Beagle BroS™
MICRO SOFTWARE

CATALOG &
TIP BOOK

AND GUIDE TO MORE ENJOYMENT FROM YOUR

APPLE][

WINTER 1980-81

APPLE][is a registered trademark
of the Apple Computer Company

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APPLE II

APPLE II is a registered trademark of the Apple Computer Company.

Apple Tips & Tricks:

APPLESOFT vs. INTEGER BASIC

The Apple II supports two BASIC languages, Integer BASIC and Applesoft. Simply speaking, Integer is a faster language better suited for games, and Applesoft is a floating point language appropriate for mathematical functions. Fortunately, both languages overlap considerably in their applications, and if you only have one language in your Apple, you can perform an amazing variety of tasks without ever missing the other language.

Unfortunately, there are significant syntax differences between the two languages, and to convert a program from one to the other, you must know these differences:

INTEGER	APPLESOFT
TAB	HTAB
POKE 50,63	INVERSE
POKE 50,127	FLASH
POKE 50,255	NORMAL
CALL-936	HOME
<> OR #(not =)	<> or ><
X MOD Y	X-INT(X/Y)*Y
X/Y	INT(X/Y)
RND(X)	INT(RND(1)*X)
A$(LEN(A$)+1)=	A$=A$+
A$(X,X)	MID$(A$,X,1)
A$(4,6)	MID$(A$,4,3)
A$(1,3)	LEFT$(A$,3)
NEXT X	NEXT
GOTO A*100	ON A GOTO 100,200...
GOSUB A*100	ON A GOSUB 100,200...
INPUT"WHAT?",W	INPUT"WHAT";W

Other Differences: (1) All ASC values are lower by 128 in Applesoft although PEEK(-16384) returns the higher number in both languages. (2) If an IF statement is NOT true, Applesoft will NOT read the rest of a program line (a BIG difference!). (3) Applesoft has many more commands than Integer, and Integer has a few not

available in Applesoft. Check your Beagle Bros. COMMAND CHART. It lists all commands and their functions.

To convert to Applesoft with a disk system--
1. Add these lines to your Integer program:
   32764 D$="": REM (CTRL-D)
   32765 PRINT D$;"NOMON C,I,O": PRINT D$;
         "OPEN CONVERTFILE": PRINT D$;
         "WRITE CONVERTFILE": CALL-936
   32766 POKE 33,127
   32767 LIST 0,32763: PRINT D$;"CLOSE":
         TEXT: END
2. RUN 32764 (cr)
3. FP (cr)
4. EXEC CONVERTFILE (cr)
5. Correct all syntax. We recommend Roger Wagner's APPLE DOC Disk to make this task much much simpler.

To convert Applesoft to Integer--
1. Correct all syntax.
2. Add the lines at the left to your program WITHOUT LINE 32766.
3. RUN 32764 (cr)
4. INT (cr)
5. EXEC CONVERTFILE (cr)

16 COLORS = 6

Perhaps you've noticed how some lo-res colors look the same as each other on a black & white monitor. #2-Blue lines with a #4-Green background might look fine in color, but be hard to see in B/W. Good computer graphics should work BOTH WAYS. Either program in user definable colors according to monitor type (as in our Slippery Digits) or avoid letting two colors touch that have the same black & white shade.

COLOR	B&W SHADE
0 Black	0 Black
1 Magenta	1 Dark Grey
2 Dark Blue	1
4 Dark Green	1
8 Brown	1
5 Grey	2 Solid Grey
10 Grey	2
3 Lavender	3 Med. Grey
6 Med. Blue	3
9 Orange	3
12 Bright Green	3
7 Light Blue	4 Light. Grey
11 Pink	4
13 Yellow	4
14 Aqua	4
15 White	5 White

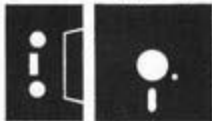Check out our Lo-Res Test Pattern on pg. 35.

HOW DENSE ARE YOU?

Here's a little exercise that may tell you you need a little exercise. What it does is calculate and list the pounds per inch of height for up to 9 people. Try it for different-sized folks (the dog & cat, too) and compare.

The Integer version uses decimal quotients, explained elsewhere in this book. The Applesoft version (quite a bit simpler with string arrays) prints to the screen with a "typing" noise, also do-able in Integer.

```
50  REM ==================
    DENSITY (Applesoft)
    ==================
55  DIM A$(20): TEXT : HOME
70  PRINT "LET'S FIND OUT HOW DEN
    SE YOU ARE...": HTAB 20: PRINT
    "-----"
74  REM === GET DATA ===
75  X = X + 1: IF X > 20 THEN 135
78  VTAB 7: PRINT "TYPE NAME AND
    HIT 'RETURN' KEY.": PRINT : PRINT
    "IF FINISHED, HIT 'RETURN' O
    NLY."
80  VTAB 5: HTAB 21: PRINT "-----
    --"
95  VTAB 4: PRINT "NAME OF PERSON
    #";X;"->)        (-"
100 VTAB 4: HTAB 20: INPUT A$(X)
105 IF A$(X) = "" THEN 135
106 IF LEN (A$(X)) > 7 THEN 80
108 CALL  - 958
110 VTAB 8: PRINT "    (IN POUNDS
    )"
115 VTAB 6: INPUT "    HIS OR HER
    WEIGHT->";W(X)
120 VTAB 12: PRINT "    (IN INCHE
    S)"
125 VTAB 10: INPUT "    HIS OR HE
    R HEIGHT->";H(X)
130 HOME : GOTO 75
133 REM === PRINT DATA ===
135 HOME : PRINT "NAME      WEIGHT
    HEIGHT DENSITY"
150 PRINT "-------- --------- ----
    -- ----------------"
155 FOR I = 1 TO X - 1: VTAB I +
    2
160 HTAB 1:T$ = A$(I): GOSUB 100
    0
162 HTAB 9:T$ = STR$ (W(I)) + "
    LBS.": GOSUB 1000
165 HTAB 18:T$ = STR$ (H(I)) +
    " IN.": GOSUB 1000
170 HTAB 25:T$ = STR$ ( INT (10
    0 * (W(I) / H(I)) + .5) / 10
    0) + " LBS./IN.": GOSUB 1000
175 PRINT : NEXT
180 PRINT "-------- --------- ----
    -- ----------------": END
1000 REM === TYPING NOISE ===
1005 FOR T = 1 TO  LEN (T$): PRINT
     MID$ (T$,T,1);
1010 FOR U = 1 TO 4:S =  PEEK ( -
     16336): NEXT
1020 FOR U = 1 TO 33: NEXT : NEXT
     : RETURN
```

```
50  REM ================
    DENSITY (Integer)
    ================
55  DIM A$(20),B$(20),C$(20),D$
    (20),E$(20),F$(20),G$(20),H$
    (20),I$(20),Q$(9),W(9),H(9)
65  TEXT : CALL -936
70  PRINT "LET'S FIND OUT HOW DENSE
    YOU ARE...": TAB 20: PRINT
    "-----"
74  REM === GET DATA ===
75  I=I+1: IF I>9 THEN 135
78  VTAB 7: PRINT "TYPE NAME AND HIT
    'RETURN'.": VTAB 9: PRINT
    "IF FINISHED, 'RETURN' ONLY."
80  VTAB 5: TAB 20: PRINT "--------"
    : VTAB 4: PRINT "NAME OF PERSON
    #";I;"->)        (-"
100 VTAB 4: TAB 20: INPUT Q$
105 IF Q$="" THEN 135: IF LEN(Q$
    )>7 THEN 80
108 GOSUB 500+I: CALL -958
110 VTAB 8: PRINT "    (IN POUNDS, 32
    5 MAX., NO FRACTIONS)"
115 VTAB 6: INPUT "    HIS OR HER WEI
    GHT->",W(I): IF W(I)>325 THEN
    115
120 VTAB 12: PRINT "    (IN INCHES, N
    O FRACTIONS)"
125 VTAB 10: INPUT "    HIS OR HER HE
    IGHT->",H(I)
130 CALL -936: GOTO 75
134 REM === PRINT DATA ===
135 CALL -936: PRINT "NAME","WEIGHT"
    ,"HEIGHT","DENSITY"
150 PRINT "-------- --------- ------- -
    ----------------"
155 FOR X=1 TO I-1: VTAB X+2
160 GOSUB 600+X: PRINT W(X),H(X)
    ;:D=(100*W(X))/H(X)
170 PRINT D/100;".";D MOD 100;" LBS/
    IN.": NEXT X
180 PRINT "-------- --------- ------- -
    ----------------": END
501 A$=Q$: RETURN
502 B$=Q$: RETURN
503 C$=Q$: RETURN
504 D$=Q$: RETURN
505 E$=Q$: RETURN
506 F$=Q$: RETURN
507 G$=Q$: RETURN
508 H$=Q$: RETURN
509 I$=Q$: RETURN
601 PRINT A$,: RETURN
602 PRINT B$,: RETURN
603 PRINT C$,: RETURN
604 PRINT D$,: RETURN
605 PRINT E$,: RETURN
606 PRINT F$,: RETURN
607 PRINT G$,: RETURN
608 PRINT H$,: RETURN
609 PRINT I$,: RETURN
```
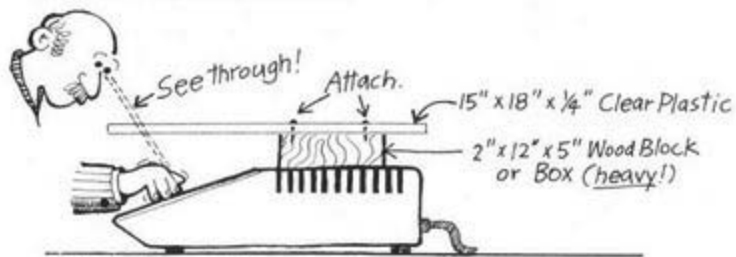
DON'T DRINK AND COMPUTE!

Computers provide great party entertainment, but BEWARE of liquid-whatever getting onto and into your keyboard (not to mention cigarette ashes, toothpicks, cracker crumbs, cat hair . . .).

A Solution: Obtain a 15" x 18" piece of 1/4" clear plastic, and cover your keyboard like so . . .

and enjoy the party!


```
1928375837483728348282
523456 AUTO 1938478 RUN
DEL 512H9 DEL 54119P,362
HIMEM:HIMEM:HIMEM:HIMEM:
HIMEM:HIMEM:HIMEM:HIMEM:
HIMEM:HIMEM:HIMEM:HIMEM:
```

TAKE OUT THE GARBAGE!

Got some Integer lines numbered greater than 32767 that you'd like to delete? Or eight pounds of unwanted HIMEM's at the end of a program? Try this to remove them. The line number should be just above the highest line you want to keep.

```
32767 POKE 76, PEEK (220): POKE 77
      , PEEK (221): END
```
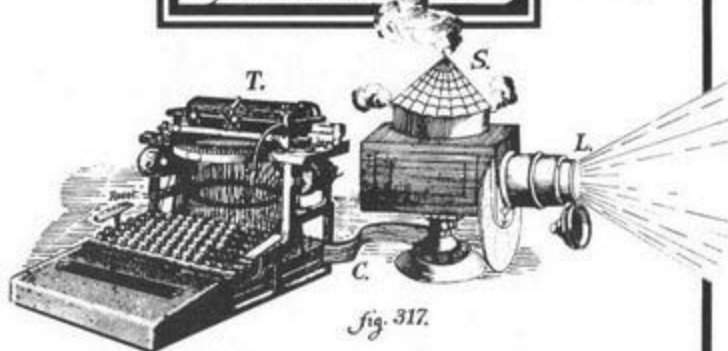
Now, **GOTO 32767.**

To remove garbage from the beginning of a program, the line below might work, depending on your garbage. Make the line number one number less than your first good program line number.

```
50 POKE 202, PEEK (220): POKE
   203, PEEK (221): END
```

GOTO 50. Good luck!

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fig. 317.

Alpha Printer

Hours of lo-res sketching fun and titling possibilities from Beagle Bros.! In the typing mode, you can directly input giant color text characters 7 GR plots high to the screen while a completely moveable flashing cursor leads the way. In the drawing mode, lo-res lines are drawn via the keyboard in any color. In both modes, a trace scanner lets you change colors of ANY SELECTED SCREEN AREA to any other color!

Commands: **D = DRAWING** (lo-res lines mode). **T = TYPING** (giant letters mode). **B = BLOW UP** (enlarge an area). **F = FAST/SLOW** (line generation speed). **S = SCANNER** (changes any color in a cursor-specified area). **L = LINES** (connects 2 points). **C = COLOR** (type or draw in 16 colors + rainbow!). **SPACE = DRAW/NO DRAW** (for moveable cursor). **ARROWS = CURSOR** (up, down, left, right). **E = ERASE** (clear screen in any color). **S & L = SAVE & LOAD** (screen image to disk or tape). **ESC = OPTIONS** (display commands).

Use Alpha Printer to create graphs, titles or drawings (we love to just PLAY with it!). Any lo-res image may be appended to your programs via disk.
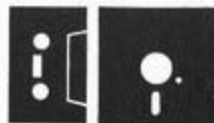

Disk	**$16.00**
Cassette	**$14.00**

(16K, INTEGER ONLY)

BEAGLE BROS. COMMAND CHART
INCLUDED WITH EACH ORDER!

AN APPLEBOARD

If you're using a 15" or bigger TV monitor with your Apple, you will probably agree with us that placing it on top of the computer puts it much too close to your eyes (if only your arms were longer . . .). And your desk isn't deep enough to leave room for the TV behind the Apple. AND it's a pain trying to type while you look sideways, right?

O.K., cut a piece of 3/4" plywood like so.
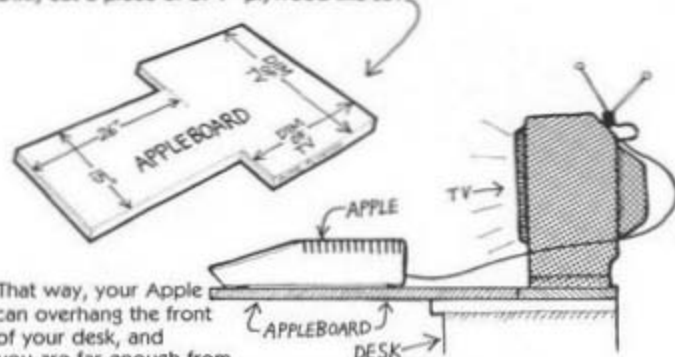
That way, your Apple can overhang the front of your desk, and you are far enough from your monitor to prevent TV eyeballs. The whole unit can be pivoted or slid out of the way when not in use.

POKE WON'T CLICK!?

Hey! Someone just pointed out that POKE −16336,0 won't click their Apple's speaker, and page 123 of the Integer Manual says it will. Same is true on our Apple. How about yours? Meanwhile, X = PEEK(−16336) clicks just fine, but only every other time! Mysteries of the deep!
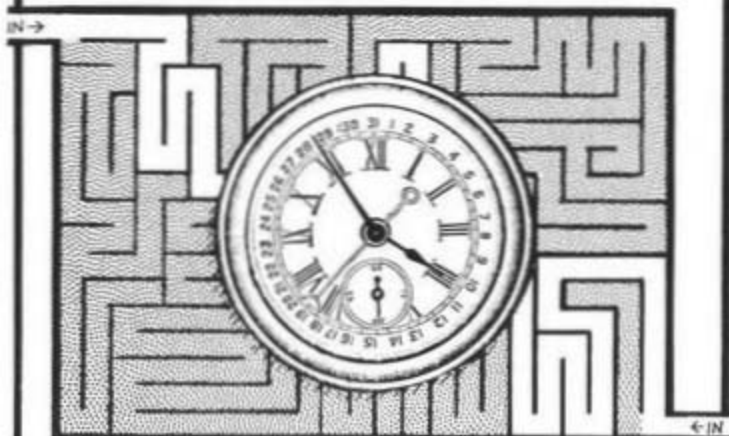
A

THE SECRET TO BETTER PROGRAMMING:
Reprogram.

WAS THAT −16633 OR −16363 OR −1633 ...?

All of those negative PEEK & POKE numbers will be easier to remember if you set a variable equal to one of them early in a program. Say, LET Q = −16384. Then, those hard to remember numbers become Q, Q + 16, Q + 48, etc. Much easier on your little grey ROM chips!

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Beagle Bros MICRO SOFTWARE

Wowzo!

Beagle Bros.' real-time Apple maze game!

Each player moves his or her own name through a constantly-changing maze towards five targets. Maze gates are opened and closed through keyboard commands to gain access to targets or to strategically block an opponent. All moves are time-limited to keep the game moving. Players input the game clock's speed as well as their names, abilities and target information to make each game unique. Your Apple adds its own touches with extensive sound effects, an animated clock and a constantly visible scoreboard. All move and gate commands are presented with player names and move/gate requests.

Wowzo is a strategy game you can grow with. Add it to your Apple library!

Disk	$16.00
Cassette	$14.00

(16K, Integer or Applesoft)

BEAGLE BROS. COMMAND CHART INCLUDED WITH EACH ORDER!

FLASH IN I.B.!

To flash alphabetical keys in Integer BASIC, simply POKE 50,127.

Here is Beagle Bros. Integer flash subroutine that will flash ALL characters:

```
10 REM INTEGER FLASH SUBROUTINE
       BY BERT KERSEY
20 DIM A$(40):FLASH=1000
22 CALL -936
25 XTAB= RND (10)+1:YTAB= RND
   (21)+2: VTAB 1: TAB 1
30 PRINT "TYPE SOMETHING:": VTAB
   YTAB: TAB XTAB: INPUT A$
40 VTAB YTAB: TAB XTAB: PRINT
   A$: GOSUB FLASH: GOTO 25
1000 FOR CHR=1 TO LEN(A$)
1010 XPOS= PEEK (36)-1+XTAB
1020 YPOS=2* PEEK (37)-1
1030 COL= SCRN(XPOS-1+CHR,YPOS)
1040 COLOR=COL-4
1050 IF COL>11 THEN COLOR=COL-8
1060 PLOT XPOS-1+CHR,YPOS
1070 NEXT CHR: RETURN
```

For clarification of what goes on here, read the following—

Use Graphics Commands in Text Mode to
PRINT THE UNPRINTABLES
by Bert Kersey

Certain Apple text characters don't seem to want to appear on the video screen. Namely [, \, _ and ". CHR$ will retrieve these for you in Applesoft, but not in Integer BASIC. And sure, FLASH flashes fine in Applesoft, and an Integer POKE 50,127, while not widely publicized, will flash characters ASC 192 and above (A through Z and shift M, N & P). But what about flashing numbers, spaces and punctuation?

A SOLUTION: As we all know, Apple's lo-res colors have corresponding characters in the text mode. Hit RESET or type TEXT while viewing a lo-res picture, and you will see 800 or more text characters—some flashing, some inverse and some normal. Keep looking—Some of these characters are probably the "unprintables" mentioned above! Conversely, a POKE −16304,0 will convert a text display to its corresponding lo-res "picture" with each text character represented by a pair of lo-res colors.

Every Apple text character has a corresponding pair of stacked color blocks in the graphics mode.

For example:
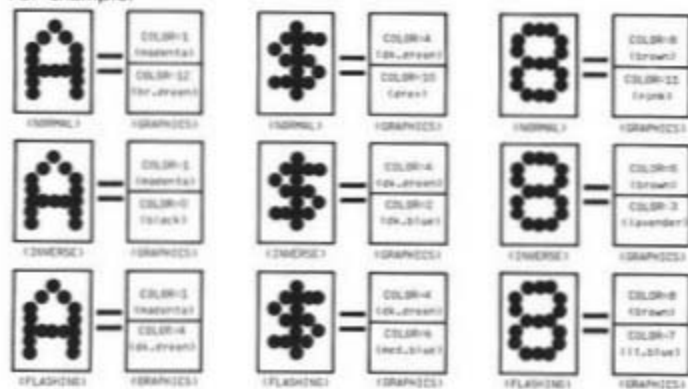
Here is a chart showing each standard Apple text character and its two corresponding lo-res colors:

BOTTOM COLOR

	0	1	2	3	4	5	6	7	12	13	10	11	
0	@	P	sp	0	@	P	sp	0	@	P	sp	0	0
1	A	Q	!	1	A	Q	!	1	A	Q	!	1	1
2	B	R	"	2	B	R	"	2	B	R	"	2	2
3	C	S	#	3	C	S	#	3	C	S	#	3	3
4	D	T	$	4	D	T	$	4	D	T	$	4	4
5	E	U	%	5	E	U	%	5	E	U	%	5	5
6	F	V	&	6	F	V	&	6	F	V	&	6	6
7	G	W	'	7	G	W	'	7	G	W	'	7	7
8	H	X	(	8	H	X	(	8	H	X	(	8	8
9	I	Y	)	9	I	Y	)	9	I	Y	)	9	9
10	J	Z	*	:	J	Z	*	:	J	Z	*	:	10
11	K	[	+	;	K	[	+	;	K	[	+	;	11
12	L	\	,	<	L	\	,	<	L	\	,	<	12
13	M	]	-	=	M	]	-	=	M	]	-	=	13
14	N	^	.	>	N	^	.	>	N	^	.	>	14
15	O	_	/	?	O	_	/	?	O	_	/	?	15
	INVERSE				**FLASH**				**NORMAL**				

(TOP COLOR on left and right sides)

To put some of our "unprintables" on the screen, let's approach things a bit backwards. To print an "A" at VTAB 1, TAB 1, the hard way, type this program:

```
10 TEXT : CALL -936
20 COLOR=1: PLOT 0,0
30 COLOR=12: PLOT 0,1
99 END
```

RUN it. Get the picture? Try this:

```
10 TEXT : CALL -936
20 VTAB 10: PRINT "SHE SAID, 'YOU C
   AN'T PRINT QUOTE MARKS!'"
30 COLOR=2: PLOT 10,18: PLOT 39
   ,18
99 END
```

The apostrophes in Line 20 have an upper color of 7 and a lower color of 10. Line 30 changes the upper color to 2 and produces quote marks (upper color 2, lower color 10). Change Line 30's COLOR to 11 to produce + 's, or to 15 to get / 's.

To find plotting coordinates X and Y for a text character at TAB (or HTAB) XT and VTAB YT, use $X = XT + 1$ and $Y = 2*YT-2$ (upper half) or $Y = 2*YT-1$ (lower half).

This little Integer program flashes some numbers at you, something POKE 50,127 won't accomplish:

```
10 TEXT : CALL -936
20 PRINT "FLASH: 12348"
30 COLOR=7: HLIN 7,11 AT 1
99 END
```

Line 30 changes the lower color of all the numbers from 11 to 7 and produces flashing numbers. COLOR = 3 would produce inverse numbers. COLOR = 13 changes things entirely. Try it, and compare your results with the chart.

Here is a program that unleashes the truly unprintable (in I.B., anyhow) underscore:

```
10 TEXT : CALL -936
20 FOR N=1 TO 5
30 VTAB N: PRINT "AMOUNT #";N;
   "??????"
40 COLOR=13: HLIN 10,14 AT 2*N-
   1
50 VTAB N: TAB 10: INPUT A
60 VTAB N: TAB 10: PRINT ":";A;
   "     ": CALL -958
99 NEXT N: END
```

Now you're on your own! As you can see, any character can be printed on the screen flashing, inverse or normal, with a little work. Some clever use of GOSUB statements in a long program will keep the keyboard banging to a minimum.

Have fun!

12

"RUNDOWN"

Occasionally you will want to leave your Apple alone with someone who is unfamiliar with loading procedures. Here is a little "Hello" program that will help them—and you, too.

Replace your "Hello" program (or whatever you call it; it has to be the first program listed on your disk) with the one below. Call it "DOWN." Make a small printed sign to place near your keyboard that reads—

```
TO CHANGE PROGRAMS:
1. Press the "RESET" KEY.*
2. Type "RUNDOWN."
3. Press the "RETURN" KEY.
```

*or whatever sends your Apple to BASIC.

Executing the above will (1) CATALOG your disk (maximum 17 programs including "Down"). (2) Erase the confusing sector numbers and I's & A's from the catalog. (3) Erase "Disk Volume" and "Down." (4) Tell the user to "type the program name and press 'return'," thus eliminating the need to remember to type 'RUN' before the program name. Software is available that will assign each program a number, and only the number needs to be entered to run the program. "RUNDOWN" will work with this method also.

The clearer you make things for non-comps, the better.

(non-COMPUTERERS)

```
]LIST

10 REM SAVE PROGRAM: "DOWN"
30 D$ = ""; REM (CTRL-D)
40 TEXT : HOME
50 PRINT D$;"CATALOG"
70 FOR I = 3 TO 5: VTAB I: HTAB
   1: PRINT  SPC( 15): NEXT
90 FOR I = 6 TO 21: VTAB I: HTAB
   1: PRINT  SPC( 6): NEXT
110 VTAB 4: HTAB 8: PRINT "PROGR
    AMS:"
120 HTAB 8: PRINT "-------------
    ----"
130 VTAB 24: PRINT " & PRESS 'RE
    TURN'.";
140 VTAB 23: HTAB 1: INPUT " TYP
    E PROGRAM NAME ->";A$
150 VTAB 22: CALL  - 958
170 FLASH : VTAB 22: HTAB 8: PRINT
    "";A$;"" LOADING."
180 POKE 50,255: PRINT D$;"RUN";
    A$
```

```
]LIST

10 REM  SAVE PROGRAM: "DOWN"
20 DIM A$(40)
30 D$="": REM (CTRL-D)
40 TEXT : CALL -936
50 PRINT D$;"CATALOG"
70 FOR I=3 TO 5: VTAB I: TAB 1
   : PRINT "             ": NEXT
   I: REM (^ 15 SPACES ^)
90 FOR I=6 TO 21: VTAB I: TAB
   1: PRINT "      ": NEXT I
110 VTAB 4: TAB 8: PRINT "PROGRAMS:"

120 TAB 8: PRINT "------------------"

130 VTAB 24: PRINT " & PRESS 'RETURN
    '.";
140 VTAB 23: TAB 1: INPUT " TYPE PRO
    GRAM NAME ->",A$
150 VTAB 22: CALL -958
170 POKE 50,127: VTAB 22: TAB 8
    : PRINT "";A$;"" LOADING."
180 POKE 50,255: PRINT D$;"RUN"
    ;A$
```
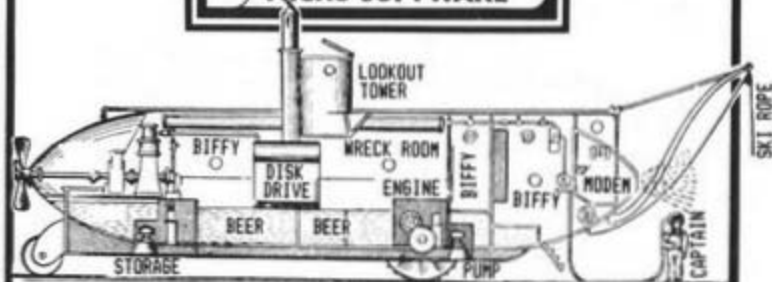
14

DO SOMETHING MEAN TODAY!

While strolling by someone's Apple, reach over, POKE 33,90, and keep walking. No permanent damage will be done (RESET cures all), but LISTing a program will be, let's say, interesting. Other POKEs to try to temporarily mess things up are—
POKE 50,99; POKE 50,250 and POKE 50,127.

Beagle Bros. are <u>not</u> responsible for any possible repercussions.

THREE APPLE ERROR MESSAGES

```
*** SYNTAX ERR  Integer
?SYNTAX ERROR  Applesoft
SYNTAX ERROR   D.O.S.
```

15

A Contest!

O.K., Gang, our Uncle Louie only has an 0.6K Apple and needs some programs for it. So here's a contest—Let's help him out!

RULES: Programs must be written in Applesoft or Integer BASIC only, and be NO LONGER THAN TWO PROGRAM LINES. There is no limit to the number of multiple statements on or length of each line, as long as we can type them and not get a "··· TOO LONG ERR" message. Please submit legible copy. Nothing can be returned.

Programs will be judged on . . .

(a) how impressive the program is when run.

Decisions of the Beagle Bros. judges is semi-final (Uncle Louie gets the last say).

PRIZES:

1st PRIZE: Any 3 Beagle Bros. Programs
2nd PRIZE: Any 2 Beagle Bros. Programs
3rd PRIZE: Any Beagle Bros. Program
4th-9th PRIZES: Haven't decided yet
10th PRIZE: Uncle Louie

The most impressive 2-liners will be printed in our next printing.

Here are a couple of 2-liners we found in an old trunk in the attic:

```
>LIST
 1 DIM A$(80):A$="ABCDEFGHIJKLMNOPQ
   RSTUVWXYZABCDEFGHIJKLMNOPQRSTUVW
   XYZABCDEFGHIJKLMNOPQRSTUVWXYZ"
   : POKE -16304,0: POKE -16302
   ,0
 2 B=B+1: IF B>35 THEN B=1:A=A+
   1: FOR I=1 TO A/9: PRINT " "
   :: NEXT I: PRINT A$(B,B+10)
   :: GOTO 2: REM INTEGER
```

```
>LIST
 1 POKE -16304,0: POKE -16302,
   0: REM INTEGER BASIC
 2 PRINT PEEK (-16384)-192:: GOTO
   2: REM HIT ANY KEY TO OPERATE.
```

and last year's LOSER. . .

```
>LIST
 1 CALL - 936
 2 NEW
```

16

```
>LIST
 1 POKE - 16304,0: POKE - 16302
   ,0: REM APPLESOFT
 2 PRINT PEEK ( - 16384) - 192::
   GOTO 2: REM HIT ANY KEY TO
   OPERATE.
```

Thanks, gang!

ON, CHARLES! YOUR PROGRAM IS WONDERFUL. I HOPE YOU WIN THE CONTEST!

UH... I'VE GOTTA GO.... I JUST THOUGHT OF A COUPLE OF CHANGES...

ME TOO, PATRICIA.

RESET PROTECTION!

In the olden days (computer terminology for last June), a 1/4"
error when hitting RETURN could cause you to hit RESET and kill a
program. The new Apples require a two-handed* CTRL-RESET.
Hooray! A terrible flaw is eliminated! For those of us with our
ancient Apples, here are some solutions:

1. Ask your Apple dealer. There are several hardware RESET
protectors for sale, including a dealie that requires two RESET hits
within a second and a RESET switch that attaches to the back of
your Apple.

2. Make your own RESET protector.

FOLD.

RESET

FOLD.

glue.

CUT.

glue.

RESET KEY
RETURN KEY

U.S. PATENT 3-276-732-767-327-673-276-732-767
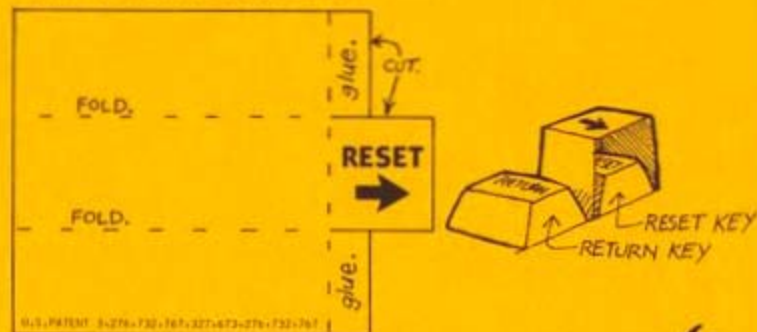
Let's forgive Apple for one B-L-U-N-D-E-R!

* Our neighbor, Kareem Abdul Murphy, can do a CTRL-RESET with one hand.

20

ENTERING MACHINE CODE:

As beginners, we were frustrated when presented with even a simple Assembly Language program in a magazine, because we just DIDN'T KNOW HOW TO TYPE IT IN! Well, here's how!

This simple (and useless) little program prints flashing, normal & inverse fonts on the screen.

```
0800-    A0 FF        LDY    #$FF
0802-    88           DEY
0803-    98           TYA
0804-    20 ED FD     JSR    $FDED
0807-    98           TYA
0808-    D0 F8        BNE    $0802
080A-    60           RTS
```

Or, you might see it like this:

```
0800- A0 FF 88 98 20 ED FD 98
0808- D0 F8 60 2A 2A 2A 2A 2A
```

Here's how you enter this program:

First, CALL -151 (return) to enter the monitor. This will produce an asterisk and a cursor. Now type:

```
800: A0 FF 88 98 20 ED FD 98 D0 F8 60
```

and hit return. That's it! Now go back to BASIC with RESET. To run the program from BASIC, CALL 2048 (decimal 2048 = hex 800, the number of the 1st program line). To list it, type CALL -151 (return) and 800L (return).

WHY DOES THIS DO THIS?

```
>LIST
10 REM WHY THIS?
15 REM (INTEGER)
20 CALL -936: GR
30 COLOR= RND (16)+1
40 N= RND (1280)
50 H=N MOD 32
60 V=N/32
70 PLOT H,V
80 GOTO 30
```

```
]LIST
10   REM AND THIS?
20   REM (APPLESOFT)
30   FOR X = 1 TO 255
40   PRINT CHR$ (X);
50   REM BOMBS WITH COMMA,
     BUT NOT WITHOUT!
70   NEXT X
```

OUR FAVROITE TYPOS:

```
>RUB        >PRITN
>RIM        >LIAR
>RYB        >KUST
>RUIN       >;OST
>LSIT       >CATAKIG
```

*** SYTNAX ERR

```
>LIST
  3 REM ========================
       RANDOMRACE! (Integer)
       ========================
  6 REM -> This is a race between a
       red dot and a white dot, both
       propelled by the Apple random
       number generator.
  9 REM -> Points are determined by
       the vertical coordinate value
       of each dot. 1st one to 32000
       wins. Place your bets!
 12 WIN=31999: GR
 15 CALL -936: VTAB 24: TAB 14
 18 PRINT "(WIN: ";WIN+1;")";
 21 FOR I=0 TO 39: COLOR=1
 24 VLIN 38,39 AT 39-I
 27 COLOR=0: IF R#W THEN 36
 30 COLOR=55-I: FOR J=1 TO 8
 33 S= PEEK (-16336): NEXT J
 36 VLIN 0,39 AT I
 39 R=R+ RND (3)-1: IF R)36 THEN
    R=36: IF R(4 THEN R=4
 42 W=W+ RND (3)-1: IF W)36 THEN
    W=36: IF W(4 THEN W=4
 45 COLOR=9: PLOT I,R
 48 COLOR=15: PLOT I,W
 51 IF R)W THEN 57
 54 A=W-1:B=R+1: GOTO 60
 57 A=R-1:B=W+1
 60 IF B)A THEN 66
 63 COLOR=2: VLIN B,A AT I
 66 IF A+2)36 THEN 72
 69 COLOR=7: VLIN A+2,36 AT I
 72 WPT=WPT+35-W:RPT=RPT+35-R
 75 POKE 50,63+192$(RPT(WPT)
 78 IF WPT(999 OR WPT)RPT+4 OR
    WPT(RPT-4 THEN 84
 81 PRINT "";:: REM (CTRL-G BEEP)
 84 VTAB 22: TAB 1
 87 PRINT " RED: ";RPT;" ";
 90 POKE 50,63+192$(WPT(RPT)
 93 TAB 27
 96 PRINT " WHITE: ";WPT;" ";
 99 IF RPT)WIN OR WPT)WIN THEN
    END : NEXT I: GOTO 21
```

THINGS THAT GOSUB IN THE NIGHT

Around 2 a.m., a CTRL-G can sound like an air raid siren. And sometimes, even on Saturday afternoon, a little silence is nice. It's a simple thing to put a switch on your Apple speaker. Just cut one of the speaker wires and run new wires to a toggle switch.
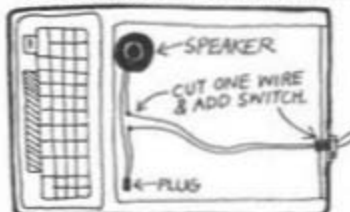
Certain types of switches will attach through the slots in the back of the Apple, and make hole drilling (gasp!) unnecessary.

INVERSE REM STATEMENTS!

We sure wish we knew how, but we don't. However, here IS a short cut to making your REM statements show up—

First POKE 33,32 (Integer) or POKE 33,28 (Applesoft). Then your REM statements will LIST formatted the way you type them (POKE 33,40 or RESET before LISTing). We like to underline our REMs with hyphens like so:

```
>LIST                              ]LIST
  970 INPUT X                        970 INPUT X
  980 IF X=0 THEN PRINT "FIZZLE"     980 IF X = 0 THEN  PRINT "FIZZLE"
  990 REM                            990 REM
       EXPLOSION:                         EXPLOSION:
       ----------                         ----------
1000 IF X=86 THEN PRINT "KA-BOOM!"  1000 IF X = 86 THEN  PRINT "KA-BOOM!"
```

Experiment, and you'll see what we mean.

AN EFFICIENT SOFTWARE FILE

CLIP OFF THESE CORNERS AND YOUR WRITE-PROTECT NOTCHES WON'T GET CAUGHT.

HINGED COVER MAKES STAND.

←DISKS OR CASSETTES

CATALOG PRINT-OUTS
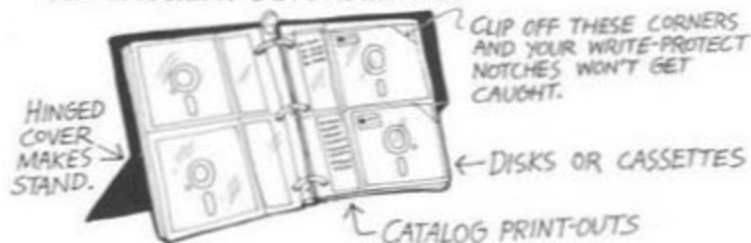
K & M Co. makes a nice 3-ring binder (#ES 311-1) that stands up when open. Use it with some disk holder inserts and you've got a super disk OR CASSETTE file!

```
]CATALOG

DISK VOLUME 254

A 005 HELLO
I 004 **%&*! BILLS
A 041 "PROFIT" SHEET
I 038 $-REPORT
I 038 *# LISTING

>■
```
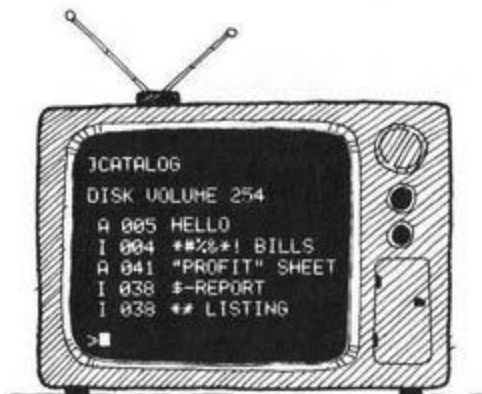
FILE NAME VIOLATIONS

The DOS 3.2.1 Manual says that file names must start with a letter. **Forget it!** If you have Neil Konzen's Program Line Editor and DON'T have a lower case adaptor, you can include lower case characters in a file name that will appear as non-letter characters on the video screen. For example, a lower-case "D" will appear as a "$," etc. So it's easy to call a file "$ REPORT" or "* LISTING" OR "%#&@ BILLS." If you want to indent a file name in your catalog, a lower-case "@" is a space! Here are the equivalent upper and lower case characters:

U.C.	L.C.	U.C.	L.C.	U.C.	L.C.
A	!	J	*	S	3
B	"	K	+	T	4
C	#	L	,	U	5
D	$	M	–	V	6
E	%	N	.	W	7
F	&	O	/	X	8
G	'	P	0	Y	9
H	(	Q	1	Z	:
I	)	R	2	@	sp.

By the way, if you don't have the Program Line Editor disk, go buy one _now_. It's worth every penny!

Flashing and inverse file names are also possible with this little trick: In immediate mode, POKE 50,63 (return) or POKE 50,127 or FLASH (return). Then PRINT "FILE NAME" (return). Then type "SAVE" and use cursor moves to _trace over_ your flashing or inverse file name and return. CATALOG your catalog, and take a look. The only way to load such a program is the same way you saved it. Type LOAD or RUN, and trace over the file name with the cursor. It works!

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P.L.E. TIPS

And speaking of the Program Line Editor . . .

In case you don't know what it does, you should! First, it allows you to edit program lines in NO-TIME compared to what you're probably doing now. Second, it has an "Escape Create" function that lets you program any key to perform any function. For example "ESC-L" can LIST a program, "ESC-P" can type the word "PRINT" for you, "ESC-N" can type "NOW IS THE TIME FOR ALL GOOD MEN TO GOSUB 86," etc., etc.

How you program your escape functions is a personal thing depending on the type of programming you do, but here's the set we use.

ESC	FUNCTION	ESC	FUNCTION
L	TEXT(R)LIST(R)	1	TEXT(R)CATALOG D1(R)
P	PRINT	2	TEXT(R)CATALOG D2(R)
R	RUN(R)	3	K=PEEK(-16384):IF K
/	\	4	POKE -16368,0
=	‾	5	POKE 50,255
]	[	6	POKE 50,63
->	8 SPACES RIGHT	7	INT(RND(1)*)
	(non-recursive)	8	PEEK(-16336)+
<-	8 SPACES LEFT	9	CALL-936
	(non-recursive)	0	POKE50,255(R)TEXT(R)
			CALL-936(R)
(R)=Return		:	CALL-151(R)
		–	ctrl-Y (exit monitor)

Notice that the last 12 functions use the TOP ROW of keys. We have labels on our Apple just above the number keys so we don't forget what's what.

"MORE QUOTE MARKS!

Applesoft—
```
10  HOME
20  PRINT "SHE SAID, "; CHR$ (34)
    ;"HELLO!"; CHR$ (34)
```

Integer—
```
10 CALL-936
20 PRINT "SHE SAID, "HELLO!"":END
```

No tricks in the Applesoft example. The illegal extra quote marks in the Integer program are actually lower case B's! With the P.L.E. and without a lower case adaptor, they will appear as quote marks on the screen.

27

DECIMAL QUOTIENTS IN INTEGER BASIC!

Sure you can—within the limits set by 32767. If $A/B = C$ and A and B are integers, then let $C = (10*A)/B$, and PRINT C/10;".";C MOD 10.

```
>LIST
   10 REM   INTEGER DECIMAL QUOTIENTS
   20 CALL -936
   30 PRINT "DIVIDE ?      BY ?   (3276
      MAX.)":: TAB 8: INPUT A
   40 VTAB PEEK (37): TAB 14
   50 PRINT "BY ?         (32767 MAX.)"
      :: TAB 17: INPUT B
   60 C=(10*A)/B
   70 VTAB PEEK (37)
   80 PRINT A;" DIVIDED BY ";B;" = "
      ;C/10;".";C MOD 10
   90 PRINT : FOR I=1 TO 666: NEXT
      I: GOTO 30
```

Substitute <u>100</u>'s for the <u>10</u>'s if you want <u>2 place</u> decimals. Just remember that 10•A or 100•A can't be greater than 32767.

RUN COUNTER! (I.B.)

Here's a little goody that you can add to a program to show how many times it's been RUN. Try RUNning it a few times as you see it here, and then LIST it. You'll notice that Line 32765 actually <u>changes</u> Line 32763 for you!

```
    5 GOSUB 32762
   10 REM APPEND INTEGER PROGRAM HERE
   20 END
32762 HIGHMEM= PEEK (76)+( PEEK (
      77)-( PEEK (77)>127)*256)*256

32763 CALL -936: VTAB 1: TAB 12
32764 TURN=1
32765 PRINT "THIS IS RUN #";TURN;
      "."
32766 POKE HIGHMEM-62,TURN+1
32767 RETURN
```

Syntax is VERY important in this one, so be extra careful! Renumbering is permissible. Just don't change or add <u>anything</u> after "TURN =".

←REM   RAM   ROM

VOCABULARY LESSON #255
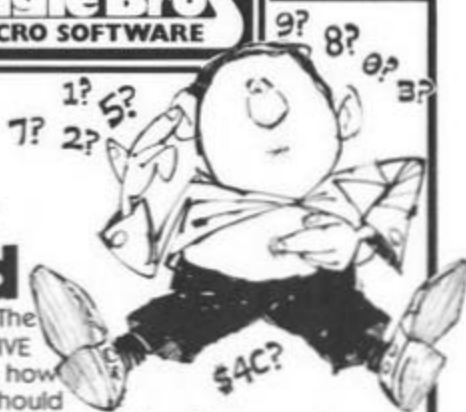
29

...AND A CASE OF ASPIRIN.

PACK MY BOX WITH FIVE DOZEN LIQUOR JUGS.

Here is a little program that takes letters out of your copy and sorts them. Uncle Louie used it and says NOBODY can come up with a SHORTER English sentence than the one above (32 letters) that uses EVERY LETTER in the alphabet. Anyone care to challenge?

```
10 REM PACK MY BOX (Applesoft)
15 HOME : DIM T(26)
20 FOR I = 1 TO 13:T(I) = 1:T(I +
   13) = 21: NEXT : VTAB 1
25 INPUT "TYPE->";COPY$
30 SUM = 0: VTAB 9: CALL - 958
35 FOR I = 1 TO 26: VTAB 8 + I -
   13 $ ( INT (I / 14)): HTAB T
   (I): PRINT CHR$ (I + 64): NEXT

40 FOR I = 1 TO LEN (COPY$)
45 NORMAL : VTAB 1: HTAB 6 + I: PRINT
   " ": INVERSE
50 LTR = ASC ( MID$ (COPY$,I,1))
    - 64: IF LTR < 1 OR LTR > 2
   6 THEN 65
55 VTAB 8 + LTR - 13 $ ( INT (LT
   R / 14)): HTAB T(LTR) + 2: PRINT
   CHR$ (LTR + 64)
60 T(LTR) = T(LTR) + 1:SUM = SUM +
   1
65 NEXT I: POKE 50,255: VTAB 23:
   PRINT "TOTAL:";SUM;" LETTER
   S": GOTO 20
```

```
10 REM PACK MY BOX (Integer)
15 CALL -936: DIM COPY$(255),ALPH$
   (26),T(40):ALPH$="ABCDEFGHIJKLMN
   OPQRSTUVWXYZ"
20 FOR I=1 TO 13:T(I)=1:T(I+13
   )=21: NEXT I: VTAB 1
25 INPUT "TYPE->",COPY$
30 SUM=0: VTAB 9: CALL -958
35 FOR I=1 TO 26: VTAB 8+I-13$
   (I/14): TAB T(I): PRINT ALPH$
   (I,I): NEXT I
40 FOR I=1 TO LEN(COPY$)
45 POKE 50,255: VTAB 1: TAB 6+
   I: PRINT " ": POKE 50,63
50 LTR= ASC(COPY$(I,I))-192: IF
   LTR<1 OR LTR>26 THEN 65
55 VTAB 8+LTR-13$(LTR/14): TAB
   T(LTR)+2: PRINT COPY$(I,I)
60 T(LTR)=T(LTR)+1:SUM=SUM+1
65 NEXT I: POKE 50,255: VTAB 23
   : PRINT "TOTAL:";SUM;" LETTERS"
   : GOTO 20
```

Uncle Louie also says that the order in which letters are most commonly used is:

ETAONRISHDLFCMUGYPWBVKXJQZ.

(We take his word for it.)

COLOR = ?

If you're not getting the lo-res colors the Apple manual says you should (for example, Color No. 8 should be Brown, not Red), try flipping your TV's "Automatic Color" switch OFF, and play with your contrast and brightness controls. When you have your colors where you want them, mark your controls for future reference. Another set of marks for your regular TV picture is handy too.

Magic Pack

Four great magic tricks on one program—

These four tricks, with a little help from you, will have them rolling on the rug. About the time they suspect that you (of all people) have something up your cuffs and have been pulling some fast ones with your Apple (which you _have_), you turn it over to an audience member and the computer still does the impossible! Four tricks are included—

1. PLENTY-QUESTIONS: Think of an object; the computer asks some key questions; the computer tells you what your object is. A real cage-rattler!

2. CARD SCANNER: The computer reads cards through the TV screen. Just press any playing card against the screen and watch it work!

3. NEXTWORD: Audience members test their wits on this one. Can they figure out what the Apple is up to? Most can't. Only you know its secret.

4. 21 NUMBERS: An Apple switch on a mix-'em-up card trick that never fails!
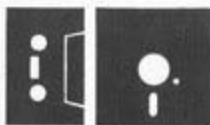
Disk	**$14.00**
Cassette	**$12.00**

(16K, Integer or Applesoft)
BEAGLE BROS. COMMAND CHART INCLUDED WITH EACH ORDER!

N, S, W or E?

To move a figure up, down, left or right on the monitor, the U, D, L & R or N, S, W & E keys are often used, but are a real pain for nontypers. I, M, J & K or some similar grouping aren't much better. We prefer this easy to remember, uncrowded set:

UP: ∧ (N) key

DOWN: Space Bar

LEFT: < (,) or ← (optional)
RIGHT: > (.) or → (optional)

Five of these six keys are already marked with "arrows" (mark your space bar too, if you want), and all are conveniently spaced for two-hand use.
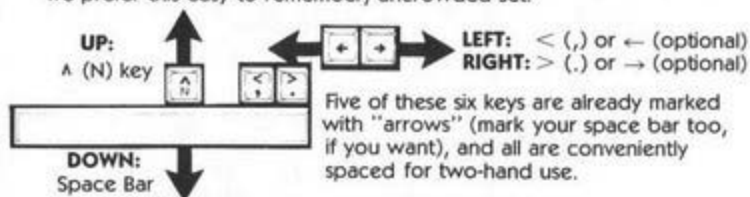
Triple Digits

A thinker's game—easy to play but hard-as-heck to win! Two players are given thirteen numbers each to distribute on the Triple Digits screen layout. Scoring can be done in four ways, and your Apple keeps track and posts all possibilities. Plan-ahead strategy, both for scoring and blocking, is the key to winning at Triple Digits. All skill levels enjoy this one.
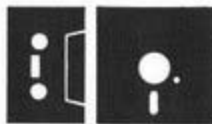
Disk	**$12.00**
Cassette	**$10.00**

(16K, Integer or Applesoft)
BEAGLE BROS. COMMAND CHART INCLUDED WITH EACH ORDER!

```
=================================
LO-RES COLOR TEST PATTERN
  by Bert Kersey
  Names & Numbers Colors
  and Classifies by B/W Shade
=================================
```

(Applesoft)

```
]LIST
120 GR : HOME :Q = - 16384
130 REM
        NAMES & NUMBERS:
        ----------------
140 REM  IN LINE 150, PERIODS =
        SPACES.
150 A$ = ".1..2..4..8..5..3..6..9
    .12..7 11.13.14..MAGDRKDRKBR
    N%10LAVMEDORGBRTLITPNKYELAQU
    ....BLUGRN...GRY...BLU...GRN
    BLU.........*
160 FOR V = 21 TO 23: FOR I = 1 TO
    37 STEP 3:T = 40 % (V - 21) +
    I:IMOD = I - INT (I / 6) %
    6: IF IMOD ( 4 AND IMOD ) 0 THEN
    INVERSE
170 VTAB V: HTAB I + 1: PRINT MID$
    (A$,T,3 - INT ((V + I) / 6)
    ));: NORMAL : NEXT I,V
180 HTAB 1: PRINT ">PRESS ANY KE
    Y.";: HTAB 21: PRINT "(0=BLA
    CK; 15=WHITE)";: COLOR= 7: PLOT
    0,47
190 FOR J = 0 TO 12:X = 3 % J
200 REM
        CLASSIFY BY B/W SHADE:
        ----------------------
210 IF J ( 5 THEN  COLOR= 2 ^ J -
    6 % INT (J / 4)
212 IF J ) 4 THEN  COLOR= 3 % (J
    - 4)
214 IF J ) 8 THEN  COLOR= 15 - 2
    ^ (12 - J)
220 FOR I = I + 1 TO I + 3: VLIN
    0,39 AT I: NEXT I: NEXT J
230 REM
        SEPARATE COLORS:
        ----------------
240 IF  PEEK (Q) ( 136 THEN 240
242 POKE Q + 16,0:R = R + 1: IF
    R ) 5 THEN R = 0
244 ON R + 1 GOTO 250,260,270,25
    0,260,270
250 GOTO 190
260 FOR I = 1 TO 37 STEP 3: COLOR=
    15 % INT (R / 3): VLIN 0,39
    AT I + 2: NEXT I: GOTO 240
270 FOR I = 1 TO 37 STEP 3: VLIN
    0,39 AT I: NEXT I: GOTO 240
```

(Integer)

```
>LIST
110 DIM A$(119):Q=-16384
120 GR : CALL -936
130 REM
        NAME AND NUMBER COLORS:
        -----------------------
140 REM IN LINE 150, DOTS = SPACES.
150 A$=".1..2..4..8..5..3..6..9.12..
    7.11.13.14..MAGDRKDRKBRN%10LAVME
    DORGBRTLITPNKYELAQU....BLUGRN...
    GRY...BLU...GRNBLU.........*
160 FOR V=21 TO 23: FOR I=1 TO
    37 STEP 3:T=40%(V-21)+I: IF
    I MOD 6(4 AND I MOD 6)0 THEN
    POKE 50,63
170 VTAB V: TAB I+1: PRINT A$(T,
    T+2-(V+I)/6);: POKE 50,255
    : NEXT I,V
180 PRINT ">PRESS ANY KEY.";: TAB
    21: PRINT "(0=BLACK; 15=WHITE)"
    ;: COLOR=7: PLOT 0,47
190 FOR J=0 TO 12:X=3%J
200 REM
        CLASSIFY BY B/W SHADE:
        ----------------------
210 IF J(5 THEN COLOR=2 ^ J-6%(
    J/4): IF J)4 THEN COLOR=3%(
    J-4): IF J)8 THEN COLOR=15-
    2 ^ (12-J)
220 FOR I=I+1 TO I+3: VLIN 0,39
    AT I: NEXT I: NEXT J
230 REM
        SEPARATE COLORS:
        ----------------
240 IF PEEK (Q)(136 THEN 240: POKE
    Q+16,0:R=R+1: IF R)5 THEN R=
    0: GOTO 250+10%(R MOD 3)
250 GOTO 190
260 FOR I=1 TO 37 STEP 3: COLOR=
    15%(R/3): VLIN 0,39 AT I+2:
    NEXT I: GOTO 240
270 FOR I=1 TO 37 STEP 3: VLIN
    0,39 AT I: NEXT I: GOTO 240
```

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ASCII Values for Applesoft & Integer BASIC

	AS	INT		AS	INT		AS	INT		AS	INT
c@	0	128	sp	32	160	@	64	192	`	96	224
cA	1	129	!	33	161	A	65	193	a	97	225
cB	2	130	"	34	162	B	66	194	b	98	226
cC	3	131	#	35	163	C	67	195	c	99	227
cD	4	132	$	36	164	D	68	196	d	100	228
cE	5	133	%	37	165	E	69	197	e	101	229
cF	6	134	&	38	166	F	70	198	f	102	230
(Bell) cG	7	135	'	39	167	G	71	199	g	103	231
(<-) cH	8	136	(	40	168	H	72	200	h	104	232
cI	9	137	)	41	169	I	73	201	i	105	233
cJ	10	138	*	42	170	J	74	202	j	106	234
cK	11	139	+	43	171	K	75	203	k	107	235
cL	12	140	,	44	172	L	76	204	l	108	236
(Rtn) cM	13	141	-	45	173	M	77	205	m	109	237
cN	14	142	.	46	174	N	78	206	n	110	238
cO	15	143	/	47	175	O	79	207	o	111	239
cP	16	144	0	48	176	P	80	208	p	112	240
cQ	17	145	1	49	177	Q	81	209	q	113	241
cR	18	146	2	50	178	R	82	210	r	114	242
cS	19	147	3	51	179	S	83	211	s	115	243
cT	20	148	4	52	180	T	84	212	t	116	244
(->) cU	21	149	5	53	181	U	85	213	u	117	245
cV	22	150	6	54	182	V	86	214	v	118	246
cW	23	151	7	55	183	W	87	215	w	119	247
cX	24	152	8	56	184	X	88	216	x	120	248
cY	25	153	9	57	185	Y	89	217	y	121	249
cZ	26	154	:	58	186	Z	90	218	z	122	250
(Esc) c[	27	155	;	59	187	[	91	219	{	123	251
c\	28	156	<	60	188	\	92	220	|	124	252
c]	29	157	=	61	189	]	93	221	}	125	253
c^	30	158	>	62	190	^	94	222	~	126	254
c_	31	159	?	63	191	_	95	223		127	255

c = cntrl

Beagle Bros MICRO SOFTWARE

```
30960  REM ====================
       JACK'S TEXT PRINTER
       (Applesoft)
       by Jack Cassidy
       ====================
30970  REM Transfers screen copy
       to printer!
30980 FIRSTLN = 1:LASTLN = 22: REM
      SET VTAB TOP & BOTTOM LIMITS

31000  PR# 2: REM OR YOUR PRINTER
       SLOT NO.
31010  POKE 50,255: PRINT
31020  FOR YPSN = FIRSTLN TO LAST
       LN
31040  FOR XPSN = 1 TO 40
31060  VTAB YPSN: HTAB XPSN
31080  XYCH =  SCRN( XPSN - 1,2 ‡
       (YPSN - 1)) + 16 ‡  SCRN( XP
       SN - 1,2 ‡ (YPSN - 1) + 1)
31100  IF XYCH < 32 THEN XYCH = X
       YCH + 192
31120  IF XYCH < 96 THEN XYCH = X
       YCH + 128
31140  IF XYCH < 128 THEN XYCH =
       XYCH + 64
31160  PRINT  CHR$ (XYCH);
31180  NEXT XPSN
31200  PRINT  CHR$ (13);
31220  NEXT YPSN


3000   REM ====================
       ASCII SCREEN PRINTER
       (Applesoft)
       ====================
3005   HOME : GOSUB 3070: HTAB 12
3010   PRINT "‡ ASCII VALUES ‡"
3015   GOSUB 3070
3020   PRINT "AS...INT  AS...INT
       AS...INT  AS...INT"
3025   PRINT "--------  --------
       --------  --------"
3030   FOR X = 32 TO 47
3035   T = X: GOSUB 3065
3040   T = X + 16: GOSUB 3065
3045   T = X + 32: GOSUB 3065
3050   T = X + 48: GOSUB 3065
3055   NEXT : GOSUB 3070: END
3065   PRINT T;" "; CHR$ (T);" ";T
       + 128;" ";: RETURN
3070   FOR X = 1 TO 40: PRINT "=";
       : NEXT : RETURN
```

```
11  REM ====================
    IMPRESS YOUR FRIENDS!
    (Integer or AS)
    by Uncle Louie
12 REM ====================
15 CALL -936
19 FOR A=1 TO 100
23 AMOUNT= RND (99): REM FOR APPLE-
   SOFT, AMOUNT=INT(RND(1)‡99)
31 PRINT AMOUNT;
35 IF X<>100 THEN PRINT " + ";

39 SUM=SUM+AMOUNT
43 NEXT A
47 PRINT " = ";SUM;"."
51 END
54 REM  Try in both languages, and
   compare speeds!


10  REM ==============
    NUMBER ROUNDER
    (Applesoft)
    ==============
20 HOME
30 INPUT " ANY REAL NUMBER->";X
40 INPUT "HOW MANY PLACES?->";N
50 T =  INT (X ‡ 10 ^ N + .5) / 1
   0 ^ N
60 PRINT "          ROUNDED->";T
70 PRINT : GOTO 30


86  REM ====================
    NAKED CITY (Applesoft)
    by Flo Chart
    ====================
127 G$ = "": REM  (CTRL-G)
255 GOTO 502
360 PRINT : INPUT "]";A$: REM
    (]=SHIFT-M)
502 PRINT "?SYNTAX ERROR";G$
997 GOTO 360
```


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