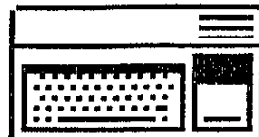


QB-MONITOR



QB-99'ERS U.G. NEWSLETTER

May 1988

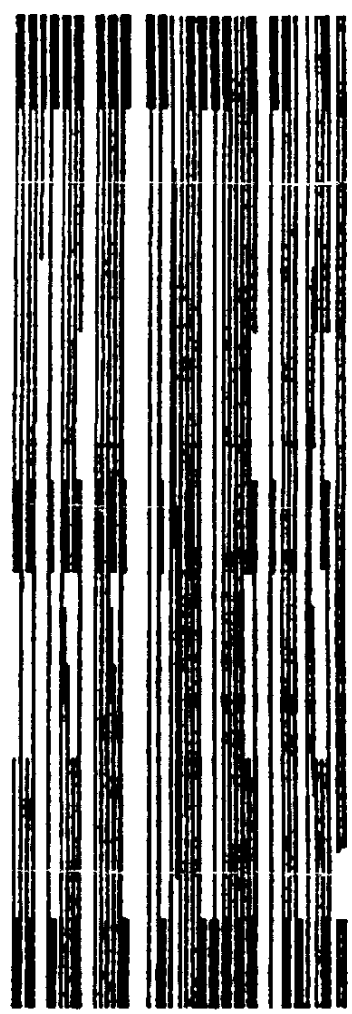
The QB MONITOR is the Newsletter of the QB-99'ers User Group, is printed Sept. thru June and sent in exchange for other User Group Newsletters. Send Exchange Newsletter to Frank Cotty, Queensborough Community College, Bayside, NY 11364. Credit original sources.

The QB 99'ers meets the second Saturday of each month September through May, at Queensborough Community College, Bayside New York, room S225, at 2 P.M. Calendar at right shows dates

| June | | | | | | | 1988 | | |
|------|----|----|----|----|----|----|------|--|--|
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7:00-9:00 PM

There's a message here!



GBC NOVA

THE HACKER by Ed Machonis

The Hacker said,
 "Mommy Dear, buy me a 'puter."
 And Mommy Dear did,
 And he sat in front of it.
 And broke into her bank's computer
 Just for the fun of it.
 And when they sent him to jail for it
 He said, "Aw Shucks,
 I'd do it again for a million bucks!"

Graphics Courtesy of NOVA 99'ers June 1988

What is it?

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IN PRAISE OF EDITORS

By Ed Machonis

Have you hugged your Editor lately? Have you walked up to him or her and said, "Hey, I enjoy the newsletter, you're doing a great job." Or even, "I think you ought to.....?" Or, as irate readers of other periodicals in another time have been known to do, waved a gun under his nose to make your point?

Today's Newsletter Editors face an even worse fate, OBLIVION. In many groups their name is not listed among the officers unless they happen to wear two hats. Their pleas (please?) for articles by the membership are ignored. Even, as in some cases, their requests for a replacement fall on deaf ears. It appears to be a job few are willing to tackle.

With good reason. While most of the other officers' work is centered around the meeting, the Editor's work goes on for most of the month. Searching for suitable material for the newsletter, typing articles, often writing articles themselves in order to fill the empty pages, formatting and printing the pages, having them reproduced, assembled and mailed. Quite a job.

Trouble is, it's never finished. No sooner is the issue in the mail, and often sooner, you've got to do it all over again. Like washing dishes, you're never done. Every month the newsletter's voracious appetite must be fed, month after month, and year after year.

Our esteemed Editor, Frank Cotty, wears two hats, President and Editor. Ask him, if you dare, which one he would like to give up. That's why, when we started our newsletter, I promised him at least one copier-ready article a month. It isn't always easy but it makes me realize what the rest of the job is like. Want to hug your Editor? Promise him or her an article, then deliver. Giving it a catchy title, like this one, will insure it being printed.

Now that I have the attention of all the Editors receiving this newsletter, a small caveat. Often, in the rush to assemble your newsletter, an author's name or the source of the article gets lost in the shuffle. Another Editor, picking up the article from your newsletter, has no way of knowing who the actual author is. More than once, I have seen my own work, and my son's, under someone else's name. Not a nice feeling. In all cases it was the result of a well intentioned mistake which

originated with someone else not crediting the article. The author's only pay is the recognition he receives, take pains not to cheat him.

As the exchange newsletter librarian, I get to read all the exchange newsletters as soon as the Editor has seen them. One of the perks of the job. It takes most of the month to get through a month's incoming newsletters, (nearly 100). Over the years I have gotten to know most of the groups quite well and almost feel like a member. I share your joy when you acquire new members and your dismay when I see systems up for sale by well known members.

The rotten part of the job, is dropping a group from our exchange list. Our ONLY criteria for dropping a group is non-receipt of their newsletter for at least 3 months, not counting July or August. In actual practice it is nearly always at least 6 months and after several notices.

A pet peeve are the groups that apparently have decided, in secret, to discontinue exchanging with us. Wish they would let us in on the secret. A postcard would save dollars in postage.

Now and again, a group will notify us that they will no longer be publishing a newsletter. You can bet that group continues to get our newsletter for at least 3 or 4 months.

As a salute to our exchange Newsletters, we are publishing their names and addresses along with the 1988 issues we received. This data must be viewed with caution. Newsletters that are not mailed in envelopes, after being subjected to the tender ministrations of our postal system, sometimes arrive with just the address page. And, I guess, sometimes not at all. The college mail room is another place a newsletter can wander. There are several computer groups at the college and, if the newsletter does not have Frank Cotty's name on it, we may never see it.

With the above in mind, special notice must be taken of the groups from which we have received 12 issues for 1988. Our hats are off to you. We can only manage 10 issues a year, as the college takes a siesta during July and August. And our timeliness is subject to the priorities of the reproduction department.

Take your bows Editors, you deserve them for a job well done and one that is often thankless. THANK YOU all for many a diverting evening.

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NOTE: ONLY THOSE GROUPS ON OUR CURRENT EXCHANGE LIST WHO SENT US NEWSLETTERS IN 1988 ARE LISTED.

"A&B" MEANS COMBINED ISSUE

DEBUGGING

by Jim Peterson

When you have finished writing a program, the next thing you should do is to run it. And, very probably, it will crash!

Don't be discouraged. It happens to the very best of programmers, very often.

So, the next thing to do is to debug it. And you are lucky that you are using a computer that helps you to debug better than some that cost ten times as much.

There are really three types of bugs. The first type will prevent the program from running at all - it will crash with an error message. The second type will allow the program to run, but will give the wrong results.

And the third type, which is not really a bug but might be mistaken for one, results from trying to run a perfectly good program with the wrong hardware, or with faulty hardware. As for instance, trying to run a Basic program, which uses character sets 15 and 16, in Extended Basic.

First, let's consider the first type. The smart little TI computer makes three separate checks to be sure your program is correct. First, when you key in a program line and hit the Enter key, it looks to see if there is anything it can't understand - such as a misspelled command or an unmatched quotation mark. If so, it will tell you so, most likely by SYNTAX ERROR, and refuse to accept the line.

Next, when you tell it to RUN the program, it first takes a quick look through the entire program, to find any combination of commands that it will not be able to perform. This is when it may crash with an error message

telling you, for instance, that you have a NEXT without a matching FOR, or vice versa.

And finally, while it is actually running and comes to something that it just can't do, it will crash and give you an error message - probably because a variable has been given a value that cannot be used, such as a CALL HCHAR(R,C,32) when R happens to equal 0.

The TI has a wide variety of error messages to tell you when you did something wrong, what you did wrong, and where you did it wrong. But, it can be fooled! For instance, try to enter this program line (note the missing quotation mark).
100 PRINT "Program must be saved in:"merge format."

And, sometimes you may be told that you have a STRING-NUMBER MISMATCH when there is no string involved, because the computer has tried to read a garbled statement as a string.

Also, the line number given in the error message is the line where the computer found it impossible to run the program; that line may actually be correct but the variables at that point may contain bad values due to an error in some previous line.

If the error occurs in a program line which consists of several statements, and you cannot spot the error, you may have to break the line into individual single-statement lines. This is the easiest way to do that - Be sure the line numbers are sequenced far enough apart. Bring the problem line to the screen, put a ! just before the first ::, and enter it. Bring it back to the screen with FCTN 8, retype the line number 1 higher, use FCTN 1 to delete the first statement and the !

and ::, put a ! before the first ::, and continue. Then, when you have solved the bug, just delete the ! from the original line and delete all the temporary lines.

Pages 212-215 of your Extended Basic manual list almost all the error codes, and almost all the causes of each one - it will pay you to consult these pages rather than guessing what is wrong.

You may create some really bad bugs when you try to modify a program that was written by someone else - especially if you add any new variable names or CALLS to the program. Your new variable might be one that is already being used in the program for something else, perhaps in a subscripted array. I have noticed that programmers rarely use @ in a variable name, so I always tack it onto the end of any variable that I add to a program.

Also, the program that you are modifying may have ON ERROR routines, or a prescan, already built in. The ON ERROR routine was intended to take care of a different problem than the one you create, so it could lead you far astray - you had better delete that ON ERROR statement until you are through modifying.

The prescan had better be the subject of another lesson, but if the program has an odd-looking command !@P- up near the front somewhere, it has a prescan built in. And if so, if you add a new variable name or use a CALL that isn't in the program, you will get a SYNTAX ERROR even though there is no error. One way to solve this is to insert a line with !@P+ just before the problem line, and another with !@P- right after it.

Continued...

When a program runs, even though it crashes or is stopped by FCTN 4 or a BREAK, the values assigned by the program to variables up to that point will remain in memory until you RUN again, or make a change to the program, or clear the memory with NEW. This can be very useful. For instance, if the program crashes with BAD VALUE IN 680, and you bring line 680 to the screen and find it reads
 CALL HCHAR(R,C,CH)
 just type PRINT R;C;CH and you will get the values of R, C and CH at the time of the crash. You will find that R is less than 1 or more than 24, or C is less than 1 or more than 32, or CH is out of range.

In Extended Basic, you can even enter and run a multi-statement line in immediate mode (that is, without a line number), if no reference is made to a line number. So, you can dump the current contents of an array to the screen by
 FOR J=1 TO 100::PRINT A(J);
 : NEXT J - or you can even open a disk file or a printer to dump it to.

You can also test a program by assigning a value to a variable from the immediate mode. If you BREAK a program, enter A=100 and then enter CON, the program will continue from where it stopped but A will have a value of 100.

You can temporarily stop a program at any time with FCTN 4, of course (the manual says SHIFT C, but it was written for the old 99/4), and restart it from that point with CON. Or you can insert a temporary line at any point, such as 971 BREAK if you want a break after line 970. Or, you can put a line at the beginning of the program listing the line numbers before which you want breaks to occur, such as 1 BREAK 960,970,980

Note that in this case the program breaks just BEFORE those listed line numbers.

You can also use BREAK followed by one or more line numbers as a command in the immediate mode.

The problem with using BREAK and CON is that BREAK upsets your screen display format, resets redefined characters and colors to the default, and deletes sprites. So, it is sometimes better to trace the assignment of values to your variables by adding a temporary line to DISPLAY AT their values on some unused part of the screen. If you want to trace them through several statements, it will be better to GOSUB to a DISPLAY AT. And if you need to slow up the resulting display, just add a CALL KEY routine to the subroutine.

Sometimes, your program will appear to be not flowing through the sequence of lines you intended (perhaps because it dropped out of an IF statement to the next line!) and you will want to trace the line number flow. This can be done with TRACE, either as a command from the immediate mode or as a program statement, which will cause each line number to print to the screen as it is executed. If used as a command, it will trace everything from the beginning of the program, so it is usually better to insert a temporary line with TRACE at the point where you really want to start. Once you have implemented TRACE, the only way to get rid of it is with UNTRACE.

TRACE has its limitations because it can't tell you what is going on within a multi-statement line, and it will certainly mess up any screen display. Sometimes it is better to insert temporary program lines to display line numbers. I use CALL TRACE() with the line number between the parentheses, and a subprogram after everything else

```
30000 SUB TRACE(X)::DISPLAY
    AT(24,1):X :: SUBEND
```

Some programmers use ON ERROR combined with CALL ERR as a debugging tool, but I can't tell you much about that because I have never used it. ON ERROR can give more trouble than help if not used very carefully, and I cannot see that CALL ERR gives any information not available by other means.

Sometimes you can debug a line by simply retyping it. It is only very rarely that the computer is actually interpreting a line differently than it appears on the screen, but retyping may result in correcting a typo error that you just could not see. In fact, most bugs turn out to be very simple errors.

When you are debugging a string-handling routine, don't take it for granted that a string is really as it appears on the screen - it may have invisible characters at one or both ends. Try PRINT LEN(M\$) to see if it contains more characters than are showing; or PRINT "*"&M\$&*" to see if any blanks appear between the asterisks and the string.

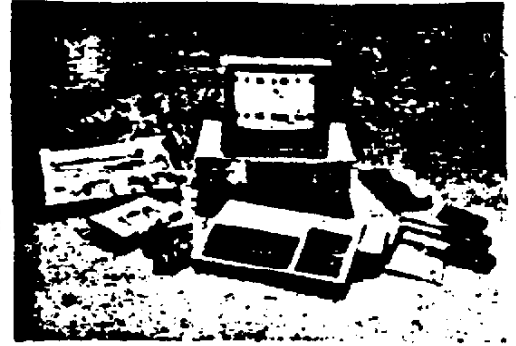
There is no standard way to debug a program. Each problem presents a challenge to figure out what is going wrong, to devise a test to find out what is really happening.

Don't debug by experimenting, by changing variable values just to see what will happen, etc. Even if you succeed, you will not have learned what was wrong so you will not have learned anything - and if your program contains lines that you didn't understand when you wrote them, you will have real problems if you ever try to modify the program. (Believe me, I speak from experience!)

END

TORONTO 15 COMPUTERS!

Orphan never lacking loving parental care



Orphan computer
An abandoned computer lives on
thanks to computer group.
PAGE 15

By STEVE MICKELSON

Today's state-of-the-art computers have an abundance of features which would have been considered truly amazing only a few years ago. For example, it's not unusual for contemporary systems to include spreadsheet and wordprocessing capabilities, or arcade games featuring multi-colored screens, music and digitized speech.

But a computer existed more than half a decade ago that already had all the above features and more. That computer was Texas Instruments' TI-99/4A, also known as the original "Home Computer" (a term coined by TI). Despite being an orphan, for five years this computer has survived and thrived.

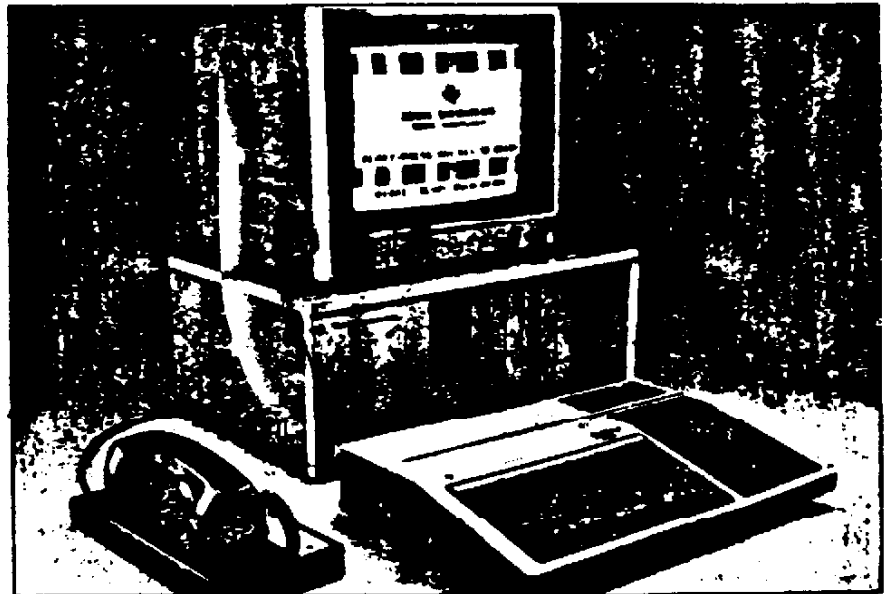
TI produced over 3 1/2 million of the 16-bit TI-99/4A computer consoles worldwide, including about 1/4 million Expansion Systems. Most of the early software produced for the TI was "locked" in GROM (Graphics Read Only Memory) cartridges distributed through TI. For each cartridge sold, TI collected a fee -- a policy which unfortunately discouraged many potential software writers.

After TI unsuccessfully tried to undersell the popular Commodore Vic-20, the company decided to cut its losses. TI stopped production of the TI-99/4A in October 1983. By rights, this should have led to the disappearance of the computer within a couple of years.

But despite TI's failure in marketing the 99/4A, the company had assured the survival of its orphan computer by implementing a policy of consumer satisfaction.

Support for the user

Back in the early 80's, TI responded to the computer literacy needs of many fledgling users by creating a number of regional



TI-99/4A built by Texas Instruments

workshops, exclusive to the 99/4A. Also a regular bulletin was mailed out to users.

As sales rose, demand for information outstripped supply. This led the company to encourage the formation of local user groups. TI sent out starter packages to aid in the formation of user groups. These new groups began their own newsletters to their members. A number of user groups began to exchange newsletters. When TI pulled the plug on their popular home computer, the existing network of user groups filled the void, providing the invaluable technical assistance needed by users.

Additional technical and hardware support

The TI-99/4A endured for another reason. Since the 99/4A was built to the high commercial standards of Texas Instruments'

mini-computers, many systems have been in use for five or more years with little or no need for repairs. For those users with problems, TI created a toll-free 800 line called "TI CARES". TI released updates for existing TI software, and even some previously commercial software programs, to all user groups for release in the public domain.

Support for orphaned 99/4As also came from many third-party sources. For example, a couple of magazines, Home Computer, MICROpendium and Asgard News, catered exclusively to the TI user (though Home Computer is now deceased). And many hardware manufacturers picked up the slack, increasing production of cards for existing expansion systems, as well as designing brand new hardware add-ons and

Orphan computer cont'd from Page 15

expansion systems. Among these companies, Myarc is probably the best known.

Shareware software and hardware kits have also come from talented individuals within the many 99/4A user groups. For example, the Horizon RAM disk and MBP real-time cards have come from user groups. And DM-1000, a disk manager from the Ottawa User Group, has become the standard in the worldwide 99/4A community, from Mail Order To Regional TI Fairs.

Several mail order suppliers still meet the needs of TI users. And now another forum has emerged for users to not only see the latest hardware and software for the 99/4A, but also to meet the remaining software authors and distributors within the TI community. That forum is the local or regional TI Fair. Chicago just had their eighth annual TI Fair, with others taking place in Milwaukee, Philadelphia, Las Vegas and Los Angeles.

In Canada, Ottawa and Halifax have been local focal points for TI forums. These events, usually held in community halls or auditoriums, give TI users an opportunity to meet one another in person, see the latest hardware and software, and hear lectures and demonstrations on their beloved orphan computer. TI-ers have been known to travel hundreds or thousands of miles just to attend such an event.

The legend lives on

Today, many of the original TI computers are still in service. For example, some of these robustly built systems have seen two or three owners without enduring any hardware failure.

Surprisingly, more options are now available for the TI-99/4A, in hardware and

ORPHAN Page 16

software, than when Texas Instruments originally discontinued the computer. There are now several languages for the 99/4A: Extended Basics, two versions of Forth, a Turbo Pascal, Pilot, Fortran, and c99, among others. There are currently also several data bases available, including TI-Base (which looks similar to D Base III). Other available databases are Creative Filing System and PR Base.

A host of other useful programs are now available too. For example, there are utilities that allow the user to port text files to and from an IBM, by reading/writing and even formatting in IBM disk format. There are several good graphics programs, including TI Artist, Picasso, Joypaint, and Graph X. And as for word processors, there are Companion, Writerease and the Press. As well, a number of advanced disk, diagnostic and assembler utilities are available for any interested 99/4A users.

New Hardware

New hardware add-ons for the TI include voice recognition systems, trackballs, mice, 80-column cards, double and quad disk controllers, as well as hard disk controllers, real-time clock cards, speech cards, digitizers, music-synthesizer cards, and battery-backed RAM disks with up to 512K pageable memory.

It is also possible to purchase IBM-XT keyboard interfaces, and hardware to dump the older cartridge software to disk.

One of the most recent hardware developments has been the Myarc 9640, also known as the Geneve. The Geneve, literally a computer on a single card, has many features of the discontinued TI-99/8, as well as a number of other features which are simply state of the art.

For example, the Geneve uses the up-grade-compatible Yamaha 9938 video display chip. And this "intelligent" video chip has mouse and joystick ports built in, with 80 column display, digitizer capabilities, as well as Composite, Analog RGB, and RF modulated video outputs.

The Geneve has the same sound chip as the TI and comes with an IBM XT, 12-function keyboard. The operating system, M-DOS, has the same command set as MS DOS. Yet, a GPL software interpreter creates a TI-emulated operating environment within the 9640, one which lets most of the 99/4A programs run on the Geneve as if they were booted on a 99/4A.

Nevertheless, the Geneve's 12 MHz clock speed allows the user to run programs at selectable speeds up to 3 1/2 times faster than those of the 4A. The 9640/Geneve has 32K or an optional 64K of 0-wait memory, plus 640K of RAM on the card. Also, the Geneve has a battery-backed real-time clock. The Geneve's graphic output is up to 512 x 424 pixels, in any of 256 colours.

Recent software offerings for the Geneve include a mouse-driven art program which can load and print 99/4A art and GIF pictures, as well as GEMME, a mouse-driven windows-like utility, which allows up to four programs to run at the same time. Overall, the Geneve brings to the TI-user many advanced features not possible in the TI-99/4A.

A bright future

In the near future, we can expect a MIDI interface card, a Canadian built Z-80 card, Kermit software, GIF, and possibly an IBM co-processor card. Also expected in the near future is a stand-alone Geneve computer system, available to any user who does not already own a TI-99/4A system.

As long as we have a dedicated community of innovative enthusiasts, the TI-99/4A orphan will continue to endure and prosper as a contemporary classic, one of the true paradoxes in today's computing world.

Steve Michelson is president of the Toronto 9T9 Users Group and edits Newsletter 9T9.

TORONTO **16** COMPUTES!

BETWEEN THE HEADLINES

From the May 1989 Issue of CALL SAY:
Asgard Publishing announces a contest for the design of a new computer compatible with the TI-99/4A, parts not to exceed \$500.

From the New York Times, May 21, 1989:
Seymour Cray leaves Cray Research to form a new company to design a new computer. John Rollwagon, [SIC] Chairman of Cray Research states, "It does not cost a whole lot to build a Cray computer."

A CRAY 4A???? Think about it!

QB MONITOR ~ QB-99'er NEWSLETTER

CATALABEL REVISITED

Page 2

```
1 ! *****
*   CATALABEL 2   *
*   A Tiny Gram   *
*   By Ed Machonis *
**QB99ers Bayside NY**
```

```
2 ! Prints A 3 Column Disk
   Catalog On A 1" x 3-1/2"
   Mailing Label
```

```
3 OPEN #2:"PIO" :: PRINT #2:
CHR$(15);CHR$(27);"A";CHR$(9
):: FOR I=1 TO 5 :: READ T$(
I):: NEXT I :: P$="#####
# ### ## " :: CALL CLEAR
```

```
4 INPUT "ALIGN LABEL-INSERT
DSK-PRESSER":X$ :: OPEN #
1:"DSK1.",INPUT ,RELATIVE,IN
TERNAL :: INPUT #1:A$,J,J,K
```

```
5 PRINT #2:A$;TAB(24);"AVAIL
";K;" ! USED ";J-K:RPT$("="
",58):: L=2 :: FOR I=1 TO 43
```

```
6 INPUT #1:A$,A,J :: INPUT #
1:B$,B,E :: INPUT #1:C$,C,D
:: IF LEN(A$)=0 THEN 8 ELSE
L=L+1 :: IF L=8 THEN PRINT #
2 :: L=1
```

```
7 PRINT #2,USING P$&P$&P$:A$
,J,T$(ABS(A)),B$,E,T$(ABS(B)
),C$,D,T$(ABS(C)):: NEXT I
```

```
8 CLOSE #1 :: FOR I=1 TO 8-L
:: PRINT #2 :: NEXT I :: CA
LL CLEAR :: GOTO 4
```

```
9 DATA D/F,D/V,I/F,I/V,PGM
```

ALTERNATE LINE 5

```
5 PRINT #2:CHR$(14);CHR$(27)
;"G";A$;CHR$(20);CHR$(27);"H
";TAB(24);"AVAIL. ";K;" !
   USED ";J-K:RPT$("="",58):: L
=2 :: FOR I=1 TO 43
```

```
1 ! *****
*   CATALABEL 3   *
*   By Ed Machonis *
*   QB99ers Bayside NY *
*****
```

```
2 ! Prints A 3 Column Disk
   Catalog On A 1-1/2" x 4"
   Mailing Label
```

```
3 OPEN #2:"PIO" :: PRINT #2:
CHR$(15);CHR$(27);CHR$(65);C
HR$(9):: FOR I=1 TO 5 :: REA
D T$(I):: NEXT I :: P$="####
##### ## ##" :: CALL
CLEAR
```

```
4 INPUT "ALIGN LABEL-INSERT
DSK-PRESSA KEY":X$ :: OPEN #
1:"DSK1.",INPUT ,RELATIVE,IN
TERNAL :: INPUT #1:A$,J,J,K
```

```
5 PRINT #2:CHR$(14);CHR$(27)
;CHR$(71);A$;CHR$(20);CHR$(2
7);CHR$(72);TAB(30);"AVAIL.
";K;" ! USED ";J-K:RPT$("="
",67):: L=2 :: FOR I=1 TO 43
:: U$,V$,W$=""
```

```
6 INPUT #1:A$,A,J,U :: INPUT
#1:B$,B,E,V :: INPUT #1:C$,
C,D,W :: IF LEN(A$)=0 THEN 1
1 ELSE L=L+1 :: IF L=12 THEN
PRINT #2 :: L=1
```

```
7 IF U THEN U$=STR$(U)
```

```
8 IF V THEN V$=STR$(V)
```

```
9 IF W THEN W$=STR$(W)
```

```
10 PRINT #2,USING P$&P$&P$:A
$,J,I$(ABS(A))&U$,B$,E,I$(AB
S(B))&V$,C$,D,T$(ABS(C))&W$
:: NEXT I
```

```
11 CLOSE #1 :: FOR I=1 TO 12
-L :: PRINT #2 :: NEXT I ::
CALL CLEAR :: GOTO 4
```

```
12 DATA D/F,D/V,I/F,I/V,PGM
```

CATALABEL REVISITED

By Ed Machonis

Babbage's Law of Diminishing Returns:
"Inside Every Program is a Tiny Gram
Struggling to Get Out."

Babbage's Law of Perpetual Motion:
"The Only Way to Finish a Program is to
Finish the Programmer."

These laws should set the scenario
for this month's melodrama, "Stick by
Your Labels and Your Labels Will Stick
to You!"

As a result of a group exchange, I
recently acquired a large number of disks
with unknown contents. Faced with a
bunch of unlabeled, uncataloged disks, I
turned to CATALABEL, the program I
usually use in such cases.

CATALABEL prints out a disk catalog
on a mailing label which is placed on
the disk and not only identifies the
disk but gives you a pretty good idea as
to what's on it. The catalog can't get
separated from the disk and is a quick
easy way of turning chaos into a
semblance of order.

Due to a corrupted file directory on
one of the programs (a D/F file with
zero record length) CATALABEL crashed
every time I tried to catalog that disk.
I took a look at CATALABEL to see if I
could program around the problem and one
thing led to another and finally to, you
guessed it, a Tiny Gram - CATALABEL 2.

I had originally written the program
many years ago in Console Basic and I
guess it was time for an upgrade to
Extended Basic. I particularly wanted
to use Extended Basic's PRINT USING
statement to solve the zero record
length problem. Also, CATALABEL prints
the catalog in Compressed Superscript,
which is not as easy to read as it was a
couple of years ago, and I wanted a
larger type style.

The Tiny Gram that finally emerged
prints the catalog in three columns,
instead of the previous two, using
Compressed type. In order to list three
programs on one line of a mailing label,
something had to give. In this case it
was the record length and protection
status. I'm not completely happy with
this compromise but you can't have
everything.

The increased line spacing required
for Compressed type, meant fewer lines
for listing programs. With three
columns, the capacity of the first label
is now 15 programs, instead of the

previous 16; and the second label, if
required, will list 21 programs instead
of 22. Not enough difference to worry
about. The 50% increase in line spacing
makes label registration a lot easier.

The simultaneous screen display of
the catalog was eliminated since I never
looked at it anyway and it only slowed
the program down. The program was
reduced to less than one half of its
original size and runs considerably
faster.

I felt that disks would be a lot
easier to locate if the disk names were
made to stand out by printing them in
Expanded Compressed Double Strike type.
Alas, this required a couple of more
lines and would destroy the program's
Tiny Gram status. I am sure this makes
no never mind to 99.99% of the users,
so I have included an alternate,
slightly longer Line 3, which will
result in a much nicer and easier to
locate label.

Using the program is very simple.
Turn on your printer and load the
program. At the prompt, align the top
of the first label to the top of the
ribbon, insert the disk to be cataloged
into Drive #1 and press <ENTER>. If
required, realign the label for the next
disk. From then on the label alignment
should hold.

While testing CATALABEL 2, I came
across some 1-1/2" by 4" labels and
these seemed more appropriate for those
double sided disks with lots of
programs. CATALABEL 2 was modified to
use the larger label and the result was
CATALABEL 3 which can list 27 programs.
The larger width enabled display of the
record length as well.

Since there was little chance at a
Tiny Gram with this program, an attempt
was made to make it compatible with
Gemini printers. I don't have access to
a Gemini, or a listing of the control
codes for it, so I don't know if I
succeeded. (I would appreciate some
feedback here.) If CATALABEL 2 won't run
properly on your Gemini, try entering
the print codes in Lines 3 and 5 as
shown for CATALABEL 3.

CATALABEL 3 can also be used to print
catalogs on paper for Scotch taping to
disk sleeves. If you have a bunch of
disks to catalog, it's probably faster
than most catalogers. Just keep feeding
the disks into Drive 1 and pressing
Enter.

Which reminds me of Babbage's Law Of
Revolving Doors: "Babbage In is Babbage
Out!"