The MIDNITE SOFTWARE GAZETTE

The PAPER

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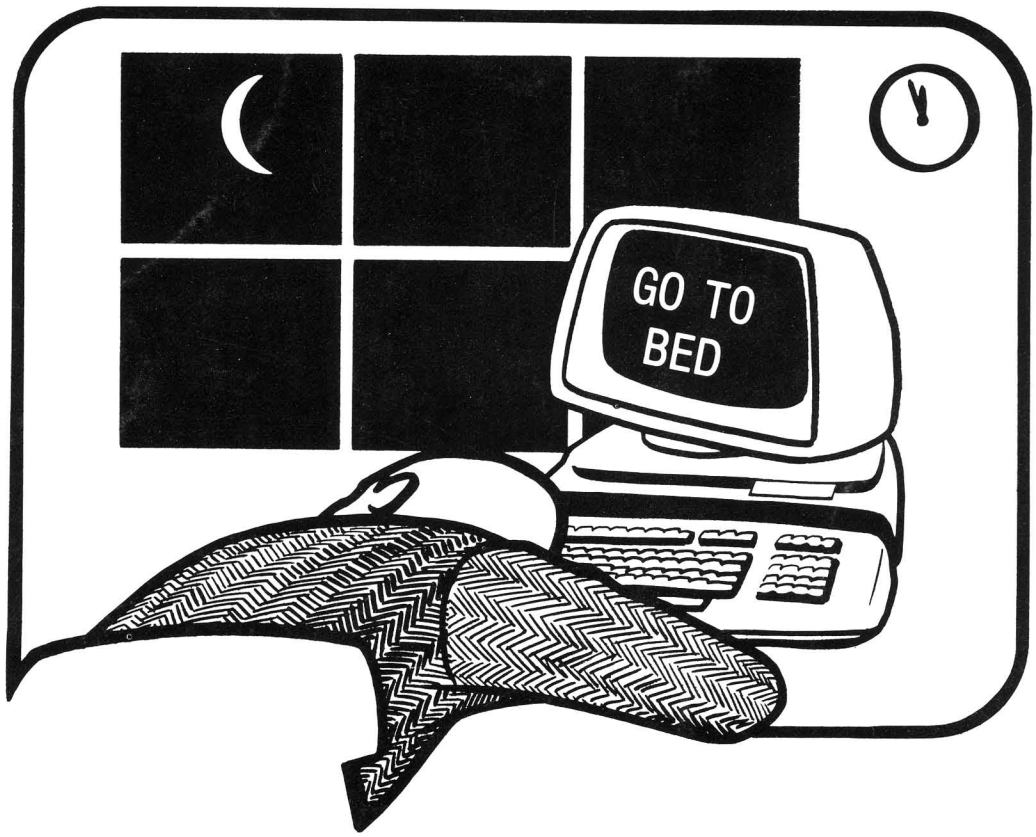

The Independent U.S. magazine for users of Commodore brand computers.

CBM — PET — 64 — MAX — VIC

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WELCOME

Welcome to issue 11 of the Midnite Software Gazette, and volume 5 issue 1 of The Paper. Special thanks to all our new subscribers. We are printing 2,500 copies of this issue, and all past issues have already been reprinted.

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Several names are abbreviated throughout this issue: Brent Anderson (BA), Arthur Cochrane (AC), J. Paton Dellow (JPD), Fran Donovan (FD), Dan Gauwitz (DG), Jerry Key (JK), Jim Lewis (JL), John O'Hare (JOH), Jim Oldfield (JO), Keith Peterson (KRP), Jayne Schiek (JAS), Clark L. Stewart (CLS), Jim (JS) and Ellen (ES) Strasma, Carolyn Wolter (CW), and Larry Woolard (LW). We thank all whose names appear beside their columns, comments and reviews for their help.

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VIC & Game Notes:	to John O'Hare, 41-132nd St., Lemont IL 60439

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* Our 300+ page book, The Whole PET Catalog is still available for $10.
* Pre-paid camera-ready advertisements still cost just $100 per page.
* Multiple orders to one address are welcome, at $15 per each 6 copies.
* The **Midnite/PAPER** welcomes articles, hints, and reviews.

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NOTES

MIDNITE MEANDERINGS

by Jim Strasma

IF YOU DIDN'T GET THIS ISSUE:

Odds are that your The PAPER subscription has run out. Hurry and renew right away. Here's a typical comment, from yesterday's mail:

"Enclosed is my check for $2Ø for the next volume of the Midnite/PAPER. I do not want to miss a single issue! I have been a subscriber to the PAPER since the beginning, and my recent experience with Midnite has been fantastic. Keep it up."-Larry Riley

ON APPEARANCES:

Having outgrown our local printer, we are adding a heavy, slick cover and considering offering color. We hope dealers like the heavy cover for their display racks, and that big-time advertisers will send the same color ads they use for Byte. Even so, the best comment came from a reader: "I don't care if you print your magazine on toilet paper, as long as you 'TELL IT THE WAY IT IS'. You are alone in doing this, as you no doubt know."-Gerald W. Carter

SPARES AND DELAYS:

Please accept our apologies to those whose copies have been delayed and to those who received a spare issue last time. Issue 1Ø needed to be reprinted before we even got it back from the printer. Incomplete checking of subscriber lists against the last The PAPER labels is to blame for the spares; please give them to a friend or dealer. We tripled our current press run.

LINCOLN COLLEGE SUMMER COMPUTER SEMINAR:

Good news! Lincoln College officially approved our one week Commodore Computer seminar June 19-26, and initial interest is high. The faculty will be headed by Jim Butterfield, and include other "famous" names. Yes, there will be varying prices, depending on whether or not you board and room on campus, have non-student family members boarding with you, or bring your own computer.

We'd like to hear from folks with extra Commodore computers they can bring or supply to the camp, with specifics on gear available and rent needed. We will also offer a registration option that includes a VIC or 64 in the price. If your company covers the full cost of courses you take, we recommend that option. For details, please write us at 128Ø Richland Av., Lincoln IL 62656.

NAME CONTEST:

We have a winner! In the final stretch were "MidniteXPress," "Shift/Run," and "The User Port." And the winner is: Newton Barnette of Charlotte NC, with "MidniteXPress"! Congratulations! Newton has been a The PAPER subscriber for 3 years, and a very happy one, even before he won the VIC! He says, "I'm thrilled to be a winner!" He and his wife Ella Mae will have lots of time for the VIC after he retires as University Dean of Engineering after this semester.

THE DISPOSABLE COMPUTER:

According to the December Softalk, American Express now offers electronic greeting cards. For Christmas '82, they played "We Wish You a Merry Christmas" and "Silent Night". The battery is said to be good for 8 hours of play.

THE WRIST COMPUTER:

Old-timers may remember that hand-held language translators came out about a year before the first hand-held computer. With that in mind, isn't it interesting that Casio now offers a language translator in a watch? It has a 2,ØØØ+ word vocabulary, plus the usual alarm, calendar, and stop watch.

ADVERTISING NOTES

COMM*DATA PROGRAMS Update:

Bill Brown, author of FINANCIAL REPORT (good review in WPC, p.108) and LIBRARY CIRCULATION UTILITY (good review in M/P 9), reports that Comm*Data has raised FINANCIAL REPORT's price to $100 and isn't offering LIBRARY CIRCULATION UTILITY. Bill now sells either directly, for $39.50, c/o Miller School, 850 Spencer Rd., Brighton MI 48116.

DATABOOKS AND DATAPAYROLL Update:

B. Prouty, author of DATABOOKS and DATAPAYROLL, reviewed very favorably last time, reports she is now selling updated versions for PET/CBM and 64 models directly, at a lower cost. See her ad in this issue. Especially note her offer to provide a free update to anyone who bought the earlier version from Datamaster. She reports that the Datamaster version allows the user to 'edit' the balance of a ledger account without leaving a trace, and adds, "Imagine the opportunity for manipulation and fraud open to a mildly larcenous bookkeeper in a program that permits changing the receivables total without a corresponding change in an individual account." I agree that being able to edit an account total should only be allowed in accounting packages that no one but the owner will personally run. No one else could be trusted with such power.-JS

FRENCH SILK ASSEMBLER IS ORIGINAL:

Don French, of French Silk, assures us Mark Niggemann was very wrong to suggest the French Silk ASSEMBLER is adapted from the old Personal Software assembler. Don's never even seen it. I must agree with Don; those who have seen the PS assembler, wouldn't use it as a model for ANYTHING. It never even ran as shipped, and after many user fixes, was huge and unwieldy. The French Silk package, in contrast, is an elegant example of compact, efficient BASIC programming. JOH will officially review the French Silk ASSEMBLER next time. Till then, Don, our sincere apologies. Wish we'd caught that blooper before publication.-JS

INFO-PRO STRAIGHTENED OUT:

I'm glad to report my own trials in reaching Tom Callen, author of INFOPRO, are over; royalties are paid and wounds are healed.-JS

INTELLIGENT SOFTWARE'S WORD PROCESSOR:

Gerald Carter asks, "Is William Robbins' WORD PROCESSOR PLUS $20, as reviewed [in M/P 9] or $30 as in his ad in the back?" Believe the ad first!-ES

MIDWEST SOFTWARE ADDRESS:

Our apologies to Midwest Software for leaving them out of the resource page last issue. They are listed this time, for those looking for a good grading program. Note that MASTER GRADES is only $40 and also available for 16K PETs.

BOB BAKER'S UTILITIES PROGRAM COLLECTION:

Bob Baker reports that two full diskettes of the program collection from his Microcomputing column, with instructions, is now available from Eastern House Software, for $25 (not $40). (Highly recommended in the WPC, p.167.)

Baker has also created a great new debugging idea - a 6502 simulator. It runs on PET and runs nearly any program without losing control (even those which intentionally lock up the PET) by emulating the work of the 6502, in BASIC. The package is huge, and will be an article in Microcomputing. If you'd rather not wait, send $5 to Baker Enterprises (specify 4040 or 8050 diskette).

ATUG NOTES

by Brent Anderson, ATUG Librarian

45+ Public Domain Diskettes as of 12/82:

ATUG specializes in annotated source code to use with Carl Moser's assemblers. We also offer ready-to-run utility, education, and game programs. We need your donation of programs and source code, especially for VIC and 64. I appreciate your patience the past few months while I dealt with pinched nerves in my neck. Now current on orders, I can catch up on library updates.

To receive the latest annotated directory of diskettes, send a letter-sized, triple-stamped SASE and request ATUG INFO. When ordering, send $10 per diskette. Specify desired diskettes and format (4040,8050,1540/41).

Revised Diskettes: HD (HELP diskette) in the almost-current 11/29/82 version

Newly Available Diskettes:

4 PET Game diskettes; TPUG disk 5/82; TPUG disk 10/82; 6 Softswap education diskettes (from Computer-Using Educators, Calif)

On hand, but not yet organized:

Software for BSR appliance controller; disk disassembler (Rockwell); hexadecimal input from numeric keypad; machine language program compactor; machine language addition/subtraction of large numbers; machine language comparison of 2 machine language programs on diskette; TinyAid (to edit BASIC on VIC); religious programs; and new versions of Extramon, Micromon, & E-ROM extended ml monitors.

The VIC exchange diskette includes the following programs:
(most work on unexpanded VIC; some need light pen or joystick)

breakout	bury ghosts	business demo	chuck-a-luck
deflection	etch-a-sketch	flag demo	general demo
graphics & sound	kaleidoscope	lt pen artist	lt pen scribe
lunar lander	maze venture	mukade	old english
rocket command	rugby	samurai	sound menu
spacewar ptl	spacewar pt2	star wars	tank vs ufo
the entertainer	vic char demo	vic char genr	vic chase
vic commander	vic screen ptr	vic snake	vic squiggle
vic star trek	vic time	wall destroy	listing
calculart	seq file(ptr)	seq file(scr)	super vicmon2
vic clock	ufo	breakout.alt	dragon maze
tv kokuban	road race	pong	animal
packman	slot machine	supereverse	letter squares
vic 3 of kind	money	star force	crazy b
mine field	car race 1	car race 2	vic word procr
menul	directory	vic freighter	vic lissajous
moonlander (vic)	bar graph (vic)	log & logo	hi-res clock
maze venture/j	star force/j	star wars/j	crazy b/j

PD (Commodore 64 Exchange Disk) includes the following programs:

driver: demo of disk menu program
labri3: neat 3-D maze game
stock4: stock exchange game/simulation
sound demo: 64 as simple organ
sped: sprite editor
craps: graphic statistic demo
sidmon & supersound: 2 screen menus to access sound chip
chred: screen grid to edit 64's screen characters
(boot.)dos5.11: disk wedge for 64 (with Strasma's mod for 1540)
xvm4.-: NICE extended machine language monitor; loads at 32768 or 49152
ALSO CONTAINS: screens; 1541 backup; launch; bounce; make sprite; demo7; demo

CBM/PET PROGRAMMING NOTES

by Jerry Key

PET/CBM Help for VIC/64

Two frequently-asked questions are: "How can you use the PET/CBM to load VIC/64 programs from diskette and save them to tape?" and, "How do you use the PET/CBM to modify VIC programs?"

The only real problem in loading VIC/64 programs into the PET/CBM is the load address (position in memory). PET/CBM expects BASIC programs to load at decimal 1025; VIC saves programs from either decimal 4097 (no memory expansion) or decimal 4609 (with memory expansion); the 64 saves programs from decimal 2049. If you simply load a VIC/64 program into the PET/CBM and try to list it, nothing will happen. But there is another way!

For VIC programs, try this on PET: POKE43,16:POKE4096,0. Then load and list the program. If it does not list, then POKE43,18:POKE4608,0 and the program should list. There are some exceptions, such as programs using SUPEREXPANDER. Now edit and resave the program to either diskette or tape normally.

For the 64, try: POKE43,8:POKE2048,0. Then load, list, modify and save.

Minor cautions: most BASIC commands work with these start-of-BASIC memory changes, but a few don't; you cannot easily add or change color commands, as PET/CBM lacks the proper keys. Since some VIC programs have lines over 80 charactors long, you must shorten or split the line, by abbreviating commands, such as ? for PRINT, or by deleting color commands. For instance, in the line, 10 PRINT "[color command] This is a sample line...[etc.]", if the line wraps past 80 characters, you could first delete the color command, put the cursor on the first quote, delete RINT and replace P with ?. Then only the overlap (part beyond column 81) is lost and must be reentered.

You can also use a utility program to merge the program into a PET/CBM. Remember that VIC and 64 have relocating loaders to allow PET/CBM programs to load directly. All bets are off on programs containing machine code.-JK

CASSETTE TAPE HINT:

Have a program on tape that has no header? Can't get the PET to read it? Before you give it up, try POKE212,1:SYS63651 and follow the prompt. This tape block read routine may recover some of those hard to read tapes. The first POKE sets the device number; the second starts the block read routine.-JK

USING USA-MADE CBM COMPUTERS IN EUROPE:

PET users might wonder if their computer monitors are like TVs. Just before being transferred to London recently, I made several inquiries about using my "USA" CBM (an 8032) on 50hz power. Calls to two Commodore "hotlines" informed me that I would need to obtain, in addition to a transformer to step the voltage back to 120v, a replacement video board and an $E000 ROM. Upon arriving in London,...all I needed was the transformer....[because] the scan rate on the CBM is controlled by an onboard timer, rather than the frequency of the power source. Unlike ordinary TV's, the PET screen works just fine on 50hz power.-Don Barr
[The new $E000 ROM corrects TI$ to keep good time at 50HZ-JS]

USING ANY PUNCTUATION WITHIN DATA FILES:

DG wrote this short routine for the 8032 that he calls LINPUT. Try it!-ES

```
10 print "[clr screen,4 cursor rights]input anything...commas, colons & returns are all ok."
20 print:gosub 1000
30 print "voila..[2 cursor rights]":print in$:end
1000 sys(48117)
1010 for b=512 to 592:if peek(b)<>0 then next
1020 in$="":poke peek(68)+256*peek(69)+1,0:poke peek(68)+256*peek(69)+2,2
1030 poke peek(68)+256*peek(69),b-512:in$=mid$(ins,1):return
```

COMMODORE 64 NOTES

by Ken Penny

DAY 3: Digital Entomology 101
or Bug Safari!

> Max Maxwell, private eye, glanced furtively about the room. A double-decker dagwood sandwich had just disappeared from the computer bench. Had the 64 developed an appetite, he wondered? All that remained was a trail of crumbs leading to the cartridge port.....

Every new system that comes out goes through three stages: First is the "shiny new toy" stage, then the "this thing doesn't work" stage, then, after some time, the "now I've got it figured out" stage.

Most people are in the first stage on the 64. That may be because they haven't seen one yet, or because they are still working on BASIC and know they make lots of mistakes. But some have reached the point where something that used to work doesn't any more.

NEW BUGS

In fact, there are a few things about the 64 that don't work quite like it seems they should. Some of these may be bugs, but some are just different. Fo r example, usually when you reset a computer, the RAM looks like you just turned the machine on - all $AA's or chr$(170)s. But because the 64 uses a non-destuctive RAM test, if the power hasn't been off, all that is reset is zero page and some controlling vectors. This, by the way, is great for those of us who periodically crash the system with the latest version of the program still inside, but it can cause confusion to some who expect to see blank RAM.

One quite obvious 'feature' of the 64 has to do with the FRE() function. It seems that FRE() is confused by more than 32K of memory, and gives a negative number when it is above that. Luckily, the only time you really care about FRE() is when you think you may be about out of memory, so it's not fatal. Sometimes though, it's handy to see how many bytes you just took out of a program. Here's a good fix: memspace=fre(0)-65536*(fre(0)<0)

Another problem you may encounter occurs on systems with two 1541 drives. On occasion the serial bus will lock up on power-up. The fix is easy; just execute a RUN/STOP/RESTORE sequence on power up before anything else is done. The drives may complain slightly, but the system will work normally from then on.

RETURN INVASION?

Some of the problems from way back have returned, problems we've forgotten about since we all went to 80 columns (most all, at least). Line wrap can have some interesting effects, and the 'push down' wrap of the 64 is a prime candidate for confusion. Be careful when prompting with 39 characters, and don't expect a return to put you on the next line in all cases. Usually just an awareness of the potential trouble is enough to forstall it. If you are doing screen operations under program control and are having problems with screen wrap, you can make all the lines non-wrapped with this routine:

```
1000 for n=217 to 242
1010 :  poke n,132-(n>223)-(n>229)-(n>236)
1020 next
1030 poke 243,192
```

Ah yes, the push-wrap crash. Move to the bottom of the screen, type in 82 characters and three deletes, and stand back! LOAD, SYNTAX ERROR, READY, RUN, READY, and the keyboard won't work. The fix? Don't let this happen.

Or type in 351ØØØ and hit RETURN. The system does a restore. This is a Microsoft bug in every system ever made by Commodore, yet no one found it before.

Another one like this is the command GO(A$,A,B). It's invalid, of course, but I've seen it send an 8Ø32 into never-never land. This is the type of bug that can creep in without anyone ever noticing. The delete error above, in my opinion, fits into that category: a bug that is rarely seen.

There are more interesting things to know, from the video port resistor that picks up the monitor output to the capacitor that fixes sparkle. They deserve a page of their own, so this subject will be continued next time. Ya'all come back now, ya hear?

> Max listens to his latest four-voice harmony program with a satisfied smile. Suddenly the smile is gone as a FIFTH voice joins in full song! Max springs into action, inverts and shakes the 64, and nails the lyrical cricket between the eyes with a can of Freezit spray....

64 Notes from our Readers:

CONVERTING CB2 SOUNDS:

Ron Jeffries' review of the 64 for Creative Computing 1/83, includes a two-line program to convert PET's CB2 sound to the 64. It works even better as a defined function. First set the SID chip for music and define the function:

```
1Ø DEF FNC(CB2)=INT(.5+14*(2 1/12)*(LOG(255/CB2)/LOG(2 (1/12))))
```

Then, whenever the PET program reads: `POKE 59464,CB2`
just substitute: `POKE 54273,FNC(CB2)`

HOMEBREW PAPERMATE 16:

We goofed last time when we told you to delete line 117 of PAPERMATE to run it on the 64 using the EMULATOR. There IS no line 117. Wipe out line 717 instead, or better yet, buy the new version 16 from AB Computers.

TAB AND SPC BUG:

Bob Baker reports that the problem he found on the 64 and VIC-2Ø, using:

```
PRINT#X,TAB(Y); and PRINT#X,SPC(Y);
```

can be cured by inserting a leading null:

```
PRINT#X,"";TAB(Y); and PRINT#X,"";SPC(Y);.
```

NEW -Ø2 ROM OUT:

The 64 has just been slightly revised. The latest ones have tiny rainbow-colored racing stripes, which don't matter, and new ROMs, which do. The new OS (operating system) chip inside is labeled "-Ø2". No word yet on when you'll be able to upgrade earlier 64's.-info from KRP

ON THE NEED FOR PATIENCE:

Two different long-term PET owners just mentioned being upset with impatient 64 owners. Those of you who just bought a 64 as your first computer often wonder why some programs aren't available for the 64 yet. What many of you don't realize is that good software takes years to develop. As one old-timer pointed out, in 1978 we were thrilled to have even one new program at a users' meeting. Personally, I am amazed that 64 owners can already buy a compiler (PETSPEED), a word processor (RTC-4 or Word Pro 3 Plus/64), arcade games (Pakacuda, Motor Mania) and a Commodore assembler better than the one for PET. We waited two years for a word processor, and over three for a compiler, and that's not to mention how much cheaper most 64 programs are than their PET equivalents!

A message on the Chicago PBBS (see Modem Notes) today griped about a 64

version of PBBS upload/download software not being available yet. Well, odds are one will be available soon, but only after PET owners take pity on 64 users and donate many hours to fix the public domain programs to run on the 64.

ON THE OTHER HAND:

"I bought a 64 in October. It reminds me of my first look at my newborn son. I know as much about computers now as I did about babies then. Unfortunately, I can't go to my parents for advice again; they know even less.

Neither Commodore nor my dealer is much help either. The 64 users guide is full of mis-prints, programs that don't work, and a general lack of information. My dealer has tried to be helpful, but he is mostly into office machines. My son is 9 and wants to play games. We could do that on a $130 Atari or $180 VIC.

I'm sorry for expressing these thoughts in a cumbersome manner, but I have not yet learned enough terminology, let alone programming. That was the reason we got the 64, to become 'computer literate', whatever that means. By the way, despite my complaints, I like it."-Herbert Gross

CP/M, 64K, & 80 COLUMNS FOR 64?:

One super-interesting new product was shown by the Data-20 company at Comdex: a "Z-80 Video Pak" CP/M adapter for the 64, that also provides 80 column output to a monitor (without moving cables or giving up 40 column color output), 64K more memory to the computer, a terminal emulator feature, and a screen print - for $300. No, of course you can't buy it yet.-JS

TIRED OF BASIC PROBLEMS?

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WHILE-ENDWHILE
FOR-ENDFOR

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CHURCH NOTES

CHURCH COMPUTER USERS NETWORK (CCUN):

Those interested in church applications of computers should contact our newly formed Church Computer Users Network (CCUN), organized with the help of United Methodist Communications and Church Resource Systems. Their new newsletter editor, Jim Strasma [who else?], hopes to finish the first quarterly issue sometime in February. To join and receive the newsletter, write Church Computer Users Network, P.O. Box 1392, Dallas TX 75221, or call 800/527-9373.-ES

To contact John Easton, who did our Church Notes last time, write 258 Lake Promenade, Toronto ONT M8W 1B3 CANADA. He is a most active spokesman for Christian Computer/Based Communications in Canada.

COMAL NOTES

by Len Lindsay

RUMORS I'VE HEARD:

COMAL for the COMMODORE 64 is up and running. Unfortunately, negotiations with Commodore are delaying its release outside of Denmark. Early 1983 is a good bet for the diskette version, with a cartridge by early summer. The COMAL Interest Group will be the North American distributor, unless Commodore includes COMAL on diskette with future computers.

The COMAL standard of May 1982, officially named the COMAL KERNAL, has now been published in the COMAL Bulletin as well as in the COMAL Handbook. This standard was agreed upon by those attending the International Working Group meetings: Borge Christensen (Creator of COMAL), Instrutek, Metanic Aps, Regencentralen, Trinity College, and COMAL Users Group. Metanic Aps, authors of a CP/M based-COMAL, apparently wish for their version to be the de facto standard, even though they had a hand in creating the COMAL KERNAL. The three books about COMAL currently available use COMAL on Commodore computers for their examples, and COMAL for CBM now conforms to the COMAL KERNAL. I Hope those promoting COMAL will re-unite to support a strong portable language.

The COMAL Handbook is finally published by Reston, and available from the COMAL Interest Group, 505 Conklin Place, Madison WI 53703. It is spiral-bound (no more shoe on the page to keep it open) and offers an optional diskette containing most sample programs and procedures, plus both CBM COMAL interpreters. Price is $19 for the book, $15 for the diskette, or $30 for both. COMAL Turtle Graphics is now available to add high-resolution bit-mapped graphics to any Commodore computer using the COMAL ROM board.

It looks like COMAL 1.02 has been modified to run on the Madison Computer Z-RAM board as well as the Commodore 8096. Version 2.00 is already being planned. It will include the ability to call a procedure from disk, execute it, and then free the space.

COMAL running on a Commodore 64 was the focus of a Danish Television Network Special, to be seen all over Scandinavia. Would you believe the COMMODORE 64 was actually hand painted blue to show up better against the background?

COMAL will be sponsored at the COMMODORE COMPUTER CAMP in Lincoln, Illinois, June 19-26. For more information contact M/P editor, Jim Strasma.

MODULAR STRUCTURES:

There's been a lot written about structured languages in the last few years and an increasing amount of confusion as to what that term means for the programmer. One of the important aspects of structure is its modular aspect, or the concept of "chunking." This allows a programmer to deal with a problem only once, and rely on the same code from then on.

BASIC has a crude form of subroutine (GOSUB/RETURN) which allows a set task to be repeated several times, but is terribly clumsy to use with any flair. For example, if you want a subroutine to cause a pause for a variable number of seconds, BASIC would force you to dedicate a variable to set the duration of the pause, and assign it a non-descriptive name. Then you must GOSUB to a rather meaningless line number whenever the routine is to be used: DU=7:GOSUB 9500. Thus subroutines are difficult to use within a program and often cannot be used in future programs without line number and variable name conflicts.

COMAL, in contrast, lets you write a routine, name it, and call it as if it were a built-in function. Simply code PAUSE(7). Seven is the parameter passed to the routine and transparent to the rest of the program--meaning you could use the same variable name, like DURATION, elsewhere with no conflict. This allows you to develop a large set of "building block" procedures you can easily link together in future programs.-Steve Kortendick

COMMODORE NOTES

by Jim Strasma

COMMODORE TO PRODUCE ITS OWN 16-BIT CHIPS?

We are told the 65ØØØ processor project is still alive, despite the loss of its chief designer. The investment in already-developed support chips is said to be sufficient to ensure its completion. It is also needed in order to keep the arcade game business, which up to now has been Commodore turf. (See Hal Hardenberg's comment on it under "Quotable Quotes" in this issue.)

Zilog, which has been devoid of an ongoing domestic second source for its line of 16-bit microprocessors for over 13 months, has signed an agreement with Commodore to fix that problem. [Wall Street Journal 1/6/83] Commodore makes nearly everything itself for its machines, and the Zilog agreement should give Commodore added Z-8Ø's, etc. for running CP/M on the 64 and forthcoming models. This may not be the last such agreement. Since some of those models will also run Intel and Motorola products, other such agreements are expected for the 8Ø88, 8Ø86, and 68ØØØ chips.

MORE 64 VARIATIONS:

At the same time Commodore announced the meeting with Zilog, it also announced 3 MORE models! These are to be portaPETs--64s with built-in TV and disk drives. One is monochrome with 1 disk drive, another is color with 1 disk drive, the third is color with 2 disk drives. The 2 disk unit was announced to sell for $14ØØ, but don't hold your breath waiting for delivery.

Why does Commodore announce stuff so far in advance? Partly as trial balloons. You know, "We've got one in the lab, but we don't know if people would buy it. To find out, we announce it. If nobody yawns, we make some." Another reason for early announcements, is to keep stock prices up. CBM stock, recently down, reportedly rose $6 per share after the announcement.

Reader Larry Newfeld reports that the PET 64 (the Fat 4Ø replacement mentioned in M/P 9) is in stock at Micro Mart Computers in Winnipeg, Canada. Probable U.S. price is $795, same as the first 8K PET. It is a PET case, with a 64 inside. The 64 board is turned sideways, with all the ports on the right side, and lots of empty space in the cabinet. The monitor has the usual green phosphor. Unfortunately, the PET 64 comes without a SID chip, and the VIC chip doesn't give color, even when hooked to a color monitor. Even so, it looks great for schools, if any are still willing to buy Commodores after waiting 7 months for the free PETs they earned last May. Oh well, at least we got big screen 4Ø32s for the price of 4Ø16s when they did show up.

CP/M for the 64 is apparently done, just waiting for a manual. Manuals for the EASY series come first.

YES, THE "B" AND "P" EXIST!

There is a production model "B" in Chicago, at a software developer's. KRP's seen it and reports some changes from earlier announcements. Apparently there is now a low-boy and a hi-boy version. The low-boy one he saw had no room for built-in disk drives. Also, instead of the expected 128K RAM, it has 256K. But no 8Ø88 in sight, so it's not a BX. No word yet on added commands or price. Two days later, the first "P" arrived in Chicago. According to Ron Jeffries, the P may be out by the end of February, for hundreds less than the $995 first quoted. That would do a lot for dealer morale now that Montgomery Wards has the VIC in their catalog for less than dealer cost. Wards reportedly plans to sell the 64 for $4ØØ beginning March 1st. Personally, I hope that doesn't happen yet. It would be foolish to let Wards drum up still more demand for the 64 with a price cut when dealers can't handle current orders.

COMPETITORS NOTES

Since January is a good month for predictions, we're reprinting a few of Ron Jeffries' bets for the new year, from the December issue of his very-readable Jeffries Report [reviewed in M/P 9]:

APPLE:

Ron guessed the Apple II-E would be introduced at the annual stockholders' meeting in January, with a price of about $995. According to Jeffries, the installed base of both TI and Commodore computers probably exceed Apple now.

According to Personal Computing, Apple is also releasing 2 new disk drives soon, single and dual double-sided 5" floppies for the III, but not for the II. Capacity is 870K per drive, for around $1,000 each. Both drives require a special 2-holer diskette made only by 3-M, and have no drive doors--hit a button to pop a diskette, ignored when writing. Don't all line up at once.

When John Ylimaki proposed a wooden Apple in M/P 10, someone was listening. Formula International now offers THE PINEAPPLE, another Apple II clone. Apple noticed too; they're suing Formula.

ATARI:

Atari may drop the rumoured 600, and plans to offer a new 1200XL. It is said to have 64K of memory in a sealed box. No longer will you be able to easily plug in new cards as on the Atari 800. Jeffries reports it may have 256 colors, up from 128, and may sell for $895. Reportedly, the new model can run games from the 400 and 800, but can't run their word processor. Even Compute! yawned.

IBM-PC:

For Big Blue, Jeffries predicted a new [Peanut-ED] model for $795, to be introduced at the winter Consumer Electronics Show. The star of Comdex this year was the PC, both as sold by IBM, and as cloned by at least 20 other manufacturers. The most interesting clone was an Osborne 1 look-a-like, said to be completely compatible with the PC, for under $3,000 fully-dressed. Lotus announced a SILICON OFFICE-like program for the PC at Comdex, with spreadsheet and graphing.

SINCLAIR/TIMEX:

I finally saw one, just in time for Jeffries to speculate its discounted price will drop to $50. Interface Age reports buyers are having trouble getting service from Sinclair.

TI:

Jeffries reports a TI price of $149, predicted sales of 500,000 computers in the first quarter of 1983, and a new 64K memory model planned for unveiling at CES. Remember all the hoopla the last time TI introduced a computer? And how disappointed we all were?

TRS-80 MODEL 16:

Both Hal Hardenbergh and DG suggest readers take anti-Tandy statements by Wayne Green [M/P 10] with a grain of salt. Hal further comments in DTACK Grounded #15, "the Model 16 is selling well despite the ABSOLUTE TOTAL ABSENCE of software for the 68000. Here are the reasons: 1) The Model 16 is priced only a little higher than the Model II...besides there MIGHT be some software someday, right? 2) You can get TWO 8" drives in the console of the 16 but only 1 in the Model II. This provides a VERY strong incentive to buy the Model 16." Hal guesses Tandy sold over 2,000 Model 16s in 1982.

COPYRIGHT NOTES

WORD WARS:

We are told that Professional Software is suing both Precision Software (SUPERSCRIPT/EASY SCRIPT) and Batteries Included (PAPER CLIP) for using the same format statements and file format (but not the same commands) as WORD PRO. It appears the main issue is whether companies can sell products that are file and format compatible with WORD PRO. A rationale for forcing competitors to be incompatible is based on a suit by Atari last year. As I understand it, that decision said a program which looks like PACMAN is Atari's PACMAN, whether copied or not. Applied to a word processor, one might say, "If the files are the same, the programs are the same." No programmer would accept this logic, but judges aren't necessarily programmers.

If theft is involved, then PS should win. But I doubt if this is simple theft. WORD PRO set a standard all would-be competitors must match, and so completely dominates the market that competitors must be able to read its files. Then too, the WORD PRO standards are good ones for the most part, many potential customers are already familiar with them, and it would be difficult to come up with an entirely different set of commands for a standard keyboard. Both the SUPERSCRIPT and PAPERCLIP manuals show a strong awareness of WORD PRO, and stress their own new features, rather than those already in WORD PRO.

The worst outcome of such a suit would be for PS to win merely because competitors accepted its files as a standard. It would be a real shame if the courts decide that following a standard is copyright infringement.

Ironically, the new programs are better in many respects than the one they allegedly copy. Perhaps Professional Software could add their new features to WORD PRO. One way to maintain market dominance is to stay ahead of the pack. Here are some other needed features: a built-in dictionary like that of RTC-4; the 700 line text area WORD PRO 5 could have had; automatic indexing, built-in menus, and help commands like WORDSTAR; true 2-column capability like SILICON OFFICE and COPYWRITER; true footnotes like TOTL.TEXT; and a user-defined command and designated patch area. And how about WORD PRO for VIC? Mark Niggemann reports he's already converted it; why hasn't Professional Software?-JS

FLEX THIEVES:

According to CIPUG members Fran Donovan and Wayne Zirkle, Michael Riley's excellent and inexpensive program FLEX-FILE is off the market until it can be protected against copying, because two different companies were selling bootleg copies. That's a real shame. They also report Michael is ill and may not be able to make the changes right away. Any company so morally dead that it sells illegal copies of something as good and cheap as FLEX FILE deserves a fate much worse than having to break a new protected version.

DEALER NOTES

SUBJECT: The Midnite Software Gazette/The PAPER
DATE: December 30, 1982
TO: All Commodore Dealers
FROM: John Gould, Midwest Region

"All of the folks involved in producing this exclusively Commodore-oriented magazine, including Jim Strasma and Jim Oldfield have done a wonderful job.

I strongly urge you to subscribe to this publication and also to see that your customers subscribe as well. They will find their dollars well spent."

Thanks, John, for the kind words. Any Commodore dealer or user is welcome to a sample copy of the Midnite/PAPER, and standing bulk orders are welcome. Just write 635 Maple, Mt. Zion IL 62549, or call 217/864-5320.

NEW ILLINOIS DEALERS:

CIPUG member, Bill McDannell, has just moved his year-old Computer Tutor program to 1410 S. MacArthur in Springfield. He offers software and instruction for Commodore computers, especially the VIC and 64.

SM-SOFTWARE INFORMATION:

I have been searching for a flexible, dependable data bank program or file manager such as what SUPERKRAM advertises to be, but unfortunately doesn't work dependably on the 8050. United Software was kind enough to refund. In the meantime I've obtained products of SM-SOFTWAREVERBUND MICROCOMPUTER in Munich, West Germany.... They are very reasonable in every respect, though very strict about program-copying. When I got one of the first SM-DIOS copies, for instance, [a data bank program worth what it costs and does what it says,] they helped with program supplements, and tips for things that didn't initially work out ideally. They are open for suggestions and [will alter] programs to suit individual needs. As they are notified of bugs, they...mail out a revision every so often.

This company...developed the operating system (LOS-96) for the 8096, using parts of their REM-Routines program.... They know the machine inside and out. They now have a branch in U.K., so that their programs are being translated. They started out as a kind of users' and programmers' club in Munich, but have developed some of the most dependable European software on the market. Commodore had them write the expanded German handbooks for the 8032 and 8050 with info taken from their users' notes, etc.-Brother Sylvestro Washburne

Here is a sampling of their products:

SM-Kit (sold by AB Computers in USA) ..... like toolkit
MAE ..... basically Moser's MAE, but expanded
REM-Routines.... instring, midstring, 250-byte get#, ASCII-char.inversion
REM-Routines.... clr variables+ arrays, copy arrays, etc.
ISM ..... index sequential file manager (in DIOS, IBIS)
ROM-Listing .... exhaustive command by command explanations for 3000,4000,8000
DOS-Listing .... " " " " " for 8050
LOS-Listing .... " " " " " for 8096 oper.system.
SM-DIOS ..... Data Information and Organisation System (data bank...)
SM-IBIS ..... integrated business package for general ledger, bookkeeping invoicing, salary, inventory, and text all in one - but also available as separate programs (only for 8096)

THANKS FOR THE MEMORIES:

In 11/79, I bought a 16K memory expansion board, adapter board and TOOLKIT from Bob Skyles. It gave good service until this past summer, when it began to behave erratically. In September, I called and they said send it back. I did, and after not hearing from them, I called in late October to inquire. The young lady said the tech was still checking it, but it would be shipped that week. Sure enough, one week later UPS brought a package C.O.D. for $27.50, which I gladly paid.... I almost dropped my teeth when I opened the package and there was a brand new 16K memory board with a new adapter board with even a new TOOLKIT. I was overwhelmed, since the board was long out of warranty. I have bought several products from Skyles since early '78, and always found them to be of excellent quality. SEW has always been helpful on the phone.-Larry Williams

TRANSONICS TRANSPLANTED:

Transonics Laboratories and Mantronics, both of Mankato MN, have merged to become Mantronics Software Designs. They specialize in useful programs, such as the recommended SPRINTYPER typing tutor for VIC.

DISK NOTES

Using SILICON OFFICE with the MATOR HARD DISK:

Howard Cohen reports he's having good results using a Mator Shark 60 Meg hard disk drive and a matching SILICON OFFICE on his 8096. It costs about $10,000 and is typically back-ordered 30 days. He says a 120 Meg version is also available. He has 35,000 records of about 200 characters on it so far. The Mator drive also includes some networking ability, especially when used with the Datatronix PETSWITCH by CBM Sweden. (Howard describes it as "like MUPPET, but it works. ") For backup, Mator offers the SHARKIVE for $3,800. It's a 1/4" streaming tape recorder, capable of 11 Meg per tape, and dumping 192K per second.-JS

One side note: The SILICON OFFICE packages are available in 3 different versions, for the CBM floppy disk drive, the CBM hard drive, and the Mator hard disk drive, but they are not compatible with each other. You cannot use an 8050 disk drive as a backup to a SILICON OFFICE hard disk version...-ES

QUESTION: 2040 write-protect error.

On my 2040, if I duplicate from a good diskette to one with a write-protect sticker, the disk crashes, destroying both diskettes... Is this pathological with other CBM drives?"-Thomas Lynch

REPLY: Nope. My 4040 (with DOS 2) just halted with an error; the source diskette is still fine.-JS

EDUCATION NOTES

DIGEST OF SOFTWARE REVIEWS: EDUCATION:

One of our regular readers of the former Midnite Software Gazette, Ann Lathrop, has just announced that she will be editing a new professional quarterly, THE DIGEST OF SOFTWARE REVIEWS: EDUCATION, to start in February. It will include 40- to 80-word abstracts only of 50 educational software programs reviewed in over 50 different magazines - including our own Midnite/PAPER! To subscribe, send $43 (for schools and educators), or $48 (for the rest of us) to the publisher, Dan Isaacson, of School & Home CourseWare, Inc., 1341 Bulldog Lane, Suite C, Fresno CA 93710. (Californians add 6%). If you want more information first, call Bill Botzong, Business Manager, at 209/227-4341.-ES

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MIDNITE GAMING NOTES

by Jim Oldfield, Jr.

The notes below were sent in by Bruce Jaeger, a reader from St. Paul Mn. I enjoy the correspondence, and couldn't have said it better, Bruce!-JO

An open letter (plea) to PET/CBM Users:

In a VIC game review in the December 1982 issue of Midnite/PAPER, Jim Oldfield made the following comment: "Whatever happened to the good war simulations we used to play?" Jim's right. WHATEVER HAPPENED TO SIMULATIONS?

Nobody would even think of writing a LUNAR LANDER program nowadays, particularly not one that utilized real gravity, velocity and fuel-consumption data. Now we're lucky to get a nifty-graphic LEM and a joystick, with some 'beep-beep' aliens to get in the way. How about all those stock market programs? Ever tried to LOSE money while playing one? OK for a game, but questionable as simulations. Wargames? I've yet to see one that wasn't trivial. (Not owning an Apple or an Atari, I haven't had the opportunity to inspect or play any of STRATEGIC SIMULATIONS offerings. I may have to buy one just for SHILOH alone.)

Perhaps the main problem is the insistence on graphics, graphics, graphics! There are only so many variations: 1) Shoot the flying junk, 2) Dodge the flying junk, 3) Eat the junk, 4) Catch the falling junk, or 5) Climb up the tower, while dodging the falling junk, and shoot some different junk in order to rescue the junk. And you NEVER win, you just survive longer and get a higher score. The heavy use of graphics also makes the programs extremely machine-dependent.

I'm not meaning this as a complaint against commercial programs. I realize that in today's world only flash, bells and whistles sell. But I suspect that the bulk of the Midnite/PAPER subscribers are past that stage, and long for some meat to feed our expensive PETs.

The gist of this is that it's OUR fault. I know that I've started several fairly realistic simulations and war-games, only to lose interest, due to laziness and the amount of research involved, and also due to the lack of stimulus from other available programs. And I'm sure I'm not alone! So here's the deal: You finish yours, I'll get off my duff and finish mine, and we'll put them in the Public Domain and give them to Midnite/PAPER for circulation. Any takers?-Bruce Jaeger

What's Broderbund doing in here?

I knew it would happen eventually. With the tremendous volume of VICs in the U.S., many of the larger game software houses have decided to sell software for the VIC - including Apple supporters. With Apple sales slowing, these companies see profitability in cartridges. It just tickles me to see a VIC (at less than $199) match game feature for game feature with an Apple (now $1350). Broderbund produces some of the best games for Apple. Now they've entered into a licensing agreement with Creative Software, known for their excellent VIC programs. The first two, CHOPLIFTER and APPLE PANIC, are reviewed under VIC Game Reviews. My prediction for 1983? A spiraling increase in software houses marketing programs written for other computers (notably for Apple and Atari) converting their best sellers to run on VIC and 64.

HAM NOTES

by Clark L. Stewart, W8TN

With the increasing sales of VIC's and 64's, there are more hams joining the ranks of computer users than ever before. This column is an attempt to bring together individual hams and their ideas for the benefit of all. Therefore, if you have a question or have solved a problem for yourself, send me the details and I will pass it on to those who need it.

By mutual agreement the Saturday PET NET has begun meeting at 9:ØØ a.m. EST (instead of 8:3Ø) on 7.156 MHz +/- but the Sunday net still meets at 12 Noon CST on 14.24Ø MHz +/-. Much information is exchanged on both frequencies, and each net has many members willing to help beginners. Give one of them a try!

In my last column, I had my GMT calendar upside down in regard to the day of the week for Radio Netherlands broadcasts. They are aired on Friday mornings at Ø25Ø and Ø55Ø GMT which, of course, is Thursday night in the USA. Frequencies in use are 6.165, 9.59Ø or 9.715 MHz. The last few broadcasts haven't carried any computer information, but keep listening. W8EG has requested a schedule for their computer-oriented broadcasts, which I'll pass along when received.

I am told that some programs created on a 4K VIC may not run properly on a VIC with an 8K or larger expander, because the program runs into the screen memory. WA2YNT sends this small program which relocates the screen below BASIC (on an expanded VIC) and allows the program to run normally. Load and run this program before loading the program created on the 4K VIC.

```
1Ø POKE 8192,ØØ
2Ø POKE 44,32
3Ø CLR
4Ø POKE 648,3Ø
5Ø POKE 36866,15Ø
6Ø POKE 36869,24Ø
7Ø PRINT"[clear-home]"
8Ø NEW
```

For the HAM PUG library I have received several ham radio type programs from K8ERV but have not had a chance to organize them yet. Also, W3HQX donated a Dupe Check program with versions for both the PET and 64. At press time N2BXA reported that he has the program from December QST for prediction of the Maximum Usable Frequency up and running on his VIC. He will be glad to supply a copy of this program (which does fit a 4K VIC) to anyone who is interested.

W3HQX reports that Kantronics is working on a Hamsoft program for the 64 that they hope to have in production by March. This will, of course, work with The Interface (tm) which they already produce. Concerning the Macrotronics RTTY program, I have received several requests for certain modifications. I have already mentioned those who have devised print routines and conversions to 4.Ø BASIC, but others are looking for the inclusion of disk operations, the expansion of the cassette save provision and more. If you have modified this program to include any additional or expanded features and have not told me about it, please do so! Please send an SASE if you wish a reply.-73, de W8TN

MODEM NOTES

by Tim Tremmel, SYSOP
Racine BBS (414/554-952Ø)

For the more experienced Bulletin Board users, you will find that the CBM/PET BBSs using Punter's software operate slightly differently than what you might be used to. Most other Bulletin Boards, such as Apple, TRS-8Ø, and CP/M boards, all operate somewhat alike. They will show the command prompt along with a line of letters which are the commands. Not so with the PET/CBM boards. All you get is the command prompt. Immediately after signing on to a CBM/PET board for the first time, you will be shown the HELP list. I suggest you save a copy or write down some of the commands. Of course, you can recall this HELP list any

time you want. Don't be intimidated by all the commands that you see. Some of them you might never use. At any rate, don't expect to operate like an 'old pro' right away. It takes time to find out how everything works. And once you find out, you'll be surprised at just how easy it really is.

MESSAGE ENTRY:

The one feature that sets these boards apart from others is MESSAGE ENTRY. Most others allow X number of lines with X number of characters each; to edit the line, it must be completely retyped. Again, NOT SO with Punter's system. When entering a message, just keep typing. A return is only necessary at the end of a paragraph. The lines you see while entering a message are 33 characters long and just wrap around to the next line as you type. By hitting RETURN on a blank line (the signal that you are through), the message will be formatted at 38 characters, with left and right justification. If you make a mistake, just List the message, which has now been assigned a line number; find your mistake, then either Edit the whole line, or use the Search & Replace. The Search & Replace is easier than you think. The format is, 'Replace/search string/replace string/line number'. You must list the message first to find the line number and also be careful that your search string doesn't appear more than once in the line; if it does, all search strings will be replaced with the new string. It isn't necessary to use whole words or phrases; you can change as little as one character in the line. If you should run into trouble, all the BBS's will have the Msg Editor instructions in their Bulletin Section.

PROGRAM UP/DOWNLOAD:

Notice I said UP/download. This is because it works BOTH ways. You would be surprised by the number of calls I get from people using non-CBM equipment, wanting to know what the password is to download the programs. IT ISN'T POSSIBLE. The transfer is automatically done 254 bytes at a time directly from the bulletin board disk drive to the caller's disk drive. The only thing the user sees on his screen is a colon for good blocks and a dash for bad blocks. There are NO text or program listings to see. In fact, you can go get a drink while this is happening. If you are downloading a program, you will have a ready-to-run program waiting on your disk drive. The transfer process doesn't care about cursor control characters. If you tried to download listings, you still would have to spend time editing before you could run it. Last but not least, the programs are not really 'FREE'; there is still the matter of Ma Bell... If you have a ny questions, give me a call either at 414/554-Ø156 (voice) or 414/554-952Ø (BBS).

NEW CBM/PET BBS SYSTEMS:

If anyone should start a CBM/PET BBS, be sure to contact one of the other Boards so the word can be passed around. Here's the latest list from Tony Ott, who is starting an Association of Commodore User Groups:

ST	NAME/CITY	HOURS	PHONE	SYSOP
CO	Fort Collins; to be started by the Wyoming group...		MST	
IL	Commodore Chicago DEALERS	24 hrs.	312/secret..	CST Rich Kurtz
IL	Commodore Chicago PUBLIC	24 hrs.	312/397-Ø871	CST Keith Peterson
IL	Video King, Chicago	24 hrs.	312/674-65Ø2	CST Gene Alper
IN	AVC-Commline, Indianapolis	24 hrs.	317/255-5435	EST Tim Renshaw
MO	KCPUG, Kansas City	24 hrs.	816/356-2382	CST Rick West
MO	Commodore Commun., Lake St. Louis	24 hrs.	314/625-4576	CST Tony Ott
OH	Ohio Valley, Marietta	24 hrs.	614/423-4422	EST
TX	RPCC, Dallas 5pm-8am M-TH,5pm F-8am M		214/996-7994	CST Don Lambert
TX	Another PBBS is rumored somewhere, but details have escaped us.			
WA	NWCUG, Edmonds (Seattle area)	24 hrs.	2Ø6/743-6Ø21	PST Dean Johnson
WI	SEWPUG, Racine	24 hrs.	414/554-952Ø	CST Tim Tremmel
WY	SE WYOMING CU, Cheyenne	24 hrs.	3Ø7/637-6Ø45	MST Roger Kesslar

PRINTER NOTES

1515 Printers with Terminal-40:

"We've discovered a potential problem with older versions of T-40 and the 1515 printer. It seems that the printer recognizes a chr$(8) as a control character to jump into the graphics mode in which it prints only characters greater than 128. The standard delete character in most systems in chr$(8). So, if a delete is transmitted to the printer buffer, the printer gets "turned off" and will only print again after being reset. We've added a filter to the printer buffer to relieve that problem and everything seems to be in good order. No known bugs at the moment."-Dr. Jim Rothwell of Midwest Micro Associates

Smith Corona TP-1 Printers with TOTL.TEXT Word Processor:

According to TOTL's Ann Palmer-McCarty, TOTL.TEXT for VIC can be used with a TP-1 letter-quality printer, via an RS-232 interface like Midwest Micro's. She'll send the proper PET-to-ASCII routine for TOTL.TEXT on request.-ES

64 Interfaces That Can Run WORD PRO 3 PLUS/64:

See the note by JAS under CBM64 Business Reviews: Word Processors, on serial interfaces to any printer in order to run WORD PRO 3 PLUS/64.

PUBLISHERS NOTES

by Jim Oldfield, Jr.

Since we published The Whole PET Catalog, mail has steadily increased, to dozens of letters a day. I wasn't quite prepared... Now, with the help of my wife Debbie, I hope to answer more quickly. A SASE is greatly appreciated. If you need information, direction, inspiration, or conversation with another PET/VIC/64'er, contact me by mail or phone, preferably from 10PM-12AM. I'm NOT a technical expert, but can steer you toward someone who is. [So that's where all the calls come from!-ES] Most of the time your local dealer can help, too. If we give poor service, let me know!

As with many businesses, you work hard to build it, only to work twice as hard to keep it going. But it's a labor of love. During the day, I manage an exclusively Commodore computer store, and by night, you guessed it, I publish the Midnite/PAPER. You could say Midnite is a family plan of sorts [pun]. Jim and Ellen, Debbie and myself are Commodore users, as well as editors and publishers. I try not to be stuffy, yet keep the magazine on a level suited to its cost.

From one Xeroxed sheet, we've come a long way, but not without help. I want to personally thank all the people, and especially the users' groups supporting us. Without you, this would really be a job!

Welch demonstrating a somewhat relaxed writing style for her upcoming book on beauty and fitness

READER QUESTIONS AND COMMENTS

Quoteable Quotes and Commentary:

"We produce for the masses, not for the classes."-Jack Trameil, Commodore

COMMENTARY: Did you notice the picture of Rachel Welch with a CBM in Time magazine December 13? According to the article, Raquel Welch, "15 years after her first starring role in a fur bikini", is writing a book. Welch "has been warming up for her task by practicing on a new $10,000 word processor."

One wonders, how could you possibly spend $10,000 on even the most elaborate CBM word processing system?-Gary Stone

COMMENTARY: "IS IT TRUE that the final design document [for the recently-announced Commodore 16+ bit microprocessor] reportedly asserts on page 3, ...capabilities somewhere between the 68000 and Intel's 432 micro-mainframe"? Is it further true that recent information which has come to light regarding the performance of the 432 indicates...the 8080 and 6502 ALSO have performance capabilities which lie between the 68000 and the iAPX432...?

"WE ARE ABLE TO REVEAL for the first time that Britain's Microcomputer Printout Magazine gossip columnist, Inside Trader, has moved to Newark, New Jersey. We have it on good authority that he prefers the living conditions in Armpit, er, Newark over those in Reading. However, he is reported to vigorously deny that the reception of several death threats from his fellow workers had anything to do with his decision to emigrate. We have faithfully promised the editor of Microcomputer Printout, Richard Pawson, not to reveal the source of this information..."-Hal Hardenberg, in DTACK Grounded

Questions and More Questions:

QUESTION: Which BASIC manual do I buy for my 64?
QUESTION: Where can I get it? [CBM Professional Guide]-Gerald W. Carter
QUESTION: How do I get a 3rd Edition [of the CBM and PET Guides by the Strasmas]! Can't locate it on sale in this area.--Edgar Steeb

ANSWER: 1) Our new Osborne PET Personal Computer Guide is currently about the only guide to PET BASIC applicable to the 64, even though not written for it. Osborne plans to offer a 64 Guide later this year, but the PET Guide gets you started with the full power of PET BASIC right now. Just follow the commands for the alternate BASIC 2.0 format. 2) Osborne/McGraw-Hill has been selling both books for a few months now, but dealers seem to have been having trouble getting them. Fortunately, our Lincoln College bookstore is able to get both easily. If your dealer can't get it for you, you may order either book directly from Midnite Software, 1280 Richland Av., Lincoln, IL 62656 for $18 ($15.20 + 5% tax + shipping). If you prefer, order from Osborne direct, at 800/227-0900.

QUESTION: Don't leave me in suspense. What is the one POKE that fixes MICROCHESS for BASIC 4?-Alexander Breed or Jerry Conley. (We forget which!)

ANSWER: My apologies to all who asked for this. I no longer have MICROCHESS; I erased it after "Sargon II" beat it to death. Near as I remember though, you are looking, (in machine language) for:

```
LDA SOMEWHERE.IN.BASIC.ROMS
CMP #VALUE.IT.CONTAINS.IN.UPGRADE.BASIC
```

You will find it very near the start of the program, and the fix is to change the byte containing VALUE... to whatever SOMEWHERE... contains in BASIC 4. First person to find it, please let the rest of us know.-JS

QUESTION: Help - Help. When I load and try to run MAIL LIST 8050 and after menu and it initializes and I choose #2 [update], it hangs up with an "out of memory error in 8060". What gives?-Edgar Steeb

ANSWER: You've just discovered why the 8050 version is appended to the HELP Disk rather than officially part of it. It has some potentially advanced features, such as managing two files at once and a truly usable alternate key, but won't run as is. If you reduce the array dimensions, it should limp along. But why bother? The 4040 version of MAIL LIST runs quite well on any Commodore disk drive sold since the old 2040 with DOS 1.-JS

QUESTION: Is there a MERGE command for the 64?

Herbert Gross wishes the cassette didn't wipe out existing programs in memory while loading. He needs a MERGE command, as in BASIC-AID and POWER-AID.

ANSWER: Unfortunately, no one has bothered to reassemble these for the 64 yet. Any takers can get the source code from the ATUG library.

QUESTION: If a Machine-Language or BASIC plus ML pgrogram is loaded, what is an easy way to find the location of the machine-language part?-Tom Lamb

ANSWER: BASIC-AID and Power-Aid have commands to show the start address of any program on disk, BASIC or Machine-Language. Both are available from the ATUG library. To find the machine language part of a combination program, use the same programs to find the keyword SYS or USR, and then use the HEX command they add to find its hexadecimal address. Usually such combination programs call themselves from BASIC. As an alternative, use Micromon, also from ATUG, to hunt for the first three $00 bytes in a row after the start of BASIC text, (at $0400 in your PET.) They mark the end of the BASIC portion. Begin disassembling from that point, and when it begins to disassemble correctly, you've likely found the machine-language part.

QUESTION: Would it be possible for someone who really knows to explain just what the trouble with @SAVE is?-Charles A. McCarthy

ANSWER: This is one for the disk doctors. On DOS 1, it failed often and could be counted upon to destroy files, though not the one currently in use. This meant the damage was often discovered only much later. Under DOS 2, it usually works. WORD PRO uses it quite reliably most of the time, although we lost 4 sectors of WORD PRO disk files after using it heavily today on an 8250. Two files got mingled; that is, their pointers both went to the same block, something that should never happen. The fix is to COPY, not BACKUP, to a new diskette. Collect (validate) won't notice this error. Commodore feels improperly-closed files that are scratched on used diskettes are the cause of this, but we've had no improperly-closed files for months. One other problem with @SAVE is that it sometimes runs out of memory when the diskette is nearly full. Don't use it unless there is room on the diskette for a spare copy of the current file, because that's just what @SAVE creates--a temporary spare till the SAVE succeeds.-JS

QUESTION: Who is using a logic analyzer?

Steve Malinowski, 2081 S. Humboldt St., Denver CO 80210, 303/744-3837 (eve.), 773-4350 (days), would like to hear from other SuperPET owners and 8096 owners, especially those using a logic analyzer on programs in the top 64K or going over the IEEE-488 bus.

QUESTION: Where is a SuperPET owner with an early model board?

Charles A. McCarthy, of 1359 W. Idaho Av. in St. Paul MN 55108 would like to hear from a SuperPET owner with an early model without the Commodore logo on the memory board and without a 3242 memory controller.

USER GROUP NOTES

User Groups By Locality:

CALIFORNIA:

SFVCUG (San Fernando Valley Commodore Users Group). For all Commodore owners. Meets every second Wednesday, but no longer at General Computer Store. Contact Tom Lynch, 21208 Nashville, Chatsworth CA 91311 (213/709-4736).

COLORADO:

The Colorado club is up to 80 members. Their president is Jack Moss of 6350 W. Mississippi, Lakewood CO 80226 (303/986-0577).

ILLINOIS:

CIPUG's Champaign subgroup planned its first meeting for the fourth Friday in January, at MicroPace Computers. Contact Ye Publisher for more info.-JO

FOX VALLEY PUG is now operational. Chicago-area users looking for a club may write 833 Willow, Lake in the Hills IL 60102, or call 312/658-7320.-JS

LCPUG, CIPUG's sub-group in Lincoln, had its first monthly meeting the third Friday in December, at the Lincoln College computer center. 30 people, including regulars from elsewhere in CIPUG, helped the group off to a good start. For more information, contact Virgil Lowe, of Computers & Video in Lincoln, or Ye Editors.-JS

PAPUG, CIPUG's sub-group in Peoria, had its first meeting the second Friday in January, at Bradley University. 60 people showed up to found the group! Contact Max Taylor at 309/676-6635 for info on upcoming meetings.-JS

CIPUG'S sub-group in Quincy, also planned a first meeting for January, the third Friday, at Room 421, Main Building, Quincy College. The contact is Prof. John Schleppenbach of Quincy College, or Jim Moore of Data Plus (Commodore dealer in Quincy). Program for the February meeting, snow permitting, is roast editor (yours truly).-JS

IOWA:

John Yigas, of Cosmos Computers, is the contact for the new Quad City Commodore Computer Club. This 50 member group meets at the Cosmos store, 1721 Grant St in Bettendorf, on the third Tuesday of each month, at 7PM.

OHIO:

The Toledo PUG has only 3 PET and 3 CBM owners so far, but lots of programs and information to share. Those in the area should contact Gerald Carter, 734 Donna Dr., Temperance MI 48182

VIRGINIA:

Max Yoder reports that the members of CAPE (Capital Area PET Enthusiasts) in the Washington D.C. area are "still alive and well and may be reached at: CAPE, 2054 Eakins Court, Reston VA 22091."

Steven J. Guenther, of 3419C Lackland Way in Washington DC would like to hear from fellow 64 users. Try contacting CAPE, Steve.-JS

WISCONSIN:

Madison's VIC/64 Users Group meets the third Thursday of the month. Contact their librarian, Geoffrey Turney, 817 Maple Terrace, Madison WI 53705 (808/233-3333). They are separate from the long established PET Users Group.

VIC NOTES

by John O'Hare

Software Hints:

ANOTHER VIC P.R.G. ERROR:

I just found another error in the VIC Programmers Reference Guide. On page 93, on multi-color graphics, the chart should read:

BIT PAIR	COLOR
ØØ	Screen color
Ø1	Border color
1Ø	Character color
11	Aux. color

-JOH

RE-DEFINING VIC'S CHARACTER SET:

When writing programs which re-define the VIC's character set, you don't have to copy the regular characters down into RAM memory, as long as you're using a POKE 36869,255. Just print or poke the reverse of the character you wish to use, and it will come out normally. For example, type: POKE 36869,255

Then hit [CTRL] and [RVS]. To prove it worked, type the letter 'a'. It should now display correctly!-JOH

DEMON ATTACK IS COMING:

Also, Imagic has said they would release DEMON ATTACK for the VIC this month. DEMON ATTACK is a popular Atari and Intellivision cartridge.-JOH

ATARI GAMES ON A VIC?:

No new word on the fabled Apple/Atari/Tandy disk reader yet. However, Cardco, a VIC supplier with a decent reputation, is advertising an almost as interesting $9Ø package that lets you use Atari 26ØØ game cartridges on the VIC. Gee, wonder why Atari won't let you run them on the Atari 8ØØ?-JS

BULLET-PROOF STOP DISABLE ROUTINE:

Some people must restrict program use on the VIC. One vector in the KERNAL ROM points to the STOP key checking routine. If we alter the vector to point somewhere else, the STOP key would be disabled, and wouldn't be RESTORE proof. To get rid of the RESTORE key, we need to disable any NMI interrupts. To disable the STOP key, type the following lines at the beginning of your program:

```
1Ø POKE 8Ø8,PEEK(8Ø8)+2:              REM DISABLES STOP    KEY
2Ø POKE 37154Ø,PEEK(37154Ø) AND 127: REM DISABLES RESTORE KEY
```

One drawback is that you cannot use the RS-232 port when you have the RESTORE key disabled. To restore the STOP key, add this line to the end of your program:

```
999 POKE 8Ø8,PEEK(8Ø8)-2: POKE 37154Ø,PEEK(37154Ø) OR 128
```

-Mark Niggemann

Hardware Hints:

FUSES and RESETS:

"There has been mention of problems getting fuses for the VIC. The best solution is to solder two new fuse clips to the existing one. This can be done in such a fashion as to permit the use of standard 1-1/4 inch fuses.

A small, normally open push-button switch connected between pins X and Z [on the Expansion Port] gives speedy RESET. I have installed the switch on my expander board, but it could be on the VIC case itself: the secret is not to have the switch in a position where it can be accidently hit."-Peter Farrow,Hardcopy

WANT ADS AND ANSWERS
Where Can I Buy...?

WANTED: Butterfield's super disassembler for ROM chips, described in Raeto West's book.-Steve Malinowski

REPLY: It's on ATUG diskette #UB. See ATUG Notes.-BA

WANTED: Scheduling program for three 24-hour shifts (for state troopers).

We need a daily, weekly and monthly scheduling program for 5-6 radio operators working 3 rotating shifts for 24 hour coverage. Each shift must be covered with at least one operator, with provisions for holidays, "HOD", sickness, "SQ", vacations, "AWL", special duty, "SD", 2 days off per operator per week,"DOD", etc. Would keep total hours, type of shifts, minimize and record overtime.-E.L. Wright Box 8341, So. Charleston WV 25309

REPLY: If no one offers you a suitable commercial (or public domain) program, we can arrange to have it done as custom software.-JS

WANTED: "Synch." software to use the USART to RS232 (AutoCat) on the SOFTBOX, preferably in CP/M.-Steve Malinowski 2081 S. Humboldt St., Denver CO 80210

WANTED: WORDPRO 3+ modifications to work with Graphtrax Plus in Epson printers. Make WORDPRO send Epson ESC sequences for underline, bold (double strike), and superscripts/subscripts.-Arthur Cochrane

REPLY: AC can access the special features of his Epson with Graftrax Plus by using WordPro's Special Characters. First assign the proper ASCII values by a format line like: [check-mark]0=27:1=52:2=53:3=69:4=70:5=71:6=72 [left-arrow]. 27 is Escape, 52/53 is Italics on/off, 69/70 is Emphasized on/off and 71/72 is Double Strike on/off. Then when the special features are required, use (in Edit Mode) the command - [control] ; (semi-colon) [number 0-9] - and the screen will display an Up-Arrow and the number, e.g. "Your [up-arrow]0[up-arrow]3NAME" would print "Your NAME" with 'NAME' being emphasized. However, be aware that Word Pro thinks that a character was printed for each special command sent to the printer. This may cause line length or printer page to be off and will definitely foul up centering, justification, etc. This alignment problem can be corrected by running a trial print out then carefully re-arranging the left or right margin of the text on a line by line basis for each case where the special characters are used.-CLS

WANTED: Someone to repair an "LRC7000" printer (possibly made by Eaton?)

About 3 years ago, I bought a PET from a dealer who was closing it out. For $40 extra, he included a little printer just wide enough to make program listings. The PET is terrific, and has never given a minute's trouble. I've had more fun out of it than anything I ever bought.

The little printer did a real slick job, but alas, it caught a case of the greadful gomboo, and is sick nigh unto death. OLD U-Know-Who left it on a couple times and after the last one...the characters it prints are too broken to read. All I want to do is get it fixed, but the original dealer doesn't want to help. I see his point; he gave me a good price, closed out, and he is not responsible. Commodore repairmen won't do anything without schematics. So like an unwed momma, I go about looking for its dad.

It is labeled "LRC 7000"; I think the name "Eaton" was connected with it. Do you recognize it? And more important, do you know the manufacturer's address? Or do you know an abortionist who would operate on it? It might be said, "You got your $40 worth, throw it away." I grudgingly admit that's true, but this is a member of the family, comparable to little brother or sister. How can I do it in?-Jerry Conley, 1607 Dayton Road, Hyattsville, MD 20783

WANTED: PET 2001.

Needs 32K with BASIC ROMs showing ### with standard typewriter keyboard. Call or write giving price to J. Buckwalter, c/o Alpha Components, 1106 E. Simpson Rd., Mechanicsburg PA 17055. Phone: 717/697-8595.

REPLY: We have about 5 of those out at Logan prison, Jerry. Write back if no one else offers you any. (Another at home started that way, but now has BASIC 4, 80-columns, 96K, and CP/M, thanks to ZRAM and Execom.)-JS

WANTED: Second source for SID, VIC and 6526 chips.

Who, if anyone, is second-sourcing Commodore's new proprietary chips (SID, VIC, 6526)? My original PET has ROM and RAM chips which are no longer made, and there is no pin-compatible equivalent.-Charles A. McCarthy

WANTED: I would like to change my 8K VIC RAM cartridge to 16K. Where can I buy the memory chips?-J.M. Mott, Jr.

REPLY: I'm fairly sure it uses Hitachi's 6116 2K by 8 bit RAM chips. These are very popular now, and widely available. Last one I bought came from A.B. Computers, 252 Bethlehem Pike, Colmar PA.-JS

FOUND: Farm programs.

The reader in the WPC who wanted farm programs for the PET may contact Mr. Gary Fisher, Alberta Agriculture, Farm Business Management Branch, Box 2000, Olds, ALB T0M 1P0 CANADA. This is a long address, but it certainly gets results!-Charles Tomm

[NOTE: Long time MSG reader Dan Underwood, of 3203 W. Roma Ave, Phoenix AZ 85017 (602/242-6683), sent us a notice of his COMPU-FARMER program for use in dairy farming, too. Haven't seen the program yet, though.-ES]

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CBM/PET REVIEWS

ASSEMBLER REVIEWS

PAL Update, $60 from Tem-Tech.

As a programmer addicted to the CBM assembler, I found PAL easy to learn and preferable on short routines. For code smaller than 2K, it's my new favorite. Directly outputs a loadable BIN file, it's best feature. Its many output options are easy to control. PAL and POWER [See comments under Utility Reviews.-ED] are an unbeatable combination for the beginning programmer, although you won't learn assembly lanquage from the manual (not that you should expect to). Recommended for users at every level.-KRP

BOOK REVIEWS

THE BASIC HANDBOOK, Second Edition, $21.50 ppd. from Microcomputing.

This book is for anyone who often converts programs from one dialect of BASIC to another. It covers some 250 different keywords, and the details of their use in nearly all popular microcomputers. Better yet, it includes substitutes to use when your BASIC lacks a needed keyword. Probably overpriced for casual users, but should be on every pro's shelf. Recommended.-JS

BEGINNING COMAL, by Borge Christensen, from COMAL Interest Group.

"...a hands-on COMAL tutorial aimed at the beginning computer user....[using] a wonderfully direct technique...: chapter 1 begins with this program line: 25 PRINT "HI, THERE." By dissecting this simple line of code, Mr. Christensen introduces line numbers, statements, keywords, and string constants.... By building on these short simple concepts with a complete series of examples and exercises, a student is led from "print your name" through variables, conditionals, iteratives, and into file structures....

"The only problems in this book are the chapter titles.... A chapter heading such as "Little John Takes A Note Home" may be cute, but does little to [identify] ...the keywords ZONE and SELECT.... Some examples...have a distinctly European flavor (Mettwurst?), but for the most part this book is very well written, clearly developing the topics.... Beginning COMAL should be your text of choice for teaching COMAL or any beginning programming language.-John S. Main

CBM PROFESSIONAL COMPUTER GUIDE Update, $15 from Osborne/McGraw-Hill.

"Your book...is one of the most well-written and organized computer manuals I have seen. You are to be congratulated for doing such a thorough job. It would be impossible to use the CBM computer effectively without it."-David C. Ayers [NOTE: As noted under Want Ads and Answers, since some folks are having some trouble locating them, readers may now order either the CBM Guide or PET Guide from us at 1280 Richland Av., Lincoln IL 62656, for $18 postpaid, courtesy of our college bookstore. "64" owners may get the PET version as a way of learning Commodore BASIC and the use of cassettes, disk drives and printers.-ED]

COMAL HANDBOOK, by Len Lindsay, $18 from Reston.

The COMAL Handbook contains the most complete description of the COMAL language to be found anywhere. And I do mean COMPLETE! Within the book's 334 pages every COMAL keyword is listed on a separate page, well defined at length, and shown in at least one USEFUL program sample with extensive cross-referencing to both related keywords and other example programs. Table of Contents lists not only COMAL keywords but includes ALL BASIC keywords, with reference to appropriate (not just equivalent) COMAL structure. Keywords are in alphabetical order, each on a separate page [with] an in-depth discussion of how, when, and where it should be used, including which versions support which keywords, [with] standard syntax, default values and ranges, Additional Samples, [where] Used in Procedure and See Also [references] Appendices contain a complete guide to COMAL structures grouped to show their relationship, each separately defined, with examples, how to convert BASIC string handling to much faster COMAL forms, sequential file differences, a LONG list of practical procedures, COMAL Kernal, Standardized COMAL, and complete index."-John S. Main

ELEMENTARY BASIC, c1982 by H. Ledgard & A. Singer, from SRA.

Would you believe there's a new textbook on BASIC so interesting that you'll stay up all night to read it? I didn't either until Jayne Schiek showed this book to me. Though not specifically for PET, this is an excellent first text on BASIC. Written in a story form, using Sherlock Holmes and his mysteries, the book makes great reading. It also teaches, painlessly, only the best techniques of true structured programming. We are using it this semester in our beginning classes at Lincoln College to supplement my own book. Highly reccommended.-JS

MASTER GRADES PROGRAM: A complete grades management system for teachers. Designed primarily for the secondary level but is in use by many elementary and college level teachers. With this program you can produce alphabetized pages for your gradebook, alphabetized grade summaries for all students by grade level, subject or class, three kinds of progress notes to parents (depending on the parameters set by the teacher) and weekly or oftener reports in alpha or percentage order for all of your classes.

MASTER GRADES works on the point system. All grades are input as points out of possible points which could be earned per assignment or test. Since only the cumulative totals are kept, scores to 9999 are possible. (It is assumed that a teacher will still record the grades in a book or on the sheets generated by this program. That is your official record). The program then converts the points to a percentage and a letter grade is assigned according to the grading scale created by the teacher. The grading scale may be changed at any time including just prior to printout to allow for "easier" or "harder" markings of different classes. The program will hold 200 names.

The 16K version is supplied in BASIC and comprises three separate programs which load each other automatically depending on the main menu option selected.

The 32K version is all one program and is compiled in PETSPEED for the ultimate in speed and reliability. This version also includes a full edit routine which allows everything concerning a student to be changed at any time.

MASTER GRADES was written by two experienced secondary math teachers who are also expert programmers. They have produced a program which is designed for the FIRST TIME COMPUTER USER and whose only ability on the computer is knowing how to load a program. MASTER GRADES is a classic in error prevention and error trapping. It will not let you fail, nor will it allow you to lose your data.

Ten pages of instructions are included which will become superfluous your first time through the program.

A DEMO disk of the 32K version is available for $7.00 for 2031/4040/8050 drives. This amount is refundable when the demo disk is returned and the regular program ordered.

MASTER LIBRARY PROGRAM — The ultimate utility program to organize all of your files. This program is not limited by the memory of the machine you are using as it writes linked sequential files and is capable of cataloging over 8000 titles. The titles, disk id and blocksize are read from each disk almost as fast as you can feed them into the drive. The options allow you to create a new file, add to an old one or print only. As many sequential files as necessary are created to handle your entire collection of programs and, when you are ready, one continuous alphabetized listing with 100 titles per page is printed. Fast machine language sort, of course.

Also included on the disk is a fast **SEARCH** program which lets you check an incoming disk for duplicate titles. The duplicates are then flagged for you on the incoming disk with a back arrow. A hardcopy printout is available at your option.

DISK-A-BETIZER is also included. This program alphabetizes the titles on your disks for you and recovers **SCRATCHED** files should you need this option.

Compiled versions of search and disk-a-betizer have been added to the original package as have three extra utilities called **PRINT LIB, EXPAND LIB** and **COMPARE LIB.**

Both require CBM Computer with 16K or 32K of memory, single or dual drive and CBM or ASCII printer.

Please specify your equipment when ordering. School purchase orders and personal checks welcome.

PRICE: $39.50 (U.S. Funds) each.

MIDWEST SOFTWARE • BOX 214 • FARMINGTON, MICH 48024
PHONE (313) 477-0897

BUSINESS REVIEWS:

Accounting Packages

BPI, $400 each for 6 modules, from Commodore. For 8032 & 8050. Dummy ROM.

GENERAL COMMENTS: I've only used some BPI modules for a short while. After setting up chart of accounts and other pertinent information, modules are easy to run. Operator doesn't need accounting knowledge. Each module's demo teaches basics before running actual company records. All BPI packages run slowly; reports can take hours to run. First designed for cash register operation.-CW

Modules include: ACCOUNTS PAYABLE, ACCOUNTS RECEIVABLE, GENERAL LEDGER, INVENTORY, JOB COST and PAYROLL. [Here are two reviewers' comments.-ES]

ACCOUNTS PAYABLE: Has many errors at the moment.-CW

GENERAL LEDGER: (1) Highly recommended for a beginning package, since it does general ledger, accounts receivable, accounts payable and payroll. AR, AP and PAYROLL portions are limited. When more sophistication is needed, then use the individual AR, AP and PAYROLL packages.-CW (2) Includes accounts receivable without an aged, or detailed report or history.-JS

INVENTORY: Accommodates only 2 costs (1 in, 1 out), making you choose last in-first out, first in-first out, or average costing.

JOB COST: Is good for a construction business.-JS

PAYROLL: (1) I use payroll for our business. Cannot update tax tables; must buy $100 update each year. Can be used for company with multiple state employee taxes or multiple city taxes.-CW (2) Must order tax tables separately; are correct for each state. Holds 100 employees/per 8050 diskette. Restauranteers must pre-deduct tip and meal allowances.-JS

INFO-DESIGNS INVENTORY MANAGEMENT, $600/module from Info-Designs. Requires 4032/8032 plus 8050 and any CBM printer. Uses BASIC 2. ROM protected.

Modules include: ACCOUNTS PAYABLE, ACCOUNTS RECEIVABLE, GENERAL LEDGER, INVENTORY MANAGEMENT, ORDER ENTRY POINT OF SALE (only module that can't stand alone; requires IM), PAYROLL and TIME MANAGEMENT/CLIENT BILLING. Have to buy all modules for full business system. Some modules can be linked by MUPPET (1-8 computers to 1 disk drive). A good system for a larger company. Compiled in PETSpeed to run quickly; reports turned out in minutes, not hours. Operator needs some knowledge of accounting. Must read manuals carefully. New users need dealer support. INFO-DESIGNS only sends one ROM chip for ALL modules. Multi-computer users are required to purchase ROM chips at $200 each! An outrageous price!

ACCOUNTS PAYABLE & ACCOUNTS RECEIVABLE: Doesn't automatically alphabetize; must number them alphabetically - bad for companies adding many new names.

GENERAL LEDGER: Does general ledger functions and reports. Its pre-initialed accounts chart can be either personalized (altered) or replaced. No output to screen display. Once you start running reports, can't abort for errors.

INVENTORY: Must use INFO-DESIGNS numbering system. Good for large company that may have different products with same ordering numbers. As with any inventory package, only as good as controls the company puts on the employees. Can take many months to set up properly.

ORDER ENTRY/POINT OF SALE: Use with INVENTORY package. Can fill customer order, update inventory, show operator amount of item in stock (or if on order) when order being placed, show quantity discounts, generate invoice with single entry. When linked with AR, can give immediate credit rating of customer.

PAYROLL: Can change tax tables.

OVERALL COMMENT: Good for a growing or large company. Has lots of flexibility within modules. Speed of programs is BIG PLUS. Drawback is the cost of modules. First designed for inventory operations, using "bin" locations.-CW

Coming Up:

We've just received several farm accounting packages for review from Cyberia, Inc. Their offerings include CYBER-FARMER 80, a G/A package; FARMER'S WORKBOOK, a set of Visicalc templates; and HOG PRODUCTION SYSTEM, also Visicalc templates. This is the only agricultural software we've seen for use with Commodore computers, and should be of great interest to some of our readers. We'll hope for more info on these from our farmer/reviewer next time.

Data Base Managers and Mail Lists

ADMINISTRATOR II, $595 from Professional Software. Needs 80 columns & 8050 or larger disks. ASCII or PET printer. Compiled DTL BASIC. Cassette dongle.

According to Bill Cataldo, who has used it for over a year, it's an excellent package, with a good reputation in Europe, where it was developed. Though not a full relational database like SILICON OFFICE, it does as well for many common business purposes, by relating two preset files--master records and transactions (ideal for my client who is automating customer service records). By juggling the sizes of the two files, records may be up to 508 characters long. Since it uses direct-access files, it can reportedly handle 9,000 records. (However, I don't recommend using direct-access files; once used, diskettes can't be validated without risking loss of data if new files are written later.)

FEATURES are much like those of other good database packages: a prime key, multi-level sorting, math calculations, searching and creating indexes, some reports (including mail labels), and ability to store complex command requests for re-use. Though it lacks a built-in word processor of SILICON OFFICE, it can send sequential data to WORD PRO. Bill reports that it is currently limited to 80-column printouts, with a 132 column update coming, and that restructuring files is difficult now, but will be eased.

For me, the ultimate test is that the first time I saw the package, I was able to start and run it, create an application, and do a sample printout for my client, without more than momentary references to the manual. Screen messages displayed nearly everything needed, and the manual itself is a good, quick reference. Though the application is not yet completed or tested, I feel the ADMINISTRATOR can do it. After brief use, I find it to be an excellent package, second only to SILICON OFFICE, and cheaper.-JS

JINSAM EXECUTIVE, full system $1295, core $795 from Jini Micro Systems.

Requires 80-columns & 8050 or larger disk. Compiled BASIC/machine language. No guarantee, but company tries to support users. Requires horizontal ROM board at $A800 connected to user port. Needs $25 change to work with WORD PRO.

FEATURES include up to 99,999 RECORDS OF UNLIMITED LENGTH; up to 150 field per record, which may be subsorted to any depth; exec files to automate often-used keystroke sequences into up to 100 "jobs;" and multi-user capability, including ways to set password access. Also maaintains good features of older JINSAMs, including up to 5 automatically-maintained prime keys, flexible and selective sorts and searches, ability to restructure a database, true interfaces to VISICALC and WORD PRO, and optional statistics packages, math packages, and one that allows JINSAM to interact with most anything that uses sequential files.

As the program just arrived, this is only a preview. It's a complex, all inclusive data manager designed to operate with multiple terminals sharing common disk drives and printers; a serious attempt to turn a micro into a mainframe, complete with security passwords; and enough options to make an eagle dizzy. Authors have attempted to cover all contingencies and types of equipment, as well as work with WORD PRO and WORDCRAFT. Documentation is reasonably good and most

program pecularities are defined. This is definitely NOT a program you can "load and run" without studying the manual and experimenting extensively. Plan on spending a lot of time training operators. Also plan on restructuring your thinking and data in order to satisfy the program's structure because of its unwillingness to accept certain characters. For example, forget about putting last name, comma, and first name in a mail list. These adjustments, of course, are all worthwhile if you need a data manager able to handle the HUGE amount of data JINSAM claims it can; it may be your only option. More next month!-JPD

SM-DIOS, from SM-Softwareverbund Microcomputer GmbH.

Finally I've found a DATA BANK PROGRAM that's worth what it costs and does what it says. SM-DIOS, a data bank manager, is really fantastic - multi-keyed (ISM) using relative files; continuation files are automatically generated as the data reaches the limits of relative files; tremendous screen generator options; printouts in nearly any form you want; selection, sorting up and down, searching with any key during correction, printing hardcopies or lists. It really reaches the limits of the 8032, and they will soon have the 8096 version ready.-Brother Sylvestro Washburne

Word Processors

PAPERCLIP, $125 from Batteries Included. Needs 2K ROM at $4000, BASIC 4 and CBM disk, but can load/save cassette files. 1 year free replacement warranty.

PAPER CLIP is completely WORD PRO compatible in file and format. Like SUPERSCRIPT, it scrolls horizontally on text entry, with video output on 40 column models (minus horizontal scrolling). Unlike SUPERSCRIPT, it manipulates columns as easily as rows (like VISICALC), and moves numeric tabs to print properly on paper despite embedded formatting characters. It adds/subtracts rows (not columns) and SUBsorts them alphabetically. (Yes, they do sell SUBSORT!)

Like SUPERSCRIPT, PAPERCLIP loads and saves sequential files, plus handles cassettes. Likewise, it reads directories without losing the current file, but can't load them to a file. Both set ranges to the letter rather than nearest line, and allow changing easily from screen to printer output and back. However, it has no vertical tabs or scrolling by screens, nor a variable speed video output, Print spooling, shadow and red/black printing, and secondary addresses, though italics are included. As in SUPERSCRIPT, a RETURN in the middle of a line doesn't erase the rest. Neither restarts from the top of page easily, but PAPER CLIP tells how to do it another way (which would also work in SUPERSCRIPT). PAPER CLIP's manual isn't as good as SUPERSCRIPT's, especially for newcomers, and needs a larger binding, but is much better and more compact than WORD PRO's.

PAPERCLIP includes set-up files for most printers, and a special program to install any other system. Unlike SUPERSCRIPT, it gives a 10 character warning of an approaching right margin when scrolling horizontally, and spells out error messages. Users may copy the program onto any number of data diskettes, as long as the ROM is in place. Beginners will like the instant startup, and everything WORD PRO asks then can be re-set anytime within PAPER CLIP, allowing you to control several disk drives and printers. The worst features are RETURNs that often end within a paragraph, and the small 115 line text area. I now see why Jim Butterfield uses this as his word processor. I expect to use it a lot myself. It's the best buy I've seen in a word processor. Highly recommended.-JS

PAPER MATE Update, $60 from AB Computers.

Mostly BASIC program for 2.0 & 4.0 PET/CBMs with cassette or disk. Completely user friendly; permits listing or copies. Offers a lot with little investment, and is well documented. Able to convert PET keyboard to CBM, or define keys for special purposes. Lacks sophistication or speed of WORD PRO (I

think of it as WORD PRO 2-), but is an excellent choice for home or light office work. Works with all printers; however, paging became erratic with an Olivetti. The newest version automatically adjusts to either 40 or 80 columns. Sometimes, if you load a file written on a 40 into an 80, you get a "file too long" message (easily corrected, however, as described in the book). Highly reliable; even "Old Ham Fist" couldn't get it to crash or misbehave! You can also break out of the program, change printer status and return without losing your file. If you're willing to sacrifice a few features for a great price, it's highly recommended.-JPD

SUPERSCRIPT, $250 from Precision Software. Versions for all current PET/CBMs (EASY SCRIPT for 64). Requires 8050 or 4040. DOS protected. Anti-warranty.

Is file- and command-compatible with WORD PRO and PAPER CLIP, and able to load those of SILICON OFFICE and WORDCRAFT, with notable new features. Has a huge 250-line text buffer. Can use horizontal scrolling, a la VISICALC, to handle wide documents (separate from the printing itself, and is most useful in typing data tables, especially on 40-column computers). Horizontal scrolling also works during Output to Video, to see how the right side of wide documents will appear in final form. Can also load, save and edit sequential files, and edit CBM ASSEMBLER files. Most notable improvement is its manual: a spiral-bound 3-part book with tutorial, quick-reference, and reference guide. The quick reference is also on diskette, with permission to copy it.

ADVANTAGES: You can 1) view the directory without losing your file or load it as part of a file; 2) restart the word processor without losing your file; 3) scroll up or down your text by whole pages; 4) invert the case of a range of text; 5) set ranges to a precise word, not just the nearest line; 6) erase to the end of paragraph; 7) have up to 50 VERTICAL tabs; 8) set tabs to trigger numeric mode; 9) have output to video in variable speeds; 10) load and save files while print-spooling from disk; 11) change from video to printer output, and from continuous to non-continuous mode during output; 12) enable shadow printing and red/black printing, along with boldface and underline; and 13) automatically scroll without holding a key down. Two other touches are typical: 1) if you hit RETURN in the middle of a line, remaining text is pushed down to the next line; and 2) you can easily send commands to secondary addresses.

NEGATIVES: Printer selections don't include TEC (Starwriter) or CBM 8300 (Diablo 630). You can't control two disk drives at once, as in WORD PRO 4 PLUS, nor can you easily restart output from the top of current page. When input width is greater than screen width, it gives no warning of approaching right margin, leaving you unsure what character ended the prior line. Fortunately, hitting LEFT-ARROW takes you back for a quick look. Also, some error messages are just letters. Though a spare copy of the copy-protected diskette is available, I especially dislike being unable to add the program to my master utility diskette.

It's an excellent word processor. Compared to WORD PRO, SUPERSCRIPT is clearly a better buy, and the most powerful yet. Especially recommended for those needing maximum features and text space.-JS

WORD PRO 4 PLUS Update: $450 from Professional Software.

"Although we are very pleased with this software, I've encountered various problems. 1) When I do a tab to a numeric tab position, immediately followed by a DELETE SENTENCE, it slowly wipes out my screen and goes into a death loop. 2) If a sentence ending in ?, !, ", or) finishes a line, the next line indents the 2 spaces we usually place between sentences and justification is lost. 3) Using an "extra" comma in a header or footer leads to garbage in the text. 4) File names containing colons are allowed, but give error messages on reloading.

"We like WORD PRO. We think it is great value for the money. The manual is clear, as far as it goes, but there is little information about technique--that is, putting commands together to accomplish tasks in efficient ways."-from letters to Professional Software by Judith Cook and Gerald Weinberg

Other Related Programs

WORDCHECK Update. The program is now named PRO-SPELL-PLUS, and comes from Universal Software Corporation. Spelling checker.

WORDCHECK on Upgrade PET is a $200 hunk of junk. 4K ROM chip contains a 1K BASIC (!!) program and a bit of machine code. No disk error checking exists; the whole PET crashes dead if you misspell a file name, etc. Inserting a word into a list takes 1/2 hour with their original short list. Printing a list of words - infinite time, as every 20 or so printer lines, the whole system stops to collect garbage. I ain't kidding you guys, I pulled the plug after "D".-Elizabeth Deal

COMPILER REVIEWS

PETSPEED Update: $300 from Small Systems Engineering

At Comdex last November, Oxford Computer Systems showed PETSPEED 2.7 for the 8032. The user function now works. Small Systems Engineering will update existing copies for a small fee.-Allan Ackerman

EDUCATION REVIEWS:

KIDSTUFF, by Thomas R. Smith; tape $60 (easily converts to disk), disk $70.

Primitive LOGO for PETs. It's a nice BASIC program, fun and easy to use. Permits visible turtle graphics (full character) and permits building a library of subroutines, but I don't think the subroutines can be easily brought into the program. The manual is excellent, uses little jargon so that even people unfamiliar with PET BASIC can use it to advantage. Saw it used by teachers in a nearby school district and was impressed.-Elizabeth Deal

VANILLA PILOT, $30 from Tamarack Software. For all current CBM models.

See under Language Reviews.

FURNITURE REVIEWS

COMMODORE CASE, about $120 from Computer Case Company. For VIC or 64.

See under 64 Furniture Reviews.

ONE MEGABYTE FUZZY DISKETTE, $25 from Totl Software. For all models.

This fuzzy diskette-shaped pillow has lost a mega-bite from one corner, perhaps taken by Bigmouth. Apart from this loss, the pillow looks like a diskette, with trim to represent the center hole, read/write access slot, and even a brand label. Our son Jamie reports that the missing bite fits perfectly under the neck for comfortable head-resting. Unlike some gift items, it's also well made - the kind of elegant, but useful gag gift a dedicated spouse with no computer interest gives a truly dedicated computer freak.-JS

HARDWARE REVIEWS:

Cassette and Disk Drives

CBM D9090 AND D9060 HARD DISK DRIVES Update, $2995 for 5M byte hard disk drive and $3495 for 7.5M hard disk drive from Commodore. For CBM/PET models.

I have used both of these hard disks with very good results. Being used to silent computers, the muffin fan sounds loud, but really isn't. Most people end up putting the hard disk in a closet or above the ceiling.

STRONG POINTS: They have huge numbers of blocks free, unlimited directory and relative file sizes and fast file look-up and access. It seems to take a moment to 'wake up' when accessed the first time, but load times seem faster than the floppy disk drives. A Wini appears to format in a funny way: it seems to just go away and refuse to talk to you. First power up, let it warm up 30 seconds, send the format command, wait 45 minutes, and then enter 'open1,8,15,"uj": print#1,"i0": close1'.

WEAK POINTS: Most programmers couldn't do with just a Wini. Too many programs require drive one (let's lobby to get this changed!). Data backup is really a problem. Even if there were a perfect backup system, you can't beat the ease of a 7 minute backup to a fresh floppy diskette. Also, these units DESPERATELY need a write (or at least header) protect. Nothing is worse than losing 4 megabytes of data with one mistake and a few seconds time. All in all, I like it. Recommended for those who can afford it or really need it.-KRP

Coming up:

8" PEDISK DISK DRIVE: $995 from CGRS Microtek

Amazingly fast! (JO reviewed the 5" version in WPC.) If CP/M still likes it, [See Z-RAM review], look for a very favorable review next time.-JS

Diskettes

FLEXYDISK2, lists at $4/SS DD or $5.50/SS DD, from BASF.

BASF wants everyone to know they've changed their diskettes, for the better. The old ones had slightly undersize spindle holes for my 2040 disk and were a bit noisy, but the new one sent for review works just fine on my 8250 megabyte-disk drive. It has a hub ring, fits properly, spins quietly, and runs easily without errors. Another advantage is that BASF makes its own diskettes, unlike the better-known ELEPHANT DISKETTES, which BASF says are made by Verbatim and Nashua. Perhaps best of all, is BASF's lifetime warranty. If the price is right, give it a try.-JS

Printers

CBM 8023 PRINTER Update, $700 from Commodore.

My favorite printer. Fast, easy to use, and trouble free, but may not be the best for on-line terminal printing with an IEEE modem. I've heard it holds the bus too long (older printers don't), it's hard to find good ribbons (a common printer problem), and it takes a long time to reset the bus. Capable of ripping bad paper apart with ease; get good paper if you have a long lift out of the box.-KRP

EPSON MX-80 with GRAFTRAX Update, about $700 from Epson America.

John Weber sent letters between him, Commodore, Epson America and others about using PET graphics on the MX-80 Graftrax printer. It is a confusing subject. For instance, there are 64 graphic characters, but two appear only in text mode.

For full graphics, either replace the printer ROM with one able to do PET graphics, or add a machine-language program to the computer that traps printer commands and replaces them with commands to Graftrax's bit image option, which then emulates the graphic characters. Earlier M/P's have mentioned two such products, one from England and one from Skyles.

For total compatibility, a Commodore printer may be the only answer, especially for such fancy options as high-resolution screen dumps from 64 or VIC. Such feats will work with the 1515 and 1525 long before the MX-80, simply because more users have the 1515 or 1525.-JS

Upgrade Modules

EUROPA-Karte, DM950. from SM-Softwareverbund. 8096 expansion board.

"Available in Germany...it is the size of a post card, leaving the expansion ROM sockets completely free. (It is the EUROPA-Karte norm.) It also has extension pins for the 6502 to possible further expansion boards. It's installed in 2 minutes, and the ones I've used work fine."-Bro. Sylvestro Washburne

EXECOM 80-Column CONVERSION BOARD Update, $250+$75 installation from Execom.

The Execom 80-column board now runs using a stock standard 8032 ROM set. That fixed our problem with IRQ grabbers, and also added the extended editing commands of the 8032! To complete our joy, I swapped my VIDEO board over Christmas, and lo and behold, the new board doesn't have fuzzy characters with the Execom. I'm back to normal green on black characters, crisp as can be, and happy as a lark. Still highly recommended, but no longer any negatives to say about it at all.-JS

ZRAM BOARD, from Madison Computers. $795 with CP/M software, $495 for 64K add-on memory alone. For all disk-based Commodore models. Requires CBM disk. 90 day limited warranty.

Ever wondered if you should have bought an Osborne 1? Have you been jealous of users with WORDSTAR or DBASE II? Don't be! ZRAM is both a full 64K 4 MHz Z80 CP/M system, and a 64K add-on memory board with a far more useful bank-selecting scheme than the 8096. It also includes serial RS232 via the user port, like MCTERM, and accepts an optional AM 9511 hardware math chip. Installation is fairly simple, and much neater than the 8096, quietly hidden under the video hood. If your system is as unusual as mine, it may take some calls to the helpful people at Madison to get it all working properly. The 4040 drive version needs a small patch.

The hard part is learning CP/M, which is anything but user-friendly. It is to Commodore disk commands what BASIC 2's disk commands are to BASIC 4's--more difficult by far, yet potentially more flexible. Madison Computers does use some non-standard CP/M syntax, notably for CONTROL-P, the printer control key. Fortunately, the changes are clearly explained.

Within CP/M, your PET/CBM becomes a Hazeltine 1500, the most popular CP/M terminal. One joy of CP/M is being able to exchange programs and files among wildly-different computers, and having them work UNCHANGED. The only catch is--you need compatible disk formats. CP/M itself, without user programs, is as useful as a dead cat. Since no one but Commodore uses CBM disks, this could limit you to buying from Lifeboat Associates, one place that stocks CP/M programs

in CBM disk format. A better option is to add an 8" PEdisk to your ZRAM system, for an additional $995. This drive uses the most popular CP/M disk format, and also overcomes the main problem with CP/M on CBM disks--lack of speed. The PEdisk is easily 10 times faster than CBM drives.

The folks at Madison have made great efforts to supply every important program needing the 8096 board in ZRAM versions as well, including SILICON OFFICE, WORDCRAFT ULTRA, VISICALC, WORD PRO 5 PLUS, MASTER, and UCSD PASCAL. The package even comes with a utility to read CBM disk files into CP/M, something I desperately needed last year. There is no longer any software reason to prefer the 8096 over the ZRAM, and several that commend the ZRAM. Highly recommended.-JS

COMPUTER LANGUAGE REVIEWS

VANILLA PILOT, $30 from Tamarack Software. For all current Commodore computers. (Previewed in M/P 10)

This package certainly grows on you, and I liked it from the start! Our formal review will be by Ellen's mom, a total novice who just bought her first computer, a 64, last week. She's already writing 3 or 4 pages of PILOT programs each night for her fourth graders! That says a lot about the 64, PILOT, and especially VANILLA PILOT. What makes it so useful to her is the ability to combine text and "pictures" easily, both in what the children will write themselves and in her own individualized lessons. It comes with all the programmer's aid commands I've grown to love so dearly. And last, but far from least, it does turtle graphics properly, with high-resolution quarter dots rather than the full characters the HES turtle graphics use. The manual is also a model of clarity. It even includes chapter quizes. The forthcoming Commodore version will really have to be fine to match this! Highly recommended, especially for teachers!-JS

SUPERPET PASCAL, free with SuperPET from Commodore. Requires 6809 64K microprocessor and any CBM disk drive. Not protected.
VS. UCSD PASCAL 4.0,$150 from Commodore. Requires 8096 or Z-RAM and 8050.

Boyd and Sandy Wilson, who used both extensively last semester, vastly prefer the SuperPET version of PASCAL for a classroom situation. With UCSD, each student needs a separate disk drive and most of the class period is spent learning the disk commands to run PASCAL and then watching programs compile. This was true on both the Apple and the 8096 systems they had access to until their SuperPET was up and running. The SuperPET, on the other hand, loads in the entire language into computer memory at the beginning, allows several users to share a disk drive for saving their programs, and executes programs immediately by interpreting them rather than compiling. UCSD Pascal exacts a heavy time penalty during the writing of a program, in return for a large saving of time later, when finished programs are run. Thus, it is best in a business environment, where programs are typically written once and run thousands of times. The SuperPET manual is good for quick reference and review after you know the language, but extremely poor as a tutorial. UCSD PASCAL has an extensive, thick reference manual, but it took forever for beginners to find what they needed.-J&ES

MAGAZINE REVIEWS

COMMANDER, $22/year. Monthly, from Micro Systems Specialties.

The first issue is 64 pages on slick, full-size paper, with 15 articles. Has article on CB2 sound, review of a VIC BASIC utility program (no address or name of seller), review of VICMON, explanation of program chaining without mentioning that string variables can be forced to high memory, some PEEKs and POKEs for the 64, two BASIC programs for PET, and a useless article on hooking a printer to the PET to use WORDPRO. I feel the last article on using 6502 "illegal" opcodes shouldn't have been printed, because "illegal" opcodes are just that; they shouldn't be used. On the whole, the magazine is FAIR - very good for a first issue of a new magazine. I hope it improves with time; however, if it doesn't get above the beginner level of this issue, I'll let my subscription lapse.-AC

MODEM REVIEWS

Hardware Packages

CBM 8010 MODEM Update (same as Livermore Star), formerly $395 from Commodore.

I have used this modem extensively and have found it to be the most sensitive MODEM I own. It has gotten clear signals when my SMARTMODEM, VIC MODEM, and TNW-103 all produced garbage. For a long time, lack of software made this modem less desirable, but ORION and Steve Punter's TERMINAL program changed that. The 8010 is reasonbly priced for an IEEE device, and performs reliably. Recommended, if you can find one.-KRP

HAYES SMARTMODEM, $279 from D.C. Hayes.

Truly an incredible piece of machinery. This modem is direct connect, auto answer, auto dial, and so forth. Everything is programmable, from the number of rings to answer on to the character to use for a back space. The built-in speaker and status lights make it easy to use (and trust), and it never seems to skip a beat. The only shortcoming I found was a fragil volume pot. Very highly recommended. Can't wait to see the 1200 baud version....-KRP

MCTERM Update, $175 from Madison Computers.

Very nice Modem Software. Uses the User port to run an RS232 modem. I have used it with a SMARTMODEM, NOVATION CAT and a homemade modem with nothing but good results. The file transfer system is very fast, and the cyclic redundency check seems to trap errors dependably. The cursor action is a little jumpy in certain situations. If you plan to do a lot of transfers between two systems, this is the answer. For other modem work, the price is probably too steep.-KRP

TNW-103 MODEM, $450? from TNW Corporation.

This is a direct connect, auto answer, auto (pulse only) dial, IEEE modem. Rather expensive; it uses all TTL logic, but it functions well, and works reliably. The answer tone level is adjustable (very handy). Has very good user programmability. For example, you can set an SRQ (service request) to occur on ring, character received, or ready to send. I also added a power switch and four LEDs to improve its usability. A nice modem, but for the money you're better off with a SMARTMODEM.

As for the company, I was very impressed with TNW's attitude. My early serial number modem needed a slight modification, and after my inquiry, they called, described the fix, then mailed a tech note, which I received the next day. VERY helpful.-KRP

UTILITY REVIEWS:

Programmer's Aids

MASTER Update, $300 from CMD. For CBM 8032 or 8096 with CBM disk.

Alan Kahn reports that not only will the run-time version of MASTER fail to run without a dongle, as reported in M/P 9, but it won't even run with the dongle supplied. You have to buy a special run-time dongle for every copy needed. This was supposed to be changed for CMD by the supplier in France months ago, but hasn't been. Until it is, the MASTER, wonderful though it is, is only usable on programs that aren't for sharing, or that are costly enough to absorb the cost of the dongle. That will keep me from using it at all, sad to say.-JS

OS-96 Update, DM250. from SM-Softwareverbund.

[A.B. Computers was to handle this in the U.S., but reportedly never received finished documentation for it, and thus isn't selling it yet.-ED]

The price included the SM-KIT (Toolkit for 8096) in 2 versions, as well as the complete MAE source listing of LOS-96, which has really good documentation of the new commands like INSTRING, ON ERROR, REDIM, PRINT-USING and others, as well as CALL, for easily accessing machine-language programs. Various LOAD options are also available. My initial impressions are very satisfying, and certainly eliminate the memory limitations of the 8032, as well as provide tremendous helps for serious programming projects.-Brother Sylvestro Washburne

POWER Update, $90 from Tem-Tech.

A very powerful, yet easy to use, programming aid. Rather strange commands are easy to get used to. Has features that you have to look up to remember, like the several trace mode options. I love the Section Renumber and the Automatic Smooth Scrolling both ways. Since it turns off IEEE timeout, your terminal and some disk programs may freeze at inopportune times if you have it turned on. This problem is easy to fix if you know machine code and can burn Eproms. Highly recommended: it's the only one I'll use.-KRP

Computing Aids

SUBSORT Update, by Jim Strasma; $35 from AB Computers, Eastern House Software, Batteries Included, etc.:

"Thought you might like to hear this: I was suddenly faced with some serious sorting tasks on files I didn't write. I broke down and got your SUBSORT from AB Computers. It's dynamite. Of course it works; it's easy and simple to use and the built-in flexibility permitted me to do the thing in no time at all, since I didn't have much in the way of file editing to do.

"Idea for expansion: your bit matching thing can only do AND with a pattern. A very useful thing would be to permit constructs such as: pull all the church people who have bit 1 and 2 on, and (3 or 4) on, but not but 5, etc. Nasty to set up, but I think it can be done."-Elizabeth Deal

[REPLY: Thanks for the kind words, Liz. Even nastier to set up has been the forthcoming version 2.0 that will once again work on all models, even the VIC and 64. How did we ever get along before the semi-annual ROM change?-JS]

COMMODORE 64 REVIEWS

64 BUSINESS REVIEWS

Accounting Packages

THE BUSINESSMAN Preview, by CMS; $100 from Southern Solutions. Requires one 1541 disk drive; C2N cassette optional. CBM or ASCII printer. Cassette dongle. Full warranty.

This package arrived for review today, and we'll hope to have a report next time. My initial impression is that this is a fantastic company! The entire package and everything in it shows experience, skill, grace and confidence. As a pastor, I'm impressed to see they offer both an optional module for Gideons and a free Bible upon request by customers. Can't wait to test the product!-JS

DATABOOKS/64 Update:

See under Advertising Notes.

Data Base Managers

EASY FILE, by Omniware; $100 from Commodore. Requires 1541 disk & VIC printer.

This very flexible data manager, also known as FILEFAX, is available for many computer brands. Unfortunately, it doesn't use some Commodore special features, like cursor editing, and both upper and lower case. On the other hand, it does a better job of defining allowable field entries than even SILICON OFFICE, sorts 8 levels deep, has an Input Editor, several HELP screens and report formats, uses relative records, and includes a well-done lengthy manual. Unlike many, this manual includes full instructions on setting up a report format for mailing labels (1-up only). The only data manager done for the 64 so far, and a worthy first offering. Recommended.-JS

Word Processors

EASY SCRIPT

See the review of its big brother, SUPERSCRIPT, under CBM/PET Reviews.

RAPIDWRITER, $40 tape from H.D. Mfg., Inc. For VIC with 8K expander, or 64. On tape, but works with disk. Available for various printers. No guarantee, but manual offers assistance with problems.

This is a very interesting word processor, with all normal functions, except Block Delete and Global Search & Replace. It offers full margin, line length, page length and tab control. It's the only BASIC word processor I've seen that formats as you enter text. The way it handles the line-breaks slows entry. Has only a 10 character buffer, which is easy to outrun and lose text at line ends.

Reformatting is possible, but difficult. No separate edit mode.

Good documentation, but 30 single spaced 8 1/2"x11" sheets seem overpowering at first. Don't despair, but wade through it all - there is a good deal of power in this program. A quick reference card of commands would help. Has 2 unusual features: First, you can calculate within the program and incorporate results into the text. Second, the program will combine 2 separate files into a 2-column output. This is especially useful. With some work on the manual, this would be a very good program. Recommended.-LW

TOTL.TEXT 2.6, $40 tape from Totl.Software. For cassette or disk. No guarantee, but assistance offered to any registered owner for $2 handling fee.

Uses formatting control codes embedded in text to allow complete format control. It has all word processing functions, except Block Move and Global Search and Replace. Its capacity is unlimited, because documents can be created in segments, and combined for printing, with line count and continuing pagination. The 64 can hold 29 double spaced pages at a time (but rather clumsy to work with). Edit mode is based on 6-1/2 line blocks; makes good use of function keys to move around in and between blocks. NICE FEATURES: allows up to 4 header lines and one footer line, allows up to 6 lines of keyboard input for form letter work, accepts hyphenated words, automatically centers, prints double quotations, and allows you to insert into text any decimal control code your printer will accept. Good documentation, and can be modified for an RS232 printer.

Besides being a good program, this is the only program I have found at anywhere near its price that will do true footnotes. The footnote is embedded in the text and held in memory until time to print; it then spaces the footnotes the same as the text. When I requested it, the author promptly gave me a modification to single space footnotes. I don't know if this is now standard. All things considered, I HIGHLY RECOMMEND this program. It's a good word processor; if you need footnoting like I do, it's a steal.-LW

WORD PRO 3 PLUS/64, $89 from Professional Software. 90 day warranty on diskette. DOS protected.

REVIEW #1: The long-awaited "64" version of the industry-standard word processor has arrived, amid mixed reviews. JO hated it on sight, calling the required white-on-dark blue characters of his early copy unreadable. Early copies also fail on the latest 64's (with the new -02 OS ROM). [Current copies correct these things]. Personally, it's just what I'd expected--every feature of the PET/CBM version, but nothing new, not even a better manual. White on blue is tolerable on a good monitor, something anyone doing word processing needs. I can't test the printing, because it's incompatible with all interfaces via the user port and my C64-LINK IEEE card. Since the CBM 1525E is specifically recommended, WP3+/64 presumably crashes 1515s and older 1525s. To print, I copy files to PET WORD PRO from a 4040 disk. That is its strength: total compatibility with PET WORD PRO. I consider it a good program, with one essential warning...there is no spare as shipped. You can supposedly now buy a spare copy for $30 extra. Do NOT use the program for anything important without it!-JS

REVIEW #2: Great package; works just like PET's WORD PRO 3 PLUS. A new version with changeable colors has just arrived. SPECIAL NOTE: This program outputs to a parallel printer through the serial port only. Only 2 interfaces are available thus far: the MW302 PARALLEL INTERFACE from Microworld Electronics (Colorado, 303/934-1973) and the CX6401 INTERFACE from ECX Computer Co. (Walnut Creek CA, 415/944-9277). I haven't tried either one, but Professional Software says they both work.-JAS

64 EDUCATION REVIEWS

EASY LESSON and EASY QUIZ. Maybe next time.-ES

VANILLA PILOT, $30 from Tamarack Software.
See under Language Reviews.

64 FURNITURE REVIEWS:

COMMODORE CASE, about $120 from Computer Case Company. For VIC or 64. 3 Separate versions offered: for computer with cassette, with 1 disk, and with 2 disks. Approximate size 1.5'x2'x5". Empty weight about 10 lb.

Recently I've been doing a lot of talks about microcomputers, and taking my 64 along as a demo unit. It's small and light, but it has so many pieces.... When I noticed Computer Case Company had a 64 case, I wrote immediately, asking for the cost. No reply for a month. I finally I found their 800 number, called, and reached the right guy the second time. He remembered the letter, just hadn't bothered to return my SASE. Yes, he could charge one right away on Mastercard. It arrived 24 hours later, just in time to pack for a CIPUG meeting.

It's an excellent case - better built than some I've seen, better looking than its pictures led me to expect, and exactly the right size for a 64 plus disk drive. With the lid off, you can use the computer without immediately unpacking or even reconnecting cables. Rubber feet protect it from scuffs; velcro straps and well-secured foam rubber keep things from shifting inside, and a padded handle, off-center to balance the disk's weight, eases carrying. If your 64 or VIC will be traveling much, you need a case like this. Get your dealer to stock it to avoid the hassle I had ordering by mail. Recommended.-JS

64 GAME REVIEWS

Cassette:

PAKACUDA, $20 cassette from Comm*Data. Protected. Requires joystick.

REVIEW #1: Guaranteed against defective tapes. The prize for the first noteworthy game to be released for 64 goes to PAKACUDA. A well done adaptation of the universal arcade game, and in my opinion, superior. A PAKACUDA eats little fish, or eats an eel for energy to eat pursuing octopi. Second of two screens is a speeded-up version of the first. I've come close to getting to the second screen, but I haven't made it yet. Highly recommended.-LW

REVIEW #2: A PACMAN type game for the 64. Requires a joystick in port two. Good use of sound and character graphics. Machine language gives it fast action. The second maze gets hectic, so I'm told. Recommended.-Dan Weidman

REVIEW #3: One family of four kids here quickly tired of it when they reached levels 3 and 4 the first day! You never know...-ES

YAHTZEE, $20 cassette from DES. Versions for 64 or VIC and cassette or disk.

Fairly good adaptation of standard game. Has some nice graphic touches, such as dice rolling across a screen. Sound is rarely used till you get a Yahtzee; then you get nice sound/color display. 1-10 people can play, and highest series score is saved on screen. Keyboard seems overly sensitive when playing; needs a little locking out of unwanted responses. Sometimes refuses to accept full house or higher play, then loses its move count, so expects a move after all slots are filled. If were fixed, recommended if you like Yahtzee.-LW

Commodore Cartridge Previews for 64/MAX

Commodore proved at the Comdex show that the 64 can do arcade games as well as the VIC. Here is what is known to be working thus far:

JUPITER LANDER: Apparently identical to the VIC version, which has good graphics, realistic sounds, and is modestly challenging.

PAK BOMBER: Like the arcades. Clown peddles back and forth with pin on his cap to pop balloons falling from above. Ones filled with lead fall quickly; if you miss, you may kick them back up to try again. On screen 2+ little Pacmen also fall, and eat any balloons piled on your head. Good use of sprites and sound. A favorite.

WIZARD OF WOR: Another arcade favorite. Kill monsters in dungeons. At least 3 different levels. Hiding in corners with a blazing gun would work, but is boring. Chasing monsters costs points, but adds enjoyment. Another example of fancy sprites.

MIDNITE DRIVE: Like Public Domain one for PET, except has color and realistic sound. This kind of game hasn't appealed to me since I got a drivers' license, but was a lot of fun before that.

OMEGA RACE: Like VIC version, plus color. Come out with guns blazing, but watch out for ice...you bounce around like AIR HOCKEY, avoiding what you can and shooting the rest. One game won't take long, but will be fun. A favorite.

SPACE INVADERS: Apparently done with sprites (proving you CAN use more than 8 at once). Much like Apple version, except no cheering section on side. Seemed slow. Most should have no trouble clearing the first screen--something I can rarely do on PET versions, despite their larger targets. Even so, everyone should get it for sentimental reasons. It was, after all, the grandaddy of them all.-JS

MOTOR MANIA: Dean Johnson of the Northwest Commodore Users Group called to report that UMI now has a 64/MAX game (cartridge, I think) out called MOTOR MANIA. It's some kind of driving game, with graphics realistic enough that wheels visibly turn when steered. How about a review?

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64 HARDWARE REVIEWS

Interfaces

SMART ASCII interface, $65 from Midwest Micro. For VIC or 64.
Parallel interface to printer. Software on cassette. Attaches to user port. We us it with the SCM TP1 letter quality printer. Load in the software with SHIFT/RUN. Defaults are Translate On, and PET ASCII (upper case), which can bechanged with POKEs to upper-lower case. Nice feature is that Translator mode translates cursor graphics to letter commands in a listing, such as (DN) (UP) (CLR). One drawback is that it does NOT work with WORD PRO 3+/64.-JAS

C64-LINK Update, now $140 plus shipping U.S. from RTC:
A very nice little critter! I tend to use it as a monitor more than anything, but the IEEE is very functional and very handy. It doesn't like more than two other controllers on the bus, tends to hang up where the regular CBMs don't. For my uses, though, it will never completely replace the 1541. Too many programs don't like it. For example, the PET emulator won't run with it unless you load in re-located software and patch it in. If you need an IEEE on your 64, though, this is a good one. Recommended.-KRP

CIE INTERFACE Preview:
Reader Gary Stone asks if the CIE from Micro Systems was tested along with the VIE for VIC reviewed in M/P10. He writes "I am particularly interested in how this (or any other) IEEE interface for the C-64 behaves when the computer is connected to a TV, where susceptibility to RFI (radio frequency interference) is more of a potential problem than when using a monitor?"
FD reports it works fine, and that he hasn't noticed any interference. We used it briefly with a monitor at a PUG meeting last Friday without difficulty. FD's main beef is the SYS to turn it on, having to turn it completely off to use the 1541, and its conflicts with programs using the same part of memory.-JS

Other Equipment

STARFIGHTER JOYSTICK, $15 from Suncom, Inc. Joystick.
Superior to the Atari joystick. It requires much less force to operate and seems more precise. It comes with a 6 foot cord, and most surprising of all, with a 2 year guarantee that can be extended to 3 years for a $5 fee.-LW

TRAKBALL, about $50 from Wico. Joystick.
Made by the folks who make arcade trakballs. Extremely well-built, smooth in operation, well-balanced and an overall joy to operate. Does wonderful things for your scores in games requiring either precise small changes of position, variable speed, or rapid changes of direction; but it can ruin your score in games simultaneously needing both extreme speed and precise positioning. Thus, it's lousy for PAKACUDA and great for MILLIPEDE. We're wearing out the socket by changing joysticks to match the proper game! We might have been better off with Wico's conventional joystick, but if you like trakballs, you'll love this.-JS

64 COMPUTER LANGUAGE REVIEWS

VANILLA PILOT, $30 from Tamarack Software.
See review under Computer Language Reviews.

VIC REVIEWS

VIC ASSEMBLER REVIEWS

FRENCH SILK ASSEMBLER Update, $25 from French Silk.
See Advertising Notes.

VIC BUSINESS REVIEWS:

Data Base Managers

TOTL.LABEL 2.Ø, $2Ø from Totl.Software. Mail List. Requires VIC with 8K expansion, disk or cassette, and VIC or RS232 printer.

I found this mailing list program quite useful. Documentation was quite helpful and easy to understand. Will sort labels either numerically or alphabetically. There are a lot of parameters on which you may print labels, such as only those added, changed, every label, or only individually selected labels. Except for 'every' option, you can combine other options. For instance, print only labels you added or changed this session. Saves your file of names on tape or disk for later recall. Another nice option is that you may specify the parameters for the particular label you wish to print on, including total lines available for print, how many lines you wish to print on, and how many characters across the label. A very useful and well-done program. Highly recommended.-JL

Word Processors

QUICK BROWN FOX, $65 cartridge from Quick Brown Fox.

Current ad claims "more features than WORDSTAR"; If you believe that, I'd like to talk to you about a bridge I have for sale. Alters on-screen text to an unpleasant wider-than-tall form, and only allows about 15 character lines on entry. Re-editing is cumbersome. JAS reports the manual is well done, and that it isn't a bad product for the price. Personally, I've seen better, and for less. Not recommended.-JS

RAPIDWRITER, $4Ø cassette from H.D. Mfg., Inc. For VIC with 8K expander.
See review under 64 Business Reviews: Word Processors.

TOTL.TEXT 2.5, $4Ø tape from Totl.Software.
See review under 64 Business Reviews: Word Processors.

VIC FURNITURE REVIEWS

COMMODORE CASE, about $12Ø from Computer Case Company.
See under 64 Furniture Reviews.

VIC GAME REVIEWS

Cassette:

ADVENTURE PACK I, $15 from Victory Software. Adventure game.

REVIEW #1: It's truly an adventure, really stretching your mind. Definitely not a fast action game; instructions give average solving time as 6 hours. Instructions need more detail; they don't tell you what's really going on. If you have time and enjoy this type of adventure, this is for you.-David Lolling

REVIEW #2: All adventures challenging. My favorite is "Big Bad Wolf".-Kent Gardner

ADVENTURE PAK II, $15 from Victory Software. Adventure game.

REVIEW #1: Contains 3 small adventure games. As in GRAVE ROBBERS, vocabulary was too small. (I'm just spoiled by the Scott Adams Adventure Series.) Considering the price for three games, I would recommend this package.-JL

REVIEW #2: It would be a very good game, except you can't understand the instructions, and they don't tell you nearly all the commands.-Chris Werth

ANNIHILATOR, $20 from Victory Software. Joystick required.

REVIEW #1: A 'DEFENDER' (tm) type game in which you maneuver a space ship above a planet's terrain, while trying to shoot and or dodge approaching enemies. Enemies include 4 kinds of spaceships, and an asteroid (the most difficult to destroy). Obtain additional fuel by docking with a fuel ship. Written in machine language; graphics and sound are exceptional. The tragic (and fatal) flaw is with the joystick implementation; it was very awkward to use, going right or left. It's a shame, because the game has great potential. Until the joystick problems are fixed, I would not recommend this game.-JL

REVIEW #2: Has plenty of fast action. This game is a challenge; it lacked better instructions. Controls are hard to handle at first. Recommended for those who like action, but don't mind the control difficulty.-David Lolling

REVIEW #3: Excellent game! This one is my favorite, with great sound and graphics, good use of color, and a lot of action and excitement. If you like space games, this one is the best. I recommend it.-Chris Werth

REVIEW #4: Best "DEFENDER" for VIC I have seen.-Kent Gardner

COSMIC DEBRIS, $15 from Victory Software. Joystick optional.

REVIEW #1: You move your gun along the bottom row, using joystick or keyboard, to shoot descending enemy ships. Has excellent graphics and sound. Written in machine language; program execution is very smooth and as rapid as you could imagine. For the price, highly recommended.-JL

REVIEW #2: The game is easy to understand and has a simple plot. I recommend it for kids between the ages of 6 and 12.-Carrie Betzelberger, age 14

REVIEW #3: Good game with nice sound and graphics. I liked it, but it's not very exciting.-Chris Werth

GET FOUR, from Victory Software.

REVIEW #1: A take-off on the game SLIDE FIVE. Has four levels of play. Not too challenging. Okay for kids.-Larry Woolard

REVIEW #2: Fun game. Can be played with another person or the computer. Is very much like CONNECT FOUR (a board type game).-Chris Werth

GRAVE ROBBERS, $14 from Victory Software. Adventure game.

REVIEW #1: As the first graphic adventure game I had seen for VIC, naturally I was quite excited at first. If the adventure had only been as good

as the graphics! Vocabulary was too limited, making the game quite frustrating. Nice concept; I realize the VIC limitations, but this one I wouldn't recommend.-JL

REVIEW #2: Good adventure game with limited graphics. Over 6 hours invested; not done yet.-Kent Gardner

REVIEW #3: It is just like ADVENTURE PACK I, but with only 1 game and you don't get all the instructions.-Chris Werth

KONGO KONG, $20 from Victory Software. Joystick optional.

REVIEW #1: Very good copy of ATARI DONKEY KONG. Control man on inclined walkway with joystick.-Kent Gardner

REVIEW #2: Very good game, especially the graphics. I recommend this game. It also has good sound. [In machine-language].-Chris Werth

LUDWIG'S LEMON LASERS, $15 from Victory Software.

REVIEW #1: Shoot the invading lemons! Excellent use of classical music, fast smooth action, and realistic colors. Like most such games, it starts slow and speeds up, and more invaders join the fray the longer you survive. Warns as they close in. Automatic firing saves your thumb. It's all so cute, that the usual blood and gore theme is thankfully missing. Our trak ball (see review under 64 Hardware), doubled scores easily. Another nifty option is two players at once, with lemons and shots going in two directions simultaneously. Jamie, age 7, likes LUDWIG'S a lot. (He's been playing all night!) Recommended-JS

REVIEW #2: Fairly easy game. Will get old in a hurry. Would be good for young children, but not for anyone over about 10.-Larry Woolard

MANCALA, from Victory Software.

No instructions included; could not play.-Kent Gardner

MAZE, $13 from Victory Software. Joystick optional. Maze game.

A 3-D maze game in which the goal is to earn as few points as possible. The more steps you take in the maze, the more points you accumulate. By pressing the shoot button, you can see an overview of the maze. The screen replots very fast as you move through the maze, which means no annoying delays. Recommended for maze lovers.-JL

NIGHT RIDER, $13 from Victory Software. Joystick optional.

REVIEW #1: Night Rider is a driving game similar to COMMODORE'S 'Midnight Drive'. You press 'B' to turn left, 'N' to turn right, 'SHIFT' to accelerate. A very unexciting game; I would not recommend this one.-JL

REVIEW #2: Good simulation of ATARI NIGHT DRIVER. Control car speeding on race track, using joystick. Variable speed sets difficulty.-Kent Gardner

SPIDERS OF MARS Update, $40 from UMI.

Excellent VIC game. Various bugs attack your bug, shooting, leaving fly specks (mines), or contact, all of which are fatal. Smooth hi-res graphics. Lots of color, and good music. Still a killing game, but the use of bugs makes it seem less serious, more like a target practice.-JS

STREET SWEEPERS, $15 from Victory Software. Joystick.

A PAC-MAN (tm) type game. You move your 'man' through the maze and try to avoid being destroyed by a single nemesis. Has four versions to choose from. You must hold joystick in direction you want to go. In contrast to PACMAN, your man stops if you release the joystick, your 'man' stops, unless you run into a wall.) A different maze is generated for each game. Graphic use and sound add to the fun. Moderately recommended for children and pre-teens.-JL

TREASURES OF THE BAT CAVE, $15 from Victory Software. Joystick optional.

REVIEW #1: Another 3-D maze game with a different twist. Use the joystick to maneuver through the maze to pick up gold pieces. When a bat attacks, the joystick is a gun sight to shoot the bat. Three bites and the game is over. For a maze overview, press the shoot button. Recommended for maze lovers.-JL

REVIEW #2: 3-D maze game easily mastered. Boring for a 13 year old after a few hours.-Kent Gardner

REVIEW #3: A neat game. You see a maze as if you were walking around in it, not from a top view. Hard to understand, and get the hang of at first, but gets very fun.-Chris Werth

TREK, from Victory Software.

Very good STAR TREK type game. Choices include Warp, Torpedoes, Energy, Map, and Scan.-Kent Gardner

VICTORY CASINO, $10 from Victory Software.

REVIEW #1: Contains 3 gambling games. Introduction gave very nice instructions. A 5 minute time limit lets you see how much money you can win/lose in that time period. Time limit was more of a nuisance than an excitement builder. Not a bad kid game for the price. However, I wouldn't recommend it.-JL

REVIEW #2: Good game. It only lacks graphics or pictures.-Chris Werth

YAHTZEE, from DES. For 64 or VIC with cassette/disk. See 64 Game Reviews.

Cartridges:

APPLE PANIC, $45 from Creative Software. Requires joystick.

An excellent game from Creative Software and Borderbund for VIC. Object is same as APPLE PANIC on Apple; miner must chop holes in 5 levels of brick floors to capture and destory the meanies. Start with 3 and progress to 7 red meanies after you; then encounter roaming green crabs. After a hole is dug, a meanie will fall into the hole. You must dig him out and watch him drop to a lower level to score points. A neat trick is to dig several holes above each other so that it drops through several levels at once. It takes thought as well as quick reaction to win this game, but as with most arcade games, you never win in the end. Though the price is steep, I highly recommend it.-JO

CHOPLIFTER, by Tom Griner; $45 from Creative Software. Requires Joystick.

REVIEW #1: One of the best VIC cartridges on the market today. This game has a twist. Object is to rescue and return your prisoners who are being held captive in prison block houses on the other side of the border. With 3 helicopters, you must try to rescue 64 prisoners of war while dodging tanks, planes, and heat sinking missiles [satellites]. GREAT animation, sound, and graphics. Even the 'cover' of the program is fun to watch! Highly recommended.-JO

REVIEW #2: Each raid begins and ends at a friendly base, across a fence from enemy territory. Of the defenders, satellites are easily shot and try to ram you, tanks can only shoot part-way up (most threatening when you're on the ground), and jets are most dangerous as they drop bombs. To initiate a rescue, land chopper on a POW hut, then park it nearby. Prisoners pour into your chopper and defenders try to destroy you and any stragglers. You can fly further into enemy territory to save up to 16 prisoners. Has excellent graphics, especially hi-res 3D effects like perspective changes in passing border fence. Colors are also pleasant, but less developed than the designs. Has realistic sounds of bullets, bombs, and chopper blades. Moreover, the social goal is far better than most. Highly recommended.-JS, assisted by Jamie, age 7

REVIEW #3: A version of the Apple game. Some of the best graphics I've ever seen in a VIC game: very smooth, backround stars seem to move in 3-D, and hostages run after chopper waving at it. It really shows off the VIC!-JOH

GRIDRUNNER, $40 from HES. Requires joystick.

This fast arcade game is like CENTIPEDE played in space. Your ship moves about in the lower third of a matrix type display. You must shoot at a centipede-like creature and its leftover pods. Also out to get you are X and Y zappers who shoot along horizontal and vertical lines within the grid. This fast action game should please most game players. Recommended.-JOH

RIVER RESCUE, $40 from Thorn EMI Video. Requires joystick.

One of the first cartridges from this newcomer to VIC software. You pilot your boat down the river avoiding or shooting alligators, empty canoes, and logs, while occasionally docking to pick up lost explorers to take them to the river hospital. A good game with better than average graphics. Recommended.-JOH

SEAWOLF, $30 from Commodore. Requires paddles.

Another Bally/Midway arcade game. Although this game copies the arcade version closely, I found it to get boring very quickly. Mainly for 2 players, the object is to bomb enemy ships from your submarine at the bottom of the screen. The one good thing I liked was that it allows both players to compete against each other at the same time, a feature not often seen in VIC games.-JOH

FOX 20:™ The magazine for *VIC-20 users

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FOX 20 will provide you, each month, with 5 or more ready-to-run programs on cassette - exciting, imaginative game, educational, and utility programs for all VIC memory configurations. In addition, you will receive Foxtales, an informative Video Newsletter, on Side 2. Novice and pro alike, **FOX 20** is the magazine for you. Be a sly little fox for only $43 a year - Subscribe to:

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VIC HARDWARE REVIEWS:

Expansion Memory Equipment

CARDBOARD/3, $30 from Cardco, Inc. Fused 3 slot expander for VIC.
Exposed board has no enable/disable or reset switches. Must turn off computer before plugging it in, then install support screws. Memory addresses may not conflict. Simple but sizeable manual; it shows how to move screen, and lists some cartridges usable with it. A 6-slot version, CARDBOARD 6, is sai d to have enable/disable (reset) dip switches and let bus to be separated from VIC.-JS

Interfaces

SMART ASCII INTERFACE, $64 from Midwest Micro Associates. For VIC or 64.
See under 64 Hardware Reviews.

Other Equipment

STARFIGHTER JOYSTICK, $15 from Suncom, Inc. Joystick. For VIC or 64.
See under 64 Hardware Reviews: Other Equipment.

TRAKBALL, $50 from Wico. Combination joystick/paddles. For VIC or 64.
See under 64 Hardware Reviews: Other Equipment.

VIDEO COMBO CARTRIDGE, $250-300 from Quantum Data. 80-column adapter.
"I've got a little good news and a lot of bad news. First the good news. The VIDEO COMBO BOARD has 80 columns and 16K of user memory, as advertised. So much for the good news; now the bad news. It has black and white video output, which is just great for a color computer like the VIC. The 7"x5" board is much too large to fit in my Arfon MICRO EXPANSION chassis. It was quite "unfriendly" to use. First you had to power up the VIC with 22 columns, then do a SYS command and transfer the video to the back of the new board. The top line was moving and so blurry that I couldn't read it. It was also very slow to display letters you typed in. Needless to say, I sent mine back. Not recommended."-JL

VIDEO GAME REPLACEMENT SWITCH, $14 from the Cable Works.
For those of you having a lot of interference in your TV picture with the VIC. It's a video A/B switch with the appropriate adapters for use with a video game (or VIC). Greatly improves picture quality when used with a VIC.-JOH

VIC LANGUAGE REVIEWS

VANILLA PILOT, $30 from Tamarack Software.
See review under Computer Language Reviews.

VIC MAGAZINE REVIEWS

VIXEL #3, $15 from The Code Works.
This has just arrived and will be reviewed next issue.-ES

VIC MODEM REVIEWS:

Software Packages

TERMINAL-40, $30 from Midwest Micro Associates. Modem software program.

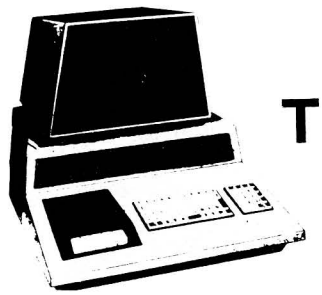
REVIEW #1: A machine language program that tytransform the VIC-20 with an 8K expander into a forty-column RS-232 terminal. All of the teatures that can possibly be changed, such as baud rate, number of stop bits, full or half duplex, etc., are selectable in the program. The forty column display is done entirely in software and is unbelievably. The author of this program had a good imagination when it cam to designing the ASCII character set in blocks of 3 dots by 6 dots. When I first saw this program advertised, and the ad said the characters were defined in a 3 x 6 matrix, I sat down and tried to do this myself on a sheet of graph paper. I was able to come up with a reasonable representation of most of the standard uppercase characters, but he didn't have the same mental limitation that I had. To say the least, I'm impressed! The program also offers smooth scrooling of the display and supports output to the VIC-1515 printer. I do not have the VIC printer, so I can't comment on the results of a screen dump. After seeing the excellent performance of the rest of this program, I'm sure you won't be disapponted. This is the kind of software that I have been waiting for. Maybe the surge of programs written for the VIC recently that were thrown together for the sole purpose of making a quick profit in a market that was virtually untapped will become a thing of the past. The author of this program has shown that good programs can be written for the VIC, and in fact, are being written. As far as I'm concerned, TERMINAL-40 will by my standard for judging the value of any future programs for the VIC.-Steve Garmon in Hardcopy

REVIEW #2: Steve is RIGHT ON! I have tried TERMINAL-40 on our PRIME 550 at work. Besides an 8K minimum expansion, it required an RS-232 interface... We took it up to 1200 baud and saw beautiful trouble free operation. The screen scroll impressed everyone who saw it and the input allows you to store your terminal transaction in part or in whole within the limits of the VIC-20 input buffer, so that the screen can be re-read any number of times after communications sign off or even during communicaions. Perfect for training sessions and for schools that can adopt this feature. The Commodore 64 version is quite similar with the added advantage of a much larger input buffer.-John Walker in Hardcopy

VIC MUSIC REVIEWS

VIC MUSIC COMPOSER, $40 from Thorn EMI Video. Requires joystick.

This cartridge allows everyone from beginners to musicians to program the vic to play 3-voice music pieces. Entry of music is made very simple. Just select a voice, key and time signature and start entering music. Music is entered by moving the cursor over the note you wish to place on the stave, hitting RETURN, and then just using the cursor controls to place the music anywhere you want it on the staff. Very easy to enter music, and very interesting results. Also has excellent graphics. My only complaint is a small bug which doesn't leave any pause between the notes you play. Recommended.-JOH



THE PAPER ARTICLES

Feature Article:
RALPH WRITES

(Where) RALPH (Usually) WRITES

We received lots of articles this time, but it would help if they could be sent to Ralph directly. That way he gets more time to do his editing. Over Christmas our existing system bombed. We didn't get the articles we had received delivered to Ralph, and he didn't get his articles here from New York. We'll be back on track next time, and hope you'll enjoy this month's offerings.-ED

Feature Article:
BASIC/BOOK

CBM Professional Computer Guide Errata

compiled by Ellen Strasma

Our thanks go to Keith Peterson of Commodore, Alan Ackerman of Image Software, Clark Stewart, Max Taylor, and all who called us with corrections to the CBM or PET Guides. Any corrections from below would have different page numbers in the PET Personal Computer Guide; a later issue may carry more PET errata.

PAGE	CORRECTIONS TO THE CBM PROFESSIONAL COMPUTER GUIDE
x	Address for James and Ellen Strasma should read: Lincoln College, Lincoln, IL 62656 USA Eliminate the chapter 8 program ASCII.FIX, on the HELP Disk. The program BAR GRAPH 2.4 was written by John Easton. Chuan Chee's program has been updated to CBM4032 V3.
xi	Change program name TOKER to EATER and move it up to the position between DRAW and MAIL LIST 4040.
2	The second line of the listing should read: [space]7167 BYTES FREE
3	The second line of the first listing should read: [space]15359 bytes free
10	Text line 12 should read: "language, COBOL, is newly available as a free upgrade."
11	In Figure 1-7, reverse the labels for the SuperPET memory protect switch and SuperPET processor select switch.
19	In the "Before HOME" illustration, add the cursor symbol where the arrow points in line 1040, following "qt=0". In the "After HOME" illustration, remove the cursor symbol from line 1040, and place it in front of the line "0 qt-qt+a".
28	Line two of the first paragraph after "The Disk Drives" should read "...the former CBM 2040; and the new CBM 8250...".
37	The last sentence of the first paragraph should read: "The CBM 8023P uses both tractor and friction feed."
40	In Figure 1-27, the lower right-hand label should just read: "CBM Printer."

PAGE CORRECTIONS TO THE CBM PROFESSIONAL COMPUTER GUIDE

41 In Figure 1-28, the top right-hand label should read: "Floppy disk drive"; the phrase "Model 2022 or 2023" in the lower right-hand label should be erased.

44 Step 13 should begin: "If the paper is set correctly,...".

55 First 2 examples should be swapped
Line 17 should read: "n is a number or numeric equation".

56 In Table 2-1, the symbols in the fourth column should be changed to:
Cursor Down.....
Cursor Up.....
Cursor Right.....
Cursor Left.....

58 In the first listing, add the line: 50 end.

59 Line 20 of both listings should read: 20 : print "a";.
The third sentence of the last paragraph should read: "The screen should rapidly fill up with 1600 a's beginning...".

60 In the first listing, add two lines: ready. and a cursor symbol below the "r".

61 Line 20 of the second listing should read: 20 : print "a";.

64 In the third illustration, the phrase to the right of the arrow should read: "Press RECORD and then PLAY on cassette 1".

67 The next to last paragraph should change the word "COPY" to lower case.

75 After the illustration "verify"*",8", add the sentence: (In this case, the disk drive activity light stays off.)

78 In the second line (last illustration), add a long, left-pointing arrow, followed by: (Note that this statement does NOT end with a semi-colon)

91 In the first listing, the answer is: 6.2831853 (leave off the "1").

108 The third paragraph-sentence should read 'string operands like A$ and B$.'
In Table 4-3, correct the third line to: 0 AND 1=0.
Add sentence at the bottom of the chart: Note: Commodore uses -1 as true.

114 In Table 4-4, column 3, add ds$ directly below ds; erase ti$ from column 6 (directly below reC), and move it to column 7, directly below ti.

116 Line 200 of the second and third listings should have no break between products and shopping....
Line 90 of the next to last listing should read: 90 rem x and y need to be initialized separately for later use (don't break to the next line).

117 In line 90 of the first listing, the words the and chapter should be on the same line.

119 The second sentence should read: "This generates an eleven-element array."

122 In the second listing, line 20 should read: 20 for i=0 to 99 step 1.

129 Line 40 of the first listing should read: 40 if cc$<>"m" then in=0.

133 Line 10 at bottom should read: 10 input a$,a%,a.

135 Line 20 of the fourth listing should read: 20 if a$<>"x" then goto 10.

146 The last line on the page should read: n$=12345 <---No space inserted.

152 TO index in middle of page should be 8*20=160

158 Add a SPACE to the start of line 1
In line 2, Move TAB after word "pet" and SPACE there to where TAB was.
3 lines later, Change '...the words "my" and "pet,"' to '...the words "pet" and "bites",'
In the next line, "4" should be "7"
4 lines later, eliminate the duplicate "TAB CLEAR clears a TAB..." paragraph.

161 The bottom illustration should show 80 columns across, as the one above.

164 In the first listing, add the line: 130 : print c$.

165 The fourth line of the first listing should read: goto 110 (not 100).

167 In the next to last listing, add ";, so that it reads: 90 ?"hit a key, or <return> to end";.

170 In line 11, delete reference to lines "250, 260,"

PAGE CORRECTIONS TO THE CBM PROFESSIONAL COMPUTER GUIDE

173 Line 140 of Figure 5-2 should read: if m%=4 or m%=6 or m%=9 or m%=11 thend%=30

178 In Figure 5-3, line 8060 should eliminate the second first in the rem statement; the line following 8130 should be renumbered to 8140.

182 In Figure 5-4, line 1010 should read: 1010 print tab(15);?????????

199 The program in Figure 5-7 may fail sometimes...

213 The second POKE (for 9-inch displays) should be 59468,12 (not 49568,12).

214 In Figure 5-9, item in line 2040 should read then; of in line 2120 should read if; the i= in line 3030 should read then i=.

216 Under "Accessing the Clock", the second text line should only have 2 "m"s, reading...the time in hhmmss format.

217 In the top box, the line "Jiffy = 1" should read Second = 1.

218 Line 50 of the first listing should read: 50 : : print:print chr$(19);...ma5

220 Line 180 of Figure 5-11 should read: 180 : : poke 59464,note:rem...???

238 In second to last paragraph, "1 through 20" should be "1 through 10"

252 In illustration one, Record no. 9's Sequential sector no. should be 5 (not 6).

256 Line 50 of the third listing should read: 50 open 1,8,7,"1:"+m$"+",w".

270 Add the following line between record 2 and record 4 in the second listing: record 3 107 108 109 110 201 202 203 204

274 Delete last paragraph.

279 Line 520 at the bottom should read: dopen#1,d(dr),(na$),l(tl) on u(du).

313 Add note below the first listing: (On the 2022 Printer, line 20 should read: 20 pR6,18).

328 Add the following phrase to the first sentence of the second paragraph under "Bulletin Board Systems": "...bulletin board in Toronto, Ontario, Canada (during non-business hours EST, please)."

338 In paragraph 4, "Figure 8-3" should be "Figure 8-2".

340-1 In the last line of page 340 and the first two lines of 341, reverse the references to "decremented (make smaller)" and "incremented (make larger)."

342 In the string variable format illustration, the words High and Low should be reversed for bytes 4 and 5.

347 81911 (below the Array Area's third "down arrow") should be: 8191.

368 The third line from the bottom of the page should read: "September 1978."

380 AND keyword omitted. Explained on pages 107-108.

404 NOT keyword omitted. Explained on pages 107-108.

418 The explanation under ATN should show the range as -PI/2 to PI/2.
Second example should be "?180/3.14159265*atn(a)"

423 The first example under RIGHT$ should read: right$("arg",2).

424 In line 6, ">=" should be ">".

436 In the ninth line from the top, reeenter should be spelled re-enter.

444 The last sentence of the ILLEGAL TRACK AND SECTOR explanation should read: "Unless you are using random access files or a backup fails, you should...".

445 After the second text line, add: This message is also returned if the error channel is read (that is, via DS$) before any other disk command is given after power-up. This is an easy way to determine which DOS is in use.

449+ Change the keyboard matrix graphic/text columns to match those in the PET Personal Computer Guide - 3rd. edition. They are totally wrong as printed.

453 The PET ASCII Text character for Decimal Number 255 should be the same as in CHR$(222) on page 452.

484 $E000 in third line from the bottom should be $E754; E798 in the second line from the bottom should be $E78F.

512 "TAB function" should read: 132, 425.

Feature Article:
HARDWARE

Selecting a Microprocessor

by Robert E. Mergy

I have good news: the 6502 is taking on new frontiers in robotics as the processor used to control a single axis (or joint). Rockwell (makers of AIM 65) has released a new family of microprocessors called the R6500/xx. Made of several chips in a single package, these are aimed at single chip microprocessor applications. A typical chip includes a microprocessor, I/O port, RAM, ROM and even a serial port. In dedicated applications, both the program and memory required are typically small, unless the program needs a lot of outside input.

More good news is Rockwell's release of the R65C02. This is a CMOS pin-compatible 6502. It is software compatible with other 6502's, plus has 12 additional instructions and 2 new address modes. New instructions are:

BBR	branch on bit reset	BBS	branch on bit set
BRA	branch always	PHX	push X register on stack
PHY	push Y register on stack	PLX	pull X register from stakc
PLY	pull Y register from stack	RMB	reset memory bit
SMB	set memory bit	STZ	store zero
TRB	test and reset bits	TSB	test and set bits

The new address modes deal with previous instructions, with additional addressing modes. The instructions affected are ADC, AND, BIT, CMP, DEC, EOR, INC, JMP, LDA, ORA, and STA. This puts a lot of new power into the 6502 machine. [Eastern House Software now offers a MAE assembler version for the R65C02-ED]

Other microprocessors on the front line include the 8085, 8086, 8087, 8051, 8048 and others from Intel. Next, are the Zilog processors (the Z8, Z80, and Z8000); these are offered with speeds up to 8MHz. Then there is the Motorola 6800 and 68000. Texas Instruments has the 7000 series of single chip micro's.

We recently took a long hard look at many microprocessors on the market. Manufacturers' reps told us why their product was better than others. Then we told them our general application and what we felt we needed. The response was always the same: "this will work" and a part number, or "Ours has this op-code and can run 4MHz; ours has four times as many commands". What we learned from all those data sheets is that all microprocessors can do the job. The question became, "Which machine best fits our application?"

We began with a list of tasks (what we wanted, what we had to have, what would be nice). Wants and needs were then converted into lists of instructions that would be used most, which became our bench mark to evaluate microprocessors. After comparing chips, only two survived - the Intel 8051 and the Rockwell R6511Q. Intel won, because of the EPROM version of the 8051 (8751). If price had been important, Rockwell would have won. The price difference was $135.

Your decision rests entirely on what do you want to do and what you are willing to accept. Once you do the development work, it's too late to change. Most microprocessors will work in most applications; one or two will work best. Most programmers choose a machine they feel most comfortable with. To sum up, the best microprocessor is the one that best fills the task you have defined, using your own bench mark for your task. The best microcomputer is the one with the best support in both hardware and software. The microprocessor used in that machine makes no difference.

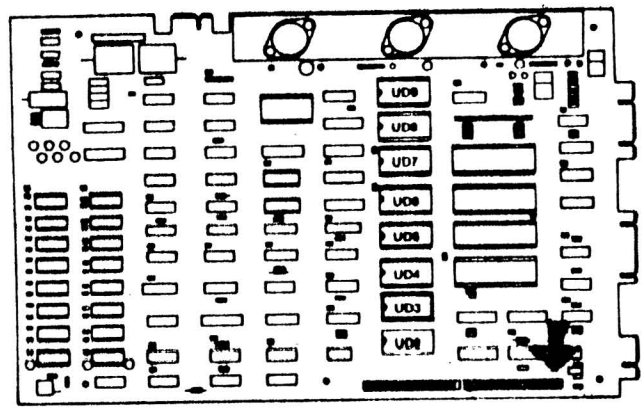
Feature Article:
HARDWARE

Additional Decoding

by Jim Halsey

Commodore had an excellent design in their 2001 series computers, keeping it fairly consistent through REV E (evidently the last) of Assembly Number 320351. The major differences were in enhanced timing circuits. Each came with 4K blocks of memory per select line. This means that to use the rest of the memory space above the screen, you have to add decoding to keep from confusing your additions with the screen. This could mean adding chips. However, Commodore already provides a spare AND gate. If you look at the bottom of your circuit board, you'll find the trace from pin 3, IC F1 (a 74ls08) is cut. This is a 'free' AND gate. Pins 1 and 2 are the inputs, and pin 3 is the output. To use this gate, connect one input to an address or select line, then connect the appropriate I/O select line to the other input.

To use the new 2 and 4K x 8 quasi-static RAM's in a ROM socket, tie the R/W line to pin 22, on memory expansion connector J9. It has an arrow pointing to it in fig. 1, for the above-mentioned boards. On other models, follow the R/W line from the processor (pin 34 on a 6502) or from pin 3 of 4116 memory chips to a spot you can reach with a connection.



Add a BELL to the 2001 Computer

If you want a bell for the 2001 like ones in the FAT 40 and 8032, you can implement one in most machines with very little trouble! First, determine which circuit board you have. Most model 2001 boards were Revision E, with an 74LS08 chip at F1 and an unused 'AND' gate at pins 1, 2, and 3. Other REVs have traces to all three pins, but the trace from pin 3 has been cut. You can also cut the traces near pins 1 and 2. If the trace from pin 3 hasn't been cut, DO NOT INSTALL THIS MODIFICATION!.

All you need is a couple of wires and a piezo speaker (Radio Shack has one for $3 - part #273-060). Either remove the amplifier and case (much easier), or change transistors to reverse signal polarity. There's usually enough volume without the amplifier.

On all boards, 'tack solder' a wire from pin 19 of the 6522 (IC C5) to pin 1 IC F1, then solder a wire from pin 9, IC C7, to pin 2, IC F1. These two pins of F1 (1 & 2) are input pins of the 'AND' gate. Then solder a wire from pin 3, IC F1, to the center of the circular portion of the speaker. Also solder a ground wire from the speaker's outer edge to ground on the Commodore circuit board. If you use silicon cement, you can attach the speaker to the top of IC F1. This won't harm it, and keeps the leads short.

EXECOM 80 column board owners will hear the 'bell' just as on the 4032 and 8032 computers, except higher pitched. Others may use it via CB2 sound, (described in many other articles.)

Feature Article:
MACHINE LANGUAGE

Machine Language Compare

by Arthur Cochrane

SUMMARY

This article presents a machine-language program that compares two machine language programs on disk and prints out addresses and bytes that differ. The program runs on Upgrade BASIC and BASIC 4.0, and may be reassembled for the VIC or 64 and BASIC 1.0 PETs.

I wanted to compare machine-language programs for different BASICs to determine where they differ, so that you can possibly patch the program to make it smart enough to work on both BASICs. Then you would not need two versions.

The BASIC program inputs the program names and drive numbers and opens the two programs as PRG files for reading. Next, it reads and prints the load addresses for the two programs. If the load addresses are not the same, extra bytes are read from one file to make the addresses the same. Then control is passed to machine-language.

The machine language program gets one character at a time from each file and compares them. If they are equal, the address is incremented and the next bytes are read. If the bytes are not equal, the address and bytes in HEX, and their ASCII values are output, via file 3. The output device, opened by BASIC, can be the screen or a printer. The program continues inputing bytes until it reaches an "end of file".

Listing 1 is the BASIC program. It POKEs the machine language program into the first cassette buffer. Listing 2 is the source listing for the machine language program. This program uses the jump table common to all CBM BASICs to do its I/O. Listing 3 is machine language hex dump. Listing 4 shows a sample output of two machine language versions of the game SPACE INVADERS, one in Upgrade BASIC and one in BASIC 4.0.

BIOGRAPHICAL NOTE

Arthur is a 1979 graduate of the University of South Carolina, with a Master of Science in electrical and computer engineering. Most of his PET programming is in assembler using MAE. His projects have included major modifications to Micromon and Basic-Aid. His home system is a Skinny 4032 PET, 4040 disk, and Epson MX-80 F/T printer.

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Listing 1 - BASIC Program

```
100 REM COMPARE.BAS
110 GOSUB 450:REM POKE MACHINE CODE
120 DIM A%(3),A$(3)
130 OPEN 15,8,15
140 INPUT "NAME OF FILE A";A$:INPUT "DRIVE # OF FILE A  0[ 3 LEFT]";A1$
150 INPUT "NAME OF FILE B";B$:INPUT "DRIVE # OF FILE B  0[ 3 LEFT]";B1$
160 A$=A1$+":"+A$ : B$=B1$+":"+B$
170 PRINT#15,"I"+A1$:PRINT#15,"I"+B1$
180 A2$=A$+",P,R":B2$=B$+",P,R"
190 OPEN 1,8,8,A2$:GOSUB 420
200 OPEN 2,8,9,B2$:GOSUB 420
210 OPEN 3,4:REM >>>>>> 3=SCREEN, 4=PRINTER <<<<<<
220 GET#1,A$(0):GET#1,A$(1)
230 GET#2,A$(2):GET#2,A$(3)
240 FOR I=0 TO 3:IF A$(I)="" THEN A$(I)=CHR$(0)
250 A%(I)=ASC(A$(I)):NEXT
260 A=A%(1)*256+A%(0):PRINT#3,"FILE A IS ";A$;" AND STARTS AT $";
270 POKE 251,A%(0):POKE 252,A%(1):SYS 634+3
280 B=A%(3)*256+A%(2):PRINT#3,"FILE B IS ";B$;" AND STARTS AT $";
290 POKE 251,A%(2):POKE 252,A%(3):SYS 634+3
300 PRINT#3,"ADDRESS  A      B"
310 C=A-B
320 ON SGN(C)+2 GOSUB 360,400,380
330 SYS 634
340 PRINT#3
350 CLOSE 1:CLOSE 2:CLOSE 3:CLOSE 15:END
360 POKE 251,A%(2):POKE 252,A%(3)
370 FOR I=1 TO(-C):GET#1,C$:NEXT:RETURN
380 POKE 251,A%(0):POKE 252,A%(1)
390 FOR I=1 TO(C):GET#2,C$:NEXT:RETURN
400 POKE 251,A%(0):POKE 252,A%(1)
410 RETURN
420 INPUT#15,Z1,Z1$,Z2,Z3
430 IF Z1 THEN PRINT [RVS]DISK ERROR ;Z1$:CLOSE 15:STOP
440 RETURN
450 READ LO,HI:FOR I=LO TO HI:READ X:POKE I,X:NEXT:RETURN
470 DATA 634, 817
480 DATA 76,139,2,162,3,32,201,255,32,8,3,32,252,2,76,204
490 DATA 255,162,1,32,213,2,162,2,32,213,2,165,253,197,254,240
500 DATA 49,162,3,32,201,255,32,244,2,32,8,3,32,244,2,165
510 DATA 253,32,15,3,32,247,2,165,253,32,233,2,32,244,2,165
520 DATA 254,32,15,3,32,247,2,165,254,32,233,2,32,252,2,32
530 DATA 204,255,32,1,3,173,49,3,240,183,96,32,198,255,32,207
540 DATA 255,149,252,32,204,255,165,150,13,49,3,141,49,3,96,41
550 DATA 127,201,32,176,2,169,46,76,210,255,32,247,2,169,32,76
560 DATA 210,255,169,13,76,210,255,230,251,208,2,230,252,96,165,252
570 DATA 32,15,3,165,251,72,74,74,74,74,32,39,3,170,104,41
580 DATA 15,32,39,3,72,138,32,210,255,104,76,210,255,24,105,246
590 DATA 144,2,105,6,105,58,96,0
```

Listing 4 - Example Run on Two Programs

```
FILE A IS 0:SPACE INVADERS 2 AND STARTS AT $0401
FILE B IS 0:SPACE INVADERS 4 AND STARTS AT $0401
ADDRESS  A      B
  04CE  89 .  FF ?
  04CF  C3 C  B3 3
  0512  2E .  55 U
  0517  E6 &  E4 $
  0A52  31 1  58 X
  0A53  E6 &  E4 $
  0BA6  55 U  94 .
  1424  53 S  4E N
  1425  50 P  45 E
  1426  41 A  57 W
  1427  43 C  20
  1428  45 E  49 I
  1429  20    4E N
  142A  49 I  56 V
  142B  4E N  41 A
  142C  56 V  44 D
  142D  41 A  45 E
  142E  44 D  52 R
  142F  45 E  53 S
  1430  52 R  20
  1431  53 S  34 4
  1583  13 .  20
  1584  03 .  0D .
  1586  12 .  04 .
  1587  05 .  2E .
  1588  01 .  20
  158A  16 .  05 .
  158B  01 .  0D .
  158C  0E .  0D .
  158D  03 .  05 .
  158E  05 .  12 .
  158F  14 .  31 1
  1590  01 .  39 9
  1591  02 .  38 8
  1592  0C .  31 1
  1593  05 .  20
  19A6  31 1  58 X
  19A7  E6 &  E4 $
  1A0B  01 .  35 5
```

Listing 3 - Machine Language Hex Dump

```
:027A 4C 8B 02 A2 03 20 C9 FF
:0282 20 08 03 20 FC 02 4C CC
:028A FF A2 01 20 D5 02 A2 02
:0292 20 D5 02 A5 FD C5 FE F0
:029A 31 A2 03 20 C9 FF 20 F4
:02A2 02 20 08 03 20 F4 02 A5
:02AA FD 20 0F 03 20 F7 02 A5
:02B2 FD 20 E9 02 20 F4 02 A5
:02BA FE 20 0F 03 20 F7 02 A5
:02C2 FE 20 E9 02 20 FC 02 20
:02CA CC FF 20 01 03 AD 31 03
:02D2 F0 B7 60 20 C6 FF 20 CF
:02DA FF 95 FC 20 CC FF A5 96
:02E2 0D 31 03 8D 31 03 60 29
:02EA 7F C9 20 B0 02 A9 2E 4C
:02F2 D2 FF 20 F7 02 A9 20 4C
:02FA D2 FF A9 0D 4C D2 FF E6
:0302 FB D0 02 E6 FC 60 A5 FC
:030A 20 0F 03 A5 FB 48 4A 4A
:0312 4A 4A 20 27 03 AA 68 29
:031A 0F 20 27 03 48 8A 20 D2
:0322 FF 68 4C D2 FF 18 69 F6
:032A 90 02 69 06 69 3A 60 00
```

Listing 2 - Assembly Language Listing

```
                0030            .BA $027A           ;$033C on VIC & 64
                0060 ;
                0070 ; JUMP TABLE CALLS
                0080 ;
                0090 CHKIN      .DE $FFC6           ;TELL DEVICE TO TALK
                0100 CHKOUT     .DE $FFC9           ;TELL DEVICE TO LISTEN
                0110 CLRCHN     .DE $FFCC           ;UNTALK & UNLISTEN
                0120 RDT        .DE $FFCF           ;INPUT TO ACC
                0130 WRT        .DE $FFD2           ;OUTPUT ACC
                0140 ;
                0150 ;
                0160 STATUS     .DE $96             ;$90 ON VIC & 64
                0170 TMP0       .DE $FB             ;$C1  "  "  "  "
                0180 TMP2       .DE $FD             ;$C3  "  "  "  "
                0190 ;
027A- 4C 8B 02  0200 ENTER1     JMP LOOP
                0210 ;
027D- A2 03     0220 ENTER2     LDX #3              ;OUTPUT ADDRESS
027F- 20 C9 FF  0230            JSR CHKOUT
0282- 20 08 03  0240            JSR WROA
0285- 20 FC 02  0250            JSR CRLF
0288- 4C CC FF  0260            JMP CLRCHN
                0270 ;
028B- A2 01     0280 LOOP       LDX #1              ;GET BYTE FROM FILE#1
028D- 20 D5 02  0290            JSR GETONE
0290- A2 02     0300            LDX #2              ; "    "    "    " #2
0292- 20 D5 02  0310            JSR GETONE
0295- A5 FD     0320            LDA *TMP2           ;SEE IF ARE THE SAME
0297- C5 FE     0330            CMP *TMP2+1
0299- F0 31     0340            BEQ EQUAL
                0350
029B- A2 03     0360            LDX #3
029D- 20 C9 FF  0370            JSR CHKOUT
02A0- 20 F4 02  0380            JSR SPAC2
02A3- 20 08 03  0390            JSR WROA            ;OUTPUT BAD ADDRESS
02A6- 20 F4 02  0400            JSR SPAC2
02A9- A5 FD     0410            LDA *TMP2           ;OUTPUT ONE BYTE
02AB- 20 0F 03  0420            JSR WROB
02AE- 20 F7 02  0430            JSR SPACE
02B1- A5 FD     0440            LDA *TMP2           ;OUTPUT ASCII CHAR.
02B3- 20 E9 02  0450            JSR PRTASC
02B6- 20 F4 02  0460            JSR SPAC2
02B9- A5 FE     0470            LDA *TMP2+1         ;OUTPUT OTHER BYTE
02BB- 20 0F 03  0480            JSR WROB
02BE- 20 F7 02  0490            JSR SPACE
02C1- A5 FE     0500            LDA *TMP2+1         ;OUTPUT ASCII
02C3- 20 E9 02  0510            JSR PRTASC
02C6- 20 FC 02  0520            JSR CRLF
02C9- 20 CC FF  0530            JSR CLRCHN
                0540
02CC- 20 01 03  0550 EQUAL      JSR INCTMP          ;INCREMENT ADDRESS
02CF- AD 31 03  0560            LDA HOLD.ST
02D2- F0 B7     0570            BEQ LOOP
02D4- 60        0580            RTS
                0590
02D5- 20 C6 FF  0600 GETONE     JSR CHKIN
02D8- 20 CF FF  0610            JSR RDT             ;GET BYTE AND STORE IT
02DB- 95 FC     0620            STA *TMP2-1,X
02DD- 20 CC FF  0630            JSR CLRCHN
02E0- A5 96     0640            LDA *STATUS         ;IF ST<>0 THEN RETURN
02E2- 0D 31 03  0650            ORA HOLD.ST
02E5- 8D 31 03  0660            STA HOLD.ST
02E8- 60        0670            RTS
                0680
02E9- 29 7F     0690 PRTASC     AND #$7F            ;STRIP MSB
02EB- C9 20     0700            CMP #$20            ;SEE IF CONTROL CHAR
02ED- B0 02     0710            BCS OK
02EF- A9 2E     0720            LDA #'.             ;IF SO SUB A PERIOD
02F1- 4C D2 FF  0730 OK         JMP WRT
                0740 ;
                0750 ;
02F4- 20 F7 02  0760 SPAC2      JSR SPACE           ;OUTPUT 2 SPACES
02F7- A9 20     0770 SPACE      LDA #$20            ;OUTPUT 1 SPACE
02F9- 4C D2 FF  0780            JMP WRT
                0790 ;
02FC- A9 0D     0800 CRLF       LDA #$0D            ;OUTPUT A CR
02FE- 4C D2 FF  0810            JMP WRT
                0820 ;
                0830 ;INCREMENT(TMP0,TMP0+1) BY 1
                0840 ;
0301- E6 FB     0850 INCTMP     INC *TMP0
0303- D0 02     0860            BNE SETWR
0305- E6 FC     0870            INC *TMP0+1
0307- 60        0880 SETWR      RTS
                0890 ;
                0900 ;
                0910 ;WRITE ADR FROM TMP0 STORES
                0920 ;
0308- A5 FC     0930 WROA       LDA *TMP0+1
030A- 20 0F 03  0940            JSR WROB
030D- A5 FB     0950            LDA *TMP0
                0960 ;
                0970 ;WRITE BYTE --- A = BYTE
                0980 ;UNPACK BYTE DATA INTO TWO ASCII
                0990 ;CHARACTERS. A=BYTE; X,A=CHARS
                1000 ;
030F- 48        1010 WROB       PHA
0310- 4A        1020            LSR A
0311- 4A        1030            LSR A
0312- 4A        1040            LSR A
0313- 4A        1050            LSR A
0314- 20 27 03  1060            JSR ASCII           ;CONVERT HIGH NIBBLE
0317- AA        1070            TAX
0318- 68        1080            PLA
0319- 29 0F     1090            AND #%00001111
031B- 20 27 03  1100            JSR ASCII           ;CONVERT LOW NIBBLE
                1110 ;
                1120 ;WRITE 2 CHARS--X,A=CHARS
                1130 ;
031E- 48        1140 WRTWO      PHA
031F- 8A        1150            TXA
0320- 20 D2 FF  1160            JSR WRT
0323- 68        1170            PLA
0324- 4C D2 FF  1180            JMP WRT
                1190 ;
                1200 ; CONVERT NIBBLE IN A TO ASCII
                1210 ;
0327- 18        1220 ASCII      CLC
0328- 69 F6     1230            ADC #$F6            ;-10
032A- 90 02     1240            BCC ASC1
032C- 69 06     1250            ADC #$06            ;'F'-'A'+1
032E- 69 3A     1260 ASC1       ADC #$3A            ;'9'+1
0330- 60        1270            RTS
                1280 ;
0331- 00        1290 HOLD.ST    .BY 0
                1310            .EN
```

Feature Article:
QUME PRINTER

Qume Printer Plotting Routine

by Harold G. Elrod

In a recent issue, Jim Strasma asked for a program to plot on the Diablo. I have one that works on the Qume Sprint 45 quite well. I think it would work on Diablo as well, since I believe they have common commands. [Control codes may differ a bit for your particular daisy wheel printer. [For specific codes, see your printer manual.-ED]

The program works from the top-of-page down. I have only friction feed, and much reversing of the platen would cause paper transport difficulties. A little machine language program in the second cassette buffer scans each of seven arrays at every 1/48 inch down to find points to be plotted. BASIC would be impossibly slow; the ML routine is fast enough to keep the printer busy.

INSTRUCTIONS

Load the program from cassette. The printer should be on while making entries, and will print out labels and values as you go along. Here are the program prompts, with comments and the proper response to produce the sample output. Each response is executed by pressing <RETURN>.

1) IS VERTICAL SLASH ON SPACE BAR? My response: Y
   Comment: Some printwheels have the vertical slash as an "extra" on the space bar, and some have it located in standard position.
2) SYMBOL NO. 1 Choices: .+*XO
   Comments: A GET statement asks for seven successive symbols.
3) HOW MANY CURVES DO YOU WISH TO PLOT? Range is: 1-7. My response: 1
4) XLEAST AND XMAX? My response: 1,6
   Comment: Here one must select numbers which include the range of data, and which yield resonable intermediate labelling. There will be five evenly spaced divisions both vertically and horizontally.
5) YLEAST AND YMAX Same as above. My response: 2,1Ø
6) INPUT FIG. NO. and ORDINATE LABEL My response: FIG. 1 TEMPERATURE.
   Comment: The labels entered here will appear under the plot.
7) ABSCISSA LABEL? My response: TIME
8) READ OR TYPE IN DATA? My response: T
   Comment: One reads in DATA statements appended to the program. The data must consist of no. of pts., then X,Y values for each of the points.
9) HOW MANY DATA POINTS FOR CURVE NO. 1? My response: 3
   There must be at least three points for the plotting routine to function.
1Ø) I=1 X,Y My response: type over the X,Y the numbers 1.5,8.8 <RETURN>. Then successively, (1.6,3.6) and 5.6,7).
11) DO YOU WISH TO CORRECT ANY ENTRIES? My response: Y
12) ITEM NO.? My response: 4
13) X,Y? My response: 3,8.57
14) DO YOU WISH TO CORRECT ANY ENTRIES? My response: N
15) DO YOU WISH TO GENERATE A CURVE FROM THE GIVEN POINTS? (Y/N) Response:Y
   Comment: If the answer is "N", then the program either plots the points as given, or goes on to the next curve for which data is required.
16) APPROXIMATELY HOW MANY POINTS ON THE CURVE? My response: 5Ø
   Comment: A curve is generated by introducing a lot of intermediate points to give the impression of a fairly continuous curve.
17) WISH TO EXTRAPOLATE (LEFT), (RIGHT)? My response: N,Y
   Comment: Sometimes, in passing a curve through data points one wishes to continue to the boundaries of the graph. To do so, one demands extrapolation.

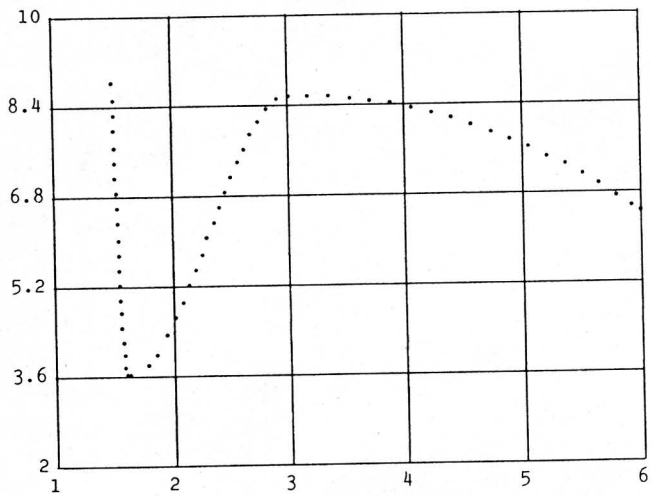

FIG. 1 TEMPERATURE*E 0 VS. TIME*E 0

DATA FOR PLOTS OF FIG. 1 TEMPERATURE VS. TIME

DATA FOR CURVE NO. 1 (SYMBOL = .)

ABSCISSA	ORDINATE
1.50E 0	8.80E 0
1.60E 0	3.60E 0
3.00E 0	8.57E 0
5.60E 0	7.00E 0

```
10 print"ume plot routine by"
20 print"h g elrod 61 nannahagan rd."
30 print"pleasantville, n.y. 10570"
90 pr$=chr$(124):input"is vertical slash on space bar";a$
91 if left$(a$,1)="y"then pr$=chr$(27)+chr$(32)
100 zz=120:open5,4:print#5,chr$(27);chr$(25);"i";
110 dn$=chr$(27)+"v"+""+"°"
120 up$=chr$(27)+"v"+"p"+""
130 dim h%(255,7),xp%(255,7)
140 print"3":print"choose five symbols by pressing appropriate keys in succession"
150 tk$(1)=dn$+"b"+"+"+up$+"b"
160 tk$(2)=dn$+"b"+"x"+up$+"b"
170 tk$(3)=dn$+"b"+"0"+up$+"b"
180 tk$(4)=dn$+"d"+"*"+up$+"d"
190 tk$(5)=dn$+"c"+"#"+up$+"c"
200 tk$(6)=dn$+"b"+"v"+up$+"b"
210 tk$(7)=dn$+"b"+"i"+up$+"b"
220 tt$="+x0*#vi"
230 print:fork=1to7:print"symbol no.";k;"=";
240 geta$:ifa$=""then240
250 t$(k)=a$:printa$
260 forp=1to7:ifa$=mid$(tt$,p,1)then t$(k)=tk$(p)
270 next
280 nextk
290 dim s(zz),t(zz),x(zz),y(zz),yp(zz),z(zz),dx(zz),dy(zz),r2(zz)
300 def fnt(p)=48+p-(p>9)*7:gosub560
310 print#5,chr$(12);chr$(27);"g"
320 qv$=chr$(27)+"l"+"0"+"1":qh$=chr$(27)+"e"+"0"+"5":print#5,qv$;qh$;
330 a=826:b=830:c=254:d=255:poke828,11 :kh=0:kv=0
340 forq=181to1step-1:pokeq,q
350 ifq>176 then380
360 ifkv=0thengosub1640
370 kv=kv+1:ifkv=3thenkv=0
380 ifkh=0then gosub1540
390 kh=kh+1:ifkh=36thenkh=0
400 for j=1tonc:pokea,0:pokeb,j
410 sysb:y=peek(a):ify>cthen 470
420 l=xp%(y/2,j):z%=l/100:l%=(l-100*z%)/10:d%=(l-10*l%-100*z%)*.6+.5
430 z$=chr$(fnt(z%)):x$=chr$(fnt(l%))
440 print#5,chr$(27);"c";z$;x$;
450 x$=chr$(64+d%):print#5,chr$(27);"h";".";"";x$;t$(j);
460 ify<dthen410
470 next:print#5:next
480 print#5,chr$(27);"e";1";"2";chr$(27);"1";"0";"8";
490 print#5,chr$(13);chr$(27);"h";".";"0";"3";chr$(27);"g";
500 print#5:fork=0to5:z%=16+k*10-len(px$(k))/2:x%=z%/10:y%=z%-10*x%
510 x$=chr$(fnt(x%)):y$=chr$(fnt(y%))
520 print#5,chr$(27);"c";x$;y$;px$(k);:next
530 print#5,chr$(13);chr$(10);chr$(10);tab(nx%);xx$
540 end
550 :
560 print:print:input"how many curves do you wish to plot  ===";nc$
570 nc=val(nc$):ifnc=0then560
580 print:print:input"xleast and xmax  ===";z1$,zm$
590 ifzm$=""orz1$=""then580
600 zm=val(zm$):z1=val(z1$):dx=zm-z1
610 print:print:input"yleast and ymax  ===";y1$,ym$
620 ifym$=""ory1$=""then610
630 ym=val(ym$):y1=val(y1$):dy=ym-y1
640 gosub1690
```

```
650 yy$="data for plots of "+y$+" vs. "+xz$:nn%=(84-len(yy$))/2
660 print#5,tab(nn%+3);yy$:fornk=1tonc
670 input"read or type in data (r/t)";a$:bj=0:if a$="r"then bj=1
680 print:print:print"how many data points (>2)":print"for curve no.";nk
690 ifbj=1thenread n:print"no. of points will be";n:goto710
700 input"   ===";n$:n=val(n$):ifn<3then680
710 for i = 1to n
720 print"i=";i;
730 if bj=1then read x$,y$:goto760
740 input"x,y    ,    =======";x$,y$
750 if x$=""ory$=""then720
760 x(i)=val(x$):y(i)=val(y$)
770 x(i)=x(i)+1e-20:y(i)=y(i)+1e-20
780 nexti
790 print:print:print"item     abscissa  ordinate "
800 print
810 p=1: for i=1ton-1
820 ifx(i)>x(i+1)thenx=x(i+1):y=y(i+1):x(i+1)=x(i):y(i+1)=y(i):y(i)=y:x(i)=x:p=0
830 next:ifp=othen810
840 for i = 1 to n
850 printi,x(i),y(i)
860 x(i)=x(i)+1e-20:y(i)=y(i)+1e-20
870 next
880 print"do you wish to correct any entries (y/n)?"
890 geta$:ifa$=""then890
900 if a$<>"y"then960
910 input"item no.   ===";i
920 input"x,y    ,    =======";x$,y$
930 ifx$=""ory$=""then910
940 x(i)=val(x$):y(i)=val(y$):ifi>nthenn=n+1
950 goto790
960 print#5,chr$(10);tab(28);"data for curve no.";nk;" (symbol = ";t$(nk);")"
970 print#5,tab(33);" abscissa     ordinate ":print#5
980 for i = 1 to n
990 q=fnb(x(i)):gosub1860:print#5,chr$(27);"c";"3";"3";q$;"e";fna(x(i));
1000 q=fnb(y(i)):gosub1860:print#5,chr$(27);"c";"4";"6";q$;"e";fna(y(i))
1010 tm=(y(i)-yl)/(ym-yl)*180+1:iftm>181ortm<1thentm=200
1020 h%(i,nk)=tm+.5
1030 tm=(x(i)-zl)*1200/(zm-zl)+390:iftm>1590ortm<390then tm=0
1040 xp%(i,nk)=tm+.5
1050 next i
1060 print:print "do you wish to generate a curve from the given points (y/n)?"
1070 input a$
1080 printa$:ifleft$(a$,1)<>"y"then 1520
1090 for j=1ton-1
1100 dx(j)=x(j+1)-x(j):dy(j)=y(j+1)-y(j):r2(j)=dx(j)^2+dy(j)^2:s(j)=dy(j)/dx(j)
1110 nextj
1120 for j=2ton-1
1130 yp(j)=(dy(j-1)*r2(j)+dy(j)*r2(j-1))/(dx(j-1)*r2(j)+dx(j)*r2(j-1))
1140 nextj
1150 s=s(1):t=s-yp(2):yp(1)=s+t
1160 ifs*t<0thenyp(1)=s+abs(s)*t/(abs(s)+abs(t))
1170 s=s(n-1):t=s-yp(n-1):yp(n)=s+t
1180 ifs*t<0thenyp(n)=s+abs(s)*t/(abs(s)+abs(t))
1190 print"approximately how many points on the curve?"
1200 input"   ===";m$
1210 if val(m$)=0then1190
1220 m=val(m$):m=int(m/1.4)
1230 rem form points
1240 print:print:print"wish to extrapolate (left),(right)?
1250 input"respond (y/n),(y/n)   ===";a$,b$
1260 ifa$=""orb$=""then1250
1270 lx=z1:ifa$<>"y"thenlx=x(1)
1280 mx=zm:ifb$<>"y"thenmx=x(n)
1290 k=1:kl=0:z(0)=lx:dd=dx/m:r=dy/dx:sl=yp(1)
1300 qx=dd/sqr(1+sl*sl/r/r):ifk=1thenqx=0
1310 z(k)=z(k-1)+qx:ql=qx:ifz(k)>=mxthenz(k)=mx:kl=1
1320 for j=ntolstep-1:ifx(j)>z(k)then next:ifj=0thenj=1
1330 if j=nthenj=n-1
1340 y0=y(j)+(z(k)-x(j))*s(j)
1350 d1=y(j)+yp(j)*(z(k)-x(j))-y0
1360 d2=y(j+1)+yp(j+1)*(z(k)-x(j+1))-y0
1370 d=d1*d2:ifd=0then t(k)=y0:goto1400
1380 ifd>0then t(k)=y0+d/(d1+d2)
1390 ifd<0thent(k)=y0+d*(2*z(k)-x(j)-x(j+1))/(d1-d2)/dx(j)
1400 ifk=1then1430
1410 dt=t(k)-t(k-1):ifabs(dt)>4*dd*r/3    thenqx=qx/2:goto1310
1420 sl=dt/ql
1430 k=k+1:ifkl=othen1300
1440 ifb$<>"y"thenifzm>mxthenk=k+1:z(k)=x(n):t(k)=y(n)
1450 for i=1tok
1460 tm=(z(i)-zl)*1200/(zm-zl)+390:iftm>1590ortm<390thentm=0
1470 xp%(i,nk)=tm+.5
1480 tm=(t(i)-yl)/(ym-yl)*180+1:iftm>181ortm<1thentm=200
1490 h%(i,nk)=tm
1500 next i
1510 print
1520 next nk
1530 return
1540 print#5,chr$(27);"e";"1";"2";
1550 jv=jv+1:z%=16-len(py$(jv-1)):x%=z%/10:y%=z%-10*x%
1560 x$=chr$(fnt(x%)):y$=chr$(fnt(y%))
1570 print#5,chr$(27);"c";x$;y$;:print#5,dn$;"a";py$(jv-1);up$;"a";
1580 print#5,chr$(27);"h";"°";"0";"8";
1590 print#5,chr$(27);"e";"0";"6";
1600 print#5,up$;"b";
1610 fork=1to 99:print#5,chr$(95);:next
1620 print#5,dn$;"b";
1630 print#5,qh$;:return
1640 for p=39to159step24
1650 l=p:z%=l/10:l=l-10*z%
1660 z$=chr$(fnt(z%)):x$=chr$(fnt(l))
1670 print#5,chr$(27);"c";z$;x$;pr$;
1680 nextp:return
1690 def fna(x)=int(log(abs(x))/log(10))
1700 def fnb(x)=int(100*x/10^fna(x)+.5)/100
1710 zx$=str$(fnb(dx)):fx$=str$(-1*fna(dx))
1720 zy$=str$(fnb(dy)):fy$=str$(-1*fna(dy))
1730 g$="*e":h$=" vs. "
1740 print:print
1750 print"input fig. no. + ordinate label"
1760 input"   ===";y$:ify$=" "then1750
1770 input"abscissa label   ===";xz$:ifxz$=" "then1770
1780 xx$=y$+g$+fy$+h$+xz$+g$+fx$
1790 nx%=(54-len(xx$))/2+15
1800 def fnd(x)=int(log(abs(x))/log(10))
1810 deffnx(x)=int((100*x/10^fnd(dx))+.5)/100
1820 deffny(x)=int((100*x/10^fnd(dy))+.5)/100
1830 fork=0to5:px$(k)=str$(fnx(z1+k*dx/5)):next
1840 fork=0to5:py$(k)=str$(fny(ym-k*dy/5)):next
1850 return
1860 q$=str$(q):iflen(q$)=2thenq$=q$+".00":return
1870 q$=left$(q$+"000",5):return
```

Feature Article:
WORD PROCESSING

WORD PRO QUICK-REFERENCE INSTRUCTIONS

by Jim Strasma

*** Most commands can be aborted with <rvs> before execution ***

*** For more detailed information, ***
*** refer to your WORD PRO manual ***

ABBREVIATIONS: Defined in extra text area with "<up-arrow>abbreviation<up-arrow>=full phrase". Called from main text by "<rvs>v"+abbreviation

APPEND LINES: Defined in extra text with "<up-arrow>paragraph.name<up-arrow>" on own line. Text goes below, ending with <c/r>. Called from main text area with "<rvs>a"+"paragraph.name"

ARITHMETIC: <rvs>"=" adds a column of numbers above.

BOLD: <rvs>"(" and ")" mark sections to be double-printed.

DELETE OPTIONS "<rvs>d" plus:
<del> deletes cursor line. <rvs> active till hit; delete several lines at once
s=one sentence per "s" hit. <c/r> to delete
w=one word+<space> following cursor for each "w" hit. <c/r> deletes

DIRECTORY <rvs> plus Ø=drive zero's, 1=drive one's, or 2=both. Once in, move the cursor to desired file's line & then begin desired command. If that file name is needed, hit <back-slash> instead. On Latest 4+ & 5+, 2 & 3 read from selected IEEE disk+1, (usually 9).

DISK COMMANDS "<rvs>." (>) enables "Wedge" commands. "<rvs>," (<) reads error channel

DUPLICATE "<rvs>1" preset range of lines above cursor

ENHANCEMENT (CBM ONLY) "<rvs>["=on, "<rvs>]"=off. All spaces must be forced, or else enhancement set & cleared between words

ERASE OPTIONS "<rvs>e" plus:
a=all
1=line range previously set by "<rvs>r"
r=remainder following cursor

EXTRA TEXT: "<rvs>x" flips from main to extra text area. Choice of 4 in WP5+.

FIND "<rvs>f" stops after match
<c/r>=find previously set string
"text<c/r>"=find "text"
1=local
g=global. Enter name of first file
"<rvs>h"=continues local hunt for next occurrence
"<rvs><right>"=continues global hunt for next occurrence

FORMATS: Start line with "<rvs>/". Separate with ":". End with <c/r>
[These also work on PAPERCLIP and SUPERSCRIPT.]
"Ø=" through "9=" plus "number.from.Ø.to.255" defines a special character
cm: comment-ignored. must be last format on line & <1 line in length
cn: centering (1=on, Ø=off)
fa: lines per inch (4, 6-default, 8, 12)
fp: force a page feed (Ø=now, >Ø=if fewer lines than this remain in page). Must be last format on line.
ft: footer+number of lines above page end it will print. ";"=underlined on CBM printer only (using 2 lines). ":"=no underline. Separate 3 fields with ",". Left field is left aligned, center is centered, & right is right aligned. "<>" is replaced with page number
hd: header+number of lines from it to first text line. Has same options as ft
hl: left margin for head & foot, default=1m
hr: right margin for head & foot, default=rm
ju: justify both sides (1=on, Ø=off)
lf: line feed (default Ø=off, 1=on, if needed)
lm: left margin (default 5, 1 min.)
ln: vertical tab lines
ma: left margin release of 1st line following, by number of spaces given
nx: +"file.name"=name of next file in global chain. Must be last line in file
p#: set page number (1-998)
pg: text lines/page (=pp-top & bottom margins, default=infinite)
pp: lines/page (usually 66, default=infinite)
ps: pause printout til hit "C". May be followed by prompt message.
pt: spinwriter characters per inch, 1Ø or 12
ra: right side only alligned (1=on, Ø=off, default)
rm: right margin (default 75, 163 max.)
sp: line spacing (default 1, 3 max.)
vp: top margin (lines, default Ø=off)

GLOBAL means all linked files are affected. Link files with "nx" FORMAT command. File ending w/o "nx" is last file. <rvs> cancels global operations after current file. MEMORIZE current file before global operation, if changed from existing disk copy. <rvs>":" copies all files in document. <rvs><right> restarts global find. To link files of extra text data: 1) Link them with "nx" FORMAT commands; 2) Global OUTPUT them to disk; 3) Global OUTPUT them from new sequential file.
GOTO "<RVS>g" plus "line.number" to go to
HYPHENATION: "<RVS>-" shows where to put hyphen only if needed. Max. 1/word.
INITIALIZE <stop> plus Ø=zero, 1=one or 2=both. Initialize disk.

INSERT OPTIONS <rvs> plus:
<SHIFT>=insert mode, inserts text at cursor. Same again to exit mode
<inst>=insert line above cursor. <rvs> active till hit, so may add several
"<clear>i"+"file.name" inserts file at cursor line. Search only 1 drive by adding its number plus ":" before filename. 4+ & 5+ can insert from next IEEE device, by requesting drive #2 or 3.

LOAD "<shift><clear>r" plus "file.name". If cursor is not at start of text, recalled text is appended from that point on. Options as in INSERT file above.
MEMORIZE "<shift><clear>m". Specify drive, or "r" then drive for previously set RANGE. Then enter "file.name" to save current file to disk. Extra 4+ & 5+ drive handled as in INSERT & LOAD.
MODIFY "<rvs>m" modifies string used in FIND or SEARCH & REPLACE
MOVE LINES: "<rvs>t" transfers preset RANGE of lines above cursor. Erases former location

NUMERIC MODE lines up columns of numbers with same number of decimals. Enter & exit mode with "<rvs>n". Set TABS at right-most column of each number. To enter numbers with aligned decimals, <tab> to column & enter number

OUTPUT OPTIONS "<rvs>o" plus:
- c=continuous, else pauses till hit "c" after each page
- d=to disk sequential file. Give "file.name" when asked. EOF marked as chr$(128)
- g=global. Enter name of first file. Restart Global output from current page by starting as before, but substitute "<left-arrow><c/r>" for file name. Be sure printer is ready at page t^p. First, tho, MEMORIZE current file, if changed
- l=list data from extra text area into VARIABLE BLOCKS
- s=get sequential data from disk file into VARIABLE BLOCKS. Give sequential file name when asked
- v=format text to screen on WP4 & later versions
- <stop> pauses printing after current line. Hit "c" to continue, <rvs> to abort. x plus number of copies, maximum 255, must be last output command

QUIT "<rvs>,<shift-Q>: Resets PET to BASIC.
RANGE "<rvs>r": Highlights cursor line. Move cursor till desired lines light, then hit <c/r>
RESTART <rvs><run> cold starts WORDPRO.

SEARCH & REPLACE OPTIONS "<RVS>@" plus:
- <c/r> alone uses previously set string for search, replace, or both "text", up to 3Ø characters+<c/r>
- g=global. Enter name of first file when asked
- l=local (in memory only)

SHIFT-LOCK <back-slash> locks all caps for alpha characters only
SOUND enabled/disabled with <rvs><back-slash>.
SPACES can be forced with "<shift><space>"
SPECIAL CHARACTER "<rvs>;"+"digit". Defined with "digit=" FORMAT. If >127, chr$(14)+(value-128)+chr$(15) is sent. If already defined, use CBM defined character, chr$(254), as special character. Whether printable or not, special characters are counted in line & page totals
SUBSCRIPT <rvs>"6"
SUPERSCRIPT <rvs>"4"

TAB OPTIONS:
- <tab> goes to next preset tab column
- "<rvs><tab>" goes to next variable block or end of text. If to variable, sets INSERT MODE
- c=clears any tab at cursor column
- k=clears ALL tabs
- K=sets default tabs for 4-column directory
- s=sets a tab at cursor column
- <down>=fast scroll down
- <up>=fast scroll up

UNDERLINING (NOT ON CBM): "<rvs>["=on,"<rvs>]"=off
VARIABLE BLOCKS set with "<rvs>b". Filled with data from either extra text area or sequential disk file. If sequential, each block reads data till <c/r>. If from extra text, reads data till <c/r> or "<rvs>z" found. ("<rvs>z" saves space; "<rvs>i" fills blocks. Then may print text as though w/o variable blocks. To reset variable counter to first variable in extra text, hit "<rvs><home><c/r>". To fill blocks during printout, use "l" or "s" option in OUTPUT. Fill blocks manually with "<rvs><tab>". To empty blocks & start over, hit "<rvs><up-arrow>"

Announcing

eZZeBOOKS/eZZePAYROLL

A general ledger bookkeeping system designed for the business owner who wants and needs up-to-the-minute information in an easy-to-get-at form. By the author of DATABOOKS and DATAPAYROLL, eZZeBOOKS has added functions, increased efficiency, and somewhat greater capacity.

It provides on just two diskettes in a dual disk drive:

GENERAL LEDGER
171 accounts

JOURNAL
3000+ entries

ACCOUNTS RECEIVABLE
1000 customers

ACCOUNTS PAYABLE
100 vendors

INVOICE REGISTER
1000+ open invoices

PAYROLL (optional)
100 employees

Full financial statements may be produced at any time. Since the ledger is posted immediately for every transaction there is no need to wait for an end-of-the-month closing.

Customer invoices are extended, printed, and consecutively numbered, and the results transmitted to the ledger accounts. Statements may be printed for the entire customer ledger or for individually selected customers at any time.

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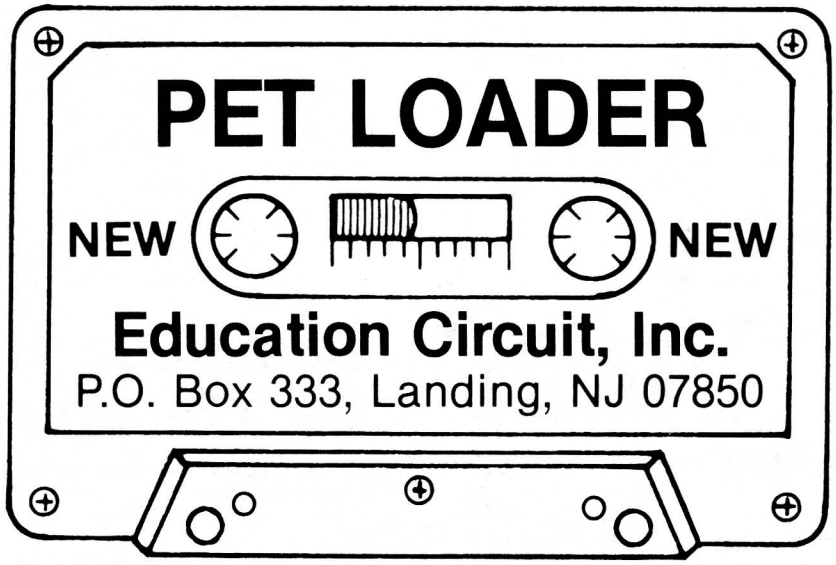

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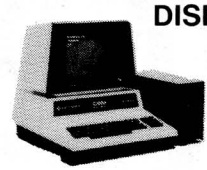

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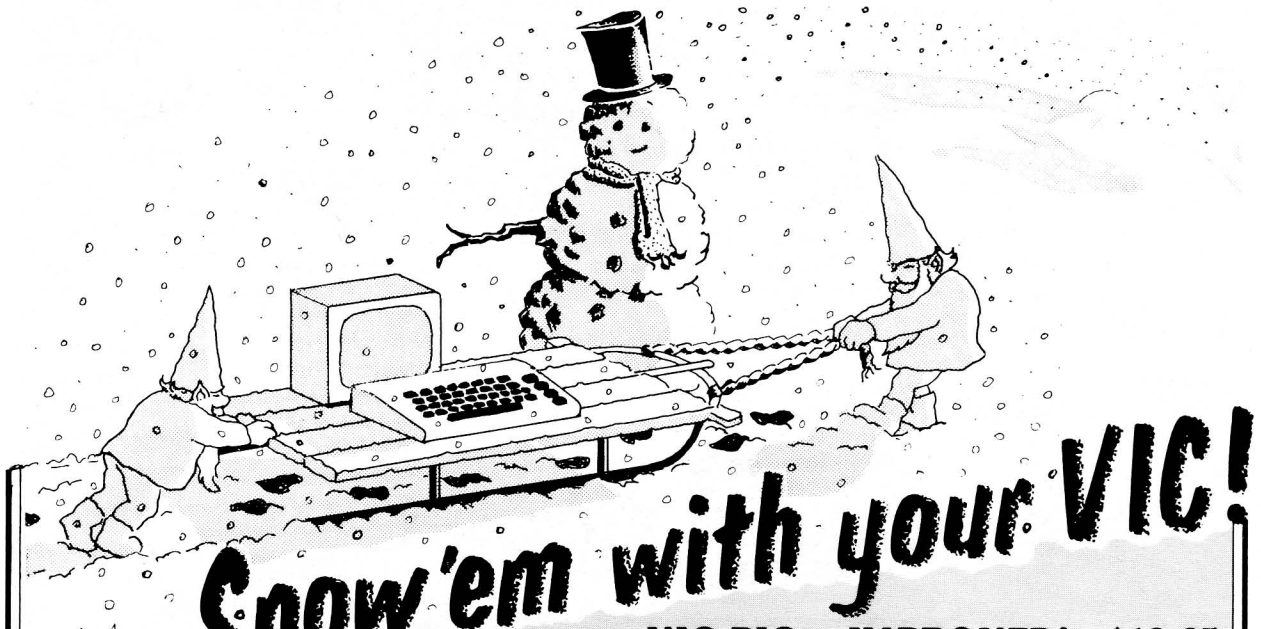

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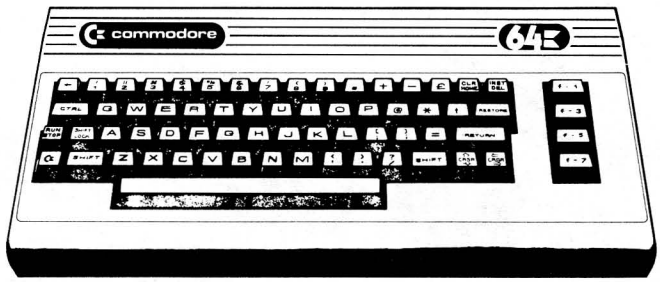

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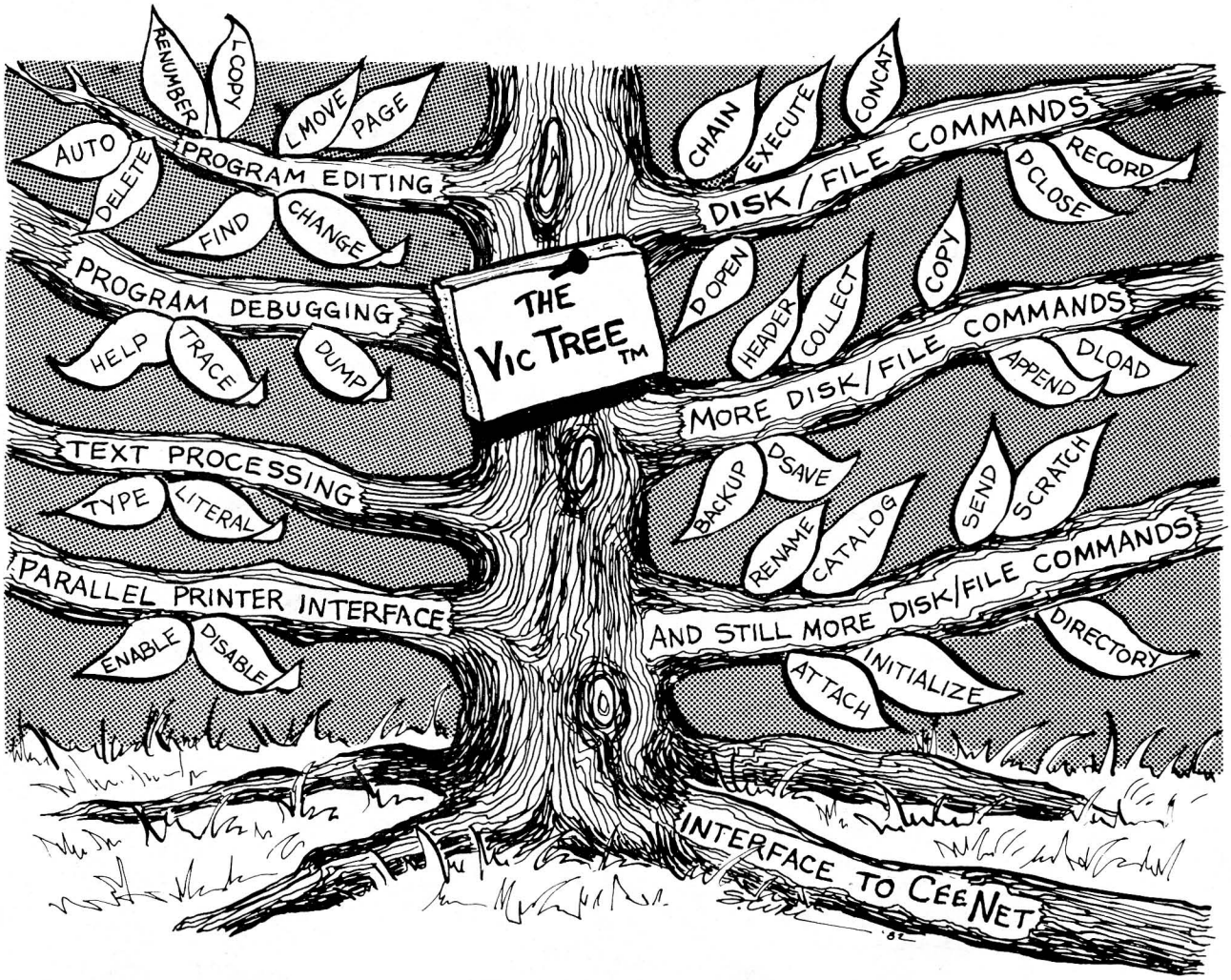

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