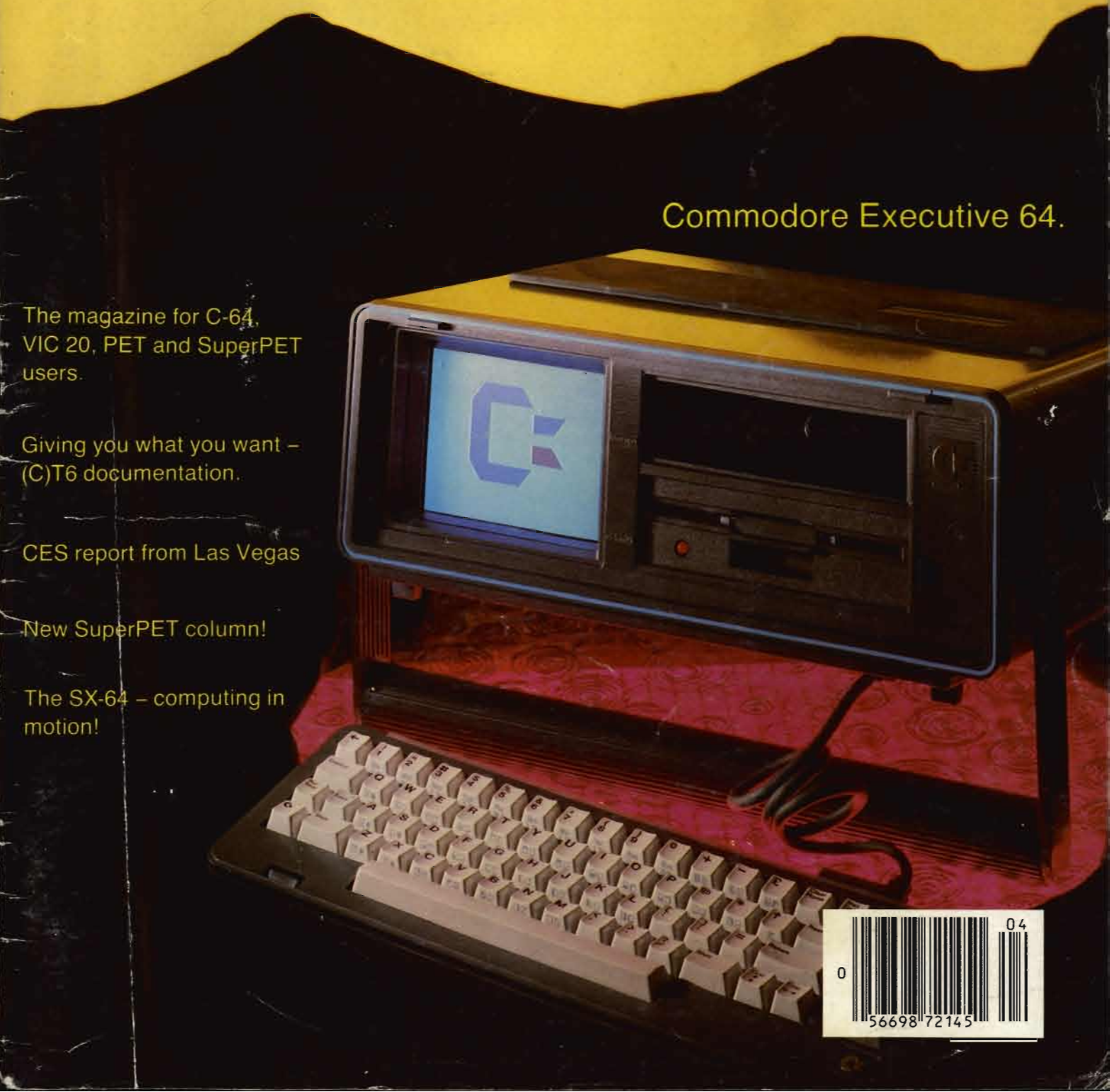
March/April, 1984 $2.95

TPUG magazine

The official publication for the world's largest international Commodore users group



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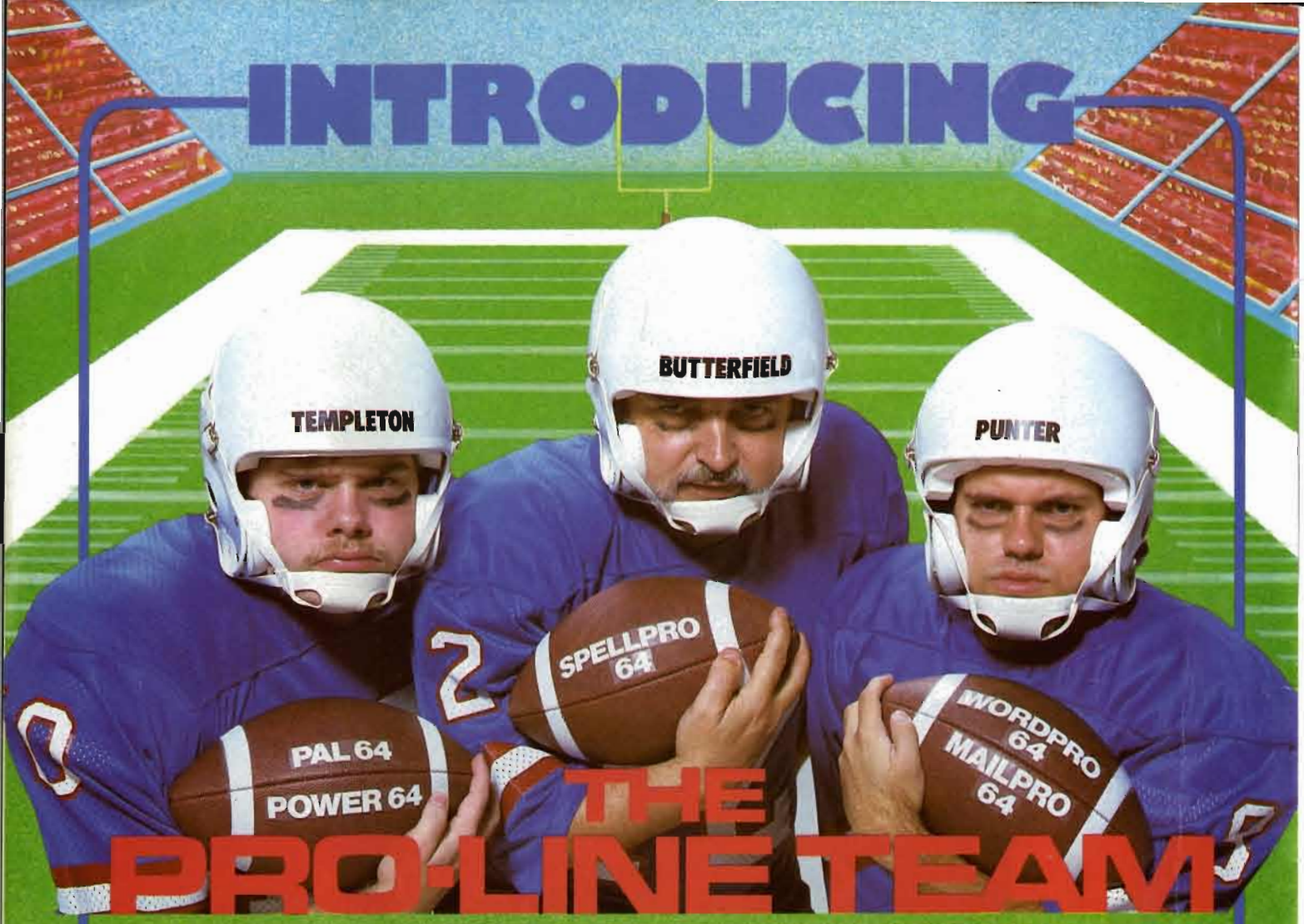

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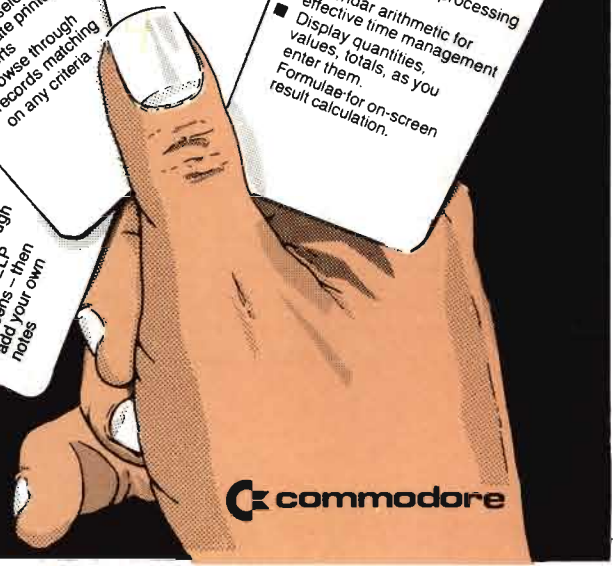

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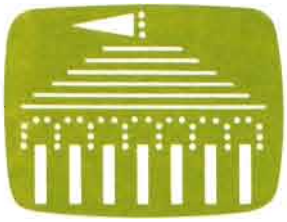

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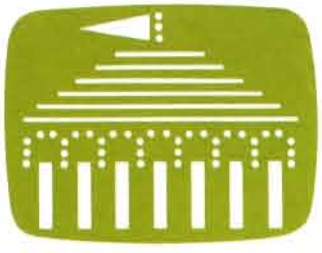

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No matter what you do (or want to do) with your computer the Computer Fair seminars will help you do it better and best of all, the cost of the seminars is included with your admission fee.

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EDITORIAL

Such are the delays involved in producing a magazine that I am having to write this just as the first issue of *TPUG magazine* is arriving in club members' mail boxes. Reaction to it has therefore, so far, been limited. However, it does seem that we are off to a reasonably good start. There were a few small glitches and snags which showed up in the first issue which we will try to ensure do not happen again.

Some readers and contributors to this magazine have expressed surprise at our copyright policy. Everything in *TPUG magazine* is copyright. It cannot legally be reproduced without permission of the copyright holder except by the owner of a copy of the magazine for his/her own private use. In other words, it is okay for you to make a photocopy of an article so that you can put it into your archives or so that you can conveniently have it beside your computer while you are typing in a program, but it is not legal for you to make copies to give away or to sell to other people.

This is different from TPUG's former copyright policy, which automatically put everything which was published by the club into the public domain. When TPUG's directors decided to make this change, they had several reasons for doing so. One was to establish a uniform copyright status for the magazine. Some well-qualified people had previously refused to write for the club's magazine because they did not want to lose control of their material. They wanted to retain copyright to it. The directors decided that they would like to encourage these people to write for this new magazine by allowing them to retain copyright. However, there would certainly be confusion if part of the magazine were copyright and the rest were not.

Another reason was a desire to maintain control over the publishing rights to articles in case the club decides to publish a "best of TPUG magazine" book. The publication of such a book is a strong possibility in the future.

A third consideration was the fact that there have been some instances of unscrupulous persons taking public-domain material, including some which was published by TPUG, and selling it as if it were their own. The club has had no legal recourse against these rip-off artists in the past. The situation will be very different if similar events occur in future, since unauthorized reproduction for resale of copyright material is clearly illegal.

The directors did NOT intend to make it impossible for material in this magazine to be reprinted elsewhere, such as in the newsletters of other user groups. TPUG continues to advocate easy exchange of information among computer users. All we ask is that editors of other magazines who want to reprint our articles contact us first. In cases where TPUG owns the copyright to the article in question, we will normally be happy to give permission to reprint. In fact, we will try to provide a machine-readable copy of the article, to make the job of reprinting it accurately easy. All we will usually ask is that the article be accompanied by an acknowledgement such as "reprinted, with permission, from *TPUG magazine*". In cases where the copyright has been retained by the author, we do not have the right to give permission to reprint. However, we will try to put whoever wants to reprint the article in touch with its author so that they can work out an agreement.

The desire to be in a position to be able to give permission to reprint articles is one of the reasons why we encourage authors to assign copyrights to the club, rather than to retain them for themselves. To this end, we pay more for articles if the author assigns copyright to us than we do if he/she does not. The two rates are $40.00 and $30.00, respectively, per printed page.

As often happens when a new decision is made, there are a lot of details to TPUG's new copyright policy which are having to be decided in the light of experience. Some ambiguities remain, which will have to be resolved at some time in the future. By and large, however, it is a reasonable and well intentioned policy, which should work for the benefit of all concerned.

David Williams

Give your disk a bath!

Sandi Waugh
Toronto, Ont.

I'm still not sure exactly how it happened. One second I was grabbing a cable that I needed and the next there was Coca-Cola all over the place. Unfortunately, in the middle of 'all over the place' lay THE DISK, that being David Bradley's disk of C-64 list-mes. I knew that I was in trouble.

Fortunately, David Bradley wasn't around and David Williams and Al Farquharson were. Al suggested that we try washing the disk. I thought he was joking but anything was better than explaining what I had done to Bradley.

We removed the disk by splitting open one side of the cover and sliding the disk out carefully holding it by the edges. It was then rinsed under the tap and blotted dry with a piece of paper towel. We used a cover from a 'dud' disk which we opened in the same manner as the first. We then cut the flap off and slid the washed disk inside. Then came the moment of truth. The disk was placed in the drive and a backup was made with no problem. Mission accomplished.

You know, I'm not sure David Bradley even noticed! *TPUG*

PRESIDENT'S LETTER

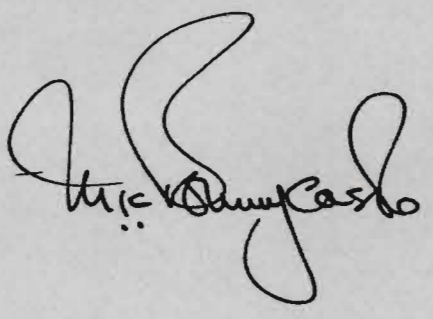
Michael Bonnycastle,
President
Toronto Pet Users Group Inc.

The staff of the TPUG office has asked me to clarity the position of our club's executive concerning "The TORPET" magazine, and particularly concerning the advertisement which appeared in the back of its January, 1984 issue.d

"The TORPET" is now completely separate from TPUG. It is true that, like several other magazines (InfoAge, for example), its editor is a member of this club. However, this fact does not imply that there is any organizational or financial connection between TPUG and the TORPET. They are entirely independent of each other.

The advertisement in the January TORPET contains two offers. One is a two year subscription to "The TORPET" as offered by Bruce Beach. The second ad is more difficult to interpret. It reads "Get two years subscription to the TORPET and receive one year associate membership free." What this means is that $20 is for a 2 year subscription to the TORPET and $20 is for a one year associate membership in TPUG Inc. This is also offered by Bruce Beach and, although we fully expect him to forward the memberships, it would be simpler if you joined the club or renewed your membership directly through the TPUG office.

I would therefore urge all members and would-be members of TPUG to deal with our office staff directly, rather than through third parties such as "The TORPET". In this way, you can avoid confusion.



BUTTERFIELD: ON THE 64

Sandi Waugh
Toronto, ON

When I asked Jim Butterfield to talk to me about the SX 64 or the Exec 64, I did not expect to fill three pages with his wisdom but I felt that *TPUG magazine* readers would be more interested in his comments about the machine than in a list of specifications. So, here are the highlights of Jim's opinions.

Good points

- It is a Commodore 64 in almost every sense except for the different packaging and the lack of datasette. It can be hooked up to a full-sized monitor and other C-64 peripherals.
- It is a tidy, complete system for people who dislike having a computer cluttering up the place.
- The Exec 64 has a nice keyboard, particularily with the shift/lock key that lights up. The keyboard will also lift away from the rest of the computer, making it possible for the user to sit as far away from the screen as he or she wishes.

Not-so-good points

- The Exec 64's built-in screen, due to the nature of small screens, has poor resolution which makes word processing and number-work difficult. Using it for these results in eye fatigue and it becomes difficult to distinguish some of the numbers and letters. Personally, Jim would have preferred the SX 64 to have a black and white screen — less pizazz, but clearer.
- Jim is in favour of Commodore keeping the C-64 logic but it would have been nice if the load device default had been changed to device 8, seeing that it has a built-in disk drive.

Generally, Jim feels that it is a convenient and nice machine. People like it and Commodore can't make enough of them. *TPUG*

Note From Batteries Included ...

Batteries Included would be happy to update any customer's copy of PaperClip if they bring the original disk to the store. Should they find it necessary to mail in the disk, please enclose a cheque or money-order for $5.00 to cover the return postage and handling. *TPUG*

Commodore's Executive 64

photo by R. Portolese

Sandi Waugh
Toronto, Ont.

Cover Feature

The Executive 64 is one of Commodore's newest hardware releases.

This portable microcomputer has 64K RAM, a full upper/lower case detachable keyboard, built-in five-inch monitor and a built-in floppy disk drive with 170K capacity. The display is in colour 40 columns by 25 lines. The machine also contains a 6581 synthesizer, and can produce nine octaves of sound.

The Exec 64 is a member of the Commodore 64 family and is fully compatible with VIC 20 and C-64 peripherals, including the VICMODEM for telecommunications. The new models will have a full range of business-related and home applications. External ports allow full-sized monitor and graphic printer hook-ups.

The briefcase-size Exec 64 weighs only about 12.5 kg (27.6 pounds) and can go anywhere with little difficulty. Ease of transport – for commuting or out-of-town trips – increases the system's usefulness.

Priced at $1200.00, this is the only portable computer within easy reach of the home user.

THIS & THAT

photo by R. Portolese

Doris Bradley
TPUG Asst. Bus. Man.

Santa Claus? Arrives Late
On Februay 2nd we received a carton of mail from 1 Brinkman Ave., Buffalo. In it were over 400 pieces of mail of every description. As we delved into it, we discovered that some of the mail went back to last June! There were over 200 address changes of varying ages, orders, letters regarding missing magazines, submissions for the HELP column etc. etc. Why this mail piled up and wasn't brought or sent to the office has yet to be determined, but needless to say the carton caused quite an uproar. The dust is now settling —the addresses have been changed, the orders dealt with, the missing magazines sent. So, if you sent something for us to Buffalo last year you now know why you didn't get action.

P.S. One of the spin-offs of bringing the magazine in house is that our office address is, and will continue to be, easy to find in the magazine. Remember—address your mail to **1912A Avenue Rd., Ste. 1, Toronto, Ontario, Canada M5M 4A1.**

Trivia
Did you know that at the end of 1982 total membership in TPUG was 3,288, and at the end of 1983—13,483!

Our Members
The Commodore Users Club of Sudbury informs us that Dorothy Ann Thom, TPUG member #11494, is quite likely the northern-most member of any computer club in the world. She lives in Nanisivik which is on the north-west coast of Baffin Island. Do we have any challengers?

Hmm. . .I wonder who is our southern-most member?

Farming Programs
There are members out there who have mentioned to me in their correspondence that they had designed some programs to help with various aspects of farming. Others of our members have shown interest in just such programs. Won't you take a few minutes and arrange to submit them to the appropriate TPUG library? Thanks.

Speaking of farming, I just received a copy of the latest Agricultural Microcomputing Newsletter (8 pages) from the Ridgetown College of Agricultural Technology, Ridgetown, Ontario N0P 2C0. It looks like it would be an asset to farmers far and wide. In addition to a number of articles it has a bibliography of other computing magazines and bulletins available in the U.S. and Canada.

Documentation for the Commodore Educational Software
For those of you who are receiving your first TPUG Magazine, this documentation (22 pages of it) is available in our January magazine, which is $2.00, and can be obtained from the club office.

Third Annual TPUG Conference
Don't forget to get your registration form in quickly for the conference which will be held the Memorial Day weekend (May 26 and 27) here in Toronto. Those who apply first are the ones who are assured of getting the sessions they want.

Ten-Line Contest
A few entries are already in. I hope you're working on your 10-line BASIC program and enjoying the challenge. Don't forget to have it finished and entered by April Fools' Day, April 1, 1984.

VIC 20 Products Suppliers List
One of our members, Colin F. Thompson, supplies me regularly with this list. It appears quarterly in Commander Magazine though it is updated every two weeks. It is available to anyone, at no charge. To receive a copy, send a large (9X12) SASE with at least 37 cents of postage to: Colin F. Thompson, 1307 Colorado Ave., Dept. T, Santa Monica, CA 90404. Canadian or International members can send an International Postal Coupon.

Other Computer Clubs
SCOPE (The Society of Computer Owners and PET Enthusiasts) meets on the second Saturday of every month at 1:30 p.m. in Room 4.614 of the Eric Jonnson Center, University of Texas at Dallas.

Anyone (who knows where Port Perry is) is welcome to join a club which is just being formed. Contact: Lynn O., Leary-Scugog Library 985-7686 or Andy Baca 985-3718, 668-8881, 361-1635 for GOTO input.

Erie County Commodore Users Group for those with VIC 20s and Commodore 64s meets the first and third Thursday at 8:00 p.m. at Edinboro University of Pennsylvania, Room G2, Hendricks Hall —everybody welcome!

Thank You
Thanks to the many people who have sent kind words about the club, the library and the magazine. Space does not permit all of your comments, whether favourable or not, to reach the magazine. I am making an exception in including the following as I thought you might be interested in this useful application of the VIC. One caution, this incident is the exception, not the rule. The TPUG office just doesn't have the staff to solve everyone's problem, so please try your local dealer, a knowledgeable friend etc. before calling us.

"Just a short "thank you" note for the TPUG office for coming to our assistance in locating a VIC 20 Motherboard we needed to continue our work. Our graduate research project at the University of Illinois into gas kinetics through laser induced multiphoton absorption uses for its acquisition and retrieval data an expanded VIC 20. To develop its ability to handle data as we desired, and with a low signal-to-noise ratio, we had to add our own buffers, filters, and variable amplifiers. For this we needed a motherboard. We at first tried mail ordering from out-of-state, but the company went bankrupt just after they had cashed our check. Locally, no major retailer that had supplied CBM machines in the past would order it for us.

continued overleaf

It was then, when things were looking bleak, that I received my membership card from TPUG. When I called Toronto, the persons staffing the office were very polite, interested, and helpful. We received the Motherboard just 5 days after talking to TPUG and a retailer they suggested in the Toronto area. We are now ready for a new series of experiments. Thanks again, TPUG." Kenneth Beck #11235, Chicago, Illinois

Answering Machine
We expect to have answer machines on both our lines soon. This will mean that if you call outside of regular office hours, and there is no-one in the office able to take calls, you will be answered by a machine with the following message:

"Toronto PET Users Group. Meetings this week are . . . Call during office hours, Monday to Friday 8:30 to 5 for more details.

If you want information on the club please leave your name and address together with the type of computer you have.

If you are a member and wish to inquire about an order, delivery of the magazine etc., please leave a message including your name, membership number and address so we can reply. If you will accept a collect evening call, please leave your phone no. as well. The answering machine is voice-activated and will hang up on you after 5 seconds of silence. Thanks for calling."

So be prepared, have all the pertinent information at your finger tips and be ready for the machine, if you don't get a person. Remember, the answering machine is hard of hearing, so speak clearly and loudly.

TPUG Associate Club Chapter Meetings

PET Educators Group (Windsor)
— meets at Windsor Separate School Board Media Centre, 1485 Janette Ave. on the 3rd Wednesday of each month (not July & August) at 7:00 p.m.
Contact John Moore 519-253-8658

London Commodore Users Club
— meets at the University of Western Ontario, in Room 40 of the School of Business Administration on the last Monday of each month at 7:00 p.m.
Contact Dennis Trankner 519-681-5059

Genesee County Area Pet Users Group (Michigan)
— meets at Bentley High School on Belsay Rd. on the 3rd Thursday of each month at 7:00 p.m.
Contact Gordon Hale 313-239-1366

Sacramento Commodore Computer Club (California)
— meets at SMUD Building Auditorium 6201 S St. on the 4th Monday of each month at 7:00 p.m.
Contact Geoff Worstell 916-961-8699

Michigan's Commodore 64 Users Group
— meets at Warren Woods High School in Warren on the 3rd Tuesday of each month at 7:00 p.m.
Contact Chuck Ciesliga 313-773-6302

Edmonton Commodore Users Group
— meets at St. Gabriel School on the lst Friday of each month at 7:00 p.m.
Contact Bob Kadylo 403-465-3523

Guelph Computer Club
— meets at Co-operators Insurance Assoc. on the 2nd Wednesday each month at 7:30 p.m.
Contact Brian Grime 519-822-4992

Commodore Users Club of Sudbury
— meets at Lasalle High School in the cafeteria on the last Thursday of each month at 7:00 p.m.
Contact Tim Miner 705-566-9632

Sarnia C-64 Users Group
— meets at Lambton College on the first Sunday of each month at 7:30 p.m.
Contact J. C. Hollemans 519-542-4710 *TPUG*

The new password for the TPUG BBS is

poltergeist

The telephone number is (416) 223-2625.

The operating hours are:

MONDAY-SATURDAY
— 7:30 p.m. to 9:00 a.m. Eastern time.

SUNDAY
— 24 hours.

HELP!

Help-intro
Do you have anything for this column? The three headings are:

(1) Helpful Hints,
(2) Who's Got the Answer? and
(3) "PET" Pals Wanted.

Just send your contributions (including answers to any questions which have appeared) to:

Toronto PET Users Group
Dept. Help
1912A Avenue Rd., Ste. 1
Toronto, Ontario, Canada
M5M 4A1
Please let us know if you wish your full address published.
This month we are only printing Helpful Hints (we have a backlog) and "PET" Pals Wanted. We do have 18 questions on hand, but they will have to wait until next time. There just isn't room for them this time.

Helpful Hints

I assume Mr. Awbrey needs the CP/M system disk which is normally supplied with the SOFTBOX. If so, it is a bit strange that the supplier would not have included this with the hardware and manual, but it would be quite easy to send him a backup 8050 disk if he contacts me.

Douglas A Staley #3389
Thornhill, Ontario

(Editor's note: Please send Mr. Staley your purchase receipt for the SOFTBOX. I am sure he would not want to risk violating copyright!)

(?) Use joystick instead of specified keys in program — L. Warner, Toronto

I use a C-64 which I believe has Kernal 1. I have converted some PET games to the 64 and added joystick options. One program is Arrow by Jim Butterfield that I got from TPUG BEST GAME 1 (O)X3 disk. I have sent a copy of this game to the TPUG library, however the screen clear routines for the newer C-64 probably will cause the screen pokes to be the same as background color. I have seen some fixes for this listed but not having the newer machine I can't test the results. The joystick routine is simple and you should be able to insert it in your code easily.

The read routine is this:

S1=PEEK(56321)AND15

I check to be sure S1 is not being used, then use this routine for the joystick read. I set the keyboard input variable accordingly — 14 is up, 7 is right, 11 is left, 13 is down, 15 is center. 10,6,9,5 are the other directions if you need them. The other Joystick port is 56320 if you want it or to use both possibly S2=PEEK(56320) and another set of if's. Of course you can set up this peek and print the values to see exactly how to interpret the movements of your joystick.

10?peek(56321)and15:goto10

will display the numbers returned for each position of the joystick. To check for the fire button fb=((peek(56321)and16)=0) fb=-1 when the fire button is pressed. 56320 is the address for the other stick.

For a more complete explanation of this technique see "Joysticks and Sprites on the Commodore 64" by Sheldon Leeman in the February 83 issue 33 Vol. 5 No. 2 COMPUTE!

Rick Crone #4637
111 Greenbriar Ln.
Jackson, TN 38305

(?) Looking for a program for decision tree analysis and one to upload ASCII to PDP 11/70 and to an IBM 4341 — Alan Flaschner, Ohio

Mr. Flaschner has answered his own question. Here is what he has found out — perhaps it will help others.

Erickson and Hall have written a user-friendly program for decision tree analysis, one that will easily allow me to change the probabilities associated with possible events and quickly see (for example print) the result of those changes. It is published within Computer Models for Management Science text vy Addison-Wesley and includes a diskette with 13 programs.

Microtechnic Solutions published a user-friendly program for uploading and downloading, one that easily allows me to upload as you require as well as to download from those computers to either disk or printer. The program is called The Smart 64 Terminal Plus.

Alan B. Flaschner #5963
Toledo, Ohio

My 8K expander for the VIC 20 is extremely difficult to plug in and extract, and I find it irritating to discover I am loading a 5K program into an expanded VIC and vice-versa! By using the 8K LOAD program included on TPUG tape (V)TS, it is possible to load 5K programs without extracting the memory expander. An alternative method is to enter in direct mode the following instructions:

POKE 642,16: POKE 644,30: POKE 648,30: SYS 64824

This "cons" the expanded VIC 20 into believing it has only 3583 bytes of available RAM. To revert back to 8K, enter SYS 64802. I can now leave my 8K memory expander plugged in at all times.

Barbara A. Cross
Brookfield, Nova Scotia

Cleaning heads on tape and disk units. Tim Tremmel gave excellent advice on this subject in the October issue, but he failed to point out one thing. You should only use computer approved Texwipes or swabs. These maybe difficult to get in your area and if so you can use surgical swabs. The reason for using these special swabs is lint. This lint can build up in your heads and cause all sorts of problems including permanent damage to your heads or cause damage to your media.

Theodore G. Lange
Riverside, California

(?) How to use the 1541 Backup program? Alan Tomlin, Ontario

Thanks to Mike Kotuba of Burlington, Ontario and Richard Crone of Jackson Tennessee who also contributed detailed instructions on how to use this program.

(?) Where to get replacement fuse for VIC 20? Bob Hart, Illinois

One day I was messing around with the user port and accidentally blew the fuse. Fortunately for me, it only blew the fuse. I thought I would have a hard time finding a replacement but I was wrong. I just went down to a local music store and they happened to have one for 75 cents.

Brendan Westhoven
Lake Havasu, Arizona

continued overleaf

The Raleigh VIC 20/64 Users Group's Hardware Committee thought the members of TPUG would like to know how to fix the 1541 disk drive alignment problem easily and permanently!

You need a Drenel tool, some emery cutting disks for it and a bobby pin plus super glue. Disassemble the drive (easily done) in order to get to the alignment cams. Use Kleenex or a vacuum cleaner to keep metal particles out of the drive. (The tissue is pushed over & around the cams to catch the particles.) Next cut a small but deep slot across the cams and the shafts on which they are press fitted. This must be done slowly so that the cams do not heat up & slip on their shafts. If they do slip, however, the drive may be easily realigned using a scope. Next, cut a bobby pin to fit the groove and very carefully glue it in place. Once it is in placed, it is impossible for it to slip. Be very careful not to cut the metal bands which go around these cams!! Finally, finish the job off with one drop of 3 in one oil very carefully applied to the shaft which 'holds' the disk. For a complete fix, lubricate the head tracks. THIS DOES WORK! WE HAVE DONE IT TO SEVERAL DRIVES ALREADY AND IT WON'T DO ANY HARM!

You may also disassemble the shaft which passes through the centre of the disk and grind down the sharp edges on the spring and replace the washers above & below it. Adjust the disk's speed by turning it over & placing it under a florescent light to adjust speed controls!!

Hardware Committee
Raleigh VIC 20/64 Users Group
Raleigh, North Carolina

(Asst.Bus.Man. note: The above was all hand printed on one 3½ by 5½ inch card!)

(?) Software disks for "Soft Box" — Jack Awbrey, Alabama

I've had to replace fuses in 2 different units. These units took a 3 amp rating not 10 or 15 amps as suggested. In one case, a replacement lasted indefinitely. The other unit kept blowing fuses every 2 or 3 days. I solved this by going to a 4 amp fuse. Since the original is around 3 amps, I wouldn't go higher than 5 amps myself.

G. Woroshelo #10458
Manitouwadge, Ontario

Radio Shack sells the fuse for the VIC 20.

Wolcott M. Smithd #5812
Vienna, Virginia

(Asst. Bus. Man. note: Never has so much help been offered on one topic!) *TPUG*

PET-Pals

I would like to correspond with anyone who has used a satisfactory accounting package for a small "business" on a 4032. All I need is General Ledger, Accounts Receivable and Accounts Payable.

Rev. J. Paul Morris #2567
203E. Broadway, Ste. 501
Long Beach, CA 90802

I would like to hear from someone in southwestern Ontario who would like to trade TPUG tapes/disks for the VIC or PET.

Brian Stienstra#10136
120 Indian Creek Rd. E.
Chatham, ON N7M 5J6

I am interested in corresponding with an 'experienced' disk-oriented C-64 member. I could swap my wood carvings for (their) C-64 expertise/software.

Hal Scheidt
Bremerton, WA

I would be interested in contacting someone with a Commodore 64 who is interested in statistics, economic model building etc. I have been a statistician and economist for thirty-odd years and want to transfer and extend my skills using my computer.

Gordon Frazier #13351
Honolulu, Hawaii

JUMPMAN BUG

David Bradley
C-64 Librarian

Many of you may have noticed that, when you are playing "Jumpman", everytime you fall down you lose a man. The first time I played I too noticed this obvious "BUG" so I decided to find a solution to it.

After the program has started to run hit RUN/STOP RESTORE and do the following:

POKE 24015,173 (return)
POKE 54296,15 (return)
SYS 9*4096(return)

In case you are interested, the first poke is the important one that fixes the "BUG". The second poke turns the sound back on and the SYS starts the game...

Good luck... *TPUG*

WARM RESETS

George Shirinian
Toronto, Ont.

Many times you want to clear the computer's memory in order to load another program. Some sophisticated programs use subroutines stored in the cassette buffer or in a protected area in high memory. The NEW command will not clear these out of memory, and they may interfere with the next program being loaded. Most people simply power down their computers and perform what is called a cold reset.

This is undesirable for a number of reasons. First, it often forces you to remove your disks from the drive, just in case the re-initialization affects your recorded data, which is a nuisance. (Actually, it is supposed not to affect your disk, if you are running DOS 2.x, but who of us takes the chance?) In any case, there is a delay, annoying for those of us who are impatient, as the drive initializes. Secondly, the surge of electricity that always occurs during power-up is thought by many to cause stress on the chips and circuitry. Thirdly, the powering off and on does add to the physical wear of the switch.

Using the following SYS calls will effect a warm reset of your computer, completely clearing memory and bringing you the same opening screen message as you get on normal power-up.

PET 4032, 8032, 2001 (32K BASIC 4.0) — SYS 64784

C-64 — SYS 64738

VIC 20 (unexpanded) — SYS 64824. *TPUG*

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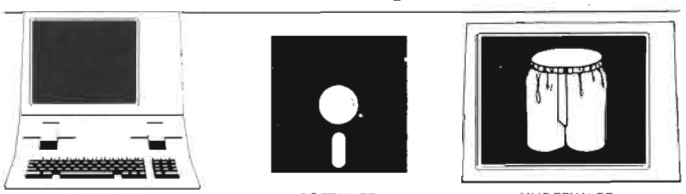

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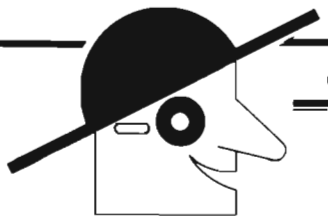

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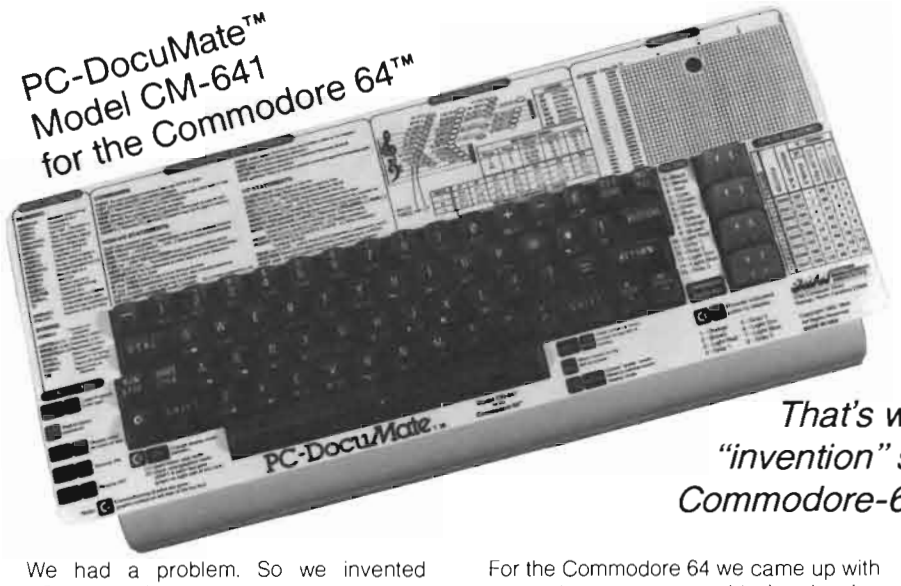

EUREKA!

That's what we said when our new "invention" solved all our VIC-20™ and Commodore-64™ programming problems

We had a problem. So we invented PC-DocuMate™ to solve it. The problem was how to quickly master the VIC-20 and CBM-64 keyboards and easily start programming in BASIC on our new personal computers. First we went through the manuals.

INCONVENIENT MANUALS

The user's guide was a nuisance and the programmer's reference manual was just plain inconvenient to use. We found the control key combinations confusing and the introduction to BASIC to be too "basic" for our needs. We needed a simple solution to our documentation problems.

So we decided to surround the keyboard of each PC with the information we wanted. We decided to print whatever we needed on sturdy **plastic templates** which would fit the keyboard of either the VIC-20 or Commodore 64.

SIMPLE SOLUTION

This was the simple solution to our problem. Now we could have the essential information right at our fingertips.

On the left side and top of the templates we put **BASIC** functions, commands, and statements. On the lower left we used **key symbols** to remind us of how to use SHIFT, RUN/STOP, CTRL and the "Commodore" key. Over on the bottom right side we put some additional keys to help remember about CLR/HOME and RESTORE. But we were still a little confused.

STILL CONFUSED

We found we were confused about music programming, color graphics, and sprites. On both the VIC-20 and the CBM-64 templates we carefully organized and summarized the essential reference data for **music** programming and put it across the top—showing notes and the scale. All those values you must POKE and where to POKE them are listed.

Then to clarify **color graphics** we laid out screen memory maps showing character and color addresses in a screen matrix. (We got this idea from the manuals.)

For the VIC-20 we added a complete memory address map for documenting where everything is in an expanded or unexpanded VIC.

For the Commodore 64 we came up with a really clever summary table for showing almost everything you ever need to know for **sprite** graphics.

GETTING EASIER

Now we had organized the most essential information for our VIC and 64 in the most logical way. BASIC, music, color graphics, and sprites all seemed a lot easier. Our initial problem was solved by PC-DocuMate™.

But we have a confession to make.

WE CHEATED

We had solved this kind of problem before. In fact, many times before. You see, we at SMA developed the original PC-DocuMate for the IBM PC. We've made templates for IBM BASIC and DOS, for WORDSTAR™, VISICALC™ and other best-selling software packages for the IBM PC.

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SANTA CLAUS WORE SHORTS

Paul Blair
Holder ACT, Australia

The letter from Mrs Bradley was typically laid-back – Bill Bullock is to visit Australia around Christmas time, and may have the chance to drop by and visit. Little did she know what was in store for us. Something of the TPUG magic was about to arrive – and in shorts. More of that later.

Lyn, my wife, was sceptical. Why would anyone give up precious holiday time to visit us, she said. There was no answer, of course, just hope in my heart. When the telephone rang on the Sunday before Christmas and the beeps announced an interstate call, the answer came. Bill Bullock was in Sydney, and could he drop by on Tuesday night? Could he heck! My razor sharp mind sprang into action, and I snapped back "Er. . . um. . . uh. . . splutter. . . cough. . . of course!" Having given away my secret (I am the village idiot), it only remained to tell Lyn that I had all the details – they were coming Tuesday. How many and when, I was asked. Who cares, said I, they ARE coming!!

Tuesday 20 December 1983 dawned fine and warm (30 degrees, eat your hearts out in Toronto. Hot is 33 degrees plus.) After a stimulating day at the office (yawn) I arrived home to find the air redolent of cooking aromas, the Christmas tree angel had been replaced from where it had fallen for the umpteenth time, and there was beer in the refrigerator. But where were the Bullocks?

By 7 p.m. I was twitching noticeably, but then Anna and Bill arrived, having negotiated the tortuous streets of Canberra (a legacy from our town planners). The kids, Megan age 10 and James age 8, hung around wondering what all the excitement was about. They relaxed visibly when it became obvious that real live TPUGers don't bite, and our particular pair were very nice folk into the bargain. The following five or so hours are hard to describe. . .

There was just so much to discuss. Anna came from the same Australian city as Lyn's folk, so many memories were revived about the place. Meanwhile, Bill and I homed in on TPUG as a starting point, and I found that local groups in Australia share many problems in common with groups like TPUG. Bill filled me in about many aspects of how it all works, mainly (in Bill's words) because there is a guardian angel named Doris. Conversation raged, we ate some of Lyn's cooking and drank some wine. It was great.

So far, the computers had stayed off, but the time came for the serious part of the evening. The 4032 and the C-64 came to life – then Bill produced some disks prepared from the TPUG library with the kind help of the Bradleys. By this stage I was thoroughly overwhelmed, and could only wonder at the kindness of the folk in far off Toronto. A huge vote of thanks to you all. Not only disks, but a genuine, unchewed candy stick from Santa's (JB's) sack!

We looked through some of the things happening here, like a decent WORKING monitor for the C-64, and the 4040's made up a disk for Bill to carry back with him. My minute offering looked a bit puny, but no way can I compete with 12,000 members.

Why Santa in shorts? Well, it was warm, and Bill had succumbed to the local tradition of wearing shorts. Must have been a severe shock after temperatures around minus 10. Bill has a couple of items to demonstrate when he returns. The Great Australian Wave can be seen anytime, but the mode of dress known as 'Mount Isa formal' will have to wait for warmer days in Toronto.

Now it's my turn. Bill has threatened the 422 modes of water torture if the Blair family doesn't turn up in Toronto some time soon. So, I hereby announce the formation of the 'Blair/Toronto Travel Trust Fund', and donations can be sent anytime, provided the currency is legal. It may take a while, but I'm sure we'll make it.

Thanks Bill and Anna. . .thanks Bradleys. . .thanks TPUG. Christmas 1983 will live long in our hearts and minds. Oh, yes Anna, he did find it under the plate. *TPUG*

TYPE ATTACK -A Review

George Shirinian
Toronto, Ont.

Type Attack. Sirius Software 1982, 1983. Cartridge for VIC 20, $39.95. Disk for Commodore 64, $39.95.

This program makes clever use of colour, graphics and sound to make you practice your QWERTYUIOP (keyboard, that is). Selecting from 99 speed settings, you are presented with invading columns of letters of the alphabet and groups of words that you destroy by typing them on the keyboard. Using the familiar devices of time limits and energy usage, the game provokes you to type as fast and accurately as possible. There is no aiming necessary, however. Your final score and words-per-minute rating are displayed at the end of the game.

There are 15 pre-programmed lessons on the VIC 20 version and 39 on the Commodore 64 version. Each lesson provides you with different combinations of letters to exercise your dexterity. Each lesson consists of a "character attack" followed by a "word attack". There is also a "Lesson Maker" module that allows you to create your own attacking characters and words.

All in all, I found this program well designed for both improving typing skills and for providing good entertainment. Type Attack was awarded the 1983 Consumer Electronics Showcase Award for Best Educational Game and the 1983 Softsel Hotlist Award for Best Selling Educational Game. *TPUG*

TPUG CENTRAL MEETING

- February 1984

Ian A. Wright
Toronto, Ont.

A phone call from a friend said that I should attend the Central meeting on February to find out about the new 264/364 machines and many other items shown at the January CES show.

The meeting started with the usual announcements by Mike Bonnycastle and Doris Bradley and then Mike called Chris Bennett to the podium to talk about the CES. I'm sure that Chris will provide a detailed summary of this show for the TPUG magazine, but unfortunately you will miss the slide presentation that accompanied Chris's talk. It seems that Commodore is in "... a state of flux" at this time, and although there were some very interesting items shown, they may not be available for some time – if ever!

Jim Butterfield was then asked to present some "inside data" on the new 264/364 machines. Jim suggests that the 264 is designed more for the programmer/hobbyist rather than the games player. He has written it up in another article in this magazine.

Mike took the stage again to make a statement about the club's policy on software piracy, the club library and TPUG's policy. I will leave this to Mike to cover elsewhere, but would like to re-iterate that the club does not condone "trading", and no copyright programs are placed in the TPUG library without the written consent of the author.

Jim Butterfield then showed us how to use "pattern matching" to selectively display the directory items on a disk. A "?" in a request will match any character, while a "*" means "... any character here or none". One use of this is to correct improperly written files and Jim showed us how to write and also ERASE the famous ","-file. First, to make one:

```
100 F$=""
110 OPEN 1,8,3,F$ + ",S,W"
120 PRINT#1,"HELLO"
130 CLOSE1
```

The file name is "null", but the directory lists this as a ",". The problem is to load or scratch this file without getting "syntax error". One way would be to make this the only file name on the disk – a better way is:

```
OPEN 1,8,15
PRINT#1,"S0:?"
CLOSE 1
```

It's the "?" that accepts the comma. Similarly, to get a listing of only the program files on a disk use:

LOAD"$0:*=P",8 (or *=S for seq.)

Jim then showed us some programs that would be added to the PET/CBM library including the new TAX 1984 by Ralph Grunier of Toronto. Mr. Grunier has expanded the program and added to its features so if you have a VIC 20 with less than 8k, the program will not operate.

A demo of S.A.M. (Software Automatic Mouth) was of considerable interest to many in the audience, but the ELIZA-like GRANDMA PERKIN'S (sic) demo was shortened because of technical problems (it didn't work!)

One last point of information concerned two new books put out by ABACUS SOFTWARE that are probably of interest to a number of club members – "Anatomy of the 64", and "Anatomy of the 1541". The company is located at P.O. box 7211, Grand Rapids, Michigan. *TPUG*

C-64 MEETING

- January 1984

Ian Wright
Toronto, Ont.

Louise Redgers, the new C-64 meeting chairperson, introduced Gord Campbell. Gord explained about those disk directories that appear on screen after the command LOAD "$0",8. (as an aside, I have been told that as many as 90% or more of new C-64s are sold with disk drives, unlike earlier sales of VIC 20/PET systems). The use of the LOAD command to get a directory means that the program in memory is overwritten (lost), and this can be very frustrating. Gord showed us THE WEDGE – "DOS Manager V5.1" which extends and simplifies many disk operations. The Wedge is loaded and seals itself into high memory and you can now write or load other programs. If you want to activate the wedge use the ">" key followed by a command. The wedge enables us to: validate, scratch, load, load and run, and many other operations – including viewing a directory. This one, however, does not overwrite the program in memory. A sample command is: >$ to view the disk directory. This presentation was followed by a brisk Q and A from the audience. Some of the highlights of Gord's responses are:

- you can write 144 disk entries onto one directory before the BAM is full.
- a "block" consists of 254 bytes of information plus a significant amount of room for housekeeping.
- the directory is located on track 18

continued on next page

in 4040-type drives.

- blocks can be allocated directly on the disk using the BLOCK-READ/ WRITE commands and these used blocks will not show up in the directory. It is possible to have a directory with one entry, that shows 664 BLOCKS FREE, and this disk is full! (this is used to protect some commercial products – do not EVER try to VALIDATE/ COLLECT this disk since the material will disappear).
- disk files that have an asterisk beside the right hand entry (5"MY PROGRAM"*PRG) are small time-bombs because they have not been correctly written. These disks must be VALIDATED or COLLECTED before the disk is written to again.
- you can write program names with unusual characters but this can present problems when trying to load/ scratch these files. The "?" (skip this character) and the "*" (anything here) can help to bypass these characters.
- the TPUG conventions for most program types are well known, but chained files that are called in by a program use ".D" as a label.

Next Gord used a regular TV with the C-64. A large number of C-64s are attached to a family TV set and some people object to both the colour and clarity of the picture. Gord suggested that if a monitor was not immediately available there were some steps that could improve the TV image.

- Throw away the video cable which was supplied with the C-64.
- Run to a radio-supply store for some 75 OHM coax cable and an adapter for phono plug to cable. (price should be about $4 and $2)
- Connect the phono plug end to the C-64 and the 75 ohm onto the TV. Some old TVs may need another converter from 75 to 300 ohm leads if they don't have 75 ohm input – this may reduce the overall improvement.
- To receive programs the leads will have to be removed from the TV set, but a Radio Shack cable converter will allow all TV inputs to go through the UHF connections. If a converter is used, the C-64 will be connected every time that the converter is switched to VHF.
- Another possibility is to use a coax switch instead of the converter unit.
- The idea is to shield the cable from interference from the keyboard, drive, or your neighbour's power saw.

After break Mike Bonnycastle took the microphone to explain some of the workings of "Adventure"-type games using a simple program that he wrote some years back called "Cave". Mike explained that his program was relatively simple, but contains the major aspects of all adventure games. Users are welcome to take the program and modify or adapt it, and Mike showed us a neat feature that is included in the opening REMs. The start of the program includes a request for a postcard from the user and Mike has received responses from all over the world.

The program, which was originally written for the PET, has been converted to work on the C-64 and one necessity was to move the "table" to a protected location in high memory. Page two of the program explains how to store this table using pokes. Line 250 – stores 126 items into the "destination table" so that if you move from a room the machine can know where you are and where you are going. There are only six possible directions in this program North, S, E, W, Up and Down and in the table, for instance, "F" is for ". . . you cannot move that way". The table is a room map. The treasures, monsters, and levels of difficulty are located in the variables from line 400 on. Mike said that all are welcome to contact him through the club office if there are other questions about writing or playing his adventure game.
TPUG

COMMUNICATIONS MEETINGS

- January 4 and February 1, 1984

Ian A. Wright
Toronto, Ont.

The first meeting of the TPUG Communications special interest group took place at the York Borough library on the evening of January 4th. By the time the meeting was brought to order by David Bradley, almost twenty people had filed into the "Story-Time room". For many it was the first time that we had met face to face; despite having communicated via computer for months over the BBSs. It is wierd to have your pre-conceived ideas of someone suddenly shattered by reality!

Our guest was Don Wieler of Bell Systems who gave us a complete outline of Envoy 100. This new service is similar to Compuserve in that you can send or receive E-mail but this one is based on the character count – not the online time. Similarly you don't pay extra for a call to Florida since all calls go through the main computer on Adelaide Street, also there are 76 phone numbers across Canada so you don't even pay local long distance charges.

What you do pay is $25.00 to join Envoy 100 and $5.00 per month service charges. Each message sent or received costs an additional 30 cents per thousand characters. There are extra charges for hardcopy – same-day letters cost $1.60

continued overleaf

with the extra paid to Canada Post (the letter may be there in only one hour!). For next-day letter service the surcharge is $1.10. Note: According to some Envoy users, there are other charges as well.

Anyone can set up a BBS within the Envoy 100 network and can control the access to their messages by password. This would mean that you could dial a local (Toronto) number and talk to members in Victoria B.C. who are also on their local line. The system has access to both Tymnet and Telenet systems which link Envoy 100 to an even larger audience in the U.S.

Phone (416)581-2084 and they will take all the information needed to log you onto Envoy 100.

The February meeting followed a similar format but the topic was Compuserve and our guest was one of their Toronto SYSOPs (System Operators), Mike Reichman. Mike explained that he has no financial arrangement with the Compuserve company, but gets free access to the Atari-SIG (special interest group) because of the hours he spends on SYSOP duties. Compuserve, he said, may be looked at as a BBS with 100,000 members that is growing at 10,000 new members each month. It can support about 10,000 simultaneous on-line contacts, and has literally hundreds of sub-sections. Mike suggested that it could be looked on as a newspaper with numerous divisions and sub-sections that are of special interest to some people, and others of general interest to all.

Compuserve has tree-structured files and you move from the "root" or trunk out along various branches by selecting from more specific menues. Yes, you can get lost, but a quick "?"-press and an area-specific help function comes up. Mike also suggested that you record the page numbers of areas which you might wish to re-visit. Among the branches we visited in 1½ hours were: C.B. (adult version), the encyclopaedia, games, wire service, stock market, and the programmer section.

While sitting comfortably at home it is easy to forget that you are wired in to a mainframe unit and that you can have 128k of workspace to program in COBOL or whatever! The only time that the 'phone became obvious was when we were asked to wait a few seconds while switching from branch to branch. It seems that we were actually transferred to another of the mainframe units somewhere else in North America.

There are Compuserve nodes in both Toronto and Vancouver, along with 300 U.S. cities and you can get sign-up information at most computer stores. When you sign on you are given a user I.D. that is also your billing number. Your password is your security against unauthorized use of your code and it should be changed often. The cost is $6.00 (U.S.) per hour for regular use and there are surcharges for some of the features. All of this is explained in the Compuserve starter set, and a 50+ page magazine for Compuserve users is also part of the package. We were able to use the encyclopaedia to look up information on computers for about 60 cents. This beats trudging to the local library through snow and slush. *TPUG*

TPUG HAM OPERATORS

Please make these additions to the list which appeared in the November/December TORPET.

Canada

J. L. Asp	Calgary, AB	VE6DR
Don Osterland	Ponoka, AB	VE6BJD
Tom Holtby	Ganges, BC	VE7VP
Ernest D. Smith	Telkwa, BC	VE7EAR
Bill Kremer	Westminster, BC	VE7CSD
Jim Griffith	Brandon, MB	VE4ACN
Mike Peleschak	Ajax, ON	VE3OGE
Bob McMullen	Cambridge, ON	VE3MAM
Murray Crimless	Cannington, ON	VE3GAD
Vic Forde	Hamilton, ON	VE3HPD
Earl Flewelling	Kingsville, ON	VE36JF
Lloyd Wright	London, ON	VE3CFR
Gordon Woroshelo	Manitouwadge, ON	VE3EYW
Jim Heatley	Mississauga, ON	VE3FRU
Roy Stokes	Mississauga, ON	VE3E5S
Thomas Bilesko	Pt. Robinson, ON	VE3AGB
John Birchall	Richmond Hill, ON	VE3GAW
Montgomery Hart	Stroud, ON	VE3PA
N. I. Robb	Sudbury, ON	VE3HKF
Walter Fuhr	Tavistock, ON	VE3NQM
Peter Gayle	Scarborough, ON	VE3OBI
Wilf Antheunis	Toronto, ON	VE3FEA
Frank Gosselin	Toronto, ON	VE3DGI
Tom Hutchinson	Toronto, ON	VE3CWY
George Owen	Toronto, ON	VE3NLJ
Ronald Stockey	Toronto, ON	VE3NLQ
Denis St-Cyr	Montreal-Nord, PQ	VE2BXD
Peter Wayes	White Spruce, SK	VE5ACY

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Dick Greatorex	Phoenix, Arizona	W7KSO
Bil Munsil	Yarnell, Arizona	N7AOU
Ted Kelpinski	Buena Park, CA	W6RHB
Vern Vincent	El Granada, CA	K6CSS
Karl Case	Granada Hills, CA	KA6RAO
Joseph Brennan	Upland, California	KF6NO
Don Ketchum	Upland, California	W6RPZ
Orin Batesole	Walnut Creek, CA	W6HJE
Jerry Berry	Aurora, Colorado	WB0FGL
Steve Brody	New Haven, Connecticut	KB1GZ
Lloyd Wright	Avon Park, Florida	VE3CFR
Sherman Stanley	Twin Falls, Idaho	WA6IRN
Don Brunn	Peoria, Illinois	K9TGQ
Jim Boorman	Iowa City, Iowa	KB0II
Dennis Dowling	Springfield, MA	KA1HME
Art Van Wyhe	Allendale, Michigan	K0TWB
Bruce Werner	Big Rapids, Michigan	WB8TVD
Clancy Burleson	Davison, Michigan	KA8ARF
John Mesch	Empire, Michigan	W8LQZ
Fritz Smith	Gaylord, Michigan	WD8CQG
James Theisen	Gaylord, Michigan	WB8REH
Donald Payne	Swartz Creek, MI	WB8DLN
William Ruch	Little Ferry, NJ	WA2WIL
Andy Boyle	Brooklyn, New York	WA2GDS
Louis Anderson	New England, New York	K0ND
Roy G. Smith	Pleasant Garden, NC	N4BYU
Richard Macduff	Dayton, Ohio	WD8ODT
Lauchlan Forbes	Erie, Pennsylvania	W3STK
Rod Koeb	Montrose, Pennsylvania	N3CDI
Michael Sussman	Upper Black Eddy, PA	WA3TWC
Char. Gruskiewicz	Wyoming, Pennsylvania	W3GBA
Lawrence Williams	San Antonio, Texas	N5CX
George Culbertson	Spanish Fork, Utah	W7CBU

International

Max Bolinger	Switzerland	HB9BAY

General Information

There is a Commodore NET at 9:00 a.m. Pacific Coast time around 7.165 mhz each Sunday for persons along the Pacific Coast.

VIC 20 NET 8:30 p.m. Mondays at 3760khz (75 meter band) NET Manager Joe Cain VE3ANJ, NET Control Bill Melhvish VE3AOY

Commodore User's NET – 9 a.m. Saturdays at 7158 khz (40 meter band)

– also 2 p.m. Sundays, local time, at 14230 khz (20 meter band)

If we've missed you, please send in your Call Sign to TPUG, 1912A Avenue Rd., Ste. 1, Toronto, ON M5M 4A1. *TPUG*

C-64 AUTOMODEM

photo by R. Portolese

Ian A. Wright
Toronto, Ont.

1650 Automodem available from most computer stores for VIC 20 and C-64. Comes with terminal programs on tape, instruction booklet and trial memberships in some telecomputing services. Price is $155.00 (Cdn.) from "Computers For Less", 5170 Dundas St. West, Islington, Ontario M9A 1C4. Phone (416) 233-1421.

My latest "toy" is the 1650 Automodem which has just been released in Canada. For those who are not sure what a modem does – it is a "MOdulator" and "DEModulator" which allows your computer to talk with other computers over the regular telephone lines. The modem is a door into a whole new realm of computer applications. Now you can download (receive) programs in your home directly onto your disk. Accessing (talk to) database systems such as CompuServe or Dow Jones can provide such up-to-date business information as stock quotes. You can also enter the world of Telecomputing via local Bulletin Board Systems (BBSs).

In the Toronto area we can access over 40 of these BBSs of which about six are Commodore boards, although this does not mean that you cannot access non-Commodore boards. With a good terminal program your modem can transmit data between your PET/VIC 20/C-64 and almost any other computer. I have accessed the DEC and VAX at OISE, and the Apple, IBM and other computer boards. It is even possible to download a non-Commodore program and modify it to run on a Commodore machine. The problem, however, is to get through to these boards which are extremely busy. You may find that you telephone a BBS many times before getting through. This is where the 1650 Automodem shines!

Commodore's 1650 Automodem is a rather simple looking black box only slightly larger than a cigarette package fitted with three switches, two input jacks, and an edge connector. Inside this black box, however, dwells magic. Turn off your VIC 20/C-64 computer and plug the Automodem into the user port, then plug in the line to the telephone jack. Now set the switches, and load in the tape program. You are all set to telecompute.

The three switches should be set to (D)ata, (O)riginate and (F)ull duplex for most uses but this is easier said than done. Commodore has not coloured the switch labels, and black on black is hard to read. You can plug your telephone into the telephone jack and by switching from data to (T)elephone continue to have a regular telephone line in the same location as your modem. This switch is the cause of many errors since it MUST be in data-mode for the Automodem to work. I have waited for a half-hour for the modem to contact a board – only to discover that the telephone was on-line, not the computer!

In the box with the Automodem is a free subscription to CompuServe along with a free hour of access time on this service. However, in my package an incorrect phone number was given! Also in the box is a "free" hour on Comp-U-Card (a discount shopping service) on payment of $5.00, a "free" hour on the General Videotex system (encyclopedia, mail, banking, games etc.) after paying $34.95, and a "free" hour on Dow Jones News/Retrieval. I have accessed only the CompuServe system since it has over 800 indexed sub-menus and has no charges for the "free" hour.

Once the modem is set up, load a "terminal program" to turn your computer into an intelligent terminal. This Modem comes with two versions of a terminal program on tape, one for the VIC 20 and one for the C-64. The program works and is quite well explained in the manual – but this program does NOT provide autodialing! You can telephone numbers into the terminal program and then dial by pressing one number. After dialing, however, you must type in your selection again and I didn't buy an automodem to have to sit at the computer and dial from the keyboard.

There is a terminal program to automatically dial and re-dial any number and then call you when contact is made. The program is called Autoterm1650.c and is available on communications disk ((C)C2) from the TPUG's library. I downloaded this program along with Term64.c from the B.B.B.B.S. in Toronto (both are necessary to make Autoterm1650.c work). This terminal program allows you to make a sequential file of BBS numbers and save it to disk. You can then load the file, select

continued on next page

one or all numbers and leave the 1650 to do the rest. When a number is contacted, your computer will call you by ringing a bell.

The Autoterm1650.c program is a group effort. Originally written by Steve Punter, it has been converted to the C-64 by Keith Peterson, had colour added by Gord Duesburry, and was made into an autodialer by Richard Bradley. When it is first run the Autoterm1650.c loads in its machine language and then clears a "used #'s file". This file (named "checker") is used when the program is asked to dial all numbers in the disk file in sequence since it must keep track of any numbers that have already been successfully contacted. If this were not done, the autodialler would continuously redial a number that had already been reached.

Other features of Autoterm1650.c let you change screen colours, receive programs, go to terminal mode, send a disk file, and transmit a program. The latter instructs you to "beware!" when transmitting or uploading. There seems to be some glitch in this part of the terminal program that can cause uploading errors. I have used this program with my C-64, BusCard, 4040, and 2031sl and seen it operating with an Interpod attached to the IEEE drives. Of course it works with the 1541 drive.

I bought my 1650 Automodem from Computers For Less in Etobicoke because their price was excellent. At the same time that I bought my 1650 for $155.00, local department stores had a sale on VIC 1600 modems for $179.00! I got my automatic modem for less than a stick-shift model, so it pays to shop around. *TPUG*

SINGLE DISC-DRIVE BUGS

David Williams
Toronto, Ont.

Many people have reported difficulties when trying to use RELative files on single floppy-disk drives. The drives concerned include the 2031 (both large and "slimline" models), the 1540 and 1541. Frequent errors have been reported, mainly records being written in the wrong places or not being written at all.

Several people, including Jim Butterfield and myself, have tried to investigate these problems. At the February, 1984, Central Chapter meeting, Jim reported that he had found a "fix", which simply consisted of sending the positioning command TWICE every time it is needed. Doing this can cause no harm, and wastes very little time.

Unfortunately, it has since been discovered that, although sending the positioning command twice certainly reduces the number of errors greatly, it does not completely eliminate them.

At present we do not know of any absolutely reliable way to use relative files on single floppy drives. I have done some experiments which have suggested that the error rate can be reduced by waiting for about a tenth of a second after printing to a relative file, before sending the next positioning command. It also seems to be safer to write to an "empty" (i.e. newly formatted) record than to one which already contains information. It is DANGEROUS to try to read-back information which has just been written to the disk drive. Sometimes the buffer will return the wrong information. However, subsequent reading of the disk itself may show that the information has been written to it correctly. It also seems to be dangerous to write only one character at a time. Writing two or more characters seems to reduce the error rate, at least in some circumstances.

I do not want to give the impression that programs which use relative files on single floppies will inevitably fail. On the contrary, they often seem to work quite reliably, especially if the positioning command is given twice. However, we should all be aware that there are some glitches lurking in the system, which are not fully understood.

If any readers can shed any more light on this situation, especially if it may lead to our being able to publish an absolutely reliable "recipe" for using relative files on single floppies, we would be very glad to hear from them! *TPUG*

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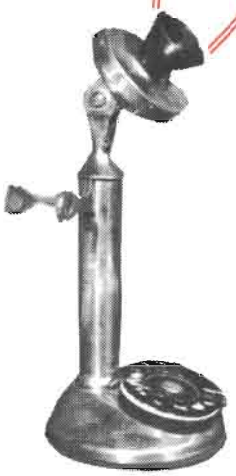
RS-232C



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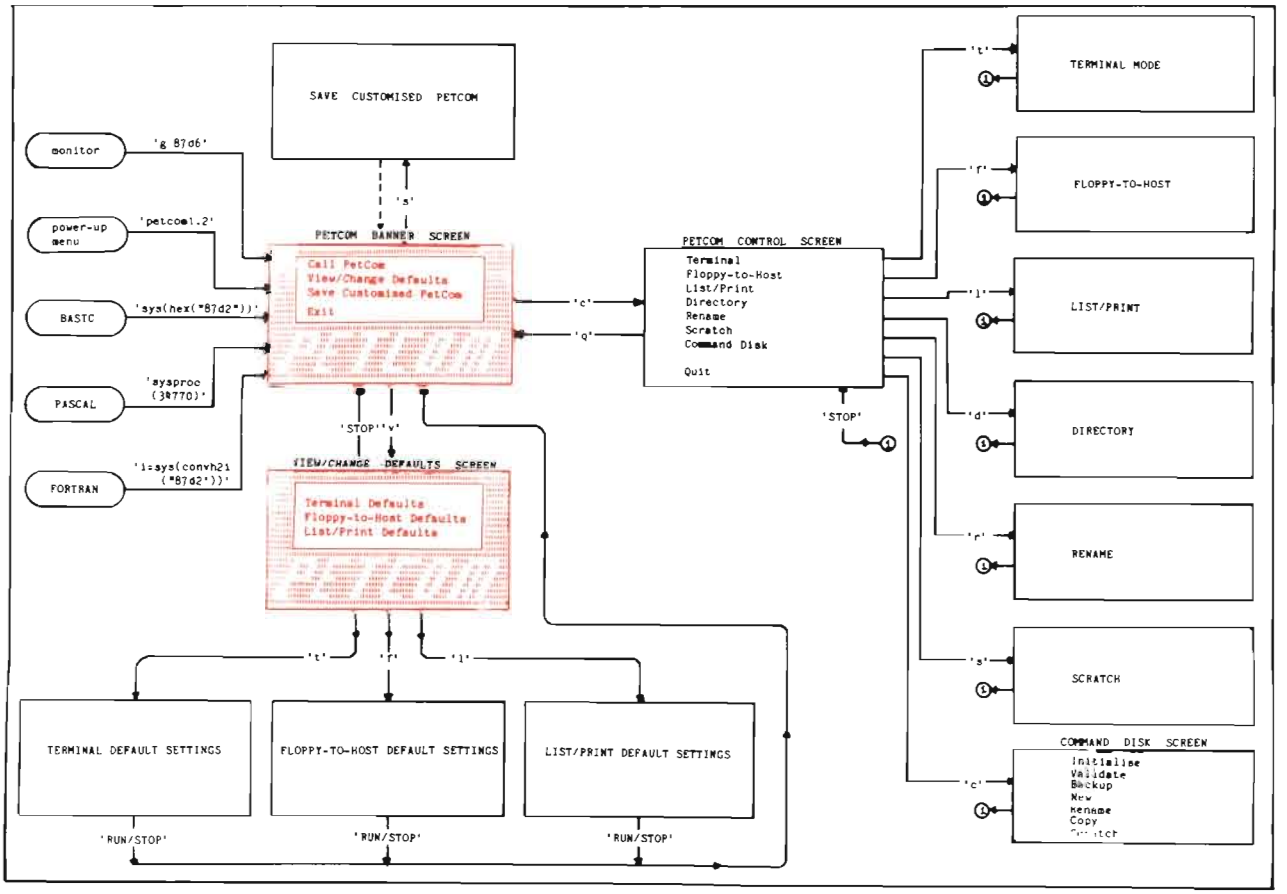

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TWO DISK OR NOT TWO DISK?

Dave Powell
Mississauga, Ont.

There is a philosophy shared by some who play the Stock Market that when a stock price has fallen from the level at which they bought, then buying more will lower their average price, and somehow leave them better off. I lowered the average price of my 1541 disk drives late last year.

Now, while this may have made me feel better for a little while, (and may appeal to others who paid $700 for their first drive!) there's little to be said for this philosophy of drive or stock purchasing unless there is an inherent value in the addition. Is a second drive worth the extra money?

Well, yes, but be prepared for some frustration, although this article should help avoid some of the worst.

Unkindest Cut Of All

(Changing the device number)

This is easy, right? The instructions on page 40 of the 1541 manual even tell me how many screws to undo. Besides, one can always use the software method. Well, not quite. To start with, the software method will drive anyone crazy the first day. Each time it's necessary, one has to unplug the OTHER drive, and either type in the proper incantation or load and run the supplied address change program. Trouble is, the address resets whenever the disk does, which happens whenever the C-64 does. THAT happens when one powers down, and THAT is necessary between switching many proprietary programs, and THOSE were one reason to buy two drives in the first place. On to the hardware method.

I got as far as step 4, sans sweat. Then it says 'remove two screws on the side of the metal housing'. No metal housing. Not even two screws. Five or six, yes, but not two, and definitely not in a metal housing. I even took the last resort – I risked the ignomy of having the Better Half point out that the answer was right in front of my nose. Better Half was stumped too. Even without a metal housing and or screws, there was no sign of appropriate jumpers to cut.

Commodore and one other source both insisted that the jumpers were clearly marked, and on the left centre of the board, so I looked again. So did the BH. No way. A second call got to the root of the problem – I had a short board. How silly I felt, not knowing I had a short board. The instructions, of course, were for a long board. If, inside your 1541, there is a printed circuit board which extends from the back of the drive about two thirds of the length of the cabinet, then you have a short board too. I didn't ask about the metal housing. I suspect that short boards happened about the same time as the cabinet colour change (whitish to browny-beigish) – and the price drop.

The jumpers on the short board are not labelled. On MY drives, they are just in front of a capacitor labelled C46. (Front being the side where the floppy goes in.) This capacitor is fairly central, in the second major row of components in front of the 6502, 6522, 6522 row of chips. Left to right, it's in line with the 6522 which is next to the 6502. The two jumpers are silver plating on the board itself. Each is in the shape of a circle about the size of a pencil. Each circle is almost cut through by a narrow slot which is interrupted in the centre. Thus the total effect is that of an 'H' with a small bridge and bulbous legs. The way to change the device number is to cut through the bridge(s).

Which one? Well, that was my next problem. My informant said that the one nearest the C46 was jumper one. I should cut this one to get a device 9 drive. I now have a device 10 drive. Unless you want a '10' too, (it does add a touch of class), I suggest that you cut the other, that is, the jumper closest to the front, FURTHEST from the C46 capacitor. Unfortunately, without a soldering iron, it is rather permanent, so if you really care, I'd suggest you get a second opinion – your drive might be different. Cutting both will almost certainly give one an '11' – that's what page 40 says, anyway.

Copy-All Did

Fresh from my triumph with the knife (by the way, it's a good idea to try to get all the metal cuttings out, before closing up the drive) I tried out my only piece of two-drive software. From now on, no swapping disks when doing back-ups! I even had TWO copies of COPY-ALL, one with each drive! The instructions were not too helpful; I had to guess what a PATTERN was, but taking the default got me by that problem. Then something was supposed to happen when I held down 'Y' or 'N' as the directory scrolled by. Nothing did. However, it did seem to back up a whole disk. But why all the rigamarole with selecting? It wasn't until I got a TPUG 'best-of' disk with COPY-ALL on it that I found what a nice tool it was, the 'Y'and 'N' now worked, enabling me (as soon as I get around to it!) to rearrange all my programs to appropriate disks – one for sound, one utilities, one (two?) for games, and so on. If you're trying to get by with the TEST/DEMO version, run, do not walk, and get the update from TPUG.

The '4040' Syndrome

One of the next things I learned was that all of those proprietary programs that included disk support really had 4040's in mind. There is a great deal of business software which has been converted from 8032 to the C-64, which was good because it got a great deal of good, well-tested software out on the market in a short time, but a little frustrating each time one comes across the 'for dual drives only' footnote. If you thought that these commands would apply to you when you got a second 1541, think again. Thankfully, this is confined to 'backup' or 'copy' commands (which can be done internally on a 4040) and can thus be done outside of the product.

Load ,8

I always use '8' as the program drive, and '10' (until I take a soldering iron to it) for data. This is because many programs which load in two or more

continued on next page

segments assume '8' as the device number. From another drive, the first segment loads, and then one gets a 'file not found' message. I suppose the '8' will wear out soonest, but there's nothing to be done here because the programs load in several segments to prevent unauthorized back-ups, so the number can't be easily changed. Cracking the protection and changing the code to load in one is the only real solution and it's not worth the effort.

Lock-Out

I have heard far too many rumours and half-truths about this problem for me to be able to sort out the bare facts. The problem is that with two 1541s and a 1525 printer on the serial bus, lock-outs happen. My own experience is that this does not happen with all software, but will occur with sickening regularity with some. For instance, I am using WORDPRO3+ to type this, and (touch wood) I can still access disk, even with both drives and the printer all powered up.

My "Delphi's Oracle" and "Multiplan" (which coincidentally both use relative files) both hang up regularly with three peripherals. My fix is to have only two of the three devices switched on at a time. When the third is needed, switch off another before switching the one on. Remember to remove floppies before switching on or off.

I'm still looking for a more satisfactory solution to this problem. The software vendors say it's in the equipment. Some reports state that the order of 'powering-up' the equipment is important, but interestingly, suggest the C-64 should be turned on first. This totally contradicts the disk manual, which goes to some pains to insist that all will be well as long as the C-64 comes up last. One other suggestion was for a bigger power supply. The jury is still out on this one.

However...

Sounds like a pretty bad idea so far. Not so. Especially with a hefty investment in the more expensive packages, which justify their existence by making things easier for the user, a second disk makes sense. In some packages, where not all the code is resident at once, and is brought in as required, a second drive will allow frequent data saving without continual disk changes. Disk back-up, and reorganizing data on several diskettes is FAR easier with two. A back-up can be left unattended — who doesn't have something better to do with 10-15 minutes than watching buffers filling and emptying, and playing floppy-swoppy?

Is there anything better than two 1541s? Of course — Dual drives. But unless Commodore finds a way to bring their price down (without losing the speed advantage), we'll all have to settle for what we can afford, possibley a little more than we can justify, and maybe telling our friends about the financial coup we pulled off, actually REDUCING the cost of our drives by buying another one! *TPUG*

THE G-LINK

J. Allan Farquharson
Paris, Ont.

This is a device which plugs into the cartridge slot on the Commodore 64. The main object of this device appears to be to allow one to operate a program called the Manager from a single parallel disk drive.

Several other devices which plug into the same location allow one to use double disk drives such as the 4040 and the 8050. They will not work with the Manager. In truth Commodore has laid an egg. The G Link is meant to overcome the stupidity of a company which markets software which cannot be backed up, and won't run except on the slowest drive that they market.

With respect, I found that the Manager does run with the 2031 but still takes quite a while to load. As a solution to run this very powerful data base on the single parallel disk drive, it is a success. For this purpose it is highly recommended.

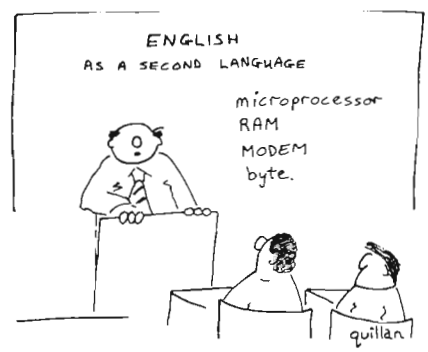
In other respects it has less value. It appears to be transparent to programs such as The Koala Pad but these will run on a 4040 anyway with suitable parallel links. The Koala Pad is another software program which is also disk protected and cannot be copied for back-up purposes. I understand that most software will run with the G Link in place.

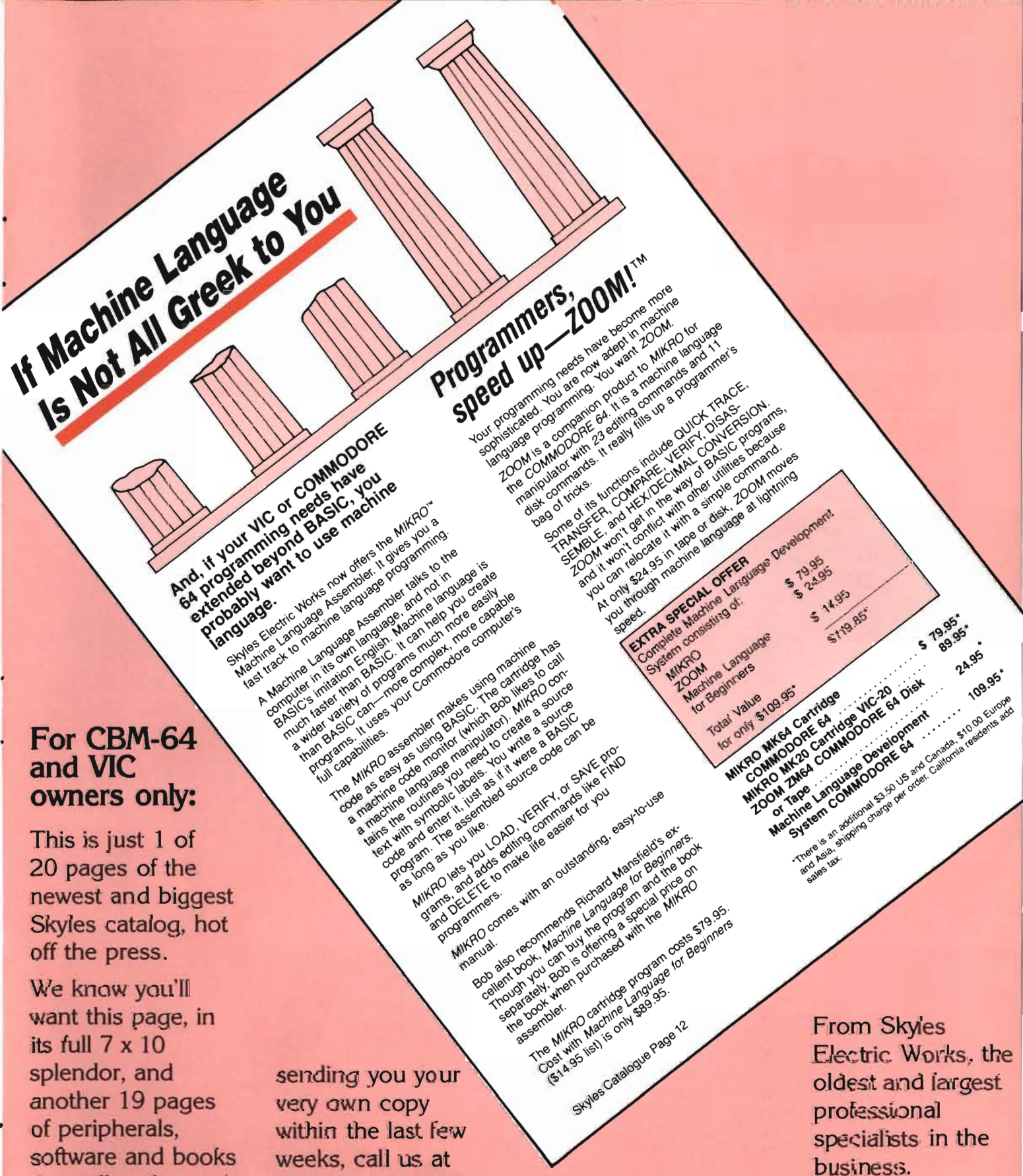
Other devices which allow a user to run parallel drives, (those which connect to the IEEE bus on other Commodore computers,) have several advantages which are not presently in the G Link. I have a Buscard from Batteries Included and a C Link from RTC (Richvale Telecommunications) both which provide a monitor for the C-64 and also allow one to use BASIC 4. To anyone used to other Commodore computers this is a great advantage as BASIC 2 is a regressive step. Of course BASIC 2 is the version used in the C-64.

This product is excellent for the purpose claimed: to run the Manager on a single 2031 drive. For other uses I find it very limited. It does not appear to interfere when used on other programs. The price is rumoured to be $89.50 Cdn.

Documentation is adequate and it carefully explains the BASIC 2 codes to users who are accustomed to BASIC 4.

I find it unfortunate that one need buy the G Link to support an excellent software product. If it was written to run on other double disk drives it would have been superb! *TPUG*





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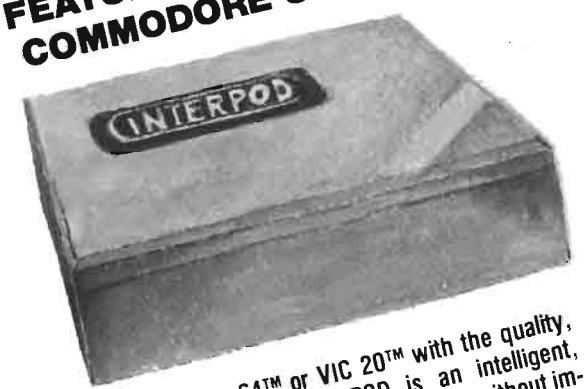

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The Word Worker

Gerry Gold
Toronto, Ont.

Reviews of C-64 word processors have now appeared in virtually every popular computing magazine, often with large comparison tables that permit readers to compare the features of each product. Rather than undertake shopping list reviews, this column will explicitly point to some of the advantages and disadvantages of available programs. This month's column deals with Script 64 and WordPro 3 Plus/64. Next month I will turn to EasyScript and the new PaperClip 64B.

The programs reviewed this month are radically different from each other in design, each with its advantages and disadvantages.

WORDPRO 3 PLUS/64

The principal advantage of WordPro is that it is the standard in Commodore word processing. Steve Punter's WordPro 3 Plus was running on the Commodore 4032 several years before the C-64 was produced. Its 80 column cousin, WordPro 4 Plus, which runs on the Commodore 8032, has long been a standby in the TPUG office. Yet these advantages of WordPro also attract 'work-alikes' some of which (PaperClip and SuperScript, for example) offer an operating environment with features that are not available in WordPro. To be fair, WordPro 3 Plus/64 offers a few features that are not available in any other C-64 word processor.

One of the few unique advantages of WordPro is the "extra text" feature which permits a user to move text between two user areas. The default size of the main user area is 329 lines, with 23 lines allocated to extra text. However, these can be readily changed to whatever size is convenient. For example, main text and extra text can be 176 lines each. Personally, I find this to be an invaluable editing aid, particularly because WordPro 3 Plus/64 permits variables and lines from extra text to be rapidly recalled into main memory. Given the slow response of the VIC-1541 drive, this is an important asset to the C-64 word worker. Files of variables can be stored on disk and then recalled to extra text for future use. WordPro also offers an excellent block variable feature that permits form letters to be filled in from extra text or using a variable file on disk.

In other respects WordPro 3 Plus/64 is a full-featured program, permitting text to be readily reformatted within a document and allowing for headers, footers, superscripts, subscripts and 'hanging' identation. These features are called by the user with special on-screen formatting commands, which are placed on a separate line(s) of text. WordPro also features a useful column arithmetic function.

Formatting text for printer output is smooth if you own a Commodore or a SpinWriter, but the default ascii printer will not be adequate for many users. Fortunately, special characters are easily defined which turn on special features of printers such as the Epson MX-80. The WordPro 3 Plus/64 manual is clear and thorough. Features such as special formatting commands are not only clearly explained, but there are also examples for the more popular printers. An excellent tutorial provides new users with basics.

What are the features that I not like about WordPro 3 Plus/64? First, it is a text formatter that processes words to paper. Without a video print routine, it is impossible to rapidly view text to see what it will look like on paper. Secondly, WordPro and all of its 'work-alikes' feature a destructive RETURN key. Everything to the right of the cursor is erased after the user presses return. Lines are also easily erased if, while the control key (Commodore key) is pressed, a user happens to also press the delete key. Although this is a normal aspect of typing with WordPro, I still make this error after 3 years of experience with the program. Thirdly, cut and paste operations with WordPro are tedious. Text can only be moved if it occupies an entire line and it must be saved to disk if it is to be moved to a different file or moved from main text to extra text.

A fourth difficulty with WordPro 3 Plus/64 is that it does not make use of special C-64 features such as colour, function keys and the SID chip. Steve Punter tells me that he has virtually completed a WordPro that is designed exclusively for the C-64. I hope to have more news on this program shortly.

Our evaluation copy of WordPro came with a promising spelling checker – SpellRight Plus/64. This program does not operate from within WordPro and I will comment on it in a later review. But its availability makes WordPro 3 Plus/64 worth considering, especially if you require a high speed spelling checker. As for WordPro 3 Plus – it is comprehensive, fast, reliable and bug free and, at its reduced C-64 price, makes it a good buy.

SCRIPT 64

Imagine all your disk as 1000 slices of pie, forty of which can be loaded into the memory of your computer at any one time. Script 64 does this by dividing the disk into screens. It loads them serially, 40 at a time (for example screens 001 to 040 form one file and screens 041 to 080 form another file). The user can print, to the screen or to paper, virtually any combination of screens and the same screen may even be printed twice within the same document. In this way, commonly used formats can be used repeatedly and combined with new material without the need to link files with special commands as is necssary with WordPro and similar programs.

Script 64 manages this merging by mixing two types of screens: a wordstream screen of continuous typing without any format commands and a structured screen where 'what you see is what you get'. For both types of screens, formatting commands are off screen on easily accessed 'control maps'. There is one control map for the entire word processing sesion and another is available for each screen.

The word worker can move all or any part of a screen, even one word, to any other screen on the disk or even on

continued overleaf

another disk. Programmer David Foster has designed the search and replace formats to be more interactive, searching screens in serial order, with an ability to search the entire disk. This is one of dozens of screen-oriented commands that are accessible with one or two key strokes or from the fully-configured C-64 function keys.

SCRIPT 64A

Script 64 comes with a spelling checker, which is more of a fast proof reader, that works from within the program, using a dictionary built from the user's vocabulary. A dictionary maintenance program, written by Bill Dutfield, can correct and print out the dictionary. The program is sold with Scratchpad, a data base and mailing list that works interactively with Script 64, accepting multiple input disks. Incidentally French and other non-English scripts are available on screen or in a simple routines that redefine any key to a character that is available on the printer but not on the keyboard.

The program will do background printing and will permit a user to temporarily halt printing. Several printer drivers are included on disk and these are fully configured. Most interesting is a printer setup program that permits users to configure their own printer driver. Video printing is available and can be scrolled sideways, paused and changed to printer output (print from any page).

Space limitations preclude a full listing of Script 64 features. There are some liabilities. Though the screen format is not a problem on the 8032 version, there is only a limited amount of data they the C-64 can carry on a 40 column 64, despite the ability to merge screens in video printing. Side scrolling (like PaperClip and Easyscript) could possibly compensate for this limitation. Script 64's solution, now also offered by PaperClip, is an alternative 80 column version of the program which splits the character set using the C-64's hi-resolution graphics. The result is not pleasing to the eye but it is a cheap 80 column version in software and it does offer an accurate video print of what a page will look like after it's printed to paper.

A second liability is also an asset. A disk index, constructed by the author, is maintained in 3 accessible files which can also be used to load programs. Nonetheless, sometimes it would be convenient to merge the disk directory with the index of Script 64 files. Finally, sometimes the paging of screen is not as convenient as a file that scrolls as you type. The pages are, in my opinion, better for long documents or for fixed formats like lecture notes or recipe cards, the scrolling is more desirable with shorter files (such as this one) or letters.

Forthcoming: EasyScript and PaperClip (C64); WordCraft for the 8032 and 8096; the Waterloo Editor in the SuperPET; the best word processors on the VIC 20.

WORD WORKER AND TEXTMASTER:

FREE WORD PROCESSORS FOR THE C-64 ((c) T5)

Word processors seem to appear on every TPUG release disk and last month's disks were no exception. Richard Bradley called me about Word Worker and Textmaster before the disk was released. I tested both of them as soon as I received the disk. If you have a Commodore Printer, both of these programs are worth trying. Even if you do not use Word Worker, you may wish to study the BASIC coding to get ideas for your own programs. The programmers are identified (Jim Garrick – Word Worker and Harold Brochman and Maurice LaRose – Textmaster) if you wish to follow up with questions or improvements. Though these programs are described in the last issue of TPUG magazine, several features are worth mentioning in this column.

Word Worker (WW) offers a readable full screen menu, function key control and a number of editing features usually found in commercial software including the ability to search forwards and backwards through a document. Also unusual in public domain programs is true word wrap, leaving only whole words at the end of a line.

Speed is not a virtue of WW. Text entry and printing are relatively slow, but this may not be of concern to readers who need an occasional word processsor. If you own an ascii printer, you may wish to change the subroutines for printing. However, even an Epson (ascii) accepts WW's function key commands for underlining, enlarged print and italics.

Textmaster (TM) is in some ways similar to Storywriter, reviewed last month. TM is geared for children. It comes with three sample files that give the user the history of the program in North Vancouver elementary schools and instructions on how to use it with either a Commodore or an ascii printer. TM also seems to be 'crash-proof', though it comes with no fancy editing features. It is extremely easy to load programs from the disk directory (type in a number and press return). As the authors attest, grade 7 students are proficient with this after two sessions.

TM is designed to give children a comfortable feel for word processing, not to make them junior scribes. Printing and paragraph format are set to default values and TM ignores text preceeded by 6 blank lines – a paper saving feature. There is only one screen available screen colour and numbers larger than 60 characters cannot be entered. Indentation is impossible, a disappointment in a program aimed at teaching word processing skills.

SCRIPT 64—WORDPRO 3 PLUS COMPATIBILITY

To load a WordPro file into Script 64:
- Every 22 lines or less, replace carriage return marks with "a".
- Eliminate all format commands.
- Rename the file to "a" (or b,c,d,e etc. if you are linking files)
- Save these files to a blank disk or to work disk
- Load Script 64, insert the work disk. Script 64 will read the Wordpro files.

To load a Script 64 file into WordPro 3 Plus:
- Eliminate all underlining, emboldening or italics commands from the text
- Save your text, quit Script 64 and load WordPro 3 Plus
- Load each Script 64 file (a, b, c, d, etc.) separately.
- Strip away the first few lines of formatting characters

(Commodore key and DEL) *TPUG*

LAS VEGAS AND THE COMMODORE 264

Jim Butterfield
Toronto, Ont.

photo by John Wood

I was surprised when Commodore asked me if I would present their new product line, the Commodore 264 series, at the Consumer Electronics show in Las Vegas in early January. I'm not a Commodore employee, and it would be out of character for me to pretend to be. If I were to show the new machines, I'd have to do it as "myself".

A trip to West Chester, Pennsylvania, just before Christmas, revealed some technical aspects of the machine. The real 264 wasn't ready yet; its final logic had not be assembled; and the stylish cases had yet to be manufactured; and the software packages were near completion but not yet ready. I had a shot at mockups and prototypes, and had a chance to talk to marketing, software, and design groups. It seems odd, but you can get a good deal of the style of a machine even before it exists.

Some technical words about the 264 series (the 264 and its big sister, the 364).Physically, it's stylish and attractive. Architecturally, it has a more sophisticated structure than the Commodore 64, so that BASIC is able to power up with 60,671 bytes free even though the 264 has only the same 64K of RAM as in the C-64. BASIC-ally, there's a super BASIC which has 4.0 disk command, graphics capabilities, editing and renumbering features, and extra BASIC commands such as structured statements, error trapping, IF... THEN...ELSE, and PRINT USING. The BASIC, for some reason, is named BASIC 3.5; I don't know why, since it contains all 4.0 commands and a whole bunch more.

From a user standpoint, the new series has some attractive aspects. The cursor keys are finally done right, arranged in a diamond formation so that the cursor can be moved as easily as with a joystick. The function keys are live the moment power is on; Key F3, for example, is DIRECTORY. You may redefine any or all function keys as desired. The same software that can be plugged in as a cartridge – yes, Commodore have seven or eight software packages ready for the show – can also be fitted inside the computer. Thus, the user may buy a computer pre-fitted with any of a number of applications.

The 264 series will not obsolete the Commodore 64 (or the VIC 20 for that matter; but that's another story). Commodore call the 264 their "productivity" machine: with its expanded BASIC, built-in software, and user convenience features, it will be a handy machine for getting a task done quickly. But for fun... I still prefer the C-64, which has features not found on the 264. That marvellous ADSR (attack-decay-sustain-release) sound on the C-64 has been cut down to a simpler VIC-style sound capability. Sprites are not available on the 264 so that there are likely to less shoot-'em-down games. The 264' graphics are otherwise good, by the way: high resolution, multi colour, extended colour and custom character definition are still there; and the choice of colours on the 264 is greatly expanded to 16 colours each with 8 hues. Some observers were puzzled by Commodore's arithmetic on this: 16 colours each with 8 hues seemed to conflict with Commodore's statement that 121 colour combinations could be achieved. Why not 128? Well, Commodore seems to feel that many users will have trouble distinguishing between the various hues of black...

The 264 looks like it will be a good communications machine. It uses a communications chip (ACIA) rather than the VIC 20 and C-64's somewhat limiting interrupt system.

Compatibility? The screen is the same as on the C-64; 40 columns by 25 rows. BASIC will be OK, but POKE statements will need to be changed; you don't have the same chips in the same places. On fact, you shouldn't need to use POKE at all on the 264 series, since there are BASIC commands for everything. Machine language will be the same, but it will influenced by the fact that BASIC loads into address 4097 rather than the C-64's address 2049. And don't forget that BASIC has access to all of RAM; there are less safe places for your program unless you make them yourself. By the way, there's a splendid Supermon-type machine language monitor built right in; you can reach it by typing the BASIC command MONITOR.

continued overleaf

On the show. Commodore had an immense display. It dwarfed those around it; the display contained not only equipment displays and a stage (where I did my thing) but also a two storey structure which included a lounge and a private office for Jack Tramiel. A multi-screen video showing the 264 was thundering away in the stage area. At the entrances (yes, this was big enough that there were entrances) you'd find Magic Mike, a magician using a Commodore 64 to do card tricks, and Egg, a mime who ushered passers-by into the exhibit area. (I'm thinking of hiring the mime to handle my telephone answering service, by the way).

Every hour or so, I'd introduce myself and describe what I'd observed about the series. Once in a while, a Commodore person would sidle up to me between demonstrations and correct me on something I had gotten wrong. By the time the fourth day was in progress, I think I had it down pat.

Many Commodore personnel came to the show from various locations around the world. I'm sure that it will be no surprise when I say that some of them learned about the 264 series from my presentation. Commodore has been very tight on security on this new product (formerly nicknamed "Ted" or "444"); many employees haven't had access to detailed information.

Price? It was a question I was often asked. Commodore did not announce a price at the show, and as far as I know have not done so yet. All that is known is that rumors say it's expected to be higher than the Commodore 64 but not over $500 in the U.S.A.

I didn't get to see much of the rest of the show; I was tied to the Commodore diplay. I gather from other attendees' comments that the other major microcomputer manufacturers didn't have new products on display. I briefly visited the software area: the Commodore 64 is very visible in terms of the volume of programs now available.

I imagine Chris Bennett will have a more comprehensive report on the show itself. I trust that he will report how I snaffled a Commodore T-shirt (extra large) for him after all other sources had failed. Credit where credit is due.

p.s. Never say that I don't give you news in plenty of time before you need it! I have just heard that Commodore has postponed distribution of the 264 and 364 until (probably) late this year. So now you know all about them six months ahead of the time when you may be able to buy one!

p.p.s. Yes, it was a heckuva lot warmer in Las Vegas than it was in Toronto.

TPUG

RIGHT JUSTIFY

J. Allan Farquharson
Paris, Ont.

I think this could refer to our justice system, is it right? Not so. The printers justify printed words by moving them so that they sit on the left and right margin. Left justification, as it is called, is normal, even on a typewriter or computer printer. Most newspapers and books set type so that the right margin looks like the left, all letters in the last position, say column 70, line up from top to bottom.

I shall wander slightly to make a point. Have you used the function LEFT$? It works like this: a string, such as W$ consists of blanks and characters.

Make W$ = " HI THERE CHARLIE "

This will be a simple method with no smarts to look after strange things like commas, which foul up computers quite often. Remember what commas, semicolons, and colons do in BASIC?

If I write A$ = LEFT$(W$,2)

then A$ is given the result of the operation called LEFT$. This means count over two characters in the string W$ and put this is A$. In this case, counting over two from the left in W$, " HI THERE CHARLIE," results in A$ being equal to "H." Count from left, one, a blank space, and two the letter "H."

To continue, another thing that computers do with strings is to string the strings together like apples on a string hung up to dry. The word concatenation, or the verb concatenate describes this process.

So I may say that A$ = A$ + B$.

If A$ = "HI" AND B$ = " THERE"

Then A$ becomes "HI THERE" . . .

Note the space after "HI" actually is tacked on to the front of "THERE." The result of adding a string to a string is that it simply gets longer.

If A$ = "10 blanks "

then A$ = A$ + A$ makes A$ = "20 blanks"

Back to the cat, I mean concat. . .you know. Here is a simple example of a right justify with no smarts built in:

```
10 REM RIGHT JUSTIFY
20 S$ = " 10 BLANKS" : REM DON'T
     USE THE WORDS
30 S$ = S$ + S$ : REM NOW S$ = 20
     BLANKS
40 INPUT WURD$ : REM DON'T USE
     WORD$!
50 REM WORD CONTAINS OR WHICH
     IS A NO NO.
60 L = LEN(WURD$)
70 R$ = LEFT$(S$,20-L) + WURD$
80 PRINT R$
100 GOTO40
```

Note that I threw in a curve. LEN(WURD$ actually counts how long the string is from the first to last character. The story is this: start with a string of blanks, remove from them the length of the string, WURD$, then tack the WURD, ok word, back onto the string by concatenating it. Then print it and voila! it is right-justified. Try it. This demonstration allows you to concatenat strings, use LEFT$ and allow the computer to calculate the length of a string with LEN(WURD$). Now some programs may begin to make sense when they use these three operations. *TPUG*

SUPERPET'S SUPER FEATURES

Brad Bjorndahl
Bramalea, Ont.

Any article describing the SuperPET must face the problem of choosing among the abundant features and languages available. These programs, which come with a complete SuperPET package, include the following: an Editor, Basic, Pascal, Fortran, Cobol, APL, a ROM monitor, and an assembly language development system. This impressive set of software is in addition to the usual BASIC and monitor in a CBM 8032.

In order to give the reader a feeling for the power and uniqueness of the SuperPET, this first article will attempt to provide some background by discussing the editor, more properly called the Waterloo microEditor. VIC 20 and C-64 users may believe there will be little to interest them here, but programming methods apply to all languages. For example, once users of Commodore BASIC learn the rational file naming system provided by the Waterloo operating system, they may want to use something similar in their own program development.

Now, for those who lack exposure to other computing systems, that is, minicomputer or large mainframes, let me describe the purpose of the editor. An editor is simply the means for imitating on a monitor screen the now obsolete (and once omnipresent) computer cards. An editor is not a word processor and was never intended to be. The presence of an editor on all new computer systems is exactly why computer cards are now obsolete.

Editors were originally designed with programmers in mind. Imagine a deck of computer cards in which each card contains one line of Basic punched in it with little rectangular holes. In the bad old days a programmer would have to correct a mistake on one card by replacing it with a correctly punched card. These days the programmer enters on a keyboard the number of the 'card' that needs fixing and then types in the correct code, or if they have a Commodore system, the 'card' is listed and overtyped. Without going into the details of how one punches little holes in cards and handles card decks, I can assue anyone that the difference in procedures is as great as the difference between using a 1953 Underwood and a Wang Word Processor.

Most home computer users can proceed quite well without an editor program because a minimal editor is built into Basic. Most other languages, however, rely on a separate editor to create a sequential file of code which is then compiled or interpreted. Given an editor though, much more can be done. Sequential files of data can be generated easily, selected searches and changes can be quickly done, other files (e.g. subroutines) can be copied into the editor file, and code (or data) can be displayd with scrolling features.

The SuperPET editor allows all this and more. In fact, as editors go, the Waterloo microEditor can be rated somewhere between good and excellent.

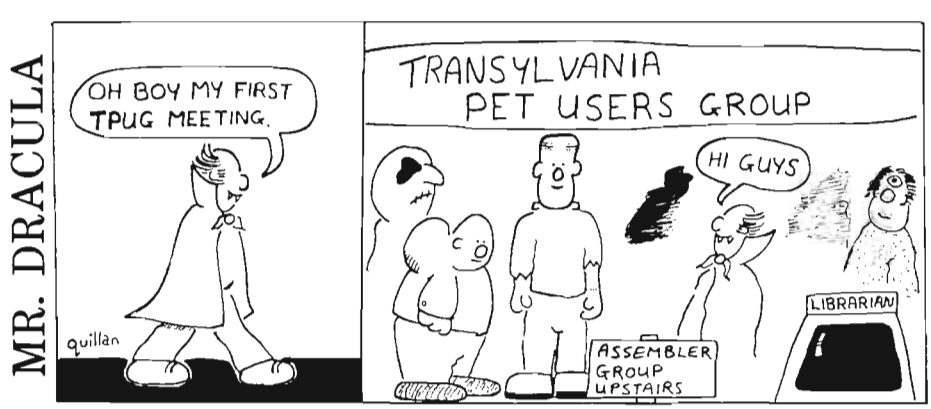
Now , to get down to details, the Editor breaks the screen into three parts. The upper part of 22 lines displays the edit file up to 80 bytes per record (just like a computer card). Edit commands are entered on line 23 and Editor responses (e.g. file status, record number, etc.) appear on line 24. To edit a file called ABC, the user enters 'g ABC', which means 'get file ABC from (default) disk unit 8, drive 0'. The file is then copied from disk to memory and the first records of the file are displayed through a 22 line 'window' which can be 'scrolled'. The user can move a cursor anywhere in the window to change, insert, or delete characters or entire records. The Editor is therefore classed as a 'full screen' editor as opposed to lesser editors in which only one record can be changed at a time.

The Editor accepts commands (on line 23) which can search or change character strings within the file. The command can be restricted to a subset of the file using various criteria such as record numbers or special strings. Search strings can themselves be restricted to the beginning or end of other character strings or of entire records.

Scrolling is done one or 20 records at a time, up or down the file; 20 records allows 2 lines of overlap from the previous window. When a search command is given, scrolling is automatic to put the cursor at the searched record. Searching can be done to find the first, next , first previous, or all the occurances of a given character string.

Various other commands exist allowing the user to copy, delete, rename and save files. The user can also display directories, reset tab, date and time settings and recall the last command (very useful!). Also, the scrolling and other window operations (such as inserting a record) are easy with the numeric keypad used as a programmed function keypad.

I am not attempting to give the reader lessons on how to use the Waterloo microEditor. I do hope to show that the function of the editor is to provide a programmer with a powerful and easy to use tool with which to write code and that Waterloo has succeeded very well. Much more could be said but for now I believe that I have satisfied my original goal and demonstrated with the Editor that the SuperPET is powerful and unique and, from my point of view a pleasure to work with. *TPUG*



LINE FINDER

David Williams
Toronto, Ont.

For those of you who like experimenting with the PET's machine-language monitor, here is a very short little utility program for PET/CBM computers with BASIC 4.0 which you may like to type in:

```
c*
pc irq   sr   ac xr yr sp
.; b780 e455 33 ac 34 30 fa
.
.: 0384 a9 4c 85 00 a9 91 85 01
.: 038c a9 03 85 02 60 20 2d c9
.: 0394 20 a3 b5 b0 05 a9 00 a8
.: 039c f0 14 a9 24 20 d2 ff a5
.: 03a4 5c 85 fb a5 5d 85 fc 20
.: 03ac 17 d7 a4 5c a5 5d 4c bc
.: 03b4 c4 00 00 00 00 00 00 00
.
.
```

When you have keyed this in to your machine, save it on disk or tape if you want, then go into BASIC direct mode and enter "SYS 900". Nothing will appear to happen; the "READY" prompt will immediately reappear. However, the PET's USR vector will have been set to use this new routine.

Now write or LOAD a BASIC program into the computer's memory. LIST this program and find a line number which it contains. Let us suppose that there is a line with the number 560. Still in direct mode, enter the command "PRINT USR(560)". What will then appear on the screen will be the address, expressed in both hexadecimal and decimal form, of the start of line 560, as it resides in memory.

Go back into the monitor and look at the contents of memory starting at the address which the utility indicated. The first two bytes are the address, in hexadecimal form, of the start of the NEXT line. BASIC puts these "line links" into memory to enable it to search quickly through a program when carrying out instructions such as GOTO. The next two bytes are the line number (560 in this case) again expressed in hexadecimal form. Following the line number are a series of bytes containing the actual text of the BASIC line. If you know what the line says, and if you know the ASCII values of the letters of the alphabet (which start at $41) and of digits (starting at $30) you may be able to read the line, or at least parts of it. However, you will find that the BASIC instruction words are not spelled out, but are condensed into single "token" bytes. At the end of the line, you will find a zero. This is simply the "end-of-line marker". After this will be the beginning of the next line, at the address which was contained in the "line link" which we looked at first.

While still in the monitor, make one or two changes to bytes in the line, then return to BASIC and LIST it again. You will find that the line has changed.

Find a line number which is NOT contained in the program – say 559, and enter "PRINT USR(559)". A single zero will be printed. This is the utility's way of indicating that the requested line was not found.

There are several practical uses for this utility. Perhaps the most common is to help in correcting certain kinds of errors which may result from bad LOADs. One of the worst frustrations which a BASIC programmer can encounter is to find that the disk or tape recording of the program he is working on will not LOAD properly. This seems to be particularly likely to happen in environments such as schools, where disk and tape drives tend to be contaminated with chalk dust and are frequently out of adjustment. The result of a LOAD error may simply be that the program contains syntax errors, which can be corrected by using the line editor in the usual way. However, a far worse problem can arise if a line number is changed by an error. If this results in lines being out of order in the program, with a line with a high number followed by one with a lower number, BASIC will fail to find the lower-numbered line, so the editor cannot be used to fix it. This utility (which uses BASIC's line-finding routine) will also fail to find the lower-numbered line, but it will succeed in finding the higher-numbered line. Looking through memory with the monitor will then soon show the start of the low-numbered line, and the line number can then be corrected by changing the relevant bytes with the monitor.

Another use, which is particularly timely in view of the current TPUG programming contest, is to help in editing compacted program lines. Lines which cannot be written in eighty characters cannot be edited with the BASIC line editor. However, they can be changed by using the monitor. Providing it is not desired to change the length of the line, this can be a faster way of making changes than by changing the "source" program and re-compacting it.

A third possible use for this type of utility would be in connection with self-modifying BASIC programs – programs which change themselves as they run. Such programs have various uses, such as allowing the user to enter BASIC instructions during a program run. For example, a program which draws graphs of mathematical functions may ask its user "please enter the equation of the function". The program then changes itself to incorporate the equation. This can be done, essentially, by POKEing addresses in memory which are within the area in which the program resides. However, finding the correct addresses to POKE can be a problem. The program has to "know" exactly where, in memory, a particular target line resides. If the original programmer has found these addresses and written them into the program, the system is likely to fail if a user subsequently edits the program, changing the position in memory of the target line. However, if this utility (slightly changed so that it doesn't print anything) is incorporated into the program, it can find the correct target addresses wherever they may happen to be. *TPUG*

The Manager – A User's Review

Chris Bennett
TPUG Business Manager

The Manager is a data base program written by BMB CompuScience of Milton, Ontario. It was originally for the 8032 and is now also for the Commodore 64 and is distributed all over the world. I am not going to explain every feature of this program, step-by-step, but will explain why I use it and what types of applications it can perform.

First, a little history. About four years ago, I became membership secretary for the Toronto Pet Users Group (TPUG). Part of this job required that I keep a list of all the members, their addresses phone numbers, and other information. To do this, I wrote a mail list program. (MAIL LIST 4040 and MAIL LIST 8050 in the TPUG library). This took many hours of my time (200+) and was a lot of fun. However, as the club began to grow, I needed more and more information kept by the Mail List. Each time I made a change, I would have to spend many hours changing my programs. By December of 1981, we had 721 members and an ever increasing need for a more flexible method of keeping our membership data. To do this I chose The Manager.

My first job was to define the data for my mail list on The Manager. To do this I called the 'CREATE' option from the menu. After about an hour, I had created a mail list record of 200 characters with all the extra fields that I needed. In the process, I also had showing, on the screen, much more descriptive information about each field. The Manager allows you to create your record description on from one to two screens on the 8032. Three types of information can be displayed: Text, Data Fields and Display Fields. Text is descriptive information to help let understand what is being entered. Data Fields are pieces of information that are entered for each record and stored onto the disk as part of your record. Display Fields are part of the 'ARITHMETIC' function of The Manager. These are locations on the screen where the results of arithmetic are stored. For example, a quantity field can be multiplied by a cost field to produce a value displayed on the screen. This does not take up any room in the record and is recalculated each time a new record is sent to the screen.

After the new mail list record had been designed, I had two new files on disk. The first contains the screen definition and other pieces of information needed by The Manager. This appears as a PRG file on the disk directory. The second file is a Relative Record file which contains the actual data that is entered. When this file is created, The Manager asks for the number of records needed. It then goes out and pre-formats that many records. If more space is needed, you just go into the 'MANIPULATE' file option of the menu and add more records. The only restriction on this has been that on the 8050, a relative file can only be 180,000 characters long. Another restriction by the 8032 version of The Manager is that the record length cannot be longer than 253 characters or that more than 16,000 records can be created. The new version of The Manager on the Commodore 64 does not have the same restrictions.

Now that I had defined my new mail list data, all that remained was for me to write a program to copy from my mail list format to the new Manager format. After that, I was ready to go. To ADD, CHANGE or DELETE records, I use the ENTER/EDIT option from the menu. This is now a lot more flexible than my old mail list program since I could skip up and down fields to change them using the cursor UP/DOWN key. Also within each field, the cursor LEFT/RIGHT and the DELETE/INSERT keys work to manipulate my data. The ENTER/EDIT program also has many useful functions that I never had before. I can search for records using different SEARCH criteria on one or more fields. I can access any record in the file using the INDEX search option which allows one field to be defined as a key field. The search by index can access any record in the file within about three seconds.

The next step for all mail lists is the SORT. The Manager allows you to sort on up to 16 fields. This allows me to sort by Postal Code (ZIP), last name, or any other sequence that I need. After sorting, the information stored in the record can be printed. The REPORT function of The Manager allows you to define the report format in any way you like. The LABEL function allows you to create mailing labels in a very versatile method using either single labels or 3 or 4 up labels. When you receive your TPUG Magazine, the label that got it there was created by The Manager.

As it has turned out, The Manager has been invaluable to TPUG for maintaining the Membership list. We now have over 13,000 names on a 9090 hard disk. I can sort that entire list in about 20 minutes. I can access each member by membership number or by last name (INDEX). Also, The Manager is being used by office staff who have not had a great deal of background in computers.

As I have got more experienced with The Manager, I have found many other applications. I keep track of all the money coming into TPUG by the use of the DEPOSIT file. This not only records all money received, but also allows me to sort by G/L account number to post to my general ledger. This is also true of my PAYABLES file. Any payments I make are recorded and also can be sorted by G/L account code for the general ledger. As an example of the number of records involved, the DEPOSIT file now has close to 12,000 records in it from the 1st of July, 1983.

In summary, The Manager is not the only data base program out there, nor is it the least expensive. But for the price together with the features it rates as one of the best. Combine this with the fact that BMB CompuScience is constantly upgrading the features and correcting any 'bugs' that may appear, I consider this to be one of the best buys available. The version for the Commodore 64 that we were shown at one of our meetings is one of the best products available this year. Many new features have been added and all of the power of The Manager will be available at a very low cost to many hundreds of thousands of '64 users. *TPUG*

Annual TPUG Conference

May 26 & 27, 1984

Constellation Hotel

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Check February TPUG Magazine

or the Club Office

for details!

THE WINTER CONSUMER ELECTRONICS SHOW

photo compliments of Commodore

Chris Bennett
TPUG Business Manager

The Winter Consumer Electronics Show was held in Las Vegas, January 7th to 10th. It is the showcase for new electronic products and an opportunity for manufacturers, distributors and vendors to get together in one place. This was the largest C.E.S. ever. There were over 1000 exibitors, one million square feet of exibit space and close to 17 miles of aisles. Over 91,000 people attended this year, up 15,000 from last year.

This years C.E.S. was a very sober one. Texas Instruments is out of the home market completely, Atari is still in rough shape and Coleco has had problems with the ADAM. Throughout these times, Commodore has done well. It has now sold more computers than anyone else, it is profitable and has shown, at least for the present, that it is number 1 in the home computer market. The big emphasis this year is software. The catch phrase is 'PRODUCTIVITY'.

The Commodore Booth — Hardware

The big news at the Commodore booth was the introduction of the 264 and 364 line of 'productivity' machines. Also seen but not announced was the 116 which is a 16K RAM version of the 264 with a chiclet keyboard. The 264 is a 64K RAM, 64K ROM machine with many enhancements over the Commodore 64. However, missing are the SID chip for music synthesis and sprites in the graphics chip. There is now 60K available to BASIC instead of 39K, 128 colours instead of 16 and four separate cursor keys.

The C-64 and VIC 20 will still be sold. I have heard that there are 500,000 VIC 20's in stock ready for market and that if there is a large demand for them, more will be manufactured. The C-64 will still be Commodore's big machine this year.

Other items shown include a touch screen for the colour monitor. The C1703 which is a new colour monitor to replace the 1701 and 1702. The MCS801 is a colour dot matrix printer which prints 8 colours – black, yellow, purple, cyan, green, red, blue and black at 38 CPS. The DPS1101 is a low speed (18CPS) bi-directional daisy wheel printer capable of printing up to 165 columns at 15 pitch. The C64850 is the 'Magic Voice' speech module which contains a built-in vocabulary of 235 words in a female voice. More words and different voices (male, cartoon characters, etc.) will be available on cartridge and disk. The voice speed can be user defined to slow, normal, or fast. The words can be programmed directly from BASIC and/or assembler.

Two games that already work with the speech module are WIZARD OF WOR and GORF.

One very interesting item was the SFS 481 Fast Disk Drive. This is a 1541 type of drive that plugs directly into the cartridge port of the 264. The operation is just like a 1541 except that it is five (5) times faster. This was only working on the 264/364 computers but could possibly be modified to run on the Commodore 64.

The music keyboard seems to be dead. All the SID chips being produced, are needed to produce Commodore 64s. This leaves no extra stock for the music keyboard.

During 1983, Commodore sold over 100,000 modems for the VIC 20 and Commodore 64. This made them one of world leaders in modem units sold. Commodore's SIG (Special Interest Group) on CompuServe is the most active of all the SIGs.

Commodore has also signed an agreement for CompuServe's VIDTEX terminal emulator. This package allows users to transfer programs from CompuServe's library to their own disk unit. The VIDTEX package has 100% error detection and correction of files being transfered to or from CompuServe. Other features include a 32K RAM buffer, printer support and 10 programmable function keys.

The Commodore Booth — Software

Commodore was showing a large number of new software packages for the VIC 20 and Commodore 64.

COMMODORE INTERNATIONAL SOCCER (C-64) uses realistic graphics to simulate a soccer game.

B/GRAPH (C-64) is a professional graphics-charting and statistical analysis program for the Commodore 64.

KINDER KONCEPTS (C-64) is a series of five disks containing 40 educational programs for the 4-6 age group. Each disk contains four math programs and four reading programs.

SILENT BUTLER (C-64) is a home

continued on next page

finance and record-keeping program. It will balance the chequebook, pay bills, remind you of birthdays, anniversaries and appointments.

3-PLUS-1 includes a wordprocessor, electronic spreadsheet, file management program and a graphics package. It has windowing capability so that the wordprocessor and spreadsheet can be viewed simultaneously.

MANAGER 64 (C-64) is a database management program that comes with four applications on disk. These are: Holiday Planner/Mailing List, Task Manager, Portfolio Manager and Home Checkbook. About 5,000 copies of version 1.04 of the MANAGER 64 had a minor bug in them. For information about updates contact Commodore head office.

LOGO (C-64) should be available in April or May 1984. The price will be under $80 (US).

Other Vendors

This CES was very interesting when looking at outside vendors selling Commodore related products. Last year, there was very little support for Commodore machines; mostly software and hardware for the VIC 20. This year, products for the Commodore 64 and VIC 20 were being shown all over the place. Almost every second booth had some product for a Commodore computer.

Another first: —This was the only time I have seen someone come out with a Commodore compatible disk drive. In fact, there were TWO companies: Micro Systems Development and Concorde Peripheral Systems. There have previously been disk drives for the Commodore PET, but these had their own operating systems and were not compatible with the 4040 or 2031 disk drives.

photos by Chris Bennett

Micro Systems Development is producing both a single disk drive and a dual disk drive. Both models come with a serial bus interface for the VIC 20 and Commodore 64, and a IEEE bus interface for the PET and CBM. The single drive is $399 (US) and the dual drive is $695 (US).

The disk drive from Concorde Peripheral Systems plugs into the cartridge port of the Commodore 64 and shows a 50% to 60% speed increase over that of the 1541.

One possible problem with these disk drives is that they may not be 100% compatible with programs that run on the 1541 drive. The 64 Manager uses the operating system inside the 1541. Since these drives have their own operating systems to emulate Commodore's, these types of programs will not work. The 64 Manager doesn't even work with a 4040 because the disk operating system on the dual drive is slightly different from that in the single drive.

DATABAR Corporation were showing an optical scanning reader (OSCAR) for the Commodore 64. With OSCAR, you can scan printed pages of bar code to enter programs into your computer. The reader is $80 (US) and a magazine containing 8 programs each month can be ordered for $120 (US) per year for 12 issues.

The most noticeable change this year at the show was the vast quantities of software for the VIC 20 and Commodore 64. There are literally hundreds of new games, utilities and business programs coming on the market. Some of these are popular programs that originally ran on the Apple or Atari and have been converted to run on the Commodore 64. It is impossible to list all these new programs. Some of the best will be reviewed in later issues of TPUG magazine.

News from Commodore

Just a few days after the Las Vegas show, Jack Tramiel resigned as president and chief executive officer of Commodore International. Mr. Tramiel founded Commodore 25 years ago and has virtually run the company as a one man show.

Two weeks later, four top executives

also left. The executives who resigned are Donald Richard, acting president of Commodore's U.S. unit; marketing vice-president Myrrdin Jones; systems engineering director Bill Miller; Roy Thomas, director of materials overseeing U.S. chip-making and computer-assembly operations.

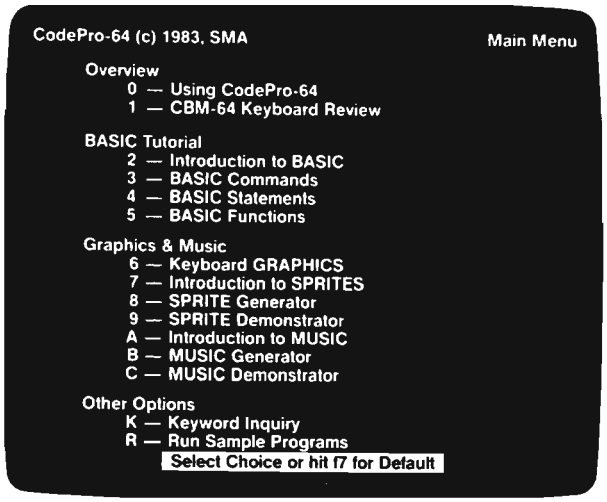
To replace Jack Tramiel, Commodore International has hired Marshall F. Smith, president and chief executive officer for Thyssen-Bornemisza, a Netherlands-based billion dollar industrial company.

It was during this period that Commodore said it would delay shipments of the 264 and 364. Times are going to be tough at Commodore over the next few months until the new management gets into the swing of things. There never seems to have been a clear-cut business strategy at Commodore. This Commodore will need to survive the next five years. The competition (IBM, Apple etc) seem to plan what they are doing, while Commodore doesn't.

A new Commodore computer based on the Zilog 8000 is almost ready to go. It should be announced at the Hannover show this spring. Commodore has announced the signing of an agreement with Mark Williams Co. of Chicago for COHERENT. Coherent is a multi-user, multi-tasking operating system for the Z-8000 and is a UNIX clone. The new computer is supposed to be under $1000 (US) for 128K of RAM and a disk drive. Since COHERENT on the IBM PC requires 256K of RAM and a hard disk, it should be interesting to see how Commodore's version is going to work.

A rumor, I hear, is that Commodore is working on a MS-DOS computer. This could be the 8088 option for the 3-year old B-series machines not yet released.

TPUG



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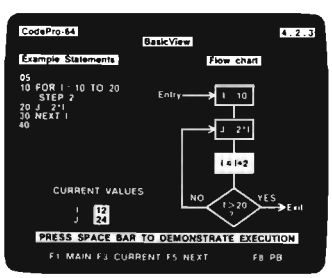

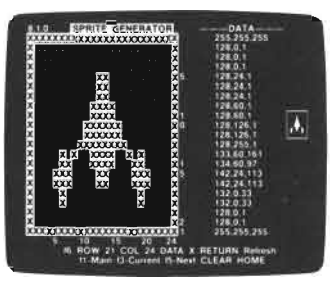

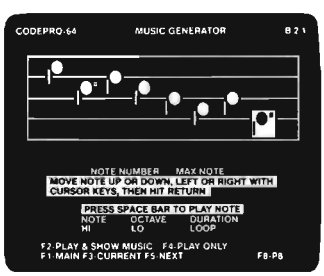

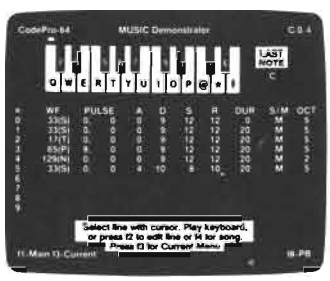

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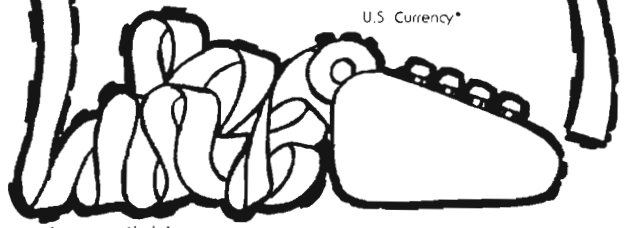

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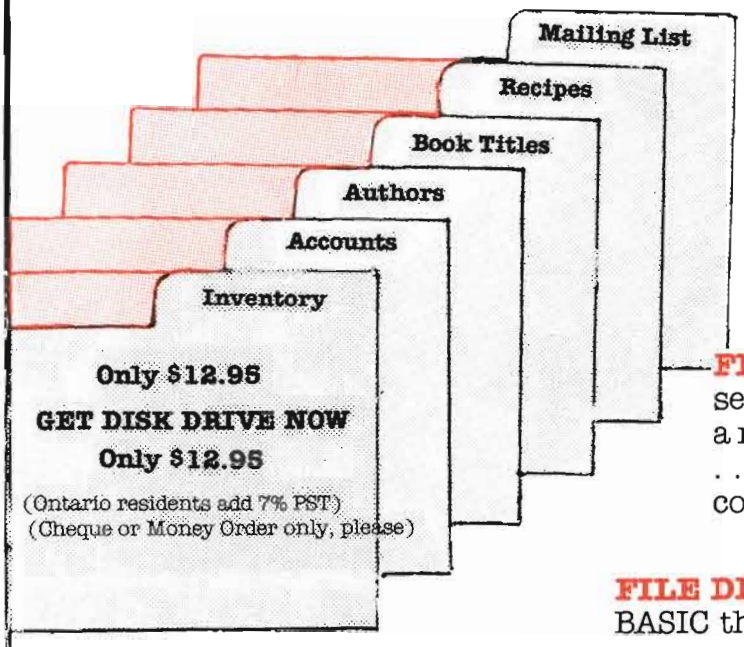

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George Shirinian
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How many times have Commodore 64 & VIC 20 users wished for access to the 4040 dual disk drive for the ease of backup it provides, or for programs that use 2 drives, or to use disks that are read-write incompatible with the 1541 drive? How about access to the 8050 or 8250 drives for their extra storage capabilities? And let's not torment ourselves with talk of the printers that use the IEEE bus, with their speed, extra paper width, and superior type font!

The truth of this is attested to by the number of IEEE interfaces that have been produced for these popular computers. Unfortunately, the approaches taken by some of these interfaces have drawbacks keeping us from Utopia. The major problem is that they can eat up RAM and interfere with certain programs that have machine language routines residing in high memory.

A new interface called Interpod has recently come onto the market. It seems to have the major problems licked, in that it is 100% software transparent and takes up absolutely no RAM.

To give you a brief description, it is a box about 11 x 17 x 3.5mm that contains a number of microprocessors. This means, among other things, that it needs its own power supply (included), and gets quite hot after a while. It connects via the computer's serial cable to your VIC 20 or C-64, and via an IEEE to IEEE cable to your disk drive. It allows you to connect up to 30 dual disk drives. For extra convenience it also allows you to connect directly one RS-232 device, such as a printer.

Convenience is built-in in other ways, as well. For example, the RS-232 port is configurable (with simple commands) as to baud rate, parity, stop bits, etc., although its factory setting will suit most applications. It will treat any device connected to this port automatically as device #4, and will not interfere with device #4 on the IEEE bus.

The simplicity of operation is taken somewhat for granted in the mere 3 pages of documentation accompanying Interpod. I had no difficulties with it, however, and it took me about 2 minutes to read the instructions, make the connections and start using it.

I have heard that early versions of Interpod did have slight bugs, although they did not show up in anything that I tried. I am informed that the manufacturer, Oxford Computer Systems, is aware of them and by the time you read this, a bug-free model should be in the stores.

Nevertheless, Interpod is not without its shortcomings. First, data transfer must occur via the computer's serial port. This means that the transfer rate is about 4 times slower than we expect from an IEEE parallel device. For example, loading one of the popular word processing programs from disk takes about 70 seconds. If you do a lot of disk accessing, this can become tiresome. Secondly, the price seems a bit high, in relation to the low (and continually falling) prices of the VIC and C-64. Thirdly, you have to purchase an extra IEEE to IEEE cable, that costs around $63.00. Fourthly, unlike other IEEE interfaces, this one does not provide the extra disk commands of BASIC 4.0.

The decision to buy this interface depends somewhat on your personal situation. The cost of Interpod is a lot lower than that of a 1541 disk drive. For those people who need or already have a 4040, 8050, etc., it makes sense to get an interface to utilize these devices. For those people who want to use a serial printer as well, Interpod provides a very convenient package, and becomes cheaper than buying two separate interfaces. In comparison with other interfaces on the market this one has the distinct advantage that you can run *all* your software through it. *TPUG*

Changes to "ONT 83 TAX V1.2" -- (C)T6

Ralph Grunier
Toronto, Ont.

The following minor changes should be made to the program "ONT 83 TAX V1.2" (with thanks to John Spencer).

1. To differentiate from the previous version, line 100 should read:

```
100 DIMC(5),F(5),D(14):REM V1.1 FEB 26/84 LIST
```

2. To separate and print the Ontario Social Services Maintenance Tax, the following two changes should be made:

```
980 P=48:I=FNP(D(6)):IFI<=11080GOTO990
985 SS=(I-11080)*.025:SS=INT(SS+.5):I=I+SS:PRINT
    "SOCIAL SERVICES TAX", SS/100
```

3. The following change should be made to correct the 1983 Temporary Home Heating Credit:

```
1190 GOSUB2100:B=0:P=1:I=FNB(2E3-FNP(D1)):IFI=
     0GOTO1220
```

TORONTO BBS NUMBERS

Jim McLaughlin
Toronto, Ont.

CODE	*BBS NAME*	*NUMBER*	*WEEKLY TIMES*	*WEEKEND TIMES*
	Atari Info-System	622-2462	24 Hours	
*$P	BBBBS	487-5833	24 Hours	
*$P	BBBBS Download	481-9047	24 Hours	
	Bull 80	265-3227	M-F 7:30PM-8:00AM	S ??:??AM-M ?:??AM
	CBBS	461-2110	24 Hours	
P	CFTR BBS	366-2069	M-S 6:00PM-9:00AM	S 11:00AM-M 9:00AM
	Coco-nut	743-6221	24 Hours	
	Colour 80	767-0412	M-F 6:00PM-9:00AM	F ??:??PM-M ?:??AM
	Dr. Phobos #26 Dating	421-8930	24 Hours	
	ETI BULL BBS	423-3265	M-F 5:00PM-9:00AM	F 5:00PM-M 9:00AM
	Exceltronics	921-4013	24 Hours	
	Games	439-0065	M-F 7:00PM-9:00AM	F ??:??PM-M ?:??AM
	G.E. Nightowl	482-2823	24 Hours	
*	IBMPC BBS	499-7023	24 Hours	
	Infoport	278-3267	24 Hours	
*$	Logic	445-5192	24 Hours	
	Medical Net-Works	978-6893	M-F 7:00PM-9:00AM	F ??:??PM-M ?:??AM
	OSBOARD	484-9663	24 Hours	
NP	Pritchard	291-8026	Unknown	
P	PSI-WordPro	624-5431	M-F 6:00PM-9:00AM	F 6:00PM-M 9:00AM
*$	RCP/M 1	232-0442	24 Hours	
*$	RCP/M 2	231-1262	24 Hours	
*$	RCP/M 3	232-0269	24 Hours	
P	R.T.C. BBS	884-6198	M-S 8:00PM-9:00AM	S 10:00PM-M 9:00AM
	Superboard	839-3260	M-S 9:30PM-8:00AM	S 10:00PM-M 8:00AM
	THUG	232-2644	M-F 7:00PM-7:00AM	F ??:??PM-M ?:??AM
N	TMUG	451-7137	Unknown	
*P	TPUG	223-2625	M-S 7:00PM-9:00AM	S 7:00PM-M 9:00AM
*$	Toronto Net-Works #1	445-6696	24 Hours	
*$	Toronto Net-Works #2	683-3733	24 Hours	

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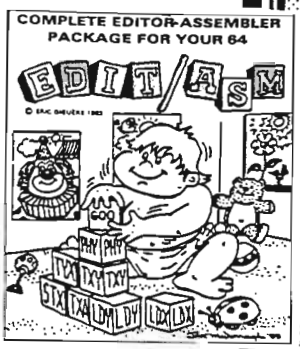

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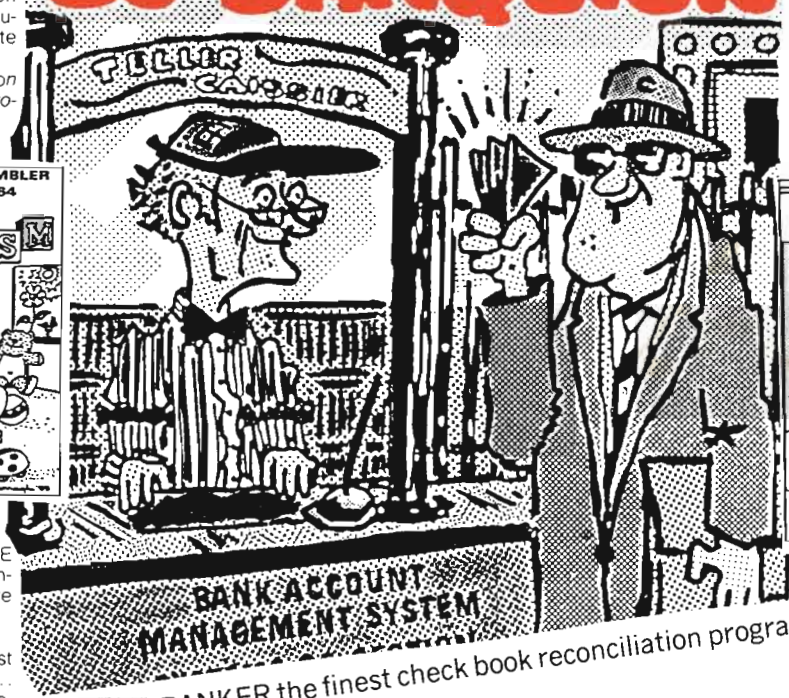

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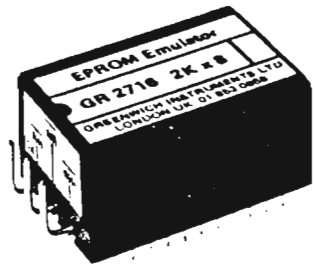

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FLOATING POINT NUMBERS

John Lam
Scarborough, Ont.

While I was in the process of writing a spreadsheet, I realized the need for more precise math routines. Although the PET's 9 digit precision is more than adequate in most applications, some engineering models require more precision than PET's floating point routines can supply. Although the routines presented here are specifically designed for the PET, they should be easily transportable to other 6502 based machines.

Floating Point Number Representation

Floating point is a convenient way of expressing decimal numbers in a binary format. It closely resembles scientific notation, except that the mantissa (the portion before the exponent) is a fractional value with no digit preceeding the decimal point. An example of a decimal number: 130 in scientific notation would be 1.3x10↑2. Floating point is base 2, so that the exponent would be 2↑x where x is the power to which 2 is raised to. It can also be thought of as the number of binary 0's that preceed or succeed the mantissa. Floating point also has provision for differentiating between negative and positive numbers through the use of a sign bit.

PET Floating Point Number Representation

The PET's floating point numbers are stored in the Microsoft version of the IEEE standard Short Real format. This format allocates 24 bits for the mantissa; giving it six decimal digits guaranteed accuracy. Microsoft, however, modified this format so that the mantissa now has 31 bits allocated to it. This increases the accuracy of the number to 31 binary or 9 decimal digits guaranteed accuracy. The exponent has a range of approximately 1*10↑-38 to 1*10↑38. The exponent is stored with 129 added so that positive and negative exponents can be represented with ease. Any exponent of 129 or more is a positive exponent and any exponent of 128 or less is a negative exponent. One bit in the mantissa is reserved for the sign bit. This bit determines the sign of the number. A one stored in this bit represents a negative number and a zero represents a positive number. A diagram of this floating point storage system would look like this:

EXPONENT	SIGN BIT	M1	M2	M3	M4
1 Byte	1 Bit	7 Bits	1 Byte	1 Byte	1 Byte

The decimal equivalent of the number would equal the exponent multiplied by the mantissa, with the sign bit determining the sign. This is the basis of all floating point to ASCII number conversion routines. The formula for converting this binary representation of a decimal number to its decimal equivalent is as follows:

```
SIGN*2↑(Exponent-129)*(1+(M1/(128*256↑0))+(M2/
  (128*256↑1))+(M3/(128*256↑2))+(M4/(128*256↑3)))
```

In case you were wondering why there is a 1+... in the formula; it is because the Microsoft adaptation of the Short Real format involves storing the mantissa as a fractional value with an assumed binary 1 preceeding the decimal point. In order for the PET to perform mathematical operations, Floating Point Accumulators are created by software. In all Commodore machines, there are two floating point accumulators called appropriately, Floating Point Accumulator #1 and #2. Floating point accumulators differ slightly from the format described above—which is the STORAGE format that the PET uses to save floating point numbers in memory. The floating point accumulator format 'unpacks' the sign bit and moves it to its own SIGN BYTE. The sign byte holds $FF when the floating point accumulator holds a negative number, a $00 when the floating point accumulator holds a positive number. This is done for several reasons, the most important being that the mantissa can be manipulated without worrying about inadvertantly changing the sign bit.

The floating point accumulators are in the following locations for the three main versions of Commodore machines:

	PET (all models except BASIC 1)	VIC 20 and C-64
FPACC#1		
Exponent	$5E (94 decimal)	$61 (97 decimal)
Mantissa	$5F-$62 (95-98)	$62-$65 (97-100)
Sign Byte	$63 (99)	$66 (101)
FPACC#2		
Exponent	$66 (102)	$69(105)
Mantissa	$67-$6A (103-106)	$6A-$6D(106-109)
Sign Byte	$6B (107)	$6E (110)

To see the PET's floating point system in action, type the following in action, type the following into your computer:

```
POKE1,4:POKE2,0:POKE4,0:X=USR(any number)
  <RETURN>
```

On the VIC 20 and Commodore 64, a machine language monitor must be loaded before this demonstration can be performed. Now, assuming that you have loaded your machine language monitor, type the following instead of the above into your computer:

```
POKE311,52:POKE312,3:POKE820,0:X=USR
  (any number)<RETURN>
```

What the above line does is to point to user function vector to memory address $0004 (or $334 for VIC 20 and C-64's). A BRK instruction is stored there to force the computer into its machine language monitor (if it is present). The USR function automatically converts its argument (the part inside the parentheses) to its floating point equivalent, and stores the result in floating point accumulator #1.

The floating point accumulator can now be examined freely from the machine language monitor. Type the following command into the machine language monitor:

```
.M 005E 0063 <RETURN>
```

continued on next page

Note: for VIC 20 and C-64 users: type the following into your machine language monitor:

.M 0061 0066 <RETURN>

The computer will now print out a series of 8 hexadecimal numbers. The first number (going from left to right) is the EXPONENT of the number. The following four bytes is the MANTISSA of the number. The byte following the MANTISSA is the sign byte discussed earlier. Try typing in different numbers in for the USR argument and note the effects that it has on the floating point accumulator. The following command will get you out of the machine language monitor and back to BASIC:

.X <RETURN>

Some decimal numbers and their floating point equivalents are presented below:

Decimal Number	Floating Point Equivalent Exponent	Mantissa	Sign
2	130	128,0,0,0	0
−2	130	128,0,0,0	255
13.13	132	210,20,122,255	0
5.125	131	164,0,0,0	0
−3125855	150	190,201,124,0	255

Temporary Real Representation

As noted earlier in the example with Microsoft and IEEE Short Real formats, an increase in the number of bits allocated to the mantissa portion of the number corresponds to an increase in precision. This is the basis of the Temporary Real Number Representation. Instead of 31 bits representing the mantissa of the number, a full 64 bits are allocated. As a result, the precision is increased from 9 digits guaranteed accuracy to 18 digits guaranteed accuracy. The size of the exponent has also been increased from 7 to 14 bits (excluding the exponent's sign bit); giving an exponential increase in the possible range of numbers. The range of numbers in the Temporary Real format is from approximately 3.4*10↑-4932 to 1.1*10↑4932. The following is a diagram of the structure of Temporary Real numbers:

Sign Bit	Exponent Sign Bit	Exponent	Mantissa
S	ES	EXP	M1 M2 M3 M4 M5 M6 M7 M8
↑	2 Bytes	↑	↑ 8 Bytes ↑

The Temporary Real Format is used exclusively in the double precision math routines. Before we get into the routines themselves, an additional word is required about the floating point accumulator format. In order for the results to be guaranteed accurate to 64 digits, binary accuracy, an additional bit is required to serve as a "guard bit", so that the results can be rounded up if necessary. If the mathematical operation results in this guard bit being a 1, then the mantissa is rounded up by adding a binary 1 to it. More about this in detail later.

In the next article, we'll take a look at the actual process of converting an ASCII number (ie 13.55855) to its floating point equivalent, and the converse operation (converting a floating point number to its ASCII equivalent). *TPUG*

WHEN VERIFY DOESN'T

David Williams
Toronto, Ont.

The VERIFY command in Commodore BASIC is normally used after a program is SAVEd to disk or tape. It checks that the recording is the same as the program in memory. Providing that the message "OK" is printed after a VERIFY, which is almost always the case, the user can confidently reset or switch off his computer, knowing that he has a good recording of the program.

VERIFY can also be used after a program is LOADed. Normally, of course, the newly-loaded program will VERIFY "OK". If it does not, there may be reason to think that the recording has not been read reliably, so it may be advisable to LOAD the program again.

If VERIFY ERRORs are frequently reported, it may be a good idea to have the disk or tape drive serviced.

However, there is one major exception to this rule. If you are using a VIC 20 or a Commodore 64, and if you are loading a BASIC program which has been written and SAVEd with a different type of machine from your own, you will ALWAYS get an error message if you attempt to VERIFY the newly-loaded program, even if everything is working properly. The reason for this is that your computer has relocated the program into a different set of addresses from those it occupied when it was SAVEd. This means that the program in memory is not quite the same as the one in the recording.

The VERIFY function notices this difference and reports an error, even though there is actually nothing wrong.

Some of the programs in the TPUG program library, particularly those on some of the older C-64 disks, are actually PET programs which, because they are written in plain BASIC, will also work on the C-64. However, because they were SAVEd with a PET, they will never VERIFY properly. So, if you have some programs which you got from TPUG, which work fine, but which give you VERIFY ERRORs, don't worry. If the error message offends you, just re-SAVE the program onto another disk after you have LOADed it. The new recording will be of the relocated version, and should VERIFY "OK". *TPUG*

MESSY IS BEAUTIFUL!

David Williams
Toronto, Ont.

In the past two or three years, I have taught several courses in microcomputer programming. These have included a Grade 11 class in "Computer Science", which was the students' first exposure to computers, a Grade 13 advanced course, mainly in machine language, and several "continuing education" classes, in which most of the students are adults who want to keep up with the times and who have had no previous experience with computers, although they may well have taken many "continuing" courses in other subjects.

My approach to teaching these courses was initially to accept conventional wisdom and to try to train the students, from the outset, to write elegantly structured, neatly flowcharted, heavily commented, beautifully typed programs. After all, so the theory goes, habits which are acquired early will become second nature to the students, standing them in good stead when they find themselves having to write or maintain complex programs in a business environment.

Experience has made of me a sceptic. Nowadays, I find myself thinking more of analogies such as learning to walk before one can run. Teaching concepts such as program structuring to complete novices is a bit like talking about continental drift to someone who has no awareness of the world beyond the limits of his own home-town! The students may be willing, even eager, to learn but, without some experience in handling simple computer operations, there is no way for them to grasp the broader concepts of program organization.

To impose the rigours of structured programming, especially in a language such as BASIC which permits a looser style, is a wonderfully effective way of "turning off" beginning students. The way in which most of us "old timers" learned to program was to experiment and to learn from our mistakes. Usually, within a few hours of starting, we had succeeded in writing programs which worked, and we experienced the excitement and sense of achievement which this engenders. We were fortunate. No teacher ripped our efforts to shreds because we used multiple statements on each line, jumped all over the place with GOTOs, and didn't put in any REMs. I have heard many a student ask in bewilderment why his program, which worked, was given a lower mark than another which, though prettily set out, failed to do what it was supposed to do. My sympathies are with these students. In the rarified atmosphere of academe, it is easy to lose sight of the fact that the primary purpose of any computer program is to work. Everything else is secondary.

Of course I am not claiming that carefully-planned program organization is worthless. All of us who have written programs of substantial complexity know that it is extremely valuable. But its value is not apparent to a novice programmer whose simple routines can easily be written without much forethought. When he has become ambitious, when he has managed to get himself into a horrible mess because the logic of some complex program has become utterly incomprehensible, then will be the time for him to appreciate the advantages of flowcharts, structuring and documentation. Then he will realize the need for them, and will not feel them to be ludicrous impositions by a hide-bound teacher. Then will be the time for him to learn about them, not before.

Adult-education classes reveal another situation in which too much stylishness can be a drawback, but this time the problem originates with the students. In "continuing education", almost all of the students have taken touch-typing courses. Their fingers fly across the keyboard with amazing speed and accuracy. And, at least to start off with, almost all of their programs, though superficially appearing impeccable, generate syntax errors when run!

Why? Too many spaces, that's why! Many of us have written BASIC statements such as "IFSTAND64THEN100", in which we intended to test bit six of the status variable, and found that the program bombed because the computer tokenized the letter-sequence "TAN" as referring to a trigonometric function. Perhaps we then learned that putting spaces into BASIC can sometimes be useful even outside literal strings. But there must be many experienced programmers who have never discovered that an INPUT statement fails if there is a space between the quote-mark ending the prompt and the semicolon before the variable! Continuing education students (and their teachers) learn this fact from experience remarkably quickly. I have now gotten to the stage at which I ask the students NEVER to put spaces into their programs except in literal strings. Certainly, someday, this rule will have to be relaxed. However, for the time being, its benefits outweigh its disadvantages.

Maybe, by moving away from structured programming and elegant typing, I am encouraging my students to write messy programs. But at least they ARE writing programs, programs which work and which provide them with the positive feedback which comes from achievement. This, to me, is the most important thing which can come out of a programming course. *TPUG*

ULTRABASIC-64 A Review

Don White
Ottawa, Ont.

How many of you have struggled with PEEKs and POKEs while trying to plot on the Commodore 64 hi-res screen? Does the lack of appropriate BASIC sound commands drive you to distraction when attempting to compose a symphony? Possibly the answer to most of your problems is contained in the extensions to BASIC provided by 'ULTRABASIC-64'. This package, written by Roy Wainwright, is produced by Abacus Software, Grand Rapids, MI and distributed in Canada by King Microware, Suite 210, 5950 Cote des Neiges, Montreal, Que. H3S 1Z6.

'ULTRABASIC-64' allows you to plot in either high-resolution or multicolour modes. You can define and manipulate sprites in either modes. You can create music and sound effects using any or all of the three voices. You can also detect sprite-to-sprite and sprite-to-background collisions and read the joystick, game paddle and lightpen ports. A set of TURTLE graphics commands are provided for drawing and, last but not least, a hardcopy of the hi-res screen can be dumped to Commodore or EPSON printers with bit graphics capabilities.

The 50 new commands provided by 'ULTABASIC-64' are as follows:

Hires/Multicolour Commands
hires, multi, tic, dot, draw, box, circle, char, block, mode, fill, pixel

Screen Control Commands
dump, gread, norm, graph

Sprite Commands
copy, sprite, off, place, rotate, bit, colors, hex, sdata, scoll, bcoll

Turtle Graphics Commands
turtle, tcolor, tup, tdown, turn, turnto, move, bye, tpos

Input Functions
joy, paddle, pen

Timers
sctr, ctr

Sound Commands
sound, gen, vol, set, tdata, tune

Other Commands
[n: :], :exit, hard

The manual, while not providing many programming examples, is very straightforward in its description of the new commands. Anyone with a general knowledge of programming in BASIC should have no trouble in using the package. For example, a circle can be drawn on the hi-res screen with two simple statements:

```
10 hires 1,1
15 rem black background & border
20 circle 160,100,75,8
25 rem x=160,y=100,radius=75,colour=
   yellow
```

Lines 10 and 20 will generate a yellow circle with a radius of 75 in the centre of the screen.

Once you have created a graphic display it can be saved to tape or disk for later recall or if you wish, a hardcopy can be generated on a Commodore or EPSON printer. However, it must be noted that sprites, even when they appear on the screen, cannot be dumped to the printer.

The 'HARD' command is currently available for use with a Commodore 1515 or 1525 printer or an EPSON MX-80 or FX-80 interfaced through a MICRO WORLD ELECTRONIX printer interface. However, a minor modification to the software will allow the command to be used with the EPSON printers interfaced through a BUSCARD from Batteries Included. I have sent Arnie Lee of Abacus Software the modified version of the printer routine for inclusion on their diskettes. He advised me that they are currently checking the package with as many interfaces as possible.

The TURTLE graphics commands included in 'ULTRABASIC-64' facilitate the generation of complex displays. The turtle actually looks like a turtle and its head always points in the direction it is travelling. This I found to be an advantage over the triangle used for the turtle in other packages like LOGO. I always have difficulty in discerning which way the triangle is pointing.

The inclusion of 10 counters which are accessed by the 'sctr' and 'ctr' commands makes the timimg of various events very easy. Counters 0 through 4 count down in jiffies (1/60th of a second) while counters 5 through 9 count down in seconds

The sound generation commands constitute the one area of the package that may cause problems for some users. The 'tdata' statement must be written in hexadeciamal notation (i.e. base 16 arithmetic). However, anyone wishing to learn more about their computer will have to learn hexadecimal notation at some time or another and the users manual for 'ULTRABASIC-64' contains a short section on converting numbers from decimal to binary to hexadecimal as well as a table of the hexadecimal equivalents of musical notes.

There is very little lacking in this package, however, it would have been useful to be able to specify both x and y radii for a circle in order to generate true circles on the video display. Another useful feature would be an ARC command to facilitate the generation of partial circles (i.e. as in pie charts). It is possible though to overcome these problems with short BASIC subroutines.

The package, which costs about $50 (Canadian), seems to be quite a reasonable value. If you want to generate software with both sound and graphics then 'ULTRABASIC' is a must.

continued overleaf

Comments from Abacus Software

- The HARD routine for providing hardcopy has been expanded to work with the following printers: Epson MX, FX and RX series, Gemini 10 and 15 series, Okidata ML 92, 82A w/OKIGRAPH, 83A w/ OKIGRAPH, 93 and 84 Step 2 as well as the Commodore 1515 and 1525E printers.
- The HARD routine has been expanded to provide two size printouts. Now you can have a hardcopy which fills about one-half the page and prints horizontally and one that fills the complete page and prints vertically.
- The number of interfaces that it supports has been expanded so that most parallel interfaces that connect to the Commodore serial bus can be used if they transmit 8-bits required by the graphics mode of the printers.
- The circle command has been expanded to allow for both x and y radii so that true circles may be displayed on the screen.
- We have always distributed Ultra-Basic with a demonstration program and a two-part tutorial on the use of the added commands. These inclusions have been helpful to the first time user of the package. *TPUG*

Vanilla Pilot - A Review

Ravi Palepu,
Sydney, Nova Scotia

Vanilla Pilot is a programming language useful to teachers or to anyone to use for entertainment. This language is available on disk or tape from Tamarack Software for $29.95 U.S. It is available for the Commodore 64, 8032, and 4032 PET and VIC 20 microcomputers. This deal comes with a disk or a cassette and a good manual (113 pages).

Vanilla Pilot is easy to use, as it says in the advertisement. One letter commands make it easier. The commands have meaningful names, e.g. 10 T:Hello. The example above shows you how to print the word "Hello" on the screen. The "T" stands for the "t" in type. There must always be a colon after the command. Other features are:

AUTONUMBERING—so you don't have to type line numbers.
RENUMBERING—to change line numbers to insert other lines.
TRACE—an editing feature which shows the line of the program that the computer is using, when running the program.
FIND—lists the line you're looking for instead of listing the whole program.
UNNEW—brings back the program you lost by the NEW command. You can save your programs on disk or cassette.

Turtle Graphics are also used and are explained well in the manual. You move a turtle to where you want, and the turtle will leave a trail of line. The examples really helped me.

Sound is also available through the Beep command or B. The language uses the Commodore 64 and the other computers to their full-sound capabilities. The only problem is that you have to use a new line for every note, which can be too long for beginners.

Sound only uses 1 command, the Beep command, which is followed by information. E.g:

C-64 = 10	B: V1,W129,A15,H40, L200, D200,M#15
VIC 20=10	B:V15,M151,D10
8032&4032=10	B:100,100

For the C-64 the V=voice, W=waveform, A=attack, H=high frequency, L=low frequency, D=Duration, and M=volume.

Turtle Graphics also only uses one command, the "G" Command from the "g" in graphic. There are 11 main graphic subcommands. They are:

CLEAR—Gets the screen ready
DIRECTION—Faces the turtle in certain directions
DOWN—Puts the turtle on the screen
UP—Lifts the turtle off the screen
DRAW—Draws a line, a certain length
ERASE—Erases a line a certain length
GOTO X,Y—Moves the turtle to a certain position
LEFT—Turns the turtle left a certain # of degrees
RIGHT—Turns the turtle right a certain # of degrees
COLOUR—Changes the colour of the turtle
LOCATE—Locates the turtle's location
There are many more commands!

The manual is comprehensive and easy to use in most areas and average in the rest. In the beginning, the manual starts out like a user guide should; teaching you the basics. In each chapter it first teaches you about the topic and then gives example programs to try. At the end of each chapter, there is a quiz to test what you have learned.

Altogether, the package is a good investment for a teacher who has bought a computer for students, and is feeling frustrated. Beginners may be annoyed by the fact that you must load the Vanilla Pilot Program before you can use your own original programs.

I rate Vanilla Pilot Program an 8.5 out of 10. (8.5 = very good.) *TPUG*

Comal
A Structured Language

Ian Wright
Toronto, Ont.

A recent TPUG Central meeting was the stage for an exciting demonstration of the language called COMAL by our esteemed member Jim Butterfield. I was impressed with Jim's demo and his explanation of COMAL, and was determined to learn more about it. The result is this short piece using some of Jim's presentation, some historical data from the Whole PET Catalog, and some library research.

For a number of years, I have listened to computer studies teachers exclaiming that "... BASIC isn't structured", as if this were immoral or illegal or both. When I asked them to explain what was so bad about BASIC, their answer usually included "... structured languages don't use GOTO statements" – and little else. Structure is much more than this. COMAL will produce a structured program somewhat like that of Waterloo MicroBASIC or PASCAL without you having to add a ROM chip or having to buy a SuperPET. The use of "procedures" means that the language is extendable and recursive, features explained below. The nicest thing about COMAL is that it is public domain and you can have it for the 8032 for the cost of copying TPUG disk L1. According to Jim Butterfield, COMAL will be available in the public domain for the Commodore 64 by the time you read this.

Comal is a disk-loaded language that originated in Denmark in 1974. Its creators were Borge Christensen and Benedict Leofstedt. CBM COMAL was written by three other Danes – Jensen, Kjaer and Lassen. The language has been updated a number of times since its inception and there is an on-going debate about some features such as the number of variables in a procedure. Programs written in the latest version of COMAL on a Commodore machine will run on an IBM or any other machine with COMAL. The latest version is for the C-64 and will be available in two versions – a public domain disk version 1.0 and a cartridge version 2.0 with some more advanced features. Both of these make use of the C-64 features such as colour (for example – the word "background"is a command as in background,0). The language was explained in a book titled "The COMAL Handbook" by Len Lindsay, and a new version is expected from the same author to update to COMAL.64. Other books such as Christensen's "Problem Solving Using COMAL" are also available. For more information you can contact the COMAL Users Group at 5501 Groveland Terrace, Madison WI 53716.

So what's so special about this COMAL anyway? If you type in the first program, COMAL will list it as shown in the second without you doing anything. This means that if you are a BASIC programmer, implementing COMAL is almost as easy as loading a disk. The error trapping in this language is much better than in BASIC:

```
Basic Version
100 PRINT "I CAN DO SQUARE
    ROOTS!"
110 INPUT "FROM";F

Comal Version
100 PRINT "I CAN DO SQUARE
    ROOTS!"
110 INPUT "FROM";F
SYNTAX ERROR IN 110
```

Note that errors are trapped WHEN ENTERED, you do not have to wait until the program is run. Further the error checking includes additional prompts such as "expression expected" if you forget the variable. In our example above, COMAL uses a comma rather than a semicolon to accept a variable after an input statement (the 8032 version uses a colon).

```
Basic Version
120 INPUT "TO";T
130 FOR J=F TO T
140 PRINT SQR(J)
150 NEXT


Comal Version
120 INPUT "TO",T
130 FOR J:= F TO T DO
140   PRINT SQR(J)
150 NEXT J
```

These lines show that COMAL will automatically indent loops and, like PASCAL, an "=" means "test this statement", and a ":=" means "change to". If you leave out the variable in a "next", COMAL will put it in for you. Also, if you cross nested loops, COMAL will give an error immediately when you enter the crossed next. New looping structures include ELSE, CASE, REPEAT ... UNTIL, etc. You can see that the GOTO is not allowed because we have written a "procedure" which is called by the command execute as in "EXEC name". That's right – you call a name or label, NOT a linenumber! This is one of the primary advantages of COMAL since you can call a procedure to call other procedures or to call itself again. Jim showed a COMAL program which reproduced the turtle graphic logo for "The Friends of the Turtle" column in COMPUTE! magazine by recursion (a routine calling itself). COMAL does insist on all spaces being left so that if you type in "forx", COMAL assumes that this is a variable. Whereas BASIC only allows a 2 letter variable, COMAL will allow a line to read – TOTAL'OF'CONSECUTIVE'NUMBERS = TOTAL'OF'CONSECUTIVE'NUMBERS + K (note lack of spaces!) and this may be used many times with only the original 30 bytes of memory overhead. You can also delete a line of your program. Programs written in COMAL are as fast or faster than the same program in BASIC.

When COMAL.64 v1.0 is loaded in the C-64 you have 11041 bytes of memory free with which to program. In an 8032 PET/CBM there are only 4864 bytes free after loading the TPUG disk version (v00.11 1981). You lose some RAM, but you can now produce some very neat, readable, and comprehensible programs. This language has gained a lot of support in Europe as a teaching tool, and could find a similar use here, especially as micro-computer memory becomes cheaper. *TPUG*

Library Corner

Craig Bonner
Toronto, Ont.

Hello VIC users. Here is the latest news concerning the VIC Library.

We now have two librarians to help keep the library going. Chris Covell volunteered to assist me when I found it was getting too much to handle. Chris has had more experiance with games and machine language than I have, so his help in these areas will be a great asset. If you have questions regarding the VIC Library you can reach us at the TPUG office on Monday evenings from 7-10 PM (416)782-8900 unless a meeting falls on that evening. Chris is also willing to accept calls at home (416) 925-9296. Since I now attend all the TPUG meetings, I am not home that often. With Chris to help me, I can answer questions sent into the office, process donations sooner, and move progams from the monthly disks to category disks for the upcoming TPUG Conference in May.

The list-me files (documentation for disks and tapes) have recently been expanded to more than one per each program. They are sometimes too long to fit in a standard VIC 20, so I break them into two parts. Many new users would load this program and try to RUN it, so now we have added the command LIST in the first line to avoid this.

We have found two programs in the library that do not work on certain disks/tapes. Turtle Graphics and their related programs and demos TL]FOTT & TL]STAR fail to work on V8 and on (V)X1. They DO work however on (V)T7. To use, LOAD and RUN the appropriate BOOT (DISK or TAPE). This is quite a good program for those interested in the TURTLE language. VIC A1D4.REL is a good programming utility but does not work on (V)X1 but DOES work on V5 and (V)TN. Hopefully these programs will be corrected on their original tapes in the next run. The disks will be fixed as soon as we have time.

I often get calls regarding certain types of programs, so I will give a summary of the most requested programs and where to find them.

TERMINAL PROGRAMS

V-TERM 5K on V8 & (V)X1 Runs on a VIC 20 with no expansion, uploading/downloading not included. Read V-TERM 5K INST for instructions.

TERMINAL.VIC & TERM.VIC on (V)T2. Load and run TERMINAL.VIC, it loads TERM.VIC. These programs provide downloading to disk but the uploading is unreliable. Requires an 8K expander.

Note: There is NO terminal uploading/downloading program for tape in the VIC 20 Library.

WORD PROCESSOR and SPREAD SHEET

VIC EDITYPE 8K.V on (V)TU is a word processor for the VIC 20. It requires an 8K expander and a printer. See July 1983 Torpet (#21) for instructions.

TINY PLAN 8K.V on (V)TU is a spread sheet for the VIC 20.

MACHINE LANGUAGE MONITOR

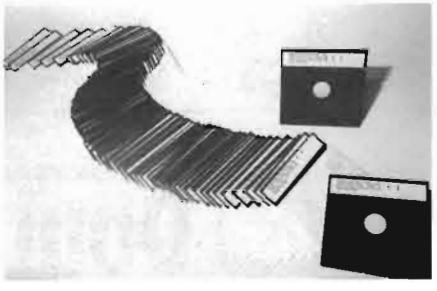
MICROMON@$0E003K on (V)T3 requires a 3K expander. For instructions see the September 1983 Torpet (#23).

MICROMON@$30008K on (V)T3 requires an 8K expander. For instructions see above.

All the librarians meet regularly to discuss ideas to improve the libraries. We now have a French librarian, Baudouin St. Cyr, to look after programs written in French, for all branches of the library. We have almost completed a French disk for the VIC 20. He would appreciate any French programs you have to contribute. Speaking for all librarians, we are grateful for donations. Keep those programs coming! *TPUG*

Commodore 64 Notes

photo by R. Portolese



David Bradley
Toronto, Ont.

Use Write Protect Stickers

Several people have returned disks to the office saying that they were using the **1541 Backup** program and somehow managed to get the disks mixed up. The end result of this was instead of having 2 copies of the disk, they had 2 blank disks. To stop this from happening, I suggest that you put a **write protect sticker** over the notch on your original disk **before** you attempt to back it up. Then if you put the wrong one in at the wrong time you won't lose your disk. You may waste a bit of time, but you won't lose your disk.

Be Careful

TPUG disks are copied on **4040 disk dual drives** because they can be copied in 2 minutes and 18.5 seconds instead of the 10-25 minutes it takes on a 1541. There is one thing that you have to be careful of and that is **writing** to these disks. The 4040 and the 1541 are **READ COMPATIBLE ONLY.** That means that if you write to a disk and it was not formatted in the type of disk drive that you are using, you **will** do some **very serious damage to your disk.** Some people have told me that they write to their 4040 formatted disks all the time

continued overleaf

on their 1541's and have never had any trouble. If you want to take that chance, it is up to you, but I have ruined a couple of monthly disks by switching between drives. It is a very frustrating and time consuming experience.

Read The LIST-ME Files

The first thing that you should do after you get a disk is to load the **LIST-ME** file and read it. If you can, print it out so you can refer to it. I make the **LIST-ME** files as informative as possible. **Please** read them.

Read Instructions Carefully

Another way to save time is to read **all** the instructions in any program and **follow** them. I have several calls each week from people that don't bother with the **LIST-ME** files and pay no attention to any of the instructions offered by the program. Save me time and yourself money by reading these first. Then, if you still have problem, I'll try and help.

.D = DON'T LOAD

Unless the **LIST-ME** states otherwise, any file that has a '.D' after it is not to be loaded by you. It is loaded and used by another program on the disk. **So don't load it, it won't work.**

.L = LIST

One other note is that any file with a '.L' after it is a **LIST-ME** file and, as the name suggests, it is to **LIST** ed. Many people attempted to RUN the **LIST-ME** files and found that they got nothing. So we have added the **LIST** command to the beginning of the file so that if you run it, it will **LIST** anyway.

Fix for CHAR DISPLAY.C

Some of you that have the newer models of the Commodore 64 may have noticed that the program "CHAR DISPLAY.C" (on TPUG disks (C)X2 and (C)T2) does not display the large characters the way it should. To fix this change line 320 so it reads as follows:

```
320 POKE 53281,14:PRINT "(SHIFT)
    (CLR/HOME)";:POKE53281,6
```

After you make the change, be sure and re-save the program on a 1541 formatted disk.

Fix for DRAW POKER.C

Some of you that have the newer models of the Commodore 64 may have noticed that the program "DRAW POKER.C" (on TPUG disk (C)D4) does not work properly. To make it work properly add the following lines:

```
90 POKE 53281,1:PRINT CHR$(147);
   :POKE53281,6

317 FORX=1TO40:POKE55935+
    X,1:NEXT
```

After you make the change, be sure and re-save the program on a 1541 formatted disk.

Fix for PI HUNT.C

Some of you that have the newer models of the Commodore 64 may have noticed that the program "PI HUNT.C" (on TPUG disk (C)D4) does not work properly. To make it work properly add the following line:

```
99 POKE 53281,1:PRINT CHR$(147)
   "(CTRL 3)(RVS ON)";: POKE53281,
   6: POKE53280,14
```

After you make the change, be sure and re-save the program on a 1541 formatted disk.

Disk Tips

Over the past 3 or 4 years I have heard and seen many horror stories about what people have done to diskettes. Please don't try and re-create any of the following incidents.

On a very cold December morning one fellow came into the office on his way to work, picked up a monthly disk and then continued on to work. The next day he returned and told us that his disk was bad. We checked and sure enough it was bad. So we replaced it. The next day he was back. Once again the disk was bad. I asked him what he had done and he told me that all he did was go to work, go home and the disk was bad. So what happened? Well, he had left the disk in the car and the extreme cold of the Canadian winter had damaged it.

At one meeting a while back Mike Bonnycastle told his favourite disk destruction story. It went something like this: I had just gotten a bunch of club games disks and was ready to sit down for an enjoyable evening with my PET. So as not to mix up disks I set the pile next to the phone and started in on one of them. After a bit a friend called, we talked for a few minutes, we finished and then I went back to the games. Eventually I finished with the first disk and was eager to investigate the second but I couldn't get the DIRECTORY. The same was true for all of the disks. So what happened? Well, disks are sometimes referred to as magnetic medium and the bell in the phone sends out some very strong magnetic flux that will damage your disk(s).

So don't leave disks in your car and don't leave disks next to the phone. I'll have more disk stories and helpful hints next month.

Good luck. . . *TPUG*

Library Additions

(Access to library available to TPUG members only)

'List-Me' files for the new releases in the TPUG library now appear in each issue of *TPUG Magazine*. 'List-Me's are on all the disks/tapes which have been added to the library since March 1983. It is hoped that we will gradually provide 'List-Me' files for previous releases and that eventually we will produce a "publication" containing them for all the listings in the library.

NOTE: Each List-Me File includes the following notation:
"Copyright (C)1983 by Toronto PET Users Group Inc."
"OK to copy but is not to be sold or published for profit" *TPUG*

(P)T5—JANUARY 84
(1 disk/2 tapes)

LIST-ME (P)T5.L	List-Me for this disk/tape.
DISKSPEEDTIMER.Z	UTIL: Test disk speed on IEEE disk drives.
ECONOMIC ANAL.8	BUS: Analysis of economics of investments including the effects of time on returns.
F INVADERS.F	GAME: "Space Invaders" for the Fat Forty.
INV ANAL DECV1.8	BUS: Analysis of capital investments. Uses "PRNT USING ML.Z"
MISSING #.4	EDUC: Pre-school—fill in the missing numbers.
PRNT USING ML.Z	UTIL: Used in "INV ANAL DECV1.8".
RECONCILE.Z	BUS: Balance your check book.
ROULETTE GAME.P	GAME: Roulette on your PET.
ROULETTE INST.P	Instructions for roulette.
SANTA LUCIA.P	MUSIC: Play a tune,includes the music staff.
SEQFIL V1-5.8	UTIL: Convert ASCII to PETSCII to ASCII.
TRUE MERGE+.Z	UTIL: Merge programs.
TURTLE.8	EDUC: Run Turtle on the 8032.
UTILIIESINSTR.Z	UTIL: Instructions for "UTIL@$X000.Z"
UTIL@$4000.Z	UTIL: @4*4096 renumbers, structured format and errors.
UTIL@$6000.Z	UTIL: @6*4096 renumbers, structured format and errors.
WP LIST/SCRN-A.Z	UTIL: Word processor file lister (small bug fixed). SPACE KEY—stops/continues listing. S—stops/continues at end of line. P—paging or scrolling. F—new file. Q—quit.
XMAS PET!.P	Christmas music.

(P)T6—FEBRUARY 84
(1 disk/2 tapes)

LIST-ME (P)T6.L	List-Me for (P)T6.
83 ONT TAX V1.Z	Tax—Calculate your income tax (Ontario Tax Table).
MESSAGE 896.P	Utility—Put a noneraseable message on the screen.
MESSAGE INSTR.P	Utility—Instructions for "MESSAGE 896.P".
SKI.F	Game—the PET SKI GAME on the Fat 40.
AGENDA.Z	Misc.—A daily agenda program uses cassette.
R-MATRIX.8	Math—Regression analysis generates the matrix.
REGRAN.8	Math—Regression analysis uses data from "R-MATRIX.8".
EAT-MAN.F	Game—Pacman type on the Fat 40 (BASIC program).
DEAD MAN MATH.4	Educational—Simple math exercise—grade school.
STANDARD.8	Math—Standard stats. tests.
ANOVAMS.8	Math—Analysis of variance.
ANCOVA.8	Math—Analysis of co-variance.
BETTER FILE.Z	Misc—Simple data file prog.
WP LIST/SCREEN.Z	Utility—Word processing file lister for Forcast progs.
FORCST INFO1.W	Business—Word Pro File#1 for Forcast prog.
FORCST INFO2.W	Business—Word Pro File#2 for Forcast prog.
FORCST INFO3.W	Business—Word Pro File#3 for Forcast prog.
FORCST INFO4.W	Business—Word Pro File#4 for Forcast prog.
FORCST DATA.8	Business—Data File for Forcast prog.
FORCST DEMO.D	Business—Demo for Forcast prog.
FORCST MA.8	Business—Moving Average Calcs—for Forcast prog.
FORCST GLM.8	Business—General linear model for Forcast progs.
FORCST EXP.8	Business—Exponential smoothing for Forcast progs. The Forcasting program is used for time series forcasting. Right instructions are in the INFO.W files.

(C)T6 Please check table of contents for the location of the (C)T6 documentation.

continued on next page

(C)S2 — MUSIC/SOUND 2
(1 disk/tape)

LIST-ME (C)S2.L	This file contains information about the programs on (C)S2. To access it, LOAD and LIST it.
RAINBOW.C	Over The Rainbow" from the classic film "The Wizard of Oz". Not only plays the song, but also displays the lyrics on your VDT so you can sing along.
MUSICBOX DNCER.C	Plays the song "Music Box Dancer" Suggested speed setting: 100.
BACH PRELUDE.C	Plays the "Bach Prelude". Suggested speed setting: 125.
BACH INVENTN#8.C	Plays Bach's Invention #8 in F. Suggested speed setting: 100.
MORNING BROKEN.C	Plays the song "Morning Has Broken" by Cat Stevens.
FROSTY.C	Plays the theme song from "Frosty The Snowman". To adjust the speed list line 260.
SOUNDER.C	Experiment with the SID chip. See all current register values on your VDT.
MUSICMASTER.C	Converts your 64 keyboard into a dual keyboard.
ORGAN.C	Play songs on your 64 keyboard.
SIDMON.C	Examine your SID chip on your VDT and experiment with 64 sound.
MUSIC LESSON.C	Learn about lines and spaces on the treble clef. Converted by Steven Darnold.
FUGUE.C	Plays a condensed version of "BACH FUGUE". The ADSR can be varied if you so desire.
AMERICAN FLAG.C	Displays the flag of the United States of America and plays its national anthem.
RETUNER.C	Gives you the high and low POKEs for chromatic scale if you want to tune you 64 higher or lower than your manual suggests.
BIRTHDAY.C	Plays Happy Birthday and displays the words to the song. To change the name edit lines 500 and 510.

(C)S3 — MUSIC/SOUND 3 (1 disk/tape)

LIST-ME (C)S3.L	This file contains information about the programs on (C)S3. To access it, LOAD and LIST it.
SOUND TUT-1.C	A tutorial on creating sound and music on the Commodore 64 written by Professor Peter Ponzo. It covers Attack, Decay, Sustain, Release (ADSR), waveforms and how to use them.
SOUND TUT-2.C	The second of Peter Ponzo's tutorials on sound and music for the Commodore 64. This one is a continuation from "SOUND TUT-1.C" and covers filtering and ring modulation.
PETER PIPER.C	Plays the song "PETER PIPER". Suggested speed setting: 50.
SOUND/RING MOD.C	Turns your keyboard into an organ that demonstrates the effects of proper use of ring modulation.
SOUND/PHASE.1.C	Turns your keyboard into an organ that demonstrates the effects of proper use of phase shifting.
DIALER.C	SID produced tones will dial the phone (*) for you. Hold your phone in front of the speaker on your VDT and select the number you want. (*Your exchange must support touch tone dialing for this program to work.)
RAGTIME.C	Plays a song by Joplin and since we were unsure of the exact name we called it "RAGTIME".
SOUND EFFECTS.C	Experiment with the SID chip. When you like what you have done you can print out the current values of the registers of the SID chip.

(V)T6 — FEBRUARY 84
(1 disk/tape)

LIST-ME(V)T6.L	LIST this file for description of programs on (V)T6.
21 W/DICE.V	Blackjack with graphic dice. You play against the computer.
84 CALENDAR HC.V	Prints a 1984 calendar on your printer.
B'DAY RECORD.V	Keeps a file of dates of people's birthdays.
BACH'S INV.4.V	Excellent music for the VIC 20. Plays a long version of Bach's Invention #4.
BIRD-MAN SX	Maze-type game uses super expander. (Good graphics and sound).
BIRTHDAY SONG.V	Plays 'Happy Birthday' and shows the person's name.
CRAZY SC.BOOT.V	Run this program before "CRAZY SCALER. V".
CRAZY SCALER.V	Guide a man up the building while avoiding obstacles.
ESCAPE8KADV.V	An adventure in which your only objective is to stay alive!
EXP REGR.V	This program does exponential regression.
FLAG GUESS SX	This program shows a flag. You have to guess which country it is from.
GRAPH PLOT SX.V	Plots information on a graph.
GRAPHICS 2 SX, GRAPHICS SX	These two programs are graphics demonstrations for the super expander cartridge.
GRID ESCAPE.V	Try to guide your man from the top left corner of the screen to the bottom right, while avoiding obstacles.
LEM. STAND 3K.V	Try to make the largest profit by carefully buying supplies and selling them at the best price.
LIGHT RACER SX	Try to beat the computer by forcing its light cycle into a wall, you, or its own trail.
LONG DIVISION.V	A program which shows the steps involved in long division whileyou answer the problem.
MATH QUIZ	Asks you 10 questions in addition, subtraction, division and multiplication (grade 4-8).
MEMORY CHECK.V	Allows you to check what memory is in which block.
OHM'S LAW.V	Calculate voltage, amperage, ohmage, or wattagebysupplyingsomeinformation.
SIMON.V	Match the coloured squares and tones.
SPACE NUMBERS.V	Allows small children to type the number they see on the screen.
SPEED MATH 1.V	Math quiz on addition and subtraction (Grade 1-3).
SUPERPROF.V	Math will all four operations at varying levels of difficulty.
TIC-TAC-TOE.V	Tic-Tac-Toe game for two players.
TREASURE CHASE.V	Get the treasure (uses custom characters).
WAVE DEMO SX.V	Graphics demo.

SUPERSTUFF!

This is the first time we are listing any of the disks in the SuperPET Library. There are now 12 4040 disks and 10 8050 disks available (disks 8,9 and A are combined on one 8050). This time we are merely giving the listings for the last 5 of these disks. The "Describe" files on these are like List-Me files. We hope to start providing these in the magazine in the near future. *TPUG*

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sphercor.fp
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redmol.data
poisson.data
nnpro.fp

(C)T6

photo by R. Portolese

By David Bradley
C-64 Librarian

The following is a slightly abridged version of the documentation that was available at the TPUG Commodore 64 meeting. The only items which have been excluded are the start and finish addresses in both hexidecimal and decimal. If you need these, they are included in the complete version from the TPUG office for $1.00.

ABBREVIATIONS USED IN THIS LIST-ME
BL – Block Length
PL – Program Length
FT – File Type
CL – Classification

LIST-ME (C)T6
Load as follows: LOAD "LIST-ME (C)T6",8
FT: PRG, CL: LIST-ME
This file contains 1 line documentation of the programs on (C)T6.

AFRICAN ADVN.C
Load as follows: LOAD "AFRICAN ADVN.C",8
BL: 88, FT: PRG, CL: GAME
This is an adventure game in which you have to find Dr. Livingstone and rescue him. You will earn points for each valuable you return to your bedroom. Note, however, that some valuables may be useful in other ways. So be creative!
This game is like most other adventure games. If you want to give commands you must use two words. For example if you wanted to CATCH a LION, you enter CATCH LION. As long as there is a LION there, and nothing obstructs you from getting it (such as another angry lion) you will be allowed to CATCH the LION.
If you want to see what you are carrying, type INVENTORY. If you want to move, type GO followed by the direction (North, South, East or West) that you want to go. If you want to see your rating type SCORE. If you get into trouble, ask for HELP. Good luck...

VISIBLE 64.C
Load as follows: LOAD "VISIBLE 64.C",8
BL: 11, FT: PRG, CL: MISC
This DEMO lets you see what is going on inside your C-64 during a number of operations.

DM MASTER.C
Load as follows: LOAD "DM MASTER.C",8
BL: 24, FT: PRG, CL: GAME
If you are into Dungeons and Dragons this program will aid you in creating your characters.

OCTOPUS.C
Load as follows: LOAD "OCTOPUS.C",8
BL: 17, FT: PRG, CL: GAME
Using H to move left and K to move right move past the octopus and get to the box. When you arrive, turn around and go back. To win you must do this 5 times. Beware of the tentacles...they are deadly.

WHEN SAINTS.C
Load as follows: LOAD "WHEN SAINTS.C",8
BL: 5, FT: PRG, CL: MUSIC SOUND
This music driver program can play any music that you tell it to. It comes with a sample song, "When the Saints...". To change the song, modify the DATA statements. Have fun...

ADSR DEMO.C
Load as follows: LOAD "ADSR DEMO.C",8
BL: 4, FT: PRG, CL: MUSIC SOUND
This program will graphically show you what the terms Attack, Decay, Sustain and Release really mean when it comes to programming music on the Commodore 64.

U BOAT.C
Load as follows: LOAD "U BOAT.C",8
BL: 19, FT: PRG, CL: GAME
Your mission is to destroy as many ships as you can. Use a joystick in port #2 to move your submarine and fire your torpedos.

BOWLING.C
Load as follows: LOAD "BOWLING.C",8
BL: 13, FT: PRG, CL: GAME
Bowl by yourself or against up to 2 of your friends. The ball will bounce back and forth across the lane. When the ball is in line with the pins that you want to knock down, press any non-destructive key. The computer keeps score for you. Good luck, and good bowling...

HEX PUZZLE.C
Load as follows: LOAD "HEX PUZZLE.C",8
BL: 12, FT: PRG, CL: EDUCATIONAL GAME
The object is to make the box on the left look exactly like the box on the right by moving the characters around with the keys that you picked earlier. After you decide whether or not to have a time limit and pick the keys that you want to use for up, down, left and right you must enter your setup goal. You do this by hitting any of the characters displayed at the top of the screen. When you have selected all the characters, the game begins and looks something like this:

	1234		1357
	5678		9246
PUZZLE	9ABC	GOAL	8DEF
	DEF		ABC

Good luck...

EGGS.C
Load as follows: LOAD "EGGS.C",8
BL: 23, FT: PRG, CL: MISC
Move your chicken around the screen using joystick port #2. To lay an egg press the fire button. To erase an egg press the space bar. The top row of keys on the keyboard will change the egg colours. f1 clears all the eggs from the screen and f7 aborts the program.
The daughter of the gentleman that donated this program wanted to be able to save her "creations" to disk. But the "hen" became distorted when he tried to do this. If anyone can get around this problem, there would be one very happy little girl in Paisley, Ontario.

RAT RUN.C
Load as follows: LOAD "RAT RUN.C",8
BL: 10, FT: PRG, CL: GAME
Run as fast as you can to the open door on the far side of the room. Your time is counted and you lose 100 points everytime you hit an object. Depending on how good a rat you are, pick a level from 1-20.
Use joystick port #2 to move. Good luck...

FANFARE.C
Load as follows: LOAD "FANFARE.C",8
BL: 2, FT: PRG, CL: MUSIC SOUND
This short music program sounds good and may be of use to you in your own programs where you need a short fanfare.

PRELUDE.C
Load as follows: LOAD "PRELUDE.C",8
BL: 37, FT: PRG, CL: MUSIC SOUND
This program plays Prelude in C Major and sounds great!

SOUND SETTER.C
Load as follows: LOAD "SOUND SETTER.C",8
BL: 11, FT: PRG, CL: MUSIC SOUND
This program allows one to experiment

continued overleaf

with some of the many sounds that can be produced by the Commodore 64's SID chip. Attack, Sustain, Decay and Release values are input in terms of milliseconds. Pulse width settings are input in terms of % duty cycle. This program should make playing with the SID chip much easier for you.

LIFE.C
Load as follows: LOAD "LIFE.C",8
BL: 76, FT: PRG, CL: MISC
The game of life was first presented by John Conway, a mathematician at Cambridge University, in the October, 1970 issue of Scientific American. For all of the rules. LOAD and PRINT LIST-ME LIFE.L.

TRY THIS 1 to 7.LIFE.D
From within "LIFE.C", LOAD as follows: Press F1 twice, then type TRY THIS 1-7
FL: 41 BYTES, BL: 1, FT: SEQ, CL: DATA FILE
These files contain different patterns of cells. They are all interesting to watch.

LIST-ME LIFE.L
Load as follows: LOAD "LIST-ME LIFE.L",8
BL: 30, FT: PRG, CL: LIST-ME
This file contains information and instructions for LIFE.C. To access the information LOAD and LIST this to your printer.

STAR TREK INST.C
Load as follows: LOAD "STAR TREK INST.C",8
BL: 26, FT: PRG, CL: GAME INSTRUCTIONS
This program gives instructions for "STAR TREK BOOT.C". Please LOAD and RUN this program BEFORE you attempt to play the game. There is information here that you will need if you are to be a successful Star Ship captain.

STAR TREK BOOT.C
Load as follows: LOAD "STAR TREK BOOT.C",8
BL: 6, FT: PRG, CL: GAME LOADER
This program loads and runs all of the files needed by "STAR TREK V1.D".

STAR TREK V1.D
Do NOT attempt to LOAD this file.
BL: 109, FT: PRG, CL: DATA FILE
The object of this game is to seek out your enemies the Klingons and kill them. You do this by exploring the galaxy in your star ship, the Enterprise. The graphics are superb! The sound is excellent! This program is without a doubt the best game ever to be donated to the TPUG library. But it could be better! The author, David Neale, has a message in the beginning of the game that suggests that if enough interest is shown he will do an enhanced version of the game with many new features never before seen in any Star Trek game. The way that he suggests you shown interest is to send him $2. I urge you to sit down with this game, play it and then truthfully tell yourself that it is not worth $2. If you find any bugs, have any suggestions for modifications that he might put in further updates or if you decide to send him the money his address is:
Dave Neale, P.O. Box 1324, Meaford, Ont., N0H 1Y0
Or you can call him at (519) 538-1758.

STAR TREK ML 1.D to 4D
Do NOT attempt to LOAD this file.
BL: 17, 9, 1, 1, FT: PRG, CL: DATA FILE
These files are machine language loaded and used by "STAR TREK V1.D".

ONT 83 TAX V1.Z
Load as follows: LOAD "ONT 83 TAX V1.Z",8
BL: 31, FT: PRG, CL: BUSINESS
Calculate your income tax. Note, this is the first version of the 1983 version so there may be a few bugs. If you find any, please tell us what they are.

SPEEDSCRIPT.C
Load as follows: LOAD "SPEEDSCRIPT.C",8
BL: 19, FT: PRG, CL: BUSINESS
This word processor will let you do many functions that until now have only been available in commercial packages.

SPEEDSCRIPTINS.C
Load as follows: LOAD "SPEEDSCRIPTINS.C",8
BL: 4, FT: PRG, CL: INSTRUCTIONS
Before you LOAD SPEEDSCRIPT.C have a look at the information in this file. It will save you a lot of time. *TPUG*

CALENDAR OF TPUG EVENTS

1983-1984 Schedule

Annual Conference

Saturday and Sunday, May 26th and 27th, 1984
10:00 a.m. to 5:00 p.m.
Constellation Hotel, 900 Dixon Road

Pre-registration
(prior to April 15)
Member $20.00
Spouse & children $10.00 per person

For 8-page Registration Package
See February TPUG Magazine
or Contact Club Office

CENTRAL CHAPTER – Leaside High School, Bayview & Eglinton Aves. at 7:30 p.m. in the auditorium for **PET/CBM**

Wed. Mar. 21	Wed. May 9
Wed. Apr. 11	Wed. June 13

VIC 20 CHAPTER – York Public library, 1745 Eglinton Ave. W., (just east of Dufferin) at 7:30 p.m. in the auditorium

Tue. Mar. 6	Tue. May 1
Tue. Apr. 3	Tue. June 5

Commodore 64 CHAPTER – York Mills C.I., 490 York Mills Rd., (east of Bayview) at 7:30 p.m. in the cafetorium – **Note: Changes in place and dates**

Mon. Mar. 26	Mon. May 28
Mon. Apr. 30	Mon. June 11

WESTSIDE CHAPTER – Clarkson Secondary School, Bromsgrove just east of Winston Churchill Blvd. (south of the QEW) at 7:30 p.m. in the Little Theatre for **PET/CBM/VIC 20/Commodore 64**

Thu. Mar. 22	Thu. May 17
Thu. Apr. 19	Thu. June 21

SuperPET CHAPTER – York University, Petrie Science Building, enter campus from Steeles Ave. – park in Lot D. Meet at 7:30 p.m. in front of Room 340.

Wed. Mar. 14	Wed. May 16
Wed. Apr. 18	Wed. June 20

MACHINE LANGUAGE CHAPTER (6502) – Call Jim Carswell at 416/531-9909 for additional information.

VIC 20/Commodore 64 Assembly Language and Communications Group – This group has been discontinued until such time as a co-ordinator is found.

COMMUNICATIONS GROUP – York Public Library, 1745 Eglinton Ave. W., (just east of Dufferin) at 7:30 p.m. in the Story Book Room (adjacent to the auditorium).

Wed. Mar. 7	Wed. May 2
Wed. Apr. 4	Wed. June 6

COMAL GROUP – York Public Library, 1745 Eglinton Ave. W., (just east of Dufferin) at 7:30 p.m. in the auditorium

Thu. Mar. 29	Thu. May 31
Thu. Apr. 26	Thu. June 28

NEW GROUPS IN THE PLANNING STAGES

– COMAL Group
– Eastside Chapter
– New Owners Group

Are you interested in being involved in any of these groups, either as a participant or an organizer? Are you interested in organizing some other interest group in the Greater Toronto area? Please let the club office know, by mail, phone, or TPUG bulletin board. *TPUG*

TPUG Contacts

*President	Michael Bonnycastle	416/654-2381
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*Vice-President	Gord Campbell	416/492-9518
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*C-64 Chapter	Louise Redgers	416/447-4811
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*SuperPET Chapter	Gerry Gold	416/225-8760
VIC 20 Chapter		
*Westside Chapter	John Easton	416/251-1511
*Westside Chapter	Al Farquharson	519/442-7000
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	Richard Bradley	416/782-7320
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SuperPET	Bill Dutfield	416/224-0642
VIC 20	Craig Bonner	416/663-4025
Assistant	Chris Covell	416/925-9296
Bulletin Boards	Steve Punter	416/624-5431
*Conference	Gord Campbell	416/492-9518
*Director	Bruce Beach	519/925-5376
*Director	Rosemary Beasley	416/787-8432
*Director	Gary Croft	416/727-8795

*TPUG Board of Directors *TPUG*

Advertisers' Index

classified

*File recovery Service – recovery of scratched disk files (program, sequential, relative) for 1541, disk drive and Commodore 64. Call Mark (416) 787-6917

**Wanted: Commodore 8032 computer, 2031, 2040, 4040 or 8050 disk drive. Call (416) 366-2130*

*Wordpro 4 for CBM 8032, $75.00. Call Kathy – (416) 925-3451 business hours

**Zenith Green Display Monitor for Sale. $95.00. Call Martin – (416) 663-5698 after six.*

*For Sale: Commodore CBM 8096 with 8050 Dual Disk Drive, 8023P tractor printer with stand. Silicon Office, Calc Result. 6 months old. Best offer over $4,000. Days 433-4200, evenings 579-7720 (ask for Dave)

Infomag ad page 18 February issue TPUG magazine: Precision Software Superbase 64 should be $117 not $17 as stated.
Our apologies to anyone who had an unpleasant surprise.

Name _____

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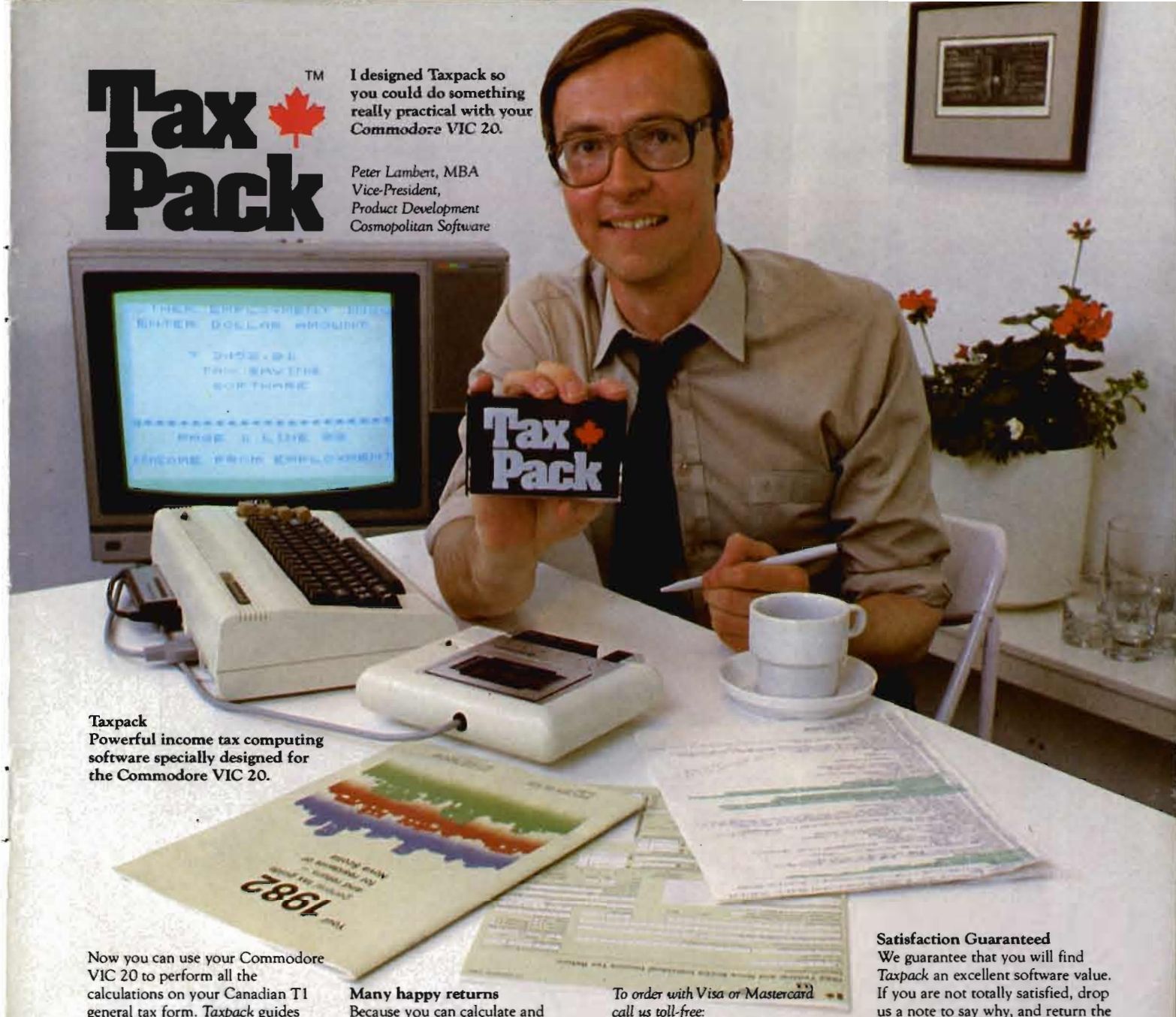

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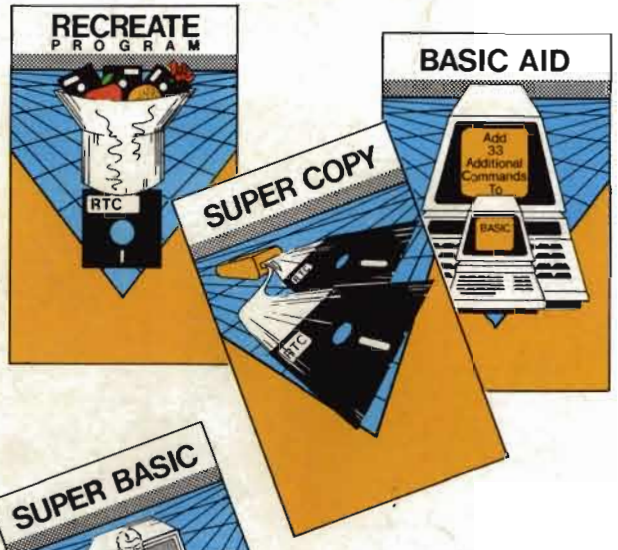

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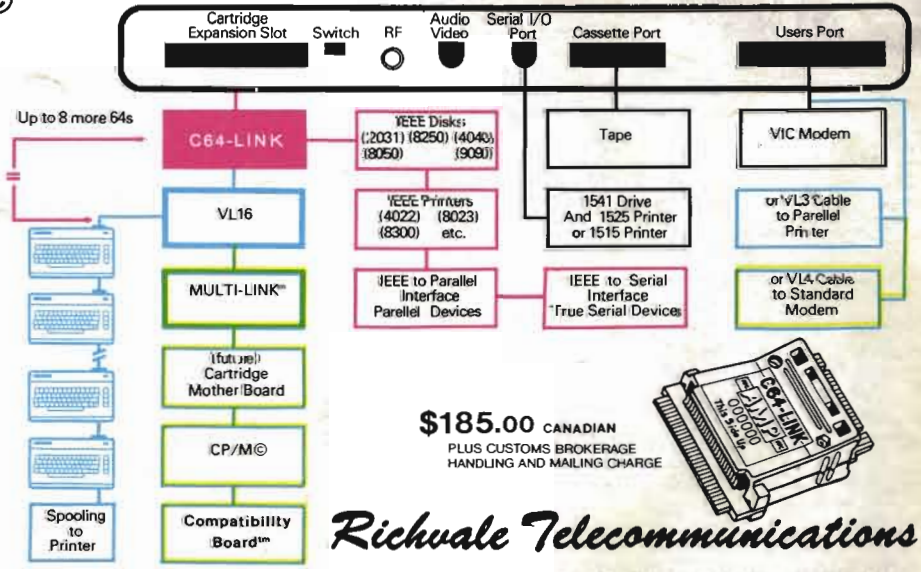

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