     012740  176564                          MOV     #176564,-(R0)
741  000644     012740  176566                          MOV     #176566,-(R0)
742  000650     012740  000074                          MOV     #74,-(R0)
743  000654     012737  000001  000434  2$:     MOV     #1,@#TEMP1      ;TEMP1=1
744  000662     005037  000436                          CLR     @#TEMP2         ;TEMP2=0
745  000666     012737  000001  000440                  MOV     #1,@#TEMP3      ;TEMP3=1
746  000674     005037  000442                          CLR     @#TEMP4         ;TEMP4 0
747
748
752
753                                                     ;*********************************
754                                                     ;     ASH INSTRUCTION TESTS
755                                                     ;*********************************
756
757
758
759
760                                                             ;*************
761                                                             ; TESTS 1-36
762                                                             ;*************
763
764
765  000700     010701                  START:  SCOPE1
766  000702     013700  000434                  MOV     @#TEMP1,%0      ;LOAD R0 WITH THE CONTENTS OF TEMP1
767  000706     032737  000001  000406          BIT     #1,@#$PASS      ;IS IT AN EVEN PASS ?
768  000714     001004                          BNE     2$              ;IF NOT THEN GO TO 2$
769  000716     013701  000436                  MOV     @#TEMP2,R1      ;OTHERWISE EXECUTE THE INSTRUCTION
770                                                                     ;IN MODE 0 USING R1
771  000722     072001                          ASH     R1,R0
772  000724     000402                          BR      4$
773  000726     072067  177504          2$:     ASH     TEMP2,%0        ;SHIFT R0 BY THE NUMBER SPECIFIED BY TEMP2
777  000732                             4$:     MFPS    @#PSWORD        ;SAVE PS
(1)  000732     106737                          .WORD   1067(0!..C
781  000736     123737  000442  000432          CMPB    @#TEMP4,@#PSWORD;IS THE PS - TEMP4 ?
782  000744     001403                          BEQ     .+10
783  000746     004767  016142                  JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINF
(2)                                                                     ;THE PS IS NOT EQUAL TO 0
```

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

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

```
(2)                                                     ;EITHER INCORRECT R3 OR INCORRECT SEQUENCE
(2)  001440  000010                                     10
894  001442  021537  000430                             CMP     (R5),@#COUN     ;IS THE TEST NUMBER EQUAL TO THE COUNTER?
895  001446  001372                                     BNE     6$              ;IF NOT GO TO THE HLT ABOVE
896  001450  005215                                     INC     (R5)
897  001452  010701                                     SCOPE1
898  001454  021527  000037                             CMP     (R5),#37        ;HAS THE CONTENTS OF REGISTERS BEEN SHIFTED
899                                                                              ;LEFT BY 14. AND RIGHT BY 14.?
900  001460  002010                                     BGE     8$
901  001462  005237  000436                             INC     @#TEMP2
902  001466  006367  176746                             ASL     TEMP3           ;SHIFT TEMP3 LEFT?
903  001472  021527  000020                             CMP     (R5),#20        ;HAS THE CONTENTS OF REGISTERS BEEN SHIFTED LEFT BY 14.?
904  001476  001003                                     BNE     REG4
905  001500  000550                                     BR      NEGAT           ;IF SO GO TO NEGAT AND INITIATE RIGHT SHIFT
906  001502  004767  000342                 8$:       JSR     PC,TST37        ;IF SO GO AND CONTINUE THE REST OF THE PROGRAM
907  001506  010703                         REG4:     SCOPE3
908  001510  013704  000434                             MOV     @#TEMP1,%4      ;LOAD R4 WITH THE CONTENTS OF TEMP1
909  001514  010501                                     MOV     R5,R1           ;SAVE R5
910  001516  032737  000001  000406                     BIT     #1,@#$PASS      ;IS IT AN EVEN PASS ?
911  001524  001004                                     BNE     2$              ;IF NOT THEN GO TO 2$
912  001526  013705  000436                             MOV     @#TEMP2,R5      ;OTHERWISE EXECUTE ASH INSTRUCTION IN MODE 0
913  001532  072405                                     ASH     R5,R4           ;USING R4
914  001534  000402                                     BR      4$
915  001536  072467  176674                 2$:       ASH     TEMP2,%4        ;SHIFT R4 BY THE NUMBER SPECIFIED BY TEMP2
919  001542                                 4$:       MFPS    @#PSWORD        ;SAVE PS
(1)  001542  106737                                     .WORD   106700!..C
923  001546  123737  000442  000432                     CMPB    @#TEMP4,@#PSWORD;IS PS = TEMP4 ?
924  001554  001403                                     BEQ     .+10
925  001556  004767  015332                             JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
(2)                                                                              ;THE PS IS NOT EQUAL TO 0
(2)  001562  000011                                     11
926  001566  005237  000430                             INC     @#COUNT
927  001570  023704  000440                             CMP     @#TEMP3,%4      ;IS THE RESULT IN R4 EQUAL TO TEMP3?
928  001574  001403                                     BEQ     .+10
929  001576                                 6$:
(2)  001576  004767  015312                             JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
(2)                                                                              ;EITHER INCORRECT R4 OR INCORRECT SEQUENCE
(2)  001602  000012                                     12
930  001604  010105                                     MOV     R1,R5           ;RESTORE R5
931  001606  021537  000430                             CMP     (R5),@#COUNT    ;IS THE TEST NUMBER EQUAL TO THE COUNTER?
932  001612  001371                                     BNE     6$              ;IF NOT GO TO THE HLT ABOVE
933  001614  005215                                     INC     (R5)
934  001616  010701                                     SCOPE1
935  001620  021527  000037                             CMP     (R5),#37        ;HAS THE CONTENTS OF REGISTERS BEEN
936                                                                              ;SHIFTED LEFT BY 14. AND RIGHT BY 14.?
937  001624  002010                                     BGE     8$
938  001626  005237  000436                             INC     @#TEMP2
939  001632  006367  176602                             ASL     TEMP3           ;SHIFT TEMP3 LEFT
940  001636  021527  000020                             CMP     (R5),#20        ;HAS THE CONTENTS OF REGISTER BEEN SHIFTED BY 14.?
941  001642  001003                                     BNE     REG5
942  001644  000466                                     BR      NEGAT           ;IF SO GO TO NEGAT AND INITIATE RIGHT SHIFT
943  001646  004767  000176                 8$:       JSR     PC,TST37        ;IF SO GO AND CONTINUE THE REST OF THE PROGRAM
944  001652  010701                         REG5:     SCOPE1
945  001654  010501                                     MOV     R5,R1           ;SAVE R5
946  001656  013705  000434                             MOV     @#TEMP1,%5      ;LOAD R5 WITH THE CONTENTS OF TEMP1
947  001662  032737  000001  000406                     BIT     #1,@#$PASS      ;IS IT AN EVEN PASS ?
```

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

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1004  002152  005237  000436              INC     @#TEMP2         ;SHIFTED BY -15
1005  002156  005337  000440              DEC     @#TEMP3         ;IS=-1
1006  002162  012737  000010  000442      MOV     #10,@#TEMP4             ;AND PS=10
1007  002170  000207                      RTS     PC
1008  002172  021527  000043      TST43:  CMP     (R5),#43        ;IS IT TEST 43?
1009  002176  001012                      BNE     TST44           ;IF NOT THEN IF NOT THEN TRY TEST 44
1010  002200  012737  125252  000434      MOV     #125252,@#TEMP1 ;125252
1011  002206  012737  177777  000436      MOV     #-1,@#TEMP2     ;SHIFTED BY -1
1012  002214  012737  152525  000440      MOV     #152525,@#TEMP3 ;IS=152525 AND PS=10
1013  002222  000207                      RTS     PC
1014  002224  021527  000044      TST44:  CMP     (R5),#44        ;IS IT TEST 44?
1015  002230  001012                      BNE     TST45           ;IF NOT THEN TRY TEST 45
1016  002232  012737  000001  000436      MOV     #1,@#TEMP2      ;125252 SHIFTED BY 1
1017  002240  012737  052524  000440      MOV     #52524,@#TEMP3  ;IS=52524
1018  002246  012737  000003  000442      MOV     #3,@#TEMP4      ;AND PS=3
1019  002254  000207                      RTS     PC
1020  002256  021527  000045      TST45:  CMP     (R5),#45        ;IS IT TEST 45?
1021  002262  001012                      BNE     TST46           ;IF NOT THEN TRY TEST 46
1022  002264  012737  177776  000436      MOV     #-2,@#TEMP2     ;125252 SHIFTED BY -2
1023  002272  012737  165252  000440      MOV     #165252,@#TEMP3 ;IS=165252
1024  002300  012737  000011  000442      MOV     #11,@#TEMP4     ;AND PS=11
1025  002306  000207                      RTS     PC
1026  002310  021527  000046      TST46:  CMP     (R5),#46        ;IS IT TEST 46?
1027  002314  001014                      BNE     TST47           ;IF NOT THEN TRY TEST 47
1028  002316  012737  177777  000434      MOV     #-1,@#TEMP1     ;-1
1029  002324  012737  000020  000436      MOV     #16.,@#TEMP2    ;SHIFTED BY 15.
1030  002332  005037  000440              CLR     @#TEMP3         ;IS=0
1031  002336  012737  000007  000442      MOV     #7,@#TEMP4      ;AND PS=7
1032  002344  000207                      RTS     PC
1033  002346  021527  000047      TST47:  CMP     (R5),#47        ;IS IT TEST 47?
1034  002352  001011                      BNE     TST50           ;IF NOT THEN TRY TEST 50
1035  002354  005337  000436              DEC     @#TEMP2         ;-1 SHIFTED BY 15
1036  002360  012737  100000  000440      MOV     #100000,@#TEMP3 ;IS=100000
1037  002366  012737  000011  000442      MOV     #11,@#TEMP4     ;AND PS=11
1038  002374  000207                      RTS     PC
1039  002376  021527  000050      TST50:  CMP     (R5),#50        ;IS IT TEST 50
1040  002402  001007                      BNE     ENT51           ;IF NOT THEN TRY TEST 51
1041  002404  012737  137777  000434      MOV     #137777,@#TEMP1 ;137777 SHIFTED BY 15. IS=100000
1042  002412  012737  000013  000442      MOV     #13,@#TEMP4     ;AND PS=13
1043  002420  000207                      RTS     PC
1044  002422  021527  000051      ENT51:  CMP     (R5),#51        ;IS IT ENTERING TEST 51?
1045  002426  001403                      BEQ     .+10
1046  002430  004767  014460              JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
 (2)                                                  ;TEST NUMBER GOOFED
 (2)  002434  000015                      15
1047
1048  002436  005726                      TST     (SP)+           ;RESTORE STACK POINTER
1049  002440  012704  177771              MOV     #-7,%4
1050  002444  012702  000454              MOV     #S1,%2
1051  002450  012703  000456              MOV     #S2,%3
```

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

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

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1056                                    ;*****************************************************************
(1)                                     ;TEST:55   LSI-11   ASH     125252 SHIFTED BY (2)+  177525  PS   1
(1)                                     ;*****************************************************************
(1)
(1)  002752  010701                     TST55:  SCOPE1
(1)  002754  012700  125252                     MOV     #125252,%0      ;LOAD R0 WITH 125252
(1)  002760  072022                             ASH     (2)+,%0         ;SHIFT R0 BY (2)+
(1)  002762                                     MFPS    @#PSWORD        ;SAVE PS
(2)  002762  106737                             .WORD   106700!..C
(1)  002766  122737  000010  000432             CMPB    #10,@#PSWORD    ;IS THE PS 10?
(1)  002774  001403                             BEQ     .+10
(3)  002776  004767  014112                     JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
(3)                                             ;THE PS IS NOT EQUAL TO 10
(3)  003002  000026                             26
(1)  003004  022700  177525                     CMP     #177525,%0      ;IS THE RESULT 177525?
(1)  003010  001403                             BEQ     .+10
(1)  003012                             1$:
(3)  003012  004767  014076                     JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
(3)                                             ;R0 IS NOT EQUAL TO 177525 OR INCORRECT SEQUENCE
(3)  003016  000027                             27
(1)  003020  021527  000055                     CMP     (R5),#55                ;IS $TESTN = #55
(1)  003024  001372                             BNE     1$              ;IF NOT THEN GO TO HLT ABOVE
(1)  003026  005215                             INC     (R5)
(1)
(1)
(1)
1057                                    ;*****************************************************************
(1)                                     ;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)
(1)  003040                                     MFPS    @#PSWORD        ;SAVE PS
(2)  003040  106737                             .WORD   106700!..C
(1)  003044  122737  000010  000432             CMPB    #10,@#PSWORD    ;IS THE PS 10?
(1)  003052  001403                             BEQ     .+10
(3)  003054  004767  014034                     JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
(3)                                             ;THE PS IS NOT EQUAL TO 10
(3)  003060  000030                             30
(1)  003062  022700  177525                     CMP     #177525,%0      ;IS THE RESULT 177525?
(1)  003066  001403                             BEQ     .+10
(1)  003070                             1$:
(3)  003070  004767  014020                     JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
(3)                                             ;R0 IS NOT EQUAL TO 177525 OR INCORRECT SEQUENCE
(3)  003074  000031                             31
(1)  003076  021527  000056                     CMP     (R5),#56                ;IS $TESTN = #56
(1)  003102  001372                             BNE     1$              ;IF NOT THEN GO TO HLT ABOVE
(1)  003104  005215                             INC     (R5)
(1)
(1)
(1)
```

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1058                                            ;*************************************************************
 (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)
 (1)  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  013754                            JSR     PC,$HLT             ;SEEN AN ERROR, GO TO TH HALT ROUTINE
 (3)                                                                                ;THE PS IS NOT EQUAL TO 11
 (3)  003140  000032                                    32
 (1)  003142  022700  177252                            CMP     #177252,%0          ;IS THE RESULT 177252?
 (1)  003146  001403                                    BEQ     .+10
 (1)  003150                                    1$:
 (3)  003150  004767  013740                            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)
1059                                            ;*************************************************************
 (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)
 (1)  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  013674                            JSR     PC,$HLT             ;SEEN AN ERROR, GO TO TH HALT ROUTINE
 (3)                                                                                ;THE PS IS NOT EQUAL TO 10
 (3)  003220  000034                                    34
 (1)  003222  022700  177525                            CMP     #177525,%0          ;IS THE RESULT 177525?
 (1)  003226  001403                                    BEQ     .+10
 (1)  003230                                    1$:
 (3)  003230  004767  013660                            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)
```

```
1060                                    ;*****************************************************************
 (1)                                    ;TEST:61   LSI-11   ASH     125252 SHIFTED BY @(3)+ = 177525  PS = 10
  .                                     ;*****************************************************************
  .
 (1)  003246  010701                    TST61:  SCOPE1
 (1)  003250  012700  125252                    MOV     #125252,%0      ;LOAD R0 WITH 125252
 (1)  003254  072033                            ASH     @(3)+,%0        ;SHIFT R0 BY @(3)+
 (1)  003256                                    MFPS    @#PSWORD        ;SAVE PS
 (2)  003256  106737                            .WORD   106700!..C
 (1)  003262  122737  000010  000432            CMPB    #10,@#PSWORD    ;IS THE PS 10?
 (1)  003270  001403                            BEQ     .+10
 (3)  003272  004767  013616                    JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
 (3)                                            ;THE PS IS NOT EQUAL TO 10
 (3)  003276  000036                            36
 (1)  003300  022700  177525                    CMP     #177525,%0      ;IS THE RESULT 177525?
 (1)  003304  001403                            BEQ     .+10
 (1)  003306                            1$:
 (3)  003306  004767  013602                    JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
 (3)                                            ;R0 IS NOT EQUAL TO 177525 OR INCORRECT SEQUENCE
 (3)  003312  000037                            37
 (1)  003314  021527  000061                    CMP     (R5),#61                ;IS $TESTN = #61
 (1)  003320  001372                            BNE     1$              ;IF NOT THEN GO TO HLT ABOVE
 (1)  003322  005215                            INC     (R5)
 (1)
 (1)
 (1)
1061                                    ;*****************************************************************
 (1)                                    ;TEST:62   LSI-11   ASH     125252 SHIFTED BY @-(3) = 177525  PS = 10
 (1)                                    ;*****************************************************************
 (1)
 (1)  003324  010701                    TST62:  SCOPE1
 (1)  003326  012700  125252                    MOV     #125252,%0      ;LOAD R0 WITH 125252
 (1)  003332  072053                            ASH     @-(3),%0        ;SHIFT R0 BY @-(3)
 (1)  003334                                    MFPS    @#PSWORD        ;SAVE PS
 (2)  003334  106737                            .WORD   106700!..C
 (1)  003340  122737  000010  000432            CMPB    #10,@#PSWORD    ;IS THE PS 10?
 (1)  003346  001403                            BEQ     .+10
 (3)  003350  004767  013540                    JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
 (3)                                            ;THE PS IS NOT EQUAL TO 10
 (3)  003354  000040                            40
 (1)  003356  022700  177525                    CMP     #177525,%0      ;IS THE RESULT 177525?
 (1)  003362  001403                            BEQ     .+10
 (1)  003364                            1$:
 (3)  003364  004767  013524                    JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
 (3)                                            ;R0 IS NOT EQUAL TO 177525 OR INCORRECT SEQUENCE
 (3)  003370  000041                            41
 (1)  003372  021527  000062                    CMP     (R5),#62                ;IS $TESTN = #62
 (1)  003376  001372                            BNE     1$              ;IF NOT THEN GO TO HLT ABOVE
 (1)  003400  005215                            INC     (R5)
 (1)
 (1)
 (1)
1065                                            ;*******************************
1066                                            ;       ASHC INSTRUCTION TESTS
1067                                            ;*******************************
1068
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1069
1070
1071                                                    ;************
1072                                                    ;TESTS 63-157
1073                                                    ;************
1074
1075
1076
1077  003402  012737  000062  000430          MOV     #62,@#COUNT
1078  003410  005037  000434                  CLR     @#TEMP1         ;TEMP1=0
1079  003414  012737  000001  000436          MOV     #1,@#TEMP2      ;TEMP2=1
1080  003422  005037  000440                  CLR     @#TEMP3         ;TEMP3=0
1081  003426  005037  000442                  CLR     @#TEMP4         ;TEMP4=0
1082  003432  012737  000001  000444          MOV     #1,@#TEMP5      ;TEMP5=1
1083  003440  005037  000446                  CLR     @#TEMP6         ;0 1 SHIFTED BY 0=0 1, PS=0
1084
1085  003444  010703                  REG01:  SCOPE3
1086  003446  010502                          MOV     R5,R2           ;SAVE R5
1087  003450  013700  000434                  MOV     @#TEMP1,%0      ;PLACE THE CONTENTS OF TEMP1 IN REGISTER 0
1088  003454  013701  000436                  MOV     @#TEMP2,%0.1    ;PLACE THE CONTENTS OF TEMP2 IN REGISTER 1
1089  003460  000241                          CLC
1090  003462  032737  000001  000406          BIT     #1,@#$PASS      ;IS IT AN EVEN PASS ?
1091  003470  001004                          BNE     2$              ;IF NOT THEN GO TO 2$
1092  003472  013705  000440                  MOV     @#TEMP3,R5      ;OTHERWISE EXECUTE ASHC INSTRUCTION IN MODE 0
1093  003476  073005                          ASHC    R5,R0           ;USING R0
1094  003500  000402                          BR      4$
1095  003502  073067  174732          2$:     ASHC    TEMP3,%0        ;ASHC REGISTER 0 BY THE CONTENTS OF TEMP3
1099  003506                           4$:     MFPS    @#PSWORD        ;SAVE PS
 (1)  003506  106737                          .WORD   106700!..C
1103  003512  123737  000446  000432          CMPB    @#TEMP6,@#PSWORD;COMPARE PS WITH THE CONTENTS OF TEMP6
1104  003520  001403                          BEQ     .+10
1105  003522  004767  013366                  JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
 (2)                                                                 ;WRONG PS
 (2)  003526  000042                          42
1106  003530  005237  000430                  INC     @#COUNT
1107  003534  023700  000442                  CMP     @#TEMP4,%0      ;IS THE RESULT IN R0 SAME AS TEMP4?
1108  003540  001403                          BEQ     .+10
1109  003542  004767  013346                  JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
 (2)                                                                 ;WRONG RESULT IN R0
 (2)  003546  000043                          43
1110  003550  023701  000444                  CMP     @#TEMP5,%1      ;IS THE RESULT IN R1 SAME AS TEMP5?
1111  003554  001403                          BEQ     .+10            ;TEMP1 TEMP2 SHIFTED BY TEMP3=TEMP4 TEMP5
1112                                                                  ;AND PS=TEMP6
1113  003556  004767  013332                  JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
 (2)                                                                 ;WRONG RESULT IN R1
 (2)  003562  000044                          44
1114  003564  010205                          MOV     R2,R5           ;RESTORE R5
1115  003566  021537  000430                  CMP     (R5),@#COUNT    ;IS TEST NUMBER=COUNTER?
1116  003572  001403                          BEQ     .+10
1117  003574  004767  013314                  JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
 (2)                                                                 ;NO
 (2)  003600  000045                          45
1118  003602  005215                          INC     (R5)
1119  003604  021527  000160                  CMP     (R5),#160       ;HAVE THE FIRST 159 TEST BEEN EXECUTED?
1120  003610  002014                          BGE     6$              ;YES
1121  003612  005237  000440                  INC     @#TEMP3
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1122  003616  000241                          CLC
1123  003620  006137  000444                  ROL     @#TEMP5         ;ROTATE TEMP5 LEFT BY 1 PLACE
1124  003624  006137  000442                  ROL     @#TEMP4         ;INTRODUCE CARRY FROM TEMP4 IN TEMP5
1125  003630  021527  000121                  CMP     (R5),#121       ;IS IT TEST 121?
1126  003634  001004                          BNE     REG23
1127  003636  004467  000410                  JSR     R4,RITSH        ;IF SO THEN GO AND INITIATE RIGHT SHIFT
1128  003642  0047??  000440          6$:     JSR     %7,TST160
1129  003646  0107??                  REG23:  SCOPE1
1130  003650  013702  000434                  MOV     @#TEMP1,%2      ;PLACE THE CONTENTS OF TEMP1 IN REGISTER 2
1131  003654  013703  000436                  MOV     @#TEMP2,%2.1    ;PLACE THE CONTENTS OF TEMP2 IN REGISTER 3
1132  003660  000241                          CLC
1133  003662  032737  000001  000406          BIT     #1,@#$PASS      ;IS IT AN EVEN PASS ?
1134  003670  001004                          BNE     2$              ;IF NOT THEN GO TO 2$
1135  003672  013704  000440                  MOV     @#TEMP3,R4      ;OTHERWISE EXECUTE ASHC INSTRUCTION IN MODE 0
1136  003676  073204                          ASHC    R4,R2           ;USING R2
1137  003700  000402                          BR      4$
1138  003702  073267  174532          2$:     ASHC    TEMP3,%2        ;ASHC REGISTER 2 BY THE CONTETNS OF TEMP3
1142  003706                          4$:     MFPS    @#PSWORD        ;SAVE PS
 (1)  003706  106737                          .WORD   106700!..C
 146  003712  123737  000446  000432          CMPB    @#TEMP6,@#PSWORD;COMPARE PS WITH THE CONTENTS OF TEMP6
1147  003720  001403                          BEQ     .+10
1148  003722  004767  013166                  JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
 (2)                                                                 ;WRONG PS
 (2)  003726  000046                          46
1149  003730  005237  000430                  INC     @#COUNT
1150  003734  023702  000442                  CMP     @#TEMP4,%2      ;IS THE RESULT IN R2 SAME AS TEMP4?
1151  003740  001403                          BEQ     .+10
1152  003742  004767  013146                  JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
 (2)                                                                 ;WRONG RESULT IN R2
 (2)  003746  000047                          47
1153  003750  023703  000444                  CMP     @#TEMP5,%3      ;IS THE RESULT IN R3 SAME AS TEMP5?
1154  003754  001403                          BEQ     .+10            ;TEMP1 TEMP2 SHIFTED BY TEMP3=TEMP4 TEMP5
1155                                                                  ;AND PS=TEMP6
1156  003756  004767  013132                  JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
 (2)                                                                 ;WRONG RESULT IN R1
 (2)  003762  000050                          50
1157  003764  021537  000430                  CMP     (R5),@#COUNT    ;IS TEST NUMBER=COUNTER?
1158  003770  001403                          BEQ     .+10
1159  003772  004767  013116                  JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
 (2)                                                                 ;NO
 (2)  003776  000051                          51
1160  004000  005215                          INC     (R5)
1161  004002  021527  000160                  CMP     (R5),#160       ;HAVE THE FIRST 159 TEST BEEN EXECUTED?
1162  004006  002014                          BGE     6$              ;YES
1163  004010  005237  000440                  INC     @#TEMP3
1164  004014  000241                          CLC
1165  004016  006137  000444                  ROL     @#TEMP5         ;ROTATE TEMP5 LEFT BY 1 PLACE
1166  004022  006137  000442                  ROL     @#TEMP4         ;INTRODUCE CARRY FROM TEMP5 IN TEMP4
1167  004026  021527  000121                  CMP     (R5),#121       ;IS IT TEST 121?
1168  004032  001004                          BNE     REG45
1169  004034  004467  000212                  JSR     R4,RITSH        ;IF SO THEN GO AND INITIATE RIGHT SHIFT
1170  004040  004767  000242          6$:     JSR     %7,TST160
1171  004044  010701                  REG45:  SCOPE1
1172  004046  010501                          MOV     R5,R1           ;SAVE R5
1173  004050  013704  000434                  MOV     @#TEMP1,%4      ;PLACE THE CONTENTS OF TEMP1 IN REGISTER 4
1174  004054  013705  000436                  MOV     @#TEMP2,%4!1    ;PLACE THE CONTENTS OF TEMP2 IN REGISTER 5
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 1175  004060  000241                          CLC
 1176  004062  032737  000001  000406          BIT     #1,@#$PASS      ;IS IT AN EVEN PASS ?
 1177  004070  001004                          BNE     2$              ;IF NOT THEN GO TO 2$
 1178  004072  013700  000440                  MOV     @#TEMP3,R0      ;OTHERWISE EXECUTE ASHC INSTRUCTION IN MODE 0
 1179  004076  073400                          ASHC    R0,R4           ;USING R4
 1180  004100  000402                          BR      4$
 1181  004102  073467  174332          2$:     ASHC    TEMP3,%4        ;ASHC REGISTER 4 BY THE CONTENTS OF TEMP3
 1185  004106                          4$:     MFPS    @#PSWORD        ;SAVE PS
  (1)  004106  106737                          .WORD   106700!..C
 1189  004112  123737  000446  000432          CMPB    @#TEMP6,@#PSWORD;COMPARE PS WITH THE CONTENTS OF TEMP6
 1190  004120  001403                          BEQ     .+10
 1191  004122  004767  012766                  JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
  (2)                                                                 ;WRONG PS
  (2)  004126  000052                          52
 1192  004130  005237  000430                  INC     @#COUNT
 1193  004134  023704  000442                  CMP     @#TEMP4,%4      ;IS THE RESULT IN R4 SAME AS TEMP4?
 1194  004140  001403                          BEQ     .+10
 1195  004142  004767  012746                  JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
  (2)                                                                 ;WRONG RESULT IN R4
  (2)  004146  000053                          53
 1196  004150  023705  000444                  CMP     @#TEMP5,%5      ;IS THE RESULT IN R5 SAME AS TEMP5?
 1197  004154  001403                          BEQ     .+10            ;TEMP1 TEMP2 SHIFTED BY TEMP3=TEMP4 TEMP5
 1198                                                                  ;AND PS=TEMP6
 1199  004156  004767  012732                  JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
  (2)                                                                 ;WRONG RESULT IN R5
  (2)  004162  000054                          54
 1200  004164  021137  000430                  CMP     (R1),@#COUNT    ;IS TEST NUMBER=COUNTER?
 1201  004170  001403                          BEQ     .+10
 1202  004172  004767  012716                  JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
  (2)                                                                 ;NO
  (2)  004176  000055                          55
 1203  004200  010105                          MOV     R1,R5           ;RESTORE R5
 1204  004202  005215                          INC     (R5)
 1205  004204  021527  000160                  CMP     (R5),#160       ;HAVE THE FIRST 159 TEST BEEN EXECUTED?
 1206  004210  002014                          BGE     6$              ;YES
 1207  004212  005237  000440                  INC     @#TEMP3
 1208  004216  000241                          CLC
 1209  004220  006137  000444                  ROL     @#TEMP5         ;ROTATE TEMP5 LEFT BY 1 PLACE
 1210  004224  006137  000442                  ROL     @#TEMP4         ;INTRODUCE CARRY FROM TEMP5 IN TEMP4
 1211  004230  021527  000121                  CMP     (R5),#121       ;IS IT TEST 121?
 1212  004234  001004                          BNE     8$
 1213  004236  004467  000010                  JSR     R4,RITSH        ;IF SO THEN GO AND INITIATE RIGHT SHIFT
 1214  004242  004767  000040          6$:     JSR     %7,TST160
 1215  004246  000167  177172          8$:     JMP     REG01
 1216  004252  022424                  RITSH:  CMP     (R4)+,(R4)+     ;MAKE R4 POINT TO THE NEXT REG TAG
 1217  004254  012737  040000  000434          MOV     #40000,@#TEMP1  ;TEMP1=4000
 1218  004262  005037  000436                  CLR     @#TEMP2         ;TEMP2=0
 1219  004266  012737  177742  000440          MOV     #-30.,@#TEMP3   ;TEMP3=-30
 1220  004274  005037  000442                  CLR     @#TEMP4         ;TEMP4=0
 1221  004300  005237  000444                  INC     @#TEMP5         ;TEMP5=1
 1222  004304  000204                          RTS     R4
 1223  004306  021527  000160          TST160: CMP     (R5),#160       ;IS IT TEST 160
 1224  004312  001010                          BNE     TST161          ;IF NOT THEN TRY TEST 161
 1225  004314  005037  000434                  CLR     @#TEMP1         ;0 0 SHIFTED BY 0
 1226  004320  005037  000442                  CLR     @#TEMP4         ;IS EQUAL TO 0 0
 1227  004324  012737  000004  000446          MOV     #4,@#TEMP6      ;AND PS=4
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1228  004332  000207                          RTS     %7
1229  004334  021527  000161          TST161: CMP     (R5),#161       ;IS IT TEST 161
1230  004340  001004                          BNE     TST162
1231  004342  012737  177746  000440          MOV     #-32,@#TEMP3    ;0 0 SHIFTED BY -32=0 0, PS=4
1232  004350  000207                          RTS     %7
1233  004352  021527  000162          TST162: CMP     (R5),#162       ;IS IT TEST 162
1234  004356  001004                          BNE     TST163          ;IF NOT THEN TRY TEST 163
1235  004360  012737  000032  000440          MOV     #32,@#TEMP3     ;0 0 SHIFTED BY 32=0 0, PS=4
1236  004366  000207                          RTS     %7
1237  004370  021527  000163          TST163: CMP     (R5),#163       ;IS IT TEST 163?
1238  004374  001016                          BNE     TST164          ;IF NOT THEN TRY TEST 164
1239  004376  012737  052525  000434          MOV     #52525,@#TEMP1  ;52525 0
1240  004404  012737  177760  000440          MOV     #-16.,@#TEMP3   ;SHIFTED BY -16.
1241  004412  005037  000442                  CLR     @#TEMP4
1242  004416  012737  052525  000444          MOV     #52525,@#TEMP5  ;IS EQUAL TO 0 52525
1243  004424  005037  000446                  CLR     @#TEMP6         ;AND PS = 0
1244  004430  000207                          RTS     %7
1245  004432  021527  000164          TST164: CMP     (R5),#164       ;IS IT TEST 164?
1246  004436  001014                          BNE     TST165          ;IF NOT THEN TRY TEST 165
1247  004440  012737  125252  000434          MOV     #125252,@#TEMP1 ;125252 0 SHIFTED BY -16.
1248  004446  005337  000442                  DEC     @#TEMP4
1249  004452  012737  125252  000444          MOV     #125252,@#TEMP5 ;IS EQUAL TO -1 125252
1250  004460  012737  000010  000446          MOV     #10,@#TEMP6     ;AND PS=10
1251  004466  000207                          RTS     %7
1252  004470  021527  000165           ST165: CMP     (R5),#165       ;IS IT TEST 165?
1253  004474  001007                          BNE     TST166          ;IF NOT THEN TRY TEST 166
1254  004476  012737  177777  000434          MOV     #-1,@#TEMP1     ;-1 0 SHIFTED BY -16
1255  004504  012737  177777  000444          MOV     #-1,@#TEMP5     ;IS EQUAL TO -1 -1, AND PS=10
1256  004512  000207                          RTS     %7
1257  004514  021527  000166          TST166: CMP     (R5),#166       ;IS IT TEST 166?
1258  004520  001011                          BNE     TST167          ;IF NOT THEN TRY TEST 167
1259  004522  012737  100000  000434          MOV     #100000,@#TEMP1 ;100000 0
1260  004530  012737  177740  000440          MOV     #-32.,@#TEMP3   ;SHIFTED BY -32 IS EQUAL TO -1 -1
1261  004536  005237  000446                  INC     @#TEMP6         ;AND PS=11
1262  004542  000207                          RTS     %7
1263  004544  021527  000167          TST167: CMP     (R5),#167       ;IS IT TEST 167?
1264  004550  001014                          BNE     TST170          ;IF NOT THEN TRY TEST 170
1265  004552  005037  000434                  CLR     @#TEMP1
1266  004556  005337  000436                  DEC     @#TEMP2         ;0 -1
1267  004562  012737  000020  000440          MOV     #16.,@#TEMP3    ;SHIFTED BY 16.
1268  004570  005037  000444                  CLR     @#TEMP5         ;IS EQUAL TO -1 0
1269  004574  005237  000446                  INC     @#TEMP6         ;AND PS=12
1270  004600  000207                          RTS     %7
1271  004602  021527  000170          TST170: CMP     (R5),#170       ;IS IT TEST 170?
1272  004606  001007                          BNE     TST171          ;IF NOT THEN TRY TEST 171
1273  004610  012737  125252  000436          MOV     #125252,@#TEMP2 ;0 125252 SHIFTED BY 16
1274  004616  012737  125252  000442          MOV     #125252,@#TEMP4 ;IS EQUAL TO 125252 0, AND PS=12
1275  004624  000207                          RTS     %7
1276  004626  021527  000171          TST171: CMP     (R5),#171       ;IS IT TEST 171?
1277  004632  001010                          BNE     TST172          ;IF NOT THEN TRY TEST 172
1278  004634  005337  000440                  DEC     @#TEMP3         ;0 125252 SHIFTED BY 15
1279  004640  012737  052525  000442          MOV     #52525,@#TEMP4  ;IS EQUAL TO 52525 0
1280  004646  005037  000446                  CLR     @#TEMP6         ;AND PS=0
1281  004652  000207                          RTS     %7
1282  004654  021527  000172          TST172: CMP     (R5),#172       ;IS IT TEST 172?
1283  004660  001006                          BNE     TST173          ;IF NOT THEN TRY TEST 173
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1284  004662  012737  052525  000436          MOV     #52525,@#TEMP2  ;0 52525
1285  004670  005237  000440                  INC     @#TEMP3         ;SHIFTED BY 16. IS EQUAL TO 52525 0, AND PS-0
1286  004674  000207                          RTS     %7
1287  004676  021527  000173          TST173: CMP     (R5),#173       ;IS IT TEST 173?
1288  004702  001014                          BNE     TST174          ;IF NOT THEN TRY TEST 174
1289  004704  012737  177777  000436          MOV     #-1,@#TEMP2     ;0 -1
1290  004712  005337  000440                  DEC     @#TEMP3         ;SHIFTED BY 15.
1291  004716  012737  077777  000442          MOV     #77777,@#TEMP4
1292  004724  012737  100000  000444          MOV     #100000,@#TEMP5 ;IS EQUAL TO 77777 100000, AND PS=0
1293  004732  000207                          RTS     %7
1294  004734  021527  000174          TST174: CMP     (R5),#174       ;IS IT TEST 174?
1295  004740  001013                          BNE     TST175          ;IF NOT THEN TRY TEST 175
1296  004742  012737  100000  000434          MOV     #100000,@#TEMP1
1297  004750  005337  000436                  DEC     @#TEMP2         ;100000 -2 SHIFTED BY 15.
1298  004754  005037  000444                  CLR     @#TEMP5         ;IS EQUAL TO 77777 0
1299  004760  012737  000002  000446          MOV     #2,@#TEMP6      ;AND PS=2
1300  004766  000207                          RTS     %7
1301  004770  021527  000175          TST175: CMP     (R5),#175       ;IS IT TEST 175?
1302  004774  001015                          BNE     ENT176          ;IF NOT THEN TRY TEST 176
1303  004776  012737  177777  000434          MOV     #-1,@#TEMP1
1304  005004  005037  000436                  CLR     @#TEMP2         ;-1 0
1305  005010  005237  000440                  INC     @#TEMP3         ;SHIFTED BY 16.
1306  005014  005037  000442                  CLR     @#TEMP4         ;IS EQUAL TO 0 0
1307  005020  012737  000007  000446          MOV     #7,@#TEMP6      ;AND PS=7
1308  005026  000207                          RTS     %7
1309  005030  021527  000176          ENT176: CMP     (R5),#176       ;IS THE PROGRM ENTERING TEST 176?
1310  005034  001403                          BEQ     .+10
1311  005036  004767  012052                  JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
  (2)                                                                 ;TEST NUMBER GOOFED
  (2)   005042  000056                        56
1312
1313  005044  005726                          TST     (SP)+           ;RESTORE STACK POINTER
1314
```

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

(1)
(1)

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

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

```
1319                                    ;*****************************************************************
 (1)                                    ;TEST:202       -1 SHIFTED BY 16. = 0  PS = 11
 (1)                                    ;*****************************************************************
 (1)
 (1)  005432  010701                    TST202: SCOPE1
 (1)  005434  012703  000000                    MOV     #DUMMY,%3       ;LOAD R3 WITH DUMMY
 (1)  005440  012703  177777                    MOV     #-1,%3.1        ;LOAD R3!1 WITH -1
 (1)  005444  000241                            CLC
 (1)  005446  073327  000020                    ASHC    #16.,%3         ;SHIFT R3,R3.1 BY 16.
 (1)  005452                                    MFPS    @#PSWORD        ;SAVE PS
 (2)  005452  106737                            .WORD   106700!..C
 (1)  005456  122737  000011  000432            CMPB    #11,@#PSWORD    ;IS THE PS 11?
 (1)  005464  001403                            BEQ     .+10
 (3)  005466  004767  011422                    JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
 (3)                                                                    ;THE PS IS NOT EQUAL TO 11
 (3)  005472  000073                            73
 (1)  005474  022703  000000                    CMP     #0,%3           ;IS THE RESULT 0?
 (1)  005500  001403                            BEQ     .+10
 (3)  005502  004767  011406                    JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
 (3)                                                                    ;R3 IS NOT EQUAL TO 0
 (3)  005506  000074                            74
 (1)  005510  021527  000202                    CMP     (R5),#202               ;IS $TESTN - #202?
 (1)  005514  001403                            BEQ     .+10            ;IF NOT THEN GO TO HLT
 (3)  005516  004767  011372                    JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
 (3)                                                                    ;TEST IS IN WRONG SEQUENCE
 (3)  005522  000075                            75
 (1)  005524  005215                            INC     (R5)
 (1)
 (1)
1320                                    ;*****************************************************************
 (1)                                    ;TEST:203       1 SHIFTED BY -1 = 100000  PS = 1
 (1)                                    ;*****************************************************************
 (1)
 (1)  005526  010701                    TST203: SCOPE1
 (1)  005530  010501                            MOV     R5,R1           ;SAVE R5
 (1)  005532  012705  000000                    MOV     #DUMMY,%5       ;LOAD R5 WITH DUMMY
 (1)  005536  012705  000001                    MOV     #1,%5!1         ;LOAD R5!1 WITH 1
 (1)  005542  000241                            CLC
 (1)  005544  073527  177777                    ASHC    #-1,%5          ;SHIFT R5,R5!1 BY -1
 (1)  005550                                    MFPS    @#PSWORD        ;SAVE PS
 (2)  005550  106737                            .WORD   106700!..C
 (1)  005554  122737  000001  000432            CMPB    #1,@#PSWORD     ;IS THE PS 1?
 (1)  005562  001403                            BEQ     .+10
 (3)  005564  004767  011324                    JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
 (3)                                                                    ;THE PS IS NOT EQUAL TO 1
 (3)  005570  000076                            76
 (1)  005572  022705  100000                    CMP     #100000,%5      ;IS THE RESULT 100000?
 (1)  005576  001403                            BEQ     .+10
 (3)  005600  004767  011310                    JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
 (3)                                                                    ;R5 IS NOT EQUAL TO 100000
 (3)  005604  000077                            77
 (1)  005606  010105                            MOV     R1,R5           ;RESTORE R5
 (1)  005610  021527  000203                    CMP     (R5),#203               ;IS $TESTN = #203?
 (1)  005614  001403                            BEQ     .+10            ;IF NOT THEN GO TO HLT
 (3)  005616  004767  011272                    JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
 (3)                                                                    ;TEST IS IN WRONG SEQUENCE
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```
(3)  005622  000100                          100
(1)  005624  005215                          INC     (R5)
(1)
(1)
```

```
1321                                    ;*****************************************************************
 (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.
 (1)  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  011226                    JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
 (3)                                                                    ;THE PS IS NOT EQUAL TO 11
 (3)  005666  000101                            101
 (1)  005670  022701  125252                    CMP     #125252,%1      ;IS THE RESULT 125252?
 (1)  005674  001403                            BEQ     .+10
 (3)  005676  004767  011212                    JSR     PC,$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 $TESTN = #204?
 (1)  005710  001403                            BEQ     .+10            ;IF NOT THEN GO TO HLT
 (3)  005712  004767  011176                    JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
 (3)                                                                    ;TEST IS IN WRONG SEQUENCE
 (3)  005716  000103                            103
 (1)  005720  005215                            INC     (R5)
 (1)
 (1)
1322                                    ;*****************************************************************
 (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.
 (1)  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  011132                    JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
 (3)                                                                    ;THE PS IS NOT EQUAL TO 3
 (3)  005762  000104                            104
 (1)  005764  022702  052500                    CMP     #52500,%2       ;IS THE RESULT 52500?
 (1)  005770  001403                            BEQ     .+10
 (3)  005772  004767  011116                    JSR     PC,$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  011102                    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?
```

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

```
1328                                    ;*****************************************************************
  1)                                    ;TEST:206       125252 125252 SHIFTED BY S1 = 177525 52525  PS = 10
  1)                                    ;*****************************************************************
  1)
 (1)  006046  010701                    TST206: SCOPE1
 (1)  006050  012700  125252                    MOV     #125252,%0              ;LOAD R0 WITH 125252
 (1)  006054  012701  125252                    MOV     #125252,%0!1    ;LOAD R0!1 WITH 125252
 (1)  006060  000241                            CLC
 (1)  006062  073067  172366                    ASHC    S1,%0           ;SHIFT R0,R0!1 BY S1
 (1)  006066                                    MFPS    @#PSWORD        ;SAVE PS
 (2)  006066  106737                            .WORD   106700!..C
 (1)  006072  122737  000010  000432            CMPB    #10,@#PSWORD    ;IS THE PS 10?
 (1)  006100  001403                            BEQ     .+10
 (3)  006102  004767  011006                    JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
 (3)                                            ;THE PS IS NOT EQUAL TO 10
 (3)  006106  000110                            110
 (1)  006110  022700  177525                    CMP     #177525,%0      ;IS THE RESULT 177525?
 (1)  006114  001403                            BEQ     .+10
 (3)  006116  004767  010772                    JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
 (3)                                            ;R0 IS NOT EQUAL TO 177525
 (3)  006122  000111                            111
 (1)  006124  022701  052525                    CMP     #52525,%0!1     ;IS THE RESULT 52525?
 (1)  006130  001403                            BEQ     .+10
 (1)  006132                            1$:
 (3)  006132  004767  010756                    JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
 (3)                                            ;R0!1 IS NOT EQUAL TO 52525 OR INCORRECT SEQUENCE
 (3)  006136  000112                            112
 (1)  006140  021527  000206                    CMP     (R5),#206               ;IS THE $TESTN = #206?
 (1)  006144  001372                            BNE     1$              ;IF NOT THEN GO TO HLT ABOVE
 (1)  006146  005215                            INC     (R5)
 (1)
 (1)
1329                                    ;*****************************************************************
 (1)                                    ;TEST:207       125252 125252 SHIFTED BY @S2 = 177525 52525  PS - 10
 (1)                                    ;*****************************************************************
 (1)
 (1)  006150  010701                    TST207: SCOPE1
 (1)  006152  012700  125252                    MOV     #125252,%0              ;LOAD R0 WITH 125252
 (1)  006156  012701  125252                    MOV     #125252,%0!1    ;LOAD R0!1 WITH 125252
 (1)  006162  000241                            CLC
 (1)  006164  073077  172266                    ASHC    @S2,%0          ;SHIFT R0,R0!1 BY @S2
 (1)  006170                                    MFPS    @#PSWORD        ;SAVE PS
 (2)  006170  106737                            .WORD   106700!..C
 (1)  006174  122737  000010  000432            CMPB    #10,@#PSWORD    ;IS THE PS 10?
 (1)  006202  001403                            BEQ     .+10
 (3)  006204  004767  010704                    JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
 (3)                                            ;THE PS IS NOT EQUAL TO 10
 (3)  006210  000113                            113
 (1)  006212  022700  177525                    CMP     #177525,%0      ;IS THE RESULT 177525?
 (1)  006216  001403                            BEQ     .+10
 (3)  006220  004767  010670                    JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
 (3)                                            ;R0 IS NOT EQUAL TO 177525
 (3)  006224  000114                            114
 (1)  006226  022701  052525                    CMP     #52525,%0 1     ;IS THE RESULT 52525?
 (1)  006232  001403                            BEQ     .+10
 (1)  006234                            1$:
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(3)  006234  004767  010654                JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
(3)                                                                  ;R01 IS NOT EQUAL TO 52525 OR INCORRECT SEQUENCE
(3)  006240  000115                         115
(1)  006242  021527  000207                CMP     (R5),#207               ;IS THE $TESTN = #207?
(1)  006246  001372                        BNE     1$              ;IF NOT THEN GO TO HLT ABOVE
(1)  006250  005215                        INC     (R5)
(1)
(1)
```

```
1330                                    ;*****************************************************************
 (1)                                    ;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
 (1)  006272                                    MFPS    @#PSWORD        ;SAVE PS
 (2)  006272  106737                            .WORD   106700!..C
 (1)  006276  122737  000010  000432            CMPB    #10,@#PSWORD    ;IS THE PS 10?
 (1)  006304  001403                            BEQ     .+10
 (3)  006306  004767  010602                    JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
 (3)                                            ;THE PS IS NOT EQUAL TO 10
 (3)  006312  000116                            116
 (1)  006314  022700  177525                    CMP     #177525,%0      ;IS THE RESULT 177525?
 (1)  006320  001403                            BEQ     .+10
 (3)  006322  004767  010566                    JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
 (3)                                            ;R0 IS NOT EQUAL TO 177525
 (3)  006326  000117                            117
 (1)  006330  022701  052525                    CMP     #52525,%0.1     ;IS THE RESULT 52525?
 (1)  006334  001403                            BEQ     .+10
 (1)  006336                            1$:
 (3)  006336  004767  010552                    JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
 (3)                                            ;R0!1 IS NOT EQUAL TO 52525 OR INCORRECT SEQUENCE
 (3)  006342  000120                            120
 (1)  006344  021527  000210                    CMP     (R5),#210               ;IS THE $TESTN = #210?
 (1)  006350  001372                            BNE     1$              ;IF NOT THEN GO TO HLT ABOVE
 (1)  006352  005215                            INC     (R5)
 ( )
 (1)
1331                                    ;*****************************************************************
 (1)                                    ;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)
 (1)  006372  -                                 MFPS    @#PSWORD        ;SAVE PS
 (2)  006372  106737                            .WORD   106700!..C
 (1)  006376  122737  000010  000432            CMPB    #10,@#PSWORD    ;IS THE PS 10?
 (1)  006404  001403                            BEQ     .+10
 (3)  006406  004767  010502                    JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
 (3)                                            ;THE PS IS NOT EQUAL TO 10
 (3)  006412  000121                            121
 (1)  006414  022700  177525                    CMP     #177525,%0      ;IS THE RESULT 177525?
 (1)  006420  001403                            BEQ     .+10
 (3)  006422  004767  010466                    JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
 (3)                                            ;R0 IS NOT EQUAL TO 177525
 (3)  006426  000122                            122
 (1)  006430  022701  052525                    CMP     #52525,%0!1     ;IS THE RESULT 52525?
 (1)  006434  001403                            BEQ     .+10
 (1)  006436                            1$:
```

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

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

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

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

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

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

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

```
  (1) 007362 070027 000001            MUL     #1,%0           ;MULTIPLY -1 * #1
  (1) 007366                          MFPS    @#PSWORD        ;SAVE PS
  (2) 007366 106737                   .WORD   106700!..C
  (1) 007372 122737 000010 000432     CMPB    #10,@#PSWORD    ;IS PS = 10
  (1) 007400 001403                   BEQ     .+10
  (3) 007402 004767 007506            JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
  (3)                                                         ;PS IS WRONG
  (3) 007406 000151                   151
  (1) 007410 022700 177777            CMP     #-1,%0          ;IS HIGH ORDER = -1
  (1) 007414 001403                   BEQ     .+10
  (3) 007416 004767 007472            JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
  (3)                                                         ;HIGH ORDER IS WRONG
  (3) 007422 000152                   152
  (1) 007424 022701 177777            CMP     #-1,%0!1        ;IS LOW ORDER = -1
  (1) 007430 001403                   BEQ     .+10
  (1) 007432                        1$:
  (3) 007432 004767 007456            JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
  (3)                                                         ;LOW ORDER IS WRONG OR WRONG SEQUENCE
  (3) 007436 000153                   153
  (1) 007440 021527 000221            CMP     (R5),#221
  (1) 007444 001372                   BNE     1$              ;IF IN WRONG SEQUENCE GO TO THE HLT ABOVE
  (1) 007446 005215                   INC     (R5)
1447                                  ;*****************************************************************
  (1)                                 ;TEST:222       MUL     2 * #2 = 0 4        PS - 0
  (1)                                 ;*****************************************************************
  (1)
  (1) 007450 010701                   TST222: SCOPE
  (1) 007452 012702 000002            MOV     #2,%2           ;LOAD MULTIPLICAND WITH 2
  (1) 007456 070227 000002            MUL     #2,%2           ;MULTIPLY 2 * #2
  (1) 007462                          MFPS    @#PSWORD        ;SAVE PS
  (2) 007462 106737                   .WORD   106700!..C
  (1) 007466 122737 000000 000432     CMPB    #0,@#PSWORD     ;IS PS = 0
  (1) 007474 001403                   BEQ     .+10
  (3) 007476 004767 007412            JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
  (3)                                                         ;PS IS WRONG
  (3) 007502 000154                   154
  (1) 007504 022702 000000            CMP     #0,%2           ;IS HIGH ORDER = 0
  (1) 007510 001403                   BEQ     .+10
  (3) 007512 004767 007376            JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
  (3)                                                         ;HIGH ORDER IS WRONG
  (3) 007516 000155                   155
  (1) 007520 022703 000004            CMP     #4,%2!1         ;IS LOW ORDER - 4
  (1) 007524 001403                   BEQ     .+10
  (1) 007526                        1$:
  (3) 007526 004767 007362            JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
  (3)                                                         ;LOW ORDER IS WRONG OR WRONG SEQUENCE
  (3) 007532 000156                   156
  (1) 007534 021527 000222            CMP     (R5),#222
  (1) 007540 001372                   BNE     1$              ;IF IN WRONG SEQUENCE GO TO THE HLT ABOVE
  (1) 007542 005215                   INC     (R5)
1448                                  ;*****************************************************************
  (1)                                 ;TEST:223       MUL     1000 * #200   1 0       PS   1
  (1)                                 ;*****************************************************************
  (1)
  (1) 007544 010701                   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
  (1)  007560                                MFPS    @#PSWORD        ;SAVE PS
  (2)  007560  106737                        .WORD   106700!..C
  (1)  007564  122737  000001  000432        CMPB    #1,@#PSWORD     ;IS PS = 1
  (1)  007572  001403                        BEQ     .+10
  (3)  007574  004767  C07314                JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
  (3)                                                                ;PS IS WRONG
  (3)  007600  000157                        157
  (1)  007602  022704  000001                CMP     #1,%4           ;IS HIGH ORDER = 1
  (1)  007606  001403                        BEQ     .+10
  (3)  007610  004767  007300                JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
  (3)                                                                ;HIGH ORDER IS WRONG
  (3)  007614  000160                        160
  (1)  007616  022705  000000                CMP     #0,%4 1         ;IS LOW ORDER = 0
  (1)  007622  001403                        BEQ     .+10
  (1)  007624                          1$:
  (3)  007624  004767  007264                JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
  (3)                                                                ;LOW ORDER IS WRONG OR WRONG SEQUENCE
  (3)  007630  000161                        161
  (1)  007632  021127  000223                CMP     (R1),#223               ;CHECK THE TEST NUMBER
  (1)  007636  001372                        BNE     1$              ;IF IN WRONG SEQUENCE GO TO THE HLT ABOVE
  (1)  007640  010105                        MOV     R1,R5           ;RESTORE R5
  (1)  007642  005215                        INC     (R5)
1449                                 ;*****************************************************************
  (1)                                ;TEST:224       MUL       2 * #77777 = 0 177776         PS   1
  (1)                                ;*****************************************************************
  (1)
  (1)  007644  010701                TST224: SCOPE
  (1)  007646  012700  000002                MOV     #2,%0           ;LOAD MULTIPLICAND WITH 2
  (1)  007652  070027  077777                MUL     #77777,%0       ;MULTIPLY 2 * #77777
  (1)  007656                                MFPS    @#PSWORD        ;SAVE PS
  (2)  007656  106737                        .WORD   106700!..C
  (1)  007662  122737  000001  000432        CMPB    #1,@#PSWORD     ;IS PS = 1
  (1)  007670  001403                        BEQ     .+10
  (3)  007672  004767  007216                JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
  (3)                                                                ;PS IS WRONG
  (3)  007676  000162                        162
  (1)  007700  022700  000000                CMP     #0,%0           ;IS HIGH ORDER = 0
  (1)  007704  001403                        BEQ     .+10
  (3)  007706  004767  007202                JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
  (3)                                                                ;HIGH ORDER IS WRONG
  (3)  007712  000163                        163
  (1)  007714  022701  177776                CMP     #177776,%0!1    ;IS LOW ORDER = 177776
  (1)  007720  001403                        BEQ     .+10
  (1)  007722                          1$:
  (3)  007722  004767  007166                JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
  (3)                                                                ;LOW ORDER IS WRONG OR WRONG SEQUENCE
  (3)  007726  000164                        164
  (1)  007730  021527  000224                CMP     (R5),#224
  (1)  007734  001372                        BNE     1$              ;IF IN WRONG SEQUENCE GO TO THE HLT ABOVE
  (1)  007736  005215                        INC     (R5)
1450                                 ;*****************************************************************
  (1)                                ;TEST:225       MUL       7777 * #10 = 0 77770          PS = 0
  (1)                                ;*****************************************************************
  (1)
```

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

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

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

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

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1458                                    ;*****************************************************************
 (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
 (1)  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  006152                    JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
 (3)                                            ;PS IS WRONG
 (3)  010742  000215                            215
 (1)  010744  022703  000000                    CMP     #0,%3           ;IS HIGH ORDER = 0
 (1)  010750  001403                            BEQ     .+10
 (3)  010752  004767  006136                    JSR     PC,$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
 (1)  010766                            1$:
 (3)  010766  004767  006122                    JSR     PC,$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)
1459                                    ;*****************************************************************
 (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
 (1)  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  006054                    JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
 (3)                                            ;PS IS WRONG
 (3)  011040  000220                            220
 (1)  011042  022705  100000                    CMP     #100000,%5      ;IS HIGH ORDER = 100000
 (1)  011046  001403                            BEQ     .+10
 (3)  011050  004767  006040                    JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
 (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
 (1)  011064                            1$:
 (3)  011064  004767  006024                    JSR     PC,$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
```

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   (1)  011100  010105                        MOV     R1,R5           ;RESTORE R5
   (1)  011102  005215                        INC     (R5)
  1460                              ;*************************************************************************
   (1)                              ;TEST:237       MUL      -1 * #77777 = 100001 100001        PS = 10
   (1)                              ;*************************************************************************
   (1)
   (1)  011104  010701              TST237: SCOPE
   (1)  011106  012701  177777              MOV     #-1,%1          ;LOAD MULTIPLICAND WITH -1
   (1)  011112  070127  077777              MUL     #77777,%1       ;MULTIPLY -1 * #77777
   (1)  011116                              MFPS    @#PSWORD        ;SAVE PS
   (2)  011116  106737                      .WORD   106700!..C
   (1)  011122  122737  000010  000432      CMPB    #10,@#PSWORD    ;IS PS = 10
   (1)  011130  001403                      BEQ     .+10
   (3)  011132  004767  005756              JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
   (3)                                                              ;PS IS WRONG
   (3)  011136  000223                      223
   (1)  011140  022701  100001              CMP     #100001,%1      ;IS HIGH ORDER = 100001
   (1)  011144  001403                      BEQ     .+10
   (3)  011146  004767  005742              JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
   (3)                                                              ;HIGH ORDER IS WRONG
   (3)  011152  000224                      224
   (1)  011154  022701  100001              CMP     #100001,%1:1    ;IS LOW ORDER = 100001
   (1)  011160  001403                      BEQ     .+10
   (1)  011162                      1$:
   (3)  011162  004767  005726              JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
   (3)                                                              ;LOW ORDER IS WRONG OR WRONG SEQUENCE
   (3)  011166  000225                      225
   (1)  011170  021527  000237              CMP     (R5),#237
   (1)  011174  001372                      BNE     1$              ;IF IN WRONG SEQUENCE GO TO THE HLT ABOVE
   (1)  011176  005215                      INC     (R5)
  1461                              ;*************************************************************************
   (1)                              ;TEST:240       MUL      77777 * #77777 = 1 1         PS = 1
   (1)                              ;*************************************************************************
   (1)
   (1)  011200  010701              TST240: SCOPE
   (1)  011202  012703  077777              MOV     #77777,%3       ;LOAD MULTIPLICAND WITH 77777
   (1)  011206  070327  077777              MUL     #77777,%3       ;MULTIPLY 77777 * #77777
   (1)  011212                              MFPS    @#PSWORD        ;SAVE PS
   (2)  011212  106737                      .WORD   106700!..C
   (1)  011216  122737  000001  000432      CMPB    #1,@#PSWORD     ;IS PS = 1
   (1)  011224  001403                      BEQ     .+10
   (3)  011226  004767  005662              JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
   (3)                                                              ;PS IS WRONG
   (3)  011232  000226                      226
   (1)  011234  022703  000001              CMP     #1,%3           ;IS HIGH ORDER = 1
   (1)  011240  001403                      BEQ     .+10
   (3)  011242  004767  005646              JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
   (3)                                                              ;HIGH ORDER IS WRONG
   (3)  011246  000227                      227
   (1)  011250  022703  000001              CMP     #1,%3!1         ;IS LOW ORDER = 1
   (1)  011254  001403                      BEQ     .+10
   (1)  011256                      1$:
   (3)  011256  004767  005632              JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
   (3)                                                              ;LOW ORDER IS WRONG OR WRONG SEQUENCE
   (3)  011262  000230                      230
   (1)  011264  021527  000240              CMP     (R5),#240
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(1) 011270 001372                       BNE     1$              ;IF IN WRONG SEQUENCE GO TO THE HLT ABOVE
(1) 011272 005215                       INC     (R5)
1462                            ;*****************************************************************
(1)                             ;TEST:241       MUL     2 * #2 = 4 4        PS = 0
(1)                             ;*****************************************************************
(1)
(1)                             TST241: SCOPE
(1) 011274 010701                       MOV     R5,R1           ;SAVE R5
(1) 011276 010501                       MOV     #2,%5           ;LOAD MULTIPLICAND WITH 2
(1) 011300 012705 000002                MUL     #2,%5           ;MULTIPLY 2 * #2
(1) 011304 070527 000002                MFPS    @#PSWORD        ;SAVE PS
(1) 011310                              .WORD   106700!..C
(2) 011310 106737
(1) 011314 122737 000000 000432         CMPB    #0,@#PSWORD     ;IS PS = 0
(1) 011322 001403                       BEQ     .+10
(3) 011324 004767 005564                JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
(3)                                                             ;PS IS WRONG
(3) 011330 000231                       231
(1) 011332 022705 000004                CMP     #4,%5           ;IS HIGH ORDER = 4
(1) 011336 001403                       BEQ     .+10
(3) 011340 004767 005550                JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
(3)                                                             ;HIGH ORDER IS WRONG
(3) 011344 000232                       232
(1) 011346 022705 000004                CMP     #4,%5!1         ;IS LOW ORDER = 4
(1) 011352 001403                       BEQ     .+10
(1) 011354                      1$:
(3) 011354 004767 005534                JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
(3)                                                             ;LOW ORDER IS WRONG OR WRONG SEQUENCE
(3) 011360 000233                       233
(1) 011362 021127 000241                CMP     (R1),#241               ;CHECK THE TEST NUMBER
(1) 011366 001372                       BNE     1$              ;IF IN WRONG SEQUENCE GO TO THE HLT ABOVE
(1) 011370 010105                       MOV     R1,R5           ;RESTORE R5
(1) 011372 005215                       INC     (R5)
1463 011374 012702 040000               MOV     #40000,%2
1464 011400 012703 000464               MOV     #S5,%3
1465 011404 012704 000466               MOV     #S6,%4
1466
1467                            ;*****************************************************************
(1)                             ;TEST:242       MUL     125252 * S5 = 165252 100000     PS - 11
(1)                             ;*****************************************************************
(1)
(1)                             TST242: SCOPE
(1) 011410 010701                       MOV     #125252,%0      ;LOAD MULTIPLICAND WITH 125252
(1) 011412 012700 125252                MUL     S5,%0           ;MULTIPLY 125252 * S5
(1) 011416 070067 167042                MFPS    @#PSWORD        ;SAVE PS
(1) 011422                              .WORD   106700!..C
(2) 011422 106737
(1) 011426 122737 000011 000432         CMPB    #11,@#PSWORD    ;IS PS = 11
(1) 011434 001403                       BEQ     .+10
(3) 011436 004767 005452                JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
(3)                                                             ;PS IS WRONG
(3) 011442 000234                       234
(1) 011444 022700 165252                CMP     #165252,%0      ;IS HIGH ORDER = 165252
(1) 011450 001403                       BEQ     .+10
(3) 011452 004767 005436                JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
(3)                                                             ;HIGH ORDER IS WRONG
(3) 011456 000235                       235
(1) 011460 022701 100000                CMP     #100000,%0!1    ;IS LOW ORDER = 100000
```

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

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

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

```
(1)  012226  001403                        BEQ     .+10
(1)  012230                          1$:
(3)  012230  004767  004660                JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
(3)                                                                 ;LOW ORDER IS WRONG OR WRONG SEQUENCE
(3)  012234  000260                        260
(1)  012236  021527  000250                CMP     (R5),#250
(1)  012242  001372                        BNE     1$              ;IF IN WRONG SEQUENCE GO TO THE HLT ABOVE
(1)  012244  005215                        INC     (R5)
1474                                 ;*****************************************************************
(1)                                  ;TEST:251       MUL     125252 * @(4) = 165252 100000       PS = 11
(1)                                  ;*****************************************************************
(1)
(1)  012246  010701                  TST251: SCOPE
(1)  012250  012700  125252                MOV     #125252,%0      ;LOAD MULTIPLICAND WITH 125252
(1)  012254  070074  000000                MUL     @(4),%0         ;MULTIPLY 125252 * @(4)
(1)  012260                                MFPS    @#PSWORD        ;SAVE PS
(2)  012260  106737                        .WORD   106700!..C
(1)  012264  122737  000011  000432        CMPB    #11,@#PSWORD    ;IS PS = 11
(1)  012272  001403                        BEQ     .+10
(3)  012274  004767  004614                JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
(3)                                                                 ;PS IS WRONG
(3)  012300  000261                        261
(1)  012302  022700  165252                CMP     #165252,%0      ;IS HIGH ORDER = 165252
(1)  012306  001403                        BEQ     .+10
(3)  012310  004767  004600                JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
(3)                                                                 ;HIGH ORDER IS WRONG
(3)  012314  000262                        262
(1)  012316  022701  100000                CMP     #100000,%0!1    ;IS LOW ORDER = 100000
(1)  012322  001403                        BEQ     .+10
(1)  012324                          1$:
(3)  012324  004767  004564                JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
(3)                                                                 ;LOW ORDER IS WRONG OR WRONG SEQUENCE
(3)  012330  000263                        263
(1)  012332  021527  000251                CMP     (R5),#251
(1)  012336  001372                        BNE     1$              ;IF IN WRONG SEQUENCE GO TO THE HLT ABOVE
(1)  012340  005215                        INC     (R5)
1475                                 ;*****************************************************************
(1)                                  ;TEST:252       MUL     125252 * @(4)+ = 165252 100000       PS = 11
(1)                                  ;*****************************************************************
(1)
(1)  012342  010701                  TST252: SCOPE
(1)  012344  012700  125252                MOV     #125252,%0      ;LOAD MULTIPLICAND WITH 125252
(1)  012350  070034                        MUL     @(4)+,%0        ;MULTIPLY 125252 * @(4)+
(1)  012352                                MFPS    @#PSWORD        ;SAVE PS
(2)  012352  106737                        .WORD   106700!..C
(1)  012356  122737  000011  000432        CMPB    #11,@#PSWORD    ;IS PS = 11
(1)  012364  001403                        BEQ     .+10
(3)  012366  004767  004522                JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
(3)                                                                 ;PS IS WRONG
(3)  012372  000264                        264
(1)  012374  022700  165252                CMP     #165252,%0      ;IS HIGH ORDER = 165252
(1)  012400  001403                        BEQ     .+10
(3)  012402  004767  004506                JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
(3)                                                                 ;HIGH ORDER IS WRONG
(3)  012406  000265                        265
(1)  012410  022701  100000                CMP     #100000,%0!1    ;IS LOW ORDER = 100000
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DVKABA  MACY11 30(1046)  14-SEP-81  16:32  PAGE 4-53
DVKABB.P11    14-SEP-81 16:31          MUL INSTRUCTION TESTS

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

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

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

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

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

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

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

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

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

```
                                ;*****************************************************************
                                ;TEST:271      DIV     177777 77777 / #177776 = 40000      REM = 177777      PS = 0
                                ;*****************************************************************

014364  010701                  TST271: SCOPE
014366  012700  177777                  MOV     #177777,%0      ;LOAD HIGH ORDER WITH 177777
014372  012701  077777                  MOV     #77777,%0+1     ;LOAD LOW ORDER WITH 77777
014376  071027  177776                  DIV     #177776,%0      ;DIVIDE BY #177776
014402                                  MFPS    @#PSWORD        ;SAVE PS
014402  106737                          .WORD   106700!..C
                                
014406  122737  000000  000432          CMPB    #0,@#PSWORD     ;IS PS = 0
014414  001403                          BEQ     .+10
014416  004767  002472                  JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
                                                                ;PS IS WRONG
014422  000356                          356
                                
014424  022700  040000                  CMP     #40000,%0       ;IS QUOTIENT = 40000
014430  001403                          BEQ     .+10
014432  004767  002456                  JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
                                                                ;QUOTIENT IS WRONG
014436  000357                          357
                                
014440  022701  177777                  CMP     #177777,%0+1    ;IS REMAINDER = 177777
014444  001403                          BEQ     .+10
014446  004767  002442                  JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
                                                                ;WRONG REMAINDER
014452  000360                          360
014454  021527  000271                  CMP     (R5),#271
014460  001403                          BEQ     .+10            ;IF IN WRONG SEQUENCE GO TO THE HLT
014462  004767  002426                  JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
                                                                ;TEST IS IN WRONG SEQUENCE
014466  000361                          361
014470  005275                          INC     (R5)
                                
                                ;*****************************************************************
                                ;TEST:272      DIV     0 52525 / #52525 = 1        REM = 0       PS = 0
                                ;*****************************************************************

014472  010701                  TST272: SCOPE
014474  012702  000000                  MOV     #0,%2           ;LOAD HIGH ORDER WITH 0
014500  012703  052525                  MOV     #52525,%2+1     ;LOAD LOW ORDER WITH 52525
014504  071227  052525                  DIV     #52525,%2       ;DIVIDE BY #52525
014510                                  MFPS    @#PSWORD        ;SAVE PS
014510  106737                          .WORD   106700!..C
                                
014514  122737  000000  000432          CMPB    #0,@#PSWORD     ;IS PS = 0
014522  001403                          BEQ     .+10
014524  004767  002364                  JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
                                                                ;PS IS WRONG
014530  000362                          362
                                
014532  022702  000001                  CMP     #1,%2           ;IS QUOTIENT = 1
014536  001403                          BEQ     .+10
014540  004767  002350                  JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
```

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

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

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

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

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

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(1)
1513
(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)
(1)  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  001230                     JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
(3)                                             ;PS IS WRONG
(3)  015664  000422                             422
(1)
(1)  015666  022700  025252                     CMP     #25252,%0       ;IS QUOTIENT = 25252
(1)  015672  001403                             BEQ     .+10
(3)  015674  004767  001214                     JSR     PC,$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  001200                     JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH.HALT ROUTINE
(3)                                             ;WRONG REMAINDER
(3)  015714  000424                             424
(1)  015716  021527  000303                     CMP     (R5),#303
(1)  015722  001403                             BEQ     .+10            ;IF IN WRONG SEQUENCE GO TO THE HLT
(3)  015724  004767  001164                     JSR     PC,$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)
1514
(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)
(1)  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  001122                     JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
(3)                                             ;PS IS WRONG
(3)  015772  000426                             426
(1)
(1)  015774  022700  025252                     CMP     #25252,%0       ;IS QUOTIENT = 25252
(1)  016000  001403                             BEQ     .+10
(3)  016002  004767  001106                     JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
```

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 (3)                                                                         ;QUOTIENT IS WRONG
 (3)  016006  000427                          427
 (1)
 (1)  016010  022701  000001                  CMP     #1,%0+1               ;IS REMAINDER - 1
 (1)  016014  001403                          BEQ     .+10
 (3)  016016  004767  001072                  JSR     PC,$HLT               ;SEEN AN ERROR, GO TO TH HALT ROUTINE
 (3)                                                                         ;WRONG REMAINDER
 (3)  016022  000430                          430
 (1)  016024  021527  000304                  CMP     (R5),#304
 (1)  016030  001403                          BEQ     .+10                  ;IF IN WRONG SEQUENCE GO TO THE HLT
 (3)  016032  004767  001056                  JSR     PC,$HLT               ;SEEN AN ERROR, GO TO TH HALT ROUTINE
 (3)                                                                         ;TEST IS IN WRONG SEQUENCE
 (3)  016036  000431                          431
 (1)  016040  005215                          INC     (R5)
 (1)
1515                                  ;*************************************************************************
 (1)                                  ;TEST:305       DIV     0 52525 / @(4)+ = 25252        REM = 1       PS - 0
 (1)                                  ;*************************************************************************
 (1)
 (1)  016042  010701                  TST305: SCOPE
 (1)  016044  012700  000000                  MOV     #0,%0                 ;LOAD HIGH ORDER WITH 0
 (1)  016050  012701  052525                  MOV     #52525,%0+1           ;LOAD LOW ORDER WITH 52525
 (1)  016054  071034                          DIV     @(4)+,%0              ;DIVIDE BY @(4)+
 (1)  016056                                  MFPS    @#PSWORD              ;SAVE PS
 (2)  016056  106737                          .WORD   106700!..C
 (1)
 (1)  016062  122737  000000  000432          CMPB    #0,@#PSWORD           ;IS PS = 0
 (1)  016070  001403                          BEQ     .+10
 (3)  016072  004767  001016                  JSR     PC,$HLT               ;SEEN AN ERROR, GO TO TH HALT ROUTINE
 (3)                                                                         ;PS IS WRONG
 (3)  016076  000432                          432
 (1)
 (1)  016100  022700  025252                  CMP     #25252,%0             ;IS QUOTIENT = 25252
 (1)  016104  001403                          BEQ     .+10
 (3)  016106  004767  001002                  JSR     PC,$HLT               ;SEEN AN ERROR, GO TO TH HALT ROUTINE
 (3)                                                                         ;QUOTIENT IS WRONG
 (3)  016112  000433                          433
 (1)
 (1)  016114  022701  000001                  CMP     #1,%0+1               ;IS REMAINDER = 1
 (1)  016120  001403                          BEQ     .+10
 (3)  016122  004767  000766                  JSR     PC,$HLT               ;SEEN AN ERROR, GO TO TH HALT ROUTINE
 (3)                                                                         ;WRONG REMAINDER
 (3)  016126  000434                          434
 (1)  016130  021527  000305                  CMP     (R5),#305
 (1)  016134  001403                          BEQ     .+10                  ;IF IN WRONG SEQUENCE GO TO THE HLT
 (3)  016136  004767  000752                  JSR     PC,$HLT               ;SEEN AN ERROR, GO TO TH HALT ROUTINE
 (3)                                                                         ;TEST IS IN WRONG SEQUENCE
 (3)  016142  000435                          435
 (1)  016144  005215                          INC     (R5)
 (1)
1516                                  ;*************************************************************************
 (1)                                  ;TEST:306       DIV     0 52525 / @-(4) = 25252        REM - 1       PS = 0
 (1)                                  ;*************************************************************************
 (1)
 (1)  016146  010701                  TST306: SCOPE
 (1)  016150  012700  000000                  MOV     #0,%0                 ;LOAD HIGH ORDER WITH 0
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(1)  016154  012701  052525                MOV     #52525,%0+1     ;LOAD LOW ORDER WITH 52525
(1)  016160  071054                        DIV     @-(4),%0        ;DIVIDE BY @-(4)
(1)  016162                                MFPS    @#PSWORD        ;SAVE PS
(2)  016162  106737                        .WORD   106700!..C
(1)
(1)  016166  122737  000000  000432        CMPB    #0,@#PSWORD     ;IS PS = 0
(1)  016174  001403                        BEQ     .+10
(3)  016176  004767  000712                JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
(3)                                                                ;PS IS WRONG
(3)  016202  000436                        436
(1)
(1)  016204  022700  025252                CMP     #25252,%0       ;IS QUOTIENT = 25252
(1)  016210  001403                        BEQ     .+10
(3)  016212  004767  000676                JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
(3)                                                                ;QUOTIENT IS WRONG
(3)  016216  000437                        437
(1)
(1)  016220  022701  000001                CMP     #1,%0+1         ;IS REMAINDER = 1
(1)  016224  001403                        BEQ     .+10
(3)  016226  004767  000662                JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
(3)                                                                ;WRONG REMAINDER
(3)  016232  000440                        440
(1)  016234  021527  000306                CMP     (R5),#306
(1)  016240  001403                        BEQ     .+10            ;IF IN WRONG SEQUENCE GO TO THE HLT
(3)  016242  004767  000646                JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
(3)                                                                ;TEST IS IN WRONG SEQUENCE
(3)  016246  000441                        441
(1)  016250  005215                        INC     (R5)
(1)
1520                                ;;*****************************************************************
(1)                                 ;TEST:307       TEST THAT EIS ABORTS PROPERLY WHEN INTERUPTED
(2)                                 ;;*****************************************************************
(1)
(1)  016252  132737  000040  000421  TST307: BITB    #40,@#$ENVM     ;IF TYPE OUTS HAS BEEN SUPPRESSED
(1)  016260  001100                        BNE     EASH+2          ;THEN SKIP THIS TEST
(1)  016262  013702  000502                MOV     @#TTYOUT,R2
(1)  016266  012722  016340                MOV     #RTA307,(R2)+   ;SET INTERUPT VECTOR TO RTA307
(1)  016272  012712  000340                MOV     #340,(R2)       ;AND THE INTERUPT PSW AS 340
(1)  016276                                MTPS    #0
(2)  016276  106427                        .WORD   106400!..C
(1)  016302  012737  000030  000434        MOV     #30,@#TEMP1     ;PREPARE TO EXECUTE THIS SUB TEST 30 TIMES
(1)  016310  005004                        CLR     R4
(1)  016312  112777  000015  162164        MOVB    #15,@$TPB       ;OUT PUT A "CR"
(1)  016320  112777  000100  162160        MOVB    #100,@$TPS      ;ENABLE TTY INTERUPT
(1)  016326  052704  000001        RTASH:  BIS     #1,R4           ;PLACE A 1 IN R4
(1)  016332  072427  000020        ASHA:   ASH     #16.,R4         ;SHIFT R4 FOR 16 TIMES
(1)  016336  000773                        BR      RTASH           ;STAY IN THE LOOP UNTIL INTERUPTED
(1)  016340  105077  162142        RTA307: CLRB    @$TPS           ;CLEAR TTY INTERUPT
(1)  016344  022716  016332                CMP     #ASHA,(SP)      ;IS THE RETURN ADDRESS = ASHA
(1)  016350  001415                        BEQ     4$              ;IF SO THEN GO TO 4$
(1)  016352  012777  000015  162124  1$:   MOV     #15,@$TPB       ;OTHERWISE OUT PUT A "CR"
(1)  016360  105777  162122        2$:   TSTB    @$TPS           ;LOOP HERE UNTIL DONE COMES ON
(1)  016364  100375                        BPL     2$
(1)  016366  012777  000015  162110        MOV     #15,@$TPB       ;OUT PUT ANOTHER "CR"
(1)  016374  012777  000100  162104        MOV     #100,@$TPS      ;ENABLE TTY INTERUPT
(1)  016402  000002                        RTI
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    (1)  016404  020427  000001          4$:     CMP     R4,#1           ;CHECK R4 TO CONTAIN PROPER DATA
    (1)  016410  001403                          BEQ     6$
    (3)  016412  004767  000476                  JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
    (3)                                                                  ;R4 WAS CHANGED DURING THE EXECUTION OF
    (3)  016416  000442                          442
    (1)                                                                  ;THE INSTRUCTION
    (1)  016420  032766  000360  000002  6$:     BIT     #360,2(SP)      ;CHECK THE PSW BEFORE INTERUPT
    (1)  016426  001406                          BEQ     8$
    (3)  016430  004767  000460                  JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
    (3)                                                                  ;PSW IS WRONG
    (3)  016434  000443                          443
    (1)  016436  042766  000020  000002          BIC     #20,2(SP)       ;CLEAR THE T-BIT IF IT IS SE
    (1)  016444  005337  000434          8$:     DEC     @#TEMP1
    (1)  016450  001340                          BNE     1$              ;IF THE SUB TEST HAS BEEN EXECUTED 30 TIMES
    (1)                                                                  ;THEN GO TO THE END OF THE TEST
    (1)
    (1)  016452  010277  162024                  MOV     R2,@TTYOUT      ;RESTORE TTY INTERUPT VECTOR
    (1)  016456  005012                          CLR     (R2)
    (1)  016460  022626                  EASH:   CMP     (SP)+,(SP)+     ;RESTORE THE STACK POINTER
    (1)  016462  021527  000307                  CMP     (R5),#307       ;CHECK THE TEST NUMBER
    (1)  016466  001403                          BEQ     .+10
    (3)  016470  004767  000420                  JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
    (3)                                                                  ;TEST IS IN WRONG SEQUENCE
    (3)  016474  000444                          444
    (1)  016476  005215                          INC     (R5)
 1521                                    ;;*****************************************************************
    (1)                                  ;TEST:310       TEST THAT EIS ABORTS PROPERLY WHEN INTERUPTED
    (2)                                  ;;*****************************************************************
    (1)
    (1)  016500  132737  000040  000421  TST310: BITB    #40,@#$ENVM     ;IF TYPE OUTS HAS BEEN SUPPRESSED
    (1)  016506  001116                          BNE     EMUL+2          ;THEN SKIP THIS TEST
    (1)  016510  013702  000502                  MOV     @#TTYOUT,R2
    (1)  016514  012722  016572                  MOV     #RTA310,(R2)+   ;SET INTERUPT VECTOR TO RTA310
    (1)  016520  012712  000340                  MOV     #340,(R2)       ;AND THE INTERUPT PSW AS 340
    (1)  016524                                  MTPS    #10
    (2)  016524  106427                          .WORD   106400!..C
    (1)  016530  012737  000030  000434          MOV     #30,@#TEMP1     ;PREPARE TO EXECUTE THIS SUB TEST 30 TIMES
    (1)  016536  012704  077777                  MOV     #77777,R4       ;PLACE THE MULTIPLIER IN R4
    (1)  016542  012700  177777                  MOV     #-1,R0          ;AND THE MULTIPLICAND IN R0
    (1)  016546  012701  100001                  MOV     #100001,R1      ;AND THE LOWER PART OF THE RESULT IN R1
    (1)  016552  112777  000015  161724          MOVB    #15,@$TPB       ;OUT PUT A ''CR''
    (1)  016560  112777  000100  161720          MOVB    #100,@$TPS      ;ENABLE TTY INTERUPT
    (1)  016566  070004                  RTMUL:  MUL     R4,R0           ;MULTIPLY R0 BY R4
    (1)  016570  000776                          BR      RTMUL           ;STAY IN THE LOOP UNTIL INTERUPTED
    (1)  016572  105077  161710          RTA310: CLRB    @$TPS           ;CLEAR TTY INTERUPT
    (1)  016576  022716  016566                  CMP     #RTMUL,(SP)     ;IS THE RETURN ADDRESS - RTMUL
    (1)  016602  001415                          BEQ     4$              ;IF SO THEN GO TO 4$
    (1)  016604  012777  000015  161672  1$:     MOV     #15,@$TPB       ;OTHERWISE OUT PUT A ''CR''
    (1)  016612  105777  161670          2$:     TSTB    @$TPS           ;LOOP HERE UNTIL DONE COMES ON
    (1)  016616  100375                          BPL     2$
    (1)  016620  012777  000015  161656          MOV     #15,@$TPB       ;OUT PUT ANOTHER ''CR''
    (1)  016626  012777  000100  161652          MOV     #100,@$TPS      ;ENABLE TTY INTERUPT
    (1)  016634  000002                          RTI
    (1)  016636  020427  077777          4$:     CMP     R4,#77777       ;CHECK R4 TO CONTAIN PROPER DATA
    (1)  016642  001403                          BEQ     6$
    (3)  016644  004767  000244                  JSR     PC,$HLT         ;SEEN AN ERROR, GO TO TH HALT ROUTINE
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  (3)                                                                ;R4 WAS CHANGED DURING THE EXECUTION OF
  (3)  016650  000445                              445
  (1)                                                                ;THE INSTRUCTION
  (1)  016652  020027  177777          6$:         CMP     R0,#-1    ;CHECK R0 TO CONTAIN PROPER DATA
  (1)  016656  001403                              BEQ     8$
  (3)  016660  004767  000230                      JSR     PC,$HLT   ;SEEN AN ERROR, GO TO TH HALT ROUTINE
  (3)                                                                ;R0 CONTAINS WRONG VALUE
  (3)  016664  000446                              446
  (1)  016666  020127  100001          8$:         CMP     R1,#100001  ;CHECK R1 FOR THE PROPER DATA
  (1)  016672  001403                              BEQ     10$
  (3)  016674  004767  000214                      JSR     PC,$HLT   ;SEEN AN ERROR, GO TO TH HALT ROUTINE
  (3)                                                                ;R1 CONTAINS WRONG VALUE
  (3)  016700  000447                              447
  (1)  016702  032766  000360  000002  10$:        BIT     #360,2(SP)  ;CHECK THE PSW BEFORE INTERUPT
  (1)  016710  001406                              BEQ     12$
  (3)  016712  004767  000176                      JSR     PC,$HLT   ;SEEN AN ERROR, GO TO TH HALT ROUTINE
  (3)                                                                ;PSW IS WRONG
  (3)  016716  000450                              450
  (1)  016720  042766  000020  000002              BIC     #20,2(SP)   ;CLEAR THE T-BIT IF IT IS SET
  (1)  016726  005337  000434          12$:        DEC     @#TEMP1
  (1)  016732  001324                              BNE     1$        ;IF THE SUB TEST HAS BEEN EXECUTED 30 TIMES
  (1)                                                                ;THEN GO TO THE END OF THE TEST
  (1)
  (1)  016734  010277  161542                      MOV     R2,@TTYOUT  ;RESTORE TTY INTERUPT VECTOR
  (1)  016740  005012                              CLR     (R2)
  (1)  016742  022626                  EMUL:       CMP     (SP)+,(SP)+ ;RESTORE THE STACK POINTER
  (1)  016744  021527  000310                      CMP     (R5),#310   ;CHECK THE TEST NUMBER
  (1)  016750  001403                              BEQ     .+10
  (3)  016752  004767  000136                      JSR     PC,$HLT   ;SEEN AN ERROR, GO TO TH HALT ROUTINE
  (3)                                                                ;TEST IS IN WRONG SEQUENCE
  (3)  016756  000451                              451
  (1)  016760  005215                              INC     (R5)
 1522                                  .SBTTL  END OF PASS ROUTINE
  (1)
  (2)                                  ;;*****************************************************************
  (1)                                  ;*INCREMENT THE PASS NUMBER ($PASS)
  (1)                                  ;*TYPE "END PASS"
  (1)                                  ;*IF THERES A MONITOR GO TO IT
  (1)                                  ;*IF THERE ISN'T JUMP TO BEGIN
  (1)                                  ;*IF IT IS DESIRED TO HAVE A BELL INDICATE THE "END OF PASS" LOCATION
  (1)                                  ;*$ENDMG CAN BE CHANGED TO 7.
  (1)
  (1)  016762                          $EOP:
  (1)  016762  010701                              SCOPE
  (1)  016764  005267  161416                      INC     $PASS             ;;INCREMENT THE PASS NUMBER
  (1)  016770  042767  100000  161410              BIC     #100000,$PASS     ;;DON'T ALLOW A NEG. NUMBER
  (1)  016776  005327                              DEC     (PC)+             ;;LOOP?
  (1)  017000  000001                  $EOPCT:     .WORD   1
  (1)  017002  003017                              BGT     $DOAGN            ;;YES
  (1)  017004  012737                              MOV     (PC)+,@(PC)+      ;;RESTORE COUNTER
  (1)  017006  000001                  $ENDCT:     .WORD   1
  (1)  017010  017000                              $EOPCT
  (1)  017012  000004  017051                      TYPE    ,$ENDMG           ;;TYPE "END PASS"
  (1)  017016  000004  017046                      TYPE    ,$ENULL           ;;TYPE A NULL CHARACTER
  (1)  017022  013700  000042          $GET42:     MOV     @#42,R0           ;;GET MONITOR ADDRESS
  (1)  017026  001405                              BEQ     $DOAGN            ;;BRANCH IF NO MONITOR
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 (1) 017030 000005                      RESET                   ;;CLEAR THE WORLD
 (1) 017032 004710                $ENDAD: JSR     PC,(R0)       ;;GO TO MONITOR
 (1) 017034 000240                        NOP                   ;;SAVE ROOM
 (1) 017036 000240                        NOP                   ;;FOR
 (1) 017040 000240                        NOP                   ;;ACT11
 (1) 017042                       $DOAGN:
 (1) 017042 000137                        JMP     @(PC)+        ;;RETURN
 (1) 017044 000600                $RTNAD: .WORD   BEGIN
 (1) 017046     377     377     000 $ENULL: .BYTE   -1,-1,0       ;;NULL CHARACTER STRING
 (1) 017051     015 042412 042116 $ENDMG: .ASCIZ  <15><12>/END PASS/
 (1) 017056 050040 051501 000123
1523
1528 017006 000004                ENDCT:  4
1532
1533
1534                              ;;*****************************************************************
1535
1536                              .SBTTL  POWER FAIL ROUTINE
1537
1538 017064 012737 017074 000024 $PWRDN: MOV     #$PWRUP,@#24
1539 017072 000000                       HALT
1540
1541 017074 012706 000600        $PWRUP: MOV     #BEGIN,SP       ;RESTORE THE SP
1542 017100 012737 017064 000024         MOV     #$PWRDN,@#24
1543 017106 000004 000516                TYPE    ,POWER          ;GO AND TYPE ''POWER''
1544 017112 000753                       BR      $DOAGN
1548
1549                              ;*      HALT ROUTINE
1550                              ;*      ------------
1551                              ;*
1552                              ;*
1553                              ;*      PROGRAM COMES HERE ON ENCOUNTERING ANY ERROR
1554                              ;*
1555
1556 017114 017637 000000 000402 $HLT:   MOV     @(SP),@#$FATAL  ;PLACE THE ERROR NUMBER AT LOCATION $FATAL
1557 017122 032737 020000 000422         BIT     #20000,@#$SWREG ;HAS THE OPERATOR ASKED TO SUPRESS ERROR TYPE OUTS
1558 017130 001046                       BNE     6$
1559 017132 000004 000510                TYPE    ,$CRLF          ;GO AND TYPE A CR, LF, FOLLOWED BY 3 SPACES
1560 017136 010046                       MOV     R0,-(SP)        ;SAVE R0
1561 017140 112767 000002 161303         MOVB    #2,$TPCNT       ;ALLOW TYPE OUTS OF PC AND ERROR NUMBER
1562 017146 016600 000002                MOV     2(SP),R0        ;BRING THE RETURN PC IN R0
1563 017152 162700 000004                SUB     #4,R0
1564 017156 112737 000006 000450 2$:     MOVB    #6,@#TYPCNT     ;ALLOW TYPE OUT OF 6 DIGITS
1565 017164 005046                       CLR     -(SP)
1566 017166 000241                4$:    CLC
1567 017170 006100                       ROL     R0
1568 017172 006116                       ROL     (SP)            ;BRING THE C BIT FROM R0 IN (SP)
1569 017174 052716 000060                BIS     #60,(SP)        ;PREPARE TO TYPE IT OUT
1570 017200 004767 000130                JSR     PC,$TPCHR       ;AND GO TO OUT PUT A CHARACTER
1571 017204 005016                       CLR     (SP)
1572 017206 006100                       ROL     R0
1573 017210 006116                       ROL     (SP)
1574 017212 006100                       ROL     R0
1575 017214 006116                       ROL     (SP)
1576 017216 105367 161226                DECB    TYPCNT          ;HAS ALL THE SIX CHARACTERS BEEN TYPED ?
1577 017222 001361                       BNE     4$              ;IF NOT THEN REPEAT FROM 4$
```

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

```
A       - 017064          1525#   1530
ABASE   = 000000           364
ACDW1   = 000000           364
ACDW2   = 000000           364
ACPUOP= 000000             364
ADDW0   = 000000           364
ADDW1   = 000000           364
ADDW10= 000000             364
ADDW11= 000000             364
ADDW12= 000000             364
ADDW13= 000000             364
ADDW14= 000000             364
ADDW15= 000000             364
ADDW2   = 000000           364
ADDW3   = 000000           364
ADDW4   = 000000           364
ADDW5   = 000000           364
ADDW6   = 000000           364
ADDW7   = 000000           364
ADDW8   = 000000           364
ADDW9   = 000000           364
ADEVCT= 000000             364
ADEVM   = 000000           364
AENV    = 000000           364
AENVM   = 000000           364
AFATAL= 000000             364
AMADR1= 000000             364
AMADR2= 000000             364
AMADR3= 000000             364
AMADR4= 000000             364
AMAMS1= 000000             364
AMAMS2= 000000             364
AMAMS3= 000000             364
AMAMS4= 000000             364
AMSGAD= 000000             364
AMSGLG= 000000             364
AMSGTY= 000000             364
AMTYP1= 000000             364
AMTYP2= 000000             364
AMTYP3= 000000             364
AMTYP4= 000000             364
APASS   = 000000           364
APRIOR= 000000             364
ASHA      016332          1520#
ASWREG= 000000             364
ATESTN= 000000             364
AUNIT   = 000000           364
AUSWR   = 000000           364
AVECT1= 000000             364
AVECT2= 000000             364
BEGIN     000600           722     726#    729    1522    1541
COUNT     000430           369#    370     727*    784*    788    820*    824    855*    859    890*    894    926*    931
                           963*    967    1077*   1106*   1115   1149*   1157   1192*   1200
DUMMY   = 000000           344#   1315    1316    1317    1318   1319    1320   1321
EASH      016460          1520#
EMUL      016742          1521#
```

DVKABA MACY11 30(1046) 14-SEP-81 16:32 PAGE 5-1
CVKABB.P11 14-SEP-81 16:31 CROSS REFERENCE TABLE -- USER SYMBOLS SEQ 0081

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

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SW11  = 004000          355#
SW12  = 010000          356#
S0      000452          385#
S1      000454          386#   387   1050  1054  1325  1328  1330
S10     000476          395#  1505  1508
S11     000500          396#
S2      000456          387#  1051  1053  1326  1329
S3      000460          388#
S4      000462          389#
S5      000464          390#   391  1464  1467  1469
S6      000466          391#  1465  1468
S7      000470          392#
S8      000472          393#
S9      000474          394#   395  1504  1507  1509
TEMP1   000434          373#   374   743*  766   803   838   873   908   946   982*  988*  1003* 1010*
                       1028*  1041* 1078* 1087  1130  1173  1217* 1225* 1239* 1247* 1254* 1259* 1265*
                       1296*  1303* 1520* 1521*
TEMP2   000436          375#   376   744*  769   773   796*  806   809   831*  841   844   866*  876
                        879   901*  912   915   938*  949   952   975*  983*  989*  995*  999*  1004*
                       1011*  1016* 1022* 1029* 1035* 1079* 1088  1131  1174  1218* 1266* 1273* 1284*
                       1289*  1297* 1304*
TEMP3   000440          377#   378   745*  785   797*  821   832*  856   867*  891   902*  927   939*
                        964   976*  984*  990*  1005* 1012* 1017* 1023* 1030* 1036* 1080* 1092  1095
                       1121*  1135  1138  1163* 1178  1181  1207* 1219* 1231* 1235* 1240* 1260* 1267*
                       1278*  1285* 1290* 1305*
TEMP4   000442          379#   380   746*  781   817   852   887   923   960   991*  1006* 1018* 1024*
                       1031*  1037* 1042* 1081* 1107  1124* 1150  1166* 1193  1210* 1220* 1226* 1241*
                       1248*  1274* 1279* 1291* 1306*
TEMP5   000444          381#  1082*  1110  1123* 1153  1165* 1196  1209* 1221* 1242* 1249* 1255* 1268*
                       1292*  1298*
TEMP6   000446          382#  1083*  1103  1146  1189  1227* 1243* 1250* 1261* 1269* 1280* 1299* 1307*
TST160  004306         1128    1170   1214  1223#
TST161  004334         1224    1229#
TST162  004352         1230    1233#
TST163  004370         1234    1237#
TST164  004432         1238    1245#
TST165  004470         1246    1252#
TST166  004514         1253    1257#
TST167  004544         1258    1263#
TST170  004602         1264    1271#
TST171  004626         1272    1276#
TST172  004654         1277    1282#
TST173  004676         1283    1287#
TST174  004734         1288    1294#
TST175  004770         1295    1301#
TST176  005046         1315#
TST177  005142         1316#
TST200  005236         1317#
TST201  005336         1318#
TST202  005432         1319#
TST203  005526         1320#
TST204  005626         1321#
TST205  005722         1322#
TST206  006046         1328#
TST207  006150         1329#
TST210  006252         1330#
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TST211  006354          1331#
TST212  006454          1332#
TST213  006554          1333#
TST214  006654          1334#
TST215  006756          1335#
TST216  007060          1336#
TST217  007160          1337#
TST220  007260          1445#
TST221  007354          1446#
TST222  007450          1447#
TST223  007544          1448#
TST224  007644          1449#
TST225  007740          1450#
TST226  010034          1451#
TST227  010134          1452#
TST230  010230          1453#
TST231  010324          1454#
TST232  010420          1455#
TST233  010520          1456#
TST234  010614          1457#
TST235  010710          1458#
TST236  011004          1459#
TST237  011104          1460#
TST240  011200          1461#
TST241  011274          1462#
TST242  011410          1467#
TST243  011504          1468#
TST244  011600          1469#
TST245  011674          1470#
TST246  011766          1471#
TST247  012060          1472#
TST250  012152          1473#
TST251  012246          1474#
TST252  012342          1475#
TST253  012434          1476#
TST254  012526          1486#
TST255  012634          1487#
TST256  012742          1488#
TST257  013054          1489#
TST260  013162          1490#
TST261  013270          1491#
TST262  013402          1492#
TST263  013510          1493#
TST264  013616          1494#
TST265  013724          1495#
TST266  014036          1496#
TST267  014144          1497#
TST270  014252          1498#
TST271  014364          1499#
TST272  014472          1500#
TST273  014600          1501#
TST274  014670          1502#
TST275  014770          1507#
TST276  015076          1508#
TST277  015204          1509#
TST300  015312          1510#
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TST301  015416          1511#
TST302  015522          1512#
TST303  015626          1513#
TST304  015734          1514#
TST305  016042          1515#
TST306  016146          1516#
TST307  016252          1520#
TST310  016500          1521#
TST37   002050           801    836    871    906    943    980    986#
TST40   002104           987    993#
TST41   002120           994    997#
TST42   002136           998   1001#
TST43   002172          1002   1008#
TST44   002224          1009   1014#
TST45   002256          1015   1020#
TST46   002310          1021   1026#
TST47   002346          1027   1033#
TST50   002376          1034   1039#
TST51   002454          1052#
TST52   002534          1053#
TST53   002614          1054#
TST54   002674          1055#
TST55   002752          1056#
TST56   003030          1057#
TST57   003106          1058#
TST60   003166          1059#
TST61   003246          1060#
TST62   003324          1061#
TTYOUT  000502           397#  1520*  1521*
TYPCNT  000450           383#  1564*  1576*
TYPE  = 000004           357#  1522   1543   1559   1580
$APTHD  000430           366#   368
$CPUOP  000426           364#
$CRLF   000510           400#  1559   1580
$DEVCT  000410           364#   718
$DOAGN  017042          1522#  1544
$ENDAD  017032           342   1522#
$ENDCT  017006          1522#  1526
$ENDMG  017051          1522#
$ENULL  017046          1522#
$ENV    000420           364#   737   1584
$ENVM   000421           364#  1520   1521   1617
$EOP    016762          1522#
$EOPCT  017000          1522#
$ETABL  000420           364#
$ETEND  000430           364#   366
$FATAL  000402           364#  1556*
$GET42  017022          1522#
$HD   = 000003           325
$HIBTS  000430           366#
$HLT    017114           783    787    819    823    854    858    889    893    925    929    962    966   1046
                        1052   1053   1054   1055   1056   1057   1058   1059   1060   1061   1105   1109   11'3
                        1117   1148   1152   1156   1159   1191   1195   1199   1202   1311   1315   1316   1317
                        1318   1319   1320   1321   1322   1328   1329   1330   1331   1332   1333   1334   1335
                        1336   1337   1445   1446   1447   1448   1449   1450   1451   1452   1453   1454   1455
                        1456   1457   1458   1459   1460   1461   1462   1467   1468   1469   1470   1471   1472
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                    1473  1474  1475  1476  1486  1487  1488  1489  1490  1491  1492  1493  1494
                    1495  1496  1497  1498  1499  1500  1501  1502  1507  1508  1509  1510  1511
                    1512  1513  1514  1515  1516  1520  1521  1556#
$MAIL   000400       364#   366   720
$MBADR  000432       366#
$MSGAD  000414       364#
$MSGLG  000416       364#
$MSGTY  000400       364#  1586*
$PASS   000406       364#   767   804   839   874   910   947  1090  1133  1176  1522*
$PASTM  000436       366#
$PWRDN  017064       717  1538#  1542
$PWRUP  017074      1538  1541#
$RTNAD  017044      1522#
$SETUP= 000020       403#  1522
$STUP = 177777       403#
$SVPC = 001000       342#
$SWR  = 160000       325#  1522
$SWREG  000422       364#  1557  1588
$TESTN  000404       364#   726
$TN   = 000001       325#
$TPB    000504       398#  1520* 1521* 1621*
$TPCHR  017334      1570   1613  1617#
$TPCNT  000451       384#  1561* 1581*
$TPS    000506       399#   739  1520* 1521* 1619
$TSTM   000434       366#
$TYPE   017300       361  1604#
$UNIT   000412       364#
$UNITM  000440       366#
$USWR   000424       364#
$$GET4= 000000      1522#
.       - 017362     332#   339   342#  360#  363#  366#  368#  370#  372#  374#  376#  378#  380#
                     716#   724#  733#  777#  782   786   813#  818   822   848#  853   857   883#
                     888    892   919#  924   928   956#  961   965  1045  1052# 1053# 1054# 1055#
                    1056#  1057# 1058# 1059# 1060# 1061# 1099# 1104  1108  1111  1116  1142# 1147
                    1151   1154  1158  1185# 1190  1194  1197  1201  1310  1315# 1316# 1317# 1318#
                    1319#  1320# 1321# 1322# 1328# 1329# 1330# 1331# 1332# 1333# 1334# 1335# 1336#
                    1337#  1445# 1446# 1447# 1448# 1449# 1450# 1451# 1452# 1453# 1454# 1455# 1456#
                    1457#  1458# 1459# 1460# 1461# 1462# 1467# 1468# 1469# 1470# 1471# 1472# 1473#
                    1474#  1475# 1476# 1486# 1487# 1488# 1489# 1490# 1491# 1492# 1493# 1494# 1495#
                    1496#  1497# 1498# 1499# 1500# 1501# 1502# 1507# 1508# 1509# 1510# 1511# 1512#
                    1513#  1514# 1515# 1516# 1520# 1521# 1522  1525  1526# 1530# 1587
.$X     - 000430     366#
..A       016524     733#   777#  813#  848#  883#  919#  956# 1052# 1053# 1054# 1055# 1056# 1057#
                    1058#  1059# 1060# 1061# 1099# 1142# 1185# 1315# 1316# 1317# 1318# 1319# 1320#
                    1321#  1322# 1328# 1329# 1330# 1331# 1332# 1333# 1334# 1335# 1336# 1337# 1445#
                    1446#  1447# 1448# 1449# 1450# 1451# 1452# 1453# 1454# 1455# 1456# 1457# 1458#
                    1459#  1460# 1461# 1462# 1467# 1468# 1469# 1470# 1471# 1472# 1473# 1474# 1475#
                    1476#  1486# 1487# 1488# 1489# 1490# 1491# 1492# 1493# 1494# 1495# 1496# 1497#
                    1498#  1499# 1500# 1501# 1502# 1507# 1508# 1509# 1510# 1511# 1512# 1513# 1514#
                    1515#  1516# 1520# 1521#
..B     - 016530     733#   777#  813#  848#  883#  919#  956# 1052# 1053# 1054# 1055# 1056# 1057#
                    1058#  1059# 1060# 1061# 1099# 1142# 1185# 1315# 1316# 1317# 1318# 1319# 1320#
                    1321#  1322# 1328# 1329# 1330# 1331# 1332# 1333# 1334# 1335# 1336# 1337# 1445#
                    1446#  1447# 1448# 1449# 1450# 1451# 1452# 1453# 1454# 1455# 1456# 1457# 1458#
                    1459#  1460# 1461# 1462# 1467# 1468# 1469# 1470# 1471# 1472# 1473# 1474# 1475#
                    1476#  1486# 1487# 1488# 1489# 1490# 1491# 1492# 1493# 1494# 1495# 1496# 1497#
```

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

. ABS.  017362      000

 ERRORS DETECTED:  0

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