

Ahoy! **COMMODORE USERS**

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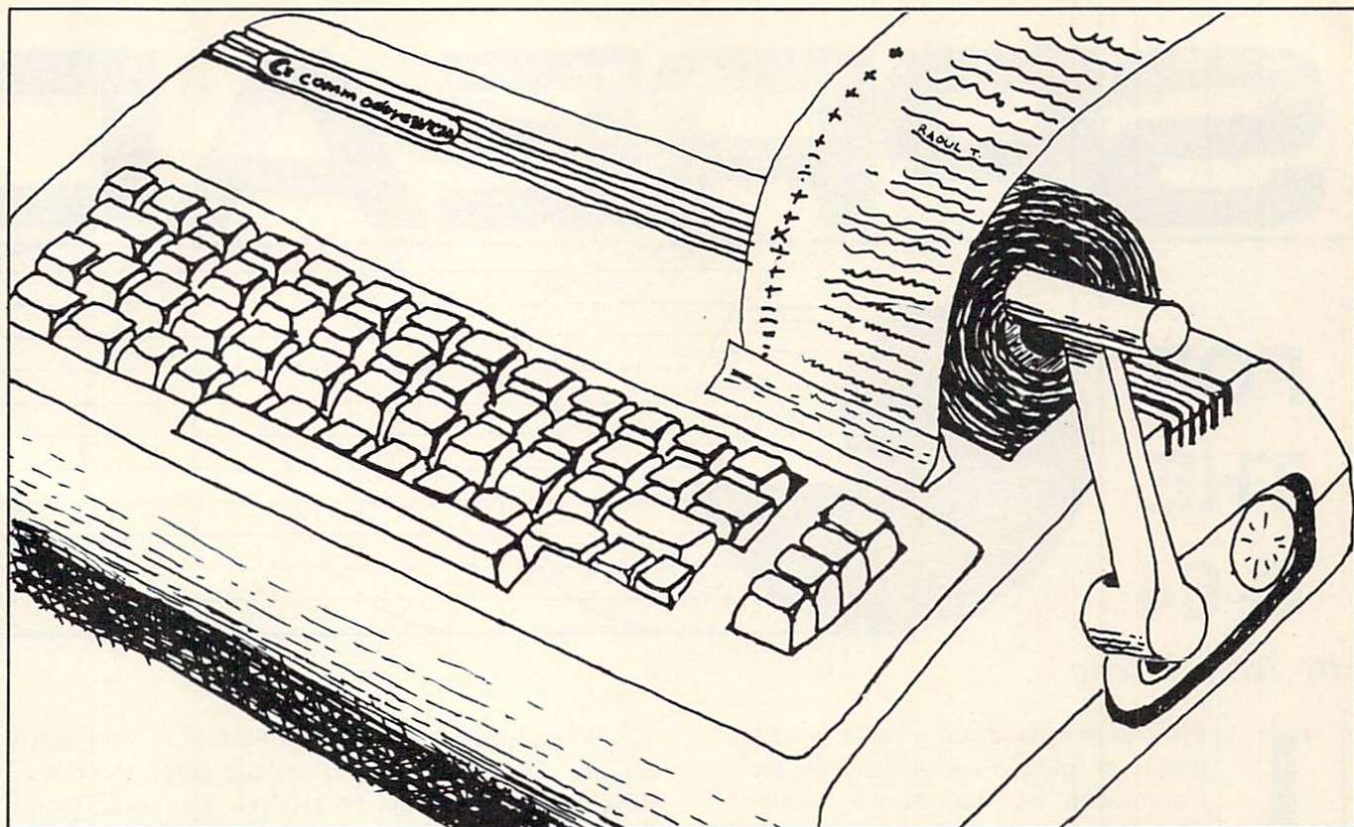
THE FUTURE OF COMMODORE?

SPREADSHEETS
FOR THE 64

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MEMORY
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THE VIC CALCULATOR

MULTIPLY YOUR COMPUTER'S MATHEMATICAL ABILITIES!

By Joe Woyton

This handy little program turns your VIC into a multifunction printing calculator with memory. The routine handles mixed chain calculations often found when preparing tax returns or balancing your checkbook or home budget.

The VIC operating system has excellent computing power *when under program control*. Unfortunately, the unprogrammed DIRECT mode of VIC operation is virtually useless except to evaluate individual expressions (like PRINT 3 + 5 RETURN). This program uses VIC BASIC string manipulation and VAL commands to input numbers (up to 8 characters), define operators (+, -, *, /, =), control number sign (+, -) and make screen notations like clear entry (CE), clear calculations (CC), etc.

These keys operate the VIC CALCULATOR:

- | | |
|-------|-------------------------|
| + | Addition operator |
| - | Subtraction operator |
| * | Multiplication operator |
| / | Division operator |
| = | Total |
| SPACE | +/-, change number sign |

- | | |
|----|---------------------------------|
| f1 | M+, add total to memory |
| f3 | M-, subtract total from memory |
| f5 | MR, memory recall |
| f6 | MC, memory clear |
| f7 | CE, clear entry, correct errors |
| f8 | CC, clear calculator |

When typing the program, pay close attention to the PRINT statements with TAB and CHR\$ commands. These are used to format the screen display. They replace the often confusing CURSOR commands. If you have a printer, add the appropriate PRINT# statements at line 50 and 460 to generate hard copy.

If you don't want to do the typing, I will copy VIC tapes (only). Send \$3.00, a blank tape, and a self-addressed stamped mailer. If you prefer, send \$5.00 and I will supply the tape and return postage. Write to:

Joe Woyton
106 Braddock Drive
Mauldin, SC 29662

SEE PROGRAM LISTING ON PAGE 78

PROGRAM LISTINGS

On the following pages are listed several programs that we hope you'll want to punch in your Commodore computer. But please read the following introduction first; there are a few things you'll need to know.

Certain computer commands are displayed on the monitor by a variety of odd-looking characters. To get your computer to display these commands rather than actually perform them, you'll need to enter the quote mode. Hold down the SHIFT key and press the "2" key; a set of quote marks will appear. This tells the computer that the characters that follow are to be displayed, not performed. To exit the quote mode, type another set of quote marks, or hit the RETURN key. You'll also enter the quote mode when you INserT spaces or characters onto a line.

In *Ahoy!*'s program listings, you'll frequently find letters and/or numbers surrounded by brackets { }. That's because, for the purposes of clear reproduction, we at *Ahoy!* use a daisy wheel printer incapable of reproducing command symbols. For example, when you're in the quote mode and press the SHIFT and CLR/HOME keys at the same time, the screen (or a dot-matrix printer) will indi-

cate this command with a heart {♥}. Because a daisy wheel cannot duplicate this symbol, it substitutes an alternate code between brackets. In the case of the SHIFT/CLR HOME symbol, our printer substitutes {SC}.

Another special case is SHIFT and COMMODORE characters. We represent these by underlining or overlining, respectively: any character underlined in the program listing should be punched in as a SHIFTeD character (J = SHIFT J), any character overlined should be punched in as a COMMODORE character (J = COMMODORE J).

An alternate way of entering commands and other graphics symbols and characters is to use their corresponding character strings. The CLR/HOME command, for example, is entered by typing CHR\$(147). While this requires a few extra strokes, it facilitates editing your program or reading the printed listing. For a complete list of CHR\$ codes, consult the appendix at the back of your Commodore user manual.

Below is a list of the command abbreviations you'll find in our program listings, the commands they stand for, how to enter them, and how they'll appear on the screen or on a dot matrix printout.

When You See	It Means	You Type	You Will See	When You See	It Means	You Type	You Will See
{SC}	Screen Clear	SHIFT CLR/HOME	♥	{YL}	Yellow	CNTRL 8	Ⓜ
{HM}	Home	CLR/HOME	S	{OR}	Orange	COMMODORE 1	Ⓢ
{CU}	Cursor Up	SHIFT ↑ CRSR ↓	Ⓢ	{BR}	Brown	COMMODORE 2	Ⓡ
{CD}	Cursor Down	↑ CRSR ↓	Ⓢ	{LR}	Light Red	COMMODORE 3	Ⓡ
{CL}	Cursor Left	SHIFT ← CRSR →	Ⓢ	{G1}	Grey 1	COMMODORE 4	Ⓢ
{CR}	Cursor Right	← CRSR →	Ⓢ	{G2}	Grey 2	COMMODORE 5	Ⓢ
{SS}	Shifted Space	SHIFT space	■	{LG}	Light Green	COMMODORE 6	Ⓢ
{IN}	Insert	INST	Ⓢ	{LB}	Light Blue	COMMODORE 7	Ⓢ
{RV}	Reverse On	CNTRL 9	Ⓢ	{G3}	Grey 3	COMMODORE 8	Ⓢ
{RO}	Reverse Off	CNTRL 0	■	{F1}	Function 1	F 1	Ⓢ
{BK}	Black	CNTRL 1	■	{F2}	Function 2	F 2	Ⓢ
{WH}	White	CNTRL 2	Ⓢ	{F3}	Function 3	F 3	Ⓢ
{RD}	Red	CNTRL 3	Ⓢ	{F4}	Function 4	F 4	Ⓢ
{CY}	Cyan	CNTRL 4	Ⓢ	{F5}	Function 5	F 5	Ⓢ
{PU}	Purple	CNTRL 5	Ⓢ	{F6}	Function 6	F 6	Ⓢ
{GN}	Green	CNTRL 6	Ⓢ	{F7}	Function 7	F 7	Ⓢ
{BL}	Blue	CNTRL 7	Ⓢ	{F8}	Function 8	F 8	Ⓢ

BUG REPELLENT LINE CODES FOR VIC 20 BUG REPELLENT

```

LINE # 63000:HA      LINE # 63011:OI
LINE # 63001:EM      LINE # 63012:OI
LINE # 63002:CI      LINE # 63013:OE
LINE # 63003:LI      LINE # 63014:PI
LINE # 63004:IA      LINE # 63015:FA
LINE # 63005:MA      LINE # 63016:CA
LINE # 63006:GI      LINE # 63017:BM
LINE # 63007:MA      LINE # 63018:BE
LINE # 63008:EM      LINE # 63019:CM
LINE # 63009:II      LINE # 63020:KA
LINE # 63010:ME      LINES: 21

```

VIC CALCULATOR

From page 17

IMPORTANT

Before typing in an *Ahoy!* program, refer to the first two pages of the program listings section.

```

•10 REM VIC CALCULATOR
•20 REM J.WOYTON 12/83
•30 S=1:O$="+
•40 PRINTCHR$(147)"OP  CALC";TAB(1
3)CHR$(18)"MEMORY"CHR$(146):PRINT
•45 IFABS(A)<.01THENA=0
•46 IFABS(M)<.01THENM=0
•47 A=VAL(LEFT$(STR$(A),9)):M=VAL(
LEFT$(STR$(M),9))
•50 PRINT"= "A:IFM<>0THENPRINTTAB(1
1)CHR$(145)CHR$(18)MCHR$(146)
•60 PRINTO$;TAB(3)S+N$
•70 GETI$:IFI$=""THENI=0:GOTO70
•80 IFI$=""THENI$="+
•90 IFI$="+THENI=1
•100 IFI$="-THENI=2
•110 IFI$="*THENI=3
•120 IFI$="/THENI=4
•130 IFI$=CHR$(133)THENI=5
•140 IFI$=CHR$(134)THENI=6
•150 IFI$=CHR$(135)THENI=7
•160 IFI$=CHR$(139)THENI=8
•170 IFI$=CHR$(140)THENI=9
•180 IFI$=CHR$(136)THENI=10
•190 IFI$=CHR$(32)THENS=-S:I$="":I
=11
•195 GOTO490
•200 ONIGOSUB260,260,260,260,380,3
90,400,420,430,440
•210 IFS<0THENS$="-"
•220 IFS>0THENS$=""
•230 N$=N$+I$:N$=LEFT$(N$,8)
•240 PRINTCHR$(145)CHR$(145)CHR$(1
45)
•250 GOTO45
•260 IFN$=""THENOS=I$:I$="":RETURN
•270 IFO$="+THENO=1
•280 IFO$="-THENO=2
•290 IFO$="*THENO=3
•300 IFO$="/THENO=4
•310 N=VAL(S$+N$):N$="":S=1:O$=I$:
I$=""
•320 PRINTCHR$(17)
•330 ONOGOTO340,350,360,370
•340 A=A+N:RETURN
•350 A=A-N:RETURN
•360 A=A*N:RETURN
•370 A=A/N:RETURN
•380 M=M+A:M$="M+":GOTO450
•390 M=M-A:M$="M-":GOTO450
•400 IFM<0THENS=-S
•410 N$=STR$(ABS(M)):N$=MID$(N$,2,
8):M$="MR":GOTO450
•420 M=0:M$="MC":GOTO450
•430 A=0:N$="":M$="CC":S=1:O$="+":
GOTO450
•440 N$="":S=1:M$="CE"
•450 PRINTCHR$(145)"
"
•460 PRINTCHR$(145)M$CHR$(17)CHR$(
17)
•470 I$=""
•480 RETURN
•490 FORK=48TO57
•500 IFI$=CHR$(K)THENI=11
•510 NEXTK
•520 IFI$=CHR$(46)THENI=11
•530 IFI=0THEN70
•540 GOTO200

```

BUG REPELLENT LINE CODES FOR VIC CALCULATOR

```

LINE # 10:KA      LINE # 30:MA
LINE # 20:PM      LINE # 40:AE

```