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Editor and Publisher
Theodore W. Paul, Jr.

Associate Editor
Darlene M. Paul

Contributing Writers: Rush T. Caley, Jim DeStefano, Kraig Brockschmidt, Steve Wegert, Mike Dooley KE4PC, Bob van der Poel, Bill Brady, Randy Krippner, Nancy Ewart, Boisy Petre, Andrew Bartels

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FROM THE DESK OF...

Ted & Darlene Paul

Happy New Year! It's hard to believe that it's now 1989. Seems that it was just last week that it was June of 1987 when Darlene and I first decided that we should produce *CoCo Clipboard Magazine*. Time flies when you're having fun!

By the time you read this the Buffalo Bills might be heading for Miami and the Super Bowl. It seems like just yesterday that the Bills were here in Fredonia for training camp. The first of the year is also a time of reflection and renewed effort. We're just as affected as most of you and plan to effect some changes here at the magazine.

First - our in house staff will be increasing by 16% around the first of July. We will be adding a new staffer here in Fredonia. The exact duties of this new staffer have yet to be determined and a lot of on the job training will be required - as will a number of naps. Darlene and I are joyfully expecting our fourth little one!

Second - I've got to apologize to some of you who received their last issue rather late into December. We've been told several times by postal authorities that it should only take seven days to have a third class "flat" sent anywhere in the continental U.S.A. Even taking into account the holiday season we still are getting reports of incredibly late deliveries. We will be contacting a number of subscribers to act as control copy contacts. We will monitor the day the magazine is delivered and report this to our local postmaster. We might find that somebody in a distribution center is sitting on our magazines or that the seven day delivery time is just not accurate. You can help in this effort by contacting your local postmaster if you're not getting the magazine - or are missing issues - or if they're coming to you damaged. Give him or her a call and let them know if you're having a problem.

Third - A number of years ago Radio Shack published a "Store-Board" on the back of their monthly flyers. They also listed by state and locality the new stores which had opened. Starting with this issue we will begin to publish our subscription numbers and our dealer sales. We're proud of our growth and are not ashamed of letting you know how we are doing. Advertisers please note - our numbers are RISING ...

Fourth - We'd like to make *Clipboard* grow faster than ever in the next twelve months. Many of our advertisers have helped to spread the word about what we're doing in *Clipboard*. Many local clubs have helped us as well. To all of you we say thanks. We can't seem to crack the door all the way open however, to reach as many of you as we might. Ed Juge at Tandy has informed us that unless we reach a particular circulation point and have "slick" paper for our pages they cannot assist us in reaching Color Computer users. Naturally one has to ask the obvious - "How to you get to xx thousands without access to names and addresses and how can you get those names and addresses without those numbers to start with!" We've done a limited amount of advertising in Computer Shopper, The Gamers Connection, '73 Magazine and Dynamic Color News. All of these efforts have helped but now with Tandy's decision to allow Rainbow to place a free "sample" card in every CoCo (and apparently the Tandy PC's as well) we feel left out in the cold. So we will appeal to the 1000 readers we have to help us out!

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Finally let's look at this issue. Nancy Ewarts "Seec-ing C" column is on vacation for this issue. Nancy is involved in helping the Girl Scouts is her area publish a cook book and she is doing a great deal of work in preparation. Mike Dooley is back with a beam antenna project, Rush Caley is back with his "Downtime" column - you'll love it. Bob van der Poel has a Pot Pourri os Basic 09 ideas to share and a program update and Bosiy Pitre has the core program for a church database.

We received a letter just before we went to press that Andrew Bartels will no longer be able to write for us. Our thanks to Andrew for his past support of *Clipboard*.

A few of our other regulars are also missing from this edition, but they will be back in the spring.

In addition we've got a good number of product reviews including one on Sculptor by Ed Gresick. Ed's been working with Sculptor a little over two years and you might check the ad from Del-Mar Co. on ordering this powerful program.

Lastly, Jim DeStafeno in conjunction with several of our readers is starting a series of programs called CoCo Clipboard Business Management Systems. After hearing a lot of people say "Sure could use the CoCo for business - only wish there was some software.." we're going to do just that. CCBMS will run only on a CoCo 3 because of it's 80 column screen. While it will run on a 128k or 512k CoCo with at least one floppy, it is intended to run on a hard disk drive. These programs will be a "spine" or framework upon which you can add or modify to your needs. Your input and suggestions are welcome in the growth of this business management system.

Hope this gets you excited about the CoCo for '89. Enjoy, keep in touch and see you in March.

P.S. We've been working to update your address labels to show when your subscription expires. In some cases the date shown is one month PRIOR to the actual date. This was done so we could sort out subscribers whose subscription was about to expire and send them a notice. Please ignore a date that doesn't seem to make sense. If you have a question please feel free to give us a call at (716) 679-0126 from 9am to 9pm Monday thru Saturday.. If the phone answerer takes your call please leave a message.

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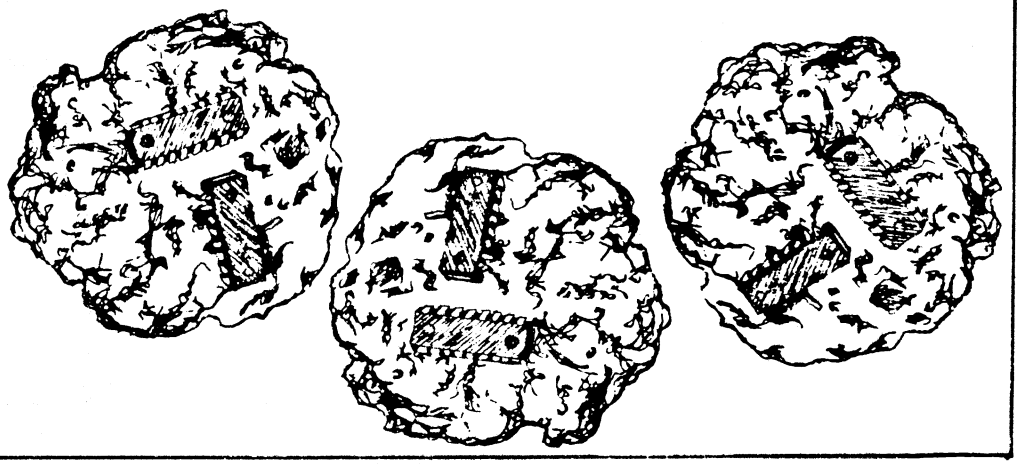

Basic 09 Pot Pourri

Bob van der Poel

This month I'm going to present a mixture of programming tips for all you Basic09ers. First off, a bug in Basic09! It's not all that serious, but if you're not aware of it (like I wasn't) then it can create some interesting effects.

PRINT USING can be used to great advantage in formatting screen layouts and reports. I'll let you read the manual to get the details, but one nice option is the ability to center a string. For example:

```
PRINT USING "s80^","Report Title"
```

will print "Report Title" on the center of an 80 column screen. However, the field width specifier (in this case 80) will be increased by Basic09 if extra leading/trailing spaces are needed for proper centering. This means that if both the field width specifier AND the string are even or odd everything works out fine, however if one is odd and one even then extra spaces are printed. If we change our text to "Reports" a total of 81 characters are printed--the final space is printed on the next line.

This caused me much head-scratching when I was writing a report generator which relied on PRINT USING. Extra lines kept popping into the report for no apparent reason. A fix? The only one I know of is to ensure that both the field specifier and variable match. Not a problem with constants (you just count), but with variables it's a tad more difficult. Here's solution I came up with:

```
INPUT A$
IF MOD(LEN(A$),2)=1 THEN A$=A$+" "\ENDIF
PRINT USING "s80^",A$;
PRINT "<<"
```

This routine simply checks to see if A$ has an odd length; if it does a space is added to it. Try the routine out on an 80 column screen. Leave out the second line and you'll see that the "<<" is printed in column 2 of the next line on inputs of odd length.

While we're discussing PRINT USING I want to share a little trick for printing repeating characters. If you are using Disk Extended BASIC and want to print a row of asterisks it's a simple matter to use something like this:

```
PRINT STRING$(50,'*')
```

Unfortunately Basic09 does not have a STRING$ command. Does this mean that we have to revert to:

```
FOR T=1 TO 50
PRINT "*";
NEXT T
PRINT
```

Well, this time PRINT USING is a friend. That's because you can use repeats in specifiers by enclosing the group to repeat with parentheses. I thought that:

```
PRINT USING "50('*')"
```

would do the trick. But it doesn't. That's because Basic09 stops processing a USING statement when all the parameters are used up. We have to be a bit tricky:

```
PRINT USING "50('*'),s0),""
```

This tells Basic09 to print the constant '*' 50 times, then to print a null string (the ""), using a field with of zero. Not only is this quicker (about twice as fast) than using a FOR/NEXT loop, it's also a bit more elegant. And if you don't want stars, then change the constant. You could of course use a two (or more) character constant to achieve even more interesting effects.

We'll leave PRINT USING for now, but don't ever forget about it. It can be a great tool--just be sure to play with the various specifiers for a while. Also, don't forget that you can end parameters with a semi-colon to suppress carriage returns. By printing a dummy string after the PRINT USING stuff you can see exactly how large a field is being used.

Recently I completed a fairly complex program to do the accounting on my stock and bond portfolio. (It's a shame that its value doesn't appreciate in relation to the amount of time I spend writing programs to keep track of it!) This program uses five random access files. Looking over the nearly complete code I found that there were tons of SEEKs, PUTs and GETs in the program--and most of them made no sense. On my first pass of cleaning up the code I changed the SEEKs so that it was obvious as to where in the file I was going. If I wanted to fetch the name of stock ten, I'd do something like this:

```
DIM Stockname:STRING[30]
DIM Sn:INTEGER
DIM Path:BYTE
```

Continued On

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```
.....

INPUT "Which number";Sn
SEEK #Path,(Sn-1)*SIZE(Stockname)
GET #Path,Stockname
PRINT Stockname
```

In this example the number of the stock (minus one) is multiplied by the size of the stocknames. So far so good. But the above code contains a very serious flaw! If you have more than 2184 stocks it won't work. Well, this isn't a problem for me, but in other applications using larger record sizes it becomes a problem very quickly. In the above example we have DIMed the variable "Sn" as an integer, and since the SIZE command also returns an integer the result of our multiplication will always be an integer. Even if the result of the operation is out of range for an integer, the truncated value will be passed to the SEEK command. Interesting results now happen. The quick fix is to change the expression so that is forced as a REAL. You could use either of the next two lines:

```
SEEK #Path,FLOAT(Sn-1)*SIZE(Stockname)

or  SEEK #Path,(Sn-1.)*SIZE(Stockname)
```

Even though the first line is a bit longer, I prefer it for it's clarity. However, the command is still quite long--and still not all that clear. As much as I dislike Disk Extended BASIC I was really starting to miss the simplicity of GET #1,SN.

The solution seemed to call for a generic GET/PUT routine. I'll spare you a list of the false starts (believe it, even in something this simple there are problems). Here are my routines:

```
PROCEDURE Rget

PARAM Path:BYTE
PARAM RecordNumber:INTEGER
PARAM Variable:STRING[5000]
SEEK
#Path,(RecordNumber-1)*FLOAT(SIZE(Variable))
GET #Path,Variable
END

PROCEDURE Rput

PARAM Path:BYTE
PARAM RecordNumber:INTEGER
PARAM Variable:STRING[5000]
SEEK
#Path,(RecordNumber-1)*FLOAT(SIZE(Variable))
PUT #Path,Variable
END
```

If you study the PARAMs you may be puzzled by the STRING[5000]. And why a string? Wouldn't we be using complex variables in applications?

Well, all this is possible because of the manner in which Basic09 procedures are linked together. The new routine does not know what kinds of variables are being passed to it. It only knows how many, where they are and how large each one is. In Rput and Rget we use the STRING[5000] PARAM to set up a maximum length. Note that this trick only works when setting STRING PARAMs. It doesn't work with REALs, etc. The beauty of this scheme is that SIZE(Variable) returns the size of the variable in the RUN statement, not 5000. Of course if you are using records larger than 5000 bytes (very unlikly) you'll have to make a small change.

To use Rput or Rget simply define your variables (use TYPE, etc.), open the needed files then do something like:

```
RUN Rget(FilePath, RecordNumber,
Complextype)
```

Just make sure that FilePath is a BYTE variable and RecordNumber is an INTEGER.

Bugs in dates. Yes, sometimes we don't do enough testing before sharing a new program. That's what happened in the DayOfYear routine presented a couple of issues ago. It appears that the Fortran machine the original algorithm was tested on either used 32 bit integers or 16 bit unsigned ones. However, Basic09 supports neither of these. When certain parts of the expression were multiplied negative results occurred. Here's a revamped (and retested) version:

```
PROCEDURE DayOfYear

PARAM Date,Month,Year,DayNumber:REAL
DIM t:REAL
DIM I,J,K:INTEGER
I=Year
J=Month
K=Date
```

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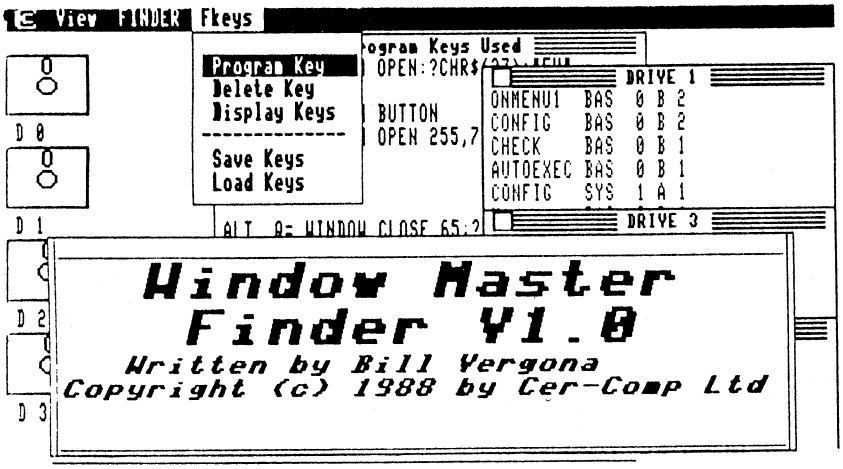

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Window Master adds a powerful new programming feature to Basic that enables you to do "Real Time" Programming in Basic. It's called Event Trapping, and it allows a program to detect and respond to certain "events" as they occur. You can trap Dialog activity, Time passage, Menu Selections, Keyboard activity and Mouse Activity with simple On Gosub statements, and when the specified event occurs, program control is automatically routed to the event handling routine, just like a Basic Gosub. After servicing the event, the sub-routine executes a Return statement and the program resumes execution at the statement where the event occured.

Enhanced Editing Features

Window Master adds an enhanced editor to Basic that allows you to see what you edit. It allows you to insert & delete by character or word, move left or right a word or character at a time, move to begin or end of line. toggle automatic insert on/off or just type over to replace characters. The editor can also recall the last line entered or edited with a single key stroke. You can even change the line number in line to copy it to a new location in the program.

Window Master Features

Multiple Windows

Window Master supports multiple window displays with up to a maximum of 31 windows on the screen. Overlapping windows are supported, and any window can be made active or brought to the top of the screen. Windows can be picked up and moved anywhere on the screen with the mouse. There are 6 different Window styles to choose from and the window text, border and background color is selectable.

Pull Down Menus

Menus are completely programmable with up to 16 menus available. They can be added or deleted at any time in a program. Menu items can be enabled, disabled, checked or cleared easily under program control. Menu selection is automatically handled by Window Master & all you have to do is read a function variable to find out which menu was selected.

Buttons, Icons & Edit Fields

Each Window can have up to 128 buttons, Icons or Edit fields active, if you can fit that many. Buttons, Icons and Edit field selection is handled automatically by Window Master when the mouse is clicked on one. All you have to do is read a Dialog function to find out which Button, Icon, or Edit field was selected, its very simple.

Mouse & Keyboard Functions

Window Master automatically handles the Mouse pointer movement, display and button clicks. It will tell you the current screen coordinate, the local window coordinate, window number the mouse is in, the number of times the button was pressed, which window number it was clicked in and more. The Keyboard is completely buffered, and supports up to 80 programmable Function keys that can contain any kind of information or command sequences you can imagine. You can load and save function key sets at any time. So, you can have special sets of function keys for different tasks. The "Ctrl" key is supported so that you have a full control code keyboard available.

Window Master Applications

Window Master pushs the Color Computer 3 far beyond its normal capabilities, into the world of a "User Friendly" operating enviornment. We are already planning several new programs for use with Window Master. So you don't have to worry about having to write all your own programs. And don't forget that many existing Basic and M.L. programs will run under Window Master with little or no changes. The Possibilities for Application programs are endless: Spread Sheets, Word Processing, Communications, Education, Games, Graphic Design, Desk Top Publishing and on and on.

Hardware Requirements

Window Master requires 512K of memory, at least 1 Disk Drive, a Hi-Res Joystick Interface and a Mouse or Joystick.

Technical Assistance

If you run into difficulty trying to use some of Window Master's features, we will be happy to assist you in any way possible. You can write to us at the address below or call us between 10am and 2pm Pacific Standard Time for a more timely response. Sorry, no collect calls will be accepted.

Ordering Information

To order WINDOW MASTER by mail, send check or money order for $69.95, plus $3.00 for shipping & handling to the address below. To order by VISA, MASTERCARD or COD call us at (702)-452-0632
(Monday thru Saturday, 8am to 5pm PST)

CER-COMP Ltd.
5566 Ricochet Avenue
Las Vegas, Nevada 89110
(702)-452-0632

Continued From 10

```
DayNumber=INT(INT(3055.*(J+2))/100)-(J+10)/13
*2-91
   +(1-(I-I/4*4+3 )/4+(I-I/100*100+99)/100
   -(I-I/400*400+399)/400)*(J+10)/13+K
```

Note the dot after the constant "3055". This forces this part of the expression to be evaluated as a real, rather than an integer. The nested INTs are needed to achieved integer rounding--upon which this routine depends (it will not work if we change the variables to REALs).

Finally, this months listing. BVARS is a Basic09 program which lists out all the variables used in another in Basic09 program. It does this by examining the variable table which is maintained in memory for each program. BVARS is quite useful in locating those variables not DIMed in your program. Since all arrays; BOOLEAN, INTEGER and BYTE variables; and complex structures must be DIMed (or set as a PARAM) that only leaves us with REAL and STRING variables to check.

Having undeclared variables in your program can create two problems. First, it takes much longer for Basic09 to re-compile the program after a load or edit. Second, using undeclared REALs where INTEGERs can have a significant effect on program speed. Here's a quick example of the speed difference:

```
PROCEDURE SpeedTest

FOR T=1 TO 9000
NEXT T
```

RUN this program and time it. Now insert a DIM T:INTEGER statement and do it again. I get about 6 seconds for the REAL loop vrs. 1.5 for the INTEGER--quite a difference!

When using BVARS make sure that you have lots of memory. The Variables() array chews up quite a bit of memory. Depending on your system, the size of the program being referenced and the size of the variables being used you may want to change the array size from 200 or Vname from 40.

As always, your cards and letters are welcome. Let us know what kinds of Basic09 programs you are writing, what new tricks have you learned, and what problems are you having. In the next issue we're going to see how simple assembly language routines can work with your Basic09 programs.

```
PROCEDURE BVars
0000      (* BVARS: a basic09 variable lister.
0001      (* (C) 1987, Bob van der Poel
0025      (* This version released to public domain for
0042      (* non-commercial use only.
006F
008A      DIM Types(8),Used(5):STRING[10]
008B      DIM Tablend,DirPtr,NumVars,ProcPtr,T,I,Limit:INTEGER
00A5      DIM Char,Path:BYTE
00C4      DIM ProcNam,Temp,Temp1:STRING[100]
00CF
00E3      TYPE VT=VName:STRING[40]; VType:BYTE
00E4      DIM Variables(200),Tempvar:VT
00FA
010C      (* Initialize the variable type strings.
010D
0135      FOR T=1 TO 8
0136        READ Types(T)
0146      NEXT T
014F
015A      FOR T=1 TO 5
015B        READ Used(T)
016B      NEXT T
0174
017F      DATA "BYTE","INTEGER","REAL","BOOLEAN"
0180        ,"STRING","DEFINED","?","?"
01C1      DATA CHR$($20)+"typedeclr",CHR$($40)+"typename"
            ,CHR$($60)+"variable",CHR$($80)+"parameter"
            ,CHR$($A0)+"Procname"
0217
0218      (* talk to user.
0228
0229      PRINT
022B      PRINT "BASIC09 Variable Lister."
0247      PRINT
0249      PRINT "(C) 1987, Bob van der Poel"
0267      PRINT "17435-57 Avenue, Edmonton"
0284      PRINT "Alberta,  Canada T6M 1E1"
02A0      PRINT
02A2      PRINT
02A4      INPUT "Enter procedure name: ",ProcNam
02C2      T=ADDR(ProcNam)
02CC      GOSUB 1000 \(* convert to uppercase
02E7
02EB      (* find the start of the module directory
0311
0312      DirPtr=PEEK($04)*256+PEEK($05)
0324
0325      REPEAT
0327        ProcPtr=PEEK(DirPtr)*256+PEEK(DirPtr+1)
033C        DirPtr=DirPtr+2
0347
0348        IF ProcPtr=0 THEN
0354          PRINT "Unable to find "; ProcNam
036B          END
036D        ENDIF
036F
0370        IF PEEK(ProcPtr)<>$87 OR PEEK(ProcPtr+1)<>$CD THEN
038A          PRINT "Invalid module header."
03A4          END
03A6        ENDIF
03A8
03A9        (* point T to name of this procedure
03CD
03CE        T=ProcPtr+(PEEK(ProcPtr+4)*256+PEEK(ProcPtr+5))
```

GOT THOSE "Compatibility Blues?"

You're not alone. Many Color Computer users have experienced the frustration of buying a cheap imitation of our Hard Drive Basic and then discovering that their favorite programs *no longer work*!

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- Works with the LR-TECH, DISTO & KEN-TON Hard Disk Interfaces
- NO extra RAM used or extra tokens added. FULLY COMPATIBLE with The Color Computer 1, 2 OR 3 WITHOUT MODIFICATION
- Easily Affordable. The RGB-DOS System Disk with Users Manual is only $29.95 plus $3.00 shipping & handling

Don't wait! ***Supercharge*** your Color Computer TODAY . . . with RGB-DOS!

RGB COMPUTER SYSTEMS

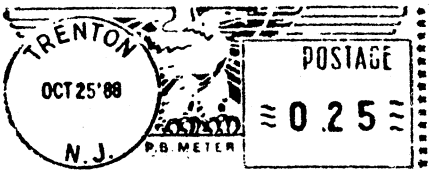
294 STILLWELL AVE.
KENMORE, NY 14217

(716) 876-7538

```
073A
073B 500
073F        (* This subroutine prints out the sorted list to PATH.
0775        (* First time PATH always =1 , stdout. 2nd time it may
07AB        (* be reset to the printer or disk file, etc.
07D8
07D9        PRINT #Path
07DF
07E0        FOR I=1 TO NumVars
07F1          Temp=Types(LAND(Variables(I).VType,$07)+1)
0809          Temp1="?"
0811
0812          FOR T=1 TO 5
0822
0823            IF LAND(Variables(I).VType,$F0)=ASC(LEFT$(Used(T),1))
THEN
0841              Temp1=MID$(Used(T),2,20)
0851            ENDIF
0853
0854          NEXT T
085F
0860          PRINT #Path,Variables(I).VName;
0871
0872          IF LAND(Variables(I).VType,$08)>0 THEN
0888            PRINT #Path,"()";
0894          ENDIF
0896
0897          IF Temp1="Procname" THEN
08AB            PRINT #Path,"",Temp1
08B8          ELSE
08BC            PRINT #Path,"",Temp; " "; Temp1
08D1          ENDIF
08D3
08D4        NEXT I
08DF
08E0        RETURN
08E2
08E3
08E4 1000
08E8        (* convert string to uppercase. T=start in memory
0919
091A        REPEAT
091C          Char=PEEK(T)
0925
0926          IF Char>=$60 AND Char<$7B THEN
093B            POKE T,Char-$20
0948          ENDIF
094A
094B          T=T+1
0956        UNTIL Char=$FF
0962
0963        RETURN
0965
0966
0967 2000
096B        (* transfer string in memory ending with msb set
099B        (* to temp.
09A6
09A7        Temp=""
09AE
09AF        REPEAT
09B1          Char=PEEK(T)
09BA          Temp=Temp+CHR$(LAND($7F,Char))
09CB          T=T+1
09D6        UNTIL Char>$7F
09E2        RETURN
```

```
03EA          GOSUB 2000 \(* parse off name
03FF          T=ADDR(Temp)
0409          GOSUB 1000 \(* convert to uppercase
0424        UNTIL Temp=ProcNam
0430
0431        (* If we get here we've found the specified program!
0465
0466        IF PEEK(ProcPtr+$06)<>0 THEN
0477          PRINT "Not an unpacked BASIC09 procedure."
049D          PRINT
049F          END
04A1        ENDIF
04A3
04A4        (* point T to start of variable name table
04CE
04CF        T=ProcPtr+(PEEK(ProcPtr+$0D)*256+PEEK(ProcPtr+$0E))
04ED        Tablend=ProcPtr+(PEEK(ProcPtr+$02)*256+PEEK(ProcPtr+$03))
050B
050C        (* now parse out all the names in the nametable at the end
0546        (* of the procedure.
055A
055B        NumVars=0
0562
0563        WHILE T<Tablend DO
0570          NumVars=NumVars+1
057B          Variables(NumVars).VType=PEEK(T)
058B          T=T+3
0596          GOSUB 2000
059A          Variables(NumVars).VName=Temp
05A9        ENDWHILE
05AD
05AE        (* quick and dirty bubble sort -- please forgive me!!
05E3
05E4        PRINT "Sorting";
05F0        FOR Limit=NumVars TO 2 STEP -1
0607          FOR I=1 TO Limit-1
061B            PRINT ".";
0621
0622            IF Variables(I).VName>Variables(I+1).VName THEN
063E              Tempvar=Variables(I)
0649              Variables(I)=Variables(I+1)
065B              Variables(I+1)=Tempvar
066A            ENDIF
066C          NEXT I
0677        NEXT Limit
0682
0683        (* Report what we've found out.
06A2
06A3        PRINT
06A5        Path=1
06AC        GOSUB 500
06B0        PRINT
06B2        PRINT "Do you wish a printout? ";
06CF        GET #0,Path
06D8        PRINT
06DA        IF Path=ASC("Y") OR Path=ASC("y") THEN
06F1          OPEN #Path,"/p":WRITE
06FE          PRINT #Path,"Variable list for "; ProcNam
071D          PRINT #Path,DATE$
0725          PRINT #Path
072B          GOSUB 500
072F          CLOSE #Path
0735        ENDIF
0737        END
0739
```

Reader Mail



Dear Clipboard:

I would like to report two problems encountered with Color Computer disk drives. The first problem involves drive motors and was announced by Dr. Marty Goodman. Because of it's importance I wish to restate the problem. WHEN ANY DRIVE IS ACCESSED ALL DRIVE MOTORS SHOULD BE RUNNING.

It seems, from our customers feedback, that many brands of dual drives are in need of a wiring change described in Dr. Goodmans article. If a user has more than a single disk drive he or she should perform the following steps to see i his or her drives ar wired properly.

1. Open all drive doors and remove all disks from the drives.

2. Turn computer on and type DIR and press ENTER.

3. While the 1st drive motor is spinning check to see that ALL OTHER drive motors are spinning.

If all drive motors are spinning then your disk drives are wired properly.

If only the 1st drive motor is spinning then your other drives are IMPROPERLY wired. Contact the store where you purchased the drives to have them properly wired.

There seems to be another REAL potential for trouble using odified Disk Operating Systems (DOS) ROMS and Double Sided drives set up as follows.

Drive 0 front as drive 0; back as drive 2
Drive 1 front as drive 1; back as drive 3

The trouble is a MIS-READ of data on the disk and seems to stem from the way in whcih the head position of each drive is kept track of. The DOS can either use a 2 byte or 4 byte head position table for this purpose.

The following BASIC program will allow a double side drive user to determine the way their DOS handles the drive table. Type it in and insert a scratch disk, formatted on both sides, into drive 0 and run the program.

Listing 1

```
10 POKE 2430,0:'DRIVE 0 HEAD POS
20 POKE 2431,0:'DRIVE 1 HEAD POS
30 POKE 2432,0:'DRIVE 2 HEAD POS
40 POKE 2433,0:'DRIVE 3 HEAD POS
50 PRINT"INSERT SCRATCH DISK FORMATTED ON
   BOTH SIDES (DRIVE 0 AND 2)"
60 PRINT"THEN PRESS ANY KEY"
70 A$=INKEY$: IF A$=""THEN70
80 DIR0:'READ DRIVE 0 DIRECTORY
90 DIR2:'READ DRIVE 2 DIRECTORY
100 PRINT
110 IF (PEEK(2432)) = 17 THEN PRINT"4 BYTE
HEAD TABLE":END
120 IF (PEEK(2432)) = 0 THEN PRINT"2 BYTE
HEAD TABLE":END
```

The trouble seems to occur if a 4 byte table is used with double sided drives. The correct way to keep track of a double sided disk drive's head is to have one byte per drive representing both sides as opposed to 2 bytes per drive, one byte representing each side. Since the heads of a double sided drive move together that will always be in the same position. Therefore, only 1 byte is needed to represent both heads.

If you have a 4 byte head table, program listing 2 will indicate if the mis-read trouble occurs with your DOS or not. Type it in and insert a scratch disk, formatted on both sides into drive 0 and run the program.

Listing 2

```
10 CLEAR 1000
20 PRINT"INSERT SCRATCH DISK FORMATTED ON
BOTH SIDES (DRIVE 0 AND 2)"
30 PRINT"THEN PRESS ANY KEY"
40 PRINT
50 A$=INKEY$: IF A$="" THEN 50
60 A$="READS OK!"
70 DSKO$ 2,17,1,A$,B$
80 A$="READ BAD!"
90 DSKO$ 2,0,1,A$,B4
100 DSKI$ 2,34,1,A$,B$
110 DSKI$ 0,1,1,A$,B$
120 DSKI$ 2,17,1,A$,B$
130 PRINT A$
```

The program writes the word "RAED OK!" on drive 2, track 17, and writes the words "READ BAD!" on drive 2 track 0. It then reads drive 22 track 34 followed by drive 0, track 1. Finally it attempts to read the data stored on drive 2 track 17. If the DOS is working properly the words "READ OK!", stored on track 17, should appear. If the words

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"READ BAD!", stored on track 0, appear there is a serious problem with the DOS using double sided drives.

This mis-read trouble was discovered when a user sent us a set of VIP Database data disks which spanned across 2 double sided drives. When the VIP Database searched for a file that was on the back side of drive 0 (drive 2) the file was not found. He was using a DOS ROM he bought from a well known Color Computer disk drive vendor (not Radio Shack).

The mis-read can be duplicated if you have a CoCo 3 and RSDOS 1.1 or 2.1 and double sided drives set up as outlined above. Poke the following locations to enable the double sided drives. Format a disk on both sides (DSKINI0 and DSKINI2). Them run listing 2 and watch it fail for yourself.

```
POKE 55453,1
POKE 55454,2
POKE 55455,65
POKE 55456,66
```

The cure was found when we tried the disks using RGB-DOS from RGB Computer Systems. RGB-DOS uses a 2 byte head table instead of a 4 byte head table and does NOT fail the mis-read test. If your DOS fails,you should contact the supplier and request an updated DOS ROM which will not fail the above test.

Other double sided drive configurations may also fail in a similar manner, but until the cause is found and cured these double sided drive users cannot be assured of proper disk operatons.

Paul Anderson
SD Enterprises

Dear Clipboard:

I have just received your letter and flyer. I am very pleased to discover that there is another publication covering the CoCo.

I am not interested in computer games. I have had a CoCo 2 since 1984 and had done quite a bit of hardware modification on it. In November of 1987, I purchased a CoCo 3 and installed a Performance Peripherals 512k upgrade. My system also includes a DMP 200 printer, 2 FD502 disk drives, a a Disto Super Controller, an upgraded Multi-Pak and an RGB Monitor.

I have learned enough about the OS9 Level II system to make my own modified system disks. My two most useful OS9 software packages are Screen Star and DynaCalc. While you may not be interested in individual systems, I have included this information in the event you would like to know what type of equipment your readers have.

Enclosed find payment for a 2 year subscription and payment for 5 back issues.

Harold J. Conner
Manassas, VA

Dear Harold:

Always glad to hear from our readers and hear about their growing CoCo systems. Feel free to keep us informed on what you're doing!

Dear Clipboard:

Hi! I've been hearing about your magazine for some months now, and all of it has been good. Rainbow Magazine has been a great source of information about my computer, and I've learned a great deal since subscribing to it several years ago. Since I upgraded to a 512K CoCo 3 with OS-9 Level II, I find that I get less and less out of the magazine than I used to.

From what I've heard of CoCo Clipboard you seem to cater to the more serious user and I'd like to think that I am one. I also think competition wouldn't do any harm to Rainbow. Who knows it might even improve it. I wish I could hang around CIS more often because I'd like to get in on one of the conferences that you are always sponsoring. Maybe someday.

I'd like to take a chance on your magazine and would like to enter my subscription for 6 issues. Enclosed is a check for $15.00 which I believe is the current subscription rate.

Sal Morreale
CIS: 73767,70
Sante Fe, NM

Dear Sal:

Thanks for the support and we hope to see you in one of our CompuServe conferences soon!

Dear Clipboard:

Thanks for forwarding my last letter to Bob van der Poel, concerning my troubles with building a bootlist for use with MultiVue. He wrote back (much to my surprise!) with most of the answers I was looking for. (He thoughfully left SOME things out, knowing fully, that some things a person just has to learn for himself). It still took me longer than (his hour) to build just what I needed, but now I have a much better understanding of the MultiVue and OS9 systems.

Joseph T. Arntz
Poughkeepsie, NY

Dear Joe:

Glad to help out!

Dear Clipboard:

I just had to let you know how pleased I was with two programs I ordered from RainyDay Software through an ad in your magazine (to which I am a happy new subscriber), Graffind and Electronic Photo Album. What fun it was

Continued On 28

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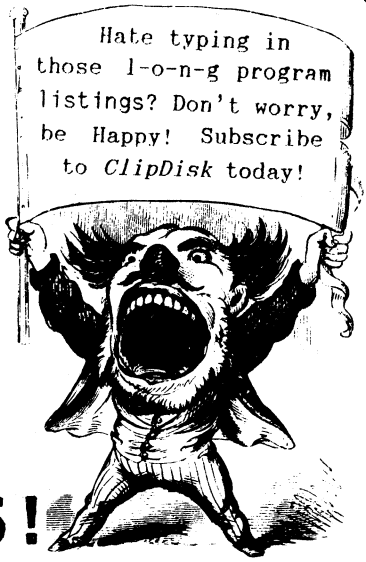
PRESENTS

ClipDisk



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CoCo Clipboard Magazine

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CoCo Clipboard Magazine
Reader Survey

We'd appreciate hearing from you about *CoCo Clipboard.* You can send in this sheet, or better yet just make a photocopy and send it in filled out. Knowing about you and what you'd like to see in our pages really helps us out. Our thanks in advance.

Age: _____ Under 20
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_____ 36 to 50
_____ 51 to 65
_____ 65 and over

Sex: _____ Male / _____ Female

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_____ Junior college
_____ College grad.
_____ Post grad

Occpation: _____ professional
_____ business
_____ educators
_____ students

Income: _____ 10,000 to 20,000
_____ 21,000 to 30,000
_____ 31,000 to 40,000
_____ over 41,000

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What improvments to *Clipboard* would you like to see?

_____

_____

Thank you for your help. The first 200 people responding to the survey will receive a free blank disk in the mail as our token of appreciation.

Product Reviews

Review Crew

ADOS-3
SpectroSystems
11111 N. Kendall Drive, Suite A108
Miami FL 33176
(305)274-3899

Pgm. Type: Alternate CoCo DOS software (EPROM burnable)
Requires : 128K CoCo3 + disk
Price : $34.95 + $2 S/H

By Donald Ricketts

If there is one thing that I consider indespensible to the CoCo disk system owner, besides lots of disks, it is ADOS-3. The added commands and enhancements will have you grinning ear-to-ear for a very long time. Once you have used this gem, you will honestly wonder how you could have gotten along without it, or be kicking yourself for not having gotten it sooner!

ADOS-3 comes on a disk as software which can be customized to fit your needs, then you can use it as a disk utility, or have it burned into an EPROM, which you would put in your disk controller, replacing the Radio Shack DOS that is socketed there. Specto Systems can not burn an EPROM for you, but they do provide information on how to get it done.

The customizing is done by editing a BASIC program contained on the ADOS-3 disk. This program is REMarked so well that the customizing could be done with no documentation, although the original ADOS manual is provided, as well as a 4-page ADOS-3 supplement. A few of the alterable features are boot-up screen colors, screen width, 35, 40 or 80 track (single or double-sided) drives, drive step rates, fast or slow processor speeds, printer baud rate, boot-up logo, control, or macro key definitions.

You can customize your screen to come up in 32, 40 or 80 columns. The colors can also be altered. When using ADOS-3 as a disk utility, the width and colors are retained on a warm reset. With it burned into an EPROM, a warm reset or cold start defaults to the width and colors you have chosen. You can also customize the logo that pops up, with your name for instance. This is touted as a form of theft protection, but it's also just plain neat to see your name up there! If your ADOS-3 is burned into an EPROM, your name (or whatever) pops onto the screen as soon as your CoCo is turned on.

A super time-saver is the control key macros for most-used commands or functions. Many are already set up, but they are easily. Virtually any key can be assigned a command. However, you are limited to a certain number of characters total for all your commands, so don't get carried away. A couple of examples of the defaults in ADOS-3 are; CTRL-R sends 'RUN"'; CTRL-L sends 'LIST', etc.

Some of the commands include RUNM, which loads AND executes machine language programs, FAST, which puts you in the high-speed mode, SLOW to return to normal speed, PRT ON which sends screen text to your printer also, and of course, PRT OFF shuts off that feature. The DOS command is also included, for OS9 and other program disks that use that feature. There is a SCAN (and SCANP) which can be used either of two ways; to get the start, end and execute addresses of a machine language disk file; or to list an ASCII disk file to your screen. Using the P suffix will route the output to your printer at the same time. The DIR command is complimented with a DIRP, sending the directory to the printer for quickie directory printouts. The CAT and CATP command list the directory in two columns, giving the filename and number of granules it uses on the disk. The P suffix performs as above. All the DIR and CAT commands give you the number of free granules on your disk at the end of the list, with or without a pause to continue. The pause is configurable.

ADOS-3 accepts all input in lowercase as well as uppercase. When using lowercase, file names are converted to uppercase before a file is saved to disk. In the 32-column mode, true lowercase is used on the CoCo3, instead of that terrible inverse-character business.

A great feature of ADOS-3 is the ability to repeat and/or edit the last direct statement typed in, with a '/ - ENTER.' Doing this brings up the last statement you typed in. Pressing ENTER again would enter it just as if you had typed it all in again and hit ENTER, or you can edit the statement like a BASIC program line, using any of the EDIT commands, then press ENTER to send it on through. When writing a BASIC program, you can use this command to change the line number, in effect copying the line to another point in the program.

Another editing feature you will like is that when a BASIC program crashes, pressing the rightarrow puts you in the EDIT mode on the line which contained the error. An especially nice feature is the use of the F2

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key to end the insert mode when editing a line, a big improvement over SHIFT-UPARROW.

Full control over scrolling through a BASIC program is made possible with the up and down arrow keys. Instead of using the LIST command, you can press the down arrow and hold it down to list as far as you like. Let up on the key and it stops. The up arrow lists backwards, if you went too far for instance. Pressing the rightarrow puts you in the EDIT mode on the last line listed.

For those who like to PEEK and POKE, or need to find out the contents of a particular memory location quickly can use the MON command. This lets you look at any memory location, and change it if you wish. Pressing the down arrow and holding it scrolls through memory from the point you started at and the up arrow scrolls backward from the point you are at.

One of the greatest features of ADOS-3 on a CoCo3 is its ability to perform flawless disk I/O when the computer is in the 1.8mz, or high-speed mode. Depending on what you are saving or loading, it can speed up the process anywhere from 50-400% - great for saving large programs!

COPYing a file from one drive to another is a LOT simpler now - instead of having to 'COPY "filename.ext:0" TO "filename.ext:1"' you can just 'COPY "filename.ext" TO 1' and if you are copying a file to the same drive (or another drive) under a different name, the extension is not required on the copied filename, as ADOS-3 assigns it itself. This feature is also available with the RENAME command. If you are copying or renaming a file to a name that already exists, you have the option to write over the original file instead of being dumped out with an ?AE ERROR.

CoCo3 owners using monochrome composite monitors will be pleased to find they can kill the colorburst signal with a CTRL-F2. Hitting CTRL-F2 again re-enables the signal. The F2 key can also be assigned as your CLEAR key as well.

If you have a CoCo1 or 2, ADOS-3 in an EPROM will still work with your system, but a CoCo3 is needed to realize the full benefits. ADOS-3 is compatible with virtually all CoCo software. If you should bump into something that won't run, there is the DISABLE command, which usually does the trick, disabling all the new commands and making ADOS-3 more like RSDOS. I have not found anything that simply would not run.

I would love to go on about ADOS-3, but space is limited. This is the most useful product for the CoCo I have seen to date. It makes life a lot easier and increases your abilities enormously. My feeling is you're getting much more than you're paying for at their $34.95 price and most vigorously recommend ADOS-3 to anyone with a CoCo and disk drive. You'll find it irresistible!

Business Writer
TCE Software
P.O. Box 2477
Gaithersburg, MD 20879

Pgm. Type: Word Processor
Requires : 64K Coco 2, 128K Coco 3, disk drive
Price : $89.95

Reviewed by Rush T. Caley

I've been asked to keep this short. Consequently, this will be more of an overview than an in-depth feature by feature look at BUSINESS WRITER. To begin with, BW is an extremely fast all machine language program. To speed things up even more, BW lets you shift into the Coco 2 or Coco 3 high speed modes with a click of the mouse.

BW's interface gives the CoCo the "MAC" like appearance, and was the first of its kind on the market. Replete with all the windows, drapes and click down menus, BW has a mouse-based interface, and requires joystick or mouse for selecton of text. However, for nearly every mouse-driven command there is a corresponding keyboard command that will accomplish the task and satisfy even the most stubborn "keyboard dinosaur".

Because the program is so unlike any word processor on the market, I'll concentrate on describing the concepts that make BUSINESS WRITER so unique. The first and most important generational leap made by TCE is in the area of formatting. There is no more need to memorize and format using symbolic control key or "dot" commands. With BW you concentrate on your DOCUMENT, not the formatting! BW is also a "What You See Is What You Get" word processor. You SEE all margins, indents, underline, centering, and justification ON SCREEN! All you do is type.

All of this "clickety magic" is possible due to BUSINESS WRITER's unique "Flexi-Rule" formatting. (A term I coined myself to describe it.) With a keystroke or mouse click, you can pop in a formatting ruler. With the click of the mouse, you can dynamically change paragraph indentation, right and left margins, or set text to ragged edge, centered, or fill justified. When you change these values, the screen instantly displays the new formatting.

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Other than their obvious useful attributes within the word processor, the reason that the NOTEPADS are so important is that they

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```
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July 11, 1988   14:37:30

Shell

OS9: xmode /w5 type=0
OS9: iniz /w5
OS9: rsb <>>>/w5 &
&007
```

CLEAR

```
RSB COPR. 1988 BURKE & BURKE
DISK EXTENDED COLOR BASIC 2.1
COPR. 1982, 1986 BY TANDY
UNDER LICENSE FROM MICROSOFT
AND MICROWARE SYSTEMS CORP.

OK
LOAD "DEMO"
OK
LIST
10 PMODE 4:SCREEN 1,1
20  X=RND(256)-1:Y=RND(192)-1
30  XS=RND(256-X)-1:YS=RND(192-Y)-1
40 LINE (X,Y)-(X+XS,Y+YS),PSET,BF
```

CLEAR

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Our R.S.B. software creates a complete, OS9-compatible version of Disk Extended Color BASIC by reading your CoCo's ROM chips. Burke & Burke has added new software to give you OS9-style graphics, sound, printer, and disk I/O. Of course, you can't use R.S.B. to run machine language programs, and some BASIC commands work slightly differently under R.S.B.

R.S.B. loads and saves files using OS9's file format, so we've also included utilities to transfer BASIC programs and data files between OS9 and BASIC disks. Your BASIC programs can take advantage of great OS9 features like hard disks, no-halt floppies, multi-tasking, and 2 MHz operation.

You must have a CoCo 3 with at least 128K RAM, and a floppy controller with Disk Extended Color BASIC 1.0, 1.1, 2.0, or 2.1 ROM, or CoCo 3 CDOS ROM, to use R.S.B.

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Our sincere thanks, too, go out to the magazine publishers, SIG / BBS operators, club officers, and Color Computer dealers who have provided us with the means to promote, demonstrate, or support our products.

Thank You!

and Season's Greetings

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are the key component to TCE's design of true program integration. Pieces of TCE spread sheets or TCE database files can be cut and pasted and moved to documents via the NOTE PADS.

In addition to the notepads, BUSINESS WRITER also has a window containing 5 "scratch pads". Each allows 256 characters, and information stored there can be instantly popped up to be examined, edited or placed in the text at the position of the cursor. These are extremely handy for a variety of uses such as standard letter salutations and complimentary close, document headers and footers, program subroutines, or just random notes.

"PICKY-PICKY-PICKY"

These are a few observations concerning program operation that are not mentioned in the documentaton about which the user needs to be aware. This is true especially if one has used an alternate word processor previously. Without going into the minute technical details, BW contains what amounts to its its own operating system and allocates information to the disk differently than a normal CoCo program. It does, however, result in the fact that more files fit on the disk.

One problem occurs when you try to use the COPY command from BASIC. It results in portions of the file being lost. However, this does not affect the BACKUP command which works normally. The user of BUSINESS WRITER should keep two tips in mind: First, it is wiser to store only BW files on a disk where others will reside; and secondly, always use BW's DUPLICATE FILE option from the program or the BACKUP command of BASIC to copy files.

Another problem can come up in relation to conversion of old Word Processing files to BW format. The process to make it successful is somewhat tedious. I had 7 years of Telewriter 64 files; and when I was converted to the fabulous world of BUSINESS WRITER, I only converted what I considered to be critical files. Bob van der Poel was kind enough to write a conversion program that made the task easier. But in truth, for all but critical files conversion will not be necessary. (A conversion process is not necessary in all cases. VIP Writer files, for example, require only that they be renamed to add a ".TCE" extension to the filename. R.K.)

Finally, I would like to bring up the subject of product support. TCE programs is unrivaled in this area. First, there is an 800 toll free number you can call for information or program support. Although Business Writer is copy protected, it is sent to you with two grand disks. If you have a problem that requires you to return your disk, you are not left high and dry while waiting for a new version.

Furthermore, TCE products are all upwardly compatible. If you had previously purchased TCE WRITER or CHILD WRITER, all of those files can be read by BUSINESS WRITER; and all you would pay is an upgrade fee. Even more unusual is that if you decide to abandon the CoCo for a PC COMPATIBLE, you can easily upgrade to the MS-DOS version. Lastly, and probably the best feature of TCE's support is their willingness to to let you "test drive their software! You can use BUSINESS WRITER for 30 days; and if you don't like it, you can send it back for a complete refund. All in all, it is the best customer support program I've seen in the CoCo 3rd party market.

Keyboard Commander
E-Z Friendly
Hutton & Orchard Sts.
Rhinecliff, NY 12574

Pgm. Type: Typing tutor
Requires : 64K Coco, 1 drive
Price : $24.95

Reviewed by Randy Krippner

Keyboard Commander is a delightful typing tutor program that combines excellent hi-res graphics and arcade type action to make learning your way around your Coco's keyboard fun.

K.C. displays a duplicate of the Coco keyboard on the lower part of the screen, with a space ship's viewport occuping the upper half of the screen.

As the game begins, random letter and number "meteors" will appear in the viewport, zooming towards you. You have to zap the incoming meteor by pressing the key which is the same as the letter or number. If you do not hit the right key in time, the meteor will hit you and you'll lose one of your ships.

One unique part of this program is that in the "training" phase, a pair of phantom hands appear on the screen to show you which fingers should strike which keys. As the incoming letters appear, the phantom hands will move to strike the correct letter on the on-screen keyboard, showing you the correct finger positioning.

After each training phase, a test will be given. Letters will pop up two or more at a time, and you have to type all of the letters before they hit you. During this part of the program, the phantom hands are not present. You're on your own here.

I had a lot of fun testing this program, and I think anyone interested in a typing tutor should give Keyboard Commander serious consideration.

Fraze Craze
RAM Electronics
814 Josephine Street
Monmouth, OR 97361

Pgm. Type: CoCo 2 or CoCo 3 Game
Requires : At least 64K + Disk + Joystick
Price : $9.95

By Lee Deuell

If you're looking for a fun, inexpensive game for your Color Computer, look no further than "Fraze Craze" by RAM Electronics. "Fraze Craze" is similar to the TV show

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"Wheel of Fortune". All that's missing are Pat Sajak and Vanna White!

The program contains instructions, and they also come in a 12-page booklet. The manual explains how to make a backup copy first for your own use. There are 212 phrases included in the program. The manual explains the procedure to add your own phrases.

I ran "Fraze Craze" on my CoCo 3 in both CoCo 2- and CoCo 3-modes. I put my CoCo 3 into CoCo 2 mode using the following short program:

```
10 POKE &HFFDE,0
20 POKE 113,0
30 EXEC 40999
```

I then turned on my television, and reran "Fraze Craze". It looked and worked the same in either mode. Low-resolution graphics are used. With a CoCo 3, hi-res graphics are used only on the title screen. The program is in color on either computer.

Dashes are displayed to represent the hidden phrase. You start out with 5 men (turns). A counter is used, giving you approximately 20 seconds to choose a letter. If the counter gets to 0, you lose a man. Using the joystick, you select a letter. A spinner determines the dollar amount for that round. If the chosen letter is in the puzzle, it appears in the proper place(s). Otherwise, you lose a man. Vowels cost the player $250. If you choose a letter that's not in the phrase, you also lose one man. When you think you know the answer, move the arrow to the question mark, and type the answer.

Your score is determined by the amount on the spinner and the number of correct letters you pick; also by the number of blanks remaining in the puzzle. If your score is one of the top ten, you can enter your name, which CoCo keeps track of. That way, several people can play, alternating turns.

"Fraze Craze" does as advertised. You can't beat the price for such a fun game! Colorful graphics and sound effects are used throughout. You almost don't need the manual to play: I was able to get $4900 in the second game, without having looked at the manual!

SCULPTOR version 1.16
Microprocessor Developments, Limited
London, England
USA Office:
MPD International, Inc.
651 Blackburn Ave.
Fairfield, Ohio 45014
(513) 844-2751
Todd Goodwin, Sales Manager

Pgm. Type: 4GL Relational Database
Requires : CoCo3 w/512k,OS9 Level II
and 2 drives

Reviewed by Edward Gresick

SCULPTOR is a relational database system and powerful command language which has been around since 1981. It has been used on 6809 computer systems operating under OS9 and Uniflex for years. With the availability of the CoCo3 and 512K of memory, SCULPTOR is available to CoCo users. SCULPTOR runs on a large variety of computers; from the CoCo (and PC's) up to main-frame computers. It runs on most Operating Systems; from OS-9, Uniflex, MSDOS, the varieties of UNIX and XENIX through ULTRIX and VMS.

Version 1.16 of SCULPTOR allows the direct transfer of SCULPTOR programs and data files between different computers and operating systems without having to recompile the programs. All that's required is the appropriate 'run-time program' for the target computer. Since the run-time package is 20% of the cost of the full development package, substantial savings can be achieved by buying only one development package (for the CoCo, naturally) and the 'run-time system' for the target computer. (A SCULPTOR development system for a main-frame computer is $17,850.)

To write a SCULPTOR program, first prepare a data dictionary (file structure) using the SCULPTOR 'DESCRIBE' program. Define the file fields, the field names you wish used on reports and/or the screen form, the types of fields (alphanumeric, 1, 2 or 4 byte integer, real, money or date), validations and, for numerical fields, the printed format. Use the 'NEWKF' program to generate the files (both data and index) and then the 'SG' (Screen Generator) program to prepare both the source code and the compiled program and you're ready to run. Once you've decided on what you

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PCDIR	directory of PC disk	**RSDIR**	directory of RSDOS disk
PCDUMP	display PC disk sector	**RSDUMP**	display RSDOS disk sector
PCREAD	read PC file	**RSREAD**	read file from RSDOS disk
PCWRITE	write file to PC disk	**RSWRITE**	write file to RSDOS disk
PCRENAME	rename PC file	**FLEXDIR**	directory of FLEX disk
PCDELETE	delete PC file	**FLEXDUMP**	display FLEX disk sector
PCFORMAT	format PC disk	**FLEXREAD**	read FLEX file
		FLEXWRITE	write file to FLEX disk

Extensive Options Single, double sided disks. 40 or 80 track floppy drives. 8 or 9 sectors. First level sub-directories - PC (MSDOS). FLEX transfers binary files also.

Requires OS-9 (Level 2 for MultiVue), 2 drives (one can be hard), MultiVue for MultiVue version, SDISK (SDISK3 for MultiVue) - see D.P. Johnson ad for SDISK

GSC File Transfer Utilities for CoCo - MultiVue version $54.95

GSC File Transfer Utilities for CoCo - Standard version $44.95

All diskettes are CoCo OS-9 format. Orders must be prepaid or COD, VISA/MC accepted, add $1.50 S&H, additional charge for COD.

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want in the file (the hardest part) the rest of the process will only take a few minutes. A program generated with 'SG' gives the following capabilities: AMEND, DELETE, EXIT, FIND, INSERT, MATCH, NEXT and PREVIOUS.

For reports, screen or printed, use the 'RG' (Report Generator) program and in less than a minute, the source code and compiled program for the report are completed. Put some data in your files by running 'SAGE <program name>' and then run 'SAGEREP <program name>'and the report will appear on your screen. If you wish to print the report use 'SAGEREP <program name> printer >/p'

The source code is easily changed to tailor it to your requirements using any text editor. The source code is then compiled using the compilers provided with SCULPTOR (either 'CF' or 'CR').

Only two of the SCULPTOR programs are required to run programs developed under SCULPTOR. SAGE is the screen (or terminal) input program and SAGEREP the report generator program. SAGEREP is also useful for batch processing of data.

A fairly common SAGEREP program might be:

```
-------------- START PROGRAM -----------------

!file 1 file_name

!title print tab(30);#dw;'REPORT TITLE';#sw

!heading print 'Page No ';pageno;
!heading print tab(60);'Date ';date
!heading printh *field1,*field2,*field3,
!heading printh *field4,*......,*field(n)

!final print: print 'END OF REPORT'; #tf

     keep 6
     printh field1,field2,field3,
     printh field4,.....,field(n)
     end

-------------- END of PROGRAM -----------------
```

The above program will print the report title in bold characters at the top of the first page. Then the page number and date will be printed. The variables 'pageno' and 'date' do not have to be declared in a sagerep program. This is followed by the field titles as described in the data dictionary. The file will be opened and the report will start at the first record and continue to the end. Each item of data will be automatically aligned with the file heading, alphanumeric data justified toward the left of the field and numeric data justified toward the right of the field. When 6 lines remain, SAGEREP will issue a form-feed, print the page number, date and field titles on the next page and resume printing the data. When the 'eof' is encountered, SAGEREP will close the file, send ending statements and a form-feed to the printer and exit. Options such as starting record, ending record, select, exclude, headers, footers, total, sub-total, etc. are available to tailor the report to the users requirements.

After you've written several programs, you'll want a simple way to access them. SCULPTOR includes a 'MENU' program which is easy to prepare and use. Each MENU item requires two lines; the first line is a description of the function and appears on the screen. The second line is the actual command line to run the program. A third line is optional and is used to input and pass parameters to the program being called. Non-SCULPTOR programs may also be called.

SCULPTOR uses a B-Tree index file structure providing extremely fast random access to individual records. A file can hold up to 15 million records and each record may be 32,768 bytes long. It especially shines on very large files containing thousands or more records. In one application I'm aware of, the file has over 1 million records, the processor is a 68030, the operating system is OS9, it has 44 users and performance is outstanding.

SCULPTOR is one of the fastest data-base systems I've worked with and its speed is fast enough for some real-time processing on a CoCo. Error recovery is excellent and gracefull with all kinds of built-in traps plus the capability of adding error trap handling in the program. Of course, no one will ever provide a data-base system that we will be completely happy with. MPD has come close.

One major flaw, in what is otherwise a satisfactory program, is the MENU program. When operating from the device 'TERM', some items of the MENU are often garbled. This does not occur when operating from T(n) or on other SCULPTOR systems - only the CoCo version. Readings I have gotten from MPD indicate they have no plans for correcting this problem at present.

SCULPTOR has a small vocabulary and from that standpoint is easy to learn. The small vocabulary has its down side - if you want to do something unusual, your program may end up being somewhat obtuse.

The manual provided by MPD can only be described as beautifully prepared with excellent printing and a padded binder and case. On the other hand, the content is poor. There is no tutorial and only a few, very simple examples. Too often, the description of the commands is obtuse and incomplete. To compound the problem, it is written in the QUEEN's English. In fairness, it isn't the worse manual I've seen.

I started using SCULPTOR about four years ago on a MSDOS computer. Because of the poor documentation (it was worse then), I didn't do much with it. However, after experimenting and asking questions, I've reached the point where I use it for over 90% of my work. Recently, while I was explaining what I considered the virtues of SCULPTOR, I realized that its main virtue was relieving me of the details of writing the program and permitting me to concentrate on the overall picture insuring retention of all of the program objectives.

MPD has reorganized their US operation

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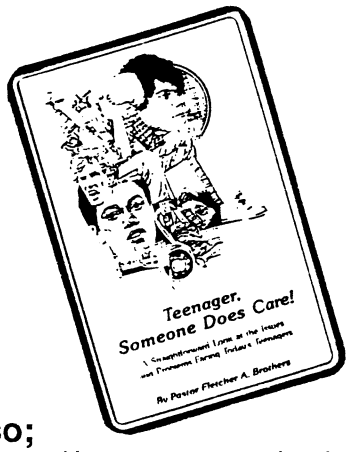

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Continued From 23

and, so far, user support has been excellent. I hope it continues and expands.

If you are willing to spend some time learning Sculptor, then $215.00 is a very small price for the power, capability and transportability Sculptor provides.

CoCo Graphics Designer Plus
Picture Disk #4Zebra Systems Inc.
78-06 Jamaica Ave.
Woodhaven, NY 11421
(718) 296-2385

Pgm. Type : Printer Utility
Requires : CoCo 2 w/64k or 3, Jostick
Mouse, Printer
Price : $29.95 for program
$14.95 for picture disk

System Used : 512k CoCo III, Magnavox Amber monitor, RGB Dos, Epson LQ500 printer, Joystick

Reviewed by Ted Paul

I am not a normal user of graphics programs. This is because I can't draw a stick man without making a mess. Good thing that the gang at Zebra Systems have taken the heart break out of creating beautiful banners, snappy signs and creative cards with CoCo Graphics Designer Plus. In fact I made up a couple of poster signs for my local Radio Shack manager just before Christmas showing his extended store hours. The signs were made within 30 minutes after receiving the program!

I am constantly amazed at the number of people who buy a computer or computer program and then don't read the directions for its proper operation. The CoCo is a nice machine because so much of what's needed to run the machine is ready to go when you turn it on. CGDP is a program that runs just like the CoCo - just about everything you need is on the disk. The only thing that isn't on the disk are the extra pictures you can buy on a picture disk. And the only thing I had to really look up in the instructions were how to start the program, 'RUN"CGDP"', and how to clear the text screen. 98% of everything else is intuitive point and click. Anybody who has ever used a Mac and all its point and click interfaces will find CGDP a snap. This program is a breeze to use.

The other thing about this program that makes it a real pleasure to use was the blistering speed of the screen / menu display and the extremely smooth operation of the joystick / mouse. The only part that could be considered slow occurs when the program is drawing the picture and the actual printing itself. The drawing of the graphic is done in a hidden mode and you are then asked if you would like a reduced or full view of the picture. The reduced version gives a nicely detailed but small version of what you've made, and full view lets you scroll down the picture in about several steps.

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I couldn't crash the program, even when putting the wrong disk in a drive, or turning the printer off line while printing. The break key is locked out. The program ran under RSDOS and RGB Dos. The docs state that you can also use ADOS as well. And speaking of documentation the 62+ pages supplied are clear, easy to follow and easy to read. The manual is also a bit of a tutorial on assembling banners, signs and cards. It shows you how cards, banners and signs are assembled on screen and printed out.

One final point to be made here is that this program supports a LOT of printers! I counted over 37 types listed in the manual. The list inlcudes most Tandy dot matrix, Epson LX, RX, FX, and LQ series. The Panasonic KXP's, Star SG and NX's Legends, C.ITOH and more. Simply place the arrow on the down arrow on the printer selection and click on the printer you need. You can also select baud rate up to 9600 and line feeds with or without a carriage return.

Little has been left out of this program except maybe underlining. The program will print flush left, right or center. It prints four font sizes on a banner, sign or card. There are number of good quality readable fonts and on and on and on. I haven't had a lot of need for this type of a program in the past only because I had been exposed to "Print Shop" on a Commodore 64 and didn't want to grow old watching the hard copy appear. Now with this extremely easy to use and fast program for the CoCo, I can see more signs, banners and card being cranked out than I dreamed of before. This is one of the best $29.95 you could invest in your library of CoCo programs. It is highly recommended.

Telepak and Telepak Plus
Orion Technologies
P.O. Box 63196
Wichita, KS 67203
(316) 946-0440

Hardware: RS232 PAK
Requires: CoCo 1, 2 or 3
Telepak for CoCo 1 only
Price : $49.95

This is the second replacement RS232 Pak we've reviewed in this magazine in the last 6 months. For those of you who are still looking in Radio Shack stores for the "Deluxe RS232 PAk" save some gas, time and frustration and write a check to Orion Technologies. This product is easy to use, the company is easy to deal with and unlike the "Deluxe" pak, works like a charm. My only problem was one of my own creation in not being able to toggle back to the main menu of MikeyTerm using my old 300 baud, manually operated Mura modem. If you are using anything remotely more modern you won't face this minor problem.

There are actually two Telepaks. The original Telepak was designed to work with the original CoCo 1 and MultiPak. For those of you who have never had a CoCo 1 Tandy had some weird voltages floating around those days and not every PAK would run properly in a Multipak. Something about 12 volts here and there... Anyway, if you have one of these beasties still working hard for you get the original TelePak. For those of you running a CoCo 2 or 3 grab a TelePak Plus. The documentation tells you just how to set up the pak in your Multipak Interface or on a Y cable. The documentation does caution you to use a buffered Y cable so not to do damage to your CoCo. I used a short Y cable and had no problems. I also dropped by our Radio Shack store and picked up an RS232 cable with male DB25 ends to complete the connection from Telepak Plus to my modem.

The instructions provide full pin outs for those wishing to make their own cables from their own parts stocks. Also inlcuded are instructiones needed to set up two CoCo's via null modem connections. Orion also provides memory address locations for programming, resetting and for the command registers. This is a nice aid for those writing their own terminal or bbs programs. The unit is capable of baud rates from 50 to 19200 bps.

But how does the PAK behave? Very nicely. I used my MikeyTerm Config program to set up for the pak. After turning off the computer I removed the disk controller and installed the Y cable. I then reconnected the disk controller and the Telepal Plus to the Y cable. I ran the RS232 cable with the DB 25 ends from the Telepak Plus to the modem. I fired up my configured MikeyTerm program, dialed up CompuServe and was off and running. My next project is to get a 1200 baud (2400 baud for Valentines day - are you reading this Dar??) auto answer / auto dial modem and go crazy. Brian Stretch has sent along TUBBS BBS V2.4 and maybe I'll set up a temporary BBS to run a further test of Telepak Plus. I have had zero problems with the unit on line. The unit comes in a standard black plastic "disk controller" style case and although the ends are not "gold" plated I've had no problems with drop out or bad connections. Bren Stockdale at Orion has told me they are constantly looking for ways to improve the quality and performance of Telepak Plus.

Although this unit does the same thing as the Deluxe RS232 Pak from Radio Shack, it doesn't come saddled with the clumsy software Radio Shack ROMmed into that hardware. It is far easier to use and for those just entering into telecommunication with their CoCo, it makes an inexpensive addition to your hardware compliment.

Sixdrive
Gimmesoft
4 Hallfield Ct.
Baltimore, MD 21236

Pgm. Type: Disk drive utility
Requires : Coco II/III, 64K or more
Price : $16.95

Reviewed by Randy Krippner

Sixdrive is not a program a lot of people need. But if you do, there just isn't anything else like it on the market.

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Standard RS-DOS will only recognize four disk drives, numbered 0 to 3. Sixdrive modifies RS-DOS to permit you to use up to three double sided drives, for a total of six disk drives on-line. (RS-DOS is modified to treat each disk side as a single drive.) So instead of drives 0 - 3, you can have drives 0 - 5 on line.

No hardware modifications to the disk drives, controller or computer are required. All you need is a third drive and a new cable with four connectors instead of three; one for the computer and three for the drives.

Using Sixdrive is very simple. Basically speaking, all you need to do is run it and go. The only really hard decision you need to make is how to number your disk drives. After that, just use your drives as you normally would. The only difference is that now you have two extra drives to play with, 4 and 5.

Why would anyone want to have six drives on line in the first place? I can think of several reasons why someone would require the additional storage space-- a bulletin board system, a large inventory system, any application where large amounts of data are needed could benefit from an extra drive or two.

There are some difficulties. There aren't many programs out there that will recognize drive numbers greater than 3. It may be necessary for users to patch programs to permit drive numbers greater than 3 to be recognized.

Another difficulty is that you cannot have more than one file open at a time on drives 2 and 4 and drive 3 and 5. This shouldn't be much of a problem in most cases. You should keep this in mind if you are writing software specifically for Sixdrive or patching existing software to handle the extra drives.

Sixdrive can be placed in an Eprom if you wish, or just run as a utility program after turning the computer on. The current versions, 1.1A, is compatible with the Coco 3, ADOS and FKEYS III. Because of space limitations, Sixdrive and ADOS cannot fit into a single Eprom. If ADOS is used, the company recommends Sixdrive be run from disk.

Level II Tools
Alpha Software Tecnologies
2810 Buffon St.
Chalmette, LA 70043
(601) 266-2773

Pgm. Type: OS9 Utilities
Requires : Coco 3, 128K, OS9 L2
Price : 24.95

Reviewed by Randy Krippner

Alpha's collecton of OS9 Level II utilities is one just about every OS9 user will want to have handy. They add some extremely useful functions to the already versatile OS9 L2 operating system.

The most useful of these tools are the wild card commands. These commands are so useful that after using them for only a few minutes, I wondered how I had ever gotten along without them.

A problem I've always had with OS9 is moving files back and forth between my double sided and single sided drives. A recent problem came when I needed to copy my Tandy Home Publisher picture files from my double sided work disk to a single sided disk. Dsave wouldn't work because it could only transfer my entire CMDS directory, and that would have exceeded the capacity of the single sided drive. So I was looking at the rather intimidating task of copying twenty or thirty GRF.xxxxxx files the hard way.

Alpha's WCOPY function did the entire job with a single command: Wcopy /d0/cmds/grf.* /d1. That was all there was to it. Wcopy went to work copying every file that started with "grf." to drive 1.

Level II Tools also contains a WDEL function which will delete multiple files from a directory, and WATTR, which will set the attributes to multiple files in a directory. There is also a WMATCH function which will give a list of what files match a specified wild card pathname.

Tools has two functions which will give a graphic display of a disk's directory structure. There is a directory sorting routine to give you a directory listing with the file names sorted in alphabetical order.

Tools includes two functions designed for use within procedure files (also called command or script files). Procedure files are text files containing OS9 commands. OS9 attempts to execute these commands as if they were typed from the keyboard.

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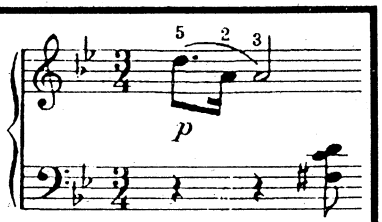
Introducing **CoCo MIDI 3**!
The familiar MIDI sequencer is more powerful than ever! No other sequencer program for the Color Computer can rival the ease of use and powerful editing capabilities. In addition to high performance recording and playback, CoCo MIDI 3 has extensive editing capabilities. Such as block cut, copy, and paste. Quantize a block; scale velocities or a controller value; change the channel assignment of a block. Purchase price includes 6 months of free updates! Multipak or Y cable required. Includes a hardware MIDI interface and cables. $149.95. CoCo MIDI hardware interface available separately $99.95. CoCo MIDI 2 software also available $34.95.



Introducing **FB01EDIT**... our new FB-01 voice editor! Edit and creat new FB-01 voices on your CoCo 3. Full 80 column display makes it easy to see all the data at once. Save banks to disk. Receive data from FB-01 and send it back. Requires CoCo MIDI hardware pack. $29.95. **FB-01 Calc** creates custom configuration event files for your FB-01 and Lyra. $19.95.

Music Library is a collection of music to play on your CoCo (no extras needed!). Each disk with 40-60 minutes music $5.00. **Musica 2**, the companion music composition program, is only $24.95.

Lyra Lybrary is an extensive collection of music to use with your MIDI synthesizer. See review in December 1988 Rainbow magazine. Each disk $14.95. **Lyra** is a powerful yet easy-to-use MIDI music composition program. Put notes on a graphical grand staff with a mouse, like printed music! Comes with MIDI cable. Only $59.95.

Ordering information: send check or money order. Sorry, no credit cards. COD is ok. Shipping and handling included in price. CA residents add 7% tax.

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(619) 690-3648 (evenings 6-10 PT)

Clearbrook Software Group NEWSLETTER

CSG IMS FOR THE 68000

Work is currently under way on version 3 of CSG IMS for the 68000. This version will have many enhancements over version 2.x.

SCREEN FORMS

A major improvement will be in screen form handling. Instead of SET FORM TO <path> and ENTERing and DISPLAYing a field at a time the following commands will be available:

OPEN FORM[<path>[AS <tag>] - open the named form giving it an optional tag. If no tag is specified, the file name becomes the tag. You can have up to 16 forms open at one time. The form and all of the current field values will be displayed.

CLOSE FORM[<tag>] - close the current or specified form. The form will be erased from the screen.

CLEAR FORM[<tag>] - erase the current or specified form from the screen.

CLEAR FIELDS - clear the field data and screen locations for all file fields in the current form.

CLEAR FIELDS ALL - clear the field data and screen locations for all file and memory fields in the current form.

CLEAR FIELDS <field list> - clear the field data and screen location for the specified fields in the current form.

CLEAR SCREEN - erase all forms from screen.

USE FORM[<tag>] - if the current or specified form is not displayed on the screen (CLEAR FORM or CLEAR SCREEN), it will be displayed.

DISPLAY[FORM <tag>] - display all file fields in the specified form.

DISPLAY[FORM <tag>] ALL - display all file and memory fields in the specified form.

DISPLAY[FORM <tag>] <field>[MASK <text>] - display specified field.

DISPLAY[FORM <tag>] <field list> - display fields.

ENTER has the same syntax as DISPLAY. When more than one field is being ENTERed, the cursor down or ENTER key moves you to the next field and cursor up moves to the previous field. ESCape, next page and previous page will exit the ENTER statement.

It is the programmer's responsibility to make sure the displayed portions (text, boxes and fields) of the screens do not overlap. You can have screens located in a blank area of another screen with good results.

NEW DATA TYPES

Two new data types are being added, TIME and MEMO. TIME is similar to DATE in that you can SET a default time mask. When adding TIME to a DATE, the time is first converted to days to give you correct results.

The MEMO data type is a variable length text field. A seperate text file holds and marks the MEMO data. The text editor is used to maintain the data. This type of field is useful for holding long descriptions or notes and for letters and memos.

When declaring a KEY for a database you can now specify that it is to be unique. When you INSERT or UPDATE a record a check is done to ensure that all keys which were declared as UNIQUE will still be unique.

BATCH FILES

A BATCH command has been added. It will read interactive commands from a text file. When CSG IMS is executed, it looks for a batch file called CONFIG.IMS. If this file is found, the commands in the file are executed. This file normally contains SET commands to set the default conditions of CSG IMS.

FILE COMMANDS

The LIST command will now print column headings for the fields being listed. You can specify which fields you want printed. LIST FORM will list the current form. LIST FORMS will list names and status of all OPEN forms. LIST MEMORY lets you see the names of memory fields or variables.

COPY STRUCTURE lets you specify which fields are to be copied (they can be from any open files). By using COPY STRUCTURE OVER instead of COPY STRUCTURE TO you can overwrite an existing file.

COPY speed has been improved by using the WITHOUT INDEX clause to disable index updating.

Descending SORTs can now be performed. The structure of the sorted database can also be changed by specifying which fields the new file is to have. You can also overwrite an existing file if you want.

The BROWSE command lets you edit multiple records on the screen in a columnar format. It is useful for fast edits or review of data.

MISCELLANEOUS

The MENU command will execute the current menu module which is set with SET MENU TO <text>

The screen, report and label formatters as well as the database creator are now more easily accessible from within IMSI.

Interactive mode has an improved line editor with printer redirect and history buffer so you can retreive previous commands.

You can now declare variables in interactive mode. These variables are global to all modules called after the variable is declared.

The SUM function sums an array.

A wildcard (*?) match relational operator has been added to allow more sophisticated searching of data.

The CHANGE$ function allows the matching part of a text string to be replaced.

If you use a field name where CSG IMS is expecting a file name (OPEN, SORT, COPY STRUCTURE) and the field does not exeist, CSG IMS will now use the field name as the file name. This means that you no longer need to use quote marks around most file names. For example:

```
IMS: OPEN MAILLIST
```

instead of

```
IMS: OPEN "MAILLIST"
```

WISH LIST

Do you have a wish list for CSG IMS? Now is the time to submit it to us in writing. We will try to implement any worthy suggestions in version 3. If a good suggestion will take to long to implement and test, we will consider it for version 4.

Unfortunately these enhancements will not be available for CSG IMS 6809 since there is not enough memory available. You can look forward to CSG IMS version 3 when you upgrade to OS9 68000.

SCREEN FORM EXAMPLE

```
   OPEN FORM TENTRY
   OPEN FORM
CDETAIL
   ENTER FORM
TENTRY
   FIND FILE CUST
TCUST
   IF RECORD THEN
     DISPLAY FORM
CDETAIL
   ENDIF
   IF TTYPE='I'
THEN
     DO INVOICE
   ELSE
      .
      .
      .
```

```
TRANSACTION ENTRY                                                  05Jan89
Type: I  (Invoice)
Reference Number: 14832     Transaction Date: 05Jan89
 Customer Number: EMK002   EMK Computer Group

                                                  CUSTOMER DETAIL

                                                  Address:
                                                    P.O. Box 800-460
                                                    Abbotsford, B.C.
                                                    V2S 6H1

                                                  Ship To:
                                                    #460 - 33255  Fraser St
                                                    Abbotsford, B.C.
                                                    V2S 2B2

                                                  Contact: Edward
                                                  PO No. Required? No
                                                  Credit Limit: $800
                                                  A/R Balamce: $143.95
```

```
TRANSACTION ENTRY                                                  05Jan89
Type: I  (Invoice)
Reference Number: 14832     Transaction Date: 05Jan89
 Customer Number: EMK002   EMK Computer Group

       Item: CSGIMS
 Quantity:
 Subtotal:
 Discount:
          ---------
    Total:

                                                  INVENTORY ITEM DETAIL

                                                  Description:
                                                    Database software

                                                  Quantity on hand: 42
                                                  Reorder point: 20

                                                  Price: $169.95
```

```
   OPEN FORM IN-
VOICE
   CLEAR FORM
CDETAIL
   OPEN FORM
IDETAIL
   ENTER IITEM
   FIND FILE INV
ITEM
   IF RECORD THEN
      DISPLAY
FORM IITEM
   ELSE
      .
      .
      .
```

As you can see, the new forms system will allow you to develope more sophisticated screen oriented programs more quickly. Your applications will have extra pizzazz to impress your boss.

Clearbrook Software Group

BOX 8000-499
Sumas, WA
U.S.A. 98295-8000

BOX 8000-499
Abbotsford, B.C.
CANADA V2S 6H1

(604)853-9118

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These two commands, PAUSE and GOTO, make procedure files more programmable. Instead of just executing OS9 commands, a procedure file can now pause and display a message until the user presses a key, and the flow of a procedure file can be controlled with GOTO.

Three filters, Upcase, Locase and Dislex are included. These will convert text that is piped through them into upper case, lower case or, in the case of Dislex, reverses them.

There is a Browse function to let you scroll forwards or backwards through a text file, color manipulation commands and window handling commands.

Overall, Level II Tools is an excellent collection of truely useful utilities for OS9 Level 2 users.

T/S Edit
Tandy/Radio Shack

Pgm. Type: Text editor
Requires : 32K Coco, 64K Coco (OS9 version), 1 disk drive
Price : $34.95

Reviewed by Randy Krippner

First, a bit of clarification. T/S Edit is a text editor, NOT a word processor. It features no functions for formatting or printing text. It's only purpose is to permit the user to type in and edit text files. If you wish to print the files created with T/S Edit, you'll need a text processor, such as T/S Word.

The program comes on disk, with two versions included, one that runs under RS-DOS for 32K Color Computers, and one that runs under OS9 for 64K Cocos. The two versions are virtually identical in their functions. The OS9 version was used for this review.

T/S Edit is a full featured screen editor that offers a high-resolution display that can handle up to 80 characters per line, with true upper and lower case letters. The screen display can be easily changed with the Display Mode command from a low-res screen of 32 X 16, to a hi-res screen of 80 X 32. In addition, it also supports 40, 50 and 60 column screens. Needless to say, anything beyond 60 characters per line is difficult to see on televisions and low-res monitors.

Although touted as a full screen editor, most of the actual commands are line and character oriented.

The commands are not easy to learn. In some cases, a lower case command performs one function, while the same command entered as an upper case letter does something entirely different, something which leads to a great deal of confusion at times.

If you're just curious, and can find it on sale somewhere, go ahead and try it. But if you're looking for an easy to use, full featured word processor, you'd be better off putting that $34.95 towards the purchase of VIP Writer or one of the other real word processors available for the Coco.

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to see family photos on the CoCo and then using Colormax to print them out.

RainyDay is very nice to do business with and they are available for help. I hope more of your subscribers avail themselves of the opportunity to build an electronic record of their favorite pictures at such a low price.

Doreen Scott
Santa Barbara, CA

Dear Doreen:

I'm sorry this took so long to get into print, but it sure was a treat to receive your letter. The folks at RainyDay have been very supportive of Clipboard and we urge folks to give them a try!

Dear Clipboard:

I watched the NBC Evening News November 3rd. On it, there was a feature about fast-scan television. I knew that the Color Computer was capable of receiving -1slow -0 scan TV, so I was interested in learning whether computers could be used to send and/or receive fast scan. I was disappointed as the segment progressed, as no computers were shown. However, towards then end, an unidentified young man said he could receive such transmissions "... on my Color Computer."

Would it be possible for you to find out who this person was, and how he uses his Color Computer to send/receive fast-scan TV? It would make an interesting article for CoCo Clipboard Magazine!

Lee Deuell
Shell Rock, LA

Dear Lee:

We're going to write to the producers of the NBC Nightly News in New York and se what they can tell us. I'm sure Mike Dooley will have something to say on this subject in the future. Right now, Ed Juge has announced in another non-CoCo publication that Tandy will be introducing a 10 meter transceiver! This rig, coupled with a high quality TNC, will be capable of handling 10 meter Packet Radio! We've asked Ed if he can arrange for us to get a unit for evaluation with a CoCo. Tandy has also released a General Class tutorial similar to the Novice Class tutorial which Mike reviewed last year. With Novice class having "phone" or voice privilages on 10 meters the world of Amateur Radio is opening to more and more people. We recommend any one interested in the CoCo and Amateur Radio to buy the Novice course and to contact a local Ham operator for help. A membership in the ARRL is also of great benefit.

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(String handling is added to most versions of Pascal since the "standard" version of the language cannot handle strings except as arrays of individual characters.) It also includes an excellent full screen text editor for typing in programs, the compiler itself, a linker, a utility to help support the development of subroutine libraries, and an excellent macro assembler.

The documentation comes in an attractive, padded three ring binder. It is very comprehensive, but will not teach you how to program in Pascal. But since this is a standard version of the language, just about any good text book on Pascal will get you started.

Compiling time is always a factor with Pascal. Because the source code must be compiled and linked before a program can be run, BASIC programmers often find Pascal tedious to work with because each time a change is made to the program it must be compiled and linked again before it can be tested.

Deft is no speed demon, but it's no slouch either. It compiled a complex, 800 (eight hundred) line program in only 3 minutes and linked it in just four. These times were generated by printing the resulting compilation and linking reports to a disk file instead of to the printer. If I'd had them printed, it would have taken considerably more time because of the relatively slow speed of the printer.

This is still an excellent time for an 8 bit computer, and a lot faster than many other compilers I've worked with, including several running on IBM computers.

The result of the compilation and linking is a stand alone, machine language program that will run on either the Coco 2 or Coco 3, and which will run many times faster than any BASIC program ever could.

Deft Pascal itself, like most standard Pascal compilers, lacks direct access (random access) disk file capabilities and has no provision for handling machine specific functions such as graphics. That's where Deft Extra comes in. This is an extension to the language that adds random access disk files and high resolution graphics functions.

The real showpiece of this collection is AGS, however. It adds hi-res text display, additional graphics functions, windowing capabilities, menu bars and pull down menus, and support for the use of a mouse/joystick (or keyboard) as a pointer to select menu options.

Setting up a menu bar or pull down menu is absurdly easy. Just set up an array with the menu options in it and make a call to the desired menu function. AGS handles everything else; setting up the window, handling the selection of the desired option, and then restoring the screen and returning the number of the option selected. It's so easy to use that it makes Multi-Vue's automatic menuing system look ridiculously complex.

AGS fully supports a hi-res text screen, with a user re-definable character set. True proportional print is also supported on the screen, as are several text attributes, such as reverse video, half-intensity, etc.

If I sound enthusiastic about the Deft Pascal package, it's because I am. It is the most powerful software development system for the Coco 2 I've seen. It permits you to do things with the Coco 2 that normally would require the windowing capabilities of OS9 Level 2 and a Coco 3. This is no toy, folks. It is a serious, full blown software development package that can be used to design powerful, professional quality software for the Coco.

There two drawbacks. The first, of course, is the price. Deft Pascal is not cheap. The complete package, including Extra and AGS, will set you back almost $200. But then again you'd spend around $200 for OS9 L2 and Microware Pascal, and Deft Pascal is superior to the Microware version sold by Tandy, in my opinion. Considering what you're getting for your money, the Deft Pascal package is well worth the expense.

The other drawback is that Deft Pascal is copy protected, something I object to when it comes to something as expensive and as important as a compiler. Unfortunately, the wide spread theft of commercial software has made things like this necessary. (Copying a commercial program and giving it away to someone is not "piracy", it is theft, pure and simple, and just as illegal and immoral as any other type of robbery.) Only the Linker program is protected. The other programs in the package can be backed up, including AGS and Extra. You can write and compile a program from a backup copy, but in order to link it, you have to have the master disk.

To be fair, TCE does give you two master copies of the disk, and has a good replacement policy. If one of the master disks ever fails, just return it to TCE with $1 for postage, and they'll replace it.

While hobby programmers will find the price a bit steep, Deft Pascal is real bargain for serious programmers. If you're developing software for the Coco 2/3 computers outside of the OS9 environment, Deft Pascal is something you should take a much closer look at.

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OS9 Level II BBS
Alpha Software Technologies
2810 Buffon St.
Chalmette, La. 70043
(601) 266-2773

Pgm. Type: BBS
Requires : 512K Coco 3, OS9 L2
Price : 29.95

Reviewed by Randy Krippner

I admit it... I'm a BBS addict. Not as a user, but as sysop and programmer. While I haven't operated a BBS in some time, I've remained active in assisting others starting and operating bulletin board systems and in designing, writing and modifying BBS software for a variety of computers.

I've always felt that the Coco 3 and OS9 would make an ideal host system for a BBS. Unfortunately, good OS9 BBS software is hard to find. There are only a handful of commercial and public domain OS9 based BBS programs available. A new entry into the commercial market is the OS9 Level II BBS from Alpha.

It is actually a collection of programs and data files that together make up the complete software package, and it is an impressive package indeed.

Level II BBS is easy to install. Installation amounts to just making backup copies of the two disks that come with the Level II BBS package and then running Tsmon. This is a program that monitors a selected I/O port for a connection, sets the baud rate (Level II BBS can handle 300, 1200 and 2400 baud) and then starts the BBS itself with the log in procedure. The disks also include various procedure files (also called command or script files) which can be used to move the Level II BBS files to different drives or even to install it on a hard drive.

The Level II BBS system is one of the more sophisticated I've seen for a small computer system. The message and mail systems are very versatile and offer a nice message editor and some very useful search and scan functions.

The file transfer section is a real gem. It features not only standard Xmodem protocol, but also Xmodem CRC and Ymodem as well. Files available for download feature a full paragraph description of the program. A group of keywords can be entered for each file, which the callers can use to perform searches.

The sysop can create a virtually unlimited number of SIGs (Special Interest Groups) with the software's very flexible menu design system.

While the software comes with pre-designed menus enabling it to be run right out of the box, most sysops will want to design their own custom menus to add new SIGs, include other functions or give the BBS a unique look.

The only real difficulty we had with the software was with the documentation. The documentation is terse. Novice OS9 users will have difficulty getting Level II BBS up and running. The function to validate new users is not described at all. It took a bit of digging and experimentation before we got that working. If you do run into trouble, Alpha provides a phone number you can call to get help.

While Level II BBS may not be a system for the novice OS9 user, it does give the sysop an excellent set of tools for designing a unique, sophisticated BBS. Level II BBS's capabilities and low price should make it attractive to any OS9 user interested in operating a BBS on the Coco 3.

Deft Pascal Workbench 4.1
Deft Advanced Graphics System
Deft Extra
TCE Programs Inc.
P.O. Box 2477
Gaithersburg Maryland 20879
(301) 963-3848

Pgm. Type: Programming language and extensions
Requires : Coco 2/3, 64K, 1 drive
Price : Pascal Workbench: $99.95
A.G.S.: 49.95
Extra : $39.95

Reviewed by Randy Krippner

Deft Pascal is not new. It's been around for almost as long as the Coco has. It was, and still is, one of the few alternatives programmers have to BASIC and assembly language without resorting to OS9. Deft Pascal was taken over by TCE some time ago, and even though you may not have seen it advertised for some time, it is alive and well, and evolving.

TCE has fixed several bugs found in previous versions of the language, has made it compatible with the Coco 3 and has added some fantastic extensions to the language.

Programs compiled and linked by previous versions of the language were not compatible with the C3. This new version takes care of that problem. Deft does not make use of the C3's extended memory or hi-res graphics, but it does automatically make use of the C3's high speed mode and true lower case letters.

The most exciting thing TCE has done with the language is offer the Deft Advanced Graphics System. This is a set of extensions to Pascal that adds hi-res graphics, a redefinable, proportional character set and the functions necessary to handle it, and (drum roll please!) automatic menu bars, pull down menus, pointing device support (i.e. mouse) and windows! And it does all of this without OS9, and it does it on the lowly 64K Coco 2!

The complete Deft software development system consists of three packages, each sold seperately. Deft Pascal and Deft Extra, which were available previously, and the newer Deft AGS package.

The language itself is a standard implementation of Pascal (a lot more standard than most versions I've seen). A few extensions have been added to assist in string handling, but aside from that it looks and behaves like a true, standard implementation of Pascal.

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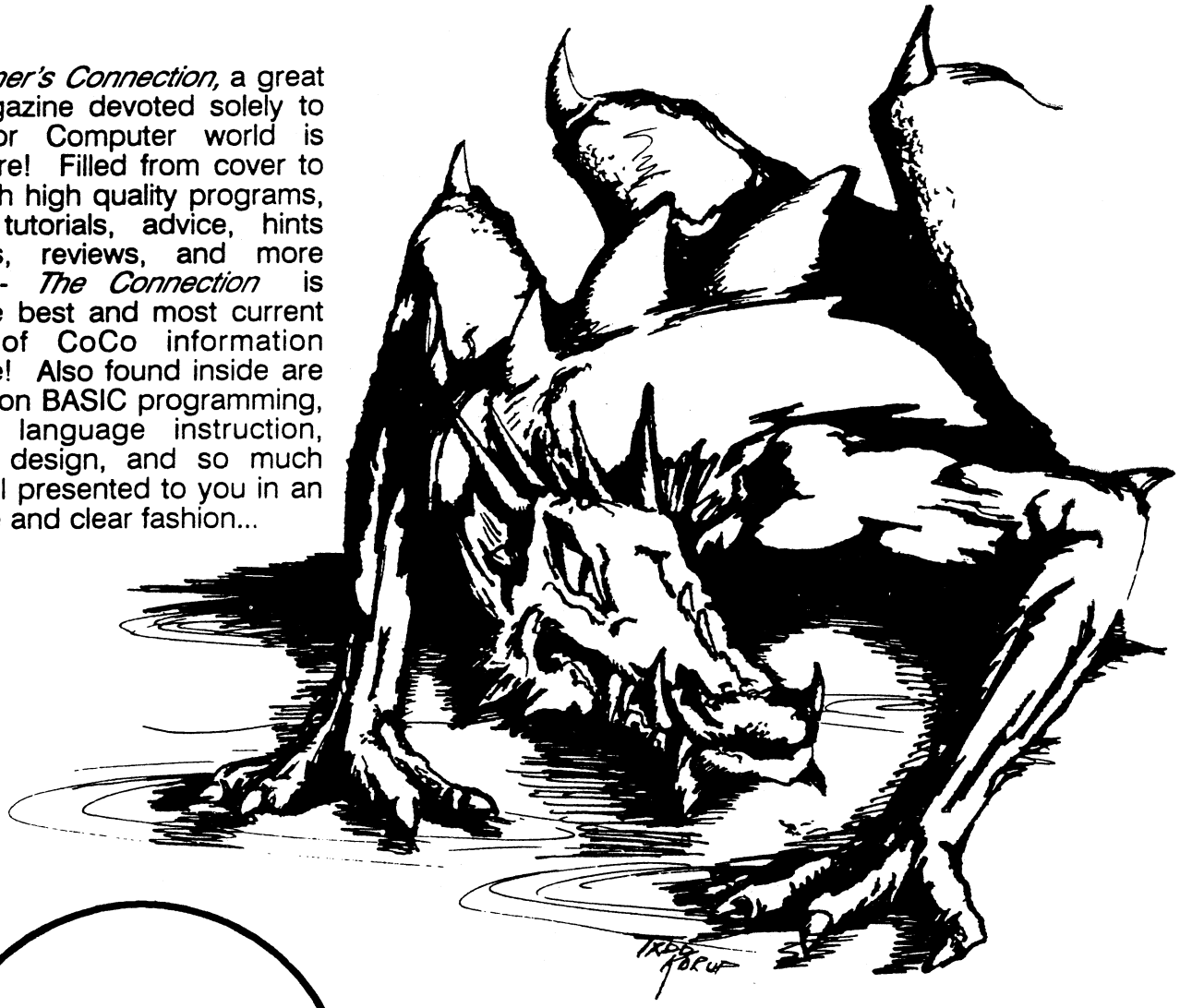

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DOWNTIME

Rush Caley

Morton Downey Jr. of the CoCo world? Is that supposed to be a compliment, Ted? I'm not sure. But he should talk: it wasn't me involved in the "GREAT PEA-BRAIN controversy" of 1987. In any case, I don't compare myself with quasi-celebrities. Since the inception of DOWNTIME in 1983 in my own small publication SPILLED CoCo, through its subsequent purchase by 2 other publications, I have tried to give readers a look at the lighter side of computing and life in general. Further, to provide the opportunity to read an author who is not afraid to challenge establishments and established ideas; not afraid to make predictions; and not afraid to give an in-depth review without worrying about "politics". But more important, I'm just out to have fun. After a year's "hiatus", I appreciate Ted Paul and CoCo Clipboard offering me a chance to bring DOWNTIME back again.

++++++++++++++++++++++++

RAPID FIRE TOPICS

1.) RAINY DAY BLUES

Well, again this year, no one bought me a 15" carriage high speed printer. But I always try to keep my spirits high during January. Here, on the Olympic Peninsula, January usually provides a good imitation of the Genesis Flood. There's not much to do but churn away at the CoCo in leisure time hours. As the resident maven for CoCo business applications in this neck of the woods, I spend these rainy days imagining ways to duplicate the output of sundry over-priced PC software packages.

At night, when I fight insomnia, I try to think of more useful additions Bob van der Poel can squeeze into Ultra-Telepatch. He keeps telling me there is no more room; but that's what he said many features ago. I may have to break down and get a CoCo III and OS-9 Level II. There's a guy named Terry Laraway who keeps breaking into my office, waving his arms, and rambling on about having Koronis Rift running in eight windows simultaneously. Where's my wallet?

2.) BAD DAY AT BLACK ROCK DEPARTMENT

My second favorite Coco and TWO J&M controllers were wiped out in one day! Let me point out to all would be electricians that the ground should NOT go where the 12 volts are supposed to go; and that the 12 volts are NOT supposed to go to ground. I'd sure like to find the guy who hacked that cable!!

2.) QUOTABLE QUOTES DEPARTMENT

A friend of mine who wishes to remain anonymous is a highly successful real estate magnate. One day we began to discuss computers. "I've got 3 computers, - I think they're IBM's. - 3 printers and 3 screens. I don't know anything about them. The only way I want to deal with them is with a hammer!"

++

ACRONYMIA NERVOSA

I left the teaching profession in the mid 1970's when educational jargon was at its peak. Teachers were referred to as "Learning Facilitators" or "Change Agents"; the library became the "LRC" (learning resource center); English had evolved into "Language Arts" and then mutated into "Communications" or "Multi-Media Skills". I finally escaped out the side door one afternoon during a mandatory seminar on "Values-Clarification".

We are all familiar with this infestation of acronyms, buzzwords, abbreviations, and other such lexicographical "mysteriosities" into the mainstream of the English language. It seems that every field of study or walk of life has its own peculiar specialized vocabulary. The field of computers is no exception. The following list is illustrative of the type of chatter one might hear or read in and about the CoCo fraternity on any given day:

BUG, MOUSE, GLITCH, RAM, ROM, EXEC, CALL, BOOT, MOD, FIX, PAL, PIA, SAM, PROM, EPROM, WORM, HEX, KLUGE, LOGON, BBS, GIME, CPU, CRT, KILL, MERGE, INTERFACE, VIRUS, and of course, "CoCo" itself.

Some scholars will argue that the English language will deteriorate so far as to be lost in this sea of colloquialism. I like to leave this type of speculation to the scholars. However, I thought it might be important for all of us to at least recognize that our everyday conversations and reading materials are riddled with these types of expressions.

I have decided that I would start keeping a

Continued On 35

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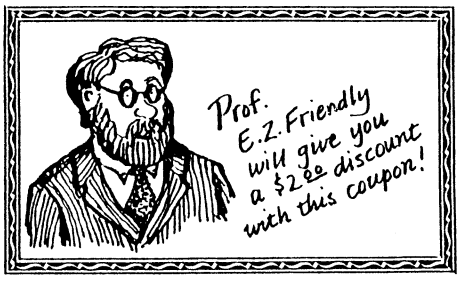

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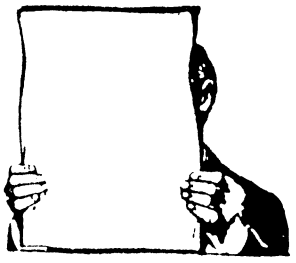

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list of those I run across and format my own notebook or dictionary to which I can refer when I need to look up a reference. I may even suggest to manufacturers of word processors for IBM compatibles that they keep a memory-resident "ACRO-SAURAUS" in new versions of their programs. Below is a list of acronyms I read in the newspaper or heard on television (TV?) just this last week. Start keeping track, you might find it fun.

NASA, NOW, MIA, CORE, ASPCA, POW, CIA, NATO, NRA, SIDS, AIDS, GOP, MADD, IRA, the 'FED', UN, U.S., U.K., IRS, OSHA, and my personal favorite this week: COCOM: Coordinating Committee on Multi-Lateral Export Controls.

But as you can guess, I won't leave it at that. I have also decided that if others can devise their own terminology, that I can do so as well. So now I am beginning to build my personal dictionary of specialized concepts and words, abbreviatons, or acronyms to describe them. If you would like to contribute, just send along your suggestions.
TBS - (Tandy Bashing Syndrome): A common ailment usually brought on by a visit to a R/S Computer Center and trying to extract coherent information regarding CoCo products.

BIG CHILL : Another name for a cold start.

On an old Grey CoCo, what would you call the little black shiny places at the foot of the keyboard where your sleeves have rubbed off the silver paint?

---------- <<
Place Answer at left

Before I go, I'd like to chat a little about the other column that will alternate with DOWNTIME as Ted announced in the last issue. This is, of course, only if there is enough interest. It will be a question and answer type column that will deal with your questions about Business applications of the CoCo. It will be your opportunity to get a second opinion on some of those gnawing questions; it will be my opportunity to serve you in the capacity I know best; and it will be Ted Paul's opportunity to get me to say something serious. Whether it's program design, database design, software choices, or whatever. Send the questions directly to me, and I'll answer as many as possible in one issue. My address is:

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Painless OS9

Randy Krippner

Despite its reputation of being complex and difficult to use, people are starting to realize that the only way to fully utilize the capabilities of the Coco 3 is with OS9. More software requiring OS9 L2 is appearing every day, and the trend towards OS9 based software is rapidly expanding as both programmers and users begin to realize just how powerful OS9 is.

The result is that increasing numbers of Coco 3 owners are finding themselves being dragged, in some cases kicking and screaming all the way, into the world of OS9. So for the next several issues The 9th Power is going to attempt to help make this transition easier by more fully explaining what OS9 does and how it works.

Hardware Requirements

Before we begin, let's take a look at what kind of equipment you need in order to use OS9 Level 2.

Tandy's catalog states that OS9 L2 requires a 128K Coco 3 and one disk drive. That's true. Sort of. In actual fact, if you want to do anything at all serious with OS9 L2 you need 512K and two drives.

The reason for this is that OS9 L2 is big. When you first start up OS9, the first thing it does is suck up 64K of RAM for its own use. More memory is required for "overhead"; miscellaneous purposes such as internal tables, buffers, etc. So on a 128K system you'll have only 40 - 50 K RAM free after starting up OS9.

If you plan on using windows or hi-res graphics on a 128K computer, you have a problem. Hi-res graphics eat up gobs of memory. A 320 X 192, 16 color graphics screen requires 32K just for storing the screen. If you want to use windows, it requires even more memory.

As for disk drives... Well, you can run OS9 L2 with one single sided drive, but you aren't going to do a heck of a lot with it. Because of OS9's size, most of the operating system is stored on disk and loaded into memory only when needed. The required OS9 files take up almost all of the free space on a single sided disk. You can delete some of the OS9 modules and utilities that normally aren't used in day to day operation, but space will still be at a premium. So you need at least two, single sided drives. (Besides. disk drives are cheap. I've seen 360K double sided, bare drives selling for under $70.)

In the rest of the articles in this series, I'm going to assume you have 512K RAM and two single sided drives. Later on in the series we'll look at how you can re-configure OS9 to work with double sided drives and do other little things to "tweak" the performance of the system.

Now, you've got your 512K Coco 3. You've got your two disk drives. Now all you need is OS9.

You head down to your local Radio Shack, $79.95 plus tax burning a hole in your pocket. You tremble with eagerness as you approach the Coco software display looking for OS9 Level 2. (Well, alright. So maybe you're not trembling with eagerness...)

You find the OS9 L2 package sitting on the shelf, take one look at the three inch thick binder and the thousand or so pages of documentation, then turn around and blow your money on Flight Simulator and Shanghai.

Shame on you! You're not going to let a few pounds of documentation get between you and OS9, are you? Of course not! Pick it up. (Note the heavily reinforced shelf it's kept on.) Make a mental note to have that hernia taken care of first thing in the morning as you heft it down off the shelf and carry it over to the friendly sales person behind the counter. Resist the impulse to buy the fireman's hat with the revolving light. Pay for it. Take it home. Put it on your desk. Admire the nicely designed binder, the flashy color scheme, the twenty pounds of paper stuffed between those covers... Don't panic!

Believe it or not, you can safely ignore 90% or more of that intimidating looking document. In fact, if you follow along carefully over the next few issues of Coco Clipboard, you may not have to open it at all.

Now let's take a closer look at what you get for your $79.95.

When you tear off the plastic around the binder and open it, a rectangular, heavy object in shrink-wrap plastic will fall out and hit your toe. After you return from hopping around the room in pain, take a closer look at the object that almost broke your foot.

This potentially lethal object is the documentation itself. That's right, Tandy doesn't even put the pages in the binder for you. But there is a good reason for that: it doesn't fit.

Strip the plastic off the pages. Remove

Continued On

Continued From 36

the Basic09 documentation and set it aside. Stuff the rest of the pages into the binder in some semblance of order. If you have the patience to do so, insert the cards with the index tabs into their proper places as well. When you get a chance, stop by a school or business supply store and get a seperate binder for the Basic09 documentation.

Also stuffed in that binder is a plastic disk holder with two disks labeled "OS-9 Level Two System Master" and "OS-9 Level Two Boot/Config/Basic09".

These are your master disks that contain the OS9 operating system and the Basic09 programming language. Remove them and put them in a safe place. Never leave them in the binder. Documentation tends to get spilled on, dropped, tossed against the wall, eaten by small animals, flushed down toilets by happy children and subjected to other accidental and deliberate damage. One should never subject one's master disks to that kind of abuse, so keep them as far away from the documentation as possible.

Also in the package are some postcards. One is a registration form. The others are change of address cards. Fill out the registration form, stick a stamp on it and mail it. This is so Tandy can find you if it ever gets around to issuing an upgrade.

Now, the first thing to do is put the documentation somewhere out of sight and totally ignore it. At least for the time being.

The next thing that needs to be done is to make back up copies of the disks that came with the OS9 L2 package. You never use the master disks for anything except to make working backup copies.

Take out the disk labeled "OS9 Level Two System Master". Make sure the notch in the side of the disk is covered with a write protect tab just in case.

Get out two new, blank disks. Turn on the computer, disk drives and monitor. Insert the system master disk in drive 0 and type:

```
DOS <ENTER>
```

The drive will spin, the screen will go blank and the words "OS9 Boot" will appear on your screen. After a few seconds, the following will appear on your display:

```
OS9 LEVEL TWO VER. 02.00.01
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ALL RIGHTS RESERVED.

* Welcome to OS-9 Level 2 *
* On the Color Computer 3 *

yy/mm/dd hh:mm:ss

Time ?
```

You have successfully booted up OS9 Level 2 and it is now waiting for you to tell it what the date and time is.

You can bypass entering the time by

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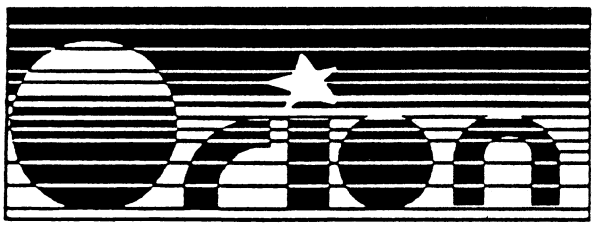

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hitting the ENTER key. However, it's a good idea to enter the date and time because some programs require the system date and time to be accurate. OS9 also "date stamps" files. When you save a file, OS9 automatically records the date and time when the file was saved along with the file itself. Being able to know when a particular file was saved can come in handy sometimes.

After you enter the date and time, you'll see something like this on your screen:

```
September 20, 1988 11:30:15

SHELL

OS9:
```

The word "SHELL" means that the OS9 shell is now active. The shell is a special part of OS9 that we'll discuss in detail later.

"OS9:" is the normal OS9 prompt, similar to the "OK" prompt that appears when you are using RS-DOS. It means that OS9 is up and running and ready to accept your commands. But before we can start playing around, we have to make back up copies of our master disks.

Leave your OS9 master disk in drive 0. Put your blank disk in drive 1. (Make sure your master disk is write protected just in case.)

Now type this line at the OS9: prompt:

```
format /d1 <ENTER>
```

Note that you can type any OS9 command in either upper or lower case letters. OS9 completely ignores case.

Format tells OS9 we want to format a disk to prepare it for use. It is the OS9 version of the RS-DOS "DSKINI" command. The "/d1" is the term used under OS9 for drive 1. Under RS-DOS, different disk drives are selected by appending a colon (:) followed by the drive number, to the file name. OS9 uses a different method of naming drives and devices. You always tell OS9 which drive to use with a "/d0" or "/d1".

If you keep an eye on your drives after you type this line, you'll notice that drive 0, not drive 1, comes on. What's happening?

Unlike RS-DOS, which is stored in a ROM chip, OS9 resides almost entirely on disk. Format is an OS9 module that is loaded into memory only when it is needed. So before the format function can be used, it must be loaded off the master disk in /d0.

After it is loaded, this will appear on you screen:

```
Color Computer Formatter
Formatting Drive /d1
y (yes) or n (no)
Ready?
```

OS9 is warning you that it is about to format the disk in drive /d1. Format, like DSKINI, will erase any information already stored on the disk, so OS9 gives you a chance to check to make sure you really want to format the disk in /d1. Press "y" to go ahead with the formatting process.

Drive 1 will turn on for a few seconds. Then another message will appear on the screen:

```
Disk name:
```

When you make a new disk with the OS9 format command, you have to give it a name. OS9 also stores the date and time when the disk was created along with the name, which makes it a lot easier to keep track of things.

You can enter anything you want for a name. It may be up to 32 characters long, and include any alpha-numeric character.

What you enter now doesn't matter because we'll be using this disk to make a backup copy. After the backup this disk will have the name of the master disk. So when asked for the disk name just enter anything and press the ENTER key.

Next a series of numbers will flash on the screen as the disk is formatted. Finally the following message will appear:

```
Number of good sectors: $000276
```

This tells you how many useable sectors are available on the disk, in hexidecimal. There are $276 sectors on a single sided disk.

One important note. OS9 automatically "locks out" any bad sectors it may find on the disk, and will not permit data to be stored on them. The disk can still be used, but NOT for backups! A disk to be used for backups must have no bad sectors. Now we're ready to do the back up.

With the master disk in /d0 and the freshly formatted disk in /d1, type the following line:

```
backup #56K <ENTER>
```

Again, drive 0 will come on. As was the case with format, backup must be loaded from disk before it can be used.

The "#56K" tells OS9 to use 56K of RAM for buffer space during the backup, which cuts down on the amount of time required for backup. (If you only have 128K RAM, you can only use about 20 or 30K for buffer space.)

You will next see this message:

```
Ready to backup from /d0 to /d1
?:
```

OS9 is giving you a chance to abort the operation if you wish. Press "Y" to continue.

OS9 gives you still another chance to abort the operation. You will next see this message appear:

```
diskname
  is being scratched

Ok?:
```

OS9 looks at the disk in /d1, reads the name of the disk and displays it, warning you that this disk is going to be "scratched", or

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erased, by the backup process. Press "Y" to continue.

The actual backup process now begins. After a short time, OS9 will display this:

```
Sectors copied : $0276
Verify Pass
Sectors Verified : $0276
```

First it tells you how many sectors were copied. It then verifies the backup copy to make sure the backup went alright. If the number of sectors verified matches the number of sectors copied, the backup is finished.

If the numbers do not match, then something went wrong. In all likelihood there was a flaw on the backup disk. Get out a different blank disk, format it, and repeat the backup process if this occurs.

You now have an exact copy of your OS9 system master disk. Remove the original from /d0 and put it in a safe place. Label the backup copy you just made and use it from now on whenever you boot up OS9.

The process of making a backup copy of your Config/ Basic09 disk is similar, but requires something a bit different.

Put your backup copy of the master disk in /d0. Put a blank disk in /d1 and repeat the format process that you performed earlier.

Remember when I mentioned that not all of OS9 is loaded into memory? Some modules must be loaded off the system disk, including the backup function.

This means that you can't just slap any disk into /d0 and back it up to /d1 without first loading the backup command into memory.

When you give OS9 a command to use a function such as "backup", the first thing OS9 does is search through a list of all of the functions or modules that are currently in the computer's memory. If the required module is not in memory, it looks on the disk to see if it's there. If it is, it loads it into memory and executes it. Later on we'll take a closer look at these modules, and the "module directory" that OS9 maintains in memory. But for the moment, just do this. With the master disk in /d0, type:

```
load backup <ENTER>
```

Drive 0 will spin, and after a second the OS9: prompt will reappear.

What we did was load the backup function into memory so that OS9 doesn't have to try to find it on the disk.

Remove your system disk from /d0 and replace it with the Boot/ Config/ Basic09 disk. Make sure the blank, formatted disk you just made is in /d1. Now procede with the backup function as we described earlier.

That wasn't so hard, was it? And it certainly wasn't all that different from RS-DOS, either. True, some of the function names are different, but the functions we've looked at so far do the same things they do under RS-DOS. They just look a little different.

We're out of room for this installment. Next time we'll move onward and explore OS9's unique directory system. I encourage you to go ahead and read "Getting Started With OS-9" in the OS9 documentation. It really isn't as bad as it looks.

As usual, send your comments and questions to: Randy Krippner, 1014 W. Hwy. 114, Lot 29, Hilbert WI 54129.

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C.C.B.M.S.

Jim DeStafeno

"CCBMS"??? We are doing it! The idea has been rattling around for a long time. How many times have you thought about using a CoCo to help manage your business? Then the questions flood in. Can it do it? Can I do it? Do I know enough? Are there enough people interested? Well, we are going to find out.

CoCo Clipboard Business Management System ("CCBMS") is out of the closet. The key hit like a ton of lead when I read the Sep/Oct'88 "Reader Mail" Dr. Stephen Houghy, in Wisconson, wanted to put his practice on the CoCo "soon". Over the years I've seen dozens of such letters. Will the good doctor ever get it done?

Maybe; most likely not. Time is the killer. Sooner or later he'll opt for a PC and a catch-all Medical Practice program that will care for most of his needs. Not just as he wants, but it will do the job.

And right there lies the key. The good doctor, the plumber, the contractor is willing to "give" as much as they can, but they need help to get it done. Can they help each other? Of course they can. What is needed is an association of Users, a Users Group, to exchange and organize ideas. There is not enough time for each of them to invent a wheel.

(Along with that, at the least we all can gain some programming knowledge. Would you like a blinking cursor while using INKEY$ in the 80 and 40 column screens? Check out lines 50 and 200.)

* * * * * * * *

What is needed? Well, a communications vehicle is needed. What better place then in the pages of CoCo Clipboard Magazine! We need someone that understands business systems. That is my profession. We need someone that can program, but one that knows what it is to be a User. I can't do it all, but no one has to do it all if we work together.

First we have to know what is needed for each business type. I mean, most every business needs an Order Entry module, Paul Bornemann needs it to be free-form, someone else needs part numbers and inventory reduction; but Dr. Houghy doesn't even want Order Entry.

Okay, Paul and Stephen and YOU; you know your business and what it needs. That is where you should concentrate their resources. Together we can get it done. What I need most is an explanation of the design you want. We will all use the same program "spine" and hang different "business type" sub-structures on it. From there you do can do anything with it you wish. And if you get stuck, the Users Group will lend a hand.

* * * * * * * *

Sound right so far? Okay, let us set some ground rules. The objectives will be Completion, User Friendliness and Low Cost; in that order. The worlds greatest program has no value if it is not completed. So we must keep the "spine" simple. The given business type sub-modules will add a bit more complexity, but that is what will tailor the system to each business type. If a given User feels he needs more than a given sub-module provides, he will have an excellent base to begin from.

If the User needs help with his additions we may very well have someone from the Users Group that will do that. I would like all additions to be sent to the Users Group. They will be kept on file for distribution to members of like need.

The need for User Friendliness and Low Cost are in competition with each other, but the system must be easy to use. The objective is business management, not computer operation. The system is just a business tool.

With all of the above in mind, I suggest we write the "spine" for a CoCo-3. It has so many advantages; the 80 X 24 screen, error trapping, super high speed mode and OS-9 II. Those that want can convert the code to -2 usage. The conversion code could be sent to the User's Group, and kept on file for distribution to those that want to use a -2.

* * * * * * * *

Although a monitor will add cost, a TV can not display readable characters in the 80 column mode and has high susceptibility to interference in any mode. That reduces the display method choice to a monitor, but not necessarily color. Even a composite is okay. If you plan to do a fair amount of word processing with your system, you might seriously consider an amber screen. I have both color and monochrome. The color box is a dust collector; I use the amber screen for everything.

A hard disk is the highest cost that will be needed. Of course one is not needed just

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yet, but as we get more programs to complete the system, and collect the data generated, a floppy drive will be over loaded. Those that think they can get along using only floppies can start that way, but I expect they will want a hard disk sooner or later.

Which hard disk system to get is still open to question. I presently have the RGB system running a 20 Mb hard disk. It has been working for a year without flaw. The Burke and Burke offering arrived last week. The plan is to review it in the next issue of CoCo Clipboard. Owl Ware talked to me about their system, but hasn't committed to sending the chip as yet.

One word of caution. If you are planning to purchase a floppy system, make sure the controller has at least two (2) slots and "no- halt". The two slots will allow the use of normal BASIC and the hard disk seperatly, thereby allowing the use of those machine language programs that won't run using the hard disk chip. I expect we will be going to OS-9 before we are finished, and under OS-9 a no-halt controller allows type-ahead.

* * * * * * * *

The language must be serviceable and common. It should allow all User Group members to contribute with ease and also let the magazine readers follow the action easily. Later we may convert to 09 Basic, but for the beginning we will stick with RS-BASIC. In addition, we might be surprised by what BASIC can do.

Along with a universal language, we will have on screen "help" notes for every input and option, and use sound for prompting. The modules must be integrated, but also stand alone in every configuration. Only inventory and scheduling will be on-line updated. All other activites will be "batch processed" with approval before processing. Reversing incorrect entries in any system is difficult at best.

The Operating System choice is between RS-BASIC and OS-9. The choice can be based on the complexity of the system. That is, there are ways of getting Multi-User on the CoCo without OS-9, therefore RS-BASIC can not be ruled out. However, background tasking and easy file handling can best be done using OS-9. To allow as much participation as possible we will begin with RS-BASIC.

* * * * * * * *

So, how will all this work? Module "splines" and some sub-modules will be printed in each issue of CCM. Anyone that wants to use the programs to manage their business is encouraged to do so. If a user makes an enhancement, they are encouraged to send them in. If the change applies to all businesses the spline/sub-module will be updated and printed in the magazine. Otherwise they will be kept on file for others that need the same result.

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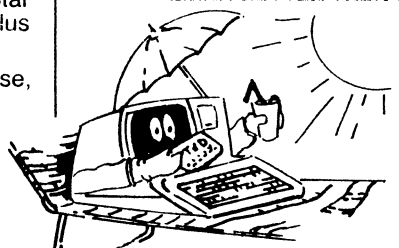

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But don't wait for the "spine" you need to be printed. Write in right now with your request. I will write your spline and sub-module per your request.

The best way to make a request is to show what you want on each screen and report header. The best way to do this is to make a sketch of each screen and report header on graph paper.

Since the CoCo-3 can easily produce 80 X 24 and 40 X 24 character displays, just use paper with 80 or 40 spaces across, and 24 spaces long. You may have to tape a couple of pages together; it doesn't have to be fancy.

Once you have the proper graph paper setup, using pencil write in what you want the screen to display. To that attach a short description of what you expect the program to do. The same approach will work for the reports. If all the information you want printed can be shown in 80 columns, just use 80 column graph paper to show the heading needed. If 80 columns isn't enough use 132. Most of today's dot matrix printers produce good condensed print, which is 132 columns. Of course the wide carriage printers produce 132 normal character columns too.

So get your graph paper, put down your ideas and send them into the magazine or directly to myself. I will write the program to your screen and header design and send it to you for review. You can make any needed changes or send it back to me to do it. Either way it will be printed in CCM and kept on file for later use.

If you don't have a business, but want to get into writing programs for the system, or just contributing expert knowledge; accounting, inventory management, scheduling, etc. let me know. Everyone will get credit for his efforts.

* * * * * * * *

Enough preamble, lets take a look at a "spine". There are few systems that can exist without Order Entry. It may be an elaborate set of inputs that records who, when, what, print a receipt, etc. Such a need would best be written as a stand alone module. Other systems may just need a utility within the Accounts Receivable and/or Inventory Modules to record items charges and/or consumption of inventory. In either case we need to record the activity in a file for later recall upon report printing.

So... there are several major parts to Order Entry. One of the major parts is the Customer File. That is the part included in this issue. It is no more than a data base that records each customer and their basic data; name, address, phone number and the like.

There are two fields that might be strange, Type and Class; three characters each. These fields will be used later for sorting. Lets say the business sells, installs and services heating and air conditioning equipment. By setting up Type and Class codes for each customer, they can be identified as to the "type" of equipment; "HTR", heater; and "class" of the heater, "C12". Sorts can then be made to identify customers for flyer mailing or equipment update, service, etc.

The sub-module of the Order Entry Module in this issue is call Customer File Maintenance, "CSFLMT.BAS". It is a data base with Add, Inquire, Change and Report Printing. It's not very unusual except for In-Memory Search and no sorting is done except for an Alpha Customer List.

In-Memory Search is setup when the User requests one of the above actions. The screen displays a "LOADING DATA" note while all of the customer records are played in and the Customer Name and Number are put into a string array.

Then when a customer's Name or Number is requested, the array is searched. Since it is in memory it is fast; at least compared to calling in each record from the disk until the desired customer is found.

Anyway, when the desired customer is found in the array, only the requested customer's record is called in from the disk. The complete customer records are not put in the array to reduce the amount of memory consumed by the array.

A feature of the program is the input prompts at the bottom of the screen. Be sure to check them before responding to any request. There is also a Hints List. Check it before doing any activity in the sub-module.

If you find any bugs or have improvement suggestions please let us know as soon as you can. If you feel your business needs more customer data, let me know about that too. I'll make the mod or you can do it yourself. If you do it let me know how it went.

By the way, if you don't have a business tell a friend that does have one about the series. Of course the program can be used to store and retrieve any data.

* * * * * * * *

So far I havn't mentioned the second program in this issue. This other program is a simple System Menu, "SYSMNU.BAS". It is used to select the different modules and sub-modules. It will be added to with each addition to the System.

The program begins with a logo display that takes a few seconds to run its course. To cut it off at any point just press any key. Also, if you are using a composite monitor and your display needs improvement, Load "SYSMNU" without running it. Then input GOTO2222 <ENTER>, then RUN the program. For "CSFLMT", GOTO11111

We are looking forward to hearing from you whether you will be a User or a Contributor.

CoCo Clipboard Magazine

```
0 ' /\/\/\/\/\/\/\/\/\/\/\/\/\
1 ' \        - CCBMS -        /
2 ' /      "CSFLMT.BAS"       \
4 ' /        Rev 1.0.0        \
5 ' \   (C) Copyright 1988    /
6 ' / CHATHAM HOUSE SOFTWARE  \
7 ' \      JIM DESTAFENO      /
8 ' /    WYOMING, DE  19934   \
9 ' \/\/\/\/\/\/\/\/\/\/\/\/\/\/
10 POKE65497,0:GOTO9030
20 '***
30 '*** Sub-Routine Section ***
40 '***
50 LOCATEX1,Y1:ATTR0,0,B:PRINT""
;:I$=INKEY$:IF I$="" THEN50 ELSE
 ATTR0,0:ON INSTR(TG$(1),I$) GOT
O50,50,80,50,50,50,70,90,50,50
60 LN=LEN(F$):IF LN=>LN(1) THEN
SOUND50,1:GOTO50 ELSE F$=F$+I$:L
OCATEX2,Y1:PRINTF$;:X1=X1+1:GOTO
50
70 SOUND225,1:RETURN
80 IF LEN(F$)=0 THEN SOUND50,1:G
OTO50 ELSE F$=LEFT$(F$,LEN(F$)-1
):LOCATEX2,Y1:PRINTF$;STRING$(LN
(1)-LEN(F$),46);:X1=X1-1:GOTO50
90 IF LEN(F$)=0 THEN SOUND50,1:G
OTO50 ELSE F$="":X1=X2:LOCATEX1,
Y1:PRINTSTRING$(LN(1),46);:SOUND
224,1:GOTO50
100 LOCATEX1,Y1:ATTR0,0,B:PRINT"
";:I$=INKEY$:IF I$="" THEN100 EL
SE ATTR0,0:ON INSTR(TG$(1),I$) G
OTO100,100,120,100,100,100,70,13
0,100,100
110 LN=LEN(F$):IF LN=>LN(1) THEN
 SOUND50,1:GOTO50 ELSE F$=F$+I$:
LOCATEX2,Y1:IF LEN(F$)=5 THEN F$
=F$+"-":PRINTF$;:X1=X1+2:GOTO100
 ELSE PRINTF$;:X1=X1+1:GOTO100
120 IF LEN(F$)=0 THEN SOUND50,1:
GOTO100 ELSE F$=LEFT$(F$,LEN(F$)
-1):LOCATEX2,Y1:PRINTF$;STRING$(
LN(1)-LEN(F$),46);:X1=X1-1:GOTO1
00
130 IF LEN(F$)=0 THEN SOUND50,1:
GOTO100  ELSE F$="":X1=X2:LOCATE
X1,Y1:PRINTSTRING$(LN(1),46);:SO
UND224,1:GOTO100
140 LOCATEX1,Y1:ATTR0,0,B:PRINT"
";:I$=INKEY$:IF I$="" THEN140 EL
SE ATTR0,0:ON INSTR(TG$(1),I$) G
OTO140,140,180,140,140,140,170,1
90,140,140
150 LOCATE0,15:PRINT"":LN=LEN(F$
):IF LN=>LN(1) THEN SOUND50,1:GO
TO140 ELSE F$=F$+I$:IF LN=2 THEN
 F$=F$+") ":LOCATEX1,Y1:PRINTI$+
") ";:X1=X1+3:GOTO140 ELSE IF LN
=7 THEN F$=F$+"-":LOCATEX2,Y1:PR
INTF$;:X1=X1+2:GOTO140
160 LOCATEX1,Y1:PRINTI$;:X1=X1+1
:GOTO140
170 LOCATE0,15:PRINT"":IF LEN(F$
)=0 THEN F$="    ) ":LOCATEX1,Y1:
PRINTF$;:X1=X1+5:SOUND225,1:GOTO
140 ELSE SOUND225,1:RETURN
180 IF LEN(F$)=0 THEN SOUND50,1:
GOTO140 ELSE F$=LEFT$(F$,LEN(F$)
-1):LOCATEX2,Y1:PRINTF$;STRING$(
LN(1)-LEN(F$),46);:X1=X1-1:GOTO1
40
190 IF LEN(F$)=0 THEN SOUND50,1:
GOTO140 ELSE F$="":X1=X2:LOCATEX
1,Y1:PRINTSTRING$(LN(1),46);:SOU
ND224,1:GOTO140
200 LOCATEX1,Y1:ATTR0,0,B:PRINT"
";:I$=INKEY$:IF I$="" THEN 200 E
LSE ATTR0,0:SOUND224,1:RETURN
210 LOCATE25,22:X1=47:Y1=22:PRIN
T"- MORE?, Select (Y/N)":GOSUB20
0:RETURN
220 WIDTH40:LOCATE13,9:PRINT"- L
OADING DATA -":RETURN
230 WIDTH40:LOCATE2,9:PRINT"- DI
D NOT FIND:":LOCATE5,11:RETURN
240 FG=0:GOSUB220:GOSUB1030:GOSU
B1040:GOSUB1050:FOR X=1 TO LOF(1
):GET #1,X:CS$(X)=CS$:CN$(X)=CN$
:NEXTX:RETURN
910 SOUND224,1:GOTO9070
1000 '***
1010 '*** Disk I/O ***
1020 '***
1030 OPEN"D",#1,"CUS FILE",152:R
ETURN
1040 FIELD #1,6AS CN$,30AS CS$,2
5AS TR$,15AS CT$,2AS TT$,10AS ZP
$,45AS CM$,13AS PH$,3ASTY$,3AS C
L$:RETURN
1050 LSET CN$=CN$(1):LSET CS$=CS
$(1):LSET TR$=TR$(1):LSET CT$=CT
$(1):LSET TT$=TT$(1):LSET ZP$=ZP
$(1):LSET CM$=CM$(1):LSET PH$=PH
$(1):LSET TY$=TY$(1):LSET CL$=CL
$(1):RETURN
1060 PUT #1,LOF(1)+1:LOCATE0,0:P
RINTLOF(1)+1
2000 '***
2010 '*** Field Display ***
2020 '***
2030 CS$(1)="":GOSUB1030:GOSUB10
40:GOSUB2040:LOCATE35,0:ATTR0,0,
U:PRINT" - ADD - ";:LOCATE0,1:PR
INT"";:ATTR0,0:GOSUB2050:GOSUB20
70:GOSUB4030
2040 WIDTH80:ATTR0,0,U:PRINT"Cus
.File Maint.":LOCATE35,0:PRINT"-
 CCBMS -";:LOCATE74,0:PRINT"CSFL
MT";:ATTR0,0:RETURN
2050 LOCATE0,3:PRINT"Customer. .
 . "STRING$(30,46)
2060 LOCATE50,3:PRINT"Cus No ...
...":RETURN
2070 LOCATE0,5:PRINT"Street. . .
 . "STRING$(25,46)
2080 LOCATE0,7:PRINT"City, St  Z
ip ..............., ..  .....-..
.."
2090 LOCATE50,5:PRINT"Phone (...
) ...-...."
2100 LOCATE50,7:PRINT"Type . ...
"
2110 LOCATE62,7:PRINT"Class ..."
2120 LOCATE0,9:PRINT"Comments. .
 . "STRING$(45,46)
2130 PRINT:PRINTSTRING$(80,45);
2140 SOUND224,1:PRINT"EDITOR COM
MANDS:  BACKSPACE - L Arrow,  CL
EAR - SF/L Arrow,  END INPUT - <
ENTER>";;:ATTR0,0,U:PRINTSTRING$
(80,32);:ATTR0,0:RETURN
3000 '***
3010 '*** Inquire ***
3020 '***
3030 GOSUB240
3040 WIDTH80:GOSUB2040:LOCATE35,
0:ATTR0,0,U:PRINT"- INQUIRE -";:
LOCATE0,1:PRINT"";:ATTR0,0:GOSUB
2050:LOCATE0,5:PRINT" ";:FOR X=1
 TO 26:PRINTSD$;:NEXTX:PRINT:GOS
UB2140
3050 N$="":CS$="":LOCATE25,22:PR
INT"- INPUT: Customer Name or <E
NTER> for Customer NUMBER.":X1=1
4:X2=14:Y1=3:LN=0:LN(1)=30:GOSUB
50:IF F$="" THEN3060 ELSE LOCATE
0,3:PRINTSTRING$(13,32);:CS$=F$:
GOTO3070
3060 LOCATE25,22:PRINT"- INPUT:
Customer NUMBER":X1=57:X2=57:Y1=
3:LN=0:LN(1)=6:GOSUB50:X=VAL(F$)
:IF X=0 THEN9040 ELSE3120
3070 LOCATE25,22:PRINT"- INPUT:
Number of Customer or 'M', More"
:C=0:A1=0:B1=9:FOR X=1 TO LOF(1)
:IF C=12 THEN A1=40:B1=9
3080 IF C=24 THEN C=0:FL=1:A1=0:
B1=9:LN=0:LN(1)=6:X1=66:Y1=22:X2
=66:F$="":GOSUB50:IF F$="M" THEN
3090 ELSE X=VAL(F$):IF X=0 THEN3
135 ELSE 3120
3090 IF INSTR(CS$(X),CS$)>0 THEN
 LOCATEA1,B1:Y=X:PRINTUSING"####
#";X;:PRINT". "CS$(X):B1=B1+1:C=
C+1
3100 NEXTX:IF C=0 THEN3135 ELSE
IF FL=0 AND C=1 THEN X=Y:GOTO313
0
3110 LOCATE53,22:PRINT"":F$="":L
N=0:LN(1)=6:X1=53:Y1=22:X2=53:GO
SUB50:X=VAL(F$):IF X=0 THEN9040
3120 IF X>LOF(1) OR X<1 THEN SOU
ND50,1:LOCATE25,22:PRINT"- NUMBE
R is larger or smaller then exis
ting numbers.":FOR X=1 TO 999:NE
XTX:GOTO 9040
3130 GOSUB1040:GET #1,X:LOCATE0,
6:PRINT:GOSUB2070:IF FG(1)=1 THE
N CS$(1)=CS$:CN$(1)=CN$:TR$(1)=T
R$:CT$(1)=CT$:TT$(1)=TT$:ZP$(1)=
ZP$:CM$(1)=CM$:PH$(1)=PH$:TY$(1)
=TY$:CL$(1)=CL$:GOTO3140 ELSE LO
CATE0,11:ATTR0,0,U:PRINT:ATTR0,0
:PRINT:PRINT:GOTO3140
3135 GOSUB230:PRINT" "CS$:FOR X=
1 TO 750:NEXTX:GOTO9040
3140 LOCATE0,3:PRINTSTRING$(13,3
2)" "CS$;
3150 LOCATE57,3:PRINTCN$
3160 LOCATE0,5:PRINTSTRING$(14,3
2)TR$;
3170 LOCATE0,7:PRINT"
   "CT$", "TT$"  "ZP$;
3180 LOCATE0,9:PRINTSTRING$(14,3
2)CM$;
3190 LOCATE57,5:PRINTPH$;
3200 LOCATE57,7:PRINTTY$;
3210 LOCATE68,7:PRINTCL$;
3220 IF FG(1)=1 THEN5030 ELSE LO
CATE25,22:PRINT"- Press ANY-KEY
to Continue.":X1=53:Y1=22:GOSUB2
00:GOTO5030
4000 '***
4010 '*** Data (Add) Input ***
4020 '***
4030 LOCATE25,22:PRINT"- INPUT:
Customer Name."TS$TS$;:F$=CS$(1)
:X1=14:X2=14:Y1=3:LN=0:LN(1)=30:
 X1=X1+LEN(CS$(1)):GOSUB50:IF F$
="" THEN4030 ELSE LOCATE0,3:PRIN
TSTRING$(13,32);:CS$(1)=F$
4040 CN$(1)="000000":IF FG(1)=1
THEN Y$=STR$(X):X$=RIGHT$(Y$,LEN
(Y$)-1):MID$(CN$(1),7-LEN(X$))=X
$:LOCATE57,3:PRINTCN$(1) ELSE Y$
=STR$(LOF(1)+1):X$=RIGHT$(Y$,LEN
(Y$)-1):MID$(CN$(1),7-LEN(X$))=X
$:LOCATE57,3:PRINTCN$(1)
4050 LOCATE43,22:PRINT"Street.";
:F$=TR$(1):X1=14:X2=14:Y1=5:LN=0
:LN(1)=25:X1=X1+LEN(TR$(1)):GOSU
B50:LOCATE0,5:PRINTSTRING$(13,32
);:IF F$>"" THEN TR$(1)=F$
4060 LOCATE43,22:PRINT"City, do
NOT input the comma.";:F$=CT$(1)
:X1=14:X2=14:Y1=7:LN=0:LN(1)=15:
X1=X1+LEN(CT$(1)):GOSUB50:LOCATE
0,7:PRINT"State";:IF F$>"" THEN
CT$(1)=F$
```

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```
4070 LOCATE43,22:PRINT"State, 2
characters."TS$;:F$=TT$(1):X1=31
:X2=31:Y1=7:LN=0:LN(1)=2:X1=X1+L
EN(TT$(1)):GOSUB50:LOCATE0,7:PRI
NT"Zip .";:IF F$>"" THEN TT$(1)=
F$
4080 LOCATE43,22:PRINT"Zip Code;
 Do NOT type the dash.";:F$=ZP$(
1):X1=35:X2=35:Y1=7:LN=0:LN(1)=1
0:X1=X1+LEN(ZP$(1)):GOSUB100:LOC
ATE0,7:PRINTSTRING$(13,32);:IF F
$>"" THEN ZP$(1)=F$:IF RIGHT$(F$
,1)="-" THEN ZP$(1)=LEFT$(ZP$(1)
,5)
4090 LOCATE34,22:PRINT"Free-Form
, shows on Sales Order entry scr
een.";:F$=CM$(1):X1=14:X2=14:Y1=
9:LN=0:LN(1)=45:X1=X1+LEN(CM$(1)
):GOSUB50:LOCATE0,9:PRINTSTRING$
(13,32);:IF F$>"" THEN CM$(1)=F$
4100 F$=PH$(1):IF F$="" THEN LOC
ATE27,15:PRINT"Press <ENTER> to
";:ATTR0,0,B:PRINT"by-pass";:ATT
R0,0:PRINT" the Area Code";
4110 LOCATE34,22:PRINT"Do NOT ty
pe the parenthesis, space or das
h.  ";:X1=57:X2=57:Y1=5:LN=0:LN(
1)=13:X1=X1+LEN(PH$(1)):GOSUB140
:IF F$>"" THEN PH$(1)=F$
4120 LOCATE34,22:PRINT"A classif
ication for sorts."TS$"      ";:F
$=TY$(1):X1=57:X2=57:Y1=7:LN=0:L
N(1)=3:X1=X1+LEN(TY$(1)):GOSUB50
:IF F$>"" THEN TY$(1)=F$
4130 F$=CL$(1):X1=68:X2=68:Y1=7:
LN=0:X1=X1+LEN(CL$(1)):GOSUB50:I
F F$>"" THEN CL$(1)=F$
4140 LOCATE25,22:PRINT"- ALL COR
RECT ?, Select (N/Y) or F2 to Ab
ort";:X1=70:Y1=22:GOSUB200:ATTR0
,0:IF I$=CHR$(4) THEN CLOSE:GOTO
9040 ELSE IF I$<>"Y" AND I$<>"y"
 THEN4030 ELSE GOSUB1050:GOTO803
0
5000 '***
5010 '*** Change Record ***
5020 '***
5030 IF FG(1)=1 THEN 4030 ELSE 9
040
5040 FG(1)=1:GOSUB240:WIDTH80:GO
SUB2040:LOCATE35,0:ATTR0,0,U:PRI
NT"- CHANGE -";:LOCATE0,1:PRINT"
";:ATTR0,0:GOSUB2050:LOCATE0,5:P
RINT" ";:FOR X=1 TO 26:PRINTSD$;
:NEXTX:PRINT:GOSUB2140:FG(1)=1:G
OSUB3050:FG(1)=0:GOTO5030
5999 EXEC44539:STOP
6000 '***
6010 '*** Report/Printer Routine
 ***
6020 '***
6030 GOSUB240:WIDTH80:GOSUB2040:
LOCATE31,0:ATTR0,0,U:PRINT"- REP
ORT PRINTING -";:LOCATE0,1:PRINT
"";:ATTR0,0:
6040 LOCATE29,3:PRINT"- PRINT CU
STOMER LIST -":LOCATE25,22:PRINT
"- RETURN to menu ?  (N/Y)";:X1=
51:Y1=22:GOSUB200:IF I$="Y" THEN
 CLOSE:GOTO9040:
6050 LOCATE25,22:PRINT"- SORT on
 Name or Ident. number ?  (N/I)"
;:X1=66:GOSUB200:IF I$="I" THEN
I1$="I":SI$="IDENT.#" ELSE SI$="
  NAME"
6060 LOCATE1,7:PRINT"- SORTING o
n Customer ";SI$;":";:FOR X=LOF(
1) TO 1 STEP-1:CS$(X+1)=CS$(X)+C
N$(X):NEXTX
6070 IF I$="I" THEN6090 ELSE FG=
0:FOR LG=LOF(1)+1 TO 2 STEP-1:FO
R X=2 TO LG:IF CS$(X)>CS$(X+1) T
HEN TH$=CS$(X):CS$(X)=CS$(X+1):C
S$(X+1)=TH$:FG=1:NEXTX ELSE NEXT
X
6080 IF FG<>0 AND LG<>1 THEN FG=
0:NEXTLG
6090 LOCATE1,7:PRINT"- INPUT: Re
port Date, ../../... (mm/dd/yy)"
;:F$="":DA$=F$:X1=23:X2=23:Y1=7:
LN=0:LN(1)=8:X1=X1+LEN(DA$):F$="
":DA$="":SOUND224,1:GOSUB50:IF F
$>"" THEN DA$=F$
6100 LOCATE1,7:PRINT"- Printer R
EADY ?, (N/Y)  [ Be SURE printer
 is ON and paper is in place.]";
:X1=25:Y1=7:GOSUB200:IF I$<>"Y"
THEN6100
6105 IF I1$="I" THEN A=1:B=LOF(1
) ELSE A=3:B=LOF(1)+2
6110 C=0:POKE65496,0:P=-2:FOR X=
A TO B:IF C>0 AND C<15 THEN6170
ELSE PRINT#P:PRINT#P
6120 PRINT#P,"CUSTOMER LIST";STR
ING$(22,32);"- CCBMS -";STRING$(
29,32);"CSFLMT"
6130 PRINT#P,"REPORT DATE: "DA$;
STRING$(40,32);"SORTED ON: ";SI$
:PRINT#P
6140 PRINT#P,"CUSTOMER NAME";STR
ING$(20,32);"IDENT.#      TYPE
  CLASS                LINE #"
6150 PRINT#P,"STREET";STRING$(27
,32);"PHONE #"
```

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Continued From 44

```
6160 PRINT#P,"CITY            STAT
E  ZIP-CODE    COMMENT"
6170 IF I1$="I" THEN Z=X:GOTO619
0
6180 Z=VAL(RIGHT$(CS$(X),6))
6190 PRINT#P:GET #1,Z
6200 PRINT#P,CS$"    "CN$;"
   ";:PRINT#P,USING"% %";TY$;:PR
INT#P,"        ";:PRINT#P,USING"%
 %";CL$;:PRINT#P,"            ";
:PRINT#P,USING"######";X-2
6210 PRINT#P,TR$"        ("PH$
6220 PRINT#P,CT$", "TT$"  "ZP$"
 "CM$
6230 C=C+1:IF C=14 THEN PRINT#P:
PRINT#P:C=0:NEXTX ELSE NEXTX
6240 CLOSE:GOTO9040
6250 FOR X=1 TO LOF(1):PRINT#P:Z
=X:GOTO6190
6999 EXEC44539:STOP
7000 '***
7010 '*** Hints ***
7020 '***
7030 GOSUB2040:PRINT:PRINT:PRINT
"      ";:ATTR0,0,U:PRINT"GENERAL
";:ATTR0,0:PRINT":":PRINT:PRINT"
        -The operator is often
requested to make a Yes/No choic
e,":PRINTTS$;"noted by (Y/N) or
(N/Y).  The first letter, N or Y
, is the"
7040 PRINTTS$;"default choice an
d will work with any key.  The s
econd":PRINTTS$;"letter must be
pressed directly.":PRINT:PRINT"
        -Upon an irreversible ch
oice, the operator will be asked
 to":PRINTTS$;"spell the choice;
 such as, (N/YES)."
7050 PRINT:PRINT"        -Menu
items 4 through 7 are reserved f
or use with later":PRINTTS$;"rev
isions."
7060 PRINT:PRINT:PRINT"      ";:A
TTR0,0,U:PRINT"INQUIRE";:ATTR0,0
:PRINT":":PRINT:PRINT"        -
Input Customer Data, ADD, before
 running INQUIRE.  Otherwise":PR
INTTS$;"an Error will result.":G
OSUB7998
7070 PRINT:PRINT:PRINT"
-INQUIRE searches on lowercase";
7080 PRINT" and uppercase letter
s separatly.":PRINTTS$;"If you i
nput the customer name using low
ercase, don't forget":PRINTTS$;"
to use lowercase during INQUIRY.
7090 PRINT:PRINT:PRINT"      ";:A
TTR0,0,U:PRINT"DISPLAY";:ATTR0,0
:PRINT":":PRINT:PRINT"        -
If you are using a composite mon
itor add 'GOTO10111' to the"
7100 PRINTTS$;"end of Line 9030.
":PRINT:PRINT"        -If you a
re using a RGB monitor, turn it
ON in Line 9030.":GOSUB7998
7997 GOTO9040
7998 LOCATE27,23:PRINT"Press Any
-Key to continue.";:EXEC44539:CL
S:GOSUB2040:PRINT:PRINT:RETURN
7999 EXEC44539:STOP
8000 '***
8010 '*** Save Data to Disk ***
8020 '***
8030 PUT #1,VAL(CN$(1))
8040 CS$(1)="":TR$(1)="":CT$(1)=
"":TT$(1)="":ZP$(1)="":CM$(1)=""
:PH$(1)="":TY$(1)="":CL$(1)="":I
F FG(1)=1 THEN CLOSE:RETURN ELSE
 GOSUB210:IF I$="N" OR I$="n" TH
EN CLOSE:WIDTH40:GOTO9040 ELSE G
OSUB2050:GOTO4030
9000 '***
9010 '*** Setup and Menu ***
9020 '***
9030 PCLEAR1:CLEAR9999:DIM CS$(2
01),CN$(201):CLS1:POKE&HFF94,2:T
G$(1)=CHR$(1)+CHR$(4)+CHR$(8)+CH
R$(9)+CHR$(10)+CHR$(12)+CHR$(13)
+CHR$(21)+CHR$(189)+CHR$(214):TG
$(2)="123456789"+CHR$(4):LD$=CHR
$(127):SD$=" - ":TS$="
"
9040 CLOSE:C=0:FG=0:F$="":CN$=""
:CS$="":WIDTH40:PRINT"Cus.File M
aint.":LOCATE15,0:PRINT"- CCBMS
-";:LOCATE34,0:PRINT"CSFLMT"
9050 LOCATE8,3:PRINT"1. INQUIRE
on Customer Data.":LOCATE8,5:PRI
NT"2. ADD New Customer.":LOCATE8
,7:PRINT"3. CHANGE Customer Data
.":LOCATE8,9:PRINT"4.":LOCATE8,1
1:PRINT"5.":LOCATE8,13:PRINT"6."
:LOCATE8,15:PRINT"7."
9060 LOCATE8,17:PRINT"8. REPORTS
, Customer Data.":LOCATE8,19:PRI
NT"9. HINTS.":LOCATE7,21:PRINT"F
2. RETURN to Main Menu.":LOCATE9
,23:PRINT"- SELECT (1 to 9 or F2
) ";:SOUND245,1:X1=32:Y1=23
9070 LOCATEX1,Y1:ATTR0,0,B:PRINT
"";:I$=INKEY$:IF I$="" THEN9070
ELSE ATTR0,0:ON INSTR(TG$(2),I$)
+1 GOTO9070,3030,2030,5040,9080,
9090,9100,9110,6030,7030,9140
9080 SOUND224,1:GOTO9070
9090 SOUND224,1:GOTO9070
9100 SOUND224,1:GOTO9070
9140 WIDTH40:CLS:LOCATE10,9:PRIN
T"- LOADING SYSTEM MENU -":RUN"S
YSMNU.BAS"
10000 '***
10010 '*** Composite Screen Setu
p ***
10020 '***
10030 EXEC44539:STOP
10111 WIDTH80:PALETTE 0,0:PALETT
E 8,63:POKE&HFF98,4:POKE&HFF99,&
H75:POKE&HE045,4:POKE&HE046,&H75
:POKE&HFE05,24:POKE&HFE06,47:POK
E&HFE07,160:CLS1:POKE&HFE07,0:RU
N

0 ' /\/\/\/\/\/\/\/\/\/\/\/\/\/\
1 ' \        - CCBMS -          /
2 ' /       "SYSMNU.BAS"        \
3 ' \       System  Menu        /
4 ' /         Rev 1.0.0         \
5 ' \   (C) Copyright 1988      /
6 ' / CHATHAM HOUSE SOFTWARE    \
7 ' \      JIM DESTAFENO        /
8 ' /    WYOMING, DE  19934     \
9 ' \/\/\/\/\/\/\/\/\/\/\/\/\/\/
10 POKE65496,0:GOTO1110
11 '***
12 '*** Sub-Routine Section ***
13 '***
20 CLS:PRINT"Main Menu        - C
CBMS -          SYSMNU":RETURN
30 LOCATEX1,Y1:ATTR0,0,B:PRINT""
;:I$=INKEY$:IF I$="" THEN30 ELSE
 ATTR0,0:ON INSTR(TG$(1),I$)+1 G
OTO30,40,50,60,70,80,90,100,110,
120,130'*** Select Choice
40 CLS:LOCATE16,7:PRINT"Loading"
:LOCATE17,11:PRINT"Module":SOUND
224,1:LOCATE10,9:PRINT"- S (NEXT
 ISSUE) RY -":FOR X=1 TO 750:IF
INKEY$<>"" THEN1010 ELSE NEXTX:G
OTO1010:EXEC44539:STOP:RUN"SAORE
N"'***1
50 CLS:LOCATE16,7:PRINT"Loading"
:LOCATE17,11:PRINT"Module":SOUND
224,1:LOCATE5,9:PRINT"- CUSTOMER
 FILE MAINTENANCE -":RUN"CSFLMT"
'***2
60 SOUND224,1:GOTO30'***3
70 SOUND224,1:GOTO30'***4
80 SOUND224,1:GOTO30'***5
90 SOUND224,1:GOTO30'***6
100 SOUND224,1:GOTO30'***7
110 SOUND224,1:GOTO30'***8
120 SOUND224,1:GOTO30'***9
130 CLS:LOCATE16,9:PRINT"- END -
":END
200 '***
201 '*** Logo Display ***
202 '***
210 POKE65497,0:LOCATE3,11:PRINT
C$(3);S$(10);S$(1);C$(3);S$(10);
S$(2);C$(3);S$(4);C$(3);S$(5);C$
(3);S$(2);C$(3);S$(2);C$(3);S$(9
);S$(1);C$(4)
220 LOCATE3,10:PRINTC$(3);S$(10)
;S$(1);C$(3);S$(10);S$(2);C$(9);
S$(6);C$(3);S$(1);C$(5);S$(1);C$
(3);S$(7);C$(4)
230 LOCATE3,9:PRINTC$(3);S$(10);
S$(1);C$(3);S$(10);S$(2);C$(3);S
$(4);C$(3);S$(5);C$(6);S$(1);C$(
6);S$(5);C$(3)
240 LOCATE3,12:PRINTC$(3);S$(10)
;S$(1);C$(3);S$(10);S$(2);C$(3);
S$(4);C$(3);S$(5);C$(3);S$(7);C$
(3);S$(9);S$(4);C$(3)
250 LOCATE4,13:PRINTC$(3);S$(3);
C$(3);S$(5);C$(3);S$(3);C$(3);S$
(5);C$(3);S$(4);C$(3);S$(5);C$(3
);S$(7);C$(3);S$(6);C$(3);S$(3);
C$(3)
260 LOCATE4,8:PRINTC$(3);S$(3);C
$(3);S$(5);C$(3);S$(3);C$(3);S$(
5);C$(3);S$(4);C$(3);S$(5);C$(4)
;S$(5);C$(4);S$(6);C$(3);S$(3);C
$(3)
270 LOCATE6,7:PRINTC$(5);S$(9);C
$(5);S$(7);C$(8);S$(7);C$(3);S$(
7);C$(3);S$(8);C$(5)
280 LOCATE6,14:PRINTC$(5);S$(9);
C$(5);S$(7);C$(9);S$(6);C$(3);S$
(7);C$(3);S$(8);C$(5)
290 IF A<=0 THEN300 ELSE CLS:FOR
 X= 1 TO A:IF INKEY$ <> "" THEN1
010 ELSE NEXTX:A=A-15:GOTO210
300 LOCATE25,3:PRINT"C o  C o
C L I P B O A R D":LOCATE23,19:P
RINT"-  Business Manngement Syst
em  -":LOCATE79,23:POKE65496,0:S
OUND245,1
310 FOR X=1 TO 999:IF INKEY$ <>
"" THEN1010 ELSE NEXT
1000 '***
1001 '*** Main Menu ***
1002 '***
1010 WIDTH40:GOSUB20:LOCATE8,3:P
RINT"1. SALES ORDER ENTRY":LOCAT
E8,5:PRINT"2. Customer File Main
tenance":LOCATE8,7:PRINT"3.":LOC
ATE8,9:PRINT"4.":LOCATE8,11:PRIN
T"5.":LOCATE8,13:PRINT"6.":LOCAT
E8,15:PRINT"7.":LOCATE8,17:PRINT
"8.":LOCATE8,19:PRINT"9."
1020 LOCATE7,21:PRINT"F2. END SY
STEM USE.":LOCATE9,23:PRINT"- SE
LECT (1 to 9 or F2) ";:SOUND245,
1:X1=32:Y1=23:GOSUB30
1100 '***
1101 '***Setup Section ***
1102 '***
```

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ChurchBase

Boisy Pitre

It's good to be back with you in 1989! In our last issue, we finished up the modular design concept. This issue, starts something new and exciting! It's called CHURCHBASE, a database-in-the-making for the CoCo 1, 2, and 3. Although primarily targeted for church use, CHURCHBASE will be useful for other database purposes as well.

How did we come upon this idea? After Ted and I went over the suggestions that we received, we decided that most CoCo users would benefit from something in the mode of a database program, complete with sorting, printing, and the whole bit. After deliberating on the subject, we decided to focus on a special interest area, so we chose churches. Don't let this idea turn you away. The only thing that will make CHURCHBASE different from any other database program is the approach. Everything else will be much to "standard" database function.

Type in listing 1. To start the ball rolling, I went ahead and wrote the INITIALIZATION module. We'll go over the rules of this program later on, but first, I would like to call your attention to the line numbering enhancements of the module.

MODULAR ENHANCEMENTS

In the previous issues dealing with modular design, I endorsed the "top-down" design method. That is: INITIALIZATION first, followed by MAIN PROGRAM, then SUBROUTINES, DATA STATEMENTS, and so on. Although it was a logical order, it wasn't the most efficient in terms of speed. With suggestions from Jim DeStafeno and others, I'm going to make a change in the module order of CHURCHBASE.

As most of you know, speed is an essential part of the effectiveness of the program. Several things can contribute to the speed-up or slow-down of a program, one being organization. If your widely-used modules (SUBROUTINE and ERROR TRAPPING) are at the bottom of the stack, then the computer must go through much overhead to get to it. The longer the program is, the longer it takes to search through the overhead to find the line, thus more time is lost. To minimize time and improve effective speed, I've elected to place the INITIALIZATION module at the bottom of the program. Since this module is called only once during run-time, it makes sense to put at the bottom. You'll notice that I've placed a GOTO at the beginning of the program, directing to the INITIALIZATION module, and another GOTO pointing to the MAIN PROGRAM module.

So for the sake of speed (and the settlement of some minds), we will place our SUBROUTINE and ERROR TRAPPING modules at the beginning of the program. Since these modules are more commonly called upon, the computer will have to search through less overhead to find the subroutine or the error trap.

DEFINING THE OBJECTIVES

First, let's go over the objectives we wish to define for CHURCHBASE. To be designed with the pastor in mind, CHURCHBASE will be an general database to keep up with each individual member of the assembly. I know that most of you out there aren't pastors, so I've done the "specifics" for you. Things that are important to a church information system, such as membership date, birthday, church position(s), etc. are DIMensioned in listing 1.

Since my father is a pastor, I asked for his help on this project. We sat down and discussed what a pastor would need to keep in a special church database. General information like name, address, and phone number of the individual would be first and most necessary. Next, we decided that a work phone and work place field would be helpful, in case the individual needed to be reached on the job. Personal information would come next with fields like age, date of birth, sex, etc. After that would come the church membership information: baptism date, membership date, church positions, and previous churches attended.

SETTING THE STANDARDS

Every event needs guidelines. Because this is a multi-programmer project, we will need to set some standards here. First, let's look at the field defining. Here is a list of the fields that will be used:

PERSONAL INFORMATION
- Last name, First name, middle initial, address, city, state, zip code, phone number, date of birth, sex

WORK INFORMATION
- Place of work, work phone, position at work

Continued On 48

CoCo 'N Amateur Radio

Mike Dooley

Hello, and welcome back! In the last issue's article we looked at building a dipole. This month let's take that knowledge and build a three element beam.

Our three element beam consists of three parts. These are the boom, the reflector, the driven element and the director. Figure one shows a beam.

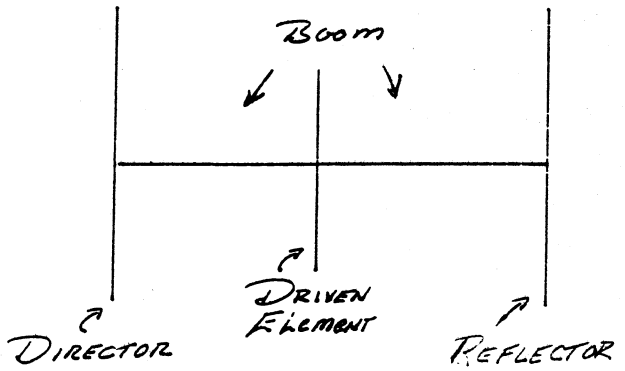

Fig. 1

Since our beam is going to be made of tubing, we can't use the exact formula we used last time. Last issues formula was based on using wire for our antenna in free space. The length of wire found using that formula will always be long which is good because we almost always need to adjust the antenna by shortening or 'pruning'.

Pruning an antenna made of tubing is another matter entirely. The formula this month will include a factor in it that will give us a length closer to what we need.

Driven Element
(492 * 0.95)/f(Mhz)=length in feet

The 0.95 is the added factor. This formula will give us the length of the Driven Element. For our antenna to operate at 28.5 Mhz the driven element will be 16 feet 4.8 inches in length.

Now we need to calculate the lengths of the Reflector and Director. These two elements aren't the same length as the Driven Element. Instead, the Reflector is always 5% longer and the Director 5% shorter. This difference in lengths provides us with an antenna that has a wider bandwidth without sacrificing gain.

Reflector
1.05 * ((492 * 0.95)/f(Mhz))=length in feet

Director
.95 * ((492 * 0.95)/f(Mhz))=length in feet

Using the above formulas the length of our Reflector will be 17 feet 2.64 inches and the Director will be 15 feet 6.96 inches.

All that leaves us with is the length of the boom. This length depends primarily on element spacing. That is, the distance between the Driven Element and Reflector, and the distance between the Driven Element and Director. The distance we'll be using is 0.2 wavelength. Since our formula calculates a half wavelength antenna all we need to do is multiply the result by 0.4 to get the distance between elements.

Distance between elements
0.4 * ((492 * 0.95))/f(Mhz)=length in feet

For our antenna the distance between the elements would be 6 feet 6.72 inches. That means our boom needs to be at least 13 feet 1.44 inches long.

The Reflector and Director can be attached to the boom using muffler clamps. The Driven Element requires something more.

Cut a section 12 inches long from the center of the Driven Element. Take a piece of wooden dowel (about 24 inches long) that will just fit inside the tubing and connect the two pieces of tubing together (figure two).

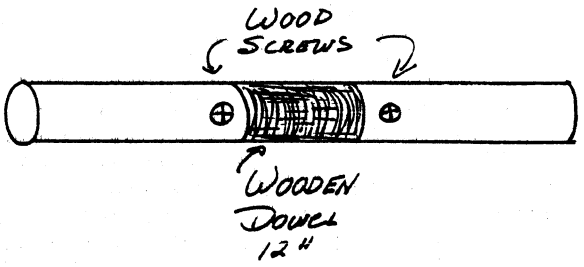

Fig. 2

You should end up with 6 inches of dowel inside each piece of tubing. That leaves a 12 inch length seperating the two pieces of the Driven Element. Use a couple of 1/2 inch wood screws to attach the tubing to the dowel.

Next, we'll need to make a mounting plate.

Continued On 48

The plate will be used to attach the Driven Element to the boom (figure three). It should be aluminum about 1/8 to 1/4 inch thick and ten by ten inches square. Attach the plate to the boom and Driven Element using muffler clamps bolted through the holes in the plate.

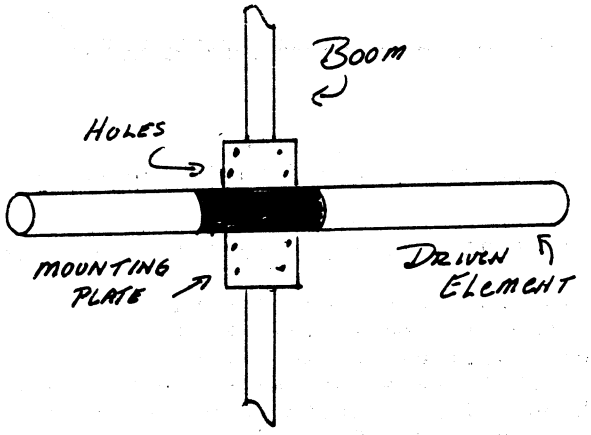

FIG. 3

The Balun can be attached to the plate at any convenient spot or hung from the boom. The two wires from the Balun are then connected to the two halves of the Driven Element (figure four). A good connection point would be the screws you used to attach the wooden dowel to the tubing of the Driven Element.

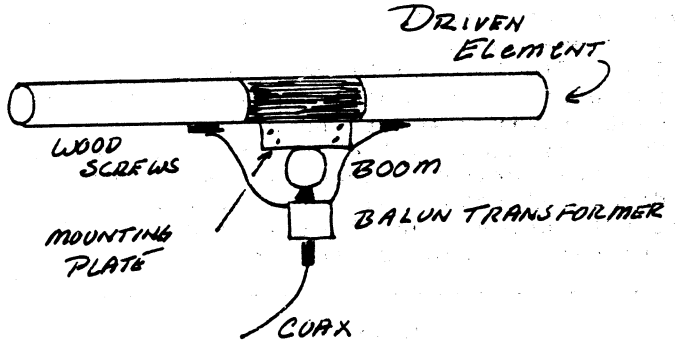

FIG. 4

Will the antenna work? Well,if you're going to be transmitting, some adjustment (pruning) will probably be necessary. Remember, if you change the length of the Driven Element to change the Reflector and Director an equal length. For just receiving the antenna should work fine as is.

How much gain can be expected? Normally about 7db from a three element beam. Let me give you a rough idea of what 7db of gain is. If your transmitter is putting out 1 watt, 7db of gain will make it sound like approximately 100 watts. Not bad for a weekend project, eh? 73's de Mike Dooley KE4PC...

CHURCH INFORMATION
- Membership date, Church position(s), previous churches and pastors

This general description could fit most any church. Such detailed things as individual salvation information have not been included, since it varies from denomination to denomination. If you can think of a field we might have overlooked, let us know.

I DIMensioned each field with an array of 100. This will be flexible of course. At the moment, we don't know how large the program will grow, so we'll have to play around with values until the "right" one pops up.

A NEW STRUCTURE

As I mentioned earlier, a new structure will be defined for CHURCHBASE. So there won't be confusion, here are the specifications:

LINE NUMBER	MODULE
0-9	(Program info. not a module)
10-4999	SUBROUTINE MODULE
5000-9999	ERROR TRAPPING MODULE
10000-49999	MAIN PROGRAM MODULE
50000-59999	DATA STATEMENTS MODULE
60000-63999	INITIALIZATION MODULE

Keep this structure in mind while writing and enhancing your CHURCHBASE entry. For those of you wishing to participate, we need you to work on these stages of the program for the next issue:

- An attractive, professional-looking title screen
- A full-fledged menu displaying all the features of a good database

The title screen and menu will appear in the MAIN PROGRAM module. Please remember this when you work on your entry. Follow the guidelines listed above.

Here is another note for those wishing to participate: I would like you to start implementing this neat little subroutine in your entry. The special POKE, discovered by Jim DeStafeno gives the INKEY$ function a cursor. Here is the subroutine:

```
10   POKE 32346,177:ONINSTR("123456",INKEY$
)+1 GOTO 10,20,30,40,50
```

Disregard the line numbers, but notice the essence of the subroutine. This can be implemented for the menu selection. Also, use the 32 column screen so CHURCHBASE maintains CoCo 1, 2, and 3 compatibility. And please, don't include commands that are exclusively for the CoCo 3. Experiment with listing 1 and remember to use modular structure as part of your work. See you in March!

CoCo Clipboard Business Management System

```
1110 WIDTH80:CLS1:A=150:FOR X=1
TO 10:S$(X)=STRING$(X,CHR$(32)):
C$(X)=STRING$(X,CHR$(124)):NEXT:
TG$(1)="123456789"+CHR$(4):POKE&
HFF94,3:GOSUB210
2000 '***
2001 '*** Composite Screen Setup
 ***
2002 '***
2212 EXEC44539:STOP
2222 WIDTH80:PALETTE 0,0:PALETTE
 8,63:POKE&HFF98,4:POKE&HFF99,&H
75:POKE&HE045,4:POKE&HE046,&H75:
POKE&HFE05,24:POKE&HFE06,47:POKE
&HFE07,160:CLS1:POKE&HFE07,0:STO
P
```

CoCo 'N Amateur Radio

```
10 CLS:A=0:B=0:C=0:D=0:E=0:F=0
20 G=0:H=0:I=0:J=0:K=0:L=0:M=0
30 N=0:O=0
40 INPUT "FREQUENCY (MHZ):";A
50 B=(492*.95)/A:C=INT(B):D=12*(
B-C)
60 E=B*1.05:F=INT(E):G=12*(E-F)
70 H=B*.95:I=INT(H):J=12*(H-I)
80 J=(.4*B):K=INT(J):L=12*(J-K)
90 M=(2*J)+1:N=INT(M):O=12*(M-N)
100 PRINT "REFLECTOR LENGTH":PRI
NT F;" FEET ";G;" INCHES"
110 PRINT "DRIVEN ELEMENT LENGTH
":PRINT C;" FEET ";D;" INCHES"
120 PRINT "DIRECTOR LENGTH":PRIN
T I;" FEET ";J;" INCHES"
130 PRINT "ELEMENT SPACING":PRIN
T K;" FEET ";L;" INCHES"
140 PRINT "BOOM LENGTH":PRINT N;
" FEET ";O;" INCHES"
150 PRINT "ONE FOOT ADDED FOR EL
EMENT":PRINT"CLAMPING ROOM AT EN
DS."
160 PRINT "AGAIN?";
170 A$=INKEY$:IF A$="" THEN 170
180 IF A$="N" OR A$="n" THEN END
 ELSE 10
```

ChurchBase

```
1 '     *** CHURCHBASE ***
2 '    THE CHURCH DATABASE
3 '   FOR THE COCO 1, 2, & 3
4 '
5 'A CLIPBOARD PROGRAMMING PROJE
CT
6 'AUTHORED BY:
7 'BOISY PITRE,
8 '
9 '
10 GOTO 60000 'INITIALIZE SYSTEM
20 'START TITLE HERE
59999 END 'THIS PREVENTS REDUNDA
NCY OF THE INITALIZATION ROUTINE
60000 '***** INITIALIZATION ****
*
60010 POKE960,95:POKE961,92:POKE
962,150:POKE963,188:POKE964,31:P
OKE965,2:POKE966,126:POKE967,150
:POKE968,163:EXEC960 '**PCLEAR 0
 ROUTINE
60020 CLEAR 10000
60030 '---* RECORD DEFINTIONS *-
--
60040 ML=100 'NO. OF MEMBERSHIP
RECORDS PER FILE
60050 '- PERSONAL INFO.-
60060 DIM LN$(ML) 'LAST NAME
60070 DIM BN$(ML) 'FIRST NAME
60080 DIM AD$(ML) 'ADDRESS
60090 DIM CT$(ML) 'CITY
60100 DIM ST$(ML) 'STATE
60110 DIM ZP$(ML) 'ZIP CODE
60120 DIM HP$(ML) 'HOME PHONE
60130 DIM AG$(ML) 'AGE
60140 DIM BD$(ML) 'BIRTH DATE
60150 '- WORK INFO. -
60160 DIM BP$(ML) 'WORK PHONE
60170 DIM PW$(ML) 'PLACE OF WORK
60180 DIM WP$(ML) 'WORK POSITION
60190 '- CHURCH INFO. -
60200 DIM DM$(ML) 'DATE OF MEMBE
RSHIP
60210 DIM CP$(ML,3) 'UP TO 3 CHU
RCH POSITIONS
60220 DIM PC$(ML,3) 'UP TO 3 PRE
VIOUS CHURCHES
60230 DIM PP$(ML,3) 'THE PASTORS
 OF THE PAST CHURCHES
60240 GOTO 20
```


MJK & MJK3 DOS

EXAMINED BY CLIPBOARD

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VIP Calc has all the features of VIP Calc III described elsewhere in this magazine except the screen widths are 32, 51, 64 & 85. Screen colors are black, green and white, double clock speed and Spooler are not supported. Even so, VIP Calc is the most complete calc for the CoCo 1 & 2! Version 1.1 has FASTER and more RELIABLE disk access and vastly improved display speed. **DISK $59.95**

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VIP Writer has all the features of VIP Writer III described elsewhere in this magazine except the screen widths are 32, 51, 64 & 85. Screen colors are black, green & white, double clock speed is not supported, Spooler and menus are unavailable because of memory limitations. Even so, VIP Writer is the BEST word processor for the CoCo 1 & 2! Version 1.1 includes the configuration/ printer installation program and RGB Hard Disk support. Available thru Radio Shack Express Order #90-141.

Includes VIP Speller 1.1 DISK $69.95

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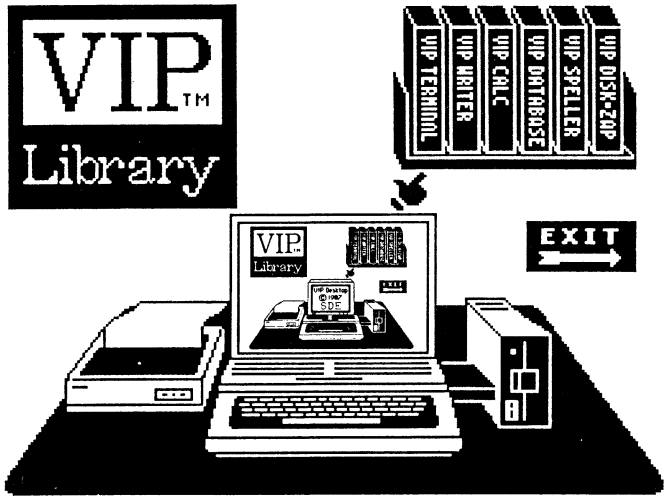
VIP™ Library



The VIP Integrated Library 1.2 combines all six popular VIP programs - Writer 1.1, Speller 1.1, Calc 1.1, Database1.1, Terminal and Disk-Zap 1.1 - into one program on one disk. The program is called VIP Desktop. From the desktop you have instant access to word processing with a spelling checker always in attendance, data management with mailmerge, spreadsheet financial analysis, telecommunications and disk maintenance. Just move the hand to the volume on the bookshelf and the application is there. 64K req'd. $149.95 + $4 S/H US, $5 Canada, $10 Foreign.VIP Library is available thru Radio Shack Express Order #90-213.

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MORE SCREEN DISPLAY OPTIONS

VIP Writer III offers screen widths of 32, 40, 64 & 80 - all with 24 lines and actual lower case letters using the CoCo 3's hardware display. It runs at double clock speed and has 4-color menus making VIP Writer III FAST and EASY to use! You can choose foreground, background, hilite and cursor colors from up to 64 hues. Color can be turned ON or OFF for the best possible display using a monochrome monitor or TV set. VIP Writer III has a context sensitive help facility to display command usage in easy to read colored windows.

CUSTOMIZER & PRINTER INSTALLER

VIP Writer III comes with a configuration / printer installation program which lets you customize VIP Writer III to suit your own liking. You can set screen width and colors as well as margins and more. You can also install your own printer and set interface type (serial, parallel or J&M), baud rate, line feeds, etc. Once done, you never have to enter these parameters again! VIP Writer III will load n' go with your custom configuration every time!

MORE TOTAL TEXT STORAGE

VIP Writer III has 106K total text storage in a 128K CoCo 3 (495K in 512K). VIP Writer III creates ASCII text files which are compatible with all other VIP Programs as well as other programs which use ASCII files. You can use VIP Writer III to even type BASIC programs! There is a 48K text buffer (438K in a 512K CoCo 3) and disk file linking allowing virtually unlimited text space. VIP Writer III works with up to four disk drives and lets you display directories and free space as well as rename or kill disk files. In addition VIP Writer III is 100% compatible with the RGB Computer Systems Hard Disk.

POWERFUL EDITING FEATURES

VIP Writer III has a full featured screen editor which can be used to edit text with lines up to 240 characters long with or without automatic word wrap around. You can select type-over mode or insert mode. There is even an OOPS command to recall a cleared text buffer. Other editing features include: Type-ahead • typamatic key repeat and key beep for flawless text entry • end of line bell • full four way cursor control with scrolling • top of textfile • bottom of textfile • page up • page down • top of screen • bottom of screen • beginning of line • end of line • left one word • right one word • DELETE character, to beginning or end of line, word to the left or right, or entire line • INSERT character or line • LOCATE and/or CHANGE or DELETE single or multiple occurrence using wildcards • BLOCK copy, move or delete with up to TEN simultaneous block manipulations • TAB key and programmable tab stops • word count • line restore • three PROGRAMMABLE FUNCTIONS to perform tasks such as auto column creation and multiple copy printing.

Writer III or Library /W owners: Upgrade to the VIP Writer III 2.0 for $10 + $3 S/H. Send ORIGINAL disk and $13 total.

AUTOMATIC TEXT FORMATTING

VIP Writer III automatically formats your text for you or allows you to format your text in any way you wish. You can change the top, bottom, left or right margin and page length. You can set your text flush left, center or flush right. You can turn right hand justification on or off. You can have headers, footers, page numbers and TWO auxiliary lines which can appear on odd, even or all pages. You can also select the line on which they appear! You can even change the line spacing! Parameters can be altered ANYWHERE !

PREVIEW PRINT FORMAT WINDOW

VIP Writer III features an exclusive format window which allows you to preview your document BEFORE PRINTING IT! You are able to move up, down, left and right to see centered and justified text, margins, page breaks, broken paragraphs, orphan lines etc.

PRINTING VERSATILITY

VIP Writer III prints TWICE as fast as any other CoCo word processor! It supports most serial or parallel printers using J&M JFD-CP or Rainbow interface and gives you the ability to select baud rates from 110 to 19,200. You can imbed printer control codes anywhere in your text file EVEN WITHIN JUSTIFIED TEXT! VIP Writer III also has TWENTY programmable printer macros which allow you to easily control all of your printers capabilities such as bold, underline, italics and superscript using simple key strokes. Other features include: multiple copy printing • single sheet pause • line feeds.

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VIP Writer III has a print spooler with a 57,000 character buffer which allows you to print one document WHILE you are editing another. You don't have to wait until your printer is done before starting another job! Some word processors DO NOT include this feature!

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VIP Writer III includes VIP Speller (not FREEWARE) to check your text for misspelled words It has a 50,000 (not 20,000) word dictionary that can be added to or edited.

QUALITY DOCUMENTATION

VIP Writer III comes with a well written 125 page manual which is Laser printed, not dot-matrix like the competition. It includes a tutorial, glossary of terms and examples for the beginner as well as a complete index! VIP Writer III is truly the BEST you can buy.

VIP Writer III includes VIP Speller 1.1. **DISK $79.95**

Available through Radio Shack Express Order Cat. #900-0908

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VIP Database III

VIP Database III features selectable screen displays of 40, 64 or 80 characters by 24 lines with choice of 64 foreground, background, hilite and cursor colors for EASY DATA ENTRY. It uses the CoCo 3's hardware screen and double clock speed to be the FASTEST database available! VIP Database III will handle as many records as will fit on your disks and is structured in a simple and easy to understand menu system with full prompting for easy operation. Your data is stored in records of your own design. All files are fully indexed for speed and efficiency. IN-MEMORY SORT of records is LIGHTNING FAST and provides for easy listing of names, figures, addresses, etc., in ascending or descending alphabetical or numeric order. Records can be searched for specific entries using multiple search criteria. The built-in mail-merge lets you sort and print mailing lists, print form letters, address envelopes - the list is endless. The built-in MATH PACKAGE even performs arithmetic operations and updates other fields. VIP Database III also has a print spooler and report generator which uses print forms you create. **DISK $69.95**

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For VIP Library shipping please add $4 USA. $5 Canada. $10 Foreign.

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VIP Calc III

FAST 4 color POPUP menus • PRINT SPOOLER
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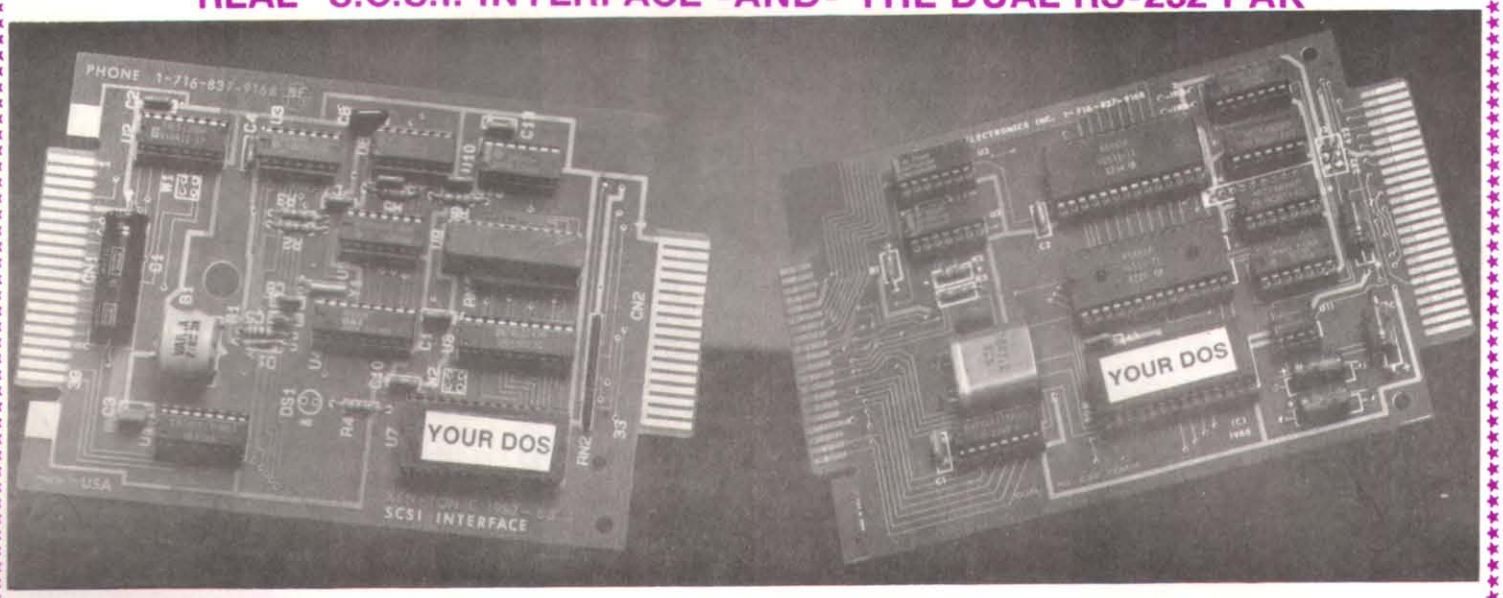

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