```
ALWELG-ALIENS WELL GAME MAINLIN       ATARI MAC65 VM03.09  00 00 01
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    1-  5 *MODULE  ALWELG
    1-  6 *FUNCTION  PERFORMS ALIENS WELL GAME FUNCTION
    1-  7 *
    1-  8 ****************************
    1- 10 ******************************************************
    1- 11 *                                                    *
    1- 12 *MODULE                ALCOMN                        *
    1- 13 *PROGRAMMER    DAVE THEURER                          *
    1- 14 *FUNCTION      ALIENS CONSTANTS AND VARIABLES        *
    1- 15 *              TO BE .INCLUDED IN                    *
    1- 16 *                  ALGAME,ALDISP,ALHARD              *
    1- 17 *                                                    *
    1- 18         COPYRIGHT 1980 ATARI, INC.  UNAUTHORIZED REPRODUCTION,
    1- 19         ADAPTION, DISTRIBUTION, PERFORMANCE OR DISPLAY OF THIS
    1- 20         COMPUTER PROGRAM OR THE ASSOCIATED AUDIOVISUAL WORK IS
    1- 21         STRICTLY PROHIBITED.
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   26-  7 PLAY - MOVE CURSOR  MAINLINE
   26- 78         PLAY-AUTO MOVE OF CURSOR
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```

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     1                                .TITLE ALWELG-ALIENS WELL GAME MAINLINE
     2                                       .SBTTL ****************************
     3                                       .SBTTL *
     4                                       .SBTTL *PROGRAMMER  DFT
     5                                       .SBTTL *MODULE  ALWELG
     6                                       .SBTTL *FUNCTION  PERFORMS ALIENS WELL GAME FUNCTION
     7                                       .SBTTL *
     8                                       .SBTTL ****************************
     9+                                      .INCLUDE ALCOMN ;
    10+                              .SBTTL ************************************************
    11+                                     .SBTTL *                                      *
    12+                                     .SBTTL *MODULE          ALCOMN                *
    13+                                     .SBTTL *PROGRAMMER      DAVE THEURER          *
    14+                                     .SBTTL *FUNCTION        ALIENS CONSTANTS AND VARIABLES  *
    15+                                     .SBTTL *                TO BE .INCLUDED IN    *
    16+                                     .SBTTL *                    ALGAME,ALDISP,ALHARD      *
    17+                                     .SBTTL *                                      *
    18+                                     .SBTTL  COPYRIGHT 1980 ATARI, INC.  UNAUTHORIZED REPRODUCTION,
    19+                                     .SBTTL  ADAPTION, DISTRIBUTION, PERFORMANCE OR DISPLAY OF THIS
    20+                                     .SBTTL  COMPUTER PROGRAM OR THE ASSOCIATED AUDIOVISUAL WORK IS
    21+                                     .SBTTL  STRICTLY PROHIBITED.
    22+                                     .SBTTL ************************************************
    23+                                     .ENABL AMA
    24#                                     .INCLUDE HLL65          ;
    25#       0000                      ...X 0
    26#                                 .MACRO  DEFIF   ...1,...2
    27#                                 .MACRO  ...1
    28#                                         IFXX    ...2
    29#                                         .ENDM
    30#                                         .ENDM
    31#                                 .MACRO  IFXX    ...1
    32#                                         LOC
    33#                                         ...1    .+2
    34#                                         .ENDM
    35#                                 .MACRO  THEN
    36#                                         FND
    37#                                         .ENDM
    38#                                 .MACRO ENDIF
    39#                                         FND
    40#                                         .ENDM
    41#                                 .MACRO  ELSE
    42#                                         CLV
    43#                                         IFVS
    44#                                         SWAP
    45#                                         THEN
    46#                                         .ENDM
    47#                                 .MACRO  BEGIN
    48#                                         LOC
    49#                                         .ENDM
    50#                                 .MACRO  LOC
    51#                                         ...RD 10
    52#                                         .RADIX  10.
    53#                                         ...X ...X+1
    54#                                         .LOC.    ...X
    55#                                         .RADIX  ...RD
    56#                                         .ENDM
    57#                                 .MACRO  .LOC.   ...1
```

```
ALWELG-ALIENS WELL GAME MAINLIN       ATARI MAC65 VM03.09  00 00 01 PAGE 1+
*************************************************
     58#                                      S ...1 .
     59#                                      .ENDM
     60#                              .MACRO  FND
     61#                                      ...RD 10
     62#                                      .RADIX  10.
     63#                                      .FND.    ...X
     64#                                      ...X ...X-1
     65#                                      .RADIX  ...RD
     66#                                      .ENDM
     67#                              .MACRO  .FND.   ...1
     68#                                      ...T .-S ...1-2
     69#                                      .IIF LT,...T+128,.ERROR ...T;A
     70#                                      .IIF GT,...T-127,.ERROR ...T;A
     71#                                      ...T .
     72#                                      . S ...1+1
     73#                                      .BYTE   ...T-S ...1-2
     74#                                      . ...T
     75#                                      .ENDM
     76#                              .MACRO  SWAP
     77#                                      ...RD 10
     78#                                      .RADIX  10.
     79#                                      .Z. ...X-1
     80#                                      .SWAP.   ...X, .Z.
     81#                                      .RADIX  ...RD
     82#                                      .ENDM
     83#                              .MACRO  .SWAP.  ...1,...2
     84#                                      ...T S ...2
     85#                                      S ...2 S ...1
     86#                                      S ...1 ...T
     87#                                      .ENDM
     88#                              .MACRO  DEFEND  ...1,...2,...3
     89#                              .MACRO  ...1
     90#                                      ..END   ...2,...3
     91#                                      .ENDM
     92#                                      .ENDM
     93#                              .MACRO  ..END   ...1,...2
     94#                                      ...RD 10
     95#                                      .RADIX  10.
     96#                                      .END.   ...1,...2, ...X
     97#                                      ...X ...X-1
     98#                                      .RADIX  ...RD
     99#                                      .ENDM
    100#                              .MACRO  .END.   ...1,...2,...3
    101#                                      .IF     GE,.-S ...3-127.
    102#                                      ...2    .+5
    103#                                      JMP     S ...3
    104#                                      .IFF
    105#                                      ...1    S ...3
    106#                                      .ENDC
    107#                                      .ENDM
    108#  0000                                DEFIF   IFCC,BCS
    109#  0000                                DEFIF   IFCS,BCC
    110#  0000                                DEFIF   IFEQ,BNE
    111#  0000                                DEFIF   IFNE,BEQ
    112#  0000                                DEFIF   IFMI,BPL
    113#  0000                                DEFIF   IFPL,BMI
    114#  0000                                DEFIF   IFVC,BVS
```

```
ALWELG-ALIENS WELL GAME MAINLIN       ATARI MAC65 VM03.09  00 00 01 PAGE 1+
**************************************************
   115#  0000                              DEFIF   IFVS,BVC
   116#  0000                              DEFEND  CCEND,BCS,BCC
   117#  0000                              DEFEND  CSEND,BCC,BCS
   118#  0000                              DEFEND  EQEND,BNE,BEQ
   119#  0000                              DEFEND  NEEND,BEQ,BNE
   120#  0000                              DEFEND  MIEND,BPL,BMI
   121#  0000                              DEFEND  PLEND,BMI,BPL
   122#  0000                              DEFEND  VCEND,BVS,BVC
   123#  0000                              DEFEND  VSEND,BVC,BVS
   124#                              .MACRO  LDAL    ...1
   125#                                      .BYTE   0A9
   126#                                      .WORD   ...1
   127#                                      . .-1
   128#                                      .ENDM
   129#                              .MACRO  LDAH    ...1
   130#                                      .BYTE   0A9
   131#                                      .ENABL  M68
   132#                                      .WORD   ...1
   133#                                      .DSABL  M68
   134#                                      . .-1
   135#                                      .ENDM
   136#                              .MACRO HLL65
   137#                                      .IIF NE,...X,.ERROR ...X;U
   138#                                      .ENDM
   139#                                      .LIST MEB
   140#                                      .NLIST BYT
```

```
ALWELG-ALIENS WELL GAME MAINLIN       ATARI MAC65 VM03.09  00 00 01 PAGE 2
************************************************
     1+         0010                          .RADIX 16
     2+
     3+                                       .NLIST CND
     4+                                       .SBTTL CONSTANTS-COUNTS
     5+         0000                    SPACG 0
     6+
     7+                                 ;
     8+                                 ;SCREEN OBJECT QUANTITIES
     9+                                 ;
    10+         0008                    NHISCO   8                    ;# OF HIGH SCORES KEPT
    11+         0063                    NRANKS   99.
    24+
    25+                                       .SBTTL CONSTANTS-STATE CODES
    26+                                 ;
    27+                                 ;QSTATE CODES  ROUTAD INDICES
    28+                                 ;
    29+         0000                    CNEWGA   0
    30+         0002                    CNEWLI   2
    31+         0004                    CPLAY    4
    32+         0006                    CENDLI   6
    33+         0008                    CENDGA   8
    34+         000A                    CPAUSE   0A
    35+         000C                    CNEWAV   0C
    36+         000E                    CENDWAV  0E
    37+         0010                    CHISCHK  10
    38+         0014                    CDLADR   14
    39+         0012                    CGETINI  12
    40+         0014                    CNOTFOU  CDLADR
    41+         0016                    CREQRAT  CDLADR+2
    42+         0018                    CNEWV2   CREQRAT+2
    43+         001A                    CLOGO    CNEWV2+2             ;LOGO INIT
    44+         001C                    CINIRAT  CLOGO+2
    45+         001E                    CNWLF2   CINIRAT+2
    46+         0020                    CDROP    CNWLF2+2             ;DROP MODE
    47+         0022                    CSYSTM   CDROP+2
    48+         0024                    CBOOM    CSYSTM+2             ;BOOM STATE
    49+                                 ;
    50+                                 ;DISPLAY STATE CODES
    51+         0000                    CDPLAY   0                    ;PLAY
    52+         0002                    CDSYST   2                    ;SYSTEM CONFIGURATION
    53+         0008                    CDREQRA  8                    ;REQUEST RANK
    54+         000E                    CDPLPL   0E                   ;PLAY PLAYER WARNING
    55+
    56+         000C                    CDGOVR   0C                   ;GAME OVER PLAYER MSG
    57+         000A                    CDHITB   0A                   ;HI SCORE TABLE
    58+         0006                    CDGETI   6                    ;GET INITIALS
    59+         0004                    CDBOOM   4                    ;BOOM DISPLAY
    60+         0010                    CDPRST   CDPLPL+2             ; PRESS START
    61+         0016                    CD2GAM   CDLOGP+2       ; 2 GAME MIN
    62+         0012                    CDBOXP   CDPRST+2             ;LOGO BOX
    63+         0014                    CDLOGP   CDBOXP+2             ;LOGO ITSELF
    64+
    65+
    66+
    67+
    68+                                 ;
    69+                                 ;TIMING FOR PAUSE STATE
```

CONSTANTS-STATE CODES

```
    70+                                 ;
    71+         0014                    SECOND    20.                 ;FRAMES/SECOND
    72+         0005                    QUASEC    SECOND/4            ;QUARTER SECOND FACTOR
```

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ALWELG-ALIENS WELL GAME MAINLIN       ATARI MAC65 VM03.09  00 00 01 PAGE 4
CONSTANTS-PICTURES

     1+                                      .SBTTL CONSTANTS-PICTURES
    22+                                      .SBTTL  BOOM
    23+          0010                 NPARTI   10                    ;# OF PARTICLES
    24+                                                              ;PARTICLE DECELERATIONS
    25+          0020                 PARLXA   20                    ;FRACTIONAL
    26+          0020                 PARLYA   20
    27+          0020                 PARLZA   20
    28+          0000                 PARTXA   0                     ;INTEGER  POSITIVE
    29+          0000                 PARTYA   0
    30+          0000                 PARTZA   0
```

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ALWELG-ALIENS WELL GAME MAINLIN       ATARI MAC65 VM03.09  00 00 01 PAGE 5
BOOM

      1+          0003                      LEDOFF    MLED1 MLED2
      2+          000C                      NROMS     12.
      3+                                           .MACRO LAH ...X
      4+                                           LDA I,0
      5+                                           . .-1
      6+                                           .ENABL M68
      7+                                           .WORD ...X
      8+                                           .DSABL M68
      9+                                           . .-1
     10+                                           .ENDM
     11+                                           .MACRO LXL ...X
     12+                                           LDX I,0
     13+                                           . .-1
     14+                                           .WORD ...X
     15+                                           . .-1
     16+                                           .ENDM
```

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ALWELG-ALIENS WELL GAME MAINLIN       ATARI MAC65 VM03.09  00 00 01 PAGE 6
HARDWARE DEFINITIONS

     1+                                .SBTTL  HARDWARE DEFINITIONS
     2+                                ;
     3+          0800                  COLPORT 800               ;COLOR RAM
     4+                                ;
     5+          0C00                  IN1     0C00              ;INPUT BYTE 1
     6+          0001                  MCOINR  01                ;RIGHT COIN MECH
     7+          0002                  MCOINC  02                ;CENTER COIN MECH
     8+          0004                  MCOINL  04                ;LEFT COIN MECH
     9+          0008                  $LMBIT  8                 ;SLAM
    10+          0010                  MTEST   10                ;SELF TEST
    11+          0020                  MDITES  20                ;DIAGNOSTIC TEST SWITCH
    12+          0040                  MHALT   40                ;VG HALT
    13+          0080                  M3KHTI  80                ;3 KHZ TIMER
    14+                                ;
    15+          0D00                  INOP0   0D00              ;OPTION SWITCH 0
    16+          0E00                  INOP1   0E00              ;OPTION SWITCH 1
    17+                                ;
    18+          2000                  VECRAM  2000              ;VECTOR RAM
    19+          3000                  ROMSTART 3000             ;ROM START  VECTOR ROM
    20+                                ;
    21+          4000                  OUT0    4000              ;OUTPUT BYTE 0
    22+          0001                  MRCCNT  01                ;RIGHT COIN COUNTER
    23+          0002                  MMCCNT  02                ;CENTER
    24+          0004                  MLCCNT  04                ;LEFT
    25+          0008                  MVINVX  08                ;VIDEO INVERT X
    26+          0010                  MVINVY  10                ;VIDEO INVERT Y
    27+                                ;
    28+          4800                  VGSTART 4800              ;VG START
    29+          5000                  WTCHDG  5000              ;WATCH DOG CLEAR
    30+          5000                  INTACK  WTCHDG            ;
    31+          5800                  VGSTOP  5800              ;VG RESET
    32+          6000                  HARDWA  6000              ;AUX BOARD IO BASE ADDRESS
    33+          9000                  PROG    09000             ;PROGRAM ROM
    34+                                ;
    35+                                ; AUX BOARD
    36+                                ;
    37+          6050                  EAIN    HARDWA+50         ;EAROM READ PORT
    38+          6000                  EADAL   HARDWA            ;EAROM WRITE BASE ADDRESS
    39+          6040                  EACTL   HARDWA+40         ;EAROM CONTROL
    40+                                ;
    41+          60C0                  POKEY   HARDWA+0C0        ;POKEY 1
    42+          60D0                  POKEY2  HARDWA+0D0        ;POKEY 2
    43+                                ;
    44+          60E0                  OUTANK  HARDWA+0E0        ;OUTPUT BYTE 1
    45+          0002                  MLED1   2                 ;LED 1
    46+          0001                  MLED2   1                 ;LED 2
    47+          0004                  MFLIP   4                 ;FLIP   1 FOR PLAYER 2
    48+                                ;
    49+                                ;MATH BOX
    50+          6060                  MYLOW   HARDWA+60         ;READ LOW
    51+          6070                  MYHIGH  HARDWA+70         ;READ HIGH
    52+          6040                  MSTAT   HARDWA+40         ;STATUS
    53+          6080                  MBSTAR  HARDWA+80         ;START  SIGNS ANALYSIS
    54+          6080                  MAL     MBSTAR
    55+          6081                  MAH     MBSTAR+1
    56+          6082                  MBL     MBSTAR+2
    57+          6083                  MBH     MBSTAR+3
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ALWELG-ALIENS WELL GAME MAINLIN       ATARI MAC65 VM03.09  00 00 01 PAGE 6+
HARDWARE DEFINITIONS

     58+          6084                MEL       MBSTAR+4
     59+          6085                MEH       MBSTAR+5
     60+          6086                MFL       MBSTAR+6
     61+          6087                MFH       MBSTAR+7
     62+          6088                MXL       MBSTAR+8
     63+          6089                MXH       MBSTAR+9
     64+          608C                MNL       MBSTAR+0C
     65+          608D                MZLL      MBSTAR+0D
     66+          608E                MZLH      MBSTAR+0E
     67+          608F                MZHL      MBSTAR+0F
     68+          6090                MZHH      MBSTAR+10
     69+          6092                SYM       MBSTAR+12
     70+          6094                MSZXD     MBSTAR+14
     71+          6095                MXPL      MBSTAR+15
     72+          6096                MXPH      MBSTAR+16
     73+          6098                MDYPL     MBSTAR+18
     74+                              ;
     75+                              ; POKEY DEFINITIONS
     76+                              ;
     77+          60C0                AUDF1     POKEY
     78+          60C1                AUDC1     POKEY+1
     79+          60C8                AUDCTL    POKEY+8
     80+          60C8                ALLPOT    POKEY+8
     81+          60CA                RANDOM    POKEY+0A
     82+          60CB                POTGO     POKEY+0B
     83+          60CF                SKCTL     POKEY+0F
     84+          60D0                AUDF2     POKEY2
     85+          60D1                AUDC2     POKEY2+1
     86+          60D8                AUD2CTL   POKEY2+8
     87+          60D8                ALLPO2    POKEY2+8
     88+          60DA                RANDO2    POKEY2+0A
     89+          60DB                POTGO2    POKEY2+0B
     90+          60DF                SKCTL2    POKEY2+0F
     91+                                                  ;
     92+                                                  ;INPUT BYTE 0  POKEY2 FASTPOT
     93+                                                  ; CONTROLLED BY FLIP
     94+          0020                MSTRT1    20        ;START 1
     95+          0040                MSTRT2    40        ;START 2
     96+          0008                MSUZA     8         ;SUPPERZAPPER
     97+          0010                MFIRE     10        ;FIRE
     98+          0080                MFAKE     80        ;FAKE INPUT
     99+          0007                MOPT13    07        ;SPECIAL OPTIONS
    100+                                                  ;
    101+                                                  ;INPUT BYTE 2  POKEY 1 FASTPOT
    102+                                                  ; CONTROLLED BY FLIP
    103+          0010                COCKTA    10        ; 1 IF COCKTAIL
    104+          0020                MOPTI4    20        ;SPECIAL OPTION
    105+                                                  ;D0-D3 POT READ
    106+                              ;
    107+                              ; OPTIONS
    108+                              ;
    109+          0001                OM2GAM    1         ;2 GAME MIN OPTION MASK
    110+                              ;
    111+                              ;COLORS
    112+                              ;
    113+          0006                BLUE 6
    114+          0007                BLULET    7
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ALWELG-ALIENS WELL GAME MAINLIN       ATARI MAC65 VM03.09  00 00 01 PAGE 6+
HARDWARE DEFINITIONS

   115+         0005                GREEN 5
   116+         0003                RED 3
   117+         0001                YELLOW 1
   118+         0000                WHITE 0
   119+         0002                PURPLE 2
   120+         0004                TURQOI 4
   121+         0006                WELCOL BLUE                 ;WELL
   122+         0001                CURCOL YELLOW               ;CURSOR
   123+         0000                ICHCOL WHITE                ;ENEMY SHOTS
   124+         0001                PCHCOL YELLOW               ;PLAYER SHOTS
   125+         0003                INVCOL RED                  ;INVADERS
   126+         0005                LETCOL GREEN                ;LETTERS
   127+         0006                DEPCOL WELCOL
   128+         0000                EXPCOL WHITE                ;EXPLOSION
   129+         0003                FLICOL RED                  ;FLIPPERS
   130+         0002                TANCOL PURPLE               ;TANKER
   131+         0005                TRACOL GREEN                ;TRALERS
   132+         0000                ZAPCOL WHITE                ;SUPER ZAP
   133+         000C                FRED     0C
   134+         000B                FBLUE    0B
   135+         0007                FGREEN   07
   136+         000D                HRED     0D
   137+         0000                ZWHITE   FRED FBLUE FGREEN
   138+         0004                ZYELLO   FRED FGREEN
   139+         0008                ZPURPL   FRED FBLUE
   140+         000C                ZRED     FRED
   141+         0003                ZTURQOI  FGREEN FBLUE
   142+         0007                ZGREEN   FGREEN
   143+         000B                ZBLUE    FBLUE
   144+         000F                ZBLACK   0F
   145+         0008                PSHCTR   8              ;PLAYER SOT CENTER
   146+         0009                PDIWHI   9                      ;PLAYER DEATH EXPLOSION COLORS
   147+         000A                PDIYEL   10.
   148+         000B                PDIRED   11.
   149+         000C                NYMCOL   12.                    ;NYMPHE
   150+         000F                FLASH    15.                    ;CHANGES EVERY 4 MO.
```

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ALWELG-ALIENS WELL GAME MAINLIN       ATARI MAC65 VM03.09  00 00 01 PAGE 7
VARIABLES-CONTROL

      1+                                      .SBTTL VARIABLES-CONTROL
      2+          0000                        .ASECT
      3+          0000                        . 0
      4+                                ;
      5+                                ;CONTROL   TIMING VARIABLES
      6+                                ;
      7+  0000                          QSTATE  .BLKB 1                 ;CONTAINS CODE FOR STATE ROUTINE  INDEX INTO ROUTAD
      8+  0001                          QDSTATE         .BLKB 1         ;DISPLAY STATE
      9+  0002                          QNXTSTA .BLKB 1                 ;NEXT STATE CODE TO EXECUTE AFTER PAUSE
     10+  0003                          QFRAME  .BLKB 1                 ;FRAME COUNTER  WRAPS AT FF
     11+  0004                          QTMPAUS .BLKB 1                 ;PAUSE TIMER  IN SECOND UNITS
     12+  0005                          QSTATUS .BLKB 1                 ;STATUS FLAGS
     13+          0080                   MATRACT  80                     ;       D7  0 ATTRACT  1 GAME
     14+          0040                   MGTMOD   40             ;D6 0 NO TIME;START ALLOWED
     15+                                                                 ;   1GAME TIMER RUNNING
     16+                                                                 ;   PRESS START NOT ALLOWED
     17+                                ;
     18+                                ;OTHER OVERHEAD
     19+                                ;
     20+  0006                          $$CRDT  .BLKB 1                 ;# OF CREDITS
     21+  0007                          $INTCT  .BLKB 1                 ;INTERRUPT COUNT
     22+  0008                          $TEST
     23+  0008                          $LAM
     24+  0008                          $COINA  .BLKB 1                 ;COIN MECHS
     25+  0009                          $CMODE
     26+  0009                          OPTIN1  .BLKB 1                 ;OPTIONS
     27+  000A                          OPTIN2  .BLKB 1
     28+  000B                          TSLAMR  .BLKB 1                 ;SLAM SOUND TIMER
     29+  000C                          $LMTIM  .BLKB 1                 ;SLAM INDICATION
     30+          0003                   MECHS    3
     31+          0003                   EMCTRS   3
     32+  000D                          $CNSTT  .BLKB MECHS
     33+  0010                          $PSTSL  .BLKB MECHS
     34+  0013                          $CCTIM  .BLKB EMCTRS
     35+  0016                          $BCCNT  .BLKB 1
     36+  0017                          $CNCT   .BLKB 1
     37+  0018                          $BC     .BLKB 1
     38+  0019                          COLRAM  .BLKB 10                ;COLOR RAM
```

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ALWELG-ALIENS WELL GAME MAINLIN       ATARI MAC65 VM03.09  00 00 01 PAGE 8
VARIABLES-WORK

      1+                                      .SBTTL VARIABLES-WORK
      2+
      3+  0029                          TEMP0   .BLKB 1
      4+  002A                          TEMP1
      5+  002A                          TEMPL   .BLKB 1
      6+  002B                          TEMP2   .BLKB 1
      7+  002C                          TEMP3   .BLKB 1
      8+  002D                          TEMP4   .BLKB 1
      9+  002E                          TEMPX  .BLKB 1
     10+  002F                          TEMPY   .BLKB 1
     11+  0030                          TEMPZ   .BLKB 1
     12+  0031                          MTEMP   .BLKB 4                 ;MACRO USE ONLY
     13+  0035                          SAVEX   .BLKB 1
     14+  0036                          SAVEY   .BLKB 1
     15+  0037                          INDEX1  .BLKB 1
     16+  0038                          INDEX2  .BLKB 1
     17+  0039                          INDEX3  .BLKB 1
     18+  003A                          INDEX4  .BLKB 1
     19+  003B                          INDYLO  .BLKB 1         ;USE FOR INDIRECT Y
     20+  003C                          INDYHI  .BLKB 1
     21+
     22+                                      .SBTTL VARIABLES-PLAYERS
     23+                               ;
     24+                               ;PLAYER ARRAYS
     25+                               ;
     26+  003D                          PLAYUP  .BLKB 1                 ;PLAYER UP  0 LEFT, 1 RIGHT
     27+  003E                          NUMPLA  .BLKB 1                 ;# OF PLAYERS  -1
     28+  003F                          NEWPLA  .BLKB 1                 ;# OF NEXT PLAYER  FROM END WAVE TO NEW WAVE
     29+  0040                          LSCORL  .BLKB 1                 ;SCORE ARRAY
     30+  0041                          LSCORM  .BLKB 1                 ; TRIPLE PRECISION BCD
     31+  0042                          LSCORH  .BLKB 1
     32+  0043                          RSCORL  .BLKB 1
     33+  0044                          RSCORM  .BLKB 1
     34+  0045                          RSCORH  .BLKB 1
     35+
     36+  0046                          WAVEN1  .BLKB 1                 ;# OF ENEMY WAVE WHICH PLAYER IS BATTLING -1
     37+  0047                          WAVEN2  .BLKB 1
     38+  0048                          LIVES1  .BLKB 1                 ;# OF BASES PLAYER HAS LEFT
     39+  0049                          LIVES2  .BLKB 1
     40+
     41+                                      .SBTTL VARIABLES-SWITCHES
     42+
     43+                                                              ;SWITCHES
     44+  004A                          INPUT   .BLKB 1                 ;ROUGH INPUT  0 ON
     45+                                  .BLKB 1                     ;UNUSED
     46+  004C                          DBSW    .BLKB 1                 ;LAST ROUGH INPUT  0 ON
     47+  004D                          SWSTRT
     48+  004D                          SWSTAT  .BLKB 1                 ;DEBOUNCED INPUT  0 ON
     49+  004E                          SWFINA  .BLKB 1                 ;LATCHED INPUT  1 ON  CLEARED BY GAME
     50+  004F                          SWRELE  .BLKB 1                 ;OLD SWSTAT READING
     51+  0050                          TBHD    .BLKB 1                 ;TRACK BALL VARIABLES
     52+  0051                          CURSPO  .BLKB 1
     53+  0052                          OTB     .BLKB 1
     88+
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ALWELG-ALIENS WELL GAME MAINLIN       ATARI MAC65 VM03.09  00 00 01 PAGE 9
VARIABLES-DISPLAY

     1+                                       .SBTTL VARIABLES-DISPLAY
     2+
     3+  0053                          FRTIMR  .BLKB 1                 ;VG FRAME DISPLAY TIMER
     4+  0054                          BUFRDY  .BLKB 1                 ;BUFFER STATUS  0-DISPLAY IT,   0 BUILD IT
     5+  0055                          OBJIND  .BLKB 1                 ;INDEX INTO OBJECT ARRAYS  OCNT....
     6+  0056                          PXL     .BLKB 1                 ;TEMP STORAGE FOR POINT S COORDINATES
     7+  0057                          PYL     .BLKB 1                 ;   WORLD
     8+  0058                          PZL     .BLKB 1
     9+
    10+
    11+  0059                          LINSCA  .BLKB 1                 ;LINEAR SCALE  W3DSUP
    12+  005A                          BINSCA  .BLKB 1                 ;BINARY SCALE  W3DSUP
    13+  005B                          EYH     .BLKB 1                 ;EYE POSITION  SIGNED  HI BYTE
    14+  005C                          EYLL    .BLKB 1                 ;EYE POSITION  FRACTIONAL
    15+  005D                          EYLDES  .BLKB 1         ;EYE DESTINATION Y
    16+  005E                          EXL     .BLKB 1                 ;LOCATION OF EYE  WORLD COORD
    17+  005F                          EYL     .BLKB 1
    18+  0060                          EZL     .BLKB 1
    19+
    20+  0061                          SXL     .BLKB 1                 ;TEMP STORAGE FOR POINT S COORD
    21+  0062                          SXH     .BLKB 1                 ; SCREEN
    22+  0063                          SZL     .BLKB 1
    23+  0064                          SZH     .BLKB 1
    24+  0065                          EYEFAC  .BLKB 1                 ;EYE SCREEN DISTANCE
    25+  0066                          XADJL   .BLKB 2
    26+  0068                          ZADJL   .BLKB 2                 ;SCREEN Z VANISH PT
    27+                                                                 ;DRAW SUBROUTINE VARIABLES
    28+  006A                          CURNTX  .BLKB 2                 ;CURRENT BEAM POSITION
    29+  006C                          CURNTY  .BLKB 2
    30+  006E                          XCOMP   .BLKB 4                 ;X COMPONENT FOR VECTOR DELTA
    31+        0070                    YCOMP    XCOMP+2
    32+  0072                          VGSIZE  .BLKB 1                 ;SCALING SIZE
    33+  0073                          VGBRIT  .BLKB 1                 ;VECTOR BRIGHTNESS
    34+  0074                          VGLIST  .BLKB 2                 ;VECTOR LIST POINTER
    35+  0076                          SVGLIST         .BLKB 2
    36+        0078                    CBUF1   .               ;FOLLOWING BUFFER MAY BE USED FOR OTHER PURPOSES
    37+  0078                          X0L     .BLKB 1                 ;USED WITHIN ONELIN IN ALDISP TO
    38+  0079                          X1L     .BLKB 1                 ;STORE UNIT VECTORS X 0 7  X AND Z
    39+  007A                          X2L     .BLKB 1
    40+  007B                          X3L     .BLKB 1
    41+  007C                          X4L     .BLKB 1
    42+  007D                          X5L     .BLKB 1
    43+  007E                          X6L     .BLKB 1
    44+  007F                          X7L     .BLKB 1
    45+  0080                          X0H     .BLKB 1
    46+  0081                          X1H     .BLKB 1
    47+  0082                          X2H     .BLKB 1
    48+  0083                          X3H     .BLKB 1
    49+  0084                          X4H     .BLKB 1
    50+  0085                          X5H     .BLKB 1
    51+  0086                          X6H     .BLKB 1
    52+  0087                          X7H     .BLKB 1
    53+
    54+  0088                          Z0L     .BLKB 1
    55+  0089                          Z1L     .BLKB 1
    56+  008A                          Z2L     .BLKB 1
    57+  008B                          Z3L     .BLKB 1
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ALWELG-ALIENS WELL GAME MAINLIN       ATARI MAC65 VM03.09  00 00 01 PAGE 9+
VARIABLES-DISPLAY

    58+  008C                    Z4L     .BLKB 1
    59+  008D                    Z5L     .BLKB 1
    60+  008E                    Z6L     .BLKB 1
    61+  008F                    Z7L     .BLKB 1
    62+  0090                    Z0H     .BLKB 1
    63+  0091                    Z1H     .BLKB 1
    64+  0092                    Z2H     .BLKB 1
    65+  0093                    Z3H     .BLKB 1
    66+  0094                    Z4H     .BLKB 1
    67+  0095                    Z5H     .BLKB 1
    68+  0096                    Z6H     .BLKB 1
    69+  0097                    Z7H     .BLKB 1
   138+                                                ;
   139+                                                ;
   140+  0098                    INTENS  .BLKB 1         ;OBJECT INTENSITY  D7-D5
   141+  0099                    SUBCOU  .BLKB 1         ;POINT COUNTER
   142+  009A                    UNITXL  .BLKB 1         ;UNIT VECTORS
   143+  009B                    UNITXH  .BLKB 1
   144+  009C                    UNITZL  .BLKB 1
   145+  009D                    UNITZH  .BLKB 1
   146+  009E                    COLOR   .BLKB 1         ;
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ALWELG-ALIENS WELL GAME MAINLIN       ATARI MAC65 VM03.09  00 00 01 PAGE 10
VARIABLES-DISPLAY

     1+  009F                          CURWAV  .BLKB 1         ;CURRENT WAVE
     2+  00A0                          YDEUNI  .BLKB 1                 ;Y DELTA FOR UNIT SCALE
     3+  00A1                          TNKOUT  .BLKB 1                 ;START LEDS, ETC. FOR OUTANK
     4+  00A2                          TCMFLG  .BLKB 1                 ;2 GAME MIN FLAG  80 NOT 2 YET
     5+  00A3                          NEWAIT  .BLKB 1
     6+  00A4                          OFRTIM  .BLKB 1
     7+  00A5                          OCURSL  .BLKB 1         ;OLD CURSOR POSITION  LINE #
     8+  00A6                          ESHCOU  .BLKB 1         ;ENEMY SOT COUNT
     9+  00A7                          CHACHA  .BLKB 1                 ;CHARGE CHARGE DELTA
    10+  00A8                          CHAINV  .BLKB 1                 ;CHARGE INVADER DELTA
    11+  00A9                          VGY     .BLKB 1                 ;INDEX INTO VGLIST
    12+  00AA                          OLDLLO  .BLKB 1         ;OLD ENEMY LINE BUFFER START ADDRESS
    13+  00AB                          OLDLHI  .BLKB 1
    14+  00AC                          LITRAL  .BLKB 2                 ;LANGUAGE TABLE
    15+  00AE                          ZPNLOC  .BLKB 1         ;USED BY DIGITS
    16+  00AF                          ZPOFFS  .BLKB 1                 ;USED BY DIGITS
    17+  00B0                          RUNGVG  .BLKB 2         ;RUNG VG PTR.
    18+  00B2                          PUCHDE  .BLKB 1                 ;PULSAR CHASE DELAY  # FRAMES BEFORE FLIP
    19+  00B3                          WTTFRA  .BLKB 1                 ;# OF FLIP SECTIONS TO TAKE/FRAME FOR TOP FLIPPERS
    20+  00B4                          TOUTO   .BLKB 1                 ;SCREEN FLIP STATUS FOR IO
    21+  00B5                          QT1     .BLKB 1                 ;SECURITY
    22+  00B6                          SECUVG  .BLKB 2                 ;SECURITY PTR.
    23+                               ;BD-BE   EAROM
    24+                               ;BF-FF   SOUNDS
    25+                               ;
    26+                               ;COMMON BUFFER REUSAGE
    27+                               ;
    28+
    29+       0078                                 . CBUF1
    30+
    31+                               ;
    32+  0078                          BFACTR  .BLKB 1         ;USED IN SCAPIC - BINARY PART OF SCALE FACTOR
    33+  0079                          SCFL    .BLKB 2         ;USED IN SCAPIC - SCALE FACTOR
    34+  007B                          LEFSID  .BLKB 1         ;REQUEST RATE DISPLAY LEFT SIDE
    35+  007C                          RITSID  .BLKB 1                 ;RRD-RIGHT SIDE
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ALWELG-ALIENS WELL GAME MAINLIN       ATARI MAC65 VM03.09  00 00 01 PAGE 11
VARIABLES-DISPLAY

     1+         0100                          . 100
     2+  0100                          NGAMES  .BLKB 1                 ;# GAMES FOR RANKING
     3+  0101                          NPLAYR  .BLKB 1                 ;# PLAYERS
     4+  0102                          BONUS   .BLKB 2           ;BONUS CODE FOR STARTING AT ADVANCED WAVE
     5+  0104                          CURSVL  .BLKB 1           ;CURSOR ACCELERATION DOWN WELL
     6+  0105                          CURSVH  .BLKB 1
     7+  0106                          CURMOD  .BLKB 1                 ;CURSOR MODE  - DROPPING
     8+  0107                          CURSYL  .BLKB 1           ;CURSOR POSITION  FRACTIONAL
     9+  0108                          INMCOU  .BLKB 1                 ;# OF INVADERS ON LINES
    10+  0109                          INCCOU  .BLKB 1                 ;# OF INVADERS CHASING CURSOR
    11+  010A                          EXICAM  .BLKB 1                 ;INVADER CAN EXIT FLAG
    12+  010B                          CAMPC   .BLKB 1                 ;INVADER CAM PC
    13+  010C                          CAMSTA  .BLKB 1           ;CAM STATUS
    14+  010D                          BOOMFL  .BLKB 1                 ;BOOM ACTIVE FLAG  0 NOT ACTIVE
    15+  010E                          BOOMTI  .BLKB 1                 ;BOOM TIMER  1/5 SECONDS
    16+  010F                          LEVELY  .BLKB 2
    17+  0111                          WELTYP  .BLKB 1                 ;WELL TYPE  0 CLOSED,-1 OPEN
    18+  0112                          WELLID  .BLKB 1                 ;WELL CODE
    19+  0113                          ROTFLG  .BLKB 1                 ;MSB OF BUILT SUBR BUFFER  IF 0 THEN NOT READY
    20+  0114                          ROTDIS  .BLKB 1                 ;BUILD WELL REQUEST  NOT 0
    21+  0115                          PLAGRO  .BLKB 1                 ;STAR FIELD STATUS
    22+  0116                          EXPCOU  .BLKB 1           ;# OF EXPLOSIONS
    23+  0117                          COCTAL  .BLKB 1                 ;COCKTAIL FLAG
    24+
    25+                               .SBTTL  VARIABLES - PLAY
    26+                                                         ;SKILL LEVEL CONTOURING VARIABLES
    27+                                                         ;
    28+  0118                    WCHARIN .BLKB 1                 ;INVADER CHARGE INC/FRAME
    29+  0119                    WCHARFR .BLKB 1                 ;INVADER CHARGE FREQUENCY  FIRE
    30+  011A                    WCHAMX  .BLKB 1                 ;MAX # OF INVADER CHARGES ON GIRD-1
    31+  011B                    QT6     .BLKB 1
    32+  011C                    WINVMX  .BLKB 1                 ;MAX # OF INVADERS-1
    33+  011D                    WINVJM  .BLKB 1                 ;INVAER JUMP FREQ  JUMP IF
    34+                                                         ;RANDOM AND WINVJM 0
    35+  011E                    WNYMMX  .BLKB 1                 ;# OF NYMPHS
    36+  011F                    QT5     .BLKB 1
    37+  0120                    WCHARL  .BLKB 1                 ;FRACTION CHARGE INC
    38+  0121                    ZADEST  .BLKB 2           ;ZADJL DEST.
    39+  0123                    ELICNT  .BLKB 1           ;ENEMY LINE COUNTER  D7 1 WARNING REQUEST
    40+  0124                    BOFLASH       .BLKB 1                   ;BONUS FLASH TIMER
    41+  0125                    SUZTIM  .BLKB 1                 ;SUPERZAP TIMER
    42+  0126                    HIWAVE  .BLKB 1           ;HIGHEST WAVE REACHED IN LAST GAME
    43+  0127                    HIRATE  .BLKB 1                 ;HIGHEST LEVEL-1/2 ALLOWED IN RATE TABLE
    44+  0128                    INTIME  .BLKB 1                 ;TIME SNCE LAST GAME  13 SECOND UNITS
    45+  0129                    WFLMIN  .BLKB 1           ;MINIMUM # OF TYPE ON WELL
    46+  012A                    WPUMIN  .BLKB 1
    47+  012B                    WTAMIN  .BLKB 1
    48+  012C                    WSPMIN  .BLKB 1
    49+  012D                    WFUMIN  .BLKB 1
    50+  012E                    WFLMAX  .BLKB 1                 ;MAX # OF TYPE ON WELL
    51+  012F                    WPUMAX  .BLKB 1
    52+  0130                    WTAMAX  .BLKB 1
    53+  0131                    WSPMAX  .BLKB 1
    54+  0132                    WFUMAX  .BLKB 1
    55+  0133                    SPARE3  .BLKB 2
    56+  0135                    CHACOU  .BLKB 1           ;# OF CHARGES
    57+  0136                    WTFMAX  .BLKB 1           ;TANKER + FLIPPER MAX
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ALWELG-ALIENS WELL GAME MAINLIN       ATARI MAC65 VM03.09  00 00 01 PAGE 11+
VARIABLES - PLAY

    58+                                     .BLKB 2                 ;SPACER
    59+                                                             ;SPECIAL EXPLOSION  PLAYER DEATH
    60+  0139                          SPLINE  .BLKB 1               ;LINEAR SCALE VALUABLE
    61+  013A                          SPBINA  .BLKB 1               ;BINARY SCALE VARIABLE
    62+  013B                          SPXIND  .BLKB 1               ;INDEX
    63+  013C                          SPFTIM  .BLKB 1               ;TIMER
    64+  013D                          OPFLIP  .BLKB 1               ;OPENINGS FOR EACH TYPE
    65+  013E                          OPPULS  .BLKB 1
    66+  013F                          OPTANK  .BLKB 1
    67+  0140                          OPSPIN  .BLKB 1
    68+  0141                          OPFUSE  .BLKB 1
    69+  0142                          FLIPCO  .BLKB 1
    70+  0143                          PULSCO  .BLKB 1               ;COUNT OF EACH TYPE
    71+  0144                          TANKCO  .BLKB 1
    72+  0145                          SPINCO  .BLKB 1
    73+  0146                          FUSECO  .BLKB 1
    74+  0147                          PULTIM  .BLKB 1               ;PULSE TIMER INCREMENT
    75+  0148                          PULSON  .BLKB 1               ;PULSE STATUS  MINUS OFF
    76+  0149                          WTACAR  .BLKB 4         ;TANK CONTENTS  4 POSSIBILITIES
    77+  014D                          NEARY   .BLKB 1               ;VORTEX LOGO
    78+  014E                          FARY    .BLKB 1
    79+  014F                          NEOFLI  .BLKB 1               ;NYMPHS OFF LIMIT ZONE FLAGS
    80+  0150                          OLOFLI  .BLKB 1
    81+  0151                          ENSIZE  .BLKB 5         ;COLLISION RANGE FOR EACH INVADER TYPE
    82+  0156                          BLIFIN  .BLKB 1         ;BONUS LIFE INTERVAL
    83+  0157                          PULPOT  .BLKB 1                 ;HEIGHT AT WHICH PULEARS BECOME POTENT
    84+                                                             ;CHARGE IF RANDOM # WCHARFR
    85+  0158                          LVSGAM  .BLKB 1               ;LIVES/GAME
    86+  0159                          WFUSCH  .BLKB 1         ;FUSE CHASE PLAYER FLAG  D7 FOR TOP;D6 FOR TUBE
    87+  015A                          NWTELI  .BLKB 1               ;NEW WAVE ENEMY LINE HEIGHT
    88+  015B                          NWNYMC  .BLKB 1               ;NEW WAVE NYMPH COUNT
    89+  015C                          WPULCAM .BLKB 1               ;PULSAR CAM FOR WAVE
    90+  015D                          WFLICAM .BLKB 1               ;FLIPPER CAM FOR USAVE
    91+  015E                          TYPCOD  .BLKB 1
    92+  015F                          WFUFRQ  .BLKB 1               ;FUSE LANE CHANGE PCNT  OF 256.
    93+  0160                          WINVIL  .BLKB 5               ;INVADER SPEED  FRAC  FOR EACH TYPE
    94+  0165                          WINVIN  .BLKB 5               ;INVADER SPEED  INT
    95+        0164                    WFUSIL   WINVIL+ZABFUS
    96+        0169                    WFUSIH   WINVIN+ZABFUS
    97+  016A                          OPTIN3  .BLKB 1               ;OPTION SWITCH 3  BANK OF 4
    98+  016B                          PSCALE  .BLKB 1               ;PAUSE SEALER
    99+  016C                          QT2     .BLKB 1               ;SECURITY
   100+  016D                          WPULFI  .BLKB 1               ;PULSAR FIRE FLAG
   101+  016E                          SECUVY  .BLKB 1               ;SECURITY COUNTER
   102+                               ;
   103+                               ;1C6- 1CF EAROM
   104+                               ;
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ALWELG-ALIENS WELL GAME MAINLIN       ATARI MAC65 VM03.09  00 00 01 PAGE 12
CONSTANTS-COUNTS

      1+                                      .SBTTL  CONSTANTS-COUNTS
      2+
      3+        0008                  NPLANE  8
      4+        0007                  NINVAD  7
      5+        0010                  NLINES  16.
      6+        0040                  NNYMPH  64.
      7+        0008                  NPCHARG 8
      8+        0004                  NICHARG 4
      9+        000C                  NCHARG NPCHARG+NICHARG
     10+        0008                  NEXPLO 8
     11+
     12+                                      .SBTTL  CONSTANTS-PLAYFIELD
     13+
     14+        00F0                  ILINDDY 0F0
     15+        0010                  ILINLIY 010
     16+
     17+                                      .SBTTL  VARIABLES-OBJECT COUNTERS
     18+        016F                          .ASECT
     19+        0200                          . 200
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ALWELG-ALIENS WELL GAME MAINLIN       ATARI MAC65 VM03.09  00 00 01 PAGE 13
VARIABLES-OBJECT LOCATION + STATUS

     1+                                       .SBTTL  VARIABLES-OBJECT LOCATION + STATUS
     2+                                  ;
     3+                                  ;CURSOR
     4+                                  ;
     5+  0200                           CURSL1  .BLKB 1                 ;ONE END LINE #
     6+  0201                           CURSL2  .BLKB 1                 ;OTHER END LINE #  CCW TO CURSL1
     7+                                                                  ; 80 MEANS PLAYER IS DEAD
     8+  0202                           CURSY   .BLKB 1          ;CURSOR DEPTH
     9+                                  ;
    10+                                  ;NYMPHS
    11+                                  ;
    12+  0203                           NYMPL   .BLKB NNYMPH
    13+  0243                           NYMPY   .BLKB NNYMPH
    14+                                  ;
    15+                                  ;INVADERS
    16+                                  ;
    17+                                                              ;
    18+  0283                           INVAC1  .BLKB NINVAD            ;INVADER STATUS BYTE 1
    19+         0007                    INVABI   7
    20+         0000                    ZABFLI   0                      ;APPEARANCE 0 FLIPPER
    21+         0001                    ZABPUL   1                      ;           1 PULSAR
    22+         0002                    ZABTAN   2                      ;           2 TANKER
    23+         0003                    ZABTRA   3                      ;           3 TRALER
    24+         0004                    ZABFUS   4                      ;           4 FUSE
    25+                                                                 ;           5-7 UNUSED
    26+         0018                    INVSEQ   18
    27+         0080                    INVMOT   80
    28+         0000                    ZMOTMO   0              ;MOTION 0 NOT FLIPPING/LEAPING
    29+         0080                    ZMOTJM  INVMOT                  ;       1 FLIPPER/LEAPING
    30+         0040                    INVROT   40
    31+         0000                    ZROTCW   0                      ;ROTATIONAL DIRECTION 0 CW
    32+         0040                    ZROCCW   INVROT                 ;
    33+                                                                 ;
    34+  028A                           INVAC2  .BLKB NINVAD            ;INVADER STATUS BYTE 2
    35+         0003                    INVCAR   3
    36+         0000                    ZCARNO   0                      ;CARRIER  0 NOTHING
    37+         0001                    ZCARFL   1                      ;         1 FLIPPERS
    38+         0002                    ZCARPU   2                      ;         2 PULSARS
    39+         0003                    ZCARFU   3                      ;         3 FUSES
    40+
    41+         0040                    INVFIR   40                     ;FIREPOWER  0 NO FIRE, 1 FIRE
    42+         0000                    ZFIRNO   0
    43+         0040                    ZFIRYE   INVFIR
    44+         0080                    INVDIR   80                     ;DIRECTION  0 UP, 1 DOWN
    45+         0000                    ZDIRUP   0
    46+         0080                    ZDIRDO   INVDIR
    47+  0291                           INVCAM  .BLKB NINVAD
    48+  0298                           INVLOO  .BLKB NINVAD
    49+  029F                           INVAYL  .BLKB NINVAD            ;Y POSITION  FRACTIONAL
    50+  02A6                           INVACT  .BLKB NINVAD            ;TIME SINCE LAST CHARGE LAUNCH
    51+                                 ;FOR LEAPERS    INVAL1,2 CURRENT X   Z POSITION OF LEAPER CENTER
    52+                                 ;               INVACT D3-D0 DEST. LINE #
    53+                                 ;               D4 1 MEANS GO TO CENTER FIRST
    54+                                 ;
    55+                                 ;CHARGES
    56+                                 ;
    57+  02AD                           CHARL1  .BLKB NCHARG            ;ONE END LINE #
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ALWELG-ALIENS WELL GAME MAINLIN       ATARI MAC65 VM03.09  00 00 01 PAGE 13+
VARIABLES-OBJECT LOCATION + STATUS

    58+  02B9                          INVAL1  .BLKB NINVAD            ;LINE # FOR 1 LEG  INVADERS
    59+  02C0                          CHARL2  .BLKB NCHARG            ;OTHER END LINE #  CCW TO CHARL1
    60+  02CC                          INVAL2  .BLKB NINVAD            ;LINE # FOR CCW LEG  JUMPS SEG.IF-
    61+  02D3                          CHARY   .BLKB NCHARG            ;Y POSITION  0 INACTIVE
    62+  02DF                          INVAY   .BLKB NINVAD            ;Y POSITION FOR LEGS  INVADERS
    63+  02E6                          CHARYL  .BLKB NCHARG            ;Y POSITION FRACTION
    64+  02F2                          CHARCO  .BLKB NPCHARG           ;CHARGE COLLISION COUNTER
    65+        0009                    PCVELO   9                      ;PLAYER SHOT VELOCITY  I
    66+        FEA0                    PULVEL   0FEA0                  ;PULSAR VELOCITY  IF
    67+                                ;
    68+                                ;EXPLOSIONS
    69+                                ;
    70+  02FA                          EXPLOL  .BLKB NEXPLO            ;EXPLOSION LINE #  CW LEG
    71+  0302                          EXPLOT  .BLKB NEXPLO            ;EXPLOSION TYPE
    72+  030A                          EXPLOY  .BLKB NEXPLO            ;EXPLOSION DEPTH  WORLD Y
    73+  0312                          EXPLOS  .BLKB NEXPLO            ;EXPLOSION SEQUENCES
    74+                                ;
    75+                                ;LINES  SCREEN COORDINATES
    76+                                ;
    77+  031A                          LINSXH  .BLKB NLINES            ;NEAR PT.
    78+  032A                          LINSXL  .BLKB NLINES
    79+  033A                          LINSZH  .BLKB NLINES
    80+  034A                          LINSZL  .BLKB NLINES
    81+  035A                          LIFSXH  .BLKB NLINES            ;FAR PT.
    82+  036A                          LIFSXL  .BLKB NLINES
    83+  037A                          LIFSZH  .BLKB NLINES
    84+  038A                          LIFSZL  .BLKB NLINES
    85+  039A                          LINSTA  .BLKB NLINES            ;ENEMY LINE STATUS  D7 1 NEW NEAR PT.;D6 1 SHATTERED
    86+                                ;
    87+                                ;DATA SAVED FROM PLAYER TO PLAYER
    88+                                ;
    89+  03AA                          ACTIP                           ;ACTIVE PLAYER DATA
    90+  03AA                          SUZCNT  .BLKB 1         ;SUPERZAPPER USE COUNTER
    91+  03AB                          NYMCOU  .BLKB 1                 ;# OF NYMPHS
    92+  03AC                          LINEY   .BLKB NLINES            ;ENEMY LINE HEIGHTS
    93+  03BC                          SAVEP                           ;STANDBY PLAYER DATA
    94+                                .BLKB SAVEP-ACTIP
    95+  03CE                          SAVEND                          ;DUMMY
    96+  03CE                          LINEX   .BLKB NLINES
    97+  03DE                          LINEZ   .BLKB NLINES
    98+  03EE                          LINANG  .BLKB NLINES            ;INDEX ANGLE FROM GRID LINE TO NEXT CCW LINE
    99+  03FE                          PLANEY  .BLKB NPLANE    ;STAR FIELD PLANES
   100+  0406                          BOOKKS                  ;BOOKKEEPING
   101+  0406                          SECOUL  .BLKB 1                 ;GAME UP TIMER
   102+  0407                          SECOUM  .BLKB 1
   103+  0408                          SECOUH  .BLKB 1
   104+  0409                          SECOPL  .BLKB 1                 ;GAME PLAY TIMER
   105+  040A                          SECOPM  .BLKB 1
   106+  040B                          SECOPH  .BLKB 1
   107+  040C                          NGAMIL  .BLKB 1                 ;# OF GAMES
   108+  040D                          NGAMIH  .BLKB 1
   109+  040E                          NGAME0  .BLKB 1
   110+  040F                          NGAM2L  .BLKB 1                 ;# OF 2 PLAYER GAMES
   111+  0410                          NGAM2H  .BLKB 1
   112+  0411                          NGAM20  .BLKB 1
   113+  0412                          BOOKKE
   114+  0412                          NGAVGL  .BLKB 1                 ;ORIG GAME TIME
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ALWELG-ALIENS WELL GAME MAINLIN       ATARI MAC65 VM03.09  00 00 01 PAGE 13+
VARIABLES-OBJECT LOCATION + STATUS

   115+  0413                          NGAVGH  .BLKB 1
   116+  0414                          NGAVGZ  .BLKB 1
   117+  0415                          BUFACT  .BLKB 10                ;ACTIVE/AVAILABLE BUFFER
   118+  0425                          SPOKST  .BLKB NLINES            ;SPOKE STATUS  PULEARS
   119+  0435                          LINEXM  .BLKB NLINES            ;HALF WAY BETWEEN LINES COORDINATES
   120+  0445                          LINEZM  .BLKB NLINES
   121+  0455                          QT3     .BLKB 1                 ;SECURITY
   122+        0203                              . NYMPL                 ;***WARNING OVERLAY***
   123+                                                                ;PARTICLES
   124+                                                                ;
   125+  0203                          PARLIX  .BLKB NPARTI*2          ;FRACTIONAL POSITION
   126+  0223                          PARLIY  .BLKB NPARTI*2
   127+  0243                          PARLIZ  .BLKB NPARTI*2
   128+  0263                          PARTIX  .BLKB NPARTI*2          ;INTEGER POSITION  80 CENTER
   129+  0283                          PARTIY  .BLKB NPARTI*2
   130+  02A3                          PARTIZ  .BLKB NPARTI*2
   131+  02C3                          PARLXV  .BLKB NPARTI*2          ;FRACTIONAL VELOCITY
   132+  02E3                          PARLYV  .BLKB NPARTI*2
   133+  0303                          PARLZV  .BLKB NPARTI*2
   134+  0323                          PARTXV  .BLKB NPARTI*2          ;INTEGER VELOCITY  SIGNED
   135+  0343                          PARTYV  .BLKB NPARTI*2
   136+  0363                          PARTZV  .BLKB NPARTI*2
   137+                                        .SBTTL  VARIABLES - PAGE 1
   138+        0383                              .ASECT
   139+        0600                              . 600
   140+  0600                    RANKS   .BLKB 2                 ;RANK FOR ACH PLAYER 0 NO RANK
   141+  0602                    TBLIND  .BLKB 1                 ;INDEX INTO INITIAL OF NEW INITIAL
   142+  0603                    FLGNHI  .BLKB 1                 ;FLAG FOR HIS SCORE FOUND
   143+  0604                    ININDX  .BLKB 1                 ;NEW INITIALS LEFT-1 COUNTER
   144+  0605                    TIMHIS  .BLKB 1                 ;TIMER UNTIL INITIAL ENTRY IS ABORTED
   145+  0606                    INITAL  .BLKB 3* NHISCO
   146+  061E                    HRANKL  .BLKB  3*58. + 2*41.
   147+        061F              HRANKM   HRANKL+1
   148+        0620              HRANKH   HRANKM+1
   149+        0706              HSCORL   HRANKL+ 2*41. + 3*50.
   150+        0707              HSCORM   HSCORL+1
   151+        0708              HSCORH   HSCORM+1
   152+
   153+  071E                    GAMOP1  .BLKB 1                 ;GAME PLAY OPTIONS  SWITCH 1
   154+  071F                    GAMOP3  .BLKB 1                 ; SWITCH 3
   155+  0720                    QT4     .BLKB 1                 ;SECURITY
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ALWELG-ALIENS WELL GAME MAINLIN       ATARI MAC65 VM03.09  00 00 01 PAGE 16
VARIABLES - PAGE 1

      1                                       .GLOBL INEWAV,INEWLI,MOVCUR,INIDSP,NEWAV2,UPSCOR,GETCUR,INIRAO;
      2                                       .GLOBL SWAPEN,PLAY
      3                                       .GLOBL SLAUNC,EXSNON,ESLSON,SBOING,PRSTAR,SOUTS3,PRBOOM,INBOOM
      4                                       .GLOBL INIRAT,PRORAT,LEVEL,CCEXPL,CIEXPL,CPEXPL,IPEXPL;
      5                                       .GLOBL SELICO,PLDROP,BONSCO,SOUTS2,SOUTS3,INICOL,S3SWAR
      6                                       .GLOBL PPSPXI,CPSPXI,FPSPXI,PULSTR,D70MSK,PULSTO
      7                                       .GLOBL QCHKS2,QCHKS3,QCHKS4,QCHKS5
      8          0721                         .ASECT
      9          9000                         . 9000
     10    9000    02   BB   5A   30          .BYTE 02,0BB,5A,30      ;MORSE CODE ATARI
     11    9004    50   EE   3D   A8          .BYTE 50,0EE,3D,0A8
     12    9008    00G                 CHKSM2          .BYTE QCHKS2
     13                                       .SBTTL INITIALIZE - MAINLINE
     14    9009                        INEWAV                          ;NEW WAVE
     15    9009    20  92C5                     JSR CONTOUR
     16    900C    20  9234                     JSR INIENE              ;INITIALIZE NYMPHS, ENEMY LINES
     17    900F    20  902B                     JSR INIOBJ              ;INITIALIZE OBJECTS
     18    9012    20  A831                     JSR INISUZ              ;NEW SUPERZAPPER
     19    9015    A9    FA                     LDA I,0FA
     20    9017    85    5B                     STA EYH
     21    9019    A9    00                     LDA I,0                 ;CURSOR STARTS AT TOP, NOT DESCENDING
     22    901B    8D  0106                     STA CURMOD
     23    901E    85    5F                     STA EYL
     24    9020    A9    00                     LDA I,CDPLAY
     25    9022    85    01                     STA QDSTATE
     26    9024    60                           RTS
     27    9025                        INEWLI                          ;NEW LIFE
     28    9025    20  921B                     JSR INICUR              ;INITIALIZE CURSOR
     29    9028    20  92C5                     JSR CONTOUR             ;SET SKILL LEVEL ACC TO WAVE
     30    902B    20  928F            INIOBJ   JSR INICHA              ;DEACTIVATE CHARGES
     31    902E    20  926F                     JSR INIINV              ;DEACTIVATE INVADERS
     32    9031    20  9246                     JSR ININYM              ;INITIALIZE NYMPHS
     33    9034    20  929F                     JSR INIEXP              ;DEACTIVATE EXPLOSIONS
     34    9037    20  92AD                     JSR CLRPOT              ;CLEAR POT
     35    903A    20  0000G                    JSR INIDSP              ;INITIALIZE DISPLAY
     36    903D    A9    FF                     LDA I,-1
     37    903F    8D  0124                     STA BOFLASH             ;BONUS FLASHER CLEARED
     38    9042    8D  0148                     STA PULSON
     39    9045    A9    00                     LDA I,0                 ;CLEAR ENEMY SPIKE COUNTER
     40    9047    8D  0123                     STA ELICNT
     41    904A    60                           RTS
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ALWELG-ALIENS WELL GAME MAINLIN       ATARI MAC65 VM03.09  00 00 01 PAGE 17
INITIALIZE - MAINLINE

      1
      2                                       .SBTTL  INITIALIZE-NEW WAVE PART 2
      3
      4   904B                          NEWAV2
      5   904B    A9    10                      LDA I,ILINLIY
      6   904D    8D  0202                     STA CURSY
      7   9050    A9    00                      LDA I,0
      8   9052    85    29                      STA TEMP0
      9   9054    85    2B                      STA TEMP2
     10   9056    AD  0121                      LDA ZADEST
     11   9059    85    2A                      STA TEMP1
     12   905B    10    00                      IFMI
     13   905D    C6    2B                      DEC TEMP2
     14   905C    02                            ENDIF
     15   905F    A2    01                      LDX I,1
     16                                        BEGIN                   ;CALCULATE Z INCREMENT
     17   9061    A5    2A                      LDA TEMP1
     18   9063    0A                            ASL
     19   9064    66    2A                      ROR TEMP1
     20   9066    66    29                      ROR TEMP0
     21   9068    CA                            DEX
     22   9069    10    F6                      MIEND
     23   906B    A5    29                      LDA TEMP0               ;UPDATE Z CENTER
     24   906D    18                            CLC
     25   906E    6D  0122                      ADC ZADEST+1
     26   9071    8D  0122                      STA ZADEST+1
     27   9074    A5    2A                      LDA TEMP1
     28   9076    65    68                      ADC ZADJL
     29   9078    85    68                      STA ZADJL
     30   907A    A5    2B                      LDA TEMP2
     31   907C    65    69                      ADC ZADJL+1
     32   907E    85    69                      STA ZADJL+1
     33   9080    A5    5F                      LDA EYL                 ;MOVE EYE CLOSER TO WELL
     34   9082    18                            CLC
     35   9083    69    18                      ADC I,18
     36   9085    85    5F                      STA EYL
     37   9087    A5    5B                      LDA EYH
     38   9089    69    00                      ADC I,0
     39   908B    85    5B                      STA EYH
     40   908D    C9    FC                      CMP I,0FC
     41   908F    90    00                      IFCS
     42   9091    A9    01                      LDA I,1                 ;TURN OFF STAR FIELD
     43   9093    8D  0115                      STA PLAGRO
     44   9090    05                            ENDIF
     45   9096    A5    5F                      LDA EYL                 ;CALCULATE EYE-DESTINATION DELTA
     46   9098    38                            SEC
     47   9099    E5    5D                      SBC EYLDES
     48   909B    A5    5B                      LDA EYH
     49   909D    F0    00                      IFNE
     50   909F    E9    FF                      SBC I,0FF
     51   909E    02                            ENDIF
     52   90A1    D0    00                      IFEQ                    ;PAST DESTINATION
     53   90A3    A5    5D                      LDA EYLDES              ;YES STOP AT DEST
     54   90A5    85    5F                      STA EYL
     55   90A7    A9    FF                      LDA I,0FF
     56   90A9    85    5B                      STA EYH
     57   90AB    A9    04                      LDA I,CPLAY             ;GO PLAY GAME
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ALWELG-ALIENS WELL GAME MAINLIN       ATARI MAC65 VM03.09  00 00 01 PAGE 17+
INITIALIZE-NEW WAVE PART 2

    58   90AD   24   05                  BIT QSTATUS
    59   90AF   30   00                  IFPL                    ;ATTRACT
    60   90B1   A9   08                  LDA I,CENDGA            ;YES. END IT
    61   90B0   02                       ENDIF
    62   90B3   85   00                  STA QSTATE
    63   90B5   A6   3D                  LDX PLAYUP
    64   90B7   A9   00                  LDA I,0
    65   90B9   9D   0102                STA X,BONUS             ;CLEAR BONUS
    66   90A2   19                       ENDIF
    67   90BC   A9   FF                  LDA I,0FF               ;REQUEST WELL PIC UPDATE
    68   90BE   8D   0114                STA ROTDIS
    69   90C1   4C   9749                JMP MOVCUR              ;UPDATE CURSOR POSITION
```

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ALWELG-ALIENS WELL GAME MAINLIN       ATARI MAC65 VM03.09  00 00 01 PAGE 18
INITIALIZE-PREPARE FOR SKILL LEVEL REQUEST STATE

     1                                          .SBTTL  INITIALIZE-PREPARE FOR SKILL LEVEL REQUEST STATE
     2   90C4                             INIRA0
     3   90C4    AD  0126                       LDA HIWAVE              ;YES. SET START LEVEL ODD HIGHEST LEVEL
     4                                          ;ACC HIGHEST LEVEL  -1  COMPLETED IN LAST GAME
     5   90C7    A2    1C                       LDX I,LEVELE-LEVEL
     6                                          BEGIN                   ;LOOP FROM HIGHEST CHOICE TO LOWEST
     7   90C9    CA                             DEX
     8   90CA    DD  91FE                       CMP X,LEVEL
     9   90CD    90    FA                       CSEND                   ;EXIT WHEN WAVE IN TABLE   HIGHEST LEVEL LAST GAME
    10   90CF    A0    04                       LDY I,4
    11   90D1    AD  016A                       LDA OPTIN3
    12   90D4    29    04                       AND I,4
    13   90D6    F0    00                       IFNE                    ;MAX MIN TIED TO HI SCORE OPTION
    14   90D8    AD  071D                       LDA HSCORH+21.          ;YES. GET MSB OF HIGH SCORE
    15   90DB    C9    30                       CMP I,30
    16   90DD    90    00                       IFCS                    ; 300000
    17   90DF    C8                             INY                     ;YES.
    18   90DE    01                             ENDIF
    19   90E0    C9    50                       CMP I,50
    20   90E2    90    00                       IFCS                    ; 500000
    21   90E4    C8                             INY                     ;YES.
    22   90E3    01                             ENDIF
    23   90E5    C9    70                       CMP I,70
    24   90E7    90    00                       IFCS                    ; 700000
    25   90E9    C8                             INY                     ;YES.
    26   90E8    01                             ENDIF
    27   90D7    12                             ENDIF
    28   90EA    A5    09                       LDA OPTIN1
    29   90EC    29    43                       AND I,43
    30   90EE    C9    40                       CMP I,40
    31   90F0    D0    00                       IFEQ                    ;SALES MODE
    32   90F2    A0    1B                       LDY I,1B                ;YES. ANYTHING GOES
    33   90F1    02                             ENDIF
    34   90F4    84    29                       STY TEMP0               ;NEW MAX MIN
    35   90F6    E4    29                       CPX TEMP0
    36   90F8    B0    00                       IFCC                    ;PLAYER HI LEVEL   MAX MIN
    37   90FA    A6    29                       LDX TEMP0               ;YES. USE MAX MIN FOR RIGHT LIMIT
    38   90F9    02                             ENDIF
    39   90FC    8E  0127                       STX HIRATE              ;MAX INDEX INTO LEVEL TABLE
    40   90FF    A5    05                       LDA QSTATUS
    41   9101    10    00                       IFMI                    ;ATTRACT
    42   9103    A9    00                       LDA I,0                 ;NO
    43   9105    8D  0126                       STA HIWAVE
    44   9102    05                             ENDIF
    45   9108                           INIRAT
    46   9108    A6    3F                       LDX NEWPLA
    47   910A    86    3D                       STX PLAYUP              ;YES
    48   910C    F0    00                       IFNE                    ;SPECIAL CASE FOR 2ND PLAYER
    49   910E    20  92B2                       JSR SWAPEN              ;SWAP 1ST PLAYER S ENEMIES OUT
    50   910D    03                             ENDIF
    51   9111    A9    04                       LDA I,4                 ;SET UP DEFAULT LEVELS  LEFT   RIGHT SIDES
    52   9113    85    7C                       STA RITSID
    53   9115    A9    FF                       LDA I,0FF               ;STOP RUMBLE
    54   9117    85    5B                       STA EYH
    55   9119    A9    00                       LDA I,0                 ;INITIALIZE CURSOR
    56   911B    8D  0200                       STA CURSL1
    57   911E    85    51                       STA CURSP0
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ALWELG-ALIENS WELL GAME MAINLIN       ATARI MAC65 VM03.09  00 00 01 PAGE 18+
INITIALIZE-PREPARE FOR SKILL LEVEL REQUEST STATE

    58   9120   85   7B                    STA LEFSID
    59   9122   8D  0605                   STA TIMHIS              ;NO ATTRACT DELAY
    60   9125   A6   05                    LDX QSTATUS
    61   9127   10   00                    IFMI                    ;ATTRACT
    62   9129   A9   14                    LDA I,SECOND            ;NO
    63   912B   8D  0605                   STA TIMHIS
    64   912E   A9   FF                    LDA I,0FF
    65   9130   8D  0111                   STA WELTYP              ;PREVENT WRAP
    66   9133   A9   16                    LDA I,CREQRAT           ;GO TO REQUEST
    67   9135   85   00                    STA QSTATE              ;RATE STATE
    68   9137   A9   08                    LDA I,CDREQRA
    69   9139   85   01                    STA QDSTATE             ;REQUEST RATE DISPLAY STATE
    70   913B   A9   00                    LDA I,0
    71   913D   85   9F                    STA CURWAV              ;TO GET 1ST COLORS
    72   913F   20  0000G                  JSR INICOL
    73   9142   A9   10                    LDA I,10                ;START TIMER
    74   9128   1B                         ENDIF
    75   9144   85   04                    STA QTMPAUS
    76   9146   20  92AD                   JSR CLRPOT              ;CLEAR POT
    77                                     ;FALL INTO PRORAT STATE
    78                                     .SBTTL  INITIALIZE-SET SKILL LEVEL
    79
    80   9149                      PRORAT                           ;UPDATE TIMER
    81   9149   CE  0605                   DEC TIMHIS
    82   914C   10   00                    IFMI                    ;ANOTHER SECOND DONE
    83   914E   F8                         SED                     ;YES
    84   914F   A5   04                    LDA QTMPAUS             ;DECREMENT # SECONDS
    85   9151   38                         SEC
    86   9152   E9   01                    SBC I,1
    87   9154   85   04                    STA QTMPAUS
    88   9156   D8                         CLD
    89   9157   10   00                    IFMI                    ;SECONDS LEFT AT 0
    90   9159   A9   10                    LDA I,MFIRE             ;YES. AUTO CHOOSE
    91   915B   85   4E                    STA SWFINA
    92   9158   04                         ENDIF
    93   915D   C9   03                    CMP I,3
    94   915F   D0   00                    IFEQ
    95   9161   20  0000G                  JSR S3SWAR              ;3 SECONDS WARNING
    96   9160   03                         ENDIF
    97   9164   A9   14                    LDA I,SECOND            ;RESTART FRACTIONAL SECONDS TIMER
    98   9166   8D  0605                   STA TIMHIS
    99   914D   1B                         ENDIF
   100   9169   20  0000G                  JSR GETCUR              ;UPDATE CURSOR POSITION
   101   916C   A9   18                    LDA I,MSUZA MFIRE
   102   916E   A4   04                    LDY QTMPAUS
   103   9170   C0   08                    CPY I,8
   104   9172   B0   00                    IFCC
   105   9174   A9   78                    LDA I,MSUZA MFIRE MSTRT1 MSTRT2
   106   9173   02                         ENDIF
   107   9176   25   4E                    AND SWFINA
   108   9178   F0   00                    IFNE                    ;PLAYER SELECTING THIS LEVEL
   109   917A   A9   00                    LDA I,0
   110   917C   85   4E                    STA SWFINA
   111   917E   AD  0200                   LDA CURSL1              ;YES. USE LEVEL FOR THIS PLAYER
   112   9181   A8                         TAY
   113   9182   A6   3D                    LDX PLAYUP              ;
   114   9184   9D  0102                   STA X,BONUS
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ALWELG-ALIENS WELL GAME MAINLIN       ATARI MAC65 VM03.09  00 00 01 PAGE 18+
INITIALIZE-SET SKILL LEVEL

   115   9187   B9  91FE                    LDA Y,LEVEL
   116   918A   24    05                    BIT QSTATUS
   117   918C   30    00                    IFPL                    ;ATTRACT
   118   918E   A0    01                    LDY I,1
   119   9190   84    48                    STY LIVES1
   120   9192   AD  60CA                    LDA RANDOM              ;YES. CHOOSE FROM 1ST 8 LEVELS
   121   9195   29    07                    AND I,7
   122   918D   09                          ENDIF
   123   9197   95    46                    STA X,WAVEN1
   124   9199   85    9F                    STA CURWAV
   125   919B   20  0000G                   JSR INICOL
   126   919E   20  92C5                    JSR CONTOUR
   127   91A1   20  9234                    JSR INIENE              ;INITIALIZE ENEMY
   128   91A4   20  A831                    JSR INISUZ              ;NEW SUPERZAPPER
   129   91A7   A9    02                    LDA I,CNEWLIF           ;GO ON TO GAME PLAY
   130   91A9   85    00                    STA QSTATE
   131   91AB   20  92AD                    JSR CLRPOT              ;CLEAR POT
   132   9179   34                          ENDIF
   133   91AE   A5    4E                    LDA SWFINA
   134   91B0   29    07                    AND I, C MFAKE MFIRE MSUZA MSTRT1 MSTRT2
   135   91B2   85    4E                    STA SWFINA              ;CLEAR  SWITCHES NOT PROCESSED  FLAG
   136   91B4   60                          RTS
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ALWELG-ALIENS WELL GAME MAINLIN       ATARI MAC65 VM03.09  00 00 01 PAGE 19
INITIALIZE-SET SKILL LEVEL

     1
     2                                          .SBTTL  BONUS SCORE DETERMINATION
     3                                ;INPUT    ACC BONUS LEVEL INDEX
     4                                ;OUTPUT   TEMP0,1, 2 BONUS POINTS
     5                                ;         ACC,X DESTROYED
     6
     7   91B5   0A                    BONSCO    ASL
     8   91B6   AA                              TAX
     9   91B7   A9   00                         LDA I,0                  ;LSB ALWAYS 0
    10   91B9   85   29                         STA TEMP0
    11   91BB   BD   91C6                       LDA X,BONPTM
    12   91BE   85   2A                         STA TEMP1
    13   91C0   BD   91C7                       LDA X,BONPTH
    14   91C3   85   2B                         STA TEMP2
    15   91C5   60                              RTS
    16   91C6   0000 0060 0160 0320  BONPTM    .WORD 0,60,160,320,540,740,940,1140,1340
         91CE   0540 0740 0940 1140
         91D6   1340
    17   91D8   1520 1700 1880 2080             .WORD 1520,1700,1880,2080,2260,2480,2660,3000,3400
         91E0   2260 2480 2660 3000
         91E8   3400
    18   91EA   3820 4150 4390 4720             .WORD 3820,4150,4390,4720,5310,5810
         91F2   5310 5810
    19   91F6   6240 6560 7660 8980             .WORD 6240,6560,7660,8980
    20          91C7                BONPTH     BONPTM+1
    21   91FE                       LEVEL     ;TABLE OF LEVEL #S -1  FOR RATING DISPLAY
    22   91FE    00   02   04   06             .BYTE 0,2,4,6,8,0A,0C,0E,10,13,21.,17,25.,1B,30.,32.,23,27,2B,46.,48.,51.,55.,59.,62.
         9202    08   0A   0C   0E
         9206    10   13   15   17
         920A    19   1B   1E   20
         920E    23   27   2B   2E
         9212    30   33   37   3B
         9216    3E   40
    23   9218    48   50                       .BYTE 72.,80.
    24   921A                       LEVELE
    25   921A    FF                           .BYTE OFF                        ;END OF TABLE FLAG
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ALWELG-ALIENS WELL GAME MAINLIN       ATARI MAC65 VM03.09  00 00 01 PAGE 20
INITIALIZE - CURSOR

     1                                        .SBTTL INITIALIZE - CURSOR
     2   921B                           INICUR
     3   921B    A9    0E                 LDA I,0E                ;INITIALIZE CURSOR POSITION
     4   921D    8D  0200                 STA CURSL1
     5   9220    A9    F0                 LDA I,0F0
     6   9222    85    51                 STA CURSPO
     7   9224    A9    00                 LDA I,0
     8   9226    8D  0106                 STA CURMOD
     9   9229    A9    0F                 LDA I,0F
    10   922B    8D  0201                 STA CURSL2
    11   922E    A9    10                 LDA I,ILINLIY
    12   9230    8D  0202                 STA CURSY
    13   9233    60                       RTS
    14                                    .SBTTL INITIALIZE - NYMPHS
    15                             ;
    16                             ;INITIALIZE NYMPHS
    17                             ;
    18   9234    AD  015B          INIENE  LDA NWNYMC                    ;INITIALIZE FOR NEW WAVE  NYMPH COUNT + ENEMY LINE HE
    19   9237    8D  03AB                 STA NYMCOU
    20   923A    AD  015A                 LDA NWTELI              ;INITIALIZE ENEMY LINES HIGHT
    21                                    .SBTTL  INIT ENEMY LINES
    22                                                            ;ACC INITIAL HEIGHT
    23   923D    A2    0F                 LDX I,NLINES-1
    24                                    BEGIN
    25   923F    9D  03AC                 STA X,LINEY
    26   9242    CA                       DEX
    27   9243    10    FA                 MIEND
    28   9245    60                       RTS
    29
    30   9246                       ININYM
    31   9246    A9    00                 LDA I,0
    32   9248    A2    3F                 LDX I,NNYMPH-1
    33                                    BEGIN
    34   924A    9D  0243                 STA X,NYMPY
    35   924D    CA                       DEX
    36   924E    10    FA                 MIEND
    37   9250    AE  03AB                 LDX NYMCOU
    38   9253    CA                       DEX
    39                                    BEGIN                   ;ON 8 Y LEVELS
    40   9254    AD  60CA                 LDA RANDOM
    41   9257    29    0F                 AND I,0F
    42   9259    9D  0203                 STA X,NYMPL
    43   925C    8A                       TXA
    44   925D    0A                       ASL
    45   925E    0A                       ASL
    46   925F    0A                       ASL
    47   9260    0A                       ASL
    48   9261    1D  0203                 ORA X,NYMPL
    49   9264    D0    00                 IFEQ
    50   9266    A9    0F                 LDA I,0F
    51   9265    02                       ENDIF
    52   9268    9D  0243                 STA X,NYMPY
    53   926B    CA                       DEX
    54   926C    10    E6                 MIEND
    55   926E    60                       RTS
    56                                    .SBTTL INITIALIZE - INVADERS
    57                             ;
```

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ALWELG-ALIENS WELL GAME MAINLIN       ATARI MAC65 VM03.09  00 00 01 PAGE 20+
INITIALIZE - INVADERS

    58                              ;INITIALIZE INVADERS
    59                              ;
    60   926F   A2    06           INIINV  LDX I,NINVAD-1
    61   9271   A9    00                   LDA I,0
    62                                      BEGIN                   ;LOOP FOR EACH INVADER
    63   9273   9D  02DF                    STA X,INVAY             ;DEACTIVATE
    64   9276   CA                         DEX
    65   9277   10    FA                   MIEND
    66   9279   8D  0108                   STA INMCOU
    67   927C   8D  0109                   STA INCCOU
    68   927F   8D  0145                   STA SPINCO
    69   9282   8D  0142                   STA FLIPCO
    70   9285   8D  0144                   STA TANKCO
    71   9288   8D  0143                   STA PULSCO
    72   928B   8D  0146                   STA FUSECO
    73   928E   60                         RTS
    74                                     .SBTTL INITIALIZE - CHARGES
    75   928F                       INICHA
    76   928F   A9    00                   LDA I,0
    77   9291   A2    0B                   LDX I,NCHARG-1
    78                                      BEGIN                   ;LOOP FOR EACH CHARGE
    79   9293   9D  02D3                    STA X,CHARY             ;DEACTIVATE CHARGE
    80   9296   CA                         DEX
    81   9297   10    FA                   MIEND
    82   9299   8D  0135                   STA CHACOU
    83   929C   85    A6                   STA ESHCOU
    84   929E   60                         RTS
    85                                     .SBTTL  INITIALIZE EXPLOSIONS
    86   929F                       INIEXP
    87   929F   A2    07                   LDX I,NEXPLO-1
    88   92A1   A9    00                   LDA I,0
    89                                      BEGIN
    90   92A3   9D  030A                    STA X,EXPLOY
    91   92A6   CA                         DEX
    92   92A7   10    FA                   MIEND
    93   92A9   8D  0116                   STA EXPCOU
    94   92AC   60                         RTS
    95                                                          ;CLEARS POTS
    96                                                          ;
    97   92AD   A9    00             CLRPOT  LDA I,0
    98   92AF   85    50                   STA TBHD
    99   92B1   60                         RTS
   100   92B2                       SWAPEN
   101   92B2   A2    11                   LDX I,SAVEND-SAVEP-1
   102                                      BEGIN                  ;LOOP FOR EACH BYTE OF PLAYER S SPECIAL PARAMETERS
   103   92B4   BD  03AA                    LDA X,ACTIP            ;SWAP ACTIVE TO SAVE AREAS
   104   92B7   BC  03BC                    LDY X,SAVEP
   105   92BA   9D  03BC                    STA X,SAVEP
   106   92BD   98                         TYA
   107   92BE   9D  03AA                    STA X,ACTIP
   108   92C1   CA                         DEX
   109   92C2   10    F0                   MIEND
   110   92C4   60                         RTS
```

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ALWELG-ALIENS WELL GAME MAINLIN       ATARI MAC65 VM03.09  00 00 01 PAGE 21
INITIALIZE-SET SKILL LEVEL FOR WAVE

     1                                        .SBTTL  INITIALIZE-SET SKILL LEVEL FOR WAVE
     2   92C5                               CONTOUR
     3                                      ;
     4                                      ;PARAMETER TABLES DATA STRUCTURE
     5                                      ;
     6                                      ;       BYTE 1 START WAVE
     7                                      ;       BYTE 2 END WAVE
     8                                      ;       BYTE 0 TYPE OF ENCODING
     9                                      ;       BYTE 3 PARAMETERS
    10                                      ;
    11                                      ;TYPES
    12          0002                        T1 2;   1 BYTE IN PARAMETER FIELD GOES FOR ALL WAVES IN RANGE
    13          0004                        TZ 4;   1 BYTE IN PARAMETER FIELD FOR EACH WAVE IN RANGE
    14          0000                        TE 0;   EOT  RETURN WITH 0
    15          0006                        TZANDF 6; AND CURRENT WAVE WITH F, THE DO TZ
    16          0008                        TA 8; AND BYTE 4 TO BYTE 3 FOR EACH LEVEL
    17          000A                        TB 0A; ADD BYTE 3 TO WINVIN
    18          000C                        TR 0C;ALTERNATE BETWEEN BYTES 3   4
    19   92C5    A5    9F                           LDA CURWAV
    20   92C7    C9    62                           CMP I,98.
    21   92C9    90    00                           IFCS
    22   92CB    AD  60DA                           LDA RAND02
    23   92CE    29    1F                           AND I,1F
    24   92D0    09    40                           ORA I,40
    25   92CA    07                                 ENDIF
    26   92D2    85    2B                           STA TEMP2
    27   92D4    E6    2B                           INC TEMP2
    28   92D6    A2    6F                           LDX I,WTABEND-WTABLE-1
    29   92D8    86    37                           STX INDEX1
    30                                             BEGIN                    ;LOOP FOR EACH TABLE ENTRY
    31   92DA    A6    37                           LDX INDEX1
    32   92DC    BD  9607                           LDA X,WTABLE
    33   92DF    85    3C                           STA INDYHI
    34   92E1    BD  9606                           LDA X,WTABLE-1
    35   92E4    85    3B                           STA INDYLO               ;SET UP POINTER TO BYTE TO BE SET UP
    36   92E6    BD  9605                           LDA X,WTABLE-2
    37   92E9    85    2D                           STA TEMP4
    38   92EB    BD  9604                           LDA X,WTABLE-3
    39   92EE    85    2C                           STA TEMP3                ;SET UP POINTER TO ARRAY OP PARAMETERS
    40   92F0    A9    01                           LDA I,1
    41   92F2    85    38                           STA INDEX2               ;SET UP START RANGE COUNTER
    42   92F4    A0    00                           LDY I,0                  ;SET UP TABLE POINTER
    43                                             BEGIN                    ;LOOP UNTIL CURRENT WAVE IS FOUND
    44   92F6    B1    2C                           LDA NY,TEMP3
    45   92F8    8D  015E                           STA TYPCOD               ;GET TYPE OF RECORD
    46   92FB    F0    1C                           BEQ TEXIT                ;EXIT ON EOT TYPE CODE WITH 0
    47   92FD    A5    2B                           LDA TEMP2
    48   92FF    C8                                 INY
    49   9300    D1    2C                           CMP NY,TEMP3
    50   9302    C8                                 INY
    51   9303    90    00                           IFCS                     ;IS CURRENT WAVE  START WAVE OF RANGE
    52   9305    D1    2C                           CMP NY,TEMP3             ;YES.
    53   9307    D0    00                           IFEQ                     ;  END WAVE OF RANGE
    54   9309    18                                 CLC
    55   9308    01                                 ENDIF
    56   930A    B0    00                           IFCC
    57   930C    C8                                 INY
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ALWELG-ALIENS WELL GAME MAINLIN       ATARI MAC65 VM03.09  00 00 01 PAGE 21+
INITIALIZE-SET SKILL LEVEL FOR WAVE

    58   930D   20  9677                JSR DOTYPE                  ;YES. GET PARAMETER FROM RECORD
    59   9310   4C  9319                JMP TEXIT                   ;EXIT LOOP
    60   930B   07                      ENDIF
    61   9304   0E                      ENDIF
    62   9313   20  9683                JSR DONEXT                  ;DO. UP POINTER TO NEXT RECORD
    63   9316   18                      CLC
    64   9317   90   DD                 CSEND                       ;ALWAYS LOOP
    65   9319                    TEXIT
    66   9319   A0   00                 LDY I,0                     ;GOT PARAMETER
    67   931B   91   3B                 STA NY,INDYLO               ;SAVE IT
    68   931D   A5   37                 LDA INDEX1
    69   931F   38                      SEC
    70   9320   E9   04                 SBC I,4
    71   9322   85   37                 STA INDEX1                  ;UPDATE MASTER TABLE POINTER
    72   9324   C9   FF                 CMP I,0FF
    73   9326   D0   B2                 EQEND
    74                           ;
    75                                  .SBTTL  EASY - MED - HARD OPTIONS
    76                           ;
    77         0001              ZEASY    1
    78         0002              ZHARD    2
    79   9328   AD  016A                LDA OPTIN3
    80   932B   29   03                 AND I,3
    81   932D   C9   01                 CMP I,ZEASY
    82   932F   D0   00                 IFEQ                        ;EASY
    83   9331   CE  011A                DEC WCHAMX                  ;YES. LESS ENEMY SHOTS
    84   9334   AD  0160                LDA WINVIL
    85   9337   49   FF                 EOR I,0FF
    86   9339   4A                      LSR
    87   933A   4A                      LSR
    88   933B   4A                      LSR
    89   933C   6D  0160                ADC WINVIL
    90   933F   8D  0160                STA WINVIL                  ;DECREASE SPEEDS BY 1/8
    91   9342   A5   9F                 LDA CURWAV
    92   9344   C9   11                 CMP I,17.
    93   9346   B0   00                 IFCC
    94   9348   C6   B3                 DEC WTTFRA                  ;DECREASE FLIP RATE AT TOP
    95   9347   02                      ENDIF
    96   934A   B8   50    00           ELSE
         9330   1C
    97   934D   C9   02                 CMP I,ZHARD
    98   934F   D0   00                 IFEQ                        ;HARD
    99   9351   EE  011A                INC WCHAMX                  ;YES. MORE ENEMY SHOTS UP TO 4
   100   9354   AD  011A                LDA WCHAMX
   101   9357   C9   03                 CMP I,3
   102   9359   90   00                 IFCS
   103   935B   A9   03                 LDA I,3
   104   935D   8D  011A                STA WCHAMX
   105   935A   05                      ENDIF
   106   9360   AD  0160                LDA WINVIL                  ;INCREASE SPEED BY 1/8
   107   9363   4A                      LSR
   108   9364   4A                      LSR
   109   9365   4A                      LSR
   110   9366   09   E0                 ORA I,0E0
   111   9368   6D  0160                ADC WINVIL
   112   936B   8D  0160                STA WINVIL
   113   936E   AD  015B                LDA NWNYMC                  ;INCREASE ATTACK BY 1/8
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ALWELG-ALIENS WELL GAME MAINLIN       ATARI MAC65 VM03.09  00 00 01 PAGE 21+
EASY - MED - HARD OPTIONS

   114   9371   4A                          LSR
   115   9372   4A                          LSR
   116   9373   4A                          LSR
   117   9374   6D  015B                    ADC NWNYMC
   118   9377   8D  015B                    STA NWNYMC
   119   937A   AD  016D                    LDA WPULFI
   120   937D   09   40                     ORA I,ZFIRYE
   121   937F   8D  016D                    STA WPULFI              ;PULSARS FIRE
   122   9350   31                          ENDIF
   123   934C   35                          ENDIF
   124   9382   AD  0163                    LDA WINVIL+ZABTRA       ;SPINNER
   125   9385   20  93E0                    JSR TIMES8
   126   9388   8D  0163                    STA WINVIL+ZABTRA       ;SPEED  FRAC
   127   938B   8C  0168                    STY WINVIN+ZABTRA       ;SPEED  INT
   128   938E   8E  0154                    STX ENSIZE+ZABTRA       ;COLLISION RANGE
   129   9391   AD  0120                    LDA WCHARL
   130   9394   20  93E0                    JSR TIMES8              ;ENEMY SHOT
   131   9397   8D  0120                    STA WCHARL
   132   939A   8C  0118                    STY WCHARIN
   133   939D   86   A7                     STX CHACHA              ;CHARGE CHARGE COLLISION RANGE
   134   939F   AD  0160                    LDA WINVIL
   135   93A2   20  93E0                    JSR TIMES8
   136   93A5   8D  0160                    STA WINVIL
   137   93A8   8D  0162                    STA WINVIL+ZABTAN
   138   93AB   8C  0167                    STY WINVIN+ZABTAN
   139   93AE   8C  0165                    STY WINVIN
   140   93B1   8E  0151                    STX ENSIZE+ZABFLI       ;CHARGE INVADER COLLISION RANGE
   141   93B4   8E  0153                    STX ENSIZE+ZABTAN
   142   93B7   8E  0152                    STX ENSIZE+ZABPUL
   143   93BA   AD  0160                    LDA WINVIL
   144   93BD   0A                          ASL
   145   93BE   8D  0164                    STA WFUSIL
   146   93C1   AD  0165                    LDA WINVIN
   147   93C4   2A                          ROL
   148   93C5   8D  0169                    STA WFUSIH              ;FUSE INC 2X INVADER SPEED
   149   93C8   A9   06                     LDA I, PCVELO+3 /2
   150   93CA   8D  0155                    STA ENSIZE+ZABFUS
   151   93CD   A9   A0                     LDA I,0A0
   152   93CF   8D  0161                    STA WINVIL+ZABPUL
   153   93D2   A9   FE                     LDA I,0FE
   154   93D4   8D  0166                    STA WINVIN+ZABPUL
   155   93D7   A9   01                     LDA I,ZCARFL
   156   93D9   8D  014A                    STA WTACAR+1
   157   93DC   8D  0149                    STA WTACAR+0
   158   93DF   60                          RTS
   159                        ;INPUT  ACC SPEED  SIGNED
   160                        ;OUTPUT         ACC LOW BYTE OF SPEED
   161                        ;               Y HI BYTE OF SPEED  SIGN EXT
   162                        ;               X COLLISION RANGE WITH PC
   163                        ;               TEMPO TRASHED
   164   93E0                 TIMES8
   165   93E0   A0   FF                     LDY I,0FF               ;ALL SPEEDS ARE MINUS SO START SIGN
   166   93E2   84   29                     STY TEMPO               ;EXTEND AT ALL-
   167   93E4   0A                          ASL
   168   93E5   26   29                     ROL TEMPO
   169   93E7   0A                          ASL
   170   93E8   26   29                     ROL TEMPO
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ALWELG-ALIENS WELL GAME MAINLIN       ATARI MAC65 VM03.09  00 00 01 PAGE 21+
EASY - MED - HARD OPTIONS

   171   93EA   0A                          ASL
   172   93EB   26   29                     ROL TEMP0              ;X 8
   173   93ED   A4   29                     LDY TEMP0
   174   93EF   48                          PHA                    ;SAVE RESULT
   175   93F0   98                          TYA                    ;COLLISION RANGE AVERAGE OF
   176   93F1   49   FF                     EOR I,0FF              ;ABS VAL OF SPEEDS.
   177   93F3   18                          CLC
   178   93F4   69   0D                     ADC I,PCVELO+1+1+2
   179   93F6   4A                          LSR
   180   93F7   AA                          TAX
   181   93F8   68                          PLA
   182   93F9   60                          RTS
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ALWELG-ALIENS WELL GAME MAINLIN       ATARI MAC65 VM03.09  00 00 01 PAGE 22
SKILL CONTOUR TABLES

     1                                          .SBTTL  SKILL CONTOUR TABLES
     2                                                  ;FRAMES UNTIL INVADER CAN FIRE  28 PER SECOND
     3   93FA                            TCHARFR
     4   93FA   08   01   14   50                .BYTE TA,1,20.,80.,-3
         93FE   FD
     5   93FF   02   15   40   14                .BYTE T1,21.,64.,20.
     6   9403   02   41   63   0A                .BYTE T1,65.,99.,10.
     7   9407   04   01   09   01   TCHAMX       .BYTE TZ,1,9,1,1,1,2,3,2,2,3,3  ;ADD 1
         940B   01   01   02   03
         940F   02   02   03   03
     8   9413   02   0A   40   02                .BYTE T1,10.,64.,2
     9   9417   02   41   63   03                .BYTE T1,65.,99.,3
    10                                                  ;
    11                                                  ;ENEMY SHOT INCREMENT
    12   941B                            TINVIN
    13   941B   08   01   08   D4                .BYTE TA,1,8,-44.,-5
         941F   FB
    14   9420   04   09   10   AF                .BYTE TZ,9,16.,-81.,-84.,-84.,-84.,-88.,-92.,-96.,-96.
         9424   AC   AC   AC   A8
         9428   A4   A0   A0
    15   942B   08   11   19   AF                .BYTE TA,17.,25.,-81.,-3
         942F   FD
    16   9430   08   1A   20   9D                .BYTE TA,26.,32.,-99.,-3
         9434   FD
    17   9435   08   21   27   94                .BYTE TA,33.,39.,-108.,-3
         9439   FD
    18   943A   08   28   30   92                .BYTE TA,40.,48.,-110.,-1
         943E   FF
    19   943F   08   31   40   88                .BYTE TA,49.,64.,-120.,-1
         9443   FF
    20   9444   0C   41   63   60                .BYTE TR,65.,99.,-160.,-191.
         9448   41
    21   9449                            TCHARIN
    22   9449   0A   01   63   C0                .BYTE TB,1,99.,-64.
    23   944D   0A   01   14   00   TSPIIN       .BYTE TB,1,20.,0
    24   9451   0A   15   20   D0                .BYTE TB,21.,32.,-48.
    25   9455   0A   21   30   D8                .BYTE TB,33.,48.,-40.
    26   9459   0A   31   63   D0                .BYTE TB,49.,99.,-48.
    27   945D                            WPULPOT                 ;PULSAR POTENCY HEIGHT
    28   945D   02   01   20   A0                .BYTE T1,1,32.,0A0
    29   9461   02   21   40   A0                .BYTE T1,33.,64.,0A0
    30   9465   02   41   63   C0                .BYTE T1,65.,99.,0C0
    31   9469                            WPULTIM                 ;PULSAR TIMER INCREMENT
    32   9469   02   01   30   04                .BYTE T1,1,48.,4
    33   946D   02   31   40   06                .BYTE T1,49.,64.,6
    34   9471   02   41   63   08                .BYTE T1,65.,99.,8
    35   9475                            WWTAC2
    36   9475   02   01   20   01                .BYTE T1,1,32.,ZCARFL
    37   9479   02   21   28   03                .BYTE T1,33.,40.,ZCARFU
    38   947D   02   29   63   02                .BYTE T1,41.,99.,ZCARPU
    39   9481                            WWTAC3
    40   9481   02   01   30   01                .BYTE T1,1,48.,ZCARFL
    41   9485   02   31   63   03                .BYTE T1,49.,99.,ZCARFU
    42   9489   04   01   04   00   WSPIMI       .BYTE TZ,1,4,0,0,0,1
         948D   00   00   01
    43   9490   02   05   10   02                .BYTE T1,5,16.,2
    44   9494   02   11   13   00                .BYTE T1,17.,19.,0
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ALWELG-ALIENS WELL GAME MAINLIN        ATARI MAC65 VM03.09  00 00 01 PAGE 22+
SKILL CONTOUR TABLES

    45   9498   02   14   20   01            .BYTE T1,20.,32.,1
    46   949C   02   23   27   01            .BYTE T1,35.,39.,1
    47   94A0   02   2C   63   01            .BYTE T1,44.,99.,1
    48   94A4   00                           .BYTE TE
    49   94A5   04   01   06   00   WSPIMX   .BYTE TZ,1,6,0,0,0,2,3,4
         94A9   00   00   02   03
         94AD   04
    50   94AE   02   07   0A   04            .BYTE T1,7,10.,4
    51   94B2   02   0B   10   03            .BYTE T1,11.,16.,3
    52   94B6   02   14   19   02            .BYTE T1,20.,25.,2
    53   94BA   04   1A   20   01            .BYTE TZ,26.,32.,1,2,2,2,1,1,2
         94BE   02   02   02   01
         94C2   01   02
    54   94C4   02   35   27   01            .BYTE T1,35,39.,1
    55   94C8   02   2B   63   01            .BYTE T1,43.,99.,1
    56   94CC   00                           .BYTE TE
    57   94CD   02   01   04   01   WFLIMI   .BYTE T1,1,4,1
    58   94D1   02   05   63   00            .BYTE T1,5,99.,0
    59   94D5   00                           .BYTE TE
    60   94D6   02   01   04   04   WFLIMX   .BYTE T1,1,4,4
    61   94DA   02   05   10   05            .BYTE T1,5,16.,5
    62   94DE   02   11   13   03            .BYTE T1,17.,19.,3
    63   94E2   02   14   19   04            .BYTE T1,20.,25.,4
    64   94E6   02   1A   63   05            .BYTE T1,26.,99.,5
    65   94EA   00                           .BYTE TE
    66   94EB   04   01   04   00   WTANMI   .BYTE TZ,1,4,0,0,1,0
         94EF   00   01   00
    67   94F2   02   05   10   01            .BYTE T1,5,16.,1
    68   94F6   02   11   20   01            .BYTE T1,17.,32.,1
    69   94FA   02   21   27   01            .BYTE T1,33.,39.,1
    70   94FE   02   28   63   01            .BYTE T1,40.,99.,1
    71   9502   00                           .BYTE TE
    72   9503   04   01   05   00   WTANMX   .BYTE TZ,1,5,0,0,1,0,1
         9507   00   01   00   01
    73   950B   02   06   10   02            .BYTE T1,6,16.,2
    74   950F   02   11   1A   01            .BYTE T1,17.,26.,1
    75   9513   02   1B   20   01            .BYTE T1,27.,32.,1
    76   9517   02   21   2C   02            .BYTE T1,33.,44.,2
    77   951B   02   2D   63   03            .BYTE T1,45.,99.,3
    78   951F   00                           .BYTE TE
    79   9520                      WPULMI
    80   9520   02   11   20   02            .BYTE T1,17.,32.,2
    81   9524   02   21   63   01            .BYTE T1,33.,99.,1
    82   9528   00                           .BYTE TE
    83   9529                      WPULMX
    84   9529   04   11   20   05            .BYTE TZ,17.,32.,5,3,2,2,2,2,2,2,2,2,2,2,3,4,2
         952D   03   02   02   02
         9531   02   02   02   02
         9535   02   02   02   02
         9539   03   04   02
    85   953C   02   21   63   03            .BYTE T1,33.,99.,3
    86   9540   00                           .BYTE TE
    87   9541                      WFUSMI
    88   9541   02   0B   10   01            .BYTE T1,11.,16.,1
    89   9545   02   16   19   01            .BYTE T1,22.,25.,1
    90   9549   02   1B   63   01            .BYTE T1,27.,99.,1
    91   954D   00                           .BYTE TE
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ALWELG-ALIENS WELL GAME MAINLIN       ATARI MAC65 VM03.09  00 00 01 PAGE 22+
SKILL CONTOUR TABLES

    92   954E                          WFUSMX
    93   954E   02   0B   10   01             .BYTE T1,11.,16.,1
    94   9552   02   16   19   01             .BYTE T1,22.,25.,1
    95   9556   02   1B   20   01             .BYTE T1,27.,32.,1
    96   955A   02   21   27   04             .BYTE T1,33.,39.,4
    97   955E   02   28   63   03             .BYTE T1,40.,99.,3
    98   9562   00                            .BYTE TE
    99        0028                          PN 40.
   100        0014                          PC 20.
   101   9563                               TPUCHDE
   102   9563   04   11   12   28             .BYTE TZ,17.,18.,PN,PC
         9567   14
   103   9568   0C   13   20   14             .BYTE TR,19.,32.,PC,PN
         956C   28
   104   956D   08   21   27   14             .BYTE TA,33.,39.,20.,-1
         9571   FF
   105   9572   0C   28   63   14             .BYTE TR,40.,99.,20.,10.
         9576   0A
   106   9577   00                            .BYTE TE
   107   9578                               TWFUSC
   108   9578   0C   11   20   00             .BYTE TR,17.,32.,0,40
         957C   40
   109   957D   0C   21   30   40             .BYTE TR,33.,48.,40,0C0
         9581   C0
   110   9582   02   31   63   C0             .BYTE T1,49.,99.,0C0
   111   9586   00                            .BYTE TE
   112   9587   02   01   10   DC   TFUFRQ     .BYTE T1,1,16.,220.
   113   958B   02   11   27   C0             .BYTE T1,17.,39.,192.
   114   958F   08   28   40   C0             .BYTE TA,40.,64.,192.,1
         9593   01
   115   9594   02   41   63   E6             .BYTE T1,65.,99.,230.
   116   9598   02   01   63   06   TINVMX    .BYTE T1,1,99.,6
   117   959C   06   01   63   00   TELIHI    .BYTE TZANDF,1,99.,0,0,0,0E0,0D8,0D4,0D0,0C8,0C0,0B8,0B0,0A8,0A0,0A0,0A0,0A8,0A0,9C,9
         95A0   00   00   E0   D8
         95A4   D4   D0   C8   C0
         95A8   B8   B0   A8   A0
         95AC   A0   A0   A8   A0
         95B0   9C   9A   98
   118   95B3   04   01   10   0A   TNYMMX    .BYTE TZ,1,16.,10.,12.,15.,17.,20.,22.,20.,24.,27.,29.,27.,24.,26.,28.,30.,27.
         95B7   0C   0F   11   14
         95BB   16   14   18   1B
         95BF   1D   1B   18   1A
         95C3   1C   1E   1B
   119   95C6   08   11   1A   14             .BYTE TA,17.,26.,20.,1
         95CA   01
   120   95CB   02   1B   27   1B             .BYTE T1,27.,39.,27.
   121   95CF   08   28   30   1D             .BYTE TA,40.,48.,29.,1
         95D3   01
   122   95D4   08   31   40   1F             .BYTE TA,49.,64.,31.,1
         95D8   01
   123   95D9   08   41   50   23             .BYTE TA,65.,80.,35.,1
         95DD   01
   124   95DE   08   51   63   2B             .BYTE TA,81.,99.,43.,1
         95E2   01
   125   95E3   02   01   14   02   TWTTFRA       .BYTE T1,1,20.,2
   126   95E7   02   15   20   02             .BYTE T1,21.,32.,2
   127   95EB   02   21   63   03             .BYTE T1,33.,99.,3
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SKILL CONTOUR TABLES

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   128   95EF   02   3C   63   40   TWPULF  .BYTE T1,60.,99.,ZFIRYE
   129   95F3   00                    .BYTE TE
   130                               ;SEQUENCE CIRCLE,SQUARE,CROSS,PEANUT,KEY,TRIANGLE,CLOVER,V,STAIRS,U,FLAT,
   131                               ;       HEART,STAR,WAVES,TOPO,8
   132   95F4   06   01   63         CAMWAV  .BYTE TZANDF,1,99.
   133   95F7   07                    .BYTE NOJUMP-CAM
   134   95F8   0B                    .BYTE MOVJMP-CAM
   135   95F9   19                    .BYTE SPIRAL-CAM
   136   95FA   24                    .BYTE SPIRCH-CAM
   137   95FB   53                    .BYTE COWJM2-CAM
   138   95FC   0B                    .BYTE MOVJMP-CAM
   139   95FD   24                    .BYTE SPIRCH-CAM
   140   95FE   19                    .BYTE SPIRAL-CAM
   141   95FF   53                    .BYTE COWJM2-CAM
   142   9600   87                    .BYTE AVOIDR-CAM
   143   9601   24                    .BYTE SPIRCH-CAM
   144   9602   19                    .BYTE SPIRAL-CAM
   145   9603   53                    .BYTE COWJM2-CAM
   146   9604   07                    .BYTE NOJUMP-CAM
   147   9605   87                    .BYTE AVOIDR-CAM
   148   9606   24                    .BYTE SPIRCH-CAM
   149   9607                         WTABLE
   150   9607  95EF  016D              .WORD TWPULF,WPULFI
   151   960B  95E3  00B3              .WORD TWTTFRA,WTTFRA
   152   960F  93FA  0119              .WORD TCHARFR,WCHARFR          ;INVADER S FIRE TIMER  FRAMES
   153   9613  9407  011A              .WORD TCHAMX,WCHAMX            ;MAX # ENEMY SHOTS -1
   154   9617  94CD  0129              .WORD WFLIMI,WFLMIN            ;MIN # FLIPPERS
   155   961B  94D6  012E              .WORD WFLIMX,WFLMAX            ;MAX
   156   961F  9520  012A              .WORD WPULMI,WPUMIN
   157   9623  9529  012F              .WORD WPULMX,WPUMAX
   158   9627  94EB  012B              .WORD WTANMI,WTAMIN
   159   962B  9503  0130              .WORD WTANMX,WTAMAX
   160   962F  9489  012C              .WORD WSPIMI,WSPMIN
   161   9633  94A5  0131              .WORD WSPIMX,WSPMAX
   162   9637  9541  012D              .WORD WFUSMI,WFUMIN
   163   963B  954E  0132              .WORD WFUSMX,WFUMAX
   164   963F  945D  0157              .WORD WPULPOT,PULPOT
   165   9643  9469  0147              .WORD WPULTIM,PULTIM
   166   9647  9475  014B              .WORD WWTAC2,WTACAR+2
   167   964B  9481  014C              .WORD WWTAC3,WTACAR+3
   168   964F  9598  011C              .WORD TINVMX,WINVMX
   169   9653  95B3  015B              .WORD TNYMMX,NWNYMC
   170   9657  959C  015A              .WORD TELIHI,NWTELI
   171   965B  9563  00B2              .WORD TPUCHDE,PUCHDE    ;PULSAR CHASE DELAY
   172   965F  95F4  015D              .WORD CAMWAV,WFLICAM            ;FLIPPER CAM
   173   9663  944D  0163              .WORD TSPIIN,WINVIL+ZABTRA
   174   9667  9449  0120              .WORD TCHARIN,WCHARL
   175   966B  941B  0160              .WORD TINVIN,WINVIL
   176   966F  9578  0159              .WORD TWFUSC,WFUSCH
   177   9673  9587  015F              .WORD TFUFRQ,WFUFRQ
   178   9677                        WTABEND
```

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ALWELG-ALIENS WELL GAME MAINLIN       ATARI MAC65 VM03.09  00 00 01 PAGE 23
PARAMETER TYPE CODE EXTRACTION VECTORS

     1                                        .SBTTL  PARAMETER TYPE CODE EXTRACTION VECTORS
     2                                ;INPUT Y POINTER TO 1ST PARAMETER IN RECORD
     3                                ;       TYPCOD RECORD TYPE
     4   9677                         DOTYPE
     5   9677    AE  015E                     LDX TYPCOD
     6   967A    BD  9690                     LDA X,SPARAD+1
     7   967D    48                           PHA
     8   967E    BD  968F                     LDA X,SPARAD
     9   9681    48                           PHA
    10   9682    60                           RTS
    11                                ;INPUT Y PTS. TO END RANGE FIELD
    12   9683                         DONEXT
    13   9683    AE  015E                     LDX TYPCOD
    14   9686    BD  969E                     LDA X,NPARAD+1
    15   9689    48                           PHA
    16   968A    BD  969D                     LDA X,NPARAD
    17   968D    48                           PHA
    18   968E    60                           RTS
    19   968F  0000                   SPARAD  .WORD 0                          ;EOT
    20   9691  96C3                           .WORD SAMALL-1                  ;ONE BYTE FOR ALL
    21   9693  96B6                           .WORD ITMIZE-1                  ;ITEMIZED BYTE/LEVEL
    22   9695  96AA                           .WORD DOTZAN-1
    23   9697  96E1                           .WORD DOTA-1
    24   9699  96DA                           .WORD DOTB-1
    25   969B  96FF                           .WORD DOTR-1
    26   969D  0000                   NPARAD  .WORD 0
    27   969F  96C7                           .WORD ONEBYT-1
    28   96A1  96CA                           .WORD NITMIZ-1
    29   96A3  96CA                           .WORD NITMIZ-1
    30   96A5  96C6                           .WORD TWOBYT-1
    31   96A7  96C7                           .WORD ONEBYT-1
    32   96A9  96C6                           .WORD TWOBYT-1
    33   96AB    A5  2B              DOTZAN  LDA TEMP2
    34   96AD    38                          SEC
    35   96AE    E9  01                      SBC I,1
    36   96B0    29  0F                      AND I,0F
    37   96B2    18                          CLC
    38   96B3    69  01                      ADC I,1
    39   96B5    10  02                      BPL ITMIZ2
    40   96B7    A5  2B              ITMIZE  LDA TEMP2
    41   96B9    84  29              ITMIZ2  STY TEMP0                        ;ITEMIZED BYTE FOR EACH WAVE
    42   96BB    88                          DEY
    43   96BC    88                          DEY
    44   96BD    38                          SEC
    45   96BE    F1  2C                      SBC NY,TEMP3
    46   96C0    18                          CLC
    47   96C1    65  29                      ADC TEMP0
    48   96C3    A8                          TAY
    49   96C4                         SAMALL                                  ;SAME BYTE FOR EACH WAVE IN RANGE
    50   96C4    B1  2C                      LDA NY,TEMP3
    51   96C6    60                          RTS
    52   96C7    C8                  TWOBYT  INY
    53   96C8    C8                  ONEBYT  INY
    54   96C9    C8                          INY
    55   96CA    60                          RTS
    56   96CB    B1  2C              NITMIZ  LDA NY,TEMP3
    57   96CD    88                          DEY
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ALWELG-ALIENS WELL GAME MAINLIN       ATARI MAC65 VM03.09  00 00 01 PAGE 23+
PARAMETER TYPE CODE EXTRACTION VECTORS

    58   96CE   38                              SEC
    59   96CF   F1   2C                         SBC NY,TEMP3
    60   96D1   85   29                         STA TEMP0
    61   96D3   98                              TYA
    62   96D4   38                              SEC
    63   96D5   65   29                         ADC TEMP0
    64   96D7   A8                              TAY
    65   96D8   C8                              INY
    66   96D9   C8                              INY
    67   96DA   60                              RTS
    68                          ;
    69                          ;
    70                          ;
    71   96DB   B1   2C         DOTB    LDA NY,TEMP3
    72   96DD   18                              CLC
    73   96DE   6D  0160                        ADC WINVIL
    74   96E1   60                              RTS
    75                          ;
    76   96E2                   DOTA
    77   96E2   20  96F4                        JSR RANGER
    78   96E5   AA                              TAX
    79   96E6   B1   2C                         LDA NY,TEMP3
    80   96E8   C8                              INY
    81   96E9   E0   00                         CPX I,0
    82   96EB   F0   00                         IFNE
    83                                         BEGIN
    84   96ED   18                              CLC
    85   96EE   71   2C                         ADC NY,TEMP3
    86   96F0   CA                              DEX
    87   96F1   D0   FA                         EQEND
    88   96EC   06                              ENDIF
    89   96F3   60                              RTS
    90   96F4   A5   2B         RANGER  LDA TEMP2       ;CALCULATE # OF LEVELS BETWEEN
    91   96F6   84   29                         STY TEMP0       ;START AND END INCLUSIVE  ACC .
    92   96F8   88                              DEY             ;PRESERVE Y
    93   96F9   88                              DEY
    94   96FA   38                              SEC
    95   96FB   F1   2C                         SBC NY,TEMP3
    96   96FD   C8                              INY
    97   96FE   C8                              INY
    98   96FF   60                              RTS
    99                          ;
   100   9700                   DOTR                    ;ALTERNATE BETWEEN 2 VALUES
   101   9700   20  96F4                        JSR RANGER
   102   9703   29   01                         AND I,1
   103   9705   F0   00                         IFNE
   104   9707   C8                              INY
   105   9706   01                              ENDIF
   106   9708   B1   2C                         LDA NY,TEMP3
   107   970A   60                              RTS
```

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ALWELG-ALIENS WELL GAME MAINLIN       ATARI MAC65 VM03.09  00 00 01 PAGE 24
PLAY - MAINLINE  TOP OF WELL

     1                                          .SBTTL PLAY - MAINLINE  TOP OF WELL
     2   970B                             PLAY
     3   970B    20  9749                       JSR MOVCUR              ;MOVE CURSOR AROUND
     4   970E    20  A23F                       JSR FIREPC              ;FIRE PLAYER CHARGE
     5   9711    20  A83A                       JSR PROSUZ              ;PROCESS SUPER ZAP
     6   9714    20  98A2                       JSR MOVNYM              ;MOVE NYMPHS
     7   9717    20  9B1E                       JSR MOVINV              ;MOVE INVADERS
     8   971A    20  A18F                       JSR MOVCHA              ;MOVE CHARGES
     9   971D    20  A2A6                       JSR FIREIC              ;FIRE INVADER CHARGE
    10   9720    20  A454                       JSR COLLIS              ;COLLISION DETECT
    11   9723    20  A416                       JSR PROEXP              ;EXPLOSIONS
    12   9726    4C  A504                       JMP ANALYZ              ;ANALYZE PLAYER STATUS
```

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ALWELG-ALIENS WELL GAME MAINLIN       ATARI MAC65 VM03.09  00 00 01 PAGE 25
PLAY - MAINLINE  DROP MODE

     1                                        .SBTTL  PLAY - MAINLINE  DROP MODE
     2
     3                                                              ;PLAYER IS SHOOTING THRU TUBE TO GET TO NEXT
     4                                                              ;
     5   9729                           PLDROP
     6   9729    AD  0123                       LDA ELICNT          ;CLEAR WARNING REQUEST
     7   972C    29    7F                       AND I,7F
     8   972E    8D  0123                       STA ELICNT
     9   9731    20  9749                       JSR MOVCUR          ;MOVE CURSOR AROUND
    10   9734    20  97F8                       JSR MOVCUD          ;MOVE CURSOR DOWN
    11   9737    20  A416                       JSR PROEXP          ;EXPLOSIONS
    12   973A    20  A23F                       JSR FIREPC          ;FIRE PLAYER CHARGES
    13   973D    20  A18F                       JSR MOVCHA          ;MOVE CHARGES
    14   9740    AD  0201                       LDA CURSL2
    15   9743    10    00                       IFMI                ;CURSOR DEAD
    16   9745    20  A504                       JSR ANALYZ          ;YES. ANALYZE CURSOR STATUS
    17   9744    03                             ENDIF
    18   9748    60                             RTS
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ALWELG-ALIENS WELL GAME MAINLIN       ATARI MAC65 VM03.09  00 00 01 PAGE 26
PLAY - MOVE CURSOR  PRELIMINARY CHECK

     1                                          .SBTTL PLAY - MOVE CURSOR  PRELIMINARY CHECK
     2   9749                             MOVCUR
     3   9749    AD  0201                       LDA CURSL2
     4   974C    10    00                       IFMI                    ;--;CURSOR DEAD
     5   974E    60                             RTS                     ;YES. DON T MOVE IT
     6   974D    01                             ENDIF
     7                                          .SBTTL PLAY - MOVE CURSOR  MAINLINE
     8   974F    A2    00                       LDX I,0
     9   9751    A5    05                       LDA QSTATUS
    10   9753    30    00                       IFPL                    ;ATTRACT
    11   9755    20  97C5                       JSR AUTOCU              ;YES, AUTO MOVEMENT
    12   9758    B8    50    00                 ELSE
         9754    06
    13   975B    A5    50                       LDA TBHD                ;NO. MANUAL
    14   975D    10    00                       IFMI                    ;MAXIMIZE KNOB READING
    15   975F    C9    E1                       CMP I,-1F
    16   9761    B0    00                       IFCC
    17   9763    A9    E1                       LDA I,-1F
    18   9762    02                             ENDIF
    19   9765    B8    50    00                 ELSE
         975E    09
    20   9768    C9    1F                       CMP I,1F
    21   976A    90    00                       IFCS
    22   976C    A9    1F                       LDA I,1F
    23   976B    02                             ENDIF
    24   9767    06                             ENDIF
    25   976E    86    50                       STX TBHD
    26   975A    15                             ENDIF
    27   9770    85    2B                       STA TEMP2
    28   9772    49    FF                       EOR I,0FF               ;INVERT READING
    29   9774    38                             SEC
    30   9775    65    51                       ADC CURSPO              ;UPDATE CURSOR MASTER POSITION
    31   9777    85    2C                       STA TEMP3               ;NEW CURSPO
    32   9779    AE  0111                       LDX WELTYP
    33   977C    F0    00                       IFNE                    ;PLANAR SURFACE
    34   977E    C9    F0                       CMP I,0F0               ;YES.
    35   9780    90    00                       IFCS                    ;SPLIT CURSOR  WRAP
    36   9782    A9    EF                       LDA I,0EF               ;YES. MOVE AWAY FROM EDGE
    37   9784    85    2C                       STA TEMP3
    38   9781    04                             ENDIF
    39   9786    45    2B                       EOR TEMP2
    40   9788    10    00                       IFMI
    41   978A    A5    2C                       LDA TEMP3
    42   978C    45    51                       EOR CURSPO
    43   978E    10    00                       IFMI                    ;WRAPPED AROUND
    44   9790    A5    51                       LDA CURSPO              ;YES.
    45   9792    30    00                       IFPL                    ;OLD POSITION LOW OR HI
    46   9794    A9    00                       LDA I,00                ;LOW END
    47
    48   9796    B8    50    00                 ELSE
         9793    05
    49   9799    A9    EF                       LDA I,0EF               ;HIGH END
    50
    51   9798    02                             ENDIF
    52   979B    85    2C                       STA TEMP3               ;NEW CURSPO
    53   978F    0D                             ENDIF
    54   9789    13                             ENDIF
```

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ALWELG-ALIENS WELL GAME MAINLIN       ATARI MAC65 VM03.09  00 00 01 PAGE 26+
PLAY - MOVE CURSOR  MAINLINE

    55   977D   1F                              ENDIF
    56   979D   A5   2C                         LDA TEMP3              ;NEW CURSPO
    57   979F   4A                              LSR
    58   97A0   4A                              LSR
    59   97A1   4A                              LSR
    60   97A2   4A                              LSR
    61   97A3   85   2A                         STA TEMP1              ;NEW CURSL1
    62   97A5   18                              CLC
    63   97A6   69   01                         ADC I,1                ;CCW ADJACENT LINE # FOR CURSOR IS 1 AWAY
    64   97A8   29   0F                         AND I,0F
    65   97AA   85   2B                         STA TEMP2              ;NEW CURSL2
    66   97AC   A5   2A                         LDA TEMP1
    67   97AE   CD   0200                       CMP CURSL1
    68   97B1   F0   00                         IFNE                   ;NEW POSITION
    69   97B3   20   0000G                      JSR SBOING             ;YES. MAKE SOUND
    70   97B2   03                              ENDIF
    71   97B6   A5   2A                         LDA TEMP1              ;UPDATE CURSOR POSITION
    72   97B8   8D   0200                       STA CURSL1
    73   97BB   A5   2B                         LDA TEMP2
    74   97BD   8D   0201                       STA CURSL2
    75   97C0   A5   2C                         LDA TEMP3
    76   97C2   85   51                         STA CURSPO
    77   97C4   60                              RTS
    78                                         .SBTTL  PLAY-AUTO MOVE OF CURSOR
    79   97C5   A9   FF              AUTOCU     LDA I,-1
    80   97C7   85   29                         STA TEMP0
    81   97C9   85   2A                         STA TEMP1
    82   97CB   AE   011C                       LDX WINVMX
    83                                         BEGIN                  ;LOOP FOR ALL INVADERS
    84   97CE   BD   02DF                       LDA X,INVAY
    85   97D1   F0   00                         IFNE                   ;ALIVE
    86   97D3   C5   29                         CMP TEMP0              ;YES.
    87   97D5   B0   00                         IFCC                   ;HIGHEST
    88   97D7   85   29                         STA TEMP0              ;YES.
    89   97D9   86   2A                         STX TEMP1
    90   97D6   04                              ENDIF
    91   97D2   08                              ENDIF
    92   97DB   CA                              DEX
    93   97DC   10   F0                         MIEND
    94   97DE   A6   2A                         LDX TEMP1
    95   97E0   30   00                         IFPL
    96   97E2   BD   02B9                       LDA X,INVAL1
    97   97E5   AC   0200                       LDY CURSL1
    98   97E8   20   A7A6                      JSR POLDEL             ;HOW FAR   BEST DIRECTION
    99   97EB   A8                              TAY
   100   97EC   F0   00                         IFNE                   ;ALREADY THERE
   101   97EE   30   00                         IFPL                   ;YES. WHICH WAY
   102   97F0   A9   F7                         LDA I,-9
   103   97F2   B8   50     00                  ELSE
         97EF   05
   104   97F5   A9   09                         LDA I,9
   105   97F4   02                              ENDIF
   106   97ED   09                              ENDIF
   107   97E1   15                              ENDIF
   108   97F7   60                              RTS
```

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ALWELG-ALIENS WELL GAME MAINLIN       ATARI MAC65 VM03.09  00 00 01 PAGE 27
PLAY-AUTO MOVE OF CURSOR

     1
     2                                        .SBTTL  PLAY-MOVE CURSOR DOWN
     3   97F8   AD  0201              MOVCUD  LDA CURSL2
     4   97FB   10    00                      IFMI
     5   97FD   60                            RTS
     6   97FC   01                            ENDIF
     7   97FE   AD  0106                      LDA CURMOD
     8   9801   30    00                      IFPL                    ;CURSOR DROPPING
     9   9803   60                            RTS                     ;NO
    10   9802   01                            ENDIF
    11                                                                 ;YES.
    12   9804   AD  0202                      LDA CURSY
    13   9807   C9    10                      CMP I,ILINLI
    14   9809   D0    00                      IFEQ                    ;STILL AT TOP
    15   980B   20  0000G                     JSR SOUTS2              ;YES. START RUMBLE
    16   980A   03                            ENDIF
    17   980E   AD  0107                      LDA CURSYL              ;UPDATE CURSOR DEPTH
    18   9811   18                            CLC
    19   9812   6D  0104                      ADC CURSVL
    20   9815   8D  0107                      STA CURSYL
    21   9818   AD  0202                      LDA CURSY
    22   981B   6D  0105                      ADC CURSVH
    23   981E   8D  0202                      STA CURSY
    24   9821   B0    00                      IFCC
    25   9823   C9    F0                      CMP I,ILINDDY
    26   9822   02                            ENDIF
    27   9825   90    00                      IFCS                    ;IS CURSOR PAST BOTTOM
    28   9827   A9    0E                      LDA I,CENDWA            ;YES. INITIALIZE SPACE MODE
    29   9829   85    00                      STA QSTATE
    30   982B   20  0000G                     JSR SOUTS3              ;START SPACE SOUND
    31   982E   A9    FF                      LDA I,0FF
    32   9830   8D  0202                      STA CURSY
    33   9826   0C                            ENDIF
    34   9833   AD  0202                      LDA CURSY
    35   9836   C9    50                      CMP I,50
    36   9838   90    00                      IFCS
    37   983A   AD  0115                      LDA PLAGRO
    38   983D   D0    00                      IFEQ
    39   983F   20  A7BD                      JSR INSTAR
    40   983E   03                            ENDIF
    41   9839   08                            ENDIF
    42   9842   A5    5C                      LDA EYLL                ;UPDATE EYE POSITION
    43   9844   18                            CLC
    44   9845   6D  0104                      ADC CURSVL
    45   9848   85    5C                      STA EYLL
    46   984A   A5    5F                      LDA EYL
    47   984C   6D  0105                      ADC CURSVH
    48   984F   90    00                      IFCS
    49   9851   E6    5B                      INC EYH
    50   9850   02                            ENDIF
    51   9853   C5    5F                      CMP EYL
    52   9855   F0    00                      IFNE                    ;EYE POSITION CHANGE
    53   9857   EE  0114                      INC ROTDIS              ;YES. REQUEST NEW WELL DISPLAY
    54   9856   03                            ENDIF
    55   985A   85    5F                      STA EYL
    56                                                                 ;CONSTANT ACCELERATION FOR VELOCITY
    57   985C   A5    9F                      LDA CURWAV              ;WAVE ACCELERATION +
```

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ALWELG-ALIENS WELL GAME MAINLIN       ATARI MAC65 VM03.09  00 00 01 PAGE 27+
PLAY-MOVE CURSOR DOWN

    58   985E   0A                          ASL
    59   985F   0A                          ASL
    60   9860   C9    30                    CMP I,30
    61   9862   90    00                    IFCS                    ;MAX OUT
    62   9864   A9    30                    LDA I,30
    63   9863   02                          ENDIF
    64   9866   18                          CLC
    65   9867   69    20                    ADC I,20                ;BASE ACCELERATION
    66   9869   18                          CLC
    67   986A   6D  0104                    ADC CURSVL
    68   986D   8D  0104                    STA CURSVL
    69   9870   AD  0105                    LDA CURSVH
    70   9873   69    00                    ADC I,0
    71   9875   8D  0105                    STA CURSVH
    72                                      ;
    73                                      ;CHECK FOR COLLISION WITH ENEMY LINES
    74                                      ;
    75   9878   AD  0202                    LDA CURSY
    76   987B   C9    F0                    CMP I,ILINDDY
    77   987D   B0    00                    IFCC
    78   987F   A2    0F                    LDX I,NLINES-1          ;CURSOR STILL ON LINES
    79                                      BEGIN                   ;LOOP FOR EACH LINE
    80   9881   BD  03AC                    LDA X,LINEY
    81   9884   F0    00                    IFNE                    ;ACTIVE LINE
    82   9886   EC  0200                    CPX CURSL1              ;YES.
    83   9889   D0    00                    IFEQ                    ;SAME LINE AS CURSOR
    84   988B   CD  0202                    CMP CURSY               ;YES.
    85   988E   B0    00                    IFCC                    ;CURSOR AT ENEMY LINE POSITION
    86   9890   20  0000G                   JSR PULSTO              ;TURN OFF THRUST SOUND
    87   9893   20  A347                    JSR INPPSQ              ;YES. START BANG. KILL CURSOR
    88   9896   A9    00                    LDA I,0                 ;TURN OFF STARFIELD, EXIT LOOP
    89   9898   8D  0115                    STA PLAGRO
    90   989B   20  928F                    JSR INICHA              ;CLEAR OUT ALL CHARGES
    91   988F   0E                          ENDIF
    92   988A   13                          ENDIF
    93   9885   18                          ENDIF
    94   989E   CA                          DEX
    95   989F   10    E0                    MIEND
    96   987E   22                          ENDIF
    97   98A1   60                          RTS
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ALWELG-ALIENS WELL GAME MAINLIN       ATARI MAC65 VM03.09  00 00 01 PAGE 28
PLAY - MOVE NYMPHS

     1                                          .SBTTL PLAY - MOVE NYMPHS
     2   98A2                             MOVNYM
     3   98A2    A0    00                       LDY I,0
     4   98A4    8C  014F                       STY NEOFLI              ;CLEAR NEW OFF LIMITS FLAGS
     5   98A7    AD  0108                       LDA INMCOU
     6   98AA    18                             CLC
     7   98AB    6D  0109                       ADC INCCOU
     8   98AE    CD  011C                       CMP WINVMX
     9   98B1    90    00                       IFCS                    ;INVADER SLOTS BOOKED ALREADY
    10   98B3    F0    00                       IFNE
    11   98B5    A0    FF                       LDY I,-1                ;YES.
    12   98B4    02                             ENDIF
    13   98B2    04                             ENDIF
    14   98B7    AD  0125                       LDA SUZTIM              ;AVOID KAMIKAZE
    15   98BA    F0    00                       IFNE
    16   98BC    A0    FF                       LDY I,-1
    17   98BB    02                             ENDIF
    18   98BE    84    2F                       STY TEMPY               ;ALLOW/DISALLOW UP NYMPH MOVEMENT
    19   98C0    A2    3F                       LDX I,NNYMPH-1
    20                                         BEGIN                   ;LOOP FOR EACH NYMPH
    21   98C2    BD  0243                       LDA X,NYMPY
    22   98C5    F0    00                       IFNE                    ;ACTIVE
    23   98C7    24    2F                       BIT TEMPY               ;YES.
    24   98C9    30    00                       IFPL                    ;UP MOVEMENT OK
    25   98CB    38                             SEC                     ;YES.
    26   98CC    E9    01                       SBC I,1
    27   98CE    9D  0243                       STA X,NYMPY
    28   98D1    D0    00                       IFEQ                    ;UPDATE NYMPH POSITION. CONVERT
    29   98D3    20  9923                       JSR CONYMP              ;YES. MAKE IT AN INVADER
    30   98D6    B8    50    00                 ELSE
         98D2    06
    31   98D9    C9    3F                       CMP I,3F                ;NO.
    32   98DB    D0    00                       IFEQ                    ;JUST ENTERING ALONE ZONE
    33   98DD    BC  0203                       LDY X,NYMPL             ;YES.
    34   98E0    AD  014F                       LDA NEOFLI
    35   98E3    0D  014F                       ORA NEOFLI
    36   98E6    39  0000G                     AND Y,D70MSK
    37   98E9    F0    00                       IFNE                    ;ALREADY OCCUPIED
    38   98EB    FE  0243                       INC X,NYMPY             ;YES. BACK OFF
    39   98EA    03                             ENDIF
    40   98DC    11                             ENDIF
    41   98D8    15                             ENDIF
    42   98CA    23                             ENDIF
    43   98EE    BD  0243                       LDA X,NYMPY
    44   98F1    C9    40                       CMP I,40
    45   98F3    90    00                       IFCS                    ;DON T ROTATE PAST A CERTAIN PT.
    46   98F5    A5    03                       LDA QFRAME              ;OK TO ROTATE
    47   98F7    29    01                       AND I,1
    48   98F9    D0    00                       IFEQ                    ;TIME TO ROTATE
    49   98FB    BD  0203                       LDA X,NYMPL             ;YES. ROTATE NYMPH
    50   98FE    18                             CLC
    51   98FF    69    01                       ADC I,1
    52   9901    29    0F                       AND I,0F
    53   9903    9D  0203                       STA X,NYMPL
    54   98FA    0B                             ENDIF
    55   9906    B8    50    00                 ELSE
         98F4    14
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ALWELG-ALIENS WELL GAME MAINLIN       ATARI MAC65 VM03.09  00 00 01 PAGE 28+
PLAY - MOVE NYMPHS

    56   9909   C9    20              CMP I,20              ;NO ROTATE.
    57   990B   90    00              IFCS                  ;IN ALONE ZONE
    58   990D   BC  0203              LDY X,NYMPL           ;YES.
    59   9910   B9  0000G             LDA Y,D70MSK          ;MARK LINE OFF LIMITS
    60   9913   0D  014F              ORA NEOFLI
    61   9916   8D  014F              STA NEOFLI
    62   990C   0C                    ENDIF
    63   9908   10                    ENDIF
    64   98C6   52                    ENDIF
    65   9919   CA                    DEX
    66   991A   10    A6              MIEND
    67   991C   AD  014F              LDA NEOFLI
    68   991F   8D  0150              STA OLOFLI            ;NEW TO OLD OFF LIMITS
    69   9922   60                    RTS
```

PLAY - MOVE NYMPHS

```
      1
      2                                 .SBTTL  PLAY - CONVERT NYMPH TO INVADER
      3
      4   9923                        CONYMP
      5   9923   A9   F0                      LDA I,ILINDDY           ;START AT BOTTOM
      6   9925   85   29                      STA TEMP0
      7   9927   BD   0203                    LDA X,NYMPL             ;START LINE
      8   992A   85   2A                      STA TEMP1
      9   992C   86   35                      STX SAVEX
     10   992E   20   99A5                    JSR NYMCHA              ;NYMPH CHARACTERISTICS
     11   9931   A6   35                      LDX SAVEX
     12   9933   A5   29                      LDA TEMP0
     13   9935   F0   00                      IFNE
     14   9937   20   994D                    JSR ACTINV              ;ACTIVATE AN INVADER
     15   993A   F0   00                      IFNE                    ;SLOT FOUND
     16   993C   CE   03AB                    DEC NYMCOU              ;YES. DECREMENT NYMPH COUNT
     17   993F   A9   00                      LDA I,0
     18   9941   9D   0243                    STA X,NYMPY             ;DEACTIVATE INVADER
     19   9944   60                          RTS
     20   993B   09                          ENDIF
     21   9936   0E                          ENDIF
     22   9945   A9   FF                      LDA I,0FF               ;NO. STOP UP MOVEMENT FLAG
     23   9947   85   2F                      STA TEMPY
     24   9949   FE   0243                    INC X,NYMPY             ;MOVE NYMPH BACK TO OLD POSITION
     25   994C   60                          RTS
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ALWELG-ALIENS WELL GAME MAINLIN       ATARI MAC65 VM03.09  00 00 01 PAGE 30
PLAY - ACTIVATE INVADER

     1                                        .SBTTL  PLAY - ACTIVATE INVADER
     2                                ;INPUT TEMP0 Y POSITION AT WHICH TO START INVADER
     3                                ;      TEMP2,3 CHARACTERISTICS OF NEW INVADER
     4                                ;      TEMP1 CW LINE #
     5                                ;      TEMP4 CAM VALUE
     6                                ;
     7                                ;OUTPUT IF A SLOT IS FOUND  INMCOU INCREMENTED
     8                                ;                           INVAC1,2 N  UPDATED WITH CHARACTERISTICS
     9                                ;                           INVAL1      CW LINE #
    10                                ;                           INVAL2      CCW LINE #
    11                                ;                           INVAY       Y POSITION
    12                                ;                           INVCAM      CAM PC
    13                                ;                           INVACT      0
    14                                ;                           STATUS FLAGS 0
    15                                ;       IF NO SLOT IS FOUND STATUS FLAGS 0
    16                                ;       X,Y PRESERVED
    17                                ;               SAVEY DESTROYED
    18  994D                          ACTINV
    19  994D  84    36                        STY SAVEY
    20  994F  AC  011C                        LDY WINVMX
    21                                        BEGIN                   ;LOOP THRU INVADERS UNTIL SLOT IS FOUND
    22  9952  B9  02DF                        LDA Y,INVAY
    23  9955  D0    00                        IFEQ                    ;SLOT
    24  9957  A5    29                        LDA TEMP0               ;YES.
    25  9959  99  02DF                        STA Y,INVAY             ;Y
    26  995C  A5    2A                        LDA TEMP1
    27  995E  C9    0F                        CMP I,0F
    28  9960  D0    00                        IFEQ                    ;POTENTIAL PLANAR SPLIT
    29  9962  2C  0111                        BIT WELTYP              ;YES
    30  9965  10    00                        IFMI                    ;PLANAR
    31  9967  AD  60CA                        LDA RANDOM                      ;YES. NO SPLITS
    32  996A  29    0E                        AND I,0E
    33  9966  05                              ENDIF
    34  9961  0A                              ENDIF
    35  996C  99  02B9                        STA Y,INVAL1            ;CW LINE
    36  996F  18                              CLC
    37  9970  69    01                        ADC I,1
    38  9972  29    0F                        AND I,0F
    39  9974  99  02CC                        STA Y,INVAL2            ;CCW LINE
    40  9977  A9    00                        LDA I,0
    41  9979  99  02A6                        STA Y,INVACT            ;TIMER
    42  997C  A5    2C                        LDA TEMP3
    43  997E  99  028A                        STA Y,INVAC2
    44  9981  A5    2D                        LDA TEMP4
    45  9983  99  0291                        STA Y,INVCAM
    46  9986  EE  0108                        INC INMCOU              ;INVADER COUNT
    47  9989  A5    2B                        LDA TEMP2
    48  998B  99  0283                        STA Y,INVAC1            ;CHARACTERISTICS
    49  998E  A4    36                        LDY SAVEY
    50  9990  29    07                        AND I,INVABI
    51  9992  86    36                        STX SAVEY
    52  9994  AA                              TAX
    53  9995  FE  0142                        INC X,FLIPCO            ;UPDATE INVADER TYPE COUNTER
    54  9998  A6    36                        LDX SAVEY               ;RESTORE X
    55  999A  A9    10                        LDA I,10                ;SOT FOUND FLAG
    56  999C  60                              RTS
    57  9956  46                              ENDIF
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ALWELG-ALIENS WELL GAME MAINLIN       ATARI MAC65 VM03.09  00 00 01 PAGE 30+
PLAY - ACTIVATE INVADER

    58   999D   88                          DEY
    59   999E   10   B2                     MIEND
    60   99A0   A4   36                     LDY SAVEY
    61   99A2   A9   00                     LDA I,0                ;SLOT NOT FOUND FLAG
    62   99A4   60                          RTS
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ALWELG-ALIENS WELL GAME MAINLIN       ATARI MAC65 VM03.09  00 00 01 PAGE 31
PLAY - DETERMINE NYMPH TYPE

     1                                          .SBTTL  PLAY - DETERMINE NYMPH TYPE
     2   99A5                             NYMCHA
     3   99A5    A9    00                       LDA I,0
     4   99A7    A2    04                       LDX I,4
     5                                          BEGIN
     6   99A9    9D  013D                       STA X,OPFLIP            ;0 ALL OPENING COUNTERS
     7   99AC    CA                             DEX
     8   99AD    10    FA                       MIEND
     9   99AF    A2    04                       LDX I,4
    10                                          BEGIN                   ;LOOP FOR EACH TYPE-CHECK MAX
    11   99B1    BD  012E                       LDA X,WFLMAX
    12   99B4    38                             SEC
    13   99B5    FD  0142                       SBC X,FLIPCO
    14   99B8    90    00                       IFCS                    ;MAX OF TYPE ALREADY
    15   99BA    9D  013D                       STA X,OPFLIP            ;NO SAVE # OPENINGS
    16   99B9    03                             ENDIF
    17   99BD    CA                             DEX
    18   99BE    10    F1                       MIEND
    19                                          ;
    20                                          ;TAKE AWAY Z OPENINGS OF TYPE FOR EACH TANKER
    21                                          ;
    22   99C0    AC  011C                       LDY WINVMX
    23                                          BEGIN                   ;LOOP FOR EACH INVADER
    24   99C3    B9  02DF                       LDA Y,INVAY
    25   99C6    F0    00                       IFNE                    ;ALIVE
    26   99C8    B9  028A                       LDA Y,INVAC2            ;YES.
    27   99CB    29    03                       AND I,INVCAR            ;CARRIER
    28   99CD    F0    00                       IFNE
    29   99CF    AA                             TAX                     ;YES.
    30   99D0    E0    03                       CPX I,ZCARFU
    31   99D2    D0    00                       IFEQ
    32   99D4    A2    05                       LDX I,ZABFUS+1
    33   99D3    02                             ENDIF
    34   99D6    DE  013C                       DEC X,OPFLIP-1          ;2 LESS OPENINGS OF THAT TYPE
    35   99D9    DE  013C                       DEC X,OPFLIP-1
    36   99CE    0D                             ENDIF
    37   99C7    14                             ENDIF
    38   99DC    88                             DEY
    39   99DD    10    E4                       MIEND
    40   99DF    A2    04                       LDX I,4
    41   99E1    AD  011C                       LDA WINVMX
    42   99E4    18                             CLC
    43   99E5    69    01                       ADC I,1
    44                                          BEGIN                   ;LOOP FOR EACH TYPE-CALC TOTAL # OPENINGS
    45   99E7    38                             SEC
    46   99E8    FD  0142                       SBC X,FLIPCO
    47   99EB    CA                             DEX
    48   99EC    10    F9                       MIEND
    49   99EE    A2    04                       LDX I,4
    50                                          BEGIN                   ;LOOP FOR EACH TYPE
    51   99F0    DD  013D                       CMP X,OPFLIP
    52   99F3    B0    00                       IFCC                    ;IF TOTAL # OPENINGS  TYPE OPENINGS
    53   99F5    9D  013D                       STA X,OPFLIP            ;THEN DECREASE TYPE OPENINGS
    54   99F4    03                             ENDIF
    55   99F8    CA                             DEX
    56   99F9    10    F5                       MIEND
    57   99FB    A2    04                       LDX I,4
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ALWELG-ALIENS WELL GAME MAINLIN       ATARI MAC65 VM03.09  00 00 01 PAGE 31+
PLAY - DETERMINE NYMPH TYPE

    58   99FD   A0    00                LDY I,0
    59                                  BEGIN                ;LOOP FOR EACH TYPE
    60   99FF   BD  013D                LDA X,OPFLIP
    61   9A02   F0    00                IFNE
    62   9A04   C8                      INY                  ;COUNT # TYPES WITH OPENINGS
    63   9A03   01                      ENDIF
    64   9A05   CA                      DEX
    65   9A06   10    F7                MIEND
    66   9A08   98                      TYA
    67   9A09   F0    00                IFNE                 ;OPENING
    68   9A0B   88                      DEY                  ;YES.
    69   9A0C   D0    00                IFEQ                 ;ONLY 1 TYPE
    70   9A0E   A2    04                LDX I,4              ;YES.
    71                                  BEGIN                ;LOOP UNTIL THAT ONE IS FOUND
    72   9A10   BD  013D                LDA X,OPFLIP
    73   9A13   F0    00                IFNE
    74   9A15   BD  0129                LDA X,WFLMIN         ;YES
    75   9A18   F0    00                IFNE                 ;LAUNCH OK
    76   9A1A   20  9A87                JSR NEWTYP           ;NO. TRY FOR TYPE
    77   9A1D   F0    00                IFNE                 ;GOT IT
    78   9A1F   60                      RTS                  ;YES. EXIT
    79   9A1E   01                      ENDIF                ;NO. KEEP TRYING
    80   9A19   06                      ENDIF
    81   9A14   0B                      ENDIF
    82   9A20   CA                      DEX
    83   9A21   10    ED                MIEND
    84   9A23   B8    50    00          ELSE
         9A0D   18
    85   9A26   84    61                STY SXL              ;NO.
    86   9A28   A2    04                LDX I,4
    87                                  BEGIN                ;LOOP FOR EACH TYPE-CHECK MINS
    88   9A2A   BD  013D                LDA X,OPFLIP
    89   9A2D   F0    00                IFNE                 ;TYPE OPENINGS
    90   9A2F   BD  0142                LDA X,FLIPCO         ;YES.
    91   9A32   DD  0129                CMP X,WFLMIN
    92   9A35   B0    00                IFCC                 ;TYPE MIN SATISFIED
    93   9A37   20  9A87                JSR NEWTYP           ;NO. TRY FOR TYPE
    94   9A3A   F0    00                IFNE                 ;GOT IT
    95   9A3C   60                      RTS                  ;YES. EXIT
    96   9A3B   01                      ENDIF                ;NO. KEEP TRYING
    97   9A36   06                      ENDIF
    98   9A2E   0E                      ENDIF
    99   9A3D   CA                      DEX
   100   9A3E   10    EA                MIEND
   101                                                       ;MINS ARE OK.
   102   9A40   AD  0140                LDA OPSPIN           ;TRY FOR SMART LAUNCH
   103   9A43   F0    00                IFNE
   104   9A45   AD  013F                LDA OPTANK
   105   9A48   F0    00                IFNE                 ;SLOTS FOR TANKERS   SPINNER OPEN
   106   9A4A   A4    2A                LDY TEMP1            ;YES.
   107   9A4C   B9  03AC                LDA Y,LINEY
   108   9A4F   D0    00                IFEQ                 ;LINE DEAD
   109   9A51   A9    FF                LDA I,0FF            ;YES. REAL SHORT THEN
   110   9A50   02                      ENDIF
   111   9A53   A2    03                LDX I,OPSPIN-OPFLIP  ;SHORT LINE LAUNCH SPINNER
   112   9A55   C9    CC                CMP I,0CC
   113   9A57   B0    00                IFCC                 ;LONG ENEMY LINE
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ALWELG-ALIENS WELL GAME MAINLIN       ATARI MAC65 VM03.09  00 00 01 PAGE 31+
PLAY - DETERMINE NYMPH TYPE

   114   9A59   A2   02                    LDX I,OPTANK-OPFLIP     ;YES LAUNCH TANKER
   115   9A58   02                         ENDIF
   116   9A5B   20  9A87                    JSR NEWTYP              ;NO. TRY FOR TYPE
   117   9A5E   F0   00                     IFNE                    ;GOT IT
   118   9A60   60                         RTS                     ;YES. EXIT
   119   9A5F   01                         ENDIF                   ;NO. KEEP TRYING
   120   9A49   17                         ENDIF
   121   9A44   1C                         ENDIF
   122   9A61   AD  60DA                   LDA RAND02              ;RANDOM TYPE  ELIM TYPE 0 THO
   123   9A64   29   03                    AND I,3
   124   9A66   AA                         TAX
   125   9A67   E8                         INX
   126   9A68   A0   04                    LDY I,4                 ;START AT RANDOM SPOT AND
   127                                     BEGIN                   ;LOOP UNTIL NEEDY TYPE FOUND
   128   9A6A   BD  0129                   LDA X,WFLMIN
   129   9A6D   F0   00                     IFNE                    ;OK FROM BOTTOM  NOT 0
   130   9A6F   BD  013D                   LDA X,OPFLIP            ;NO.
   131   9A72   F0   00                     IFNE                    ;NEEDY TYPE
   132   9A74   20  9A87                    JSR NEWTYP              ;YES. TRY LAUNCH
   133   9A77   F0   00                     IFNE                    ;GOT IT
   134   9A79   60                         RTS                     ;YES. EXIT
   135   9A78   01                         ENDIF
   136   9A73   06                         ENDIF
   137   9A6E   0B                         ENDIF
   138   9A7A   CA                         DEX
   139   9A7B   10   00                    IFMI
   140   9A7D   A2   04                    LDX I,4                 ;WRAP
   141   9A7C   02                         ENDIF
   142   9A7F   88                         DEY
   143   9A80   10   E8                    MIEND
   144   9A25   5C                         ENDIF
   145   9A0A   77                         ENDIF
   146   9A82   A9   00                    LDA I,0                 ;SIGNAL FAILURE
   147   9A84   85   29                    STA TEMP0
   148   9A86   60                         RTS
   149   9A87                        NEWTYP
   150   9A87   8A                         TXA
   151   9A88   0A                  NEWTY2 ASL
   152   9A89   A8                         TAY
   153   9A8A   B9  9A94                    LDA Y,NYMTAD+1
   154   9A8D   48                         PHA
   155   9A8E   B9  9A93                    LDA Y,NYMTAD
   156   9A91   48                         PHA
   157   9A92   60                         RTS
   158
   159   9A93  9A9C                  NYMTAD .WORD NEWFLI-1
   160   9A95  9AA8                         .WORD NEWPUL-1
   161   9A97  9ABA                         .WORD NEWTAN-1
   162   9A99  9AB6                         .WORD NEWSPI-1
   163   9A9B  9AB2                         .WORD NEWFUS-1
   164   9A9D                        NEWFLI
   165   9A9D    AD  9B02                   LDA TNEWI2+ZABFLI
   166   9AA0    85   2C                    STA TEMP3               ;INVAC2
   167   9AA2    AD  015D                   LDA WFLICAM
   168   9AA5    A0   00                    LDY I,ZABFLI            ;FLIPPER  INVAC1
   169   9AA7    F0   4D                    BEQ NEWGN3              ;ALWAYS
   170   9AA9                        NEWPUL                  ;PULSAR
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ALWELG-ALIENS WELL GAME MAINLIN       ATARI MAC65 VM03.09  00 00 01 PAGE 31+
PLAY - DETERMINE NYMPH TYPE

   171   9AA9   AD  9B03                LDA TNEWI2+ZABPUL
   172   9AAC   0D  016D                ORA WPULFI              ;PULSAR FIRE
   173   9AAF   A0    01                LDY I,ZABPUL            ;PULSAR  INVAC1
   174   9AB1   D0    3E                BNE NEWGN2              ;ALWAYS
   175   9AB3                   NEWFUS                         ;FUSE
   176   9AB3   A0    04                LDY I,ZABFUS
   177   9AB5   D0    37                BNE NEWGEN
   178   9AB7                   NEWSPI                         ;SPINNER
   179   9AB7   A0    03                LDY I,ZABTRA
   180   9AB9   D0    33                BNE NEWGEN
   181   9ABB                   NEWTAN                         ;TANKER
   182   9ABB   AD  60CA                LDA RANDOM
   183   9ABE   29    03                AND I,3
   184   9AC0   A8                      TAY
   185   9AC1   A9    04                LDA I,4                 ;
   186   9AC3   85    2B                STA TEMP2               ;
   187   9AC5   86    39                STX INDEX3              ;SAVE X
   188                                  BEGIN                   ;LOOP 4 TIMES  FAIL  OR UNTIL OPENING
   189   9AC7   C6    2B                DEC TEMP2
   190   9AC9   10    00                IFMI                    ;FAILURE FOR ALL
   191   9ACB   A6    39                LDX INDEX3              ;YES. RESTORE X
   192   9ACD   A9    00                LDA I,0                 ;SIGNAL FAILURE
   193   9ACF   60                      RTS
   194   9ACA   05                      ENDIF
   195   9AD0   88                      DEY
   196   9AD1   10    00                IFMI                    ;CYCLE BETWEEN 0+3
   197   9AD3   A0    03                LDY I,3
   198   9AD2   02                      ENDIF
   199   9AD5   BE  0149                LDX Y,WTACAR            ;GET TYPE OF TANKER
   200   9AD8   E0    03                CPX I,ZCARFU
   201   9ADA   D0    00                IFEQ
   202   9ADC   A2    05                LDX I,ZABFUS+1
   203   9ADB   02                      ENDIF
   204   9ADE   BD  013C                LDA X,OPFLIP-1
   205   9AE1   F0    E4                NEEND                   ;EXIT IF OPENINGS FOR TYPE
   206   9AE3   A6    39                LDX INDEX3              ;RESTORE X
   207   9AE5   B9  0149                LDA Y,WTACAR            ;GET TANKER CONTENTS
   208   9AE8   09    40                ORA I,ZFIRYE
   209   9AEA   A0    02                LDY I,ZABTAN
   210   9AEC   D0    03                BNE NEWGN2
   211   9AEE                   NEWGEN
   212   9AEE   B9  9B02                LDA Y,TNEWI2
   213   9AF1   85    2C        NEWGN2  STA TEMP3
   214   9AF3   B9  9AFD                LDA Y,TNEWCAM
   215   9AF6   84    2B        NEWGN3  STY TEMP2               ;GENERAL
   216   9AF8   85    2D                STA TEMP4
   217   9AFA   A5    29                LDA TEMP0               ;SUCCESS SIGNAL
   218   9AFC   60                      RTS
   219   9AFD   07    72    07  TNEWCAM          .BYTE NOJUMP-CAM,PULSCH-CAM,NOJUMP-CAM
   220   9B00   00    61                .BYTE TRALUP-CAM,FUSEUP-CAM
   221   9B02   40              TNEWI2  .BYTE ZCARNO ZFIRYE ZDIRUP
   222   9B03   00                      .BYTE ZCARNO ZFIRNO ZDIRUP
   223   9B04   41                      .BYTE ZCARFL ZFIRYE ZDIRUP
   224   9B05   40                      .BYTE ZCARNO ZFIRYE ZDIRUP
   225   9B06   00                      .BYTE ZCARNO ZFIRNO ZDIRUP
   226                                  .SBTTL  PLAY - DETERMINE SPLIT INVADER CHARACTERISTICS
   227                    ;INPUT  Y INVADER INDEX
```

```
ALWELG-ALIENS WELL GAME MAINLIN       ATARI MAC65 VM03.09  00 00 01 PAGE 31+
PLAY - DETERMINE SPLIT INVADER CHARACTERISTICS

   228                                ;TEMP2 INVABI TYPE CODE          ;TEMP0 SPLIT DEPTH
   229
   230   9B07   84   36               SPLCHA  STY SAVEY
   231   9B09   A5   29                       LDA TEMP0
   232   9B0B   C9   20                       CMP I,20
   233   9B0D   A5   2B                       LDA TEMP2
   234   9B0F   B0   00                       IFCC                          ;SPLITTING TOO CLOSE TO PLAYER
   235   9B11   A8                           TAY                           ;YES. NO FLIPPING
   236   9B12   20   9AEE                    JSR NEWGEN
   237   9B15   B8   50   00                 ELSE
         9B10   07
   238   9B18   20   9A88                    JSR NEWTY2                    ;NO. ASSIGN NORMAL PARAMETERS
   239   9B17   03                           ENDIF
   240   9B1B   A4   36                       LDY SAVEY
   241   9B1D   60                           RTS
```

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ALWELG-ALIENS WELL GAME MAINLIN       ATARI MAC65 VM03.09  00 00 01 PAGE 32
PLAY - MOVE INVADERS  MAINLINE

     1                                          .SBTTL PLAY - MOVE INVADERS  MAINLINE
     2   9B1E    AD  0201              MOVINV  LDA CURSL2
     3   9B21    30    00                      IFPL                    ;PLAYER DEAD OR DROPPING
     4                                         ;YES. EXIT
     5
     6   9B23    AE  011C                      LDX WINVMX
     7   9B26    86    37                      STX INDEX1
     8                                         BEGIN                   ;LOOP FOR EACH INVADER
     9   9B28    A6    37                      LDX INDEX1
    10   9B2A    BD  02DF                      LDA X,INVAY
    11   9B2D    F0    00                      IFNE                    ;ACTIVE
    12   9B2F    A9    01                      LDA I,1                 ;SET NO EXIT FLAG
    13   9B31    8D  010A                      STA EXICAM
    14   9B34    BD  0291                      LDA X,INVCAM            ;SET UP INVADER S CAM PC
    15   9B37    8D  010B                      STA CAMPC
    16                                         BEGIN                   ;LOOP UNTIL EXIT REQUESTED
    17   9B3A    AD  010B                      LDA CAMPC
    18   9B3D    A8                            TAY                     ;GET INTO INTO CAM TABLE
    19   9B3E    B9  A0F7                      LDA Y,CAM               ;GET CAM CODE
    20   9B41    20  9B98                      JSR JSRCAM              ;EXECUTE CAM REQUESTED
    21   9B44    EE  010B                      INC CAMPC               ;AUTO INCREMENT CAM PC
    22   9B47    AD  010A                      LDA EXICAM              ;EXIT REQUESTED
    23   9B4A    D0    EE                      EQEND
    24   9B4C    AD  010B                      LDA CAMPC               ;UPDATE INVADER S CAM PC
    25   9B4F    9D  0291                      STA X,INVCAM
    26   9B2E    23                            ENDIF
    27   9B52    C6    37                      DEC INDEX1
    28   9B54    10    D2                      MIEND
    29   9B22    33                            ENDIF
    30                                         ;UPDATE PULSE STATUS
    31   9B56    AD  0148                      LDA PULSON
    32   9B59    18                            CLC
    33   9B5A    6D  0147                      ADC PULTIM
    34   9B5D    A8                            TAY
    35   9B5E    4D  0148                      EOR PULSON
    36   9B61    8C  0148                      STY PULSON
    37   9B64    10    00                      IFMI                    ;PULSAR STATUS CHANGE
    38   9B66    98                            TYA                     ;YES.
    39   9B67    10    00                      IFMI                    ;GO OFF
    40   9B69    20  0000G                     JSR PULSTO              ;YES. TURN OFF
    41   9B6C    B8    50    00                ELSE
         9B68    06
    42   9B6F    AD  0143                      LDA FLIPCO+ZABPUL       ;NO. TURN ON IF ACTIVE PULSARS
    43   9B72    F0    00                      IFNE
    44   9B74    AD  0201                      LDA CURSL2
    45   9B77    30    00                      IFPL
    46   9B79    20  0000G                     JSR PULSTR              ;ACTIVE SO TURN ON
    47   9B78    03                            ENDIF
    48   9B73    08                            ENDIF
    49   9B6E    0D                            ENDIF
    50   9B65    16                            ENDIF
    51   9B7C    AD  0148                      LDA PULSON
    52   9B7F    30    00                      IFPL                    ;BONUCE BETWEEN-27. AND +15.
    53   9B81    C9    0F                      CMP I,15.
    54   9B83    B0    07                      BCS NEGPUL
    55   9B85    B8    50    00                ELSE
         9B80    07
```

```
PLAY - MOVE INVADERS  MAINLINE

    56   9B88   C9   C1                    CMP I,-63.
    57   9B8A   B0   00                    IFCC
    58   9B8C   AD  0147          NEGPUL   LDA PULTIM              ;NEGATE INCREMENT
    59   9B8F   49   FF                    EOR I,0FF
    60   9B91   18                         CLC
    61   9B92   69   01                    ADC I,1
    62   9B94   8D  0147                   STA PULTIM
    63   9B8B   0B                         ENDIF
    64   9B87   0F                         ENDIF
    65   9B97   60                         RTS
    66
```

```
ALWELG-ALIENS WELL GAME MAINLIN       ATARI MAC65 VM03.09  00 00 01 PAGE 33
PLAY - MOVE INVADERS  MAINLINE


      1
      2                                       .SBTTL  PLAY - INVADERS - CAM DISPATCHER
      3
      4   9B98    A8                  JSRCAM  TAY                     ;JSR INDIRECT TO CAM ROUTINE
      5   9B99    B9  9BA3                    LDA Y,TABJSR+1
      6   9B9C    48                          PHA
      7   9B9D    B9  9BA2                    LDA Y,TABJSR
      8   9BA0    48                          PHA
      9   9BA1    60                          RTS
     10                                       .SBTTL  CAM TABLE MACROS
     11                                       .MACRO CAMAC ...X,...Y,...W
     12                                       .WORD ...X-1
     13                                       .MACRO ...Y
     14                                       .BYTE ...W
     15                                       .ENDM
     16                                       .ENDM
     17
     18                                       .MACRO CAMA2I ...X,...Y,...W
     19                                       .WORD ...X-1
     20                                       .MACRO ...Y,...Z
     21                                       .BYTE ...W
     22                                       .BYTE ...Z
     23                                       .ENDM
     24                                       .ENDM
     25
     26                                       .MACRO CAMA2F ...X,...Y,...W
     27                                       .WORD ...X-1
     28                                       .MACRO ...Y,...Z
     29                                       .BYTE ...W
     30                                       .BYTE ...Z-CAM-1
     31                                       .ENDM
     32                                       .ENDM
     33                                       .MACRO TEST1 X
     34                                       .BYTE X
     35                                       .ENDM
     36                                       .SBTTL  CAM TABLE SUBROUTINE POINTERS
     37
     38   9BA2                       TABJSR
     39   9BA2  9BC9                          CAMAC JEXIT,VEXIT,0
     40   9BA4  9BCF                          CAMA2I JSLOOP,VSLOOP,2
     41   9BA6  9BED                          CAMAC JSKIP0,VSKIP0,4
     42   9BA8  9C16                          CAMA2F JSETPC,VSETPC,6
     43   9BAA  9C0B                          CAMA2F JELOOP,VELOOP,8
     44   9BAC  9BCE                          CAMAC JNOOP,VNOOP,0A
     45   9BAE  9C57                          CAMAC JSMOVE,VSMOVE,0C
     46   9BB0  9FC3                          CAMAC JSTRAI,VSTRAI,0E
     47   9BB2  9BDC                          CAMA2I JSLOPB,VSLOPB,10
     48   9BB4  9E5B                          CAMAC JJUMPS,VJUMPS,12
     49   9BB6  9D81                          CAMAC JJUMPM,VJUMPM,14
     50   9BB8  9C4E                          CAMAC JCHROT,VCHROT,16
     51   9BBA  9E2E                          CAMAC JKITST,VKITST,18
     52   9BBC  9BF9                          CAMA2F JBROPC,VBROPC,1A
     53   9BBE  9C20                          CAMAC JELTST,VELTST,1C
     54   9BC0  9EF0                 CAMAC    JFUSEUP,VSFUSE,1E
     55   9BC2  9E47                 CAMAC    JFUSKI,VFUSKI,20
     56   9BC4  9CB5                 CAMAC    JPULMO,VSPUMO,22
     57   9BC6  9D66                 CAMAC    JCHPLA,VCHPLA,24
```

CAM TABLE SUBROUTINE POINTERS

```
    58   9BC8  9C3A                    CAMAC   JCHKPU,VCHKPU,26
    59   9BCA                          TABJSE
```

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ALWELG-ALIENS WELL GAME MAINLIN       ATARI MAC65 VM03.09  00 00 01 PAGE 34
PLAY - INVADERS - CAM SUBROUTINES

     1                                        .SBTTL  PLAY - INVADERS - CAM SUBROUTINES
     2                                                ;
     3                                                ;EXIT CAM
     4                                                ;
     5  9BCA                           JEXIT
     6  9BCA    A9    00                       LDA I,0                 ;EXIT CAM FLAG
     7  9BCC    8D  010A                       STA EXICAM
     8  9BCF    60                     JNOOP   RTS
     9                                                ;
    10                                                ;SET CAM LOOP COUNTER
    11                                                ;
    12  9BD0    EE  010B               JSLOOP  INC CAMPC
    13  9BD3    AC  010B                       LDY CAMPC
    14  9BD6    B9  A0F7                       LDA Y,CAM
    15  9BD9    9D  0298                       STA X,INVLOO            ;NEW LOOP VALUE
    16  9BDC    60                             RTS
    17  9BDD                           JSLOPB                  ;SAME AS JSLOOP EXCEPT OPERAND BP ADDRESS OF PARAMETER
    18  9BDD    EE  010B                       INC CAMPC
    19  9BE0    AC  010B                       LDY CAMPC
    20  9BE3    B9  A0F7                       LDA Y,CAM
    21  9BE6    A8                             TAY                     ;BP LOC OF VALUE
    22  9BE7    B9  0000                       LDA Y,0                 ;NEW LOOP VALUE
    23  9BEA    9D  0298                       STA X,INVLOO
    24  9BED    60                             RTS
    25                                                ;
    26                                                ;SKIP NEXT CAM LINE IF CAMSTA 0
    27                                                ; DOUBLE BYTE
    28  9BEE    AD  010C               JSKIP0  LDA CAMSTA
    29  9BF1    D0    00                       IFEQ
    30  9BF3    EE  010B                       INC CAMPC
    31  9BF6    EE  010B                       INC CAMPC
    32  9BF2    06                             ENDIF
    33  9BF9    60                             RTS
    34                                        ;
    35                                        ;BRANCH IF CAMSTA 0
    36                                        ;
    37  9BFA    EE  010B               JBROPC  INC CAMPC
    38  9BFD    AD  010C                       LDA CAMSTA
    39  9C00    D0    00                       IFEQ                    ;BRANCH
    40  9C02    AC  010B                       LDY CAMPC               ;YES. SET NEW PC
    41  9C05    B9  A0F7                       LDA Y,CAM
    42  9C08    8D  010B                       STA CAMPC
    43  9C01    09                             ENDIF
    44  9C0B    60                             RTS
    45                                                ;
    46                                                ;DEC LOOP VALUE
    47                                                ;IF 0 THEN EXIT
    48                                                ;     ELSE RELOOP
    49  9C0C                           JELOOP
    50  9C0C    DE  0298                       DEC X,INVLOO
    51  9C0F    D0    00                       IFEQ
    52  9C11    EE  010B                       INC CAMPC               ;EXIT LOOP
    53  9C14    B8    50    00                 ELSE
        9C10    06
    54  9C17    AC  010B               JSETPC  LDY CAMPC               ;NEW CAM PC
    55  9C1A    B9  A0F8                       LDA Y,CAM+1             ;RELOOP
    56  9C1D    8D  010B                       STA CAMPC
```

```
    57   9C16   09                              ENDIF
    58   9C20   60                              RTS
    59   9C21                          JELTST
    60   9C21   BC  02B9                        LDY X,INVAL1            ;
    61   9C24   B9  03AC                        LDA Y,LINEY
    62   9C27   D0    00                        IFEQ
    63   9C29   A9    FF                        LDA I,0FF               ;WORST CASE LINE  DEAD
    64   9C28   02                              ENDIF
    65   9C2B   DD  02DF                        CMP X,INVAY
    66   9C2E   B0    00                        IFCC                    ;ENEMY ON AN ENEMY LINE
    67   9C30   A9    00                        LDA I,0                 ;YES.
    68   9C32   B8    50    00                  ELSE
         9C2F   05
    69   9C35   A9    01                        LDA I,1                 ;NO.
    70   9C34   02                              ENDIF
    71   9C37   8D  010C                        STA CAMSTA
    72   9C3A   60                              RTS
```

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ALWELG-ALIENS WELL GAME MAINLIN       ATARI MAC65 VM03.09  00 00 01 PAGE 35
PLAY - INVADERS - CAM SUBROUTINES

     1
     2                                        .SBTTL  PLAY - INVADERS - CAM ROUTINES
     3  9C3B                           JCHKPU                    ;CHECK FOR PULSING NOW OR IN NEXT 4 FRAMES
     4  9C3B    AD  0147                       LDA PULTIM
     5  9C3E    0A                             ASL
     6  9C3F    0A                             ASL
     7  9C40    18                             CLC
     8  9C41    6D  0148                       ADC PULSON
     9  9C44    2D  0148                       AND PULSON
    10  9C47    29    80                       AND I,80
    11  9C49    49    80                       EOR I,80
    12  9C4B    8D  010C                       STA CAMSTA              ;EXIT  0 NO PULSE ;80 PULSE
    13  9C4E    60                             RTS
    14                                                               ;CHANGE DIRECTION OF JUMP
    15                                                               ;
    16  9C4F                           JCHROT
    17  9C4F    BD  0283                       LDA X,INVAC1
    18  9C52    49    40                       EOR I,INVROT
    19  9C54    9D  0283                       STA X,INVAC1
    20  9C57    60                             RTS
    21                                                               ;
    22                                        .SBTTL PLAY - MOVE INVADERS  MOVE 1 UP
    23                                 ;INPUT  X INVADER INDEX
    24
    25  9C58                           JSMOVE
    26  9C58    BD  0283                       LDA X,INVAC1
    27  9C5B    29    07                       AND I,INVABI
    28  9C5D    A8                             TAY                     ;INVADER TYPE
    29  9C5E    BD  028A                       LDA X,INVAC2
    30  9C61    30    00                       IFPL                    ;GOING UP
    31  9C63    BD  029F           JSMOVU      LDA X,INVAYL            ;YES.
    32  9C66    18                             CLC
    33  9C67    79  0160                       ADC Y,WINVIL
    34  9C6A    9D  029F                       STA X,INVAYL            ;MOVE UP
    35  9C6D    BD  02DF                       LDA X,INVAY
    36  9C70    79  0165                       ADC Y,WINVIN
    37  9C73    9D  02DF                       STA X,INVAY
    38  9C76    CD  0202                       CMP CURSY
    39  9C79    F0    02                       BEQ ATOP
    40  9C7B    B0    00                       IFCC                    ;AT TOP
    41  9C7D    20  9D06           ATOP        JSR CHASER              ;YES. CONVERT TO CHASER
    42  9C80    B8    50     00                ELSE
        9C7C    06
    43  9C83    C9    20                       CMP I,20                ;NO
    44  9C85    B0    00                       IFCC                    ;TOO CLOSE TO TOP FOR CARRIER
    45  9C87    BD  028A                       LDA X,INVAC2            ;YES.
    46  9C8A    29    03                       AND I,INVCAR            ;CARRIER
    47  9C8C    F0    00                       IFNE
    48  9C8E    8A                             TXA                     ;YES.
    49  9C8F    48                             PHA                     ;SAVE X
    50  9C90    A8                             TAY                     ;
    51  9C91    20  A06F                       JSR KILINV              ;SPLIT CARRIER
    52  9C94    68                             PLA
    53  9C95    AA                             TAX                     ;RESTORE X
    54  9C8D    08                             ENDIF
    55  9C86    0F                             ENDIF
    56  9C82    13                             ENDIF
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ALWELG-ALIENS WELL GAME MAINLIN       ATARI MAC65 VM03.09  00 00 01 PAGE 35+
PLAY - MOVE INVADERS  MOVE 1 UP

    57   9C96   B8    50    00                ELSE
         9C62   36
    58   9C99   BD  029F              JSMOVD  LDA X,INVAYL             ;DOWN
    59   9C9C   38                             SEC
    60   9C9D   F9  0160                       SBC Y,WINVIL
    61   9CA0   9D  029F                       STA X,INVAYL
    62   9CA3   BD  02DF                       LDA X,INVAY
    63   9CA6   F9  0165                       SBC Y,WINVIN
    64   9CA9   9D  02DF                       STA X,INVAY
    65   9CAC   C9    F0                       CMP I,ILINDDY
    66   9CAE   90    00                       IFCS                       ;AT BOTTOM
    67   9CB0   A9    F2                       LDA I,0F2
    68   9CB2   9D  02DF                       STA X,INVAY                ;YES.
    69   9CAF   05                             ENDIF
    70   9C98   1C                             ENDIF
    71   9CB5   60                             RTS
```

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ALWELG-ALIENS WELL GAME MAINLIN       ATARI MAC65 VM03.09  00 00 01 PAGE 36
PLAY - INVADERS  PULSE MOVE

     1                                          .SBTTL  PLAY - INVADERS  PULSE MOVE
     2   9CB6    A0    01              JPULMO  LDY I,ZABPUL
     3   9CB8    BD  028A                      LDA X,INVAC2
     4   9CBB    30    00                      IFPL                    ;GOING UP
     5   9CBD    BD  02DF                      LDA X,INVAY             ;YES.
     6   9CC0    CD  0157                      CMP PULPOT
     7   9CC3    90    00                      IFCS                    ;IN POWER ZONE
     8   9CC5    A0    00                      LDY I,ZABFLI            ;NO. GO FASTER
     9   9CC4    02                            ENDIF
    10   9CC7    20  9C63                      JSR JSMOVU              ;MOVE UP
    11   9CCA    B8    50    00                ELSE
         9CBC    10
    12   9CCD    20  9C99                      JSR JSMOVD              ;MOVE DOWN  RETURN WITH ACC Y POS
    13   9CD0    AC  03AB                      LDY NYMCOU
    14   9CD3    D0    00                      IFEQ                    ;NYMPHS GONE
    15   9CD5    A9    FF                      LDA I,0FF               ;SEND PULSAR UP
    16   9CD4    02                            ENDIF
    17   9CD7    CD  0157                      CMP PULPOT
    18   9CDA    90    00                      IFCS                    ;TIME TO REVERSE
    19   9CDC    BD  028A                      LDA X,INVAC2            ;YES
    20   9CDF    49    80                      EOR I,INVDIR
    21   9CE1    9D  028A                      STA X,INVAC2
    22   9CDB    08                            ENDIF
    23   9CCC    17                            ENDIF
    24   9CE4    AD  0148                      LDA PULSON              ;YES. SEE IF CURSOR GOT ZAPPED
    25   9CE7    30    00                      IFPL                    ;PULSAR ON
    26   9CE9    BD  02DF                      LDA X,INVAY             ;YES.
    27   9CEC    CD  0157                      CMP PULPOT
    28   9CEF    B0    00                      IFCC                    ;PULSAR IN RANGE
    29   9CF1    AD  0200                      LDA CURSL1              ;YES
    30   9CF4    DD  02B9                      CMP X,INVAL1
    31   9CF7    D0    00                      IFEQ
    32   9CF9    AD  0201                      LDA CURSL2
    33   9CFC    DD  02CC                      CMP X,INVAL2
    34   9CFF    D0    00                      IFEQ                    ;ON CURSOR LINES
    35   9D01    20  A347                      JSR INPPSQ              ;YES. KILL CURSOR
    36   9D00    03                            ENDIF
    37   9CF8    0B                            ENDIF
    38   9CF0    13                            ENDIF
    39   9CE8    1B                            ENDIF
    40   9D04    60                            RTS
    41   9D05    00G                 CHKSM3            .BYTE QCHKS3
```

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ALWELG-ALIENS WELL GAME MAINLIN       ATARI MAC65 VM03.09  00 00 01 PAGE 37
PLAY - INVADERS  CONVERT TO CHASER

     1                                        .SBTTL PLAY - INVADERS  CONVERT TO CHASER
     2                              ;INPUT    X INVADER INDEX
     3
     4   9D06                       CHASER
     5   9D06    AD  0202                     LDA CURSY                ;PLACE EXACTLY AT TOP
     6   9D09    9D  02DF                     STA X,INVAY
     7   9D0C    BD  0283                     LDA X,INVAC1
     8   9D0F    29    07                     AND I,INVABI
     9   9D11    C9    01                     CMP I,ZABPUL
    10   9D13    D0    00                     IFEQ                     ;PULSAR
    11   9D15    AD  03AB                     LDA NYMCOU               ;YES.
    12   9D18    F0    00                     IFNE                     ;ANY MORE NYMPHS
    13   9D1A    BD  028A                     LDA X,INVAC2             ;YES. SEND IT DOWN
    14   9D1D    49    80                     EOR I,INVDIR
    15   9D1F    9D  028A                     STA X,INVAC2
    16   9D22    60                           RTS                      ;EXIT
    17   9D19    09                           ENDIF
    18   9D14    0E                           ENDIF
    19   9D23    BD  0283                     LDA X,INVAC1
    20   9D26    10    00                     IFMI                     ;STILL FLIPPING 2
    21   9D28    FE  02DF                     INC X,INVAY              ;YES. FINISH FLIP
    22   9D2B    60                           RTS                      ;BEFORE AT TOP STATUS
    23   9D27    04                           ENDIF
    24   9D2C    CE  0108                     DEC INMCOU               ;-1 TO # WALL INVADERS
    25   9D2F    AD  0109                     LDA INCCOU
    26   9D32    C9    01                     CMP I,1
    27   9D34    F0    00                     IFNE                     ;OTHER THAN 1 CHASER
    28   9D36    20  9D67                     JSR JCHPLA               ;YES. SEND CHASER SHORTEST WAY
    29   9D39    B8    50    00               ELSE
         9D35    06
    30                                       ;NO. 1 OTHER CHASER, SO SEND
    31   9D3C    A0    06                     LDY I,NINVAD-1           ;THIS GUY IN OPPOSITE DIRECTION
    32                                       BEGIN                    ;LOOP UNTIL OTHER CHASER IS FOUND
    33   9D3E    B9  02DF                     LDA Y,INVAY
    34   9D41    F0    00                     IFNE
    35   9D43    84    38                     STY INDEX2
    36   9D45    E4    38                     CPX INDEX2
    37   9D47    F0    00                     IFNE                     ;MAKE SURE IT S NOT NEW CHASER
    38   9D49    B9  02DF                     LDA Y,INVAY
    39   9D4C    CD  0202                     CMP CURSY
    40   9D4F    F0    03                     BEQ GOTCHA               ;EXIT LOOP IF FOUND
    41   9D48    08                           ENDIF
    42   9D42    0E                           ENDIF
    43   9D51    88                           DEY
    44   9D52    10    EA                     MIEND
    45   9D54    B9  0283             GOTCHA  LDA Y,INVAC1
    46   9D57    29    40                     AND I,INVROT             ;GET OTHER CHASER S DIRECTION
    47   9D59    49    40                     EOR I,INVROT             ;USE ITS OPPOSITS
    48                                       ;SET CHASE DIRECTION
    49   9D5B    9D  0283                     STA X,INVAC1
    50   9D3B    22                           ENDIF
    51   9D5E    A9    41                     LDA I,TOPPER-CAM-1
    52   9D60    8D  010B                     STA CAMPC                ;SET CHASER CAM
    53   9D63    EE  0109                     INC INCCOU               ;+1 TO CHASER COUNT
    54   9D66    60                           RTS
    55                                       .SBTTL
    56   9D67                       JCHPLA
```

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ALWELG-ALIENS WELL GAME MAINLIN       ATARI MAC65 VM03.09  00 00 01 PAGE 37+


    57   9D67   BD  02B9                    LDA X,INVAL1          ;SEND CHASER SHORTEST WAY
    58   9D6A   A8                          TAY
    59   9D6B   AD  0200                    LDA CURSL1
    60   9D6E   20  A7A6                    JSR POLDEL            ;DETERMINE POLAR DELTA TO CURSOR
    61   9D71   0A                          ASL
    62   9D72   BD  0283                    LDA X,INVAC1
    63   9D75   B0   00                     IFCC                  ;SET CHASE DIRECTION  SHORTEST WAY
    64   9D77   09   40                     ORA I,INVROT          ;CCW
    65   9D79   B8   50    00               ELSE
         9D76   05
    66   9D7C   29   BF                     AND I, CINVROT        ;CW
    67   9D7B   02                          ENDIF
    68   9D7E   9D  0283                    STA X,INVAC1
    69   9D81   60                          RTS
```

```
ALWELG-ALIENS WELL GAME MAINLIN       ATARI MAC65 VM03.09  00 00 01 PAGE 38
PLAY - MOVE INVADERS  PROCESS JUMP

     1                                        .SBTTL PLAY - MOVE INVADERS  PROCESS JUMP
     2   9D82                          JJUMPM
     3                                                                ;
     4                                                                ;UPDATE JUMP ANGLE
     5                                                                ;
     6   9D82    BC  02CC                     LDY X,INVAL2
     7   9D85    BD  0283                     LDA X,INVAC1
     8   9D88    29    40                     AND I,INVROT
     9   9D8A    D0    00                     IFEQ                     ;MOVING
    10   9D8C    C8                           INY                      ;CW  JUMP ROTATION CCW
    11   9D8D    B8    50    00               ELSE
         9D8B    04
    12   9D90    88                           DEY                      ;CCW  JUMP ROTATION CW
    13   9D8F    01                           ENDIF
    14   9D91    98                           TYA                      ;NEW JUMP ANGLE
    15   9D92    29    0F                     AND I,0F                 ;MOD 16
    16   9D94    09    80                     ORA I,80                 ;JUMP CODE
    17   9D96    9D  02CC                     STA X,INVAL2             ;UPDATED JUMP ANGLE
    18   9D99    BD  0283                     LDA X,INVAC1             ;
    19   9D9C    29    07                     AND I,INVABI
    20   9D9E    C9    04                     CMP I,ZABFUS             ;FUSE AT A JUNCTION  IFEQ
    21   9DA0    D0    00                     IFEQ
    22   9DA2    BD  02CC                     LDA X,INVAL2             ;MAYBE.
    23   9DA5    29    07                     AND I,7
    24   9DA7    D0    00                     IFEQ                     ;AT A JUNCTION
    25   9DA9    BD  02CC                     LDA X,INVAL2             ;YES
    26   9DAC    29    08                     AND I,8
    27   9DAE    F0    00                     IFNE                     ;MOVING CCW
    28   9DB0    BD  02B9                     LDA X,INVAL1             ;YES. ADJUST BASE
    29   9DB3    18                           CLC
    30   9DB4    69    01                     ADC I,1
    31   9DB6    29    0F                     AND I,0F
    32   9DB8    9D  02B9                     STA X,INVAL1
    33   9DAF    0B                           ENDIF
    34   9DBB    BD  0283                     LDA X,INVAC1             ;YES
    35   9DBE    29    7F                     AND I, CINVMOT
    36   9DC0    9D  0283                     STA X,INVAC1             ;SET STATUS BACK TO LINE
    37   9DC3    A9    20                     LDA I,020
    38   9DC5    9D  02CC                     STA X,INVAL2             ;MAKE IT INVINCIBLE
    39   9DC8    BD  028A                     LDA X,INVAC2
    40   9DCB    49    80                     EOR I,INVDIR
    41   9DCD    9D  028A                     STA X,INVAC2             ;REVERSE UP DOWN DIRECTION
    42   9DD0    AD  03AB                     LDA NYMCOU
    43   9DD3    D0    00                     IFEQ                     ;NYMPHS GONE
    44   9DD5    BD  02DF                     LDA X,INVAY              ;YES
    45   9DD8    CD  0202                     CMP CURSY
    46   9DDB    D0    00                     IFEQ                     ;AT TOP
    47   9DDD    20  9F81                     JSR FUCHPL               ;YES. STAY THERE   CHASE PLAYER
    48   9DE0    B8    50    00               ELSE
         9DDC    06
    49   9DE3    BD  028A                     LDA X,INVAC2             ;NO. SEND UP.
    50   9DE6    29    80                     AND I,INVDIR
    51   9DE8    9D  028A                     STA X,INVAC2
    52   9DE2    08                           ENDIF
    53   9DD4    16                           ENDIF
    54   9DA8    42                           ENDIF
    55   9DEB    B8    50    00               ELSE
```

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ALWELG-ALIENS WELL GAME MAINLIN       ATARI MAC65 VM03.09  00 00 01 PAGE 38+
PLAY - MOVE INVADERS  PROCESS JUMP

          9DA1    4C
    56                                                  ;CALCULATE FINAL JUMP ANGLE
    57    9DEE    BC  02B9                  LDY X,INVAL1
    58    9DF1    BD  0283                  LDA X,INVAC1
    59    9DF4    49    40                  EOR I,INVROT          ;BACKWARDS
    60    9DF6    20  9ED7                  JSR CALSAN
    61    9DF9    DD  02CC                  CMP X,INVAL2
    62    9DFC    D0    00                  IFEQ                  ;FINAL JUMP ANGLE UPDATED ANGLE
    63    9DFE    BD  0283                  LDA X,INVAC1          ;YES
    64    9E01    29    7F                  AND I, C INVMOT
    65    9E03    9D  0283                  STA X,INVAC1          ;SET STATUS BACK TO MOVER
    66    9E06    29    40                  AND I,INVROT
    67    9E08    D0    00                  IFEQ                  ;NEW LINE IN WHICH DIRECTION
    68    9E0A    BD  02B9                  LDA X,INVAL1          ;CW
    69    9E0D    9D  02CC                  STA X,INVAL2
    70    9E10    38                        SEC
    71    9E11    E9    01                  SBC I,1
    72    9E13    29    0F                  AND I,0F
    73    9E15    9D  02B9                  STA X,INVAL1
    74    9E18    B8    50    00            ELSE
          9E09    11
    75    9E1B    BD  02B9                  LDA X,INVAL1          ;CCW
    76    9E1E    18                        CLC
    77    9E1F    69    01                  ADC I,1
    78    9E21    29    0F                  AND I,0F
    79    9E23    9D  02CC                  STA X,INVAL2
    80    9E1A    0B                        ENDIF
    81    9DFD    28                        ENDIF
    82    9DED    38                        ENDIF
    83    9E26    BD  0283                  LDA X,INVAC1
    84    9E29    29    80                  AND I,INVMOT          ;RETURN WITH STATUS  0 JUMP DONE
    85    9E2B    8D  010C                  STA CAMSTA            ;SET CAM STATUS
    86    9E2E    60                        RTS
```

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ALWELG-ALIENS WELL GAME MAINLIN       ATARI MAC65 VM03.09  00 00 01 PAGE 39
PLAY - MOVE INVADERS  CHASE PLAYER

     1                                        .SBTTL PLAY - MOVE INVADERS  CHASE PLAYER
     2
     3   9E2F                          JKITST
     4   9E2F    BD  0283                     LDA X,INVAC1
     5   9E32    30   00                      IFPL                    ;MOVING  NOT JUMPING
     6   9E34    BD  02B9                     LDA X,INVAL1            ;YES
     7   9E37    CD  0200                     CMP CURSL1
     8   9E3A    D0   00                      IFEQ                    ;IS ANY INVADER LEG ON SAME LINE
     9   9E3C    BD  02CC                     LDA X,INVAL2            ;AS ANY CURSOR LEG
    10   9E3F    CD  0201                     CMP CURSL2
    11   9E42    D0   00                      IFEQ
    12   9E44    20  A33A                     JSR INIPSQ              ;YES. DESTROY CURSOR
    13   9E43    03                           ENDIF
    14   9E3B    0B                           ENDIF
    15   9E33    13                           ENDIF
    16   9E47    60                           RTS
    17   9E48    BD  02DF              JFUSKI LDA X,INVAY             ;CHECK FOR FUSE KILL CURSOR
    18   9E4B    CD  0202                     CMP CURSY
    19   9E4E    D0   00                      IFEQ                    ;SAME HEIGHT
    20   9E50    BD  02B9                     LDA X,INVAL1            ;YES.
    21   9E53    CD  0200                     CMP CURSL1
    22   9E56    D0   00                      IFEQ                    ;SAME LINE
    23   9E58    20  A343                     JSR INFPSQ              ;YES. DEAD CURSOR NOW
    24   9E57    03                           ENDIF
    25   9E4F    0B                           ENDIF
    26   9E5B    60                           RTS
```

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ALWELG-ALIENS WELL GAME MAINLIN       ATARI MAC65 VM03.09  00 00 01 PAGE 40
PLAY - MOVE INVADERS  CHASE PLAYER

     1
     2                                        .SBTTL PLAY - MOVE INVADERS  START A JUMP
     3                              ;INPUT    INVACO X  BIT IJDIRE
     4                              ;         ACC BIT IJDIRE JUMP DIRECTION  JUMPSD ENTRY ONLY
     5                              ;OUTPUT   INVACO X  BIT IMOVER
     6                              ;         INVAL1 X  SET TO BASE LEG
     7                              ;         INVAL2 X  SET TO JUMP SEQ START
     8                              ;
     9  9E5C                       JJUMPS
    10  9E5C  20  9EAB                        JSR OKTOJM              ;VERIFY JUMP DIRECTION
    11  9E5F                       JUMPSD
    12  9E5F  BD  0283                        LDA X,INVAC1
    13  9E62  09  80                          ORA I,ZMOTJM
    14  9E64  9D  0283                        STA X,INVAC1            ;SET JUMPS STATUS
    15  9E67  29  07                          AND I,INVABI
    16  9E69  C9  04                          CMP I,ZABFUS
    17  9E6B  D0  00                          IFEQ                    ;FUSE
    18  9E6D  BD  0283                        LDA X,INVAC1            ;YES.
    19  9E70  29  40                          AND I,INVROT
    20  9E72  D0  00                          IFEQ                    ;WHICH WAY
    21  9E74  A9  81                          LDA I,81                ;CCW
    22  9E76  B8  50  00                      ELSE
        9E73  05
    23  9E79  BD  02B9                        LDA X,INVAL1            ;CW
    24  9E7C  38                              SEC
    25  9E7D  E9  01                          SBC I,1
    26  9E7F  29  0F                          AND I,0F
    27  9E81  9D  02B9                        STA X,INVAL1
    28  9E84  A9  87                          LDA I,87
    29  9E78  0D                              ENDIF
    30  9E86  9D  02CC                        STA X,INVAL2
    31  9E89  B8  50  00                      ELSE
        9E6C  1F
    32  9E8C  BD  0283                        LDA X,INVAC1            ;NO
    33  9E8F  29  40                          AND I,INVROT
    34  9E91  F0  00                          IFNE                    ;MOVING CCW
    35  9E93  BD  02B9                        LDA X,INVAL1            ;YES. ADJUST BASE LEG
    36  9E96  18                              CLC
    37  9E97  69  01                          ADC I,1
    38  9E99  29  0F                          AND I,0F
    39  9E9B  9D  02B9                        STA X,INVAL1
    40  9E92  0B                              ENDIF
    41  9E9E  BD  0283                        LDA X,INVAC1            ;NO.
    42  9EA1  BC  02B9                        LDY X,INVAL1
    43  9EA4  20  9ED7                        JSR CALSAN              ;CALC. STARTING ANGLE
    44  9EA7  9D  02CC                        STA X,INVAL2
    45  9E8B  1E                              ENDIF
    46  9EAA  60                              RTS
    47  9EAB  AD  0111              OKTOJM    LDA WELTYP
    48  9EAE  F0  00                          IFNE                    ;PLANAR SURFACE
    49  9EB0  BD  0283                        LDA X,INVAC1            ;YES
    50  9EB3  29  40                          AND I,INVROT
    51  9EB5  F0  00                          IFNE                    ;MOVING CCW
    52  9EB7  BD  02B9                        LDA X,INVAL1            ;CCW
    53  9EBA  C9  0E                          CMP I,0E
    54  9EBC  90  00                          IFCS                    ;AT RIGHT EDGE
    55  9EBE  BD  0283                        LDA X,INVAC1            ;YES CHANGE TO CW JUMP
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ALWELG-ALIENS WELL GAME MAINLIN       ATARI MAC65 VM03.09  00 00 01 PAGE 40+
PLAY - MOVE INVADERS  START A JUMP

    56   9EC1   29   BF                    AND I, CINVROT
    57   9EC3   9D 0283                    STA X,INVAC1
    58   9EBD   08                         ENDIF
    59   9EC6   B8   50   00               ELSE
         9EB6   12
    60   9EC9   BD 02B9                    LDA X,INVAL1          ;CW
    61   9ECC   D0   00                    IFEQ                  ;AT LEFT EDGE
    62   9ECE   BD 0283                    LDA X,INVAC1          ;YES CHANGE TO CCW JUMPS
    63   9ED1   09   40                    ORA I,INVROT
    64   9ED3   9D 0283                    STA X,INVAC1
    65   9ECD   08                         ENDIF
    66   9EC8   0D                         ENDIF
    67   9EAF   26                         ENDIF
    68   9ED6   60                         RTS
    69                                                          ;
    70   9ED7                     CALSAN                        ;CALCULATE STARTING JUMP ANGLE
    71                                                          ;
    72                                                          ;BASE LEG IN Y
    73   9ED7   29   40                    AND I,INVROT
    74   9ED9   F0   00                    IFNE                  ;MOVING CCW
    75   9EDB   88                         DEY                   ;YES.
    76   9EDC   98                         TYA
    77   9EDD   29   0F                    AND I,0F
    78   9EDF   A8                         TAY
    79   9EE0   B9 03EE                    LDA Y,LINANG
    80   9EE3   18                         CLC                   ;YES. ADJUST ANGLE FOR BASE LEG ON
    81   9EE4   69   08                    ADC I,8               ;RIGHT SIDE
    82   9EE6   29   0F                    AND I,0F              ;MOD 16
    83   9EE8   B8   50   00               ELSE
         9EDA   10
    84   9EEB   B9 03EE                    LDA Y,LINANG          ;CW
    85   9EEA   03                         ENDIF
    86   9EEE   09   80                    ORA I,80              ;JUMP CODE
    87   9EF0   60                         RTS
```

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ALWELG-ALIENS WELL GAME MAINLIN       ATARI MAC65 VM03.09  00 00 01 PAGE 41
PLAY-INVADER FUSE UP/DOWN MOTION

     1                                        .SBTTL  PLAY-INVADER FUSE UP/DOWN MOTION
     2
     3   9EF1   A0    04              JFUSEUP          LDY I,ZABFUS
     4   9EF3   BD  028A                       LDA X,INVAC2
     5   9EF6   30    00                       IFPL                    ;UP OR DOWN
     6   9EF8   BD  029F                       LDA X,INVAYL            ;UP.
     7   9EFB   18                             CLC
     8   9EFC   6D  0164                       ADC WFUSIL
     9   9EFF   9D  029F                       STA X,INVAYL
    10   9F02   BD  02DF                       LDA X,INVAY
    11   9F05   6D  0169                       ADC WFUSIH
    12   9F08   9D  02DF                       STA X,INVAY
    13   9F0B   CD  0202                       CMP CURSY
    14   9F0E   B0    00                       IFCC                    ;AT TOP
    15   9F10   AD  0202                       LDA CURSY               ;YES
    16   9F13   9D  02DF                       STA X,INVAY
    17   9F16   B8    50    00                 ELSE
         9F0F   09
    18   9F19   AC  03AB                       LDY NYMCOU              ;NO
    19   9F1C   F0    00                       IFNE                    ;NYMPHS LEFT
    20   9F1E   A4    9F                       LDY CURWAV              ;YES.
    21   9F20   C0    11                       CPY I,17.
    22   9F22   B0    00                       IFCC                    ;EARLY WAVE
    23   9F24   C9    20                       CMP I,20                ;YES. TURN BACK BEFORE TOP
    24   9F23   02                             ENDIF
    25   9F26   B8    50    00                 ELSE
         9F1D   0B
    26   9F29   60                             RTS                     ;NONE LEFT. HEAD FOR TOP
    27   9F28   01                             ENDIF
    28   9F18   11                             ENDIF
    29   9F2A   B0    00                       IFCC                    ;TOO HIGH
    30   9F2C   AD  0159                       LDA WFUSCH              ;YES.
    31   9F2F   10    00                       IFMI                    ;CHASE PLAYER AT TOP
    32   9F31   20  9F81                       JSR FUCHPL              ;YES. CHASE
    33   9F34   B8    50    00                 ELSE
         9F30   06
    34   9F37   20  9F8A                       JSR LEFRIT              ;NO. RANDOM
    35   9F36   03                             ENDIF
    36   9F3A   B8    50    00                 ELSE
         9F2B   11
    37   9F3D   20  9F5F                       JSR MAYBLR              ;NO. MAYBE GO LEFT OR RIGHT ANYWAY
    38   9F3C   03                             ENDIF
    39   9F40   B8    50    00                 ELSE
         9EF7   4B
    40   9F43   20  9C99                       JSR JSMOVD              ;MOVE DOWN
    41   9F46   C9    80                       CMP I,080
    42   9F48   90    00                       IFCS                    ;AT BOTTOM OF RANGE
    43   9F4A   2C  0159                       BIT WFUSCH              ;YES.
    44   9F4D   50    00                       IFVS                    ;CHASE PLAYER ON TUBE
    45   9F4F   20  9F81                       JSR FUCHPL              ;YES. CHASE
    46   9F52   B8    50    00                 ELSE
         9F4E   06
    47   9F55   20  9F8A                       JSR LEFRIT              ;NO. RANDOM
    48   9F54   03                             ENDIF
    49   9F58   B8    50    00                 ELSE
         9F49   11
    50   9F5B   20  9F5F                       JSR MAYBLR              ;NO. MAYBE GO LEFT OR RIGHT
```

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ALWELG-ALIENS WELL GAME MAINLIN       ATARI MAC65 VM03.09  00 00 01 PAGE 41+
PLAY-INVADER FUSE UP/DOWN MOTION

    51   9F5A   03                              ENDIF
    52   9F42   1B                              ENDIF
    53   9F5E   60                              RTS
    54                                          .SBTTL  INVADER FUSE JUMP DECISION
    55
    56   9F5F                          MAYBLR
    57   9F5F   BD  02DF                        LDA X,INVAY
    58   9F62   29    20                        AND I,20
    59   9F64   F0    00                        IFNE
    60   9F66   AD  60DA                        LDA RAND02
    61   9F69   CD  015F                        CMP WFUFRQ
    62   9F6C   90    00                        IFCS
    63   9F6E   2C  0159                        BIT WFUSCH
    64   9F71   50    00                        IFVS                  ;CHASE PLAYERS ON TUBE
    65   9F73   8A                              TXA                   ;YES. ONLY IF INDEX IS EVEN
    66   9F74   4A                              LSR
    67   9F75   90    13                        BCC LEFRIT
    68   9F77   20  9F81                        JSR FUCHPL            ;YES. CHASE
    69   9F7A   B8    50    00                 ELSE
         9F72   0A
    70   9F7D   20  9F8A                        JSR LEFRIT            ;NO. RANDOM
    71   9F7C   03                              ENDIF
    72   9F6D   12                              ENDIF
    73   9F65   1A                              ENDIF
    74   9F80   60                              RTS
    75                                          .SBTTL  INVADER FUSE LEFT/RIGHT VECTOR
    76   9F81   20  9D67               FUCHPL   JSR JCHPLA            ;CHASE PLAYER
    77   9F84   20  9C4F                        JSR JCHROT            ;REVERSE DIRECTION  FUSE IS BACKWARDS
    78   9F87   4C  9F99                        JMP GOTJUM
    79   9F8A                          LEFRIT
    80   9F8A   BD  0283                        LDA X,INVAC1          ;RANDOMLY CHOOSE LEFT OR RIGHT
    81   9F8D   29    BF                        AND I, CINVROT
    82   9F8F   2C  60CA                        BIT RANDOM
    83   9F92   50    00                        IFVS
    84   9F94   09    40                        ORA I,INVROT
    85   9F93   02                              ENDIF
    86   9F96   9D  0283                        STA X,INVAC1
    87   9F99   AD  0111               GOTJUM   LDA WELTYP
    88   9F9C   F0    00                        IFNE                  ;PLANAR SURFACE
    89   9F9E   BD  0283                        LDA X,INVAC1          ;YES.
    90   9FA1   29    40                        AND I,INVROT
    91   9FA3   D0    00                        IFEQ                  ;GOING CCW
    92   9FA5   BD  02B9                        LDA X,INVAL1          ;YES.
    93   9FA8   C9    0F                        CMP I,0F
    94   9FAA   B0    08                        BCS REVFLP            ;AT RIGHT EDGE
    95   9FAC   B8    50    00                 ELSE                  ;NO.
         9FA4   0A
    96   9FAF   BD  02B9                        LDA X,INVAL1          ;NO. GOING CW
    97   9FB2   D0    00                        IFEQ                  ;AT LEFT EDGE
    98   9FB4   BD  0283               REVFLP   LDA X,INVAC1          ;YES. GO BACK
    99   9FB7   49    40                        EOR I,INVROT
   100   9FB9   9D  0283                        STA X,INVAC1
   101   9FB3   08                              ENDIF
   102   9FAE   0D                              ENDIF
   103   9F9D   1E                              ENDIF
   104   9FBC   A9    66                        LDA I,FUSELR-CAM
   105   9FBE   8D  010B                        STA CAMPC             ;PT TO LEFT RIGHT FUSE CAM
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ALWELG-ALIENS WELL GAME MAINLIN       ATARI MAC65 VM03.09  00 00 01 PAGE 41+
INVADER FUSE LEFT/RIGHT VECTOR

   106   9FC1    4C  9E5F                    JMP JUMPSD              ;GO START JUMP
```

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ALWELG-ALIENS WELL GAME MAINLIN       ATARI MAC65 VM03.09  00 00 01 PAGE 42
PLAY - INVADERS -TRAILER

     1                                        .SBTTL  PLAY - INVADERS -TRAILER
     2
     3                                                ;
     4                                                ;SPECIAL TRAILER PROCESSING
     5                                                ;
     6   9FC4                          JSTRAI
     7   9FC4    A9    01                       LDA I,1
     8   9FC6    8D  010C                       STA CAMSTA
     9   9FC9    BC  02B9                       LDY X,INVAL1
    10   9FCC    B9  03AC                       LDA Y,LINEY
    11   9FCF    D0    00                       IFEQ                    ;LINE VACANT
    12   9FD1    A9    F1                       LDA I,ILINDDY+1         ;YES. START LOW. 2
    13   9FD3    99  03AC                       STA Y,LINEY
    14   9FD0    05                             ENDIF
    15   9FD6    BD  02DF                       LDA X,INVAY
    16   9FD9    D9  03AC                       CMP Y,LINEY
    17   9FDC    B0    00                       IFCC                    ;NEW ENEMY LINE
    18   9FDE    99  03AC                       STA Y,LINEY             ;YES.
    19   9FE1    A9    80                       LDA I,80
    20   9FE3    99  039A                       STA Y,LINSTA            ;REQUEST RECALC.
    21                                                                  ;NO DESTRUCTION PICS
    22   9FDD    08                             ENDIF
    23   9FE6    BD  02DF                       LDA X,INVAY
    24   9FE9    C9    20                       CMP I,20
    25   9FEB    B0    00                       IFCC                    ;MAX HEIGHT
    26   9FED    BD  028A                       LDA X,INVAC2            ;YES.
    27   9FF0    09    80                       ORA I,ZDIRDO            ;SEND IT DOWN
    28   9FF2    9D  028A                       STA X,INVAC2
    29   9FF5    A9    20                       LDA I,20                ;MAX HEIGHT
    30   9FF7    9D  02DF                       STA X,INVAY
    31   9FFA    B8    50    00                 ELSE
         9FFC    10
    32   9FFD    C9    F2                       CMP I,0F2               ;NO.
    33   9FFF    90    00                       IFCS                    ;MIN HEIGHT
    34   A001    20  A028                       JSR ASTRAL              ;YES. REASSIGN, REVERSE
    35   A004    A9    F0                       LDA I,0F0               ;DON T LET IT GET TO LOW
    36   A006    9D  02DF                       STA X,INVAY
    37   A009    AD  03AB                       LDA NYMCOU              ;ANY NYMPHS, OR NON SPIKER TYPE CLIMBERS
    38   A00C    D0    00                       IFEQ
    39   A00E    BD  028A                       LDA X,INVAC2
    40   A011    29    FC                       AND I, C INVCAR         ;CONVERT IT TO TANKER
    41   A013    09    01                       ORA I,ZCARFL            ;CARRYING FLIPPERS
    42   A015    9D  028A                       STA X,INVAC2
    43   A018    BD  0283                       LDA X,INVAC1            ;LOOKS LIKE TANKER TOO
    44   A01B    29    F8                       AND I, C INVABI
    45   A01D    09    02                       ORA I,ZABTAN
    46   A01F    9D  0283                       STA X,INVAC1
    47   A022    A9    00                       LDA I,0                 ;SET ZERO STATUS  CONVERTED TOO CARRIER
    48   A024    8D  010C                       STA CAMSTA
    49   A00D    19                             ENDIF
    50   A000    26                             ENDIF
    51   9FFC    2A                             ENDIF
    52   A027    60                             RTS
    53   A028                          ASTRAL
    54   A028    A9    00                       LDA I,0
    55   A02A    85    2D                       STA TEMP4
    56   A02C    A9    0F                       LDA I,NLINES-1          ;LOOP LINE COUNTER
```

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ALWELG-ALIENS WELL GAME MAINLIN       ATARI MAC65 VM03.09  00 00 01 PAGE 42+
PLAY - INVADERS -TRAILER

    57   A02E   8D  0140                    STA OPSPIN
    58
    59   A031   AD  60DA                    LDA RAND02              ;START AT A RANDOM LINE
    60   A034   29    0F                    AND I,0F
    61   A036   A8                          TAY
    62                                      BEGIN                   ;LOOP FOR EACH LINE
    63   A037   C0    0F                    CPY I,0F
    64   A039   D0    00                    IFEQ
    65   A03B   AD  0111                     LDA WELTYP
    66   A03E   D0    0F                    BNE SKIPIT              ;SKIP LINE IF PLANAR FAR RIGHT EDGE
    67   A03A   05                          ENDIF
    68   A040   B9  03AC                    LDA Y,LINEY
    69   A043   D0    00                    IFEQ                    ;DEAD LINE
    70   A045   A9    FF                    LDA I,0FF               ;YES. WORST CASE
    71   A044   02                          ENDIF
    72   A047   C5    2D                    CMP TEMP4
    73   A049   90    00                    IFCS                    ;NEEDIEST LINE SO FAR
    74   A04B   85    2D                    STA TEMP4               ;YES. CONDITION
    75   A04D   84    29                    STY TEMP0               ;LINE #
    76   A04A   04                          ENDIF
    77   A04F   88                  SKIPIT  DEY
    78   A050   10    00                    IFMI
    79   A052   A0    0F                    LDY I,NLINES-1
    80   A051   02                          ENDIF
    81   A054   CE  0140                    DEC OPSPIN
    82   A057   10    DE                    MIEND
    83   A059   A5    29                    LDA TEMP0               ;REASSIGN TO NEW LINE
    84   A05B   9D  02B9                     STA X,INVAL1
    85   A05E   18                          CLC
    86   A05F   69    01                    ADC I,1
    87   A061   29    0F                    AND I,0F
    88   A063   9D  02CC                     STA X,INVAL2
    89   A066   BD  028A                     LDA X,INVAC2            ;SEND BACK UP
    90   A069   29    7F                    AND I, C INVDIR
    91   A06B   9D  028A                     STA X,INVAC2
    92   A06E   60                          RTS
```

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ALWELG-ALIENS WELL GAME MAINLIN       ATARI MAC65 VM03.09  00 00 01 PAGE 43
PLAY - INVADERS -TRAILER

      1
      2                                       .SBTTL  PLAY - KILL INVADER
      3                                ;INPUT Y INVADER TO BE SPLIT
      4                                ;OUTPUT ORIGINAL KILLED OFF
      5                                ;       UP TO 2 NEW ONES CREATED
      6                                ;       X IS PRESERVED
      7
      8   A06F                         KILINV
      9   A06F    B9  02DF                    LDA Y,INVAY             ;SAVE Y
     10   A072    85    29                    STA TEMP0
     11   A074    CD  0202                    CMP CURSY
     12   A077    D0    00                    IFEQ                    ;DECREMENT COUNTER
     13   A079    B9  0283                    LDA Y,INVAC1
     14   A07C    29    07                    AND I,INVABI
     15   A07E    C9    04                    CMP I,ZABFUS
     16   A080    F0    06                    BEQ MOVER               ;FUSE  BRANCH IF FUSE  OR CHASE
     17   A082    CE  0109                    DEC INCCOU              ;CHASER
     18   A085    B8    50    00              ELSE
          A078    0F
     19   A088    CE  0108               MOVER    DEC INMCOU          ;MOVER
     20   A087    03                          ENDIF
     21   A08B    A9    00                    LDA I,0                 ;DEACTIVATE ENEMY
     22   A08D    99  02DF                    STA Y,INVAY
     23   A090    B9  0283                    LDA Y,INVAC1
     24   A093    29    07                    AND I,INVABI
     25   A095    86    35                    STX SAVEX
     26   A097    AA                          TAX
     27   A098    DE  0142                    DEC X,FLIPCO            ;UPDATE TYPE COUNTER
     28   A09B    A6    35                    LDX SAVEX
     29   A09D    B9  028A                    LDA Y,INVAC2
     30   A0A0    29    03                    AND I,INVCAR
     31   A0A2    F0    00                    IFNE                    ;SPLIT TYPE INVADER
     32   A0A4    38                          SEC                     ;YES
     33   A0A5    E9    01                    SBC I,1
     34   A0A7    C9    02                    CMP I,ZABTAN
     35   A0A9    D0    00                    IFEQ                    ;TANKER
     36   A0AB    A9    04                    LDA I,ZABFUS            ;YES. REALLY FUSE
     37   A0AA    02                          ENDIF
     38   A0AD    85    2B                    STA TEMP2               ;RESULTANT MUTATION
     39   A0AF    B9  02B9                    LDA Y,INVAL1            ;YES.
     40   A0B2    38                          SEC
     41   A0B3    E9    01                    SBC I,1
     42   A0B5    29    0F                    AND I,0F
     43   A0B7    C9    0F                    CMP I,0F                ;DON T ALLOW WRAPAROUND ON PLANE
     44   A0B9    90    00                    IFCS
     45   A0BB    2C  0111                    BIT WELTYP
     46   A0BE    10    00                    IFMI
     47   A0C0    A9    00                    LDA I,0
     48   A0BF    02                          ENDIF
     49   A0BA    07                          ENDIF
     50   A0C2    85    2A                    STA TEMP1               ;LINE # CW
     51                                       ;Y
     52   A0C4    20  9B07                    JSR SPLCHA              ;CHARACTERISTICS
     53   A0C7    A5    2D                    LDA TEMP4               ;JUST IN CASE THE DEAD
     54   A0C9    8D  010B                    STA CAMPC               ;SLOT GETS USED
     55   A0CC    CE  010B                    DEC CAMPC
     56   A0CF    A9    00                    LDA I,0                 ;SET EXIT FLAG
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ALWELG-ALIENS WELL GAME MAINLIN       ATARI MAC65 VM03.09  00 00 01 PAGE 43+
PLAY - KILL INVADER

    57   A0D1   8D  010A                STA EXICAM
    58   A0D4   20  994D                JSR ACTINV              ;ACTIVATE AN INVADER
    59   A0D7   F0    00                IFNE                    ;ANY SLOTS
    60   A0D9   A5    2A                LDA TEMP1               ;YES
    61   A0DB   18                      CLC
    62   A0DC   69    02                ADC I,2
    63   A0DE   29    0F                AND I,0F
    64   A0E0   C9    0F                CMP I,0F
    65   A0E2   D0    00                IFEQ                    ;DON T ALLOW WRAP AROUND ON PLANE
    66   A0E4   2C  0111                BIT WELTYP
    67   A0E7   10    00                IFMI
    68   A0E9   A9    0E                LDA I,0E
    69   A0E8   02                      ENDIF
    70   A0E3   07                      ENDIF
    71   A0EB   85    2A                STA TEMP1               ;LINE #CCW
    72   A0ED   A5    2B                LDA TEMP2
    73   A0EF   09    40                ORA I,ZROCCW
    74   A0F1   85    2B                STA TEMP2
    75   A0F3   20  994D                JSR ACTINV              ;ACTIVATE ANOTHER INVADER
    76   A0D8   1D                      ENDIF
    77   A0A3   52                      ENDIF
    78   A0F6   60                      RTS
```

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ALWELG-ALIENS WELL GAME MAINLIN       ATARI MAC65 VM03.09  00 00 01 PAGE 44
PLAY - INVADER CAM TABLES

                                              .SBTTL  PLAY - INVADER CAM TABLES

                                CAM
                                                                    ;
                                                                    ;TRAILER MOVING UP
                                                                    ;
                                TRALUP
A0F7  0C                                VSMOVE                      ;MOVE UP
A0F8  0E                                VSTRAI                      ;PROCESS TRALER
A0F9  1A    06                          VBROPC NOJUMP               ;CONVERT TO CARRIER
A0FB  00                                VEXIT                       ;EXIT
A0FC  06    FF                          VSETPC TRALUP               ;RELOOP
                                                                    ;
                                                                    ;MOVING UP  NO JUMPS
                                                                    ;
                                NOJUMP
A0FE  0C                                VSMOVE                      ;MOVE UP
A0FF  00                                VEXIT
A100  06    06                          VSETPC NOJUMP               ;RELOOP
                                                                    ;
                                                                    ;MOVE 3 TIMES, THEN JUMP
                                MOVJMP                              ;
A102  02    08                          VSLOOP 8
A104  0C                        MJLOP1  VSMOVE                      ;MOVE UP N FRAMES
A105  00                                VEXIT
A106  08    0C                          VELOOP MJLOP1
A108  12                                VJUMPS                      ;START JUMP
A109  00                        MJLOP5  VEXIT
A10A  14                                VJUMPM                      ;PROCESS JUMP
A10B  04                                VSKIP0                      ;SKIP IF JUMP IS DONE
A10C  06    11                          VSETPC MJLOP5
A10E  06    0A                          VSETPC MOVJMP               ;JUMP IS DONE. RESTART SEQUENCE
                                                                    ;
                                                                    ;SMOOTH UPWARD SPIRAL
                                                                    ;
A110                            SPIRAL
A110  0C                                VSMOVE
A111  00                                VEXIT
A112  12                                VJUMPS                      ;START JUMP
A113  00                        SPILOP  VEXIT
A114  14                                VJUMPM                      ;PROCESS JUMP
A115  0C                                VSMOVE                      ;MOVE UP
A116  04                                VSKIP0
A117  06    1B                          VSETPC SPILOP
A119  06    18                          VSETPC SPIRAL               ;RESTART JUMP WHEN FINISHED
                                                                    ;
                                                                    ;CHANGE JUMP DIRECTION EVERY N JUMPS
                                                                    ;
A11B                            SPIRCH
A11B  0C                                VSMOVE
A11C  00                                VEXIT
A11D  02    02                          VSLOOP 2                    ;LOOP FOR N JUMPS
A11F  12                        SPRLP1  VJUMPS                      ;START JUMP
A120  00                        SPRLP2  VEXIT
A121  14                                VJUMPM                      ;CONTINUE JUMP
A122  0C                                VSMOVE                      ;MOVE UP
A123  04                                VSKIP0                      ;JUMP DONE
```

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ALWELG-ALIENS WELL GAME MAINLIN       ATARI MAC65 VM03.09  00 00 01 PAGE 44+
PLAY - INVADER CAM TABLES

    58   A124   06   28                VSETPC SPRLP2          ;NO. CONTINUE JUMP
    59   A126   00                     VEXIT
    60   A127   08   27                VELOOP SPRLP1          ;YES. NEW JUMP OR EXIT
    61   A129   16                     VCHROT                 ;CHANGE JUMP DIRECTION
    62   A12A   02   03                VSLOOP 3               ;LOOP FOR N JUMPS
    63   A12C   12              SPRLP3 VJUMPS                 ;START JUMP
    64   A12D   00              SPRLP4 VEXIT
    65   A12E   14                     VJUMPM                 ;CONTINUE JUMP
    66   A12F   0C                     VSMOVE                 ;MOVE UP
    67   A130   04                     VSKIP0                 ;JUMP DONE
    68   A131   06   35                VSETPC SPRLP4          ;NO. CONT JUMP
    69   A133   00                     VEXIT
    70   A134   08   34                VELOOP SPRLP3          ;YES. NEW JUMP OR EXIT
    71   A136   16                     VCHROT
    72   A137   06   23                VSETPC SPIRCH          ;START OVER
    73                                                        ;
    74                                                        ;CHASE PLAYER AROUND TOP
    75                                                        ;
    76   A139                   TOPPER
    77   A139   02   04                VSLOOP 4               ;WAIT IN CROUCH FOR N FRAMES
    78                                                        ;
    79   A13B   18              KICHEK VKITST                 ;TEST FOR CURSOR KILL
    80   A13C   00                     VEXIT
    81   A13D   08   43                VELOOP KICHEK
    82   A13F   12                     VJUMPS                 ;START A JUMP
    83                                                        ;
    84   A140   00              KJULP1 VEXIT
    85   A141   10   B3                VSLOPB WTTFRA
    86   A143   14              KJULP2 VJUMPM                 ;DOUBLE SPEED JUMP
    87   A144   1A   41                VBROPC TOPPER          ;SKIP IF JUMP IS DONE
    88   A146   08   4B                VELOOP KJULP2
    89   A148   06   48                VSETPC KJULP1          ;
    90                                                        ;ENEMY FLIPS   MOVES ON OPEN LINES, MOVES ON ENEMY LINES
    91   A14A   00              COWJM2 VEXIT
    92   A14B   0C              COWJMP VSMOVE                 ;MOVE ENEMY
    93   A14C   1C                     VELTST                 ;ON AN ENEMY LINE
    94   A14D   1A   52                VBROPC COWJM2          ;YES. CONTINUE UP ON LINE
    95   A14F   12                     VJUMPS                 ;NO. START A JUMP
    96   A150   00                     VEXIT
    97   A151   0C                     VSMOVE                 ;MOVE UP
    98   A152   14              COWJM3 VJUMPM                 ;PROCESS JUMP
    99   A153   1A   52                VBROPC COWJM2          ;JUMP DONE
   100   A155   00                     VEXIT
   101   A156   06   5A                VSETPC COWJM3          ;CONTINUE JUMP
   102                                                        ;
   103                                                        ;PULSAR
   104                                                        ;
   105                                                        ;
   106                                                        ;FUSE UP/DOWN
   107   A158                   FUSEUP
   108   A158   1E                     VSFUSE                 ;PROCESS FUSE
   109   A159   20                     VFUSKI                 ;FUSE KILL CURSOR
   110   A15A   00                     VEXIT                  ;EXIT
   111   A15B   06   60                VSETPC FUSEUP          ;RELOOP
   112                                                        ;
   113   A15D   00              FUSELR VEXIT                  ;FUSE LEFT/RIGHT
   114   A15E   02   03                VSLOOP 3               ;SLOWL
```

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ALWELG-ALIENS WELL GAME MAINLIN       ATARI MAC65 VM03.09  00 00 01 PAGE 44+
PLAY - INVADER CAM TABLES

   115   A160   20                FUSLOP  VFUSKI                ;CURSOR KILLED
   116   A161   00                        VEXIT
   117   A162   08   68                   VELOOP FUSLOP
   118   A164   14                        VJUMPM                ;LEFT/RIGHT
   119   A165   1A   60                   VBROPC FUSEUP         ;JUMP DONE
   120   A167   06   65                   VSETPC FUSELR         ;NO. CONTINUE JUMP
   121                                                           ;
   122   A169                     PULSCH
   123   A169                     PULSCP                        ;PULSAR CHASER PLAYER
   124   A169   10   B2                   VSLOPB PUCHDE
   125   A16B   22                PULSC1  VSPUMO                ;MOVE 1/8 OF TUBE BEFORE NEXT FLIP
   126   A16C   00                        VEXIT
   127   A16D   08   73                   VELOOP PULSC1
   128   A16F   26                PULSC2  VCHKPU                ;PULSING
   129   A170   1A   7E                   VBROPC PULSC3         ;BRANCH IF NOT
   130   A172   22                        VSPUMO                ;PULSING, SO KEEP MOVING
   131   A173   00                        VEXIT
   132   A174   06   77                   VSETPC PULSC2         ;RECHECK FOR PULSE
   133   A176   24                PULSC3  VCHPLA                ;SET FLIP DIRECTION TOWARD PLAYER
   134   A177   12                        VJUMPS                ;START FLIP
   135   A178   00                PULSCJ  VEXIT
   136   A179   14                        VJUMPM                ;CONTINUE FLIP
   137   A17A   1A   71                   VBROPC PULSCP         ;DONE
   138   A17C   06   80                   VSETPC PULSCJ         ;NO
   139                                                           ;
   140                                                           ;AVOIDANCE FLIPPER
   141                                                           ;
   142   A17E                     AVOIDR
   143   A17E   24                        VCHPLA                ;SET DIRECTION TOWARD PLAYER
   144   A17F   16                        VCHROT                ;REVERSE IT
   145   A180   12                        VJUMPS
   146   A181   00                AVOID1  VEXIT                 ;FLIP PROCESSING LOOP
   147   A182   0C                        VSMOVE
   148   A183   14                        VJUMPM
   149   A184   04                        VSKIP0
   150   A185   06   89                   VSETPC AVOID1
   151   A187   02   04                   VSLOOP 4.
   152   A189   00                AVOID2  VEXIT                 ;FLIP DONE. MOVE UP LOOP
   153   A18A   0C                        VSMOVE
   154   A18B   08   91                   VELOOP AVOID2
   155   A18D   06   86                   VSETPC AVOIDR
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ALWELG-ALIENS WELL GAME MAINLIN       ATARI MAC65 VM03.09  00 00 01 PAGE 45
PLAY - INVADER CAM TABLES

     1
     2                                        .SBTTL PLAY - MOVE CHARGES
     3   A18F                          MOVCHA
     4   A18F    A2    0B                     LDX I,NPCHAR+NICHAR-1
     5   A191    86    37                     STX INDEX1
     6                                        BEGIN                    ;LOOP FOR EACH CHARGE
     7   A193    A6    37                     LDX INDEX1
     8   A195    BD  02D3                     LDA X,CHARY
     9   A198    F0    00                     IFNE                     ;CHARGE ACTIVE
    10   A19A    E0    08                     CPX I,NPCHAR
    11   A19C    B0    00                     IFCC                     ;DETERMINE DIRECTION
    12                                        ;TOWARD INVADER
    13   A19E    69    09                     ADC I,PCVELO
    14   A1A0    BC  02F2                     LDY X,CHARCO
    15   A1A3    F0    00                     IFNE                     ;CHARGE IN COLLISION W. LINE
    16   A1A5    38                           SEC                      ;YES. SLOW IT DOWN
    17   A1A6    E9    04                     SBC I,4
    18   A1A4    03                           ENDIF
    19   A1A8    9D  02D3                     STA X,CHARY
    20   A1AB    20  A1FA                     JSR LIFECT
    21   A1AE    BD  02D3                     LDA X,CHARY
    22   A1B1    C9    F0                     CMP I,ILINDDY
    23   A1B3    90    00                     IFCS                     ;AT END
    24   A1B5    CE  0135                     DEC CHACOU
    25   A1B8    A9    00                     LDA I,0                  ;YES, DEACTIVATE
    26   A1BA    9D  02D3                     STA X,CHARY
    27   A1B4    08                           ENDIF
    28   A1BD    B8    50    00               ELSE
         A19D    22
    29   A1C0    BD  02E6                     LDA X,CHARYL
    30   A1C3    18                           CLC                      ;TOWARD PLAYER
    31   A1C4    6D  0120                     ADC WCHARL
    32   A1C7    9D  02E6                     STA X,CHARYL
    33   A1CA    BD  02D3                     LDA X,CHARY
    34   A1CD    6D  0118                     ADC WCHARIN
    35   A1D0    CD  0202                     CMP CURSY
    36   A1D3    B0    00                     IFCC                     ;AT TOP
    37   A1D5    C6    A6                     DEC ESHCOU
    38   A1D7    20  A1E4                     JSR CHATOP               ;YES. CHECK FOR COLLISION WITH CURSOR
    39   A1DA    A9    00                     LDA I,0                  ;DEACTIVATE
    40   A1D4    07                           ENDIF
    41   A1DC    9D  02D3                     STA X,CHARY
    42   A1BF    1F                           ENDIF
    43   A199    45                           ENDIF
    44   A1DF    C6    37                     DEC INDEX1
    45   A1E1    10    B0                     MIEND
    46   A1E3    60                           RTS
    47   A1E4                          CHATOP                   ;CHECK FOR CURSOR CHARGE COLLISION
    48   A1E4    AD  0200                     LDA CURSL1
    49   A1E7    DD  02AD                     CMP X,CHARL1
    50   A1EA    D0    00                     IFEQ
    51   A1EC    AD  0201                     LDA CURSL2               ;SAME LINE AS CURSOR.
    52   A1EF    30    00                     IFPL                     ;CURSOR ALREADY DEAD
    53   A1F1    20  A34B                     JSR INCPSQ               ;NO. KILL CURSOR
    54   A1F4    A9    81                     LDA I,81                 ;SPECIAL BLASTED CODE
    55   A1F6    8D  0201                     STA CURSL2
    56   A1F0    08                           ENDIF
```

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ALWELG-ALIENS WELL GAME MAINLIN       ATARI MAC65 VM03.09  00 00 01 PAGE 45+
PLAY - MOVE CHARGES

    57   A1EB   0D                          ENDIF
    58   A1F9   60                          RTS
    59                                      .SBTTL  PLAY - CHARGE LINE COLLISION
    60
    61                                                          ;
    62   A1FA                       LIFECT                      ;PROCESS PLAYER CHARGE S EFFECT
    63                                                          ;ON ENEMY LINES
    64                                                          ;
    65   A1FA   BC  02AD                    LDY X,CHARL1        ;DO CHARGE LINE 1 FIRST
    66   A1FD   B9  03AC                    LDA Y,LINEY
    67   A200   F0    00                   IFNE                ;LINE DEAD
    68   A202   BD  02D3                    LDA X,CHARY         ;NO.
    69   A205   D9  03AC                    CMP Y,LINEY
    70   A208   90    00                   IFCS                ;CHARGE ON ENEMY LINES
    71   A20A   C9    F0                   CMP I,ILINDDY       ;YES
    72   A20C   90    00                   IFCS                ;LINE DEAD
    73   A20E   A9    00                   LDA I,0             ;YES
    74   A20D   02                         ENDIF
    75   A210   99  03AC                    STA Y,LINEY         ;YES. UPDATE LINE ENEMY TO
    76   A213   FE  02F2                    INC X,CHARCO        ;UPDATE CHARGE - ENEMY LINE COLLISION COUNTER
    77   A216   A9    C0                   LDA I,0C0
    78   A218   99  039A                    STA Y,LINSTA        ;SET RECALC FLAG
    79                                                          ;REQUEST LINE DESTRUCTION PIC.
    80   A21B   20  0000G                   JSR SELICO          ;MAKE SOUND
    81                                                          ;GIVE PTS
    82   A21E   A2    FF                   LDX I,-1            ;SIGNAL SCORE ROUTINE TO USE TEMPS
    83   A220   A9    00                   LDA I,0             ;ADD 1 TO SCORE FOR EACH HIT
    84   A222   85    2A                   STA TEMP1
    85   A224   85    2B                   STA TEMP2
    86   A226   A9    01                   LDA I,1
    87   A228   85    29                   STA TEMP0
    88   A22A   20  0000G                   JSR UPSCORE
    89   A22D   A6    37                   LDX INDEX1          ;RESTORE CHARGE INDEX
    90   A209   25                         ENDIF
    91   A22F   BD  02F2                    LDA X,CHARCO
    92   A232   C9    02                   CMP I,2
    93   A234   90    00                   IFCS                ;CHARGE EXHAUSTED
    94   A236   A9    00                   LDA I,0             ;YES. DEACTIVATE IT
    95   A238   9D  02D3                    STA X,CHARY
    96   A23B   CE  0135                    DEC CHACOU
    97   A235   08                         ENDIF
    98   A201   3C                         ENDIF
    99   A23E   60                          RTS
```

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ALWELG-ALIENS WELL GAME MAINLIN       ATARI MAC65 VM03.09  00 00 01 PAGE 46
PLAY - FIRE PLAYER CHARGE

     1                                          .SBTTL PLAY - FIRE PLAYER CHARGE
     2   A23F                             FIREPC
     3   A23F    AD  0201                       LDA CURSL2
     4   A242    30    00                       IFPL                    ;PLAYER ALIVE
     5   A244    A5    05                       LDA QSTATUS
     6   A246    30    00                       IFPL                    ;ATTRACT
     7   A248    AD  0106                       LDA CURMOD              ;YES. AUTO FIRE
     8   A24B    85    29                       STA TEMPO
     9   A24D    A2    0A                       LDX I,NICHARG+NINVAD-1
    10                                          BEGIN                   ;LOOP FOR EACH INVADER   SHOT UNTIL EXHAUSTED OR CLOSE 1 IS F
    11   A24F    BD  02DB                       LDA X,CHARY+NPCHAR
    12   A252    F0    00                       IFNE                    ;ACTIVE
    13   A254    BD  02B5                       LDA X,CHARL1+NPCHAR     ;YES CALUCLATE ABSOLUTE VALUE OF LINE DELTA
    14   A257    38                             SEC                     ;
    15   A258    ED  0200                       SBC CURSL1
    16   A25B    10    00                       IFMI
    17   A25D    49    FF                       EOR I,0FF
    18   A25F    18                             CLC
    19   A260    69    01                       ADC I,1
    20   A25C    05                             ENDIF
    21   A262    C9    02                       CMP I,2
    22   A264    B0    00                       IFCC                    ;TOO CLOSE
    23   A266    E6    29                       INC TEMPO               ;YES. FIRE
    24   A265    02                             ENDIF
    25   A253    14                             ENDIF
    26   A268    CA                             DEX
    27   A269    10    E4                       MIEND
    28   A26B    A5    29                       LDA TEMPO
    29   A26D    B8    50    00                 ELSE
         A247    28
    30   A270    A5    4D                       LDA SWSTAT
    31   A272    29    10                       AND I,MFIRE
    32   A26F    04                             ENDIF
    33   A274    F0    00                       IFNE                    ;FIRE CHARGE
    34   A276    A2    07                       LDX I,NPCHARG-1         ;YES
    35                                          BEGIN                   ;LOOP UNTIL VACANCY IS FOUND
    36   A278    BD  02D3                       LDA X,CHARY
    37   A27B    D0    00                       IFEQ                    ;VACANCY
    38                                                                  ;YES FIRE CHARGE
    39   A27D    EE  0135                       INC CHACOU
    40   A280    AD  0202                       LDA CURSY               ;START AT CURSOR
    41   A283    9D  02D3                       STA X,CHARY
    42   A286    AD  0200                       LDA CURSL1
    43   A289    9D  02AD                       STA X,CHARL1            ;STARTS AT SAME LINE AS CURSOR
    44   A28C    AD  0201                       LDA CURSL2
    45   A28F    9D  02C0                       STA X,CHARL2
    46   A292    A9    00                       LDA I,0                 ;0 COLLISION COUNTER
    47   A294    9D  02F2                       STA X,CHARCO
    48   A297    20  0000G                      JSR SLAUNC              ;LAUNCH SOUND
    49   A29A    AD  0202                       LDA CURSY
    50   A29D    20  A463                       JSR COLCHK              ;CHECK FOR COLLISION
    51   A2A0    A2    00                       LDX I,0                 ;EXIT LOOP
    52   A27C    25                             ENDIF
    53   A2A2    CA                             DEX
    54   A2A3    10    D3                       MIEND
    55   A275    2F                             ENDIF
    56   A243    61                             ENDIF
```

```
PLAY - FIRE PLAYER CHARGE

    57   A2A5    60                          RTS
```

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                                                .SBTTL PLAY - FIRE INVADER CHARGE
                                      FIREIC
A2A6                                            LDA CURSL2
A2A6  AD  0201                                  IFPL                    ;PLAYER ALIVE
A2A9  30    00                                  LDX I,NINVAD-1          ;YES.
A2AB  A2    06                                  BEGIN                   ;LOOP FOR EACH INVADER
A2AD  BD  02DF                                  LDA X,INVAY
A2B0  F0    00                                  IFNE                    ;ACTIVE
A2B2  C9    30                                  CMP I,ILINLIY+20        ;YES
A2B4  90    00                                  IFCS                    ;INVADER LOW ENOUGH
A2B6  BD  028A                                  LDA X,INVAC2            ;YES
A2B9  29    40                                  AND I,INVFIR
A2BB  F0    00                                  IFNE                    ;INVADER MOVING BOTH LEGS ON LINES
A2BD  DE  02A6                                  DEC X,INVACT            ;YES. UPDATE INVADER S FIRE TIMR
A2C0  10    00                                  IFMI
A2C2  FE  02A6                                  INC X,INVACT
A2C5  BD  0283                                  LDA X,INVAC1
A2C8  29    80                                  AND I,INVMOT
A2CA  D0    00                                  IFEQ
A2CC  AD  60CA                                  LDA RANDOM
A2CF  A4    A6                                  LDY ESHCOU
A2D1  D9  A304                                  CMP Y,CHANCE
A2D4  90    00                                  IFCS                    ;TIMER IN FIRE WINDOW
A2D6  AC  011A                                  LDY WCHAMX
                                                BEGIN                   ;LOOP THRU EACH INVADER CHARGE
A2D9  B9  02DB                                  LDA Y,CHARY+NPCHARG     ;UNTIL VACANCY
A2DC  D0    00                                  IFEQ                    ;VACANCY
A2DE  BD  02DF                                  LDA X,INVAY             ;YES
A2E1  99  02DB                                  STA Y,CHARY+NPCHARG     ;START AT INVADER LOC
A2E4  BD  02B9                                  LDA X,INVAL1
A2E7  99  02B5                                  STA Y,CHARL1+NPCHARG    ;SAME LINE AS INVADER
A2EA  BD  02CC                                  LDA X,INVAL2
A2ED  99  02C8                                  STA Y,CHARL2+NPCHARG
A2F0  AD  0119                                  LDA WCHARFR
A2F3  9D  02A6                                  STA X,INVACT            ;RESTART TIMER
A2F6  20  0000G                                 JSR ESLSON
A2F9  E6    A6                                  INC ESHCOU
A2FB  A0    00                                  LDY I,0                 ;EXIT LOOP
A2DD  1F                                        ENDIF
A2FD  88                                        DEY
A2FE  10    D9                                  MIEND
A2D5  2A                                        ENDIF
A2CB  34                                        ENDIF
A2C1  3E                                        ENDIF
A2BC  43                                        ENDIF
A2B5  4A                                        ENDIF
A2B1  4E                                        ENDIF
A300  CA                                        DEX
A301  10    AA                                  MIEND
A2AA  58                                        ENDIF
A303  60                                        RTS
A304  00    E0    F0    FA    CHANCE  .BYTE 0,0E0,0F0,0FA,0FF ;HIGHER CHANCE FOR ENEMY SHOT IF LESS ON SCREEN
A308  FF
```

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ALWELG-ALIENS WELL GAME MAINLIN       ATARI MAC65 VM03.09  00 00 01 PAGE 48
PLAY-START EXPLOSION

     1                                          .SBTTL  PLAY-START EXPLOSION
     2                                ;OUTPUT X AND Y PRESERVED
     3                                ;       SAVEX,SAVEY,TEMP0,1,2,3,4 ARE GARBAGE
     4
     5                                          .SBTTL  PLAY-EXPLOSION OF FUSE INIT
     6
     7   A309   86   37              INCFS2  STX INDEX1
     8   A30B   A9   FF                      LDA I,0FF               ;MARK SHOT USED
     9   A30D   9D  02F2                      STA X,CHARCO
    10   A310   98                           TYA             ;CONVERT SHOT INDEX TO INVADER INDEX
    11   A311   38                           SEC
    12   A312   E9   04                      SBC I,NICHAR
    13   A314   A8                           TAY
    14   A315   B9  02B9                      LDA Y,INVAL1
    15   A318   85   2D                      STA TEMP4
    16   A31A   AD  60DA                      LDA RAND02
    17   A31D   29   07                      AND I,7
    18   A31F   C9   03                      CMP I,3
    19   A321   90   00                      IFCS                    ;RANDOMLY CHOOSE 0 250 ,1 500 , OR 2 750
    20   A323   A9   00                      LDA I,0
    21   A322   02                           ENDIF
    22   A325   48                           PHA
    23   A326   18                           CLC
    24   A327   69   02                      ADC I,CFTYPE
    25   A329   20  A3CA                      JSR GEXIFU              ;INITIALIZE EXPLOSION
    26   A32C   20  A06F                      JSR KILINV              ;KILL FUSE
    27   A32F   68                           PLA
    28   A330   18                           CLC
    29   A331   69   05                      ADC I,5
    30   A333   AA                           TAX
    31   A334   20  0000G                    JSR UPSCOR              ;UPDATE SCORE
    32   A337   A6   37                      LDX INDEX1
    33   A339   60                           RTS
    34   A33A   A9   05              INIPSQ  LDA I,IPTYPE
    35   A33C   20  A352                     JSR DEADCU              ;KILL CURSOR
    36   A33F   CE  0201                     DEC CURSL2              ;DISPLAY CURSOR
    37   A342   60                           RTS
    38   A343   A9   00G             INFPSQ  LDA I,FPSPXI            ;SPECIAL BANG PIC CODE
    39   A345   D0   06                      BNE INCP2
    40   A347   A9   00G             INPPSQ  LDA I,PPSPXI            ;SPECIAL EXPLOSION PIC CODE
    41   A349   D0   02                      BNE INCP2
    42   A34B   A9   00G             INCPSQ  LDA I,CPSPXI            ;SPECIAL EXPLOSION PIC CODE
    43   A34D   8D  013B             INCP2   STA SPXIND
    44
    45   A350   A9   01                      LDA I,CPTYPE
    46   A352                        DEADCU                  ;KILL CURSOR
    47   A352   85   2C                      STA TEMP3               ;EXPOLSION CODE
    48   A354   AD  0202                     LDA CURSY               ;POSITION
    49   A357   85   29                      STA TEMP0
    50   A359   AD  0200                     LDA CURSL1
    51   A35C   85   2D                      STA TEMP4
    52   A35E   20  0000G                    JSR CPEXPL              ;START NOISE
    53   A361   20  A3D6                     JSR GENEX2              ;INIT EXPLOSION
    54   A364   A9   81                      LDA I,81                ;KILL CURSOR/NO DISP
    55   A366   8D  0201                     STA CURSL2
    56   A369   A9   01                      LDA I,1                 ;INIT TIMER FOR EXP.
    57   A36B   8D  013C                     STA SPFTIM
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ALWELG-ALIENS WELL GAME MAINLIN       ATARI MAC65 VM03.09  00 00 01 PAGE 48+
PLAY-EXPLOSION OF FUSE INIT

    58   A36E   60                              RTS
    59   A36F   20  0000G          INCCSQ      JSR CCEXPL              ;CHARGE-CHARGE
    60   A372   B9  02DB                       LDA Y,CHARY+NPCHAR
    61   A375   85    29                       STA TEMP0
    62   A377   B9  02B5                       LDA Y,CHARL1+NPCHAR
    63   A37A   85    2D                       STA TEMP4
    64   A37C   A9    00                       LDA I,CCTYPE
    65   A37E   20  A3D4                       JSR GENEXP
    66   A381   A9    00                       LDA I,0                 ;DEACTIVATE SHOT
    67   A383   99  02DB                       STA Y,CHARY+NPCHAR
    68   A386   C6    A6                       DEC ESHCOU              ;ONE LESS SHOT
    69   A388   A9    FF                       LDA I,0FF               ;SHOT USED FLAG
    70   A38A   9D  02F2                       STA X,CHARCO
    71   A38D   60                             RTS
    72   A38E                       INCIS2
    73   A38E   A9    FF                       LDA I,0FF               ;SHOT USED MARKER
    74   A390   9D  02F2                       STA X,CHARCO
    75   A393   98                            TYA             ;CONVERT SHOT INDEX TO INVADER INDEX
    76   A394   38                            SEC
    77   A395   E9    04                      SBC I,NICHAR
    78   A397   A8                            TAY
    79   A398   B9  0283           INCISQ      LDA Y,INVAC1
    80   A39B   29    C0                      AND I,ZROCCW ZMOTJM
    81   A39D   C9    C0                      CMP I,ZROCCW ZMOTJM
    82   A39F   F0    00                      IFNE                            ;FLIPPING CCW
    83   A3A1   B9  02B9                       LDA Y,INVAL1                    ;NO. USE BASE LEG
    84   A3A4   B8    50    00                 ELSE
         A3A0   06
    85   A3A7   B9  02B9                       LDA Y,INVAL1                    ;YES. ADJUST BASE LIVE
    86   A3AA   38                             SEC
    87   A3AB   E9    01                      SBC I,1
    88   A3AD   29    0F                      AND I,0F
    89   A3A6   08                            ENDIF
    90   A3AF   85    2D                      STA TEMP4
    91   A3B1   A9    00                      LDA I,CITYPE
    92   A3B3   20  A3CA                       JSR GEXIFU              ;INITIALIZE BANG PIC
    93   A3B6   20  A06F                       JSR KILINV              ;KILL INVADER
    94   A3B9   B9  0283                       LDA Y,INVAC1
    95   A3BC   29    07                       AND I,INVABI
    96   A3BE   A8                            TAY
    97   A3BF   BE  A3C5                       LDX Y,INVPIN            ;INDEX FOR PTS TO ADD
    98   A3C2   4C  0000G                      JMP UPSCOR              ;UPDATE SCORE
    99   A3C5   01    02    03    04   INVPIN  .BYTE 1,2,3,4,1
         A3C9   01
   100   A3CA   48                     GEXIFU  PHA
   101   A3CB   20  0000G                      JSR CIEXPL              ;BANG SOUND
   102   A3CE   B9  02DF                       LDA Y,INVAY
   103   A3D1   85    29                       STA TEMP0
   104   A3D3   68                             PLA
   105                                                  ;
   106                                                  ;GENERAL EXPLOSION STARTER
   107                                                  ;INPUT ACC EXPLOSION TYPE
   108   A3D4                       GENEXP                ;       TEMP0 EXPLOSION Y ;TEMP4 EXPLOSION LINE
   109   A3D4   85    2C                       STA TEMP3               ;SAVE TYPE   DEPTH
   110   A3D6   86    35            GENEX2     STX SAVEX
   111   A3D8   84    36                       STY SAVEY
   112   A3DA   A9    00                       LDA I,0
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ALWELG-ALIENS WELL GAME MAINLIN       ATARI MAC65 VM03.09  00 00 01 PAGE 48+
PLAY-EXPLOSION OF FUSE INIT

   113   A3DC   85   2A                    STA TEMP1
   114   A3DE   85   2B                    STA TEMP2
   115   A3E0   A2   07                    LDX I,NEXPLO-1
   116                                     BEGIN                ;LOOP UNTIL VACANCY IS FOUND
   117   A3E2   BD 030A                    LDA X,EXPLOY
   118   A3E5   F0   13                    BEQ GOTEXP           ;EXIT IF VACANCY
   119   A3E7   BD 0312                    LDA X,EXPLOS
   120   A3EA   C5   2A                    CMP TEMP1
   121   A3EC   90   00                    IFCS                 ;FURTHEST ALONG SO FAR
   122   A3EE   85   2A                    STA TEMP1            ;YES. SAVE IT
   123   A3F0   86   2B                    STX TEMP2
   124   A3ED   04                         ENDIF
   125   A3F2   CA                         DEX
   126   A3F3   10   ED                    MIEND
   127   A3F5   CE 0116                    DEC EXPCOU           ;WILL BE INCD LATER
   128   A3F8   A6   2B                    LDX TEMP2            ;NO VACANCIES. USE FURTHEST AONG
   129   A3FA   A9   00              GOTEXP LDA I,0
   130   A3FC   9D 0312                    STA X,EXPLOS         ;START SEQUENCES
   131   A3FF   A5   2C                    LDA TEMP3
   132   A401   9D 0302                    STA X,EXPLOT         ;EXPLOSION TYPE
   133   A404   A5   29                    LDA TEMP0
   134   A406   9D 030A                    STA X,EXPLOY         ;EXPLOSION DEPTH
   135   A409   A5   2D                    LDA TEMP4
   136   A40B   9D 02FA                    STA X,EXPLOL         ;EXPLOSION LINE
   137   A40E   EE 0116                    INC EXPCOU           ;INC COUNTER
   138   A411   A6   35                    LDX SAVEX
   139   A413   A4   36                    LDY SAVEY
   140   A415   60                         RTS
   141          0005              IPTYPE 5                      ;EXPLOSION TYPE CODES
   142          0001              CPTYPE 1
   143          0000              CCTYPE 0
   144          0000              CITYPE 0
   145          0002              CFTYPE 2
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ALWELG-ALIENS WELL GAME MAINLIN       ATARI MAC65 VM03.09  00 00 01 PAGE 49
PLAY-PROCESS EXPLOSIONS

     1                                          .SBTTL  PLAY-PROCESS EXPLOSIONS
     2   A416                             PROEXP
     3   A416    AD  0116                       LDA EXPCOU
     4   A419    F0    00                       IFNE                    ;ANY BANGS
     5   A41B    A9    00                       LDA I,0                 ;YES CLEAR COUNT
     6   A41D    8D  0116                       STA EXPCOU
     7   A420    A2    07                       LDX I,NEXPLO-1
     8                                          BEGIN                   ;LOOP FOR ACH EXPLOSION
     9   A422    BD  030A                       LDA X,EXPLOY
    10   A425    F0    00                       IFNE                    ;ACTIVE BANG
    11   A427    BD  0312                       LDA X,EXPLOS            ;YES. UPDATE SEQUENCES
    12   A42A    BC  0302                       LDY X,EXPLOT
    13   A42D    18                             CLC
    14   A42E    79  A44E                       ADC Y,TEXINC
    15   A431    9D  0312                       STA X,EXPLOS
    16   A434    D9  A448                       CMP Y,TEXPDN
    17   A437    90    00                       IFCS                    ;EXPLOSION DONE
    18   A439    A9    00                       LDA I,0                 ;YES. DEACTIVATE IT
    19   A43B    9D  030A                       STA X,EXPLOY
    20   A43E    B8    50    00                 ELSE
         A438    08
    21   A441    EE  0116                       INC EXPCOU              ;NO. INC COUNTER
    22   A440    03                             ENDIF
    23   A426    1D                             ENDIF
    24   A444    CA                             DEX
    25   A445    10    DB                       MIEND
    26   A41A    2C                             ENDIF
    27   A447    60                             RTS
    28   A448    10    15    20    20   TEXPDN  .BYTE 10,15,20,20,20,10         ;LAST SEQUENCE # TABLE *4
         A44C    20    10
    29   A44E    03    01    03    03   TEXINC  .BYTE 3,1,3,3,3,3
         A452    03    03
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ALWELG-ALIENS WELL GAME MAINLIN       ATARI MAC65 VM03.09  00 00 01 PAGE 50
PLAY - COLLISION  MAINLINE

     1                                          .SBTTL PLAY - COLLISION  MAINLINE
     2   A454                            COLLIS
     3   A454    A2    07                       LDX I,NPCHAR-1
     4                                          BEGIN                    ;LOOP FOR EACH PLAYER CHARGE
     5   A456    BD  02D3                       LDA X,CHARY
     6   A459    F0    00                       IFNE                     ;PLAYER CHARGE ACTIVE
     7   A45B    20  A463                       JSR COLCHK
     8   A45A    03                             ENDIF
     9   A45E    CA                             DEX
    10   A45F    10    F5                       MIEND                    ;ENDLOOP FOR PLAYER CHARGES
    11   A461    60                             RTS
    12   A462    00G                     CHKSM4          .BYTE QCHKS4
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ALWELG-ALIENS WELL GAME MAINLIN       ATARI MAC65 VM03.09  00 00 01 PAGE 51
PLAY - COLLISION - SINGLE CHECK

     1                                        .SBTTL  PLAY - COLLISION - SINGLE CHECK
     2
     3                                  ;INPUT ACC PLAYER CHARGE Y
     4
     5   A463                           COLCHK
     6   A463   85    2E                        STA TEMPX
     7   A465   A0    0A                        LDY I,NICHAR-1+NINVAD   ;YES.
     8                                          BEGIN                   ;LOOP FOR EACH INVADER CHARGE   INVADER
     9   A467   B9  02DB                        LDA Y,CHARY+NPCHAR
    10   A46A   F0    00                        IFNE                    ;I C OR INVADER ACTIVE
    11   A46C   C5    2E                        CMP TEMPX               ;YES. DETERMINE OBSOLUTE DELTA
    12   A46E   90    00                        IFCS
    13   A470   E5    2E                        SBC TEMPX
    14   A472   B8    50    00                  ELSE
         A46F   05
    15   A475   A5    2E                        LDA TEMPX
    16   A477   38                              SEC
    17   A478   F9  02DB                        SBC Y,CHARY+NPCHAR
    18   A474   06                              ENDIF
    19   A47B   C0    04                        CPY I,NICHAR
    20   A47D   B0    00                        IFCC                    ;ENEMY SHOT OR INVADER
    21   A47F   C5    A7                        CMP CHACHA              ;SHOT
    22   A481   B0    00                        IFCC                    ;IN RANGE
    23   A483   B9  02B5                        LDA Y,CHARL1+NPCHAR     ;YES.
    24   A486   5D  02AD                        EOR X,CHARL1
    25   A489   D0    00                        IFEQ                    ;ON SAME LINE
    26   A48B   20  A36F                        JSR INCCSQ              ;YES. INITIALIZE EXPLOSION
    27   A48A   03                              ENDIF
    28   A482   0B                              ENDIF
    29   A48E   B8    50    00                  ELSE
         A47E   12
    30   A491   48                              PHA                     ;INVADER. SAVE DELTA
    31   A492   84    38                        STY INDEX2
    32   A494   B9  027F                        LDA Y,INVAC1-NICHAR
    33   A497   29    07                        AND I,INVABI
    34   A499   A8                              TAY
    35   A49A   68                              PLA
    36   A49B   D9  0151                        CMP Y,ENSIZE
    37   A49E   B0    00                        IFCC                    ;IN RANGE BY TYPE
    38   A4A0   C0    04                        CPY I,ZABFUS            ;YES.
    39   A4A2   D0    00                        IFEQ                    ;FUSE
    40   A4A4   A4    38                        LDY INDEX2              ;YES.
    41   A4A6   B9  02DB                        LDA Y,INVAY-NICHAR
    42   A4A9   CD  0202                        CMP CURSY
    43   A4AC   F0    00                        IFNE                    ;FUSE AT TOP
    44   A4AE   BD  02AD                        LDA X,CHARL1            ;NO.
    45   A4B1   D9  02B5                        CMP Y,INVAL1-NICHAR
    46   A4B4   D0    00                        IFEQ                    ;SAME BASE LINE
    47   A4B6   B9  02C8                        LDA Y,INVAL2-NICHAR     ;YES.
    48   A4B9   10    00                        IFMI                    ;VULNERABLE FUSE
    49   A4BB   20  A309                        JSR INCFS2              ;YES. START BANG, KILL FUSE, GIVE PTS.
    50   A4BA   03                              ENDIF
    51   A4B5   08                              ENDIF
    52   A4AD   10                              ENDIF
    53   A4BE   B8    50    00                  ELSE
         A4A3   1D
    54   A4C1   A4    38                        LDY INDEX2              ;NO. FLIPPER,TANKER,SPINNER,PULSAR
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ALWELG-ALIENS WELL GAME MAINLIN       ATARI MAC65 VM03.09  00 00 01 PAGE 51+
PLAY - COLLISION - SINGLE CHECK

    55   A4C3   B9  02C8                    LDA Y,INVAL2-NICHAR
    56   A4C6   10    00                    IFMI                    ;FLIPPER
    57   A4C8   B9  02B5                    LDA Y,INVAL1-NICHAR     ;YES.
    58   A4CB   DD  02C0                    CMP X,CHARL2            ;BASE   SECONDARY MATCH
    59   A4CE   F0    12                    BEQ YESCOL
    60   A4D0   D0    08                    BNE OKATOP              ;NO. CHECK FOR BASE MATCH
    61   A4C7   0A                          ENDIF
    62   A4D2   B9  02DB                    LDA Y,INVAY-NICHAR
    63   A4D5   CD  0202                    CMP CURSY
    64   A4D8   F0    00                    IFNE                    ;AT TOP
    65   A4DA   B9  02B5              OKATOP LDA Y,INVAL1-NICHAR     ;NO.
    66   A4DD   DD  02AD                    CMP X,CHARL1            ;
    67   A4E0   D0    00                    IFEQ                    ;BASE LEG MATCH
    68   A4E2   86    37              YESCOL STX INDEX1              ;YES.
    69   A4E4   20  A38E                    JSR INCIS2              ;START BANG
    70   A4E7   A6    37                    LDX INDEX1
    71   A4E1   07                          ENDIF
    72   A4D9   0F                          ENDIF
    73   A4C0   28                          ENDIF
    74   A4E9                         NOCOL
    75   A49F   49                          ENDIF
    76   A4E9   A4    38                    LDY INDEX2
    77   A490   5A                          ENDIF
    78   A46B   7F                          ENDIF
    79   A4EB   88                          DEY
    80   A4EC   30    03    4C  A467        MIEND                   ;ENDLOOP FOR ICS
    81   A4F1   BD  02F2                    LDA X,CHARCO
    82   A4F4   C9    FF                    CMP I,0FF
    83   A4F6   D0    00                    IFEQ                    ;PLAYER CHARGE SPENT
    84   A4F8   A9    00                    LDA I,0                 ;YES. DEACTIVATE IT
    85   A4FA   9D  02D3                    STA X,CHARY
    86   A4FD   CE  0135                    DEC CHACOU
    87   A500   9D  02F2                    STA X,CHARCO
    88   A4F7   0B                          ENDIF
    89   A503   60                          RTS
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```
PLAY - COLLISION - SINGLE CHECK

      1
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                                                .SBTTL PLAY - ANALYZE GAME
     2   A504                              ANALYZ
     3   A504    AD  0201                        LDA CURSL2
     4   A507    10    00                        IFMI                    ;CURSOR DEAD
     5   A509    AD  0135                        LDA CHACOU              ;YES
     6   A50C    05    A6                        ORA ESHCOU
     7   A50E    0D  0116                        ORA EXPCOU
     8   A511    D0    00                        IFEQ                    ;ANY ACTIVE CHARGES OR BANGS
     9   A513    AE  011C                        LDX WINVMX              ;NO. DROP EVERYBODY INTO WELL
    10                                           BEGIN                   ;LOOP FOR EACH INVADER
    11   A516    BD  02DF                        LDA X,INVAY
    12   A519    F0    00                        IFNE                    ;ACTIVE INVADER
    13   A51B    18                              CLC                     ;YES MOVE IT DOWN
    14   A51C    69    0F                        ADC I,15.
    15   A51E    B0    00                        IFCC
    16   A520    C9    F0                        CMP I,ILINDDY
    17   A51F    02                              ENDIF
    18   A522    90    00                        IFCS                    ;INVADER AT BOTTOM
    19   A524    A9    00                        LDA I,0                 ;YES. DEACTIVATE IT
    20   A523    02                              ENDIF
    21   A526    9D  02DF                        STA X,INVAY
    22   A51A    0E                              ENDIF
    23   A529    CA                              DEX
    24   A52A    10    EA                        MIEND
    25   A52C    A6    3D                        LDX PLAYUP
    26   A52E    B5    48                        LDA X,LIVES1
    27   A530    C9    01                        CMP I,1
    28   A532    D0    00                        IFEQ                    ;GAME OVER
    29   A534    A9    00                        LDA I,0                 ;YES. REQUEST RECALC OF WELL TOP
    30   A536    8D  010F                        STA LEVELY
    31   A539    A9    01                        LDA I,1                 ;REQUEST REDISPLAY OF WELL
    32   A53B    8D  0114                        STA ROTDIS
    33   A53E    A5    5F                        LDA EYL                 ;
    34   A540    38                              SEC
    35   A541    E9    20                        SBC I,20
    36   A543    85    5F                        STA EYL                 ;SHRINK HOLE
    37   A545    A5    5B                        LDA EYH
    38   A547    E9    00                        SBC I,0
    39   A549    85    5B                        STA EYH
    40   A54B    C9    FA                        CMP I,0FA
    41   A54D    18                              CLC
    42   A54E    D0    00                        IFEQ                    ;FAR ENOUGH
    43   A550    38                              SEC                     ;YES. END GAME
    44   A54F    01                              ENDIF
    45   A551    B8    50    00                  ELSE
         A533    20
    46   A554    AD  0202                        LDA CURSY               ;MOVE CURSOR DOWN
    47   A557    18                              CLC
    48   A558    69    0F                        ADC I,15.
    49   A55A    8D  0202                        STA CURSY
    50   A55D    B0    00                        IFCC
    51   A55F    C9    F0                        CMP I,ILINDDY
    52   A55E    02                              ENDIF
    53   A553    0D                              ENDIF
    54   A561    90    00                        IFCS                    ;CURSOR AT BOTTOM
    55                                                                    ;YES. END OF LIFE PHASE.
    56   A563    A9    06                        LDA I,CENDLI            ;YES. GO TO END OF LIFE STATE
```

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ALWELG-ALIENS WELL GAME MAINLIN       ATARI MAC65 VM03.09  00 00 01 PAGE 53+
PLAY - ANALYZE GAME

    57   A565   85   00                    STA QSTATE
    58   A567   20  928F                   JSR INICHA              ;CLEAR CHARGES
    59   A56A   AD  0108                   LDA INMCOU              ;ADD # OF INVADERS
    60   A56D   18                         CLC
    61   A56E   6D  0109                   ADC INCCOU
    62   A571   18                         CLC
    63   A572   6D  03AB                   ADC NYMCOU              ;TO # NYMPHS
    64   A575   C9   3F                    CMP I,NNYMPH-1
    65   A577   90   00                    IFCS                    ;MAX OUT
    66   A579   A9   3F                    LDA I,NNYMPH-1
    67   A578   02                         ENDIF
    68   A57B   8D  03AB                   STA NYMCOU              ;FOR NEXT LIFE
    69   A562   1B                         ENDIF
    70   A512   6B                         ENDIF
    71   A57E   B8   50   00                ELSE
         A508   78
    72   A581   AD  0455             ZQVAVG      LDA QT3
    73   A584   0D  011B                   ORA QT6
    74   A587   F0   00                    IFNE
    75   A589   A9   17                    LDA I,17
    76   A58B   C5   42                    CMP LSCORH
    77   A58D   B0   00                    IFCC
    78   A58F   A6   40                    LDX LSCORL
    79   A591   F6   00                    INC X,0
    80   A58E   04                         ENDIF
    81   A588   0A                         ENDIF
    82   A593   AD  0106                   LDA CURMOD
    83   A596   D0   00                    IFEQ                    ;TOP MODE
    84   A598   AD  03AB                   LDA NYMCOU              ;YES CURSOR ALIVE   BANGS DONE
    85   A59B   0D  0116                   ORA EXPCOU
    86   A59E   D0   00                    IFEQ                    ;ALL NYMPHS CONVERTED
    87   A5A0   AC  011C                   LDY WINVMX              ;YES. ALL INVADERS OOF LINES
    88                                     BEGIN                   ;LOOP FOR EACH INVADER UNTIL ALL CHECKED ON LINE FOUND
    89   A5A3   B9  02DF                   LDA Y,INVAY
    90   A5A6   F0   00                    IFNE
    91   A5A8   C9   11                    CMP I,11
    92   A5AA   B0   09                    BCS LINER               ;EXIT IF LINER  NOT AT TOP
    93   A5A7   04                         ENDIF
    94   A5AC   88                         DEY
    95   A5AD   10   F4                    MIEND                   ;EXIT AFTER ALL CHECKED.  NO LINERS
    96   A5AF   20  A5CB                   JSR INDROP              ;YES.
    97   A5B2   20  928F                   JSR INICHA              ;CLEAR CHARGES
    98   A59F   15                         ENDIF
    99   A5B5   A5   4D             LINER   LDA SWSTRT
   100   A5B7   29   60                    AND I,MSTRT2 MSTRT1
   101   A5B9   F0   00                    IFNE                    ;EITHER START PRESSED
   102   A5BB   24   05                    BIT QSTATUS             ;YES
   103   A5BD   10   00                    IFMI                    ;ATTRACT
   104   A5BF   A5   09                    LDA OPTIN1              ;NO.
   105   A5C1   29   43                    AND I,43
   106   A5C3   C9   40                    CMP I,40
   107   A5C5   D0   00                    IFEQ                    ;FREE PLAY   ABORT ENABLED
   108   A5C7   20  A5CB                   JSR INDROP              ;YES. INITIATE DROP MODE
   109   A5C6   03                         ENDIF
   110   A5BE   0B                         ENDIF
   111   A5BA   0F                         ENDIF
   112   A597   32                         ENDIF
```

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PLAY - ANALYZE GAME

   113   A580   49                          ENDIF
   114   A5CA   60                          RTS
```

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ALWELG-ALIENS WELL GAME MAINLIN       ATARI MAC65 VM03.09  00 00 01 PAGE 54
INITIALIZE CURSOR DROP MODE

     1                                          .SBTTL  INITIALIZE CURSOR DROP MODE
     2
     3   A5CB                             INDROP
     4   A5CB    A9    20                        LDA I,CDROP             ;DROP STATE NEXT
     5   A5CD    85    00                        STA QSTATE
     6   A5CF    AD  0106                        LDA CURMOD              ;SET CURSOR DROP MODE
     7   A5D2    09    80                        ORA I,80
     8   A5D4    8D  0106                        STA CURMOD
     9   A5D7    A9    00                        LDA I,0                       ;INITIALIZE DOWNWARD ACCELERATION
    10   A5D9    8D  0104                        STA CURSVL
    11   A5DC    8D  0107                        STA CURSYL              ;ZERO FRAC. POSITION
    12   A5DF    85    5C                        STA EYLL                ;TO PREVENT JERKING
    13   A5E1    8D  0123                        STA ELICNT
    14   A5E4    A9    02                        LDA I,2
    15   A5E6    8D  0105                        STA CURSVH
    16   A5E9    A2    0F                        LDX I,NLINES-1
    17                                          BEGIN
    18   A5EB    BD  03AC                        LDA X,LINEY
    19   A5EE    F0    00                        IFNE
    20   A5F0    EE  0123                        INC ELICNT              ;COUNT LIVE SPIKES
    21   A5EF    03                              ENDIF
    22   A5F3    CA                              DEX
    23   A5F4    10    F5                        MIEND
    24   A5F6    AD  0123                        LDA ELICNT
    25   A5F9    F0    00                        IFNE                    ;ENEMY LINES
    26   A5FB    A5    9F                        LDA CURWAV              ;YES.
    27   A5FD    C9    07                        CMP I,7
    28   A5FF    B0    00                        IFCC                    ;WARN PLAYER
    29                                                                    ;YES
    30   A601    A9    1E                        LDA I,6*QUASEC          ;WARNING DELAY
    31   A603    85    04                        STA QTMPAUS
    32   A605    A9    0A                        LDA I,CPAUSE            ;PAUSE FIRST
    33   A607    85    00                        STA QSTATE
    34   A609    A9    20                        LDA I,CDROP             ;THEN DROP MODE
    35   A60B    85    02                        STA QNXTSTA
    36   A60D    A9    80                        LDA I,80                ;SET WARNING FLAG
    37   A60F    8D  0123                        STA ELICNT
    38   A600    11                              ENDIF
    39   A5FA    17                              ENDIF
    40   A612    A9    FF                        LDA I,-1
    41   A614    8D  0125                        STA SUZTIM              ;DEACTIVATE SUPERZAPPER
    42   A617    60                              RTS
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ALWELG-ALIENS WELL GAME MAINLIN       ATARI MAC65 VM03.09  00 00 01 PAGE 55
INITIALIZE CURSOR DROP MODE

     1
     2                                .SBTTL  PLAY-PROCESS BIG BOOM
     3
     4   A618   AD  010E          PRBOOM  LDA BOOMTI                    ;SET BOOM OFF FLAG
     5   A61B   8D  010D                  STA BOOMFL
     6   A61E   A2    0F                  LDX I,NPARTI-1
     7   A620   86    37                  STX INDEX1
     8                                    BEGIN                  ;LOOP FOR EACH PARTICLE
     9   A622   A6    37                  LDX INDEX1
    10   A624   BD  0283                  LDA X,PARTIY
    11   A627   D0    00                  IFEQ                   ;ACTIVE PARTICLE
    12   A629   AD  010E                  LDA BOOMTI             ;NO.
    13   A62C   F0    00                  IFNE                   ;BOOM TIMER EXPIRED
    14   A62E   20  A65B                  JSR TIMLAU             ;NO. LAUNCH MORE PARTICLES OF TIME
    15   A62D   03                        ENDIF
    16   A631   B8    50    00            ELSE
         A628   0B
    17   A634   20  A6A9                  JSR UPARPO             ;YES. UPDATE PARTICLE POSITION
    18   A637   20  A721                  JSR DECPAR             ;DECELERATE PARTICLE
    19   A63A   A9    FF                  LDA I,-1               ;BOOM ACTIVE
    20   A63C   8D  010D                  STA BOOMFL
    21   A633   0B                        ENDIF
    22   A63F   C6    37                  DEC INDEX1
    23   A641   10    DF                  MIEND                  ;END LOOP
    24   A643   A5    03                  LDA QFRAME
    25   A645   29    01                  AND I,1
    26   A647   D0    00                  IFEQ
    27   A649   AD  010E                  LDA BOOMTI
    28   A64C   F0    00                  IFNE
    29   A64E   CE  010E                  DEC BOOMTI             ;UPDATE BOOM TIMER  STOP AT 0
    30   A64D   03                        ENDIF
    31   A648   08                        ENDIF
    32   A651   AD  010D                  LDA BOOMFL
    33   A654   D0    00                  IFEQ                   ;BOOM ACTIVE
    34   A656   A9    12                  LDA I,CGETIN           ;NO. GET INITIALS
    35   A658   85    00                  STA QSTATE
    36   A655   04                        ENDIF
    37   A65A   60                        RTS
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ALWELG-ALIENS WELL GAME MAINLIN       ATARI MAC65 VM03.09  00 00 01 PAGE 56
PLAY-PROCESS BIG BOOM

     1   A65B                          TIMLAU
     2   A65B    A5    03                      LDA QFRAME
     3   A65D    29    00                      AND I,0
     4   A65F    D0    00                      IFEQ                ;DELAY SINCE LAST LAUNCH OK
     5                                         ;YES. LAUNCH ANOTHER
     6   A661    A9    80                      LDA I,80            ;SET UP INITIAL LOCATION IN CENTER
     7   A663    9D  0263                      STA X,PARTIX
     8   A666    9D  0283                      STA X,PARTIY
     9   A669    9D  02A3                      STA X,PARTIZ
    10                                         ;SET UP VELOCITY  RANDOM WITHIN
    11   A66C    AD  60DA                      LDA RANDO2          ;GIVE RANGE
    12   A66F    9D  02C3                      STA X,PARLXV        ;FRACTIONAL X VELOCITY
    13   A672    20  A69B                      JSR FIXTOP
    14   A675    9D  0323                      STA X,PARTXV        ;INTEGER X
    15   A678    AD  60CA                      LDA RANDOM
    16   A67B    9D  02E3                      STA X,PARLYV        ;Y
    17   A67E    20  A69B                      JSR FIXTOP
    18   A681    30    00                      IFPL                ;UPDATE PARTICLE POSITION
    19   A683    49    FF                      EOR I,OFF
    20   A685    18                            CLC
    21   A686    69    01                      ADC I,1
    22   A682    05                            ENDIF
    23   A688    9D  0343                      STA X,PARTYV
    24   A68B    AD  60CA                      LDA RANDOM          ;Z
    25   A68E    9D  0303                      STA X,PARLZV
    26   A691    20  A69B                      JSR FIXTOP
    27   A694    9D  0363                      STA X,PARTZV
    28   A697    20  0000G                     JSR CIEXPL          ;MAKE NOISE
    29   A660    39                            ENDIF
    30   A69A    60                            RTS
    31   A69B                        FIXTOP
    32   A69B    4A                            LSR
    33   A69C    AD  60DA                      LDA RANDO2
    34   A69F    29    07                      AND I,7
    35   A6A1    90    00                      IFCS
    36   A6A3    49    FF                      EOR I,OFF
    37   A6A5    18                            CLC
    38   A6A6    69    01                      ADC I,1
    39   A6A2    05                            ENDIF
    40   A6A8    60                            RTS
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ALWELG-ALIENS WELL GAME MAINLIN       ATARI MAC65 VM03.09  00 00 01 PAGE 57
PLAY-PROCESS BIG BOOM

     1   A6A9                          UPARPO                          ;UPDATE PARTICLE POSITION
     2   A6A9    BD  02E3                      LDA X,PARLYV            ;Y
     3   A6AC    18                            CLC
     4   A6AD    7D  0223                      ADC X,PARLIY
     5   A6B0    9D  0223                      STA X,PARLIY            ;FRACTIONAL
     6   A6B3    BD  0343                      LDA X,PARTYV
     7   A6B6    30   00                       IFPL
     8   A6B8    7D  0283                      ADC X,PARTIY            ;+ VELOCITY
     9   A6BB    C9   F0                       CMP I,0F0
    10   A6BD    90   00                       IFCS
    11   A6BF    A9   00                       LDA I,0                 ;OFF SCREEN
    12   A6BE    02                            ENDIF
    13   A6C1    B8   50    00                 ELSE
         A6B7    0C
    14   A6C4    7D  0283                      ADC X,PARTIY            ;- VELOCITY
    15   A6C7    C9   10                       CMP I,10
    16   A6C9    B0   00                       IFCC
    17   A6CB    A9   00                       LDA I,0                 ;OFF SCREEN
    18   A6CA    02                            ENDIF
    19   A6C3    09                            ENDIF
    20   A6CD    A8                            TAY
    21   A6CE    BD  02C3                      LDA X,PARLXV            ;X
    22   A6D1    18                            CLC
    23   A6D2    7D  0203                      ADC X,PARLIX
    24   A6D5    9D  0203                      STA X,PARLIX            ;FRACTIONAL
    25   A6D8    BD  0323                      LDA X,PARTXV
    26   A6DB    30   00                       IFPL
    27   A6DD    7D  0263                      ADC X,PARTIX            ;+VELOCITY
    28   A6E0    C9   F0                       CMP I,0F0
    29   A6E2    90   00                       IFCS
    30   A6E4    A0   00                       LDY I,0                 ;OFF SCREEN
    31   A6E3    02                            ENDIF
    32   A6E6    B8   50    00                 ELSE
         A6DC    0C
    33   A6E9    7D  0263                      ADC X,PARTIX            ;-VELOCITY
    34   A6EC    C9   10                       CMP I,10
    35   A6EE    B0   00                       IFCC
    36   A6F0    A0   00                       LDY I,0                 ;OFF SCREEN
    37   A6EF    02                            ENDIF
    38   A6E8    09                            ENDIF
    39   A6F2    9D  0263                      STA X,PARTIX
    40   A6F5    BD  0303                      LDA X,PARLZV            ;Z
    41   A6F8    18                            CLC
    42   A6F9    7D  0243                      ADC X,PARLIZ
    43   A6FC    9D  0243                      STA X,PARLIZ            ;FRACTIONAL
    44   A6FF    BD  0363                      LDA X,PARTZV
    45   A702    30   00                       IFPL
    46   A704    7D  02A3                      ADC X,PARTIZ            ;+ VELOCITY
    47   A707    C9   F0                       CMP I,0F0
    48   A709    90   00                       IFCS
    49   A70B    A0   00                       LDY I,0                 ;OFF SCREEN
    50   A70A    02                            ENDIF
    51   A70D    B8   50    00                 ELSE
         A703    0C
    52   A710    7D  02A3                      ADC X,PARTIZ            ;VELOCITY
    53   A713    C9   10                       CMP I,10
    54   A715    B0   00                       IFCC
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    55   A717   A0    00                LDY I,0                ;OFF SCREEN
    56   A716   02                      ENDIF
    57   A70F   09                      ENDIF
    58   A719   9D  02A3                STA X,PARTIZ
    59   A71C   98                      TYA
    60   A71D   9D  0283                STA X,PARTIY
    61   A720   60                      RTS
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ALWELG-ALIENS WELL GAME MAINLIN       ATARI MAC65 VM03.09  00 00 01 PAGE 58
PLAY-PROCESS BIG BOOM

     1   A721                          DECPAR
     2   A721   A9    FD                       LDA I,-3              ;VELOCITY 0 COUNTER
     3   A723   85    29                       STA TEMP0
     4   A725   BD  02C3                       LDA X,PARLXV
     5   A728   BC  0323                       LDY X,PARTXV
     6   A72B   20  A75D                       JSR DECELE            ;DECELERATE X VELO
     7   A72E   9D  02C3                       STA X,PARLXV
     8   A731   98                            TYA
     9   A732   9D  0323                       STA X,PARTXV
    10   A735   BD  02E3                       LDA X,PARLYV
    11   A738   BC  0343                       LDY X,PARTYV
    12   A73B   20  A75D                       JSR DECELE            ;DECELERATE Y VELO
    13   A73E   9D  02E3                       STA X,PARLYV
    14   A741   98                            TYA
    15   A742   9D  0343                       STA X,PARTYV
    16   A745   BD  0303                       LDA X,PARLZV
    17   A748   BC  0363                       LDY X,PARTZV
    18   A74B   20  A75D                       JSR DECELE            ;DECELERATE Z VELO
    19   A74E   9D  0303                       STA X,PARLZV
    20   A751   98                            TYA
    21   A752   9D  0363                       STA X,PARTZV
    22   A755   A5    29                       LDA TEMP0
    23   A757   D0    00                       IFEQ                  ;ALL 3 DIRECTIONS VELOCITY 0
    24   A759   9D  0283                       STA X,PARTIY          ;YES. DEACTIVATE PARTICLE
    25   A758   03                            ENDIF
    26   A75C   60                            RTS
    27   A75D                          DECELE
    28   A75D   84    2B                       STY TEMP2
    29   A75F   24    2B                       BIT TEMP2
    30   A761   30    00                       IFPL                  ;VELOCITY+ OR -
    31   A763   38                            SEC                   ;+ SO ECELERATE BY SUBTRACTING
    32   A764   ED  A788                       SBC DECELO
    33   A767   85    2A                       STA TEMP1
    34   A769   A5    2B                       LDA TEMP2
    35   A76B   E9    00                       SBC I,0
    36   A76D   90    0F                       BCC HIT0              ;VELOCITY HIT 0   BR IF YES
    37   A76F   B8    50    00                 ELSE
         A762   0F
    38   A772   18                            CLC                   ;-, SO DECELERATE BY ADDING
    39   A773   6D  A788                       ADC DECELO
    40   A776   85    2A                       STA TEMP1
    41   A778   A5    2B                       LDA TEMP2
    42   A77A   69    00                       ADC I,0
    43   A77C   90    00                       IFCS                  ;VELOCITY HIT 0
    44   A77E   E6    29                HIT0   INC TEMP0             ;YES INCREMENT VELOCITY 0 COUNTER
    45   A780   A9    00                       LDA I,0               ;
    46   A782   85    2A                       STA TEMP1
    47   A77D   06                            ENDIF
    48   A771   12                            ENDIF
    49   A784   A8                            TAY                   ;RETURN WITH NEW VELOCITY
    50   A785   A5    2A                       LDA TEMP1
    51   A787   60                            RTS
    52   A788   20                     DECELO .BYTE 20
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ALWELG-ALIENS WELL GAME MAINLIN       ATARI MAC65 VM03.09  00 00 01 PAGE 59
INITIALIZE PARTICLES

     1                                          .SBTTL  INITIALIZE PARTICLES
     2   A789                             INBOOM
     3   A789    A2    0F                        LDX I,NPARTI-1
     4                                          BEGIN
     5   A78B    A9    00                        LDA I,0
     6   A78D    9D  0283                        STA X,PARTIY            ;DEACTIVATE PARTICLE
     7   A790    CA                              DEX
     8   A791    10    F8                        MIEND
     9   A793    A9    20                        LDA I,020               ;1/5 SECOND UNTIS
    10   A795    8D  010E                        STA BOOMTI
    11   A798    8D  010D                        STA BOOMFL              ;ACTIVATE BOOM
    12   A79B    A9    04                        LDA I,CDBOOM            ;BOOM DISPLAY STATE
    13   A79D    85    01                        STA QDSTATE
    14   A79F    A9    00                        LDA I,0
    15   A7A1    85    68                        STA ZADJL
    16   A7A3    85    69                        STA ZADJL+1
    17   A7A5    60                              RTS
    18                                          .SBTTL UTILITY - LINE LINE POLOR DELTA
    19                                 ;INPUT   Y,ACC LINE # FOR DETERMINATIN
    20                                 ;
    21                                 ;OUTPUT  ACC # OF LINES ACC LINE IS FROM Y LINE IN
    22                                 ;        SHORTEST DIRECTION  -8 TO +7   -MEANS CLOCKWISE
    23                                 ;
    24   A7A6                          POLDEL
    25   A7A6    84    2A                        STY TEMP1
    26   A7A8    38                              SEC
    27   A7A9    E5    2A                        SBC TEMP1
    28   A7AB    85    2A                        STA TEMP1
    29   A7AD    2C  0111                        BIT WELTYP
    30   A7B0    30    00                        IFPL                    ;PLANAR
    31   A7B2    29    0F                        AND I,0F
    32   A7B4    2C  A7BC                        BIT A,EIGHT             ;NO.
    33   A7B7    F0    00                        IFNE                    ;TAKE SHORTEST ROUTE
    34   A7B9    09    F8                        ORA I,0F8
    35   A7B8    02                              ENDIF
    36   A7B1    09                              ENDIF
    37   A7BB    60                              RTS
    38   A7BC    08                     EIGHT    .BYTE 8
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ALWELG-ALIENS WELL GAME MAINLIN       ATARI MAC65 VM03.09  00 00 01 PAGE 60
UTILITY - LINE LINE POLOR DELTA

      1
      2                                       .SBTTL  INITIALIZE-PLANES OF STARS
      3
      4   A7BD                          INSTAR
      5   A7BD    A2    07                      LDX I,NPLANE-1
      6   A7BF    A9    00                      LDA I,0
      7                                         BEGIN                   ;DEACTIVATE ALL PLANES
      8   A7C1    9D  03FE                      STA X,PLANEY
      9   A7C4    CA                            DEX
     10   A7C5    10    FA                      MIEND
     11   A7C7    A9    F0                      LDA I,0F0
     12   A7C9    8D  0405                      STA PLANEY+NPLANE-1     ;ACTIVATE LAST PLANE FAR AWAY
     13   A7CC    A9    FF                      LDA I,0FF
     14   A7CE    8D  0115                      STA PLAGRO              ;SET STAR FIELD GROWING FLAG
     15   A7D1    60                            RTS
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ALWELG-ALIENS WELL GAME MAINLIN       ATARI MAC65 VM03.09  00 00 01 PAGE 61
PLAY-PROCESS PLANES OF STARS

     1                                          .SBTTL  PLAY-PROCESS PLANES OF STARS
     2                                ;INPUT IF PLAGRO IS-,THEN STAR FIELD IS STILL GROWING
     3                                ;       IF PLAGRO IS 0,THEN STAR FIELD IS DEACTIVATED
     4                                ;OUTPUT IF PLAGRO IS 0,THEN STAR FIELD IS COMPLETELY DEAD
     5   A7D2    AD  0115             PRSTAR  LDA PLAGRO               ;STAR FIELD ACTIVE
     6   A7D5    F0    00                     IFNE
     7   A7D7    A9    00                     LDA I,0                  ;YES. PROCESS PLANES
     8   A7D9    85    29                     STA TEMP0                ;CLEAR COUNT OF ACTIVE PLANES
     9   A7DB    A2    07                     LDX I,NPLANE-1
    10   A7DD    86    37                     STX INDEX1
    11                                        BEGIN                    ;LOOP FOR EACH PLANE
    12   A7DF    A6    37                     LDX INDEX1
    13   A7E1    BD  03FE                     LDA X,PLANEY
    14   A7E4    F0    00                     IFNE                     ;PLANE ACTIVE
    15   A7E6    38                           SEC                      ;YES.
    16   A7E7    E9    07                     SBC I,07                 ;UPDATE PLANE POSITION
    17   A7E9    90    00                     IFCS
    18   A7EB    C9    10                     CMP I,10
    19   A7EA    02                           ENDIF
    20   A7ED    B0    00                     IFCC                     ;TOO CLOSE
    21   A7EF    AC  0115                     LDY PLAGRO               ;YES
    22   A7F2    10    00                     IFMI                     ;STILL GROWING
    23   A7F4    A9    F0                     LDA I,0F0                ;YES. START AT FARTHEST POINT
    24   A7F6    B8    50    00               ELSE
         A7F3    05
    25   A7F9    A9    00                     LDA I,0                  ;NO. DEACTIVATE
    26   A7F8    02                           ENDIF
    27   A7EE    0C                           ENDIF
    28   A7FB    B8    50    00               ELSE
         A7E5    18
    29   A7FE    AC  0115                     LDY PLAGRO               ;NO. STILL GROWING
    30   A801    10    00                     IFMI
    31   A803    8A                           TXA                      ;YES.
    32   A804    18                           CLC
    33   A805    69    01                     ADC I,1                  ;GET INDEX OF PREVIOUS PLANE
    34   A807    C9    08                     CMP I,NPLANE
    35   A809    90    00                     IFCS
    36   A80B    A9    00                     LDA I,0
    37   A80A    02                           ENDIF
    38   A80D    A8                           TAY
    39   A80E    B9  03FE                     LDA Y,PLANEY             ;PREVIOUS PLANE ACTIVE
    40   A811    F0    00                     IFNE
    41   A813    C9    D5                     CMP I,0D5                ;YES.
    42   A815    B0    00                     IFCC                     ;IS PREVIOUS PLANE CLOSE ENOUGH
    43   A817    A9    F0                     LDA I,0F0                ;YES. START NEW PLANE
    44   A819    B8    50    00               ELSE
         A816    05
    45   A81C    A9    00                     LDA I,0                  ;NO. STILL INACTIVE
    46   A81B    02                           ENDIF
    47   A812    0B                           ENDIF
    48   A802    1B                           ENDIF
    49   A7FD    20                           ENDIF
    50   A81E    9D  03FE                     STA X,PLANEY
    51   A821    05    29                     ORA TEMP0
    52   A823    85    29                     STA TEMP0
    53   A825    C6    37                     DEC INDEX1
    54   A827    10    B6                     MIEND
```

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PLAY-PROCESS PLANES OF STARS

    55   A829   A5    29                  LDA TEMPO
    56   A82B   D0    00                  IFEQ
    57   A82D   8D  0115                  STA PLAGRO
    58   A82C   03                        ENDIF
    59   A7D6   59                        ENDIF
    60   A830   60                        RTS
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ALWELG-ALIENS WELL GAME MAINLIN       ATARI MAC65 VM03.09  00 00 01 PAGE 62
PLAY-PROCESS PLANES OF STARS

     1
     2                                        .SBTTL INITIALIZE SUPER ZAP
     3          0002                  CSUMAX 2
     4          0001                  CSUINT 1
     5          0003                  CSUSTA 3
     6    A831                        INISUZ
     7    A831    A9    00                    LDA I,0                 ;SET SUPZAP USE COUNTER AND TIMER TO 0.
     8    A833    8D  03AA                    STA SUZCNT
     9    A836    8D  0125                    STA SUZTIM
    10    A839    60                          RTS
    11                                        .SBTTL PROCESS SUPER ZAPPER
    12    A83A                        PROSUZ
    13    A83A    A5    05                    LDA QSTATUS
    14    A83C    10    00                    IFMI                    ;ATTRACT
    15    A83E    AD  0125                    LDA SUZTIM              ;NO
    16    A841    D0    00                    IFEQ                    ;ZAP ACTIVE
    17    A843    AD  0201                    LDA CURSL2              ;NO.
    18    A846    30    00                    IFPL                    ;CURSOR ALIVE
    19    A848    A5    4E                    LDA SWFINA              ;YES
    20    A84A    29    08                    AND I,MSUZA
    21    A84C    F0    00                    IFNE                    ;ZAP PRESSED
    22    A84E    AD  03AA                    LDA SUZCNT              ;YES.
    23    A851    C9    02                    CMP I,CSUMAX
    24    A853    B0    00                    IFCC                    ;ZAPS LEFT
    25    A855    EE  03AA                    INC SUZCNT              ;YES. UPDATE ZAP COUNTER
    26    A858    A9    01                    LDA I,1
    27    A85A    8D  0125                    STA SUZTIM              ;START ZAP TIMER
    28
    29    A854    08                          ENDIF
    30    A85D    A5    4E                    LDA SWFINA
    31    A85F    29    77                    AND I, C MSUZA MFAKE
    32    A861    85    4E                    STA SWFINA
    33    A84D    15                          ENDIF
    34    A847    1B                          ENDIF
    35    A863    B8    50    00              ELSE
          A842    23
    36    A866    EE  0125                    INC SUZTIM              ;YES. ZAP ACTIVE
    37    A869    AE  03AA                    LDX SUZCNT
    38    A86C    AD  0125                    LDA SUZTIM
    39    A86F    DD  A883                    CMP X,TIMAX
    40    A872    90    00                    IFCS                    ;ZAP TIMER EXPIRED
    41    A874    A9    00                    LDA I,0
    42    A876    8D  0125                    STA SUZTIM              ;YES. DEACTIVATE ZAP
    43    A873    05                          ENDIF
    44    A879    20  A888                    JSR KILENE              ;WIPE OUT INVADERS   CHARGES
    45    A865    16                          ENDIF
    46    A83D    3E                          ENDIF
    47    A87C    A5    4E                    LDA SWFINA
    48    A87E    29    7F                    AND I, CMFAKE
    49    A880    85    4E                    STA SWFINA              ;CLEAR  SWITCH NOT PROCESSED  FLAG
    50    A882    60                          RTS
    51
    52    A883    00    13    05    00  TIMAX   .BYTE 0,CSUSTA+ 8* CSUINT+1  ,CSUSTA+ 1* CSUINT+1  ,0,0
          A887    00
    53
    54                                        .SBTTL SUPER ZAP-WIPE OUT ENEMY
    55    A888    AD  0125              KILENE  LDA SUZTIM
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ALWELG-ALIENS WELL GAME MAINLIN       ATARI MAC65 VM03.09  00 00 01 PAGE 62+
SUPER ZAP-WIPE OUT ENEMY

    56   A88B   C9    03                    CMP I,CSUSTA
    57   A88D   90    00                    IFCS
    58   A88F   29    01                    AND I,CSUINT
    59   A891   D0    00                    IFEQ                    ;TIME FOR ANOTHER WIPE OUT
    60
    61   A893   AC  011C                    LDY WINVMX              ;YES.
    62
    63                                      BEGIN                   ;LOOP THRU INVADERS
    64
    65   A896   B9  02DF                    LDA Y,INVAY
    66   A899   D0    09                    BNE EXIKIL              ;SPECIAL EXIT FOR 1ST LIVE ONE
    67   A89B   88                          DEY                     ;EXIT LOOP IF ALL ARE DEACTIVE
    68   A89C   10    F8                    MIEND
    69   A89E   A9    00                    LDA I,0                 ;ALL ARE DEAD. DEACTIVATE ZAP
    70   A8A0   8D  0125                    STA SUZTIM
    71   A892   10                          ENDIF
    72   A88E   14                          ENDIF
    73   A8A3   60                          RTS
    74
    75   A8A4                         EXIKIL
    76   A8A4   B9  028A                    LDA Y,INVAC2            ;MAKE SURE IT S NOT A CARRIER
    77   A8A7   29    FC                    AND I, C INVCAR
    78   A8A9   99  028A                    STA Y,INVAC2
    79   A8AC   4C  A398                    JMP INCISQ              ;START EXPLOSION
    80   A8AF   00G                   CHKSM5          .BYTE QCHKS5
    81                                      HLL65
    82         0001                         .END
```

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SYMBOL TABLE

ACTINV	994D		ACTIP	03AA		ALLPOT	60C8		ALLPO2	60D8		ANALYZ	A504						
ASTRAL	A028		ATOP	9C7D		AUDCTL	60C8		AUDC1	60C1		AUDC2	60D1						
AUDF1	60C0		AUDF2	60D0		AUD2CT	60D8		AUTOCU	97C5		AVOIDR	A17E						
AVOID1	A181		AVOID2	A189		BFACTR	0078		BINSCA	005A		BLIFIN	0156						
BLUE	0006		BLULET	0007		BOFLAS	0124		BONPTH	91C7		BONPTM	91C6						
BONSCO	91B5	G	BONUS	0102		BOOKKE	0412		BOOKKS	0406		BOOMFL	010D						
BOOMTI	010E		BUFACT	0415		BUFRDY	0054		CALSAN	9ED7		CAM	A0F7						
CAMPC	010B		CAMSTA	010C		CAMWAV	95F4		CBOOM	0024		CBUF1	0078						
CCEXPL	****	G	CCTYPE	0000		CDBOOM	0004		CDBOXP	0012		CDGETI	0006						
CDGOVR	000C		CDHITB	000A		CDLADR	0014		CDLOGP	0014		CDPLAY	0000						
CDPLPL	000E		CDPRST	0010		CDREQR	0008		CDROP	0020		CDSYST	0002						
CD2GAM	0016		CENDGA	0008		CENDLI	0006		CENDWA	000E		CFTYPE	0002						
CGETIN	0012		CHACHA	00A7		CHACOU	0135		CHAINV	00A8		CHANCE	A304						
CHARCO	02F2		CHARL1	02AD		CHARL2	02C0		CHARY	02D3		CHARYL	02E6						
CHASER	9D06		CHATOP	A1E4		CHISCH	0010		CHKSM2	9008	G	CHKSM3	9D05	G					
CHKSM4	A462	G	CHKSM5	A8AF	G	CIEXPL	****	G	CINIRA	001C		CITYPE	0000						
CLOGO	001A		CLRPOT	92AD		CNEWAV	000C		CNEWGA	0000		CNEWLI	0002						
CNEWV2	0018		CNOTFO	0014		CNWLF2	001E		COCKTA	0010		COCTAL	0117						
COLCHK	A463		COLLIS	A454		COLOR	009E		COLPOR	0800		COLRAM	0019						
CONTOU	92C5		CONYMP	9923		COWJMP	A14B		COWJM2	A14A		COWJM3	A152						
CPAUSE	000A		CPEXPL	****	G	CPLAY	0004		CPSPXI	****	G	CPTYPE	0001						
CREQRA	0016		CSUINT	0001		CSUMAX	0002		CSUSTA	0003		CSYSTM	0022						
CURCOL	0001		CURMOD	0106		CURNTX	006A		CURNTY	006C		CURSL1	0200						
CURSL2	0201		CURSPO	0051		CURSVH	0105		CURSVL	0104		CURSY	0202						
CURSYL	0107		CURWAV	009F		DBSW	004C		DEADCU	A352		DECELE	A75D						
DECELO	A788		DECPAR	A721		DEPCOL	0006		DONEXT	9683		DOTA	96E2						
DOTB	96DB		DOTR	9700		DOTYPE	9677		DOTZAN	96AB		D70MSK	****	G					
EACTL	6040		EADAL	6000		EAIN	6050		EIGHT	A7BC		ELICNT	0123						
EMCTRS	0003		ENSIZE	0151		ESHCOU	00A6		ESLSON	****	G	EXICAM	010A						
EXIKIL	A8A4		EXL	005E		EXPCOL	0000		EXPCOU	0116		EXPLOL	02FA						
EXPLOS	0312		EXPLOT	0302		EXPLOY	030A		EXSNON	****	G	EYEFAC	0065						
EYH	005B		EYL	005F		EYLDES	005D		EYLL	005C		EZL	0060						
FARY	014E		FBLUE	000B		FGREEN	0007		FIREIC	A2A6		FIREPC	A23F						
FIXTOP	A69B		FLASH	000F		FLGNHI	0603		FLICOL	0003		FLIPCO	0142						
FPSPXI	****	G	FRED	000C		FRTIMR	0053		FUCHPL	9F81		FUSECO	0146						
FUSELR	A15D		FUSEUP	A158		FUSLOP	A160		GAMOP1	071E		GAMOP3	071F						
GENEXP	A3D4		GENEX2	A3D6		GETCUR	****	G	GEXIFU	A3CA		GOTCHA	9D54						
GOTEXP	A3FA		GOTJUM	9F99		GREEN	0005		HARDWA	6000		HIRATE	0127						
HITO	A77E		HIWAVE	0126		HRANKH	0620		HRANKL	061E		HRANKM	061F						
HRED	000D		HSCORH	0708		HSCORL	0706		HSCORM	0707		ICHCOL	0000						
ILINDD	00F0		ILINLI	0010		INBOOM	A789	G	INCCOU	0109		INCCSQ	A36F						
INCFS2	A309		INCISQ	A398		INCIS2	A38E		INCPSQ	A34B		INCP2	A34D						
INDEX1	0037		INDEX2	0038		INDEX3	0039		INDEX4	003A		INDROP	A5CB						
INDYHI	003C		INDYLO	003B		INEWAV	9009	G	INEWLI	9025	G	INFPSQ	A343						
INICHA	928F		INICOL	****	G	INICUR	921B		INIDSP	****	G	INIENE	9234						
INIEXP	929F		INIINV	926F		ININDX	0604		ININYM	9246		INIOBJ	902B						
INIPSQ	A33A		INIRAT	9108	G	INIRA0	90C4	G	INISUZ	A831		INITAL	0606						
INMCOU	0108		INOPO	0D00		INOP1	0E00		INPPSQ	A347		INPUT	004A						
INSTAR	A7BD		INTACK	5000		INTENS	0098		INTIME	0128		INVABI	0007						
INVACT	02A6		INVAC1	0283		INVAC2	028A		INVAL1	02B9		INVAL2	02CC						
INVAY	02DF		INVAYL	029F		INVCAM	0291		INVCAR	0003		INVCOL	0003						
INVDIR	0080		INVFIR	0040		INVLOO	0298		INVMOT	0080		INVPIN	A3C5						
INVROT	0040		INVSEQ	0018		IN1	0C00		IPEXPL	****	G	IPTYPE	0005						
ITMIZE	96B7		ITMIZ2	96B9		JBROPC	9BFA		JCHKPU	9C3B		JCHPLA	9D67						
JCHROT	9C4F		JELOOP	9C0C		JELTST	9C21		JEXIT	9BCA		JFUSEU	9EF1						
JFUSKI	9E48		JJUMPM	9D82		JJUMPS	9E5C		JKITST	9E2F		JNOOP	9BCF						
JPULMO	9CB6		JSETPC	9C17		JSKIP0	9BEE		JSLOOP	9BD0		JSLOPB	9BDD						

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SYMBOL TABLE

JSMOVD	9C99		JSMOVE	9C58		JSMOVU	9C63		JSRCAM	9B98		JSTRAI	9FC4	
JUMPSD	9E5F		KICHEK	A13B		KILENE	A888		KILINV	A06F		KJULP1	A140	
KJULP2	A143		LEDOFF	0003		LEFRIT	9F8A		LEFSID	007B		LETCOL	0005	
LEVEL	91FE	G	LEVELE	921A		LEVELY	010F		LIFECT	A1FA		LIFSXH	035A	
LIFSXL	036A		LIFSZH	037A		LIFSZL	038A		LINANG	03EE		LINER	A5B5	
LINEX	03CE		LINEXM	0435		LINEY	03AC		LINEZ	03DE		LINEZM	0445	
LINSCA	0059		LINSTA	039A		LINSXH	031A		LINSXL	032A		LINSZH	033A	
LINSZL	034A		LITRAL	00AC		LIVES1	0048		LIVES2	0049		LSCORH	0042	
LSCORL	0040		LSCORM	0041		LVSGAM	0158		MAH	6081		MAL	6080	
MATRAC	0080		MAYBLR	9F5F		MBH	6083		MBL	6082		MBSTAR	6080	
MCOINC	0002		MCOINL	0004		MCOINR	0001		MDITES	0020		MDYPL	6098	
MECHS	0003		MEH	6085		MEL	6084		MFAKE	0080		MFH	6087	
MFIRE	0010		MFL	6086		MFLIP	0004		MGTMOD	0040		MHALT	0040	
MJLOP1	A104		MJLOP5	A109		MLCCNT	0004		MLED1	0002		MLED2	0001	
MMCCNT	0002		MNL	608C		MOPTI4	0020		MOPTI3	0007		MOVCHA	A18F	
MOVCUD	97F8		MOVCUR	9749	G	MOVER	A088		MOVINV	9B1E		MOVJMP	A102	
MOVNYM	98A2		MRCCNT	0001		MSTAT	6040		MSTRT1	0020		MSTRT2	0040	
MSUZA	0008		MSZXD	6094		MTEMP	0031		MTEST	0010		MVINVX	0008	
MVINVY	0010		MXH	6089		MXL	6088		MXPH	6096		MXPL	6095	
MYHIGH	6070		MYLOW	6060		MZHH	6090		MZHL	608F		MZLH	608E	
MZLL	608D		M3KHTI	0080		NCHARG	000C		NEARY	014D		NEGPUL	9B8C	
NEOFLI	014F		NEWAIT	00A3		NEWAV2	904B	G	NEWFLI	9A9D		NEWFUS	9AB3	
NEWGEN	9AEE		NEWGN2	9AF1		NEWGN3	9AF6		NEWPLA	003F		NEWPUL	9AA9	
NEWSPI	9AB7		NEWTAN	9ABB		NEWTYP	9A87		NEWTY2	9A88		NEXPLO	0008	
NGAMES	0100		NGAMEO	040E		NGAMIH	040D		NGAMIL	040C		NGAM2H	0410	
NGAM2L	040F		NGAM20	0411		NGAVGH	0413		NGAVGL	0412		NGAVGZ	0414	
NHISCO	0008		NICHAR	0004		NINVAD	0007		NITMIZ	96CB		NLINES	0010	
NNYMPH	0040		NOCOL	A4E9		NOJUMP	A0FE		NPARAD	969D		NPARTI	0010	
NPCHAR	0008		NPLANE	0008		NPLAYR	0101		NRANKS	0063		NROMS	000C	
NUMPLA	003E		NWNYMC	015B		NWTELI	015A		NYMCHA	99A5		NYMCOL	000C	
NYMCOU	03AB		NYMPL	0203		NYMPY	0243		NYMTAD	9A93		OBJIND	0055	
OCURSL	00A5		OFRTIM	00A4		OKATOP	A4DA		OKTOJM	9EAB		OLDLHI	00AB	
OLDLLO	00AA		OLOFLI	0150		OM2GAM	0001		ONEBYT	96C8		OPFLIP	013D	
OPFUSE	0141		OPPULS	013E		OPSPIN	0140		OPTANK	013F		OPTIN1	0009	
OPTIN2	000A		OPTIN3	016A		OTB	0052		OUTANK	60E0		OUTO	4000	
PARLIX	0203		PARLIY	0223		PARLIZ	0243		PARLXA	0020		PARLXV	02C3	
PARLYA	0020		PARLYV	02E3		PARLZA	0020		PARLZV	0303		PARTIX	0263	
PARTIY	0283		PARTIZ	02A3		PARTXA	0000		PARTXV	0323		PARTYA	0000	
PARTYV	0343		PARTZA	0000		PARTZV	0363		PC	0014		PCHCOL	0001	
PCVELO	0009		PDIRED	000B		PDIWHI	0009		PDIYEL	000A		PLAGRO	0115	
PLANEY	03FE		PLAY	970B	G	PLAYUP	003D		PLDROP	9729	G	PN	0028	
POKEY	60C0		POKEY2	60D0		POLDEL	A7A6		POTGO	60CB		POTGO2	60DB	
PPSPXI	****	G	PRBOOM	A618	G	PROEXP	A416		PROG	9000		PRORAT	9149	G
PROSUZ	A83A		PRSTAR	A7D2	G	PSCALE	016B		PSHCTR	0008		PUCHDE	00B2	
PULPOT	0157		PULSCH	A169		PULSCJ	A178		PULSCO	0143		PULSCP	A169	
PULSC1	A16B		PULSC2	A16F		PULSC3	A176		PULSON	0148		PULSTO	****	G
PULSTR	****	G	PULTIM	0147		PULVEL	FEA0		PURPLE	0002		PXL	0056	
PYL	0057		PZL	0058		QCHKS2	****	G	QCHKS3	****	G	QCHKS4	****	G
QCHKS5	****	G	QDSTAT	0001		QFRAME	0003		QNXTST	0002		QSTATE	0000	
QSTATU	0005		QTMPAU	0004		QT1	00B5		QT2	016C		QT3	0455	
QT4	0720		QT5	011F		QT6	011B		QUASEC	0005		RANDOM	60CA	
RANDO2	60DA		RANGER	96F4		RANKS	0600		RED	0003		REVFLP	9FB4	
RITSID	007C		ROMSTA	3000		ROTDIS	0114		ROTFLG	0113		RSCORH	0045	
RSCORL	0043		RSCORM	0044		RUNGVG	00B0		SAMALL	96C4		SAVEND	03CE	
SAVEP	03BC		SAVEX	0035		SAVEY	0036		SBOING	****	G	SCFL	0079	
SECOND	0014		SECOPH	040B		SECOPL	0409		SECOPM	040A		SECOUH	0408	
SECOUL	0406		SECOUM	0407		SECUVG	00B6		SECUVY	016E		SELICO	****	G

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SYMBOL TABLE

SKCTL	60CF		SKCTL2	60DF		SKIPIT	A04F		SLAUNC	****	G
SOUTS2	****	G	SOUTS3	****	G	SPACG	0000		SPARAD	968F	
SPARE3	0133		SPBINA	013A		SPFTIM	013C		SPILOP	A113	
SPINCO	0145		SPIRAL	A110		SPIRCH	A11B		SPLCHA	9B07	
SPLINE	0139		SPOKST	0425		SPRLP1	A11F		SPRLP2	A120	
SPRLP3	A12C		SPRLP4	A12D		SPXIND	013B		SUBCOU	0099	
SUZCNT	03AA		SUZTIM	0125		SVGLIS	0076		SWAPEN	92B2	G
SWFINA	004E		SWRELE	004F		SWSTAT	004D		SWSTRT	004D	
SXH	0062		SXL	0061		SYM	6092		SZH	0064	
SZL	0063		S1	A88D		S10	A2DC		S2	A891	
S3	A896		S3SWAR	****	G	S4	A84C		S5	A853	
S6	A81A		S7	A815		S8	A4B9		S9	A2D9	
TA	0008		TABJSE	9BCA		TABJSR	9BA2		TANCOL	0002	
TANKCO	0144		TB	000A		TBHD	0050		TBLIND	0602	
TCHAMX	9407		TCHARF	93FA		TCHARI	9449		TCMFLG	00A2	
TE	0000		TELIHI	959C		TEMPL	002A		TEMPX	002E	
TEMPY	002F		TEMPZ	0030		TEMP0	0029		TEMP1	002A	
TEMP2	002B		TEMP3	002C		TEMP4	002D		TEXINC	A44E	
TEXIT	9319		TEXPDN	A448		TFUFRQ	9587		TIMAX	A883	
TIMES8	93E0		TIMHIS	0605		TIMLAU	A65B		TINVIN	941B	
TINVMX	9598		TNEWCA	9AFD		TNEWI2	9B02		TNKOUT	00A1	
TNYMMX	95B3		TOPPER	A139		TOUT0	00B4		TPUCHD	9563	
TR	000C		TRACOL	0005		TRALUP	A0F7		TSLAMR	000B	
TSPIIN	944D		TURQOI	0004		TWFUSC	9578		TWOBYT	96C7	
TWPULF	95EF		TWTTFR	95E3		TYPCOD	015E		TZ	0004	
TZANDF	0006		T1	0002		UNITXH	009B		UNITXL	009A	
UNITZH	009D		UNITZL	009C		UPARPO	A6A9		UPSCOR	****	G
VECRAM	2000		VGBRIT	0073		VGLIST	0074		VGSIZE	0072	
VGSTAR	4800		VGSTOP	5800		VGY	00A9		WAVEN1	0046	
WAVEN2	0047		WCHAMX	011A		WCHARF	0119		WCHARI	0118	
WCHARL	0120		WELCOL	0006		WELLID	0112		WELTYP	0111	
WFLICA	015D		WFLIMI	94CD		WFLIMX	94D6		WFLMAX	012E	
WFLMIN	0129		WFUFRQ	015F		WFUMAX	0132		WFUMIN	012D	
WFUSCH	0159		WFUSIH	0169		WFUSIL	0164		WFUSMI	9541	
WFUSMX	954E		WHITE	0000		WINVIL	0160		WINVIN	0165	
WINVJM	011D		WINVMX	011C		WNYMMX	011E		WPULCA	015C	
WPULFI	016D		WPULMI	9520		WPULMX	9529		WPULPO	945D	
WPULTI	9469		WPUMAX	012F		WPUMIN	012A		WSPIMI	9489	
WSPIMX	94A5		WSPMAX	0131		WSPMIN	012C		WTABEN	9677	
WTABLE	9607		WTACAR	0149		WTAMAX	0130		WTAMIN	012B	
WTANMI	94EB		WTANMX	9503		WTCHDG	5000		WTFMAX	0136	
WTTFRA	00B3		WWTAC2	9475		WWTAC3	9481		XADJL	0066	
XCOMP	006E		X0H	0080		X0L	0078		X1H	0081	
X1L	0079		X2H	0082		X2L	007A		X3H	0083	
X3L	007B		X4H	0084		X4L	007C		X5H	0085	
X5L	007D		X6H	0086		X6L	007E		X7H	0087	
X7L	007F		YCOMP	0070		YDEUNI	00A0		YELLOW	0001	
YESCOL	A4E2		ZABFLI	0000		ZABFUS	0004		ZABPUL	0001	
ZABTAN	0002		ZABTRA	0003		ZADEST	0121		ZADJL	0068	
ZAPCOL	0000		ZBLACK	000F		ZBLUE	000B		ZCARFL	0001	
ZCARFU	0003		ZCARNO	0000		ZCARPU	0002		ZDIRDO	0080	
ZDIRUP	0000		ZEASY	0001		ZFIRNO	0000		ZFIRYE	0040	
ZGREEN	0007		ZHARD	0002		ZMOTJM	0080		ZMOTMO	0000	
ZPNLOC	00AE		ZPOFFS	00AF		ZPURPL	0008		ZQVAVG	A581	G
ZRED	000C		ZROCCW	0040		ZROTCW	0000		ZTURQO	0003	
ZWHITE	0000		ZYELLO	0004		Z0H	0090		Z0L	0088	
Z1H	0091		Z1L	0089		Z2H	0092		Z2L	008A	
Z3H	0093		Z3L	008B		Z4H	0094		Z4L	008C	
Z5H	0095		Z5L	008D		Z6H	0096		Z6L	008E	
Z7H	0097		Z7L	008F		$BC	0018		$BCCNT	0016	
$CCTIM	0013		$CMODE	0009		$CNCT	0017		$CNSTT	000D	
$COINA	0008		$INTCT	0007		$LAM	0008		$LMBIT	0008	
$LMTIM	000C		$PSTSL	0010		$TEST	0008		$$CRDT	0006	
.Z.	0002		...RD	0010		...T	A8A3		...X	0000	

. ABS. A8B0 00
0000 01

ERRORS DETECTED 0
FREE CORE 11223. WORDS

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RK1 ALWELG,ALWELG.LST ALWELG

 RK1 ALWELG.OBJ,RK1 ALWELG.LST DK1 ALWELG
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SYMBOL TABLE

A TOTAL OF 14,432 STATEMENTS WERE PROCESSED.

CPU TIME - 00 00 01.1 I/O TIME - 00 00 00.0