Global Applesoft Program Editor

User manual

Huibert Aalbers - European Software Partner, 1985

A note from the author

When Apple and Microsoft delivered Applesoft BASIC in 1978, it was a significant upgrade for programmers. However, Apple did not seize the opportunity to also deliver a better editor that would improve the experience of writing BASIC code for developers. Editing long programs is still a challenging task and I believe there is a better way.

That is why I started working on Global Applesoft Program Editor (o G.A.P.E). My intent was to create a tool that would solve most of the common issues faced by most programmers.

This program is completely written in 6502 assembly language. It is about 2300 lines of code long and the result of many hours of hard work.

G.A.P.E. was developed on an Orange II computer, an Apple II clone that is in theory 100% compatible. Although no issues have reported when running the software on an original Apple II, it is however possible, although unlikely, that you may run into an unforeseen problem. Should this happen, please let me know.

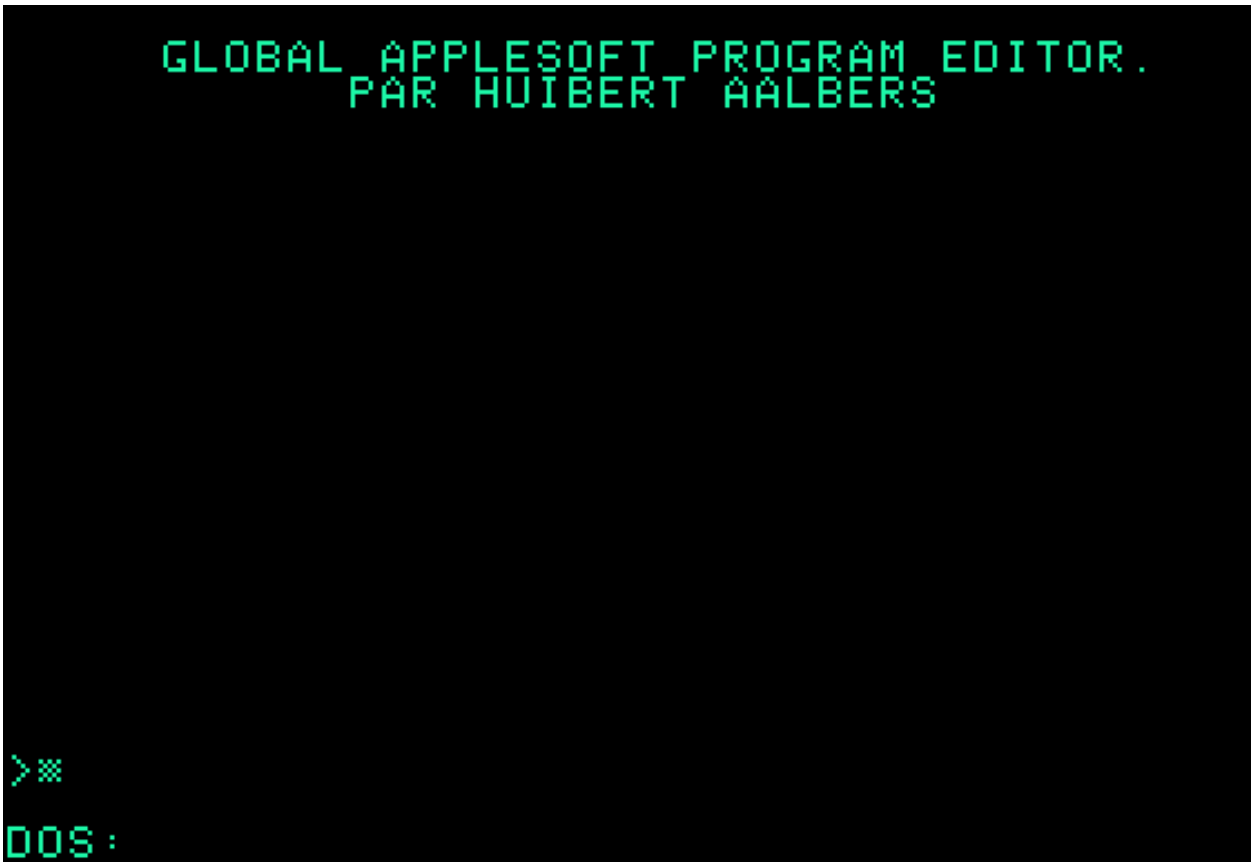
The source code is included in this document. G.A.P.E. was developed for the US market and that is why all the commands are in English. However, the comments found in the source code are mostly in Spanish and sometimes in French, my native tongues. I hope that this won't stop you from going through the source code if you are interested in understanding how the program works.

I had to split the program's source code in two parts due to memory constraints. The same issue forced me to limit the amount of comments included in the source. I hope the included comments will be enough to get you started.

In order to use G.A.P.E. all you need to do is to insert the floppy in the disk drive and turn your Apple II computer on. The editor will start automatically. I hope you enjoy the software.

Huibert Aalbers

G.A.P.E. commands



Control commands

These commands are triggered by simultaneously pressing the CTRL (ConTRol) key and a second one. Control commands can only be invoked when the cursor is blinking on the first column of the screen.

Here is a list of the available control commands along with their associated key.

The DOS commands

These functions provide quick access to common DOS functions. If you need to use other DOS. commands, you will have to do so from the default Applesoft BASIC prompt, after leaving G.A.P.E. (see the Quit command).

- CTRL-C: CATALOG
- CTRL-D: DELETE
- CTRL-L: LOAD
- CTRL-S: SAVE

All these commands work exclusively with Drive 1. If you want to work with Drive 2, you need to exit G.A.P.E. (see the QUIT command).

G.A.P.E was designed with DOS 3.3. in mind and therefore will not recognize disks formatted with previous versions of this OS or with the PRODOS Operating System.

The QUIT command

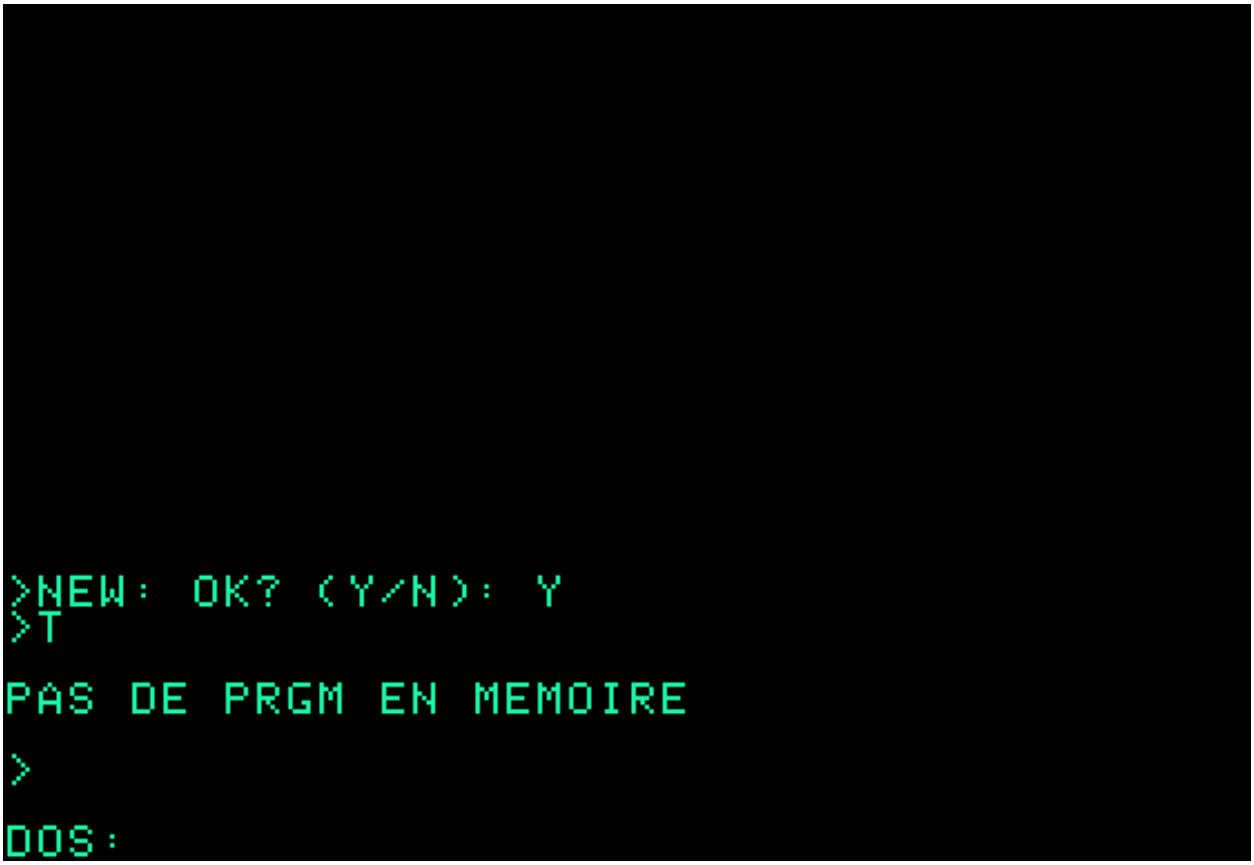
By pressing CTRL-Q you can exit the editor and return to the familiar Applesoft prompt. This is a command that you will use very often since you will need to quit G.A.P.E. in order to execute your Applesoft program. Returning to the G.A.P.E. editor is very simple, just type the following command: & <CR>

The NEW command

This command erases the Applesoft BASIC application currently stored in memory. Since this cannot be undone, G.A.P.E. asks for confirmation before it executes the command (press Y to confirm or N to cancel the operation).

Example

Type: `CTRL-N`
Displayed: `NEW: OK? (Y/N):`
Type: `Y`
Type: `T <CR>`
Displayed: `NO PROGRAM IS LOADED` (The program has been erased)



Position commands

Unlike Applesoft BASIC which treats your program simply as an unconnected collection of program lines, G.A.P.E. treats your program as a file. That is what gives G.A.P.E. its power to quickly move within your program and the reason why it has the word “GLOBAL” in its name.

G.A.P.E. always point to a program line which is considered the “current” line. Position commands allow you to change the line G.A.P.E. points to.

We will use the following sample program to illustrate how these commands work:

```
10 HOME
20 INPUT “ENTER THE ANGLE IN RADIANS”;A
30 A=(A*180)/3.14
40 PRINT “ANGLE IN DEGREES = “;A
50 END
```

The TOP command

This command moves the pointer to the first Applesoft BASIC program line and displays it.

Example

```
Type:      TOP<CR>
Displayed: TOP
           10  HOME
             : VTAB 10
             : HTAB 5
```

The BOTTOM command

This command moves the pointer to the last Applesoft BASIC program line and displays it.

Example

```
Type:      BOTTOM<CR>
Displayed: BOTTOM
           50 END
```

The NEXT command

This command moves the pointer X program lines up or down (depending on the sign of X) and displays it.

The syntax for this command is as follows:

```
N<EXT> <-> <NUMBER>
```

Example

```
Type:      TOP<CR>
```

```
Displayed: TOP
           10  HOME
             : VTAB 10
             : HTAB 5
Type:      N<CR>
Displayed: 20 INPUT "ENTER THE ANGLE IN RADIANS";A
Type:      N 2<CR>
Displayed: 40 PRINT "ANGLE IN DEGREES = ";A
Type:      NEXT 5<CR>
Displayed: BOTTOM                    (The program has reached the "bottom")
           50 END
Type:      N -2<CR>
Displayed: 30 A= (A*180)/3.14
```

The LINE command

This command moves the pointer to a specified program line number.

The syntax for this command is as follows:

```
L<INE> <NUMBER>
```

NUMBER is a 16 bits integer (between 1 and 65535).

Example

```
Type:      B<CR>
Displayed: BOTTOM
           50 END
Type:      L 10<CR>
Displayed: 10  HOME
             : VTAB 10
             : HTAB 5
```

The PRINT command

This command prints a certain number of program lines, starting with the line currently pointed to by G.A.P.E.

The syntax for this command is as follows:

```
P<RINT> <NUMBER>
```

NUMBER is a 16 bits integer (between 1 and 65535). By default, its value is 65535. Therefore, if no NUMBER is provided, G.A.P.E. will print all the program lines until it reaches the end of the Applesoft BASIC program.

Example

```
Type:      T<CR>
Displayed: TOP
           10  HOME
```

```
            : VTAB 10
            : HTAB 5
Type:       PRINT 2<CR>
Displayed:  10  HOME
            : VTAB 10
            : HTAB 5
            20  INPUT "ENTER THE ANGLE IN RADIANS";A
Type:       PRINT<CR>
Displayed:  20 INPUT "ENTER THE ANGLE IN RADIANS";A
            30 A=(A*180)/3.14
            40 PRINT "ANGLE IN DEGREES = ";A
            50 END
            BOTTOM.                (The program has reached the "bottom")
```

The PP (PinPoint) command

This command helps the programmer to see the line he/she is editing in context. It displays the two lines preceding and following the current line, without modifying the G.A.P.E. pointer.

The syntax for this command is as follows:

```
PP
```

Example

```
Type:       L 30<CR>
Displayed:  30 A=(A*180)/3.14
Type:       PP<CR>
Displayed:  10  HOME
            : VTAB 10
            : HTAB 5
            20 INPUT "ENTER THE ANGLE IN RADIANS";A
            30 A=(A*180)/3.14
            40 PRINT "ANGLE IN DEGREES = ";A
            50 END
```

Programming tools

ESCape key

Typing a long BASIC program can be a tedious, error-prone task, specially for those of us who aren't great typists. Even for those who master their keyboard perfectly, productivity can be greatly enhanced by reducing the number of keystrokes required to enter a program. That is why G.A.P.E. provides a system to type in any of the Applesoft BASIC keywords by just pressing two keys (ESC followed by the key corresponding to the desired keyword).

Here is a list of all the Applesoft keywords that can be quickly entered by using the ESCape key with their corresponding shortcut.

Shortcut	Keyword
ESC-A	ABS(
ESC-B	HPLOT
ESC-C	CLEAR
ESC-D	DATA
ESC-E	END
ESC-F	FOR
ESC-G	GOTO
ESC-H	HOME
ESC-I	INPUT
ESC-J	CHR$(
ESC-K	RIGHT$
ESC-L	LEFT$(
ESC-M	MID$(
ESC-N	NEXT
ESC-O	POKE
ESC-P	PEEK(
ESC-Q	CALL
ESC-R	RETURN
ESC-S	STEP
ESC-T	TEXT

Shortcut	Keyword
ESC-U	HTAB
ESC-V	VTAB
ESC-W	DRAW
ESC-X	XDRAW
ESC-Y	HCOLOR=
ESC-Z	RESTORE

This list contains a lot of BASIC keywords and that is why I have tried to make it as easy as possible to remember. In general, the first letter of the Applesoft function name matches the key that needs to be pressed in order to invoke it. However, there are exceptions because there are some function names that start with the same letter (i.e. PEEK and POKE). In those cases I have tried to group function names by themes. For example, PEEK, POKE and CALL (advanced functions for users who have a deeper knowledge of how the computer works) have been assigned consecutive letters, which should make them easier to memorize.

Restrictions
The ESCape functions are not available in EDIT mode since that key has a different use in that mode. This is something that we will discuss later on in this manual.

The AUTO command

When writing a new Applesoft BASIC program it can be tedious to have to write a new line number every time you want to enter a new line. This command streamlines the whole process.

The syntax for this command is as follows:

```
A<UTO> LINE,<INCREMENT>
```

LINE is a 16 bits integer (between 1 and 63999).
INCREMENT is a 8 bits integer (between 1 and 255).

Once you execute this command, every time you press the space bar at the beginning of a new line, the number of that line will be entered automatically for you. All you have to do is type the code and press RETURN at the end of the line.

Example

Type: `AUTO 10,5<CR>`
Displayed: >
Type: `<SPACE>`
Displayed: >10
Type: `HOME:CLEAR<CR>`
Type: `<SPACE>`
Displayed: >15

The AUTOFF command

This command disables the AUTO mode.

The syntax for this command is as follows:

```
AUTOF<F>
```

Example

First execute the previous example, then:

Type: `AUTOFF<CR>`
Displayed: >
Type: `<SPACE>`
Displayed: > (AUTO mode has been disabled)

The COLUMN command

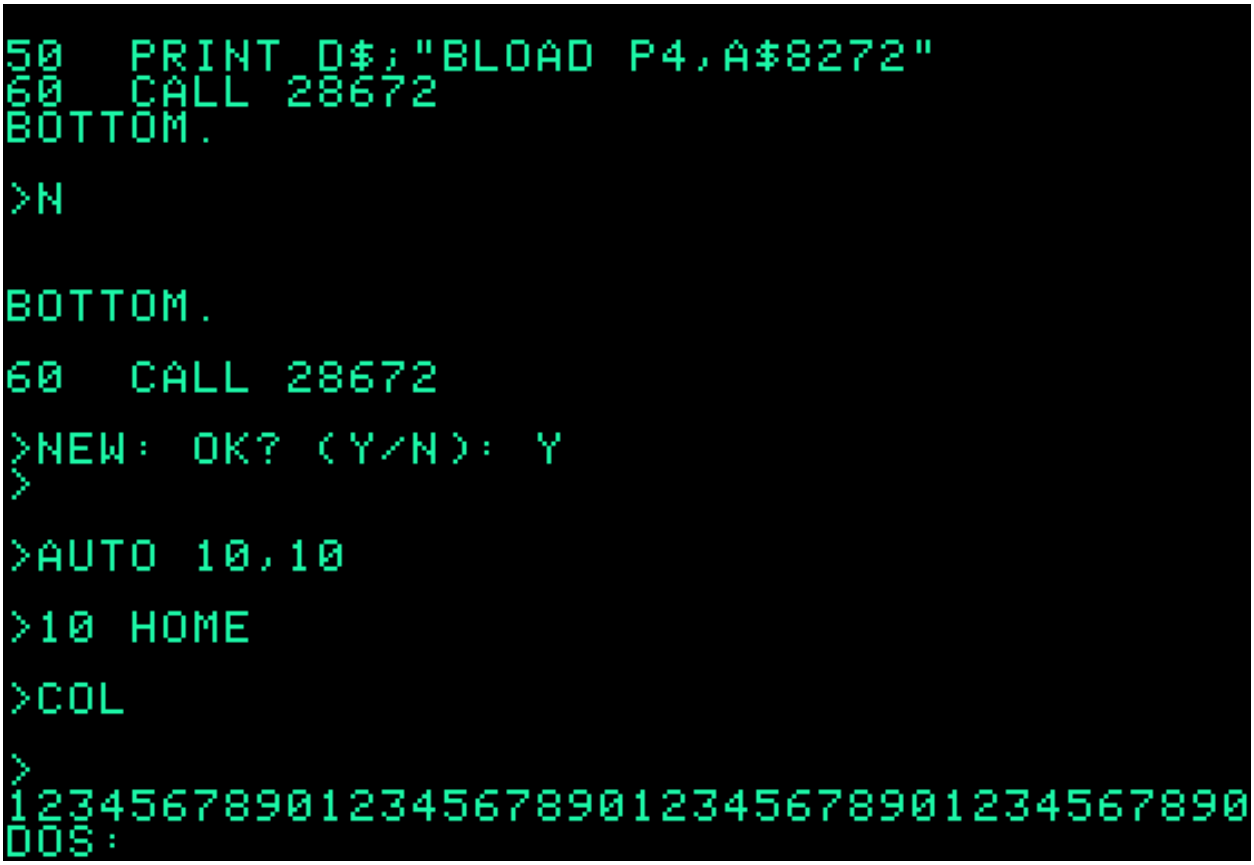
Sometimes, when writing a program you may need to center some text on the screen within a PRINT statement. In those cases it can be useful to easily know how long your text is or on what column you are typing. To solve this issue, the COLUMN functions adds a line of numbers on the penultimate line of the screen.

The syntax for this command is as follows:

```
C<OLUMN>
```

Note

Since column numbers are placed below the cursor (in a protected area of the screen) there is no risk that you could erase them accidentally or that they could interfere with anything you type.



The NOCOLUMN command

Disables the COLUMN mode and unlocks the penultimate line of the screen.

The syntax for this command is as follows:

```
NO<COLUMN>
```

The H$ command

Applesoft BASIC only works with decimal numbers. However, most of the technical documentation available for the Apple II uses hexadecimal to represent the location of ROM routines and significant memory locations. That is why is really handy to have a quick way to convert hexadecimal values into decimal. That is exactly what the H$ function does.

The syntax for this command is as follows:

```
H$ VALUE
```

VALUE is a 16 bits hexadecimal integer (between 0 and FFFF).

Example

Type: `H$E5<CR>`
Displayed: `=229`
Type: `H$C050`
Displayed: `=49232`

The SEARCH command

Once a program reaches a certain size it may become quite hard to remember on what line a particular code fragment is located. This command solves this problem by searching your program for a particular string of characters, starting from the “current line”. Every time a match is found, G.A.P.E. will list the line of code.

The syntax for this command is as follows:

```
SEARCH STRING</NUMBER>
```

STRING is a string consisting of less than 128 characters.
NUMBER specifies the number of program lines over which search will be performed. By default its value is 255. NUMBER is an 8 bit value comprised between 1 and 255.

Note

After completing the search, G.A.P.E. will point to the last line that was searched for the specified string.

Example

Enter the following program:

```
10 HOME
20 INPUT “HOWDY ?”;A$
30 END
```

Type: `T<CR>`
Displayed: `10 HOME`
Type: `S HO<CR>`
Displayed: `10 HOME`
`20 INPUT “HOWDY ?”;A$`
`BOTTOM` (G.A.P.E. found HO in lines 10 and 20 before hitting the end of the program)
Type: `T<CR>`
Displayed: `10 HOME`
Type: `SEARCH B$<CR>`
Displayed: `BOTTOM` (G.A.P.E did not find the string B$)

Editing a BASIC program line

This is the medular part of the functionality provided by G.A.P.E. because it improves significantly the way in which Applesoft BASIC program lines can be edited. In fact, Apple does not really provide a system to edit BASIC program lines. They expect you to re-enter them completely and this is a complete waste of time. With G.A.P.E. you no longer have to type everything over and over again. Making changes to an existing line is quick and easy.

The EDIT command

This command unsurprisingly allows you to quickly and easily edit a program line. G.A.P.E. will display the line in the very same way the PRINT command would, using improved text formatting that makes the code easier to read. This is important because it simplifies editing long program lines and provides consistency with printed program listings (if you have a printer).

The syntax for this command is as follows:

```
E<DIT> <LINE>
```

LINE contains an integer value between 1 and 63999 (those are the valid line numbers in Applesoft BASIC). If a LINE number is not provided, EDIT will edit the line currently pointed to by G.A.P.E.

After entering the EDIT command, G.A.P.E. will display the line to edit and the cursor will be placed just after the line number, waiting for a command. The following table displays all the commands available while in EDIT mode.

Command	Description
D	Deletes the character placed under the cursor, moving the remaining characters right of the cursor to the left.
I	Inserts a space under the cursor, moving all the characters right of the cursor one position to the right.
F <character>	Finds the specified character in the line and moves the cursor to that position. After pressing the F key you need to press the key with the character you want to find. G.A.P.E. will start searching the character from the current cursor position.
B	Moves the cursor at the Beginning of the line.
E	Moves the cursor at the End of the line.
ESC	Toggles between EDIT and TYPE mode. In TYPE mode you can type freely, overwriting the text of your line of code. In EDIT mode you can use the commands listed in this table.
CTRL-X	Cancels any changes you may have made to the line of code.
RETURN	Processes the line in its current state, saving any changes you may have made.

Note

Both in EDIT and in TYPE mode, right and left arrow keys work as expected and allow you to move the cursor over your line of code. The only difference is that you will not be able to move past the last character in that line. In addition you will not be able to use the I (Insert) command once your line of code has reached the 250 characters limit.

On the bottom line of the screen, while in EDITing a line of code, G.A.P.E. will display a message indicating which mode is currently active (EDIT: COMMAND or EDIT: TYPE).

Printing

G.A.P.E. would be quite useless if it didn't allow to print a listing of your Applesoft program. That is why it provides a way to route the screen output to a device connected to your Apple II through an interface card installed in one of the available slots.

The PR# command

This command activates the device connected to a specified slot (1 to 7) through an interface card. In general serial or parallel interface cards used to connect printers are installed in slot number 1.

The syntax for this command is as follows:

```
PR#NUMBER
```

NUMBER is a 8 bits integer (between 0 and 7).

Example

Type: `PR#1<CR>`
Type: `T<CR>`
Type: `P<CR>.` (Prints the whole program on the printer)

Note

In order to route the program's output back to the screen just use: `PR#0`

Appendices

Appendix A - Error Messages

DOS error messages

These error messages appear on the last line of the screen. For additional information about these errors please read Apple's DOS 3.3 user manual. The most frequent DOS errors you may get are the following:

FILE NOT FOUND	You computer can't find the specified Applesoft program on the floppy disk. You may have misspelled the name of the program or inserted the wrong floppy disk.
I/O ERROR	The computer cannot read the data from the floppy disk. The magnetic media may be damaged or you may have failed to properly close the drive's lid.
DISK FULL	Your floppy disk doesn't have enough free space to save your program.
WRITE PROTECTED	You tried to write data to a write-protected floppy disk. Remove the write-protect tab before saving your program.

G.A.P.E. error messages

SORRY	G.A.P.E couldn't understand the command you entered. You probably misspelled the name of the command. Please check the syntax of the command you want to use.
NO SUCH LINE	The line you want G.A.P.E. to point to doesn't exist.
BAD ARG #	You have provided an incorrect argument value to a command. Please check the syntax of the command you want to use. The argument value may be out-of-bounds.
TOP	You have reached the first line of the program.
BOTTOM	You have reached the last line of the program.

Appendix B - References

Books

La pratique de l'Apple II (Volume III) de Nicole Bréaud Pouliquen y Daniel-Jean David. Édition P.S.I.
Clefs pour l'Apple II de Nicole Bréaud Pouliquen. Édition P.S.I.
Beneath Apple DOS de Don Worth y Pieter Lechner. Quality Software.

Magazines

NIBBLE Magazine No. 6, Vol. 3. (March 1985) Ed MicroSPARC, Inc.

Appendix C - Hardware and software used on this project

Hardware

- **Apple II+** 48K RAM
- **Apple II Disk Drive** DOS 3.3.

Software

- **LISA 2.5 Assembler**. Published by PROGRAMMA International Inc.
- **Apple Writer II**. Published by Apple Computer Inc. (text editor used to print the manual).

Global Applesoft Program Editor

Source code

Huibert Aalbers - European Software Partner, 1985

File: PHILIPS.1

```
;
****************************
*                          *
*         GLOBAL           *
* APPLESOFT PROGRAM EDITOR *
*                          *
*     DEVELOPPED BY        *
*                          *
*    HUIBERT AALBERS       *
*                          *
****************************
;
;------------------------------
;ROM AND DOS ROUTINES
;DEFINITION
;------------------------------
;
BUF       EQU  $200         ;BUFFER UTILIZADO POR INLIN
AMPER     EQU  $3F5         ;VECTOR DEL &
PRGM      EQU  $801         ;PRINCIPIO DEL PROGRAMA
LIST      EQU  $74E5        ;LISTA UNA LINEA
ESCODES   EQU  $75FF        ;TRATAMIENTO DE LOS COMANDOS DE ESC.
ENTRY2    EQU  $78D6
ENTRY     EQU  $7E2B
CLOSEALL  EQU  $A316        ;CIERRA TODOS LOS FICHEROS
TKNTBL    EQU  $D0D0        ;TABLA DE COMANDOS DEL BASIC
BLTU      EQU  $D393        ;MUEVE 256 OCTETOS HACIA ARRIBA
```

```
28 INLIN     EQU  $D52C        ;ENTRA UNA LINEA HACIA EL BUFFER
29 PARSE     EQU  $D559        ;CODIFICA UNA LINEA ENTRADA POR INLIN
30 FNDLIN    EQU  $D61A        ;BUSCA UNA LINEA DE PROGRAMA
31 INITPTRS  EQU  $D665        ;PUNTEROS DE INIT
32 LINGET    EQU  $DA0C        ;PONE EN LINNUM EL NO DE LINEA CORRIENTE
33 CRDO      EQU  $DAFB        ;IMPRIME UN CARRIAGE RETURN
34 OUTSP     EQU  $DB57        ;IMPRIME UN ESPACIO
35 LINPRT    EQU  $ED24        ;IMPRIME X,A
36 VTAB      EQU  $F25A        ;TABULACION VERTICAL
37 PRBL2     EQU  $F94A        ;IMPRIME X ESPACIOS
38 HOME      EQU  $FC58        ;BORRA LA PANTALLA
39 KEYIN     EQU  $FD0C        ;ENTRA UN CARACTER
40 GETLN     EQU  $FD6A        ;ENTRA UNA LINEA DE CARAC. HACIA BUF
41 COUT      EQU  $FDED        ;IMPRIME EL CARACTER CONTENIDO EN A
42 ;
43 ;-----------------------------
44 ;DEFINICION DE LAS DIRECCIONES
45 ;EN PAGINA ZERO
46 ;-----------------------------
47 ;
48 POSCUR    EPZ  $06
49 ADL       EPZ  $08          ;VECTOR ENTRADA DEL FILE MANAGER
50 TEMP      EPZ  $0F
51 LINE      EPZ  $18          ;REGISTRO TEMPORAL SOBRE 2 OCTETOS
52 BUFF      EPZ  $1A          ;REGISTRO TEMPORAL SOBRE 2 OCTETOS
53 CH        EPZ  $24          ;POSICION DEL CURSOR (HORIZONTAL)
54 PROMPT    EPZ  $33          ;CONTIENE EL CARACTER ">"
55 LINNUM    EPZ  $50          ;CONTIENE EL NUMERO DE LINEA TRAS LINGET
56 LIST2     EPZ  $54          ;FLAG PARA HACER LIST ANTES DE CMDLP
```

```
57 ESCFLG    EPZ  $55          ;FLAG DE PULSACION DE ESC
58 INDEX     EPZ  $5E          ;REGISTRO TEMPORAL PARA MOVER MEMORIA
59 DEST      EPZ  $60
60 TXTTAB    EPZ  $67          ;DIRECCION PRINCIPIO DEL PROGRAMA BASIC
61 VARTAB    EPZ  $69          ;DIRECCION PRINCIPIO VARIABLES SIMPLES
62 STREND    EPZ  $6D          ;DIRECCION FIN VARIABLES DIMENSIONADAS
63 FRETOP    EPZ  $6F          ;DIRECCION FIN VARIABLES ALFANUMERICAS
64 MEMSIZ    EPZ  $73          ;DIRECCION FIN DE LA MEMORIA UTILIZABLE
65 CURLIN    EPZ  $75          ;FLAG (CONTIENE FF EN MODO INMEDIATO)
66 FORPNT    EPZ  $85          ;NUEVA DIRECCION DE UNA CADENA DESPLAZADA
67 HIGHDS    EPZ  $94          ;PARAMRTROS BLTU: DESTINO
68 HIGHTR    EPZ  $96          ;       66        FIN
69 LOWTR     EPZ  $9B          ;                 PRINCIPIO
70 DSCTMP    EPZ  $9D          ;REGISTRO TEMPORAL SOBRE 6 OCTETOS
71 PRGEND    EPZ  $AF          ;FINAL DE LA ZONA PROGRAMA BASIC
72 CHRGET    EPZ  $B1          ;SUBRUTINA QUE LEE EL SIGIENTE CARACTER
73 ;                           ;DEL PROGRAMA BASIC
74 TXTPTR    EPZ  $B8          ;DIRECCION CARACTER OBTENIDO POR CHRGET
75 INC       EPZ  $CE
76 ERRFLG    EPZ  $D8          ;FLAG QUE INDICA SI ONERR ESTA ACTIVO
77 ADL2      EPZ  $F9          ;REGISTRO TTEMPORAL SOBRE 2 OCTETOS
78 SAVEA     EPZ  $FB
79 AUTOFLG   EPZ  $FF
80 ;
81 ;------------------------------
82 ;PREMIO HOLANDA. PROGRAM
83 ;STARTED ON APRIL 6, 1984
84 ;------------------------------
85 ;
```

```
 86           ORG $300
 87 ;
 88 ;-----------------------------
 89 ;SUBRUTINA POR LA QUE PASA EL
 90 ;PROGRAMA CADA VEZ QUE SE PULSA
 91 ;UNA TECLA
 92 ;-----------------------------
 93 ;
 94 KEYINTCP  JSR $FD1B       ;LEE UN CARACTER DESDE EL TECLADO
 95           PHA
 96           CPX #$00        ;SI EL CURSOR NO ESTA EN LA PRIMERA
 97           BEQ >1
 98           JMP ANULADO
 99 ^1        LDA #$00
100           STA ESCFLG
101           PLA
102           CMP #$83        ;ES UN CTRL-C ?
103           BNE NOCAT
104           LDX #$00
105 AFFCAT    LDA MESSCAT,X   ;IMPRIME "CATALOG"
106           BEQ PREPDAT
107           JSR COUT
108           INX
109           JMP AFFCAT
110 PREPDAT   JSR $3DC        ;PREPARACION DE LOS DATOS NECESARIOS
111           STA ADL+1       ;PARA EFECTUAR UN CATALOG
112           STY ADL
113           LDY #$00
114           LDA #$06
```

```
115           STA (ADL),Y
116           LDA #$01
117           LDY #$05
118           STA (ADL),Y
119           LDA #$06
120           LDY #$06
121           STA (ADL),Y
122           JSR $3D6        ;LLAMADA AL FILE MANAGER
123           JMP DOSERR      ;VERIFICA SI HA HABIDO UN ERROR
124 ;
125 MESSCAT   ASC “CATALOG”
126           HEX $00
127 ;
128 NOCAT     CMP #$93        ;ES UN CTRL-S ?
129           BNE NOSAVE
130           JMP SAVE
131 NOSAVE    CMP #$8C        ;ES UN CTRL-L ?
132           BNE NOLOAD
133           JMP LOAD
134 NOLOAD    CMP #$84        ;ES UN CTRL-D ?
135           BNE NODEL
136           JMP DELETE
137 NODEL     CMP #$8E        ;ES UN CTRL-N ?
138           BNE NONEW
139           JMP NEW
140 NONEW     CMP #$91        ;ES UN CTRL-Q ?
141           BNE NOQUIT
142           JMP QUIT
143 NOQUIT    CMP #” “        ;ES UN ESPACIO ?
```

```
144             BNE  NOCOM        ;SI NO, NO ES UN COMANDO.
145             LDY  AUTOFLG      ;ESTA PUESTA LA NUMEARION AUTOMATICA ?
146             BEQ  NOCOM        ;SI NO,NO ES UN COMANDO.
147             LDA  INC          ;CALCULO PROXIMA LINEA
148             CLC
149             ADC  LINE
150             STA  LINE
151             TAX
152             LDA  #$00
153             ADC  LINE+1
154             STA  LINE+1
155             JSR  LINPRT       ;IMPRIME EL NUMERO EN PANTALLA
156             LDX  #$00
157  ^2         LDA  $100,X       ;Y LO SALVAGUARDA EN MEMORIA
158             STA  $200,X
159             BEQ  >3
160             INX
161             JMP  <2
162  ^3         LDA  #" "
163  NOCOM      JMP  ANULADO+1
164  ;
165  ANULADO    PLA               ;TRATAMIENTO DE LOS COMANDOS DE "ESCAPE"
166             CMP  #$95
167             BEQ  >1-1
168             CMP  #$9B
169             BNE  >1
170             STA  ESCFLG
171             RTS
172  ^1         LDY  ESCFLG
```

```
173           BNE >2
174           RTS
175 ^2        CMP #$C1
176           BCC >3
177           CMP #$DB
178           BCS >3
179           SBC #$C0
180           JMP ESCODES
181 ^3        LDY #$00
182           STY ESCFLG
183           RTS
184 ;
185 VIINTCP   CMP #$A0         ;RUTINA DE SALIDA DE CARACTERES.
186           BCS >1           ;IMPRIME LOS CARACTERES DE CONTROL
187           CMP #$8D         ;EN INVERSO.
188           BEQ >1
189           CMP #$88
190           BEQ >1
191           AND #%00111111
192 ^1        JSR $FDF0
193           RTS
194 ;
195           ORG $7000
196 ;
197 ;-----------------------------
198 ;PRINCIPIO DEL PROGRAMA.ESCRIBE
199 ;EL TITULO E INICIALIZA LAS
200 ;VARIABLES Y LAS E/S.
201 ;-----------------------------
```

```
;
          JSR  HOME         ;BORRA LA PANTALLA
;
;MODIFICA LOS VECTORES DE E/S
;
INIT      LDA  #$00
          STA  $9D02        ;DESCONECTA LOS CONTROLES DEL D.O.S
          STA  $38
          LDA  #$03
          STA  $9D03
          STA  $9D05
          STA  $37
          STA  $39
          LDA  #VIINTCP     ;Y TOMA EL CONTROL DE LAS ENTRADAS Y
          STA  $9D04        ;SALIDAS DE CARACTERES
          STA  $36
          LDX  #$02
AMPVCT    LDA  VECT,X       ;INSTALA LOS VECTORES QUE PERMITIRAN EL
          STA  AMPER,X      ;USO DEL & PARA VOLVER A ENTRAR EN EL
          DEX               ;G.A.P.E  DESDE EL BASIC
          BPL  AMPVCT
RESETVCT  LDA  #RESET       ;BLOQUEA LA TECLA RESET,EVITANDO QUE SE
          STA  $3F2         ;PULSE POR EQUIVOCACION
          LDA  /RESET
          STA  $3F3
          JSR  $FB6F
SETMEM    LDA  #$00         ;PROTEGE LA ZONA MEMORIA DONDE ESTA EL
          STA  MEMSIZ       ;G.A.P.E PARA QUE NO SEA DESTRUIDO POR
          LDA  #$70         ;LAS VARIABLES O EL PROGRAMA DEL BASIC
```

```
231           STA  MEMSIZ+1
232  ;------------------------------
233  ;INICIALIZACION DE ALGUNOS
234  ;REGISTROS
235  ;------------------------------
236           LDA  #$00
237           STA  AUTOFLG
238           STA  LINE+1
239           LDA  #!20
240           STA  LINE
241           LDA  #$0A
242           LDA  #$01
243           STA  $07
244           LDA  #$00
245           STA  LIST2
246  ;------------------------------
247  ;IMPRIME EL TITULO
248  ;------------------------------
249  AFFHEL    JSR  CRDO
250           LDA  #$05
251           STA  CH
252           LDX  #$00
253  ^1        LDA  MES1,X
254           BEQ  >2
255           JSR  COUT
256           INX
257           JMP  <1
258  ^2        JMP  NDOSERR
259  ;------------------------------
```

```
260 ;BUCLE PRINCIPAL
261 ;------------------------------
262 CMDLP     LDA #$00
263           STA ESCFLG
264           NOP
265           NOP
266           NOP
267           LDA LIST2
268           BEQ CMDLP2
269           JSR LIST
270           LDA #$00
271           STA LIST2
272           LDA #$00
273           STA SAVEA
274 CMDLP2    JSR CRDO
275           LDX #"> "
276           JSR INLIN+2
277           STX TXTPTR
278           STY TXTPTR+1
279           LSR ERRFLG
280           JSR CHRGET
281           TAX
282           BEQ CMDLP
283           LDX #$FF
284           STX CURLIN+1
285           BCC PROCLN
286           JMP PARSE2
287           JMP CMDLP
288 ;------------------------------
```

```
289 ;PROCEDE A LA ENTRADA DE UNA
290 ;LINEA DE PROGRAMA
291 ;-----------------------------
292 PROCLN    LDX  PRGEND      ;PONE LOMEM=FIN DEL PROGRAMA.
293           STX  VARTAB
294           LDX  PRGEND+1
295           STX  VARTAB+1
296           JSR  LINGET      ;PONE # DE LINEA EN LINNUM
297           JSR  PARSE       ;TRANSFORMA EL BUFFER EN “TOKEN"
298           STY  TEMP        ;INDEX DE BUFFER (# CARACTER+5)
299           JSR  FNDLIN      ;EXISTE YA LA LINEA ?
300           BCC  NEWLN       ;NO, HAY QUE CREARLA
301 ;-----------------------------
302 ;DESTRUYE UNA ANTIGUA LINEA
303 ;-----------------------------
304           LDY  #1          ;SI EXISTE.BORRA LA LINEA MOVIENDO EL
305           LDA  (LOWTR),Y   ;RESTO DEL PROGRAMA HACIA ABAJO, ES
306           STA  INDEX+1     ;DECIR ESCRIBIENDO SOBRE LA LINEA QUE
307           LDA  VARTAB      ;HA DE SER BORRADA
308           STA  INDEX       ;LAS LINEAS 296 A 326 CALCULAN LO
309           LDA  LOWTR+1     ;SIGUIENTE:
310           STA  DEST+1      ;(DEST),Y=PRIMER CARACTER DE LA LINEA
311           STA  DEST+1      ;QUE HA DE SER BORRADO
312           LDA  LOWTR
313           DEY
314           SBC  (LOWTR),Y   ;(INDEX),Y=PRIMER CARACTER DEL RESTO
315           CLC              ;DEL PROGRAMA
316           ADC  VARTAB
317           STA  VARTAB      ;X-1=LONGITUD DEL RESTO DEL PROGRAMA
```

```
318             STA  DEST         ;(HI-BYTE)
319             LDA  VARTAB+1
320             ADC  #$FF         ;$100-Y=LONGITUD DEL RESTO DEL PROGRAMA
321             STA  VARTAB+1     ;(LO-BYTE)
322             SBC  LOWTR+1
323             TAX
324             SEC
325             LDA  LOWTR
326             SBC  VARTAB
327             TAY
328             BCS  PL1
329             INX
330             DEC  DEST+1
331  PL1        CLC
332             ADC  INDEX
333             BCC  PGMDWN
334             DEC  INDEX+1
335             CLC
336  PGMDWN     LDA  (INDEX),Y    ;MUEVE EL PROGRAMA HACIA ABAJO
337             STA  (DEST),Y
338             INY
339             BNE  PGMDWN
340             INC  INDEX+1
341             INC  DEST+1
342             DEX
343             BNE  PGMDWN
344  ;------------------------------
345  ;INSERTA UNA NUEVA LINEA
346  ;------------------------------
```

```
347 NEWLN     LDA  BUF          ;SI NO HAY CARACTERES TRAS EL # DE LINEA
348           BEQ  SETPTRS      ;ABANDONA LA INSERCION.
349           LDA  MEMSIZ       ;PONE FINAL DE LA CADENA
350           LDY  MEMSIZ+1     ;ESPACIO=HIMEM
351           STA  FRETOP
352           STY  FRETOP+1
353           LDA  VARTAB       ;PONE PARAMETROS BLTU (START=LOWTR)
354           STA  HIGHTR       ;FINAL (LO-BYTE)
355           ADC  TEMP
356           STA  HIGHDS       ;DESTINO (LO-BYTE)
357           LDY  VARTAB+1
358           STY  HIGHTR+1     ;FIN (HI-BYTE)
359           BCC  PGMUP
360           INY
361 PGMUP     STY  HIGHDS+1     ;DESTINO (HI-BYTE)
362           JSR  BLTU         ;SUBE EL PROGRAMA
363           LDA  LINNUM       ;INSERTA #LINEA EN LO QUE SERAN LOS
364           LDY  LINNUM+1     ;BYTES 2-3 DE LA NUEVA LINEA.
365           STA  BUF-2
366           STY  BUF-1
367           LDA  STREND       ;PONE LOMEM=PRINCIPIO VAR. DIMENSIONADAS
368           LDY  STREND+1
369           STA  VARTAB
370           STY  VARTAB+1
371           LDY  TEMP
372 INSLN     LDA  BUF-5,Y      ;INSERTA LINEA EN LA MEMORIA LIBRE
373           DEY               ;BUF-4 Y BUF-3 SERAN LOS LINK-BYTES 0-1
374           STA  (LOWTR),Y
375           BNE  INSLN
```

```
376 SETPTRS   JSR  INITPTRS     ;INICIALIZA PUNTEROS
377           LDA  TXTTAB       ;PONE INDEX=PRINCIPIO DEL PROGRAMA
378           LDY  TXTTAB+1
379           STA  INDEX
380           STY  INDEX+1
381           CLC
382 ;
383 ;PONE LINK BYTES
384 ;
385 FNDEOP    LDY  #$01
386           LDA  (INDEX),Y    ;FINAL DEL PROGRAMA?
387           BNE  SETLINK      ;NO.PONE LINK BYTES
388           LDA  VARTAB       ;SI. PONE FINAL PROGRAMA=LOMEM
389           STA  PRGEND
390           LDA  VARTAB+1
391           STA  PRGEND+1
392           LDA  SAVEA
393           BNE  >1
394           JMP  CMDLP        ;VUELVE AL BUCLE PRINCIPAL
395 ^1        CMP  #$01
396           BNE  >2
397           JMP  ENTRY
398 ^2        JMP  ENTRY2
399 SETLINK   LDY  #$04         ;BUSCA EL FIN DE LA LINEA
400 SL1       INY
401           LDA  (INDEX),Y
402           BNE  SL1
403           INY               ;LO HA ENCONTRADO.PONE LINK-BYTES.
404           TYA
```

```
405           ADC  INDEX
406           TAX
407           LDY  #$00
408           STA  (INDEX),Y   ;LINK (LO-BYTE)
409           LDA  INDEX+1
410           ADC  #$00
411           INY
412           STA  (INDEX),Y   ;LINK (HI-BYTE)
413           STX  INDEX       ;PONE PUNTERO AL PRINCIPIO DE LA
414           STA  INDEX+1     ;LINEA SIGUIENTE
415           BCC  FNDEOP      ;SIEMPRE
416 ;
417 ;------------------------------
418 ;TRATAMIENTO DE LOS ERRORES
419 ;DEL D.O.S
420 ;------------------------------
421 ;
422 NDOSERR   JSR  CRDO
423           LDA  #!24
424           STA  $23
425           LDX  #!23
426           JSR  VTAB
427           LDX  #$00
428 AFFERR    LDA  MESSDOS,X
429           BEQ  SU1
430           JSR  COUT
431           INX
432           JMP  AFFERR
433 SU1       LDX  #!21
```

```
434           JSR VTAB
435           LDA #!22
436           STA $23
437           LDA #$00
438           STA CH
439           JSR CLOSEALL
440           JMP CMDLP2+3
441 ;
442 MESSDOS   ASC “DOS:              “
443           HEX 00
444 ;
445 DOSERR    LDY #$0A
446           LDA (ADL),Y
447           BEQ NDOSERR
448           STA ADL2
449           JSR CRDO
450           JSR CRDO
451           LDA #!24
452           STA $23
453           LDX #!23
454           JSR VTAB
455           LDA #$05
456           STA CH
457           LDX ADL2
458           SEC
459           JSR $A702
460 ^2        LDA CH
461           CMP #!24
462           BEQ >3
```

```
463           LDA #" "
464           JSR COUT
465           JMP <2
466 ^3        LDX #!21
467           JSR VTAB
468           LDA #!22
469           STA $23
470           LDA #$00
471           STA CH
472           JMP CMDLP+3
473 ;-----------------------------
474 ;SALVAGUARDA EL PROGRAMA
475 ;SOBRE EL FLOPPY
476 ;-----------------------------
477 ;
478 ;
479 SAVE:
480           LDX #$00
481 ^1        LDA MESSAVE,X
482           BEQ >2
483           INX
484           JSR COUT
485           JMP <1
486 ^2        LDX #" "
487           JSR INLIN+2
488           LDA #$00
489           STA ALLOW+1
490           JSR OPEN
491           LDA #$01
```

```
492           STA  ALLOW+1
493           SEC
494           LDA  $AF
495           SBC  $67
496           TAY
497           LDA  $B0
498           SBC  $68
499           STY  ADL2
500           STA  ADL2+1
501           JSR  $A3E0
502           LDA  #$04
503           LDY  00
504           STA  (ADL),Y
505           LDA  #$02
506           INY
507           STA  (ADL),Y
508           LDA  ADL2
509           LDY  #$06
510           STA  (ADL),Y
511           LDA  ADL2+1
512           INY
513           STA  (ADL),Y
514           LDA  #PRGM
515           INY
516           STA  (ADL),Y
517           LDA  /PRGM
518           INY
519           STA  (ADL),Y
520           JSR  $3D6
```

```
521           BCC >3
522           LDY #$0A
523           LDA (ADL),Y
524           CMP #$06
525           BEQ >3
526           JMP DOSERR
527 ^3        LDY #$00
528           LDA #$02
529           STA (ADL),Y
530           JSR $3D6
531           JMP DOSERR
532 ;
533 ;------------------------------
534 ;CARGA EL PROGRAMA DESDE EL
535 ;FLOPPY
536 ;------------------------------
537 ;
538 LOAD:
539           LDX #$00
540 ^1        LDA MESLOAD,X
541           BEQ >2
542           INX
543           JSR COUT
544           JMP <1
545 ^2        LDX #" "
546           JSR INLIN+2
547           JSR CLOSEALL
548           LDA #$01
549           STA ALLOW+1
```

```
550           JSR  OPEN
551           LDA  #$23
552           AND  $B5C2
553           BEQ  FILEERR
554           JSR  $A47A
555           CLC
556           ADC  $67
557           TAX
558           TYA
559           ADC  $68
560           CMP  $74
561           BCS  ERRLONG
562           STA  $B0
563           STA  $6A
564           STX  $AF
565           STX  $69
566           LDX  $67
567           LDY  $68
568           JSR  $A471
569 ^9        JMP  NDOSERR
570 FILEERR:
571           LDA  #$0D
572           JMP  DOSERR+6
573 ERRLONG:
574           LDA  #$0E
575           JMP  DOSERR+6
576 ;-----------------------------
577 ;DESTRUYE UN PROGRAMA SOBRE
578 ;EL FLOPPY
```

```
579 ;------------------------------
580 ;
581 DELETE:
582           LDX #$00
583 ^1        LDA MESSDEL,X
584           BEQ >2
585           JSR COUT
586           INX
587           JMP <1
588 ^2        LDX #" "
589           JSR INLIN+2
590           JSR OPEN
591           LDY #$00
592           LDA #$05
593           STA (ADL),Y
594           JSR $3D6
595           JMP DOSERR
596 ;------------------------------
597 ;ABRE UN FICHERO
598 ;------------------------------
599 OPEN:
600           LDY #$FF
601 ^0        INY
602           LDA BUF,Y
603           BEQ ERROR
604           CMP #$20
605           BEQ <0
606           DEY
607           LDX #$FF
```

```
608 ^1        INX
609           INY
610           LDA  BUF,Y
611           EOR  #%10000000
612           STA  BUF,X
613           CMP  #$80
614           BNE  <1
615           CPX  #$01
616           BEQ  ERROR
617           LDA  #$A0
618 ^2        STA  BUF,X
619           INX
620           CPX  #!32
621           BNE  <2
622           JSR  $3DC
623           STY  ADL
624           STA  ADL+1
625           LDY  #$00
626 ^3        LDA  TABLE,Y
627           STA  (ADL),Y
628           INY
629           CPY  #$0A
630           BNE  <3
631 ALLOW     LDX  #$01
632           JSR  $3D6
633           BCC  >4
634           LDA  ALLOW+1
635           BNE  ERR
636           LDY  #$0A
```

```
637           LDA (ADL),Y
638           CMP #$06
639           BNE ERR
640 ^4        LDA ALLOW+1
641           BEQ >6
642           LDY #$07
643           LDA (ADL),Y
644           AND #%01111111
645           CMP #$02
646           BNE >5
647           RTS
648 ^5        JMP FILEERR
649 ^6        LDY #$07
650           LDA (ADL),Y
651           CMP #$02
652           BNE >7
653           RTS
654 ^7        CMP #$82
655           BNE <5
656           LDY #$0A
657           TYA
658           STA (ADL),Y
659           JMP DOSERR
660 ERR:
661           JMP DOSERR
662 ERROR:
663           JMP CMDLP
664 TABLE:
665           HEX 01000000000106020002
```

```
666 ;------------------------------
667 ;BORRA EL PROGRAMA QUE ESTA
668 ;EN MEMORIA CENTRAL
669 ;------------------------------
670 ;
671 NEW:
672           LDX #$00
673 ^1        LDA MESSNEW,X
674           BEQ >2
675           JSR COUT
676           INX
677           JMP <1
678 ^2        JSR KEYIN
679           JSR COUT
680           CMP #$D9
681           BEQ >3
682           JMP CMDLP
683 ^3        LDA #$04
684           STA VARTAB
685           STA PRGEND
686           LDA #$08
687           STA VARTAB+1
688           STA PRGEND+1
689           LDA #$00
690           STA $801
691           STA $802
682           JMP CMDLP
693 ;------------------------------
694 ;SUBRUTINA EJECUTADA CUANDO
```

```
695 ;SE APRIETA RESET
696 ;-----------------------------
697 ;
698 RESET:
699           JSR  $FC58
700           JMP  INIT
701 ;-----------------------------
702 ;RESTAURA LOS ANTIGUOS VECTORES
703 ;DE E/S ANTES DE VOLVER AL
704 ;BASIC
705 ;-----------------------------
706 QUIT:
707           LDA  #$9E
708           STA  $9D03
709           STA  $9D05
710           STA  $37
711           STA  $39
712           LDA  #$81
713           STA  $9D02
714           STA  $38
715           LDA  #$BD
716           STA  $9D04
717           STA  $36
718           LDA  #!24
719           STA  $23
720           LDX  #$00
721 ^1        LDA  MESSQUIT,X
722           BEQ  >2
723           JSR  COUT
```

```
724           INX
725           JMP <1
726 ^2        JSR $FC42
727           DEC CH
728           JSR CRDO
729           LDA #$D0
730           STA $3F2
731           LDA #$03
732           STA $3F3
733           JSR $FB6F
734           JMP $3D0
735 ;
736 ;------------------------------
737 ;TITULO DEL PROGRAMA
738 ;------------------------------
739 MES1:
740           ASC "GLOBAL APPLESOFT PROGRAM EDITOR."
741           HEX 8D
742           ASC "           PAR HUIBERT AALBERS"
743           HEX 8D
744           HEX 00
745 ;------------------------------
746 ;OTROS MENSAJES Y DATOS
747 ;------------------------------
748 VECT:
749           HEX 4C0070
750 MESSAVE:
751           ASC “SAVE:”
752           HEX 00
```

```
753 MESSLOAD:
754           ASC  ¨LOAD:¨
755           HEX  00
756 MESSDEL:
757           ASC  ¨DELETE:¨
758           HEX  00
759 MESSNEW:
760           ASC  “NEW: OK? (Y/N): “
761           HEX  00
762 MESSQUIT:
763           ASC  "& RAMENE A L´EDITEUR."
764           HEX  00
765 ;-----------------------------
766 ;TRATAMIENTO DE LOS COMANDOS
767 ;DETERMINA EL COMANDO Y LO
768 ;EJECUTA
769 ;-----------------------------
770 ;
771 PARSE2:
772           RTS
773           END
```

File: PHILIPS.2 (lines 1-999)

```
1  ;
2  ***************************
3  *                         *
4  * APPLESOFT PROGRAM EDITOR *
5  *                         *
6  *           BY            *
7  *                         *
8  *     HUIBERT AALBERS     *
9  *                         *
10 ***************************
11 ;
12 ;-----------------------------
13 ;DEFINICION DE LAS RUTINAS DEL
14 ;APPLESOFT EN ROM O DEL D.O.S
15 ;-----------------------------
16 BUF        EQU  $200        ;BUFFER UTILIZADO POR INLIN
17 AMPER      EQU  $3F5        ;VECTOR DEL &
18 PRGM       EQU  $801        ;PRINCIPIO DEL PROGRAMA
19 CMDLP      EQU  $7069       ;BUCLE PRINCIPAL DEL PROGRAMA
20 CMDLP2     EQU  $707F
21 PROCLN     EQU  $709F       ;ENTRA UNA LINEA DE PROGRAMA
22 BUF2       EQU  $9400       ;BUFFER SECUNDARIO UTILIZADO POR REPEAT
23 BUF3       EQU  $9500       ;BUFFER UTILIZADO POR SEARCH
24 CLOSEALL   EQU  $A316       ;CIERRA TODOS LOS FICHEROS
25 CONVERT    EQU  $A1B9       ;CONVIERTE ASCII EN HEXADECIMAL
26 LININDEX   EQU  $AA5D       ;REGISTRO UTILIZADO POR $A1B9
```

```
27 TKNTBL    EQU  $D0D0      ;TABLA DE COMANDOS DEL BASIC
28 BLTU      EQU  $D393      ;MUEVE 256 OCTETOS HACIA ARRIBA
29 INLIN     EQU  $D52C      ;ENTRA UNA LINEA HACIA EL BUFFER
30 PARSE     EQU  $D559      ;CODIFICA UNA LINEA ENTRADA POR INLIN
31 FNDLIN    EQU  $D61A      ;BUSCA UNA LINEA DE PROGRAMA
32 INITPTRS  EQU  $D665
33 LINGET    EQU  $DA0C      ;PONE EN LINNUM EL NO DE LINEA CORRIENTE
34 CRDO      EQU  $DAFB      ;IMPRIME UN CARRIAGE RETURN
35 OUTSP     EQU  $DB57      ;IMPRIME UN ESPACIO
36 OUTDO     EQU  $DB5C      ;IMPRIME EL CARACTER CONTENIDO EN A
37 ISLETC    EQU  $E07D      ;COMPRUEBA SI A ES UNA LETRA (A-Z)
38 LINPRT    EQU  $ED24      ;IMPRIME X,A
39 VTAB      EQU  $F25A      ;TABULACION VERTICAL
40 PRBL2     EQU  $F94A      ;IMPRIME X ESPACIOS
41 UP        EQU  $FC1A      ;SUBE DE UNA LINEA EN LA PANTALLA
42 HOME      EQU  $FC58      ;BORRA LA PANTALLA
43 KEYIN     EQU  $FD0C      ;ENTRA UN CARACTER
44 KEYIN2    EQU  $FD1B      ;ESPERA QUE SEA PULSADA UNA TECLA
45 GETLN     EQU  $FD6A
46 COUT      EQU  $FDED      ;IMPRIME EL CARACTER CONTENIDO EN A
47 PROUT     EQU  $FE95      ;INICIALIZA EL SLOT (A)
48 ;
49 ;-----------------------------
50 ;DEFINICION DE LAS DIRECCIONES
51 ;EN PAGINA CERO
52 ;-----------------------------
53 ;
54 POSCUR    EPZ  $06        ;POS. CURSOR TRAS LINPRT DURANTE LIST
```

```
55 ALLOWPTR   EPZ  $07
56 ADL        EPZ  $08          ;VECTOR ENTRADA DEL FILE MANAGER
57 CRDNB      EPZ  $0F
58 LINE       EPZ  $18          ;REGISTRO TEMPORAL SOBRE 2 OCTETOS
59 CURLIGNE   EPZ  $1A          ;CONTIENE LA LINEA CORRIENTE
60 ADRNXT     EPZ  $1C          ;LOW BYTE DIRECCION LINEA SIGUIENTE
61 LSTLIN     EPZ  $1D          ;DIRECCION ULTIMA LINEA DURANTE BOTTOM
62 INDEX2     EPZ  $1F          ;REGISTRO TEMPORAL.GUARDA X DURANTE PRLET
63 CH         EPZ  $24          ;POSICION DEL CURSOR (HORIZONTAL)
64 CV         EPZ  $25          ;POSICION VERTICAL DEL CURSOR
65 PROMPT     EPZ  $33          ;CONTIENE EL CARACTER ">"
66 LINNUM     EPZ  $50          ;CONTIENE EL NUMERO DE LINEA TRAS LINGET
67 LIST2      EPZ  $54          ;FLAG PARA HACE PRBUF ANTES DE CMDLP
68 ESCFLG     EPZ  $55          ;FLAG QUE CONTROLA EL MODO "ESC"
69 INDEX      EPZ  $5E          ;REGISTRO TEMPORAL PARA MOVER MEMORIA
70 DEST       EPZ  $60
71 TXTTAB     EPZ  $67          ;DIRECCION PRINCIPIO DEL PROGRAMA BASIC
72 VARTAB     EPZ  $69          ;DIRECCION PRINCIPIO VARIABLES SIMPLES
73 STREND     EPZ  $6D          ;DIRECCION FIN VARIABLES DIMENSIONADAS
74 FRETOP     EPZ  $6F          ;DIRECCION FIN VARIABLES ALFANUMERICAS
75 MEMSIZ     EPZ  $73          ;DIRECCION FIN DE LA MEMORIA UTILIZABLE
76 CURLIN     EPZ  $75          ;FLAG (CONTIENE FF EN MODO INMEDIATO)
77 FORPNT     EPZ  $85          ;NUEVA DIRECCION DE UNA CADENA DESPLAZADA
78 HIGHDS     EPZ  $94          ;REGISTRO TEMPORAL SOBRE 5 OCTETOS
79 HIGHTR     EPZ  $96          ;COMPONE CON HIGHDS EL REGISTRO INTERNO
                                TEMPS1
80 LOWTR      EPZ  $9B          ;REGISTRO TEMPORAL SOBRE 5 OCTETOS
81 DSCTMP     EPZ  $9D          ;REGISTRO TEMPORAL SOBRE 6 OCTETOS
82 PRGEND     EPZ  $AF          ;FINAL DE LA ZONA PROGRAMA BASIC
```

```
 83 CHRGET    EPZ  $B1         ;SUBRUTINA QUE LEE EL SIGIENTE CARACTER
 84 ;                         ;DEL PROGRAMA BASIC
 85 TXTPTR    EPZ  $B8         ;DIRECCION CARACTER OBTENIDO POR CHRGET
 86 ERRFLG    EPZ  $D8         ;FLAG QUE INDICA SI ONERR ESTA ACTIVO
 87 INC       EPZ  $CE         ;VALOR DEL INCREMENTO EN MODO AUTO
 88 LINDEX    EPZ  $CF         ;COPIA DE LININDEX ANTES DE $A1B9
 89 ADL2      EPZ  $F9         ;REGISTRO TEMPORAL SOBRE 2 OCTETOS
 90 SAVEA     EPZ  $FB         ;REGISTRO TEMPORAL SOBRE 1 OCTETO
 91 COM       EPZ  $FC         ;REGISTRO TEMPORAL SOBRE 1 OCTETO
 92 FIRST     EPZ  $FD         ;REGISTRO TEMPORAL SOBRE 1 OCTETO
 93 TEMP      EPZ  $FD
 94 AUTOFLG   EPZ  $FF         ;FLAG RELATIVO AL MODO AUTO
 95 ;
 96           ORG  $746E
 97           OBJ  $800
 98 ;
 99 ;-----------------------------
100 ;TRATAMIENTO DE LOS COMANDOS
101 ;DETERMINA EL COMANDO Y LO
102 ;EJECUTA
103 ;-----------------------------
104 ;
105 PARSE2:
106           LDY  #$00
107           STY  COM
108           LDX  #$FF
109 ^1        INX
110           LDA  BUF,X
```

```
111             CMP  #$20
112             BEQ  <1
113             LDA  BUF,X
114             AND  #%00111111
115             STA  FIRST
116             TXA
117             STA  SAVEA
118             TAY
119             LDX  #$00
120  ^2         LDA  COMTBL,X
121             BNE  >3
122             INC  COM
123  ^3         LDA  COMTBL,X
124             INX
125             CMP  #$80
126             BCS  <2
127             CMP  FIRST
128             BEQ  >4
129             CMP  #$1D
130             BEQ  ERR
131             BNE  <2
132  ^4         DEX
133             INY
134             INX
135             LDA  BUF,Y
136             BEQ  >5
137             EOR  #%10000000
138             CMP  #" "
```

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```
139             BEQ  >5
140             CMP  COMTBL,X
141             BNE  SUIT3
142             INX
143             LDA  COMTBL,X
144             BNE  <4
145 ^5          LDA  COM
146             ASL
147             TAX
148             INX
149             LDA  TBLADR,X
150             PHA
151             DEX
152             LDA  TBLADR,X
153             PHA
154             LDA  COM
155             CMP  #$0F
156             BEQ  FUNJMP
157             LDY  #$00
158 DEPBUF      LDA  BUF,Y
159             STA  BUF2,Y
160             INY
161             BNE  DEPBUF
162 FUNJMP      RTS
163 SUIT3       LDY  SAVEA
164             JMP  <2
165 ERR:
166             LDA  #$01
```

```
167           JMP  ERREUR
168 ;
169 ;------------------------------
170 ;SOUS-PROGRAMME PERMETTANT DE
171 ;LISTER UNE LIGNE DE PROGRAMME
172 ;EN 40 COLONNES.
173 ;ENTREE: # DE LIGNE DANS LINNUM
174 ;SORTIE: IMPRESSION DE LA LIGNE
175 ;------------------------------
176 ;
177 LIST:
178           JSR  FNDLIN      ;BUSCA DIRECCION LINEA (LINNUM)
179           BCC  NOLN        ;SI NO EXISTE, ERROR
180 ;------------------------------
181 ;LIST+3 LISTE LA LIGNE POINTEE
182 ;PAR LOWTR.
183 ;------------------------------
184           LDY  #$00        ;INICIALIZACION: LAS COMILLAS ESTAN
185           STY  $4D         ;CERRADAS
186           LDY  #$02        ;CARGA EN A EL PRIMER OCTETO DEL
187           LDA  (LOWTR),Y   ;NUMERO DE LINEA
188           STA  CURLIGNE    ;LO SALVAGUARDA
189           TAX              ;Y LO PASA AL REGISTRO X.
190           INY              ;CARGA EN A EL SEGUNDO OCTETO DEL
191           LDA  (LOWTR),Y   ;NUMERO DE LINEA
192           STA  CURLIGNE+1  ;Y LO SALVAGUARDA
193           STY  FORPNT
194           LDY  ALLOWPRT
```

```
195             CPY  #$02
196             BNE  >1
197             LDX  #$00
198             STX  ALLOWPRT
199             JMP  >2
200 ^1          JSR  LINPRT
201             NOP             ;SALVAGUARDA EN POSCUR LA COLUNA EN LA
202 ^2          STY  POSCUR     ;QUE ESTA EL CURSOR TRAS IMPRIMIR EL
203             STY  INDEX2     ;NUMERO DE LINEA
204 ;
205 ;PREND CARACTERE OU TOKEN
206 ;
207             LDA  #" "
208 LSTLN:
209             LDY  FORPNT
210 PRCHR:
211             CMP  #$22
212             BNE  >1
213             PHA
214             LDA  #$FF
215             EOR  $4D
216             STA  $4D
217             PLA
218 ^1          CMP  #$3A
219             BNE  >3
220             PHA
221             LDA  $4D
222             BNE  >2
```

```
223             LDA  #$8D
224             JSR  PRLET
225             LDX  POSCUR
226             BEQ  >2
227             JSR  PRBL2
228  ^2         PLA
229  ^3         JSR  PRLET
230             INY
231             LDA  (LOWTR),Y
232             BNE  PROCHR
233             BIT  $C000
234             BPL  >4
235             LDA  $C000
236             BIT  $C010
237             CMP  #" "
238             BEQ  PAUSE
239             CMP  $98          ;CTRL-C
240             BEQ  STOP
241  ^4         LDX  INDEX2       ;SI NO, PONE UN 0 AL FINAL DE BUF Y
242             LDA  #$00
243             STA  $200,X
244             RTS
245  NOLN       LDA  #$00
246             JMP  ERREUR
247  STOP       JSR  CRDO
248             JMP  CMDLP
249  PAUSE      TYA
250             PHA
```

```
251             LDA  #" "
252             JSR  KEYIN2
253             PLA
254             TAY
255             CMP  #$98
256             BEQ  STOP
257             RTS
258 ;
259 ;PREND UN CARACTERE DANS LA TABLE
260 ;
261 KEYCHR:
262             INY
263             BNE  S1
264             INC  DSCTMP+1
265 S1:
266             LDA  (DSCTMP),Y
267             RTS
268 ;
269 ;IMPRIME CARACTERE OU MOT-CLE.
270 ;
271 PROCHR:
272             BPL  PRCHR
273             SEC
274             SBC  #$7F
275             TAX
276             STY  FORPNT
277             LDY  #TKNTBL
278             STY  DSCTMP
```

```
279             LDY  /TKNTBL-$100
280             STY  DSCTMP+1
281             LDY  #$FF
282 NXKEY:
283             DEX
284             BEQ  PRKEY
285 S2:
286             JSR  KEYCHR
287             BPL  S2
288             BMI  NXKEY
289 PRKEY:
290             LDA  #" "
291             JSR  PRLET
292             JSR  KEYCHR
293             BMI  S4
294             JSR  PRLET
295             BNE  PRKEY+5
296 S4:
297             JSR  PRLET
298             LDA  #" "
299             JMP  LSTLN
300 PRLET:
301             STA  $4C
302             CMP  #$8D
303             BNE  PRLET2
304             LDA  ALLOWPRT
305             BEQ  PRLET2-1
306             JSR  CRDO
```

```
307             LDA  $4C
308             RTS
309 PRLET2      TXA
310             PHA
311             TYA
312             PHA
313             LDX  INDEX2
314             LDA  $4C
315             AND  #%01111111
316             STA  BUF,X
317             INX
318             STX  INDEX2
319             LDX  ALLOWPRT
320             BEQ  END2
321             PLA
322             TAY
323             PLA
324             TAX
325             LDA  $4C
326             JSR  OUTDO
327             RTS
328 END2        PLA
329             TAY
330             PLA
331             TAX
332             LDA  $4C
333             RTS
334 ;
```

```
335 ;------------------------------
336 ;SOUS-PROGRAMME DE TRAITEMENT
337 ;D'ERREUR
338 ;------------------------------
339 ;
340 ERREUR:
341           ASL
342           TAY
343           LDA  ERRTBL,Y
344           STA  ADL
345           INY
346           LDA  ERRTBL,Y
347           STA  ADL+1
348           LDY  #$00
349 ^1        LDA  (ADL),Y
350           BEQ  >2
351           JSR  COUT
352           INY
353           BNE  <1
354 ^2        JMP  CMDLP
355 ;
356 ESCODES:
357           TAY
358           INY
359           TXA
360           PHA
361           LDX  #$00
362 ^1        LDA  ESCTBL,X
```

```
363             BEQ  >2
364             INX
365             BNE  <1
366 ^2          INX
367             DEY
368             BNE  <1
369             PLA
370             TAY
371             DEX
                '
372 ^3          INX
373             LDA  ESCTBL,X
374             BEQ  >4
375             STA  BUF,Y
376             JSR  COUT
377             INY
378             BNE  <3
379 ^4          TYA
380             TAX
381             LDA  #$00
382             STA  ESCFLG
383             LDA  #" "
384             RTS
385 ;
386 ESCTBL      HEX  00
387             ASC  "ABS("
388             HEX  00
389             ASC  "HPLOT"
390             HEX  00
```

```
391             ASC  “CLEAR”
392             HEX  00
393             ASC  “DATA”
394             HEX  00
395             ASC  “END”
396             HEX  00
397             ASC  “FOR”
398             HEX  00
399             ASC  “GOTO”
400             HEX  00
401             ASC  “HOME”
402             HEX  00
403             ASC  “INPUT"
404             HEX  00
405             ASC  “CHR$(“
406             HEX  00
407             ASC  “RIGHT$(“
408             HEX  00
409             ASC  “LEFT$(“
410             HEX  00
411             ASC  “MID$(“
412             HEX  00
413             ASC  “NEXT”
414             HEX  00
415             ASC  “POKE”
416             HEX  00
417             ASC  “PEEK”
418             HEX  00
```

```
419             ASC  “CALL"
420             HEX  00
421             ASC  “RETURN”
422             HEX  00
423             ASC  “STEP”
424             HEX  00
425             ASC  “TEXT”
426             HEX  00
427             ASC  “HTAB"
428             HEX  00
429             ASC  “VTAB”
430             HEX  00
431             ASC  “DRAW”
432             HEX  00
433             ASC  “XDRAW”
434             HEX  00
435             ASC  “HCOLOR=“
436             HEX  00
437             ASC  “RESTORE"
438             HEX  00
439 ;
440 ERRTBL     ADR  NOLINE
441             ADR  SORRY
442             ADR  ERRBOT
443             ADR  NOPRGM
444             ADR  BADARG
445             ADR  ERRHEX
446 ;
```

```
447 COMTBL:
448             HEX  0E
449             ASC  “EXT”
450             HEX  000C
451             ASC  “INE”
452             HEX  0004
453             ASC  “ELETE”
454             HEX  0005
455             ASC  “DIT”
456             HEX  0010
457             ASC  “RINT”
458             HEX  000E
459             ASC  “OCOLUMN”
460             HEX  0003
461             ASC  “OLUMN”
462             HEX  0001
463             ASC  “UTON”
464             HEX  0001
465             ASC  “UTOFF”
466             HEX  0014
467             ASC  “OP”
468             HEX  0002
469             ASC  “OTTOM”
470             HEX  0013
471             ASC  “EARCH”
472             HEX  000D
473             ASC  “ODIFY”
474             HEX  0001
```

```
475             ASC  “PPEND”
476             HEX  0010
477             ASC  “P”
478             HEX  0012
479             ASC  “EPEAT”
480             HEX  0010
481             ASC  “R#”
482             HEX  0008
483             ASC  “$”
484             HEX  0008
485             ASC  “ELP”
486             HEX  001D
487 TBLADR:
488             ADR  NEXT-1
489             ADR  LINE1-1
490             ADR  DELETE-1
491             ADR  EDIT-1
492             ADR  PRINT-1
493             ADR  NOCOL-1
494             ADR  COLUMN-1
495             ADR  AUTO-1
496             ADR  AUTOFF-1
497             ADR  TOP-1
498             ADR  BOTTOM-1
499             ADR  SEARCH-1
500             ADR  MODIFY-1
501             ADR  APPEND-1
502             ADR  PP-1
```

```
503             ADR  REPEAT-1
504             ADR  PR-1
505             ADR  DOLLAR-1
506             ADR  HELP-1
507             HEX  00
508 NEXT:
509             JSR  CRDO
510             JSR  LOOK
511             CLC
512             LDX  #$00
513 ^1          INX
514             LDA  BUF,X
515             BEQ  NEXTMAS
516             CMP  #"-"
517             BNE  <1
518             JMP  NEXTMNS
519 NEXTMAS:
520             JSR  LOOK
521             CLC
522             LDA  CURLIGNE
523             STA  LINNUM
524             LDA  CURLIGNE+1
525             STA  LINNUM+1
526             JSR  FNDLIN
527 ^1          JSR  NXTLIN
528             LDA  $44
529             BNE  <1
530             LDY  #$02
```

```
531             LDA  (LOWTR),Y
532             STA  CURLIGNE
533             STA  LINNUM
534             INY
535             LDA  (LOWTR),Y
536             STA  CURLIGNE+1
537             STA  LINNUM+1
538             JSR  FNDLIN
539             BCC  >2
540             JSR  LIST
541             JSR  CRD0
542             JMP  CMDLP
543 ^2          JMP  BOTTOM
544 NXTLIN:
545             DEC  $44
546             LDY  #$00
547             LDA  (LOWTR),Y
548             STA  LINNUM
549             INY
550             LDA  (LOWTR),Y
551             STA  LOWTR+1
552             LDA  LINNUM
553             STA  LOWTR
554             RTS
555 NEXTMNS:
556             INX
557             STX  LININDEX
558             JSR  CONVERT
```

```
559             LDA  CURLIGNE
560             STA  LINNUM
561             LDA  CURLIGNE+1
562             STA  LINNUM+1
563  ^1         JSR  FNDLIN
564             JSR  NXTLIN2
565             BCC  >2
566             LDA  $44
567             BNE  <1
568             LDA  LINNUM
569             STA  CURLIGNE
570             LDA  LINNUM+1
571             STA  CURLIGNE+1
572             LDA  #$01
573             STA  ALLOWPRT
574             JSR  LIST
575             JSR  CRDO
576             JMP  CMDLP
577  ^2         JMP  TOP
578  NXTLIN2:
579             CLC
580             DEC  $44
581             DEC  LOWTR+1
582             LDY  #$FF
583  ^1         DEY
584             CPY  #$00
585             BEQ  >4
586             LDA  (LOWTR),Y
```

```
587             CMP  LOWTR
588             BEQ  >2
589             BNE  <1
590 ^2          DEY
591             LDA  (LOWTR),Y
592             BEQ  >3
593             INY
594             JMP  <1
595 ^3          INY
596             INY
597             INY
598             LDA  (LOWTR),Y
599             STA  LINNUM
600             INY
601             LDA  (LOWTR),Y
602             STA  LINNUM+1
603             SEC
604             RTS
605 ^4          CLC
606             RTS
607 LINE1:
608             JSR  LOOK
609             JSR  CRDO
610             LDA  $44
611             STA  $50
612             LDA  $45
613             STA  $51
614             JSR  LIST
```

```
615             JSR  CRDO
616             JMP  CMDLP
617 LOOK:
618             LDA  #$00
619             STA  $44
620             STA  $45
621             JSR  POSBUF
622             LDX  #$FF
623 BLE         INX
624             LDA  BUF,X
625             CMP  #" "
626             BEQ  BLE
627 BLE2        INX
628             LDA  BUF,X
629             BEQ  >3-3
630             CMP  #" "
631             BNE  BLE2
632 ^2          INX
633             LDA  BUF,X
634             CMP  #" "
635             BEQ  <2
636             LDA  BUF,X
637             BEQ  >3-3
638             CMP  #"-"
639             BEQ  <2
640             CMP  #$B0
641             BCC  >4
642             CMP  #$BA
```

```
643             BCS  >4
644             STX  LININDEX
645             STX  LINDEX
646             JSR  CONVERT
647             CLC
648             LDA  $44
649             BNE  >3
650             INC  $44         ;SI EL ARGUMENTO ES 0,LO CAMBIA EN 1
651             SEC
652 ^3          RTS
653 ^4          LDA  #$04        ;EL ARGUMENTO NO ES UN NUMERO.
654             JMP  ERREUR
655 DELETE:
656             JSR  LOOK
657             BCC  >1
658             LDA  #$01
659             STA  $44
660 ^1          LDA  CURLIGNE
661             STA  LINNUM
662             LDA  CURLIGNE+1
663             STA  LINNUM+1
664             JSR  FNDLIN
665             LDA  LOWTR
666             STA  ADL
667             LDA  LOWTR+1
668             STA  ADL+1
669             LDA  $36
670             PHA
```

```
671             LDA  $37
672             PHA
673             LDA  #PRLIGNE
674             STA  $36
675             LDA  /PRLIGNE
676             STA  $37
677             LDA  #$00
678             STA  $FE
679             LDY  #$02
680             LDA  (LOWTR),Y
681             TAX
682             INY
683             LDA  (LOWTR),Y
684             JSR  LINPRT
685             LDY  $FE
686             LDA  #$00
687             STA  BUF,Y
688             PLA
689             STA  $37
690             PLA
691             STA  $36
682             LDA  #$02
693             STA  SAVEA
694             LDX  #$FF
695             LDY  #$01
696             JMP  CMDLP2+8
697 ENTRY2      LDY  #$00
698             LDA  (ADL),Y
```

```
699             BNE  >0
700             INY
701             LDA  (ADL),Y
702             BNE  >0
703             JMP  BOTTOM
704 ^0          LDY  #$02
705             LDA  (ADL),Y
706             STA  CURLIGNE
707             INY
708             LDA  (ADL),Y
709             STA  CURLIGNE+1
710             DEC  $44
711             LDA  $44
712             BNE  <1
713             LDA  CURLIGNE
714             STA  LINNUM
715             LDA  CURLIGNE+1
716             STA  LINNUM+1
717             JSR  LIST
718             JMP  CMDLP
719 EDIT:
720             JSR  CRDO
721             LDA  #$00
722             STA  COM
723             JSR  LOOK
724             BCS  >1
725             LDA  $44
726             STA  CURLIGNE
```

```
727             LDA  $45
728             STA  CURLIGNE+1
729  ^1         LDA  CURLIGNE
730             STA  LINNUM
731             LDA  CURLIGNE+1
732             STA  LINNUM+1
733             LDA  #$00
734             STA  ALLOWPRT
735             JSR  LIST
736             CPX  #$FF
737             BEQ  >0
738             LDA  #$20
739             STA  BUF,X
740             INX
741             LDA  #$00
742             STA  BUF,X
743  ^0         LDY  #$00
744  ^2         LDA  ($28),Y
745             CMP  #" "
746             BEQ  >3
747             AND  #%01111111
748             STA  BUF,Y
749             INY
750             JMP  <2
751  ^3         LDY  #$01
752             STY  ALLOWPRT
753             DEY
754             STY  CH
```

```
755             JSR  PRBUF
756             LDA  POSCUR
757             STA  INDEX
758             JSR  CURPOS
759             LDA  #" "
760             LDX  #!39
761  ^0         STA  $7D0,X
762             DEX
763             BNE  <0
764             LDX  #$00
765  ^0         LDA  MESSEDIT,X
766             BEQ  >4
767             STA  $7D0,X
768             INX
769             BNE  <0
770  ^4         LDA  #$00
771             STA  ESCFLG
772             JSR  STAT
773             JSR  KEYIN
774             CMP  #$95
775             BEQ  CTRLU
776             CMP  #$88
777             BEQ  CTRLH
778             PHA
779             LDA  COM
780             BNE  TYPE
781             PLA
782             CMP  #$9B
```

```
783             BNE  >5
784             LDA  #$01
785             STA  COM
786             JMP  <4
787  ^5         CMP  #"I"
788             BNE  >5
789             JMP  INSCHR
790  ^5         CMP  #"F"
791             BNE  >5
792             JMP  FINDCHR
793  ^5         CMP  #"D"
794             BNE  >5
795             JMP  CHRDEL
796  ^5         CMP  #"B"
797             BNE  >5
798             JMP  BEGIN
799  ^5         CMP  #"E"
800             BNE  >5
801             JMP  END
802  ^5         CMP  #"C"
803             BNE  >5
804             JMP  CUT
805  ^5         CMP  #$98
806             BNE  >5
807             JMP  CTRLX
808  ^5         CMP  #$8D
809             BNE  <4
810             JMP  CR
```

```
811 CTRLU     LDX  INDEX
812           INX
813           LDA  BUF,X
814           BEQ  <4
815           STX  INDEX
816           JSR  CURPOS
817           JMP  <4
818 CTRLH     LDX  INDEX
819           CPX  POSCUR
820           BEQ  <4
821           DEX
822           STX  INDEX
823           JSR  CURPOS
824           JMP  <4
825 TYPE      PLA
826           CMP  #$9B
827           BNE  >1
828           LDA  #$00
829           STA  COM
830           JMP  <4
831 ^1        CMP  #$8D
832           BNE  >2
833           JMP  CR
834 ^2        AND  #%01111111
835           LDY  INDEX
836           STA  BUF,Y
837           CPY  #$FA
838           BEQ  >3
```

```
839             INY
840             LDA  BUF,Y
841             BNE  >3-2
842             LDA  #$20
843             STA  BUF,Y
844             INY
845             LDA  #$00
846             STA  BUF,Y
847             DEY
848             STY  INDEX
849  ^3         JSR  PRBUF2
850             JSR  CURPOS
851             JMP  <4
852  INSCHR     LDX  #$FF
853  ^1         INX
854             LDA  BUF,X
855             BEQ  >2
856             CPX  #$FA
857             BNE  <1
858             JMP  <4
859  ^2         LDY  INDEX
860             LDA  BUF,Y
861             ORA  #%10000000
862             STA  BUF,Y
863             INX
864             TXA
865             TAY
866             INY
```

```
867 ^3        DEX
868           DEY
869           LDA  BUF,X
870           CMP  #$80
871           BCS  >0
872           STA  BUF,Y
873           JMP  <3
874 ^0        AND  #%01111111
875           STA  BUF,Y
876           LDA  #$20
877           STA  BUF,X
878           JSR  PRBUF2
879           JSR  CURPOS
880           JMP  <4
881 CHRDEL     LDY  INDEX
882           LDA  BUF,Y
883           BNE  >1
884           JMP  <4
885 ^1        TYA
886           TAX
887           INX
888 ^2        LDA  BUF,X
889           BEQ  >3
890           STA  BUF,Y
891           INX
892           INY
893           BNE  <2
894 ^3        STA  BUF,Y
```

```
895             JSR  PRBUF2
896             JSR  CURPOS
897             JMP  <4
898 FINDCHR     JSR  KEYIN
899             AND  #%01111111
900             LDY  INDEX
901 ^1          INY
902             LDX  BUF,Y
903             BEQ  >2
904             CMP  BUF,Y
905             BNE  <1
906             STY  INDEX
907             JSR  PRBUF2
908             JSR  CURPOS
909 ^2          JMP  <4
910 END         LDY  INDEX
911 ^1          INY
912             LDA  BUF,Y
913             BEQ  >2
914             JMP  <1
915 ^2          DEY
916             STY  INDEX
917             JSR  PRBUF2
918             JSR  CURPOS
919             JMP  <4
920 BEGIN       LDY  POSCUR
921             STY  INDEX
922             JSR  PRBUF2
```

```
923             JSR  CURPOS
924             JMP  <4
925 CUT         LDY  INDEX
926             LDA  #$00
927             STA  BUF,Y
928             JSR  PRBUF2
929             JSR  CURPOS
930             JMP  <4
931 CTRLX       LDA  #$00
932             STA  INDEX
933             JSR  CURPOS
934             JMP  EDIT+20
935 CR          JSR  PRBUF2
936             JSR  CRDO
937             LDX  #!39
938             LDA  #" "
939 ^0          STA  $7D0,X
940             DEX
941             CPX  #$FF
942             BNE  <0
943             LDX  #$00
944 ^1          LDA  MESSDOS,X
945             BEQ  >2
946             STA  $7D0,X
947             INX
948             BNE  <1
949 ^2          LDY  #$01
950             LDX  #$FF
```

```
951             STY  TXTPTR+1
952             STX  TXTPTR
953             JSR  CHRGET
954             JMP  PROCLN
955 STAT        LDA  COM
956             BNE  >3
957             LDX  #$00
958 ^1          LDA  MESSCOM,X
959             BEQ  >2
960             STA  $7D6,X
961             INX
962             BNE  <1
963 ^2          RTS
964 ^3          LDX  #$00
965             LDA  MESSTYPE,X
966             BEQ  >4
967             STA  $7D6,X
968             INX
969             BNE  <3+2
970 ^4          RTS
971 PRBUF2      LDY  #$00
972             STY  CH
973 ^1          LDA  ($28),Y
974             CMP  #”>"
975             BEQ  >2
976             JSR  UP
977             JMP  <1
978 ^2          INY
```

```
979             LDA  ($28),Y
980             CMP  #” “
981             BEQ  <2
982             CMP  #”E"
983             BNE  >3
984             INC  CV
985             INC  CV
986             JSR  $FC22
987             JSR  PRBUF
988             RTS
989  ^3         JSR  UP
990             JMP  PRBUF2
991             RTS
992  PRINT:
993             LDA  #$01
994             STA  ALLOWPRT
995             JSR  CRDO
996             JSR  LOOK
997             BCC  >1
998             LDA  #$FF
999             STA  $44
```

File: PHILIPS.2 (lines 1000-1830)

```
1000             STA  $45
1001  ^1         LDA  CURLIGNE
1002             STA  LINNUM
1003             LDA  CURLIGNE+1
1004             STA  LINNUM+1
1005  ^1         JSR  PRINTUNA
1006             BCC  >3
1007             LDA  $44
1008             BNE  <1
1009             LDA  $45
1010             BEQ  >2
1011             DEC  $45
1012             JMP  <1
1013  ^2         JMP  CMDLP
1014  ^3         JMP  BOTTOM
1015  PRINTUNA
      :
1016             DEC  $44
1017             LDA  LINNUM
1018             STA  CURLIGNE
1019             LDA  LINNUM+1
1020             STA  CURLIGNE+1
1021             JSR  FNDLIN
1022             BCC  >1
1023             JSR  LIST
1024             CLC
1025             INY
```

```
1026             LDA  (LOWTR),Y
1027             BNE  >0
1028             INY
1029             LDA  (LOWTR),Y
1030             BNE  >0+1
1031             BEQ  >1
1032  ^0         INY
1033             INY
1034             LDA  (LOWTR),Y
1035             STA  LINNUM
1036             INY
1037             LDA  (LOWTR),Y
1038             STA  LINNUM+1
1039             JSR  CRDO
1040             SEC
1041  ^1         RTS
1042  COLUMN:
1043             LDX  #$00
1044  BCLE       LDA  TBLCOL,X
1045             STA  $750,X
1046             INX
1047             CPX  #!40
1048             BNE  BCLE
1049             JMP  CMDLP
1050  NOCOL:
1051             LDX  #$00
1052             LDA  #" "
1053  BCLE2      STA  $750,X
```

```
1054             INX
1055             CPX  #!40
1056             BNE  BCLE2
1057             JMP  CMDLP
1058 AUTO:
1059             LDA  #$0A
1060             STA  INC
1061             JSR  LOOK
1062             BCS  >1
1063             LDA  $44
1064             STA  LINE
1065             LDA  $45
1066             STA  LINE+1
1067             BNE  CHKCOM-2
1068             LDA  LINE
1069             BNE  CHKCOM-2
1070 ^1          LDA  #$0A
1071             STA  LINE
1072             LDX  #$00
1073 CHKCOM      INX
1074             LDA  BUF,X
1075             BEQ  NOARG
1076             CMP  #","
1077             BNE  CHKCOM
1078             JSR  BLE2+10
1079             LDA  $44
1080             STA  INC
1081 NOARG       SEC
```

```
1082            LDA  LINE
1083            SBC  INC
1084            STA  LINE
1085            LDA  LINE+1
1086            SBC  #$00
1087            STA  LINE+1
1088            LDA  #$01
1089            STA  AUTOFLG
1090            JMP  CMDLP
1091 AUTOFF:
1092            LDA  #$00
1093            STA  AUTOFLG
1094            STA  LINE+1
1095            LDA  #!20
1096            STA  LINE
1097            LDA  #$0A
1098            STA  INC
1099            JMP  CMDLP
1100 TOP:
1101            JSR  LOOKPRGM
1102            LDX  #$FF
1103 ^1         INX
1104            LDA  ERRTOP,X
1105            BEQ  >2
1106            JSR  COUT
1107            JMP  <1
1108 ^2         LDA  $803
1109            STA  LINNUM
```

```
1110            STA  CURLIGNE
1111            LDA  $804
1112            STA  LINNUM+1
1113            STA  CURLIGNE+1
1114            JSR  CRDO
1115            JSR  LIST
1116            JSR  CRDO
1117            JMP  CMDLP
1118 BOTTOM:
1119            LDA  #$01
1120            STA  ALLOWPRT
1121            JSR  LOOKPRGM
1122            LDX  #$FF
1123 ^1         INX
1124            LDA  ERRBOT,X
1125            BEQ  >2
1126            JSR  COUT
1127            JMP  <1
1128 ^2         LDA  $6A
1129            TAX
1130            DEX
1131            STX  LSTLIN+1
1132            LDA  $69
1133            STA  LSTLIN
1134            LDY  #$F8
1135 ^3         DEY
1136            LDA  (LSTLIN),Y
1137            BNE  <3
```

```
1138             TYA
1139             INY
1140             INY
1141             INY
1142  ^4         PHA
1143             LDA  (LSTLIN),Y
1144             STA  CURLIGNE
1145             STA  LINNUM
1146             INY
1147             LDA  (LSTLIN),Y
1148             STA  CURLIGNE+1
1149             STA  LINNUM+1
1150             JSR  FNDLIN
1151             BCS  >5
1152             PLA
1153             TAY
1154             DEY
1155             JMP  <4
1156  ^5         JSR  CRDO
1157             JSR  LIST
1158             JSR  CRDO
1159             JMP  CMDLP
1160  BOTTOM2:
1161             LDA  #$02
1162             JMP  ERREUR
1163  SEARCH:
1164             JSR  CRDO
1165             JSR  POSBUF
```

```
1166             LDA  #$01
1167             STA  ADL+1
1168             LDX  #$FF
1169  ^0         INX
1170             LDA  BUF,X
1171             CMP  #" "
1172             BEQ  <0
1173  ^1         INX
1174             LDA  BUF,X
1175             CMP  #" "
1176             BNE  <1
1177  ^2         LDY  #$FF
1178             INY
1179             INX
1180             LDA  BUF,X
1181             CMP  #"]"
1182             BEQ  >3
1183             STA  BUF3,Y
1184             CMP  #$00
1185             BNE  <2+2
1186             LDA  #$FF
1187             STA  $44
1188             BNE  >4
1189  ^3         LDA  #$00
1190             STA  BUF3,Y
1191             INX
1192             LDA  BUF,X
1193             CMP  #" "
```

```
1194            BEQ  <3+5
1195            STX  LININDEX
1196            LDA  #$00
1197            STA  $44
1198            STA  $45
1199            JSR  CONVERT
1200            CLC
1201            LDA  $45
1202            BNE  >7
1203  ^4        LDX  $44
1204            BEQ  >6
1205            LDA  ADL+1
1206            BEQ  >0
1207            JSR  SRCHLIN
1208            BCS  >5
1209            JMP  <4
1210  ^0        JMP  BOTTOM
1211  ^5        LDA  #$01
1212            STA  ALLOWPRT
1213            LDA  CURLIGNE
1214            STA  ADL2
1215            LDA  CURLIGNE+1
1216            STA  ADL2+1
1217            LDA  #$00
1218            STA  CH
1219            JSR  LIST
1220            LDA  ADL2+1
1221            STA  CURLIGNE+1
```

```
1222             LDA  ADL2
1223             STA  CURLIGNE
1224             JSR  CRDO
1225             JMP  <4
1226  ^6         LDA  LINNUM
1227             STA  CURLIGNE
1228             LDA  LINNUM+1
1229             STA  CURLIGNE+1
1230             LDA  #$01
1231             STA  ALLOWPRT
1232             JMP  CMDLP
1233  ^7         LDA  #$04
1234             JMP  ERREUR
1235  SRCHLIN:
1236             CLC
1237             LDA  #$02
1238             STA  ALLOWPRT
1239             LDA  CURLIGNE
1240             STA  LINNUM
1241             LDA  CURLIGNE+1
1242             STA  LINNUM+1
1243             DEC  $44
1244             JSR  FNDLIN
1245             BCS  >1
1246  ^0         LDA  #$01
1247             STA  ALLOWPRT
1248             JMP  BOTTOM
1249  ^1         JSR  LIST
```

```
1250             INY
1251             LDA  (LOWTR),Y
1252             BNE  >1
1253             INY
1254             LDA  (LOWTR),Y
1255             BNE  >2
1256             LDA  #$00
1257             STA  ADL+1
1258             JMP  >2
1259  ^1         INY
1260  ^2         INY
1261             LDA  (LOWTR),Y
1262             STA  CURLIGNE
1263             INY
1264             LDA  (LOWTR),Y
1265             STA  CURLIGNE+1
1266             LDY  #$00
1267  ENTRY3     LDX  #$00
1268  ^1         LDA  BUF3,X
1269             STA  FIRST
1270             LDA  BUF,Y
1271             EOR  #%10000000
1272             CMP  #$80
1273             BEQ  >3
1274             CMP  FIRST
1275             BEQ  >2
1276             INY
1277             JMP  <1+5
```

```
1278 ^2         STY  FORPNT
1279            INX
1280            INY
1281            LDA  BUF3,X
1282            BEQ  >4
1283            AND  #%01111111
1284            CMP  BUF,Y
1285            BEQ  <2+2
1286            LDY  FORPNT
1287            INY
1288            LDX  #$00
1289            JMP  <1+5
1290 ^3         CLC
1291            RTS
1292 ^4         SEC
1293            RTS
1294 MODIFY:
1295            JSR  CRDO
1296            JSR  POSBUF
1297            LDA  #$01
1298            STA  ADL+1
1299            LDX  #$FF
1300 ^0         INX
1301            LDA  BUF,X
1302            CMP  #" "
1303            BEQ  <0
1304 ^1         INX
1305            LDA  BUF,X
```

```
1306            CMP  #" "
1307            BNE  <1
1308            LDY  #$FF
1309  ^2        INY
1310            INX
1311            LDA  BUF,X
1312            BNE  #"]"
1313            BEQ  >3
1314            CMP  #$80
1315            BEQ  >7
1316            STA  BUF3,Y
1317            JMP  <2
1318  ^3        LDA  #$00
1319            STA  BUF3,Y
1320  ^4        INX
1321            INY
1322            LDA  BUF,X
1323            CMP  #$80
1324            BEQ  >8
1325            CMP  #"]"
1326            BEQ  >5
1327            STA  BUF3,Y
1328            JMP  <4
1329  ^5        LDA  #$00
1330            STA  BUF3,Y
1331  ^6        INX
1332            LDA  BUF,X
1333            CMP  #" "
```

```
1334            BEQ  <6
1335            STX  LININDEX
1336            LDA  #$00
1337            STA  $44
1338            STA  $45
1339            JSR  CONVERT
1340            LDA  $45
1341            BEQ  >8
1342  ^7        LDA  #$04
1343            JMP  ERREUR
1344  ^8        LDA  $44
1345            BNE  ENTRY
1346            LDA  #$FF
1347            STA  $44
1348  ENTRY     LDX  $44
1349            BEQ  >0
1350            LDA  ADL+1
1351            BEQ  >9
1352            JSR  SRCHLIN
1353            BCS  >1
1354            BCC  ENTRY
1355  ^9        JMP  BOTTOM
1356  ^0        LDA  #$01
1357            STA  ALLOWPRT
1358            JMP  CMDLP
1359  ^1        STY  FIRST
1360            LDY  #$00
1361            INX
```

```
1362 ^2        CPY  FORPNT
1363           BEQ  >3
1364           LDA  BUF,Y
1365           STA  $100,Y
1366           INY
1367           JMP  <2
1368 ^3        LDA  BUF3,X
1369           BEQ  >4
1370           STA  $100,Y
1371           INX
1372           INY
1373           JMP  <3
1374 ^4        STY  ADL
1375           LDX  FIRST
1376 ^5        LDA  BUF,X
1377           BEQ  >6
1378           STA  $100,Y
1379           INX
1380           INY
1381           BNE  <5
1382           LDA  #$00
1383           STA  $1FF
1384 ^6        STA  $100,Y
1385           LDY  #$00
1386 ^7        LDA  $100,Y
1387           BEQ  >8
1388           AND  #%01111111
1389           STA  BUF,Y
```

```
1390            INY
1391            JMP  <7
1392  ^8        STA  BUF,Y
1393            LDY  ADL
1394            JSR  ENTRY3
1395            BCS  <1
1396            LDA  $36
1397            PHA
1398            LDA  $37
1399            PHA
1400            LDA  #PRLIGNE
1401            STA  $36
1402            LDA  /PRLIGNE
1403            STA  $37
1404            LDA  #$00
1405            STA  $FE
1406            LDA  LINNUM+1
1407            LDX  LINNUM
1408            JSR  LINPRT
1409            LDY  $FE
1410            LDA  #$20
1411            STA  BUF,Y
1412            PLA
1413            STA  $37
1414            PLA
1415            STA  $36
1416            LDA  #$01
1417            STA  SAVEA
```

```
1418            LDX  #$FF
1419            LDY  #$01
1420            JMP  CMDLP2+8
1421 PRLIGNE:
1422            LDY  $FE
1423            AND  #%01111111
1424            STA  BUF,Y
1425            INC  $FE
1426            RTS
1427 APPEND:
1428            LDA  #$00
1429            STA  ALLOWPRT
1430            LDA  CURLIGNE
1431            STA  LINNUM
1432            LDA  CURLIGNE+1
1433            STA  LINNUM+1
1434            JSR  CRDO
1435            JSR  LIST
1436            LDY  #$00
1437 ^1         LDA  ($28),Y
1438            CMP  #" "
1439            BEQ  >2
1440            AND  #%01111111
1441            STA  BUF,Y
1442            INY
1443            JMP  <1
1444 ^2         LDY  #$01
1445            STY  ALLOWPRT
```

```
1446            DEY
1447            STY  CH
1448            LDY  INDEX2
1449            LDX  #$FF
1450  ^3        INX
1451            LDA  BUF2,X
1452            CMP  #$20
1453            BEQ  >4-1
1454  ^3        LDA  BUF2,X
1455            CMP  #$20
1456            BEQ  >4-1
1457            INX
1458            JMP  <3
1459            DEY
1460  ^4        INX
1461            INY
1462            LDA  BUF2,X
1463            BEQ  >5
1464            AND  #%01111111
1465            STA  BUF,Y
1466            BNE  <4
1467  ^5        STA  BUF,Y
1468            LDA  #$02
1469            STA  LIST2
1470            LDY  #$01
1471            LDX  #$FF
1472            STY  TXTPTR+1
1473            STX  TXTPTR
```

```
1474            JSR  CHRGET
1475            JMP  PROCLN
1476 PRBUF:
1477            LDA  #$00
1478            STA  CRDNB
1479            LDX  #$00
1480            STX  $4D
1481 ^1         LDA  BUF,X
1482            CMP  #$22
1483            BNE  >2
1484            PHA
1485            LDA  #$FF
1486            EOR  $4D
1487            STA  $4D
1488            PLA
1489 ^2         CMP  #$3A
1490            BNE  >3
1491            LDY  $4D
1492            BNE  >3
1493            JSR  $FC42
1494            LDA  #$8D
1495            JSR  OUTDO
1496            LDA  POSCUR
1497            STA  CH
1498            LDA  #$3A
1499            INC  CRDNB
1500 ^3         CMP  #$00
1501            BEQ  >5
```

```
1502             JSR  OUTDO
1503             LDA  CH
1504             CMP  #!39
1505             BNE  >0
1506             JSR  $FC9C
1507  ^0         LDA  CH
1508             BNE  >4
1509             INC  CRDNB
1510  ^4         INX
1511             BNE  <1
1512  ^5         JSR  $FC42
1513             JSR  CRDO
1514             RTS
1515  CURPOS:
1516             JSR  CURPOS2
1517             LDA  #$00
1518             STA  CRDNB
1519             STA  FIRST
1520             LDX  #$00
1521             STX  $4D
1522  ^1         LDA  BUF,X
1523             CPX  INDEX
1524             BEQ  >5
1525             CMP  #$22
1526             BNE  >2
1527             PHA
1528             LDA  #$FF
1529             EOR  $4D
```

```
1530            STA  $4D
1531            PLA
1532  ^2        CMP  #$3A
1533            BNE  >3
1534            LDY  $4D
1535            BNE  >3
1536            INC  CRDNB
1537            LDY  POSCUR
1538            STY  FIRST
1539  ^3        CMP  #$00
1540            BEQ  >6
1541            INC  FIRST
1542            LDA  FIRST
1543            CMP  #!40
1544            BNE  >4
1545            LDA  #$00
1546            STA  FIRST
1547            INC  CRDNB
1548  ^4        INX
1549            BNE  <1
1550  ^5        CMP  #$3A
1551            BEQ  >7
1552            LDA  FIRST
1553            STA  CH
1554            LDA  CRDNB
1555            CLC
1556            ADC  ADL2
1557            STA  CV
```

```
1558            JSR  $FC22
1559            RTS
1560  ^6        DEC  INDEX
1561            JMP  <5
1562  ^7        INC  CRDNB
1563            LDA  POSCUR
1564            STA  FIRST
1565            JMP  <5
1566  CURPOS2:
1567            LDY  #$00
1568            STY  CH
1569  ^1        LDA  ($28),Y
1570            CMP  #”>”
1571            BEQ  >2
1572            JSR  UP
1573            JMP  <1
1574  ^2        INY
1575            LDA  ($28),Y
1576            CMP  #” “
1577            BEQ  <2
1578            CMP  #”E"
1579            BEQ  >3
1580            JSR  UP
1581            JMP  <1-2
1582  ^3        LDY  CV
1583            INY
1584            INY
1585            STY  ADL2
```

```
1586            RTS
1587  PP:
1588            JSR  CRDO
1589            LDA  CURLIGNE
1590            STA  ADL2
1591            STA  LINNUM
1592            LDA  CURLIGNE+1
1593            STA  ADL2+1
1594            STA  LINNUM+1
1595            LDA  #$02
1596            STA  $44
1597  ^1        JSR  FNDLIN
1598            JSR  NXTLIN2
1599            BCC  >3
1600            LDA  $44
1601            BNE  <1
1602            LDA  #$05
1603            STA  $44
1604            LDA  LINNUM
1605            STA  CURLIGNE
1606            LDA  LINNUM+1
1607            STA  CURLIGNE+1
1608  ^2        JSR  PRINTUNA
1609            BCC  >4
1610            LDA  $44
1611            BNE  <2
1612            LDA  ADL2
1613            STA  CURLIGNE
```

```
1614             LDA  ADL2+1
1615             STA  CURLIGNE+1
1616             JMP  CMDLP
1617  ^3         LDX  #$FF
1618             INX
1619             LDA  ERRTOP,X
1620             BEQ  >3
1621             JSR  COUT
1622             JMP  <3+2
1623  ^3         LDX  #$02
1624             DEX
1625             DEC  $44
1626             LDA  $44
1627             BNE  <3+2
1628             INX
1629             INX
1630             STX  $44
1631             JMP  <1+16
1632  ^4         LDX  #$FF
1633  ^5         INX
1634             LDA  ERRBOT,X
1635             BEQ  >6
1636             JSR  COUT
1637             JMP  <5
1638  ^6         LDA  ADL2
1639             STA  CURLIGNE
1640             LDA  ADL2+1
1641             STA  CURLIGNE+1
```

```
1642              JMP  CMDLP
1643  REPEAT:
1644              LDY  #$00
1645  RETBUF      LDA  BUF2,Y
1646              STA  BUF,Y
1647              INY
1648              BNE  RETBUF
1649              JMP  PARSE2
1650  LOOKPRGM
      :
1651              LDA  $69
1652              CMP  #$04
1653              BNE  NOPROB
1654              LDA  $6A
1655              CMP  #$08
1656              BNE  NOPROB
1657              LDA  #$03
1658              JMP  ERREUR
1659  NOPROB      RTS
1660  PR:
1661              JSR  POSBUF
1662              LDA  #$00
1663              STA  $44
1664              STA  $45
1665              TAX
1666  ^1          INX
1667              LDA  BUF,X
1668              CMP  #"#"
1669              BNE  <1
```

```
1670 ^2         INX
1671            LDA  BUF,X
1672            CMP  #" "
1673            BEQ  <2
1674            CMP  #$B0
1675            BCC  >3
1676            CMP  #$BA
1677            BCS  >3
1678            STX  LININDEX
1679            JSR  CONVERT
1680            LDA  $45
1681            BNE  >3
1682            LDA  $44
1683            CMP  #$08
1684            BCS  >3
1685            JSR  PROUT
1686            JMP  CMDLP
1687 ^3         LDA  #$04
1688            JMP  ERREUR
1689 DOLLAR:
1690            JSR  POSBUF
1691            LDX  #$FF
1692 ^1         INX
1693            LDA  BUF,X
1694            BEQ  >2
1695            CMP  #"$"
1696            BNE  <1
1697            STX  LININDEX
```

```
1698            JSR  CONVERT
1699            BCC  >2
1700            JSR  CRDO
1701            LDA  #"="
1702            JSR  COUT
1703            LDX  $44
1704            LDA  $45
1705            JSR  LINPRT
1706            JSR  CRDO
1707            JMP  CMDLP
1708 ^2         LDA  #$05
1709            JMP  ERREUR
1710 POSBUF:
1711            LDX  #$FF
1712 ^1         INX
1713            LDA  BUF,X
1714            BEQ  >2
1715            ORA  #%10000000
1716            STA  BUF,X
1717            JMP  <1
1718 ^2         RTS
1719 NOLINE:
1720            ASC  "NO SUCH LINE."
1721            HEX  8D00
1722 SORRY:
1723            HEX  8D
1724            ASC  "SORRY."
1725            HEX  8D00
```

```
1726 ERRBOT:
1727            HEX  8D
1728            ASC  “BOTTOM.”
1729            HEX  8D00
1730 NOPRGM:
1731            HEX  8D
1732            ASC  “NO PROGRAM IS LOADED.”
1733            HEX  8D00
1734 BADARG:
1735            HEX  8D
1736            ASC  “BAD ARG. #.”
1737            HEX  8D00
1738 ERRTOP:
1739            HEX  8D
1740            ASC  “TOP.”
1741            HEX  8D00
1742 ERRHEX:
1743            HEX  8D
1744            ASC  “ERROR IN HEX. DIGITS.”
1745            HEX  8D00
1746 MESSCOM:
1747            ASC  “COMMAND"
1748            HEX  00
1749 MESSTYPE
     :
1750            ASC  “TYPE   “
1751            HEX  00
1752 MESSEDIT
     :
```

```
1753            ASC  “EDIT: “
1754            HEX  00
1755 MESSDOS:
1756            ASC  “DOS: “
1757            HEX  00
1758 TBLCOL:
1759            ASC  “12345678901234567890123456789012345678 90”
1760 HLPMSG1:
1761            ASC  “HELP“
1762            HEX  00
1763 HLPMSG2:
1764            ASC  “PRESSEZ UNE TOUCHE”
1765            HEX  00
1766 ;
1767 HELP:
1768            LDA  #!24
1769            STA  $23
1770            LDA  #HLPMSG
1771            STA  ADL
1772            LDA  /HLPMSG
1773            STA  ADL+1
1774            LDY  #$00
1775            STY  TEMP
1776 ^9         JSR  HOME
1777            LDA  #!18
1778            STA  CH
1779            LDY  #$00
1780 ^0         LDA  HLPMSG1,Y
```

```
1781            BEQ  >1
1782            JSR  $FDED
1783            INY
1784            JMP  <0
1785  ^1        LDX  #!23
1786            JSR  VTAB
1787            LDA  #!11
1788            STA  CH
1789            LDY  #$00
1790  ^2        LDA  HLPMSG2,Y
1791            BEQ  >3
1792            JSR  $FDED
1793            INY
1794            JMP  <2
1795  ^3        LDY  TEMP
1796            LDA  (ADL),Y
1797            BEQ  >6
1798            STY  TEMP
1799            TAX
1800            JSR  VTAB
1801            LDY  TEMP
1802            INY
1803            BNE  >0
1804            INC  ADL+1
1805  ^0        LDA  (ADL),Y
1806            STA  CH
1807  ^4        INY
1808            BNE  >0
```

```
1809             INC  ADL+1
1810  ^0         LDA  (ADL),Y
1811             BEQ  >5
1812             JSR  $FDED
1813             JMP  <4
1814  ^5         INY
1815             BNE  >0
1816             INC  ADL+1
1817  ^0         STY  TEMP
1818             JMP  <3
1819  ^6         STY  TEMP
1820             JSR  KEYIN
1821             LDY  TEMP
1822             INY
1823             BNE  >0
1824             INC  ADL+1
1825  ^0         STY  TEMP
1826             LDA  (ADL),Y
1827             BNE  <9
1828             JMP  $7000
1829  ;
1830  HLPMSG:
1831             END
```