THE TORPET

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The INDEPENDENT Commodore Users' Magazine No. 18 Mar.-Apr. 1983

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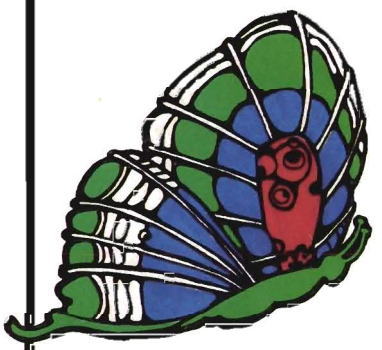

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Cover Credits

Our Cover Photo this month is from Graham Bailey. We anticipate that he will be the source of our covers for the next several months.

Our cover model this month was Sue Simone, a Grade 8 student at Our Lady Help of Christians, separate school in Richmond Hill, Ontario.

EDITORIAL

VIC-20 VOTED

COMPUTER OF THE YEAR

VANCOUVER -- An international competition run by seven personal computer magazines has recently voted the Commodore VIC-20 "Home Computer of the Year. Judging was held in London, England.

The magazines sponsoring the competition were 'Databus'(Holland), 'Microsystems' (France), 'Bit' (Italy), 'Practical Computing' (England), 'Chip' (Spain), 'Personal Computing' (U.S.A.) and 'Chip' (Germany).

Computers had to meet basic criteria -- they had to be fully developed machines, not pre-production prototypes, and available to the market place with software and service back-up. Second and third places went to the Sinclair ZX81 and Spectrum, with the Atari 400 and Tandy Colour Computer coming in as runners-up.

New Regular

Contributers to the TORPET

In addition to the regularly appearing Butterfield Box we are most happy to announce some additional new regular features.

The Houston Hardware Hacker will soon be appearing, thanks to Hank Mroczkowski.

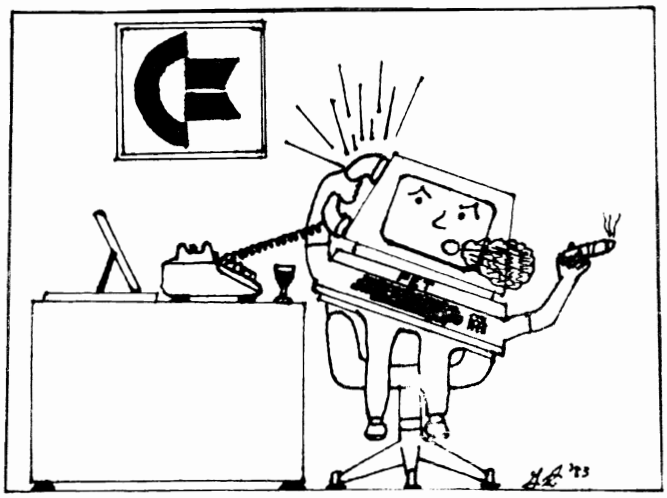
Bytes, which first appears in this issue, comes from Patrick Corrigan of The Toronto Star.

TidBytes, also appearing for the first time is from a sixteen year old TPUG member Glenn Anderson of Islington, On.

Mike Richardson is a Grade 12 TPUG member from Orangeville and his first contributions are found on several pages throughout this issue.

Our new punster is John Ylimaki from Nipigon, Ontario

TidBytes by Glenn Anderson



"So, tell me, has being voted 'Man of the Year' by TIME had any affect on you?

New Editorial Committee

The Torpet is most happy to announce that it has a new, and very distinguished in PETdom, honorary editorial committee.

Jim Butterfield
Toronto
Associate Editor
of Compute

Dave Williams
Toronto
Contributing Editor
of Info Age

Elizabeth Deal
Malvern, Pa.
Well known contributer
to Commodore Magazines.

Jane Campbell
San Diego, Ca.
Co-ordinator for
Sphinx

It will be a few months before the committee's new policies (whatever they may be) can be reflected in the publication, but please continue to bear with us during our growing pains.

EDITORIAL

A Word of Warning

The Torpet is not the **Good Housekeeping** of computers. Neither are we a **Consumers Guide**. We neither give a seal of approval nor do we rate the products.The products reviewed in our columns have not been independently tested or independently reviewed by us.

As many manufacturers and distributors of word processors, for the Commodore products, as we could find were invited to submit reviews. Not all of them arrived in time for this issue and more reviews will be printed in subsequent issues.

We try to print balanced reviews when they are available but often the reviews are by either the manufacturer themselves or someone commissioned by them. The reviewer may, or may not, be independently critical, or for that matter, may or may not be qualified to be doing the review.

The very fact that a review says some negative things about a product does not mean that the review is all that independent. Some commissioned reviewers are pretty shrewd.

We don't want you to think we don't love our reviewers, because we do. We greatly appreciate the person who takes the time to send us a review, pro or con. And, by the way, we pay $20 per page for reviews, just like anything else. So, if you disagree with a review, whip out your word processor (or quill, if that is all you have) and send us yours.

The whole point is, take anything you read here (or elsewhere) with a grain of salt. In fact we take two.

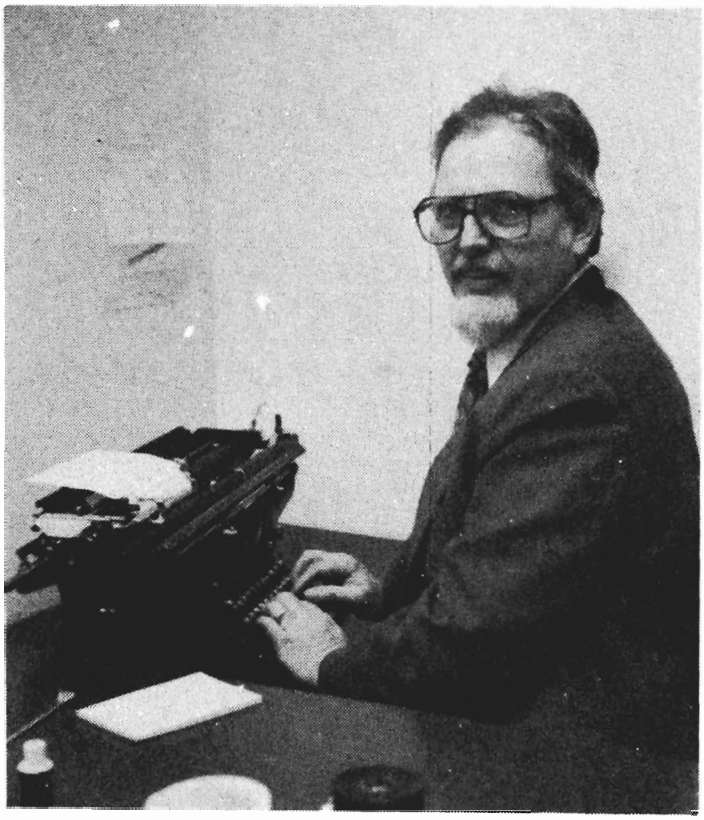


Photo: Graham Bailey

Ye olde editor, Bruce Beach, with ye olde word processor. We gotta be kidding. And believe me, we are. We would never get the TORPET out without a word processor. But we still use Susie Bell there to do a quick label or some other useful task.

The LONE RANGER would be a natural for TORPET's "Man of the Year"!

- His Indian companion is named TORONTO

- His PROGRAM is still in reRUNs

- He upholds the CODE of the west..by capturing BAUD guys

- He has silver BULLETINS on his BULLETIN BOARD system?

- He is very good at GARBAGE collection. As RipTaylor puts it, he is always riding DATA way

To the DUMP, to the dump, to the dump,dump,dump

- I/O SILVER

a Ylimaki

FEATURE

What Is A Word Processor

by Bruce Beach

Word processing is the ability to electronically manipulate text without having to retype the entire document. This is one of the most popular uses for microcomputers.

You may do your editing of the text right on the screen of the computer or the word processor may allow you to print out a draft copy of a document. After examining the printout for errors you can enter your corrections and have the corrected document retyped or typeset with all the corrections in place.

This ability is very useful for documents that have to be repeatedly revised, such as catalogs, price lists, membership lists, club by-laws, contracts, essays, theses and dissertations. For things like catalogs it is possible to retain the electronic files from year to year and then just make the updates as necessary before each new reprinting.

Corrections can include new margins, spelling, deletion of paragraphs, insertion of paragraphs, or the movement of a paragraph from one place to another. Text can be manipulated in almost anyway conceivable.

The quality of the output is as much dependent upon the output device as upon the word processing program. The control of the output device is usually accomplished by putting 'markup' into the text. The markup can be quite simple or quite complicated depending upon the capabilities of the output device. Many word processors are capable of putting in markup for any number of output devices, such as a variety of printers or typesetters.

It is really most convenient to distinguish between the text editing or input function of a word processor and its output or printing function. Some word processors divide the functions into two distinct and separate programs.

Good questions to ask when considering the text editing or input function are:

1.) Is there word wrap? This means that the word is automatically moved to the next line when a word will not fit on the line where it is being typed. It makes the text much easier to read and speeds up the use. However, some word processors do not include it because it also uses more of the text memory.

2.)How does one see the text displayed? Is it formatted on the screen in the same manner as it will be output? Narrow screens do not usually allow this to be done very conveniently. This may or may not be a real consideration, especially if the output program is sufficiently sophisticated to automatically handle hyphenation and justification of the text.

3.) Most important is the ability of the operator to easily enter the text. Therefore, are commands to copy, erase, or move text easily given, or does one have to use such things as delimiters and some combination of commands?

Good questions to ask when considering the text printing or output function are:

1.) How complicated is the markup? This may not be a consideration if the markup is done by someone other than the person doing the input. For example the text may be input on one word processor and marked up for output on another.

2.) How easily can the files be linked

for output. Again this may be only a consideration in the output word processor.

3.) With what output devices (or for that matter with what output word processors) is the word processor compatible.

4.) Is the word processor capable of controlling all the output capabilities of the output device?

Summary

In summary then it may just be necessary for an input word processor to take 'idiot' type. That is where the operator does not even have to worry about line endings or carriage returns. It may or may not be necessary for the input word processor to have strong editing capabilities.

Conversely, if all of the editing is done before the text reaches the output word processor then that word processor may not need strong editing capabilities. Markup can be put in by either processor depending upon the system design.

Quite often all the input and output functions are found in one word processing program. Such overall programs usually do both functions less well than the specialized input or output programs.

Checklist for Choosing a

Word Processor

by Bruce Beach

Number one
Easy to learn

A big fancy word processor may have so many commands in it that you will never figure out which are the commands you really need, since most of them are commands you will never use. Don't judge how good a word processor is by the size of its instruction manual.

The faster you get going the more certain you are to find your word processor useful and to fall in love with word processing. You should be able to really get going on a simple word processor within 30 minutes and be able to master it within a couple of hours.

There are some manufacturers with word processors so complicated that they offer a course a couple of weeks long on its use. Do you want to need that? Probably not.

Number two
Easy to use.

This is different from easy to learn and it is probably the biggest, most important, and most subtle difference between word processors. Again more expensive does not necessarily mean easier to use. In fact it often times is quite the opposite. You will have to learn to judge this matter for yourself, or at the outset go by a critical review.

Number three
Cheap

For some people money is not a consideration. Cost may not be important to you at all, but it is to me. However, since you you may end up buying more than one word processor, as you come to know about them, then why not first get your feet wet as cheaply as possible?

Number four
Will it do the job?

I would have put this as number three but that is again part of the problem. Until you have had some experience you probably

FEATURE

will have some difficulty in defining just what is the job you want it to do.

Number five
Compatibility

By that I mean that I want the output files from my word processor to be able to be loaded into some other make. Now you might not consider that as being important at all. But, I would consider it as being **very** important. Do you want to be able to send your tapes or disks to someone else to have them printed, or typeset? Maybe, you would like to write some articles for **The TORPET**. That would be really nice, and it would be nice if you could submit them in a machine readable form.

Number six
Transportability

That is to be able to move from from one computer to another. You can buy word processors that are built into the machine. Ugh. To change word processors you have to change machines.

More often, and this is just about as bad, the word processor you buy will work only on one machine. If you have a VIC and you get a Commodore 64 then that usually means you have to get a new word processor.

Some are even worse than that. If you upgrade from a 40 column CBM to an 80 Column, or even from 16K to 32K it can mean that your old word processor no longer works. Or your word processor may only work with one printer. Anyway, I think you should watch out for this one.

Number seven
Reliability

This one is especially important if you are putting a lot of money into it. Is the company behind it a big one that is going to be around to support changes such as made by Commodore in their ROM sets, or compatibility with new disk drives, or new printers that come on the market?

Number eight
Convenience

You might think with "easy to use" and "easy to learn" and the other things on this check list that we had already covered convenience. But we haven't. To learn about inconvenience wait until you get a word processor that requires a special ROM to be installed in your computer. Then later you may find and buy still other programs that want that same ROM spot. Plug and unplug. Plug and unplug. Ugh and Ugh again.

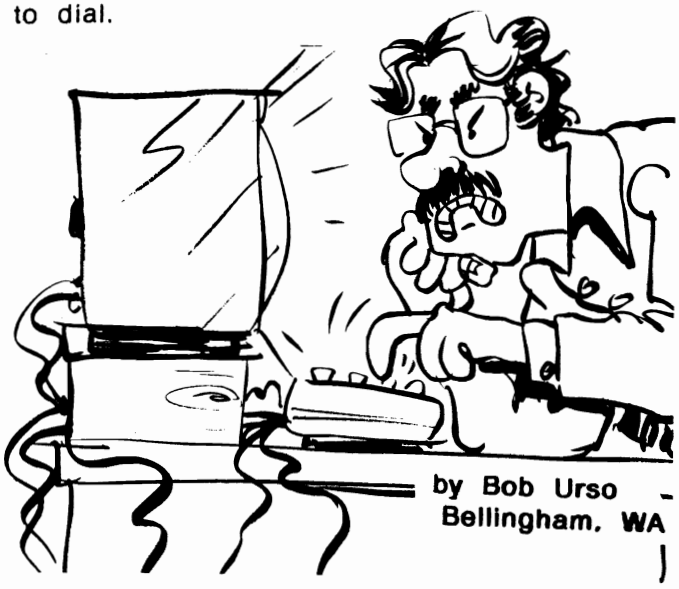
There could also be special cable arrangements required, or other things that can be just as inconvenient. Think about it.

Number nine
Output quality, and flexibility

Surprise! I would **not** recommend that at the outset that you look for too much. Just make sure that it does what you really need it to do. The more bells and whistles that you get -- once again the more complicated it may be to learn, and mean the less real use that you will get out of it.

Summary

Well, there was my check list. You will have to make up your own. But golly, do learn to use a word processor. Living in a world where we have them and still not being able to use one is like living in a world with telephones and not knowing how to dial.



by Bob Urso
Bellingham, WA

FEATURE

The BEST Word Processor

by Ed Mansfield

Question: How does one determine which is the best word processor?

Answer: In the same way one determines which is the best vehicle.

First: You have to ask the question best for what?

Suppose you were trying to choose a vehicle. Tell me, which is the best. A small sports car? A farm tractor? Or a truck? A small sports car is great for going down the highway at a fast speed. It is economical to run, and it may be fun. But it sure wouldn't do very well at pulling a plow in the field.

On the other hand, a tractor would do great in the field, but it surely would be slow going down the highway. Likewise, while a truck is very useful for hauling big loads quickly down the highway, it does use an awful lot of gas.

We could give many more examples of specialized vehicles. From the family station wagon to the camping van, each is better for its own purpose. There is no way to build one vehicle that will do **everything** best.

The same is true of word processors. One might at first think that one program in one general purpose computer could be made to do everything. But, it just isn't possible. Functions require code, and code takes memory, and the memory of all our computers is limited.

Just having more memory isn't the solution either, because a very large program might take more time to operate and therefore be less efficient. More importantly, if it is designed to do one thing well, that very design may preclude it from doing another thing well.

Is choosing a word processor very complicated then?

No, not really. You just have to know what you are looking for. First of all it has to work on **your** computer. Therefore, if you have a VIC you don't have to look at Commodore 64, or PET/CBM word processors. If you haven't chosen a computer yet then of course you can know at the outset that the larger the computer you get the larger the word processor you can run.

However, again, larger still does not necesarily mean better, (especially for you). In choosing a computer you have to know what you want, and need, and should get, just in the same way as in choosing a vehicle or word processor.

Getting your first word processor.

But, let us assume you have a computer, but don't have a word processor. Further, let us assume that you have never had a word processor. What then should you be looking for?

To begin with, get something cheap. I think the cheaper the better. Maybe, even free. There are free word processors on the TPUG club library. You can't start much cheaper than that.

First, just get any old word processor and learn to use that. Learning to use a word processor is a lot like learning to program (although it is not nearly so difficult). The way that it is a lot like learning to program is that you will spend 90% of your effort in learning to use the first one, and 10% of that amount of effort in learning to use the second. Or, as another example, it is a lot like learning to drive a car. Once

you learn to drive one it doesn't take nearly so much effort to learn to drive a different one.

Admittedly, some of the free word processors are not so hot. That is why they are free. They can't be sold, so they have to be given away. But, I will tell you a secret. Some of the more expensive word processors aren't so hot either. Once you have learned to use one word processor you can begin to appreciate the features in another.

The biggest mistake people often make.

That is to have used just one word processor. They think that because of the difficulty they had in getting used to the first one they would have to go through that to learn a second. And so, without every really becoming familiar with a second one, they go around defending their first one.

Secondly: I highly recommend that after you learn to use one word processor you make a decided effort to learn a second, and a third. Now, you will really be able to compare features.

Some word processors are best for writing letters. A lawyer, or business man that writes many similar letters will find this type of word processor most useful. It will automatically replace certain spots in the same form letter with another person's name, and other particulars, such as amount of money owed, and so forth.

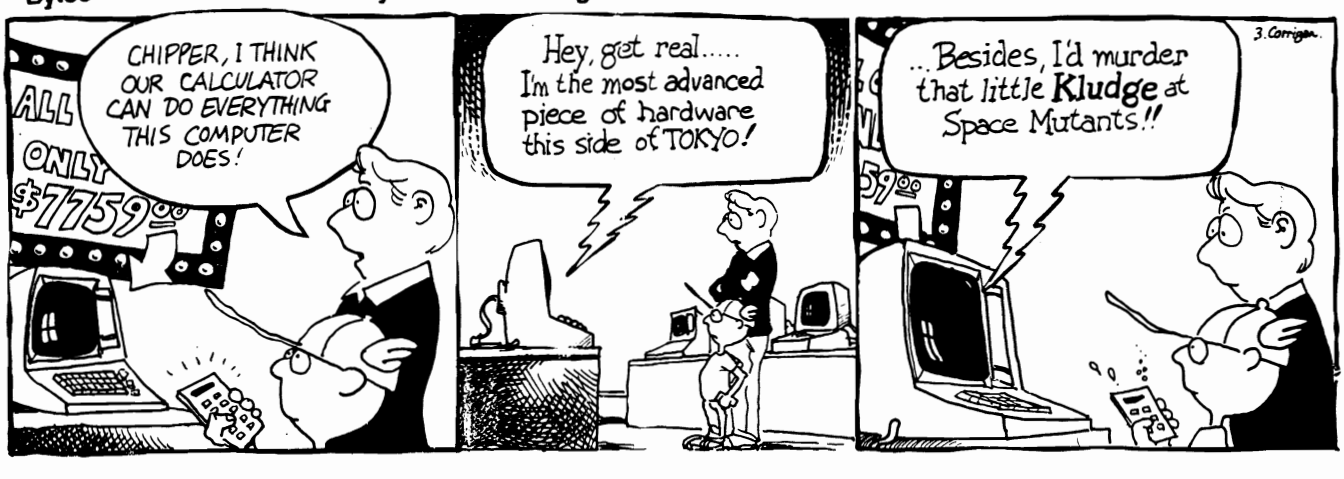
Another kind of word processor may be excellent for a firm that has long lists of clients, such as a fund raiser, or someone who does bulk mailings. It may work very well with large external data files.

Still another word processor may be most excellent for the author or writer (school teachers and graduate students most usually fall into this category). This kind of word processor is very good at allowing one to move around text, rearrange it, merge it, and generally keep track of it.

Each of these types of word processors will have a number of special features that are of particular use to the application for which they were primarily designed. Each of them can also do most of the functions that the other can do. Probably not as efficiently, however.

This is where we get into our difficulty. Every manufacturer will tell you that his is the best (at least for the money) and that it will do everything (it most likely will) and some things superbly (and that is most likely true too). But, will it do superbly what you want it to do? That is the question, or better yet, the question should be, "What do you want?", or perhaps even, "Do you know what you want?"

Bytes by Patrick Corrigan



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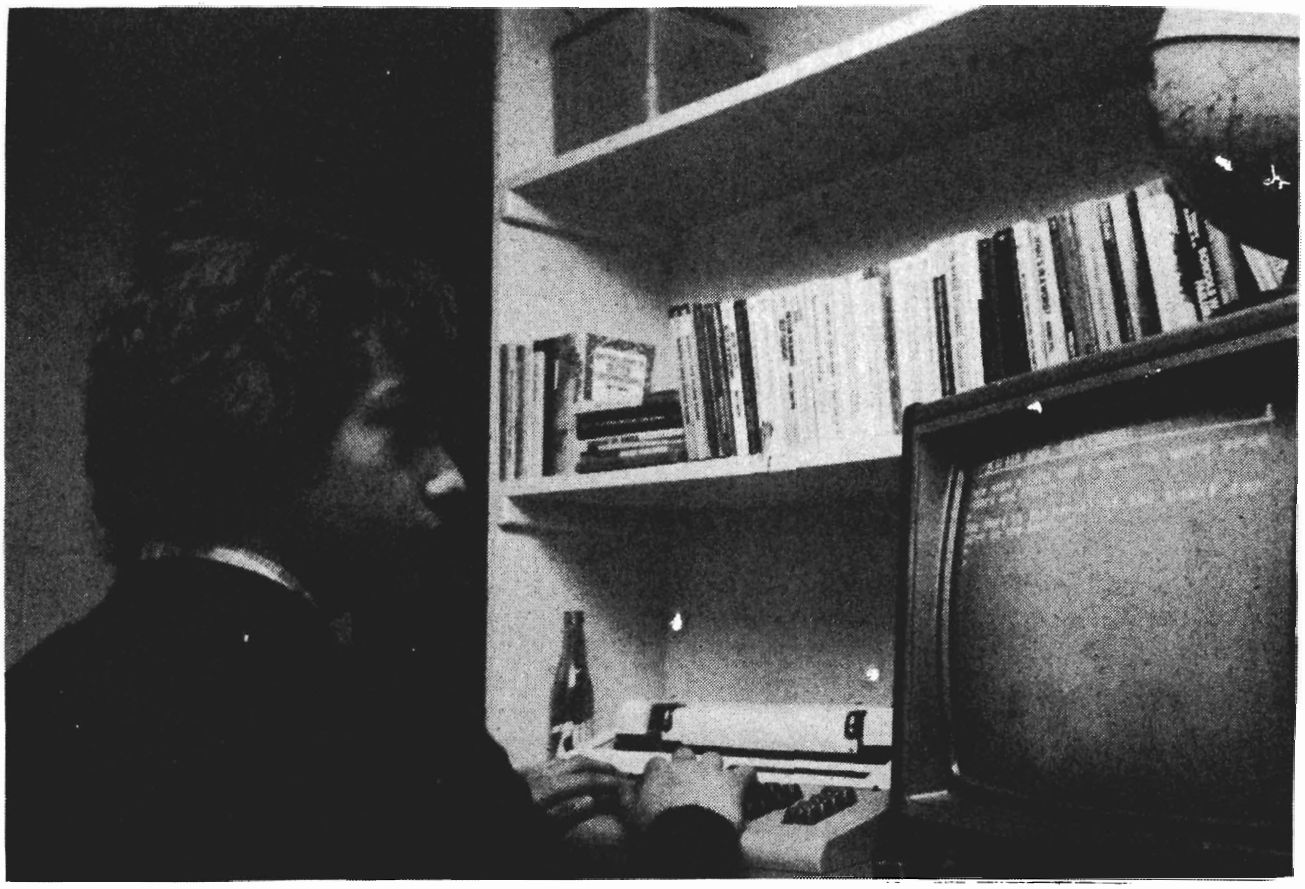

Photo: Graham Bailey

Chris Benedetto, a Grade 8 student at Our Lady Help of Christians, separate school in Richmond Hill, Ontario.

All The Reasons You Shouldn't Get A Word Processor

by Ed Mansfield

Do I really need a word processor?

Are you a student in school where you have to write essays?

Are you a business or salesperson who has to write a lot of reports or letters?

Are you a person with a large correspondence to family or friends?

Are you a creative writer much of the time, or even someone who wants to write that family history or famous first novel?

If the answer to any of these questions is "yes" then **you** need a word processor.

But, aren't word processors expensive?

Not, if you already own a personal com-

FEATURE

puter. If you don't already have a computer it may be the very thing that justifies your getting one.

Even if I have a computer it would mean I would have to get a printer and a lot of other expensive equipment.

Not necessarily. If you are a student you may be able to to write your essays at home on your own computer and then take them to school to use your school's printer to print them out.

Or, if you are a business person, you could create you reports at home and print them out on the computer at work.

Or, if you are a creative writer, you can type in your manuscript at home and then send your tapes of disks to a firm that does typesetting for them to process them. This can really reduce your costs.

It still sounds kind of expensive.

For less than $400 today you can buy a VIC, a tape drive, and a word processing program. The whole works for less than $400 where just three or four years ago a word processor alone would have cost you thousands of dollars. It costs really peanuts today if you already own a computer.

Well, it sounds complicated.

It doesn't need to be. You can find some word processors that you can learn to use in just a couple of hours. And once you learn, if you do any writing at all, you will find that it saves you hours upon hours of effort and allows you to do a much better job.

But, I don't even know how to type. Or at least, I don't type very well.

That is just why you need a word processor. It does for a poor typist what a calculator does for a person who is poor at adding up numbers. It quickly gives you accurate results. Your papers can look just like they have been typed by a professional. Everything in the right place and no erasures.

A word processor might make papers neater but I don't see how it could make them better.

Well, it almost always does. Because of the ease with which ideas may be moved around, inserted, changed or deleted, the end result is usually much better. It is also so much easier to do rewrites and correct the grammar.

It probably still wouldn't be that much help in doing school or business home work.

Want to bet? If you're graded on performance, then with a word processor it is a lot easier to perform. The word processor lets you do away with the mechanics of writing and instead concentrate on the creativeness. Many people (and especially young students who didn't like to write before) suddenly find that it is enjoyable to be creative. The reason? Those messy old mistakes that used to be so hard to correct are now a breeze and, after an editing, the results are something of which one can be proud.

So, what for are you waiting? Try one. You will probably like it. "I really cannot tell you how good an apple tastes, if you have never tried one", he said. Heh, heh, heh.

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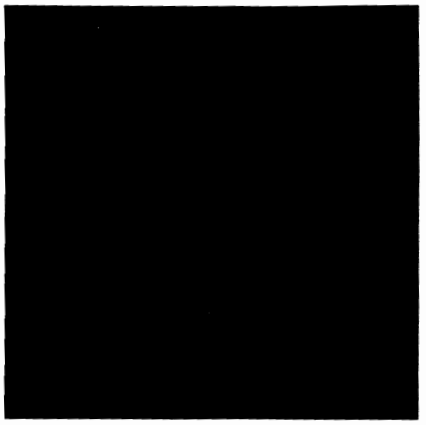

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GENERAL

The Limitations of Tape Word Processing

by Gary Greenberg

N·Y· N·Y·

When my writing was limited to just letters and magazine articles of only a few pages, I found that storing my word processor output on a cassette tape was adequate for my purposes. However, when I received a contract to write a book, I soon found a cassette thoroughly inadequate and after about thirty pages into the book I gave up on the cassette and decided that I needed a disk drive for storage.

The distinction between cassette and disk arises from the fact that word processing stores the text as a series of files. A cassette drive can only access files in a serial format. That means that the computer has to read each file one at a time until it comes to the one you want.

The files must also be stored in the order in which they are to be printed because the cassette drive reads the files only in one direction. Consequently, in order to correct a file, you must store it on a new cassette, transfer all the preceding files to a third cassette, add the corrected file to the third cassette, and follow that by adding the files that come after the corrected file. Because of how slowly the cassette drive transfers data, the process for making corrections in the text gets to be very lengthy and confusing.

With a disk drive setup, you can store the files in any order and call up any file as rapidly as any other file, no matter its location on the disk. This greatly simplifies the correction process.

A SECOND OPINION ABOUT TAPE

While everyone will admit that disk is more convenient, tape does have certain advantages.

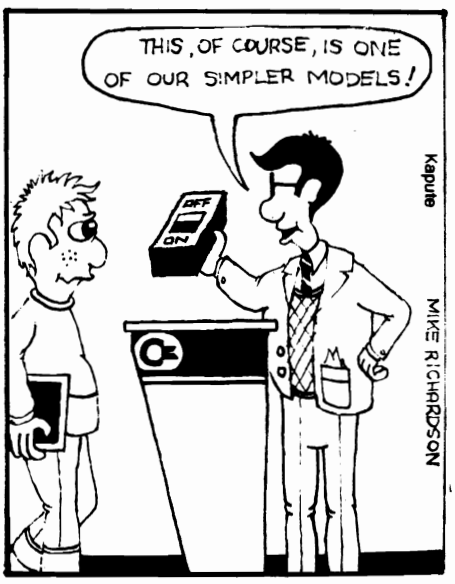
Number one. It is cheap. A tape drive can be less than $100 and a disk drive may cost several hundred or over a thousand dollars. And the diskettes themselves are more expensive than tape cassettes.

Number two. Tape can be used much more randomly than some people realize. Since the tape cassettes themselves are so cheap (as little as 3 for a dollar) all you have to do is buy lots of them and store just one file on each tape. Then you can pick them out of your file drawer randomly.

Number three. Tape is perhaps the more economical way for mailing if you are going to be sending your input to someone else for processing.

Number four. And most importantly if you are using one particular machine mostly for input and will do the editing elsewhere then tape is most definitely the most economical way to go.

So don't write off tape, even for large jobs, it can have its place.



The VIC-NIC

by Bruce Beach

This is a description of the VIC-NIC word processor designed by Bruce Beach and programmed by Gottfried Walter. It is compatible with the FINAL WORD, Wordpro, Paperclip, and many other wordprocessors. VIC-NIC created text files may be output through any of these wordprocessors or through a simple 'written in BASIC' routine that you may modify to be compatible with your printer.

VIC-NIC has a number of interesting capabilities that are unexpected in a word processor that will work on a standard size VIC with ONLY a tape drive. For example, word/wrap, two work areas, and relocatability to any size of memory.

There is an expanded version of VIC-NIC that works with BOTH tape and disk. The expanded version also automatically relocates to any size of memory. In addition it also has the ability to display the disk directory, and two function keys (f3 for screen up and f5 for screen down) not available in the standard version.

The features common to both versions of VIC-NIC are as follows:

[f1] - top of text
[f7] - bottom of text

[COMMODORE key] simultaneously with:
- i - insert line
- d - delete line
- r - restart
- f - flip area
- p - pack
- u - unpack
- m - memorize
- b - bring back
- s - save area
- l - load area
- q - quit

All the cursor keys work as normally.

Shift spaces are format spaces which will not be deleted by the pack routine.

The return key inserts the back arrow which usually indicates the end of a paragraph and the beginning of a new line for most of the the compatible wordprocessors.

There is automatic word wrap and line insertion when typing. The line insertion command is available, however, if you wish to use it.

The line deletion command is very useful for repeated use in clearing text from the current cursor location to the bottom of the text area.

Restart goes to the beginning of the current text area and clears it so you can start over.

You have two text areas. To flip from one to the other you simultaneously press the [COMMODORE key] and 'f'.

Pack removes all extra spaces from the text area that you are currently using. This can be used to put more text into a small text area.

Unpack goes through and reformats the text area (ie. word wraps it) so that it is easier to read. (It is not necessary to first pack the area because unpack automatically does it.)

Memorize is used for copying passages of text not longer than 192 characters. To copy, press the [COMMODORE key] and 'm' - simultaneously. Continue to simultaneously hold down both keys until all the text you desire to memorize has been reversed.

(Press RETURN when you are through defining the text you wish to be memorized).

To bring back the memorized text first move the cursor to where you wish to place the memorized copy and then simultaneously press the [COMMODORE key] and 'b'.

You may bring back a memorized passage as often as you wish. One or two extra lines of spaces may be automatically inserted after the text when it is brought back. These extra spaces can be removed at some convenient time by using the unpack command.

You can copy from text area 1 to text area 2 (and vice versa), if you wish.

Any formatting commands acceptable with other systems are permitted. Special characters are obtained by striking the appropriate graphics key simultaneously with the [COMMODORE key]. The shift at sign is the control check mark (✓). Consult the relevant word processor' manuals for its standards.

Extended versions are available for VICs that have expanded memory.

Expanded memory of course provides much more text area.

Extended versions work with both tape and disk:

[COMMODORE key] plus 'english pound' sign will bring the disk catalog into whichever text area you request it.

[drive 0 is the default drive and is what you get when you press RETURN in response to the prompt]

[otherwise designate the drive].

Extended versions also have additional features such as:

[f3] page up
[f5] page down
[home] top of page
[clr] bottom of page

(Future versions and a version for the 64 may have hunt and replace commands and enhanced memorize and erase commands.)

When loading from or saving to disk it is advisable that you use a drive number (ie. '1:filename').

If you wish to replace on disk you simply do this : '[at sign]drive number:file name'.

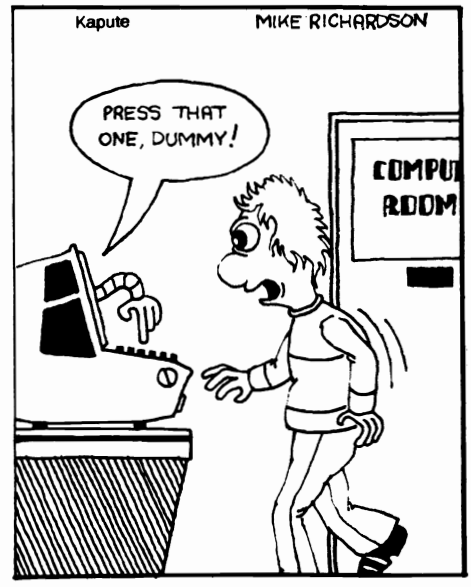
When saving on tape you can't have an [at sign] in the text file because the computer thinks it is an 'end of file' marker. (It is all right with disks though and is used for replacing a file).

For tape operations a file name is permitted but not necessary.

Prompts and error messages appear on the second line of the screen below the area and line indicator.

The line indicator is useful in indicating how much space you have left in the text area.

To quit VIC-NIC either use the Quit command of turn off your VIC. Do NOT use shift run/stop restore. Some BASIC pointers have been changed. Before quitting (or restarting a text area) be sure you have first saved any text files that you wish to keep.



VIC

Ask Dennis

A VIC Tip

by Dennis McCormack

If you have a question about your VIC or computers in general, just write it down and send it to Dennis McCormack c/o VNN Box 981 Salem, NH 03079.

Q. How do you program the special function keys?

A. Without purchasing a 3K expander or Programmers Aid Cartridge, you can program these keys in simple BASIC as follows:

```
[For F1] IF PEEK(197)=39
         AND PEEK(653)=0 THEN***
[For F2] IF PEEK(197)=39
         AND PEEK(653)=1 THEN***
[For F3] IF PEEK(197)=47
         AND PEEK(653)=0 THEN***
[For F4] IF PEEK(197)=47
         AND PEEK(653)=1 THEN***
[For F5] If PEEK(197)=55
         AND PEEK(653)=0 THEN***
[For F6] If PEEK(197)=55
         AND PEEK(653)=1 THEN***
[For F7] If PEEK(197)=63
         AND PEEK(653)=0 THEN***
[For F8] IF PEEK(197)=63
         AND PEEK(653)=1 THEN***
```

The *** refers to the action you want to happen. It can be a print statement, a GOTO, GOSUB or any other BASIC command. Of course you should put these commands in a loop so they get recognized. Try this sample program;

```
10 IF PEEK(197)=39
       AND PEEK(653)=0 THEN PRINT"John"
20 IF PEEK(197)=39
     AND PEEK(653)=1 THEN PRINT "Loves"
30 IF PEEK(197)=47
       AND PEEK(653)=0 THEN PRINT "Mary"
40 GOTO10
```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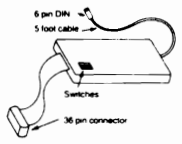

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VIC and RS-232 Printer

by Daryl E. Williams

Santa Ana, Ca.

Am I the only VIC-20, RS-232 printer user? It seems that way, when it comes to getting information or buying software. When you do find anything in the RS-232 interface, it's on the modem only. It's time we stood up and be counted. Let's have a RS-232 information exchange on printers and disks. Write to me and let me know any of your experiences with the RS-232 interface. If there are enough, maybe we can start our own users group.

The reason I ended up with this problem is as follows. This guy I work with, had a rebuilt Data Products DP-50 daisy wheel printer for sale. Only $250.00 but little did I know what was ahead. I bought a Quantum Data Model 1800 printer. Which is a RS-232interface connected to the users port. Hey, this is great, now all I have to do is power up, and we are in business. W R O N G! My first problem, it didn't line feed. Everything printed on the same line. After many failures and much research, I found the answer. I had to use open 128,2 or greater. That was in May of 1982. Only you who have experienced this will know that wasn't the only problem. For you beginners heres a couple hints.

To list a program, use
OPEN 128,2,0,CHR$(6):CMD128:LIST

Explanation:You must use greater than 127 for line feed,in this case 128. The 2 is the users port device. The CHR$(6) prints in 300 baud.

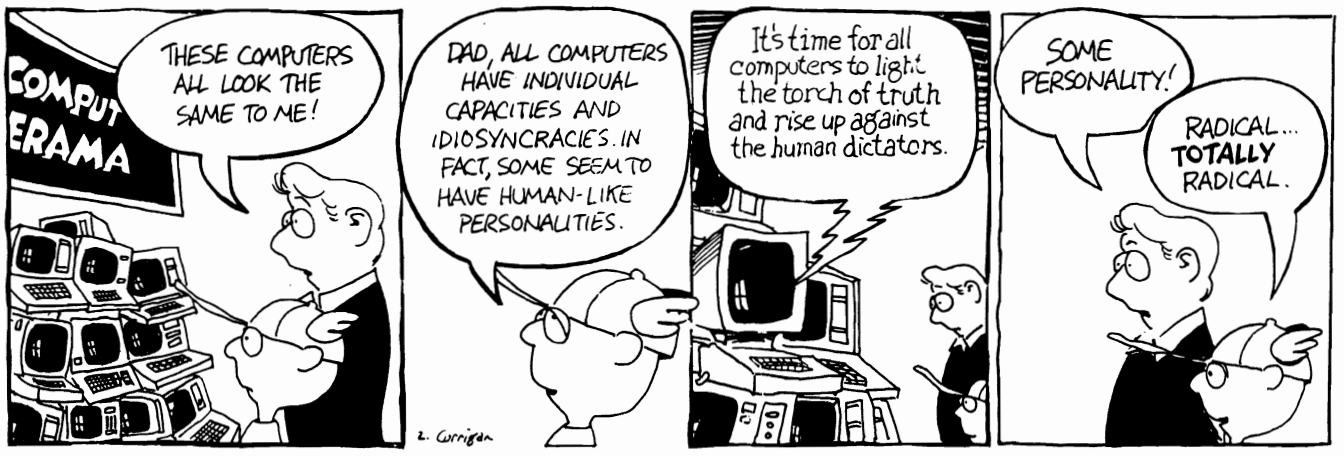
To convert to standard ASCII subroutine

```
1000 REM Standard ASCII subroutine
1010 X=LEN(P$):IF X<1 THEN1060
1020 FOR I=1TOX:X$=LEFT$(P$,I-1):
      SS$=MID$(P$,I,1):Z$=RIGHT$(P$,X-I)
1030 Y=ASC(SS$):IF Y>64 AND Y<91 THEN
      SS$=CHR$(Y+32):GOTO1050
1040 IF Y>192ANDY<219THENSS$=CHR$(Y-128)
1050 P$=X$+SS$+Z$:NEXT
1060 RETURN
```

Boy, would I like to have a way to change some of the VIC printer programs to print on my printer.

Write to me:
Daryl E. Williams
% DEW-RITE ENTERPRISES,
P.O Box 1932
Santa Ana, Ca. 92702

Bytes **by Patrick Corrigan**



VICSCRIPT

A Word Processing Program

Reviewed by Marc Swanson

Toronto

VicScript is a word processing program for the Commodore VIC-20, written by David Foster and distributed by Richvale Telecommunications. It is an excellent word processor for anyone who already owns a VIC and wants to get the most out of their machine.

What I Liked

VicScript is both easily learned and easy to use. It is also a far more powerful word processor than might be expected with the VIC. The program's major functions, all shown on the menu line, are accessed with two keystrokes. Aside from the usual inserting and deleting of words and lines, VicScript has several strong editing features, such as insert mode and delete mode. Formatting instructions for printouts, such as pitch, margins and line length, are not embedded in the word processing text, but contained in a separate part of the program called a Control Map. They are easily altered or can be left on default settings.

The limited memory of the VIC is easily its biggest drawback for serious microcomputer work. VicScript goes a long way toward solving this problem. The program is installed on ROM chips and placed in one of Commodore's memory expander cartridges for the VIC, where it operates like a cartridge video game. If you buy VicScript on a 16K expander cartridge, the program itself takes up no memory and you have the VIC's 5K plus the 16K in the cartridge to store word processing data.

VicScript saves data to tape or disk, or both. This makes it an economical starting word processor for the tape user who wants someday to graduate to disk.

Other features include underlining and bold print, both easily accessed from edit mode. Text and background colors can be changed for greater legibility. Disk users can use VicScript's index to record names of documents and their locations on the disk.

What I Did Not Like

The limitations of VicScript are the limitations of the VIC itself. The 22-column display is irritating to an 80-column user. VicScript has no video print, which can sometimes make printing a hit-and-miss affair. Options available with word processors on more powerful computers, such as global search and replace, are not available with VicScript. The problem of the VIC's limited RAM is only partially solved by placing the program in ROM. The amount of word processing data in memory is severely limited.

Summary

VicScript gets the most possible from the VIC-20. It is an excellent value for VIC owners who want an uncomplicated but fairly sophisticated word processor. However, VicScript is not a reason to rush out and buy a VIC. For business or serious writing, I would not recommend VicScript, not because of VicScript's limitations, but because the Commodore VIC-20 is not the computer for serious writing.

VicScript is available from Richvale Telecommunications at $100.00 over the retail price of the RAM cartridge on which it is installed.

Bulletin Board Update by Richard Bradley

Well, I tried to make the last published list of BBS NUMBERS as up to date as possible, but that didn't seem to help me. So now I will again try to straighten the list out.

Much to my delight we have not had any BBS deaths, so we can get right into the BBSs that have moved.

The Toronto Heathkit Users Group (THUG) really seems to be playing a game of musical BBS. They have again moved the system. I have no reports as to why they have done it again, but the number has changed from 231-4174 to 232-2644.

Toronto Net-Works 2 has not actually moved, but the Net-Works computer club decided to allow the number to be published. This is of really no help, because you can't use the Net-Works 2 unless you have paid your $15.00 to Net-Works 1. For what it is worth, the number is 494-7577.

OSBOARD operated by that wonderful fellow Simon Ewins has not actually moved. It is in the exact same location, but a new phone line was installed to allow the system to run 24 hours a day. The new number for this system is 626-1247.

That seems to be all the moving systems taken care of, so now we will move on to the new systems.

A BBS has been set up for the computer user interested in medicine. It operates from somewhere at the University of Toronto. The system is run by a professor from some part of the medical faculty. The name of this BBS is the Toronto Medical Net-Works. It is APPLE based, and is very similar to the Toronto Net-Works BBSs, but it has been pointed out that no affiliation between the two systems exists. The number of the BBS is 978-6893.

Another new BBS is now in the testing stages. It is called Torontari. I don't know much about this system other than they are testing it. The number for it is 694-4163.

This is really a move, but the system was not in Toronto, so we will call it a birth. This BBS used to run in Vancouver B.C., but for some reason the SYSOP moved to Toronto. He was nice enough to bring his BBS with him, and has set up for public access. The BBS is called CBBS, and the number is 596-0283.

Here is the new list of BBS numbers:

Area Code Is (416) Unless Specified

NORTEC BBS *	487-2593
PSI-WordPro *	624-5431
TPUG *	223-2625
R.T.C. BBS *	884-6198
Atari Info-System	622-2462
Apple-Can	447-8458
ETI BULL BBS	423-3265
Infoport	278-3267
Toronto Net-Works1	445-6696
Toronto Net-Works2	494-7577
THUG	232-2644
RCPM1	231-9538
RCPM2	231-1262
IBMPC BBS	499-7023
CSE	236-1512
OSBOARD	626-1247
Torontari (UNDER TESTING)	694-4163
Toronto Medical Net-Works	978-6893
CBBS	596-0283

(* = PET Based Systems)

I would like to assemble a North American BBS listing to publish once a year, so if you could send me any BBS numbers, their hours, and their city it would be much appreciated. Send all of them to:

147 Roe Ave.
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CANADA

The TPUG Conference

by Gord Campbell

Plans for the TPUG Conference are moving toward their final form. The Conference will be May 14 and 15, at the Casa Loma campus of George Brown College.

Topics planned for presentation at the Conference include:

- BASIC file handling
- formatting in BASIC
- using relative files
- games review panel
- financial modelling
- introduction to word processing
- advanced word processing
- using the bulletin boards
- other languages
- BASIC extensions in the B series
- using assemblers
- designing a command recognizer
- hardware interfacing
- music with the SID chip
- PASCAL
- computers in the church
- computers in small cancer clinics
- file handling in machine language

Hopefully, the next issue of the TORPET will include a schedule, so you can plan to attend those sessions which are of most interest to you.

Approximately 50 commercial organizations have been contacted regarding exhibiting at the conference. The ones who exhibit will be selling their wares, so don't forget to bring your credit cards.

With the identification of library managers now completed, we expect to be well prepared for the copy session. Not all of the library will be available, since that would require an unmanageable number of disks, but the intent is to offer all of the good stuff. We need more equipment to make the copy session a reality, so please call Bill O'Brien at 445-0331 or Gord Campbell at 492-9518 if you can loan out a 4040 and something to control it for the weekend.

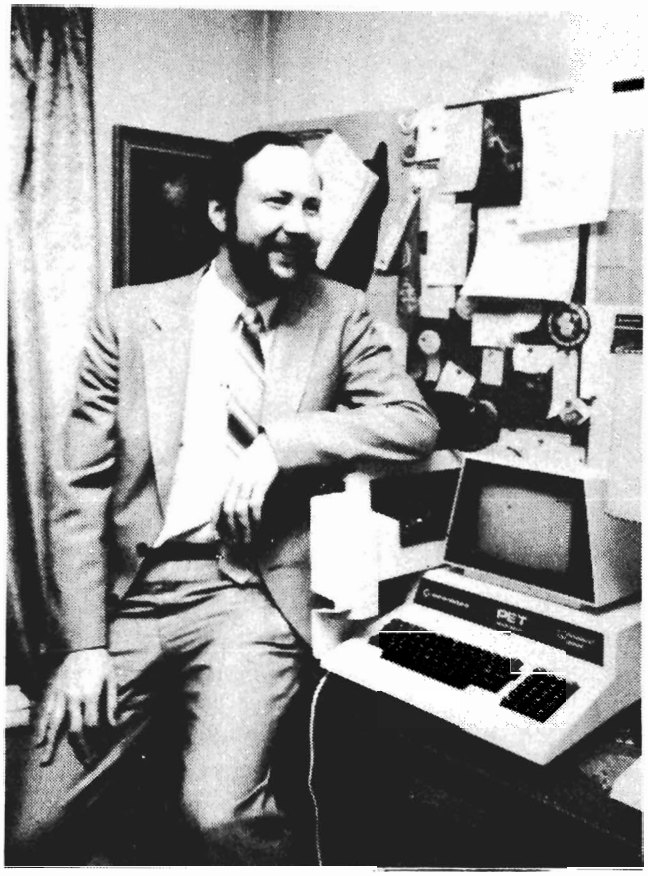

Photo: Graham Bailey

The College cafeteria will be open on the weekend, providing a place for refuelling and discussion. The Introduction to Machine-language Seminar has been filled. The Traders Corner is expected to be a popular place to sell that redundant equipment or pick up a bargain, depending on your point of view. (Kids, tell dad that this is his chance to pick up a computer for HIM to use.)

The people who have helped bring the conference to this stage are:

Rosemary Beasley
Jim Carswell
Keith Falkner
Al Farquarson
Terry Herkenrath
Mike Hyszka
Rob Lockwood
Bill O'Brien
John Shepherd
David Williams

Many thanks are due to all of them for their efforts.

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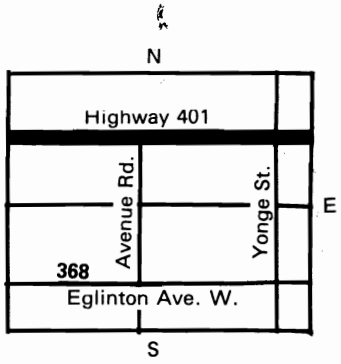

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TPUG

(Toronto PET Users Group)

Information and April/83 Library List

Membership Fees

The fees, which pay for 12 months from the time of joining, have been set as follows:

$30 - Regular Member
$20 - Student Member
$20 - Associate Member
$30 - Associate Member overseas

A Regular member is one who attends meetings regularly in the Toronto area and is the only type of member with voting privileges at the annual meeting. A Student member is someone who attends meetings and is a full time student at a public or high school, a community college or a university.

Associate members are those people, who because of distance or time restrictions, are not able to attend the regular meetings. Fees are in U.S. funds except in Canada where they are in Canadian funds.

All members receive ten issues of the TORPET annually. The TORPET (an independent Commodore magazine published by The Publisher) is the official magazine of the Toronto PET Users Group. Also, members have access to the club library of programs on disk and tape. There are several ways of obtaining these disks and tapes:

1. Take a blank disk to the club meetings and have that night's programs copied onto it.

2. Attend the yearly conference where club disks can be copied onto your blank disks.

3. Find a friend or dealer etc and copy their disks.

4. Join the Copy Tree (see page 3).

5. Order disks or tapes through the mail from the club office (see page 6).

TPUG Event Calendar

Central Chapter - Leaside H.S., 200 Hanna Rd, Bayview & Eglinton, at 7:30 pm. (PET/CBM/SuperPET)

Wed. April 13, 1983
Wed. June 8, 1983
(There is no May meeting.)

Westside Chapter - Sheridan College, Trafalgar Rd, Oakville at 7:00 pm in cafeteria. (PET/CBM/VIC/C-64)

Wed. April 20, 1983
Wed. May 18, 1983
Wed. June 15, 1983

VIC 20 CHAPTER - North York Library, 5125 Yonge St., N. of Sheppard at 7:30 pm in auditorium.

Wed. April 6, 1983
Wed. May 4, 1983
Thu. June 2, 1983

Commodore 64 CHAPTER - Earl Haig S.S., Kenneth & Princess (6 Blocks North of Sheppard, 2 blocks East of Yonge) at 7:30 pm in auditorium.

Tues. April 5, 1983
Mon. May 16, 1983
Tues. June 14, 1983

Machine Language CHAPTER (6502) - Call Jim Carswell at (416) 531-9909 for additional information.

TPUG Conference - George Brown College

May 14 and 15, 1983.

Business Meeting - Leaside H.S., 200 Hanna Rd., Bayview & Eglinton, at 7:30 pm.

Thursday April 7th

History of Commodore

Commodore currently has the widest product line of all microcomputer manufacturers. This was not always the case. In 1977, Commodore came out with a home computer called the PET 2001. PET stood for Personal Electronic Transactor and consisted of a very small calculator keyboard, a 9-inch screen and a built-in cassette drive all in one package. Also included were 8K of RAM and a 16K BASIC in ROM. This BASIC is now known as BASIC 1.0 or original ROM.

Commodore then released a large keyboard PET with an external cassette. Some small changes were made to the BASIC to fix bugs and allow a disk drive to be added. This BASIC is now known as upgrade ROM or BASIC 2.0 (BASIC 3.0 in some parts of the world).

The next Commodore was the CBM 8032, an 80 column business computer with BASIC 4.0 in 20K of ROM. This improved version had some extra disk commands added as well as an improved string collection routine (garbage collect). Along with the CBM 8032 came the CBM 4032 computer, a 40 column PET with BASIC 4.0 and a 9 inch screen. A little later, the 4032's arrived with a 12 inch screen (this is now called the FAT 40). There are subtle differences between the two versions of the 4032, mostly with programs that use machine language. The final release of this series is the SuperPET, an 8032 with an additional 6809 processor, 96K and five programming languages.

The VIC-20 was Commodore's entry into the mass marketing of home computers. With a 22 column screen and only 5K of memory, most of us didn't take it too seriously. However, now it is the largest selling computer in the world with over one million sold in 1982 and two million to be sold in 1983. This machine comes with BASIC 2.0 similar to the old 'upgrade' ROM PETs. This means no built in disk commands and the return of slow 'garbage collection'.

In 1982, Commodore introduced the Commodore 64 which, like the VIC-20 has BASIC 2.0, but comes with a full 64K of RAM. In February of 1983, Commodore started shipping the B500 and P500 series of computers which contain 128K of RAM and an extended BASIC 4.0.

The following is a list of the computers that Commodore has released:

PET	2001	(BASIC 1.0)
PET	2001	(BASIC 2.0)
CBM	8032	(BASIC 4.0)
CBM	4032	(BASIC 4.0)
CBM	4032	(BASIC 4.0 - FAT 40)
SuperPET		(8032 with a 6809 CPU)
8096		(8032 with 96K memory)
VIC-20		(BASIC 2.0)
C-64		(BASIC 2.0)
B-500		(BASIC 4.0 Ext - 80 Column)
P-500		(BASIC 4.0 Ext - 40 Column)

Programs that run on one machine do not necessarily run on another. Because of this fact, our library has been divided up into the following main categories:

VIC-20
Commodore 64
PET/CBM
SuperPET

If you wish to order disks from our library, please make sure that the programs you order are compatible with the machine you own.

Disk Identification

To divide the library by category we decided to organize all the disks according to a two character code placed in the disk ID. The first character is the category to which the disk belongs. The second character is a sequence number to separate all the disks in the same group. For example, E1 is Education disk number one, G9 is Games disk nine and GA is Games disk ten. All the disks described in this catalogue follow this convention except for the Commodore education disks. These disks have a three character disk ID (see - **Commodore Educational Disks/Tapes**. We are at this time settling on a new naming convention that will take into account the VIC 20, Commodore 64 and any other machines that may come onto the market. However, this will only apply to future releases of disks and not on the ones listed here.

The general groupings of disks are:

ID	GROUP	No. of DISKS
A	Assembler Source Code	5
B	Business	3
C	Communications	2
D	Misc. Commodore 64	3
E	TPUG Education	9
G	Games	11
K	Commodore Education	50
L	PET Language	2
N	Math / Science	3
S	PET Music	1
T	TPUG Monthly Releases	8
U	PET Utilities	7
V	VIC 20	8
X	TPUG Best of PET/CBM	7
Z	Miscellaneous	2

Please note that the majority of disks listed above are for the PET/CBM. With the large volume sales of VIC and Commodore 64 this year, this will change very quickly. On January 1st 1983, we had only three VIC disks. On March 1st 1983, we had 8 VIC disks with two more about to be released. In March 1983, we were working on setting up our first three Commodore 64 release disks to be released in April 1983. There are several SuperPET disks in preparation.

Types of Commodore Disks

Over the last few years, Commodore has released a number of disk drives for their wide variety of computers. These include the 2040, 4040, 2031, 8050, 1540, 1541, 8250, and 2031SL.

These drives can be divided into two major groups. One is the 35 track, 170K disk drive found in the 2040, 4040, 2031, 1540 and 1541. The second is the 77 track, 500K disk drive found in the 8050 and 8250.

The 8250 is a double sided version of the 8050. An 8050 disk can be read by an 8250 disk drive. Since the 8250 disk takes twice as long as the 8050 disk to create, we only send out 8050 disks in the 77 track format.

The 2040 disk drive is the original version available for the PET. It contained DOS version 1.0. The 4040 came out next with DOS 2.0 and used 6 less sectors than the 2040. This 4040 format is now the standard which we use in copying disks and can be read by the 2031, 1540, 1541 and 2031SL. However, it is possible that some of these single disk drives MAY not be able to write programs onto one of our disks because of a difference in timing. They should all be read compatible.

THE MONTHLY DISKS

At each meeting of TPUG there is a copy session so that members may acquire the programs demonstrated that evening by our speakers. Also included on that disk is a selection of programs submitted by members or received in the mail.

These monthly disks are coded with a 'T' designation as the disk ID. The Series from T1 through TJ covered meetings up to May 1982 and have now been retired and their contents merged into the appropriate category disks.

Tape/Disk of the Month Club

There are now three libraries that have monthly additions.

VIC-20
Commodore 64
PET/CBM

These may be copied free at club meetings or they may be obtained individually by ordering from the club office. To save the necessity of constantly having to order the current monthly disk distant members can order any number of months in advance and the disks/tapes will be sent automatically.

The request must include:

1. Whether tape or disk is desired.
2. Which library (VIC, C-64 or PET) is desired.
3. Sufficient payment for the number of disks or tapes ordered.

Rules of the Copy Tree

The copy tree assists TPUG in distributing disks by letting members do some of the distribution.

Participants in the copy tree must:

1. be a members of TPUG;
2. let their name be listed on the tree;
3. let two other people copy from you as new branches;
4. maintain complete library by ordering new diskettes from club office.

For more information about the copy tree contact:

Bonnar Beach
Horning's Mills
Ontario, Canada
L0N 1J0
(519) 925-5376

Commodore Educational disk/tapes

In September of 1982, TPUG received from Commodore Canada, a series of 642 Educational programs. These programs are contained on 50 diskettes and are identified, in our library, by a three character ID starting with the letter K. For example, Administration - KAA, Business - KBA & KBB etc.

These programs are a subset of those worked on by the school boards in the Metro Toronto area. Many of them are updated versions of programs already in our library. However, ALL these programs have been modified so that they will work on the following computers:

PET 2001 (BASIC 2.0)
PET 4000 (BASIC 2.0 or 4.0)
(9 and 12 inch screens)
CBM 8032 (uses CBM 4032 V2)
Commodore 64

The documentation for these programs can be ordered for $2.00 (see ordering instructions).

Torpet back issues

Backissues of the TORPET are available for $2.00 each from the club office (except for issues #1, #2, and #3 which are $1.00 and issues #7 and #12 which are $3.50). Our first issues are relatively small! Issues #1, #2, and #3 - 4 pages. Issue #4 - 8 pages and issue #5 has 16 pages. All the rest include at least 24 or more pages.

As of February 1983, there were 17 issues of the TORPET. New issues are mailed out on the 25th of the previous month. Therefore issue #18 will be sent on March 25th, #19 on April 25th etc.

Programs for the PET

The majority of the programs currently in the library will run on a 40 column PET. If you have read the HISTORY OF COMMODORE in this catalogue, you will note that there are four different versions of the PET. They are:

1. PET 2001 - BASIC 1.0, original ROM. This is the version of BASIC that came with the small keyboard PET in 1977.

2. PET 2001 - BASIC 2.0, upgrade ROM. The first large keyboard PET had BASIC 2.0 inside. The original PET could be upgraded to BASIC 2.0 by changing the ROM set.

3. CBM 4032 - BASIC 4.0. This version of the PET had a 9 inch screen with BASIC 4.0. Previous large keyboard machines can be upgraded to BASIC 4.0 from BASIC 2.0. The original small keyboard PET can not be upgraded to BASIC 4.0.

4. CBM 4032 - FAT 40, BASIC 4.0. This version of the PET has a 12 inch screen and a slightly different version of BASIC 4.0. This machine also has the same screen controller as the 8032.

Most of the programs in the library will work on all of the above machines. However, programs written in machine language or programs with PEEKs and POKEs to the operating system, will only run on the machine for which they are written. These special programs are divided into three groups. These are: BASIC 2, BASIC 4 and BASIC 4 (FAT 40). Most disks contain versions for each type of computer. The one exception is the BEST OF TPUG series (X). X3 is only for BASIC 2 machines. X4 is only for BASIC 4 machines. X7 is only for BASIC 4, FAT 40 machines.

Also, please note that the 'K' series of Commodore Education programs will all run on all BASIC 2.0 and 4.0 PETs.

Programs for the VIC-20

There are 10 disks/tapes specifically for the VIC 20 at this time. These are V1 through V8, TN and VTS. Also VIC programs can be found on each of the monthly disks. For example, the January/83 monthly release disk (TQ) contains a number of VIC programs mixed in with PET and C-64 programs. However, all VIC programs on these disks are included on VIC disks V1 to V8, TN and VTS. In March/83, we started releasing a monthly VIC disk to coincide with our new monthly VIC 20 meetings.

Note that some VIC programs require an 8K/16K/3K memory expander. Others, require the Super expander for the music and graphics commands.

Programs for the CBM 8032

Many of the programs in the TPUG library will run on the 8032. Some of the machine language programs, for example, are available in an 8032 version. These includes Basic Aid (BAID480A & BAID480P) on disk X1 and adventure on X5. Many of the games written for the 40 column PET can run on the 8032 but will require the 40 column simulator found on X1 (CBM 4032 V2.1). Just load in CBM 4032 V2.1 and RUN. You now will have a 40 column screen on your 8032.

Programs that will NOT run on the CBM 8032 include the following:

1. Many of the programs written in machine language.

2. Most VIC and Commodore 64 programs.

Some good choices of disks for the 8032 include:

B2, C1 or C2, G7, N1-N3, X1, X2, X5, X6 OR Z1

Also, please note that the 'K' series of Commodore Education programs will all run on the 8032 since CBM 4032 V2.1 is included with each disk.

Programs for the Commodore 64

All 50 of the K-series, (see Commodore Educational disks/tapes), work on the 64. In addition, there are 4 disks/tapes specifically for the Commodore 64. These are D1, D2, D3 and D4. However, other C-64 programs can be found on the monthly release disks. The February/83 disk (TR) contains a number of programs for the Commodore 64 as do TP and TQ. Also, the Best of TPUG disk X5 will run on a C-64 equipped with a disk drive.

In a few more weeks, we will be releasing a number of additional disks just for the Commodore 64. While the C-64 has only been available for a few months, the program library is building quickly.

Programs for the Superpet & CBM 8096

If you own a CBM 8096 or a SuperPET, order disks designed for the CBM 8032. Two new disks, ST1 and ST2 have been released just for the SuperPET with more on their way.

How to submit Programs

Programs for the PET, CBM, VIC and Commodore 64 can be sent to us either on disk or tape. The disk/tape will be returned to you as long as you have enclosed your name and address. It is also a good idea to put your membership number directly on the tape or disk just in case we misplace the letter or envelope it came with.

Send all programs to:

TORONTO PET USERS GROUP
1912A Avenue Road, Suite #1.
Toronto, Ontario, Canada
M5M 4A1

Chris Bennett

TPUG
Business Manager

CLUB CHAPTERS

In response to the many requests from other users groups, we have set up a way in which other Commodore clubs can associate with TPUG. There are two ways in which a users group or club can do this.

The first is to take out an associate membership for the club at $20 per year. In this case, the club will receive 1 issue of the Torpet each month and the club will have access to TPUG's library of over 3000 programs.

The second way, is to have a group join TPUG. If 15 or more people join at one time (covered by one cheque), the associate membership fee is only $15 per person. Then a copy of Torpet will be mailed to each individual member who will also have individual access to the library. If 25 or more people join at one time, then we will supply the club one free monthly disk each month. This can be either the VIC 20 disk, the Commodore 64 disk or the PET/CBM disk. If 45 or more people join at the same time, then 2 free monthly disks are sent out. If 60 or more members are enrolled, then all 3 monthly disks are supplied. All disks are sent Air Mail for speedy service.

We hope that this group rate will enable other clubs to serve their members better. Many clubs are putting out their own newsletter. Each of these may have only one very good article written by a local member. If, on the other hand, these articles are also sent to the Torpet, all clubs who contribute will benefit with a wider variety of high quality articles. Torpet policy is that articles in the magazine are in the public domain and can be used by any other club for reprinting in their own publication.

Another advantage of TPUG is the centralized pooling of programs for all the Commodore machines. This will result in a much larger program library since many good programs are only distributed locally whereas the TPUG library is distributed all over the world.

TPUG CONTACTS

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(416) 225-8760
*Hyszka, Michael . . . . . C64 Chapter
(416) 249-5805
*Punter, Steve . . . . . Bulletin Boards
(416) 625-1786
Simpson, Dave . . . . . VIC 20 Chapter
(416) 663-6400

* TPUG Board of Directors

The Whole PET Catalog

The most complete documentation currently available for the TPUG library is found in The Whole PET Catalog. This 312 page publication gives both disk by disk and alphabetic listings of the PET library.

It also gives, in a catagorized form, a reprinting of the Midnight Gazzette that appeared in The TORPET. Besides extensive reviews of programs it contains much useful information for new owners of computers.

There is probably no better aggregate collection of information available for new members. It is an opportunity for the new user to become familiar with information often only known to old time members who have gathered it over previous years. There is a large VIC section. Price $10. Order from the Club office. (See ordering instructions).

TPUG
SUSTAINING MEMBERS

Sustaining membership is open to those organizations who wish to support TPUG to a greater extent than through regular membership. The annual fee for sustaining members is $100.00. In return, these organizations are listed in the TORPET.

The sustaining members are:

Questar International
Richvale Telecommunications
T. Eaton Co. Ltd.

ORDERING INFORMATION

DISKS

To order club disks by mail, just send $10 for each 4040 / 2031 / 1540 / 1541 disk and $12 for each 8050 / 8250 disk (payable in advance). This includes the price of the diskette, the labour involved to copy them and all postage and packaging charges. Do not send us any diskettes.

TAPES

To order VIC-20 club tapes, send $6.00 for each disk desired in tape format.

The procedure for ordering non-VIC club tapes is to send $12.00 for each disk desired in tape format. Most non-VIC disks require two tapes and you will receive both tapes for the $12. For the few disks that will fit on a single tape, an additional free tape will be sent to you.

Send all orders to:

TORONTO PET USERS GROUP
1912A Avenue Road, Suite #1,
Toronto, Ontario, Canada
M5M 4A1

Include:

1. Membership number
2. Return address
3. Payment by cheque or money order

ASSEMBLER

A1 - ASSEMBLER #1

UNIVERSAL WEDGE
COPY ALL
MAE/DOS
EXTRAMON.EXE9.0B
EXTRAMON.EXE9.0G
DOS.ASM
MAE/DOS.ASM
MLMACROS.MLIB
PET.LIB
IEEE.LIB
KEYSORT.ASM
SECTOR.CTL
SECTOR.PGM
SECTOR.EXE
L.C.LISTER.ASM
PET16.ASM
PET16.MAC
UART.CT
UART.M01
LEARNING.AID1
LEARNING.AID2
LEARNING.AID3
LEARNING.AID4
LEARNING.AID5
LEARNING.AID6
LEARNING.AID7
UNASSEMBLER/CBM
UNASSEMBLER/MAE
CBM.TO.MAE
MAE.TO.CBM
EPROM.PRGM.ASM
EPROM.PRGM.EXE
EPROM.PRGM.INS
3D.PLOT.ASM
FREQ.CTR.ASM
UART.M02
UART.M03
EXMON.CT
EXMON.M01
EXMON.M02
EXMON.M03
EXMON.M04
EXMON.M05
EXMON.M06
EXMON.M07
EXMON.M08
EXMON.M09
EXMON.M0A
MAE.PAT.ASM

A2 - ASSEMBLER #2

UNIVERSAL WEDGE
COPY ALL
MAE/DOS
BASIC.AID.EXE
AID.CT
AID.M01
AID.M02
AID.M03
USERS.LETTER
EXTRAMON9.3B
EXTRAMON9.3G
APPEND.ASM
APPLE.LOADER.ASM
BASIC.AID.INS
PGMR.UNIV.ASM
PGMR4.0.EXE
SCREENPRINT.ASM
SCREENPRINT.EXE
UN-NEW.ASM
UNASS.EXE6OC
UNASS.INS.WP
MINI-COMPILER
TINY.PILOT.ASM
TINY.PILOT.EXE
TINY.PILOT.INS
V40.2.S
V40.4.S
V80.4.S
V40.2.O
V40.4.O
V80.4.O
SC1.S I/O FIX
SC1.S - OLD
BMBSTRINGTHING

A3 - ASSEMBLER #3

UNIVERSAL WEDGE
COPY ALL
BASIC AID 4
AID INSTRUCTIONS
BAID4.CT
BAID4.M1
BAID4.M2
BAID4.M3
BAID4.M3+
BAID4.DOS
BAID4.M4
ERIC ASSM
LITTLEMON.ASM
LITTLEMON+.CT
LITTLEMON.M01
MUSIC.ASM
INSTRUCTIONS
UNASSEMBLER
UNASSEMBLER/C
UNASSEMBLER.MAE
UNASSEMBLER.CBM

A4 - ASSEMBLER #4

UNIVERSAL WEDGE
COPY ALL
FORMS.M1
FORMS.M2
FORMS.CT
REAL.CT
REAL1
REAL2
JUMPTABLE
JUMP2
MICROMON.CTB
MICROMON.M01
MICROMON.M02B
MICROMON.M03
MICROMON.M04
MICROMON.M05
MICROMON.M06
MICROMON.M07A
MICROMON.M08A
MICROMON.M09
MICROMON.M10
MICROMON.M10.5B
MICROMON.M11B
LITTLEMON.ASM
WEDGE/BASIC4.ASM
PGMR.UNIV.ASM
PRINT TIME.ASM
TIM.CTL
TIM.M01
TIM.M02
USEIZE.ASM
AID4.ASM
KEY.PRINT3&4.ASM
L.C.LISTER.ASM
MEAN 14/PET.ASM
SET.KEY.ASM
SRC.EX HELLO.ASM
MXCL.SRCE
NECCL.SRCE
ASM CONV MOS
COM
APP LOAD SOURCE

A5 - TPUG-ASSEMBLER 5

UNIVERSAL WEDGE
MICROMON.CTC
MICROMON.M01
MICROMON.M02B
MICROMON.M03
MICROMON.M04
MICROMON.M05B
MICROMON.M06
MICROMON.M07A
MICROMON.M08A
MICROMON.M09.5
MICROMON.M09B
MICROMON.M10B
MICROMON.M11B
MICROMON.CT+
MICROMON.M01+
MICROMON.M02+
MICROMON.M03+
MICROMON.M04+
BASIC-AID.CT
BASIC-AID.M1A
BASIC-AID.M1B
BASIC-AID.M2A
BASIC-AID.M2B
BASIC-AID.M3A
BASIC-AID.M3B
BASIC-AID.M3C
BASIC-AID.DOS
BASIC-AID.ROLLA
BASIC-AID.ROLLB
BASIC-AID.M4
BASIC-AID.ASM
TOKEN ML SOURCE
WP LISTER.SRC
ADDCOMS.PAL

BUSINESS

B1 - BUSINESS #1

UNIVERSAL WEDGE
MORTGAGE-BTTRFLD
DATES-BTTRFLD
MILEAGE-BTTRFLD
MARKS-BTTRFLD
PORTFOLIO-BTRFLD
TAX ONT 1978 V3
GROWTH RATE
FINANCIAL CALCS
DAY OF THE WEEK
TAX 79 ONT V0.2
APARTMENT.INCOME
BUS.PR\CASH\ROI
CAR.COST\MILE
DECISION.MAKER
STOCK.OPTION.VAL
GROWTH.CALC
INVESTMENT.ALT
IRREG.CASH.FLOW
LOAN.ALT
SALES.ANAL-OP
CURRENCY.CONV
STOCK.LIST
RECIPE.SIZER
TYPEWRITER.ALT-O
TYPER.ALT2
TYPING TEST
PRICE.LIST
HOME.ACCOUNTS.IN
HOME.ACCOUNTS.SU
JAN 80
FEB 80
MAR 80
APR 80
MAY 80
DYNATEXT
DYNATEXT.INS
V40.2.B
V40.4.B
V80.4.B
DEMO 8032
E.G SET-UP 80COL
WP3/4 INST1
WP3/4 INST2
TEXT EDITOR
TEXT
TAX 80 ONT V1.0

B2 - BUSINESS #2

UNIVERSAL WEDGE
MAIL LIST 4.1
MAIL LIST 2.0
FORMAT
UPDATE
PRINT
MENU
MAIL BACKUP
JOURNAL
TAX 80 ONT V3.0
MAIL LIST 4040
4040 UPDATE
4040 FORMAT
4040 PRINT
4040 MENU
MAIL LIST 8050
8050 FORMAT
8050 UPDATE
8050 MENU
8050 PRINT
INTEREST

B3 - TPUG-BUSINESS 3

UNIVERSAL WEDGE
MORTGAGE
MORT SCHED
MORT CALC
TAX 81 ONT V1.0
CRITICAL PATH
LUMP-SUM INV 82
BKEEPING.ALT
FINANCE
INTEREST
INVENTORY CONTRO
WORD PROCESSOR
MINIWORDPRO

COMMUNICATION

C1 - COMMUNICATION #1

UNIVERSAL WEDGE
MORSE-BTTRFLD
TNW488/103A
TELE DIALER
MORSE TUTOR
PC.NET.MODEM
CBM 8010
8010 MODEM DRIVR
TERMINAL.IEEE
TERMINAL.RS232
TERM.IEEE
TERM.RS232
INTELCOM4
INTELCOM3
MODEM LOG
RS232-300@4096
RS232-1200@4096
BBS PROGRAM
TERMINAL
ED-TERM
COMMUNICATE TEST

C2

- TPUG-COMMUNIC 2

UNIVERSAL WEDGE
BRASS POUNDER 2
TERMINAL.IEEE
TERMINAL.RS232
TERM.IEEE
TERM.RS232
INTELCOM4
INTELCOM3
STP 488
TOKEN - 32K
TOKEN - SUPERPET
PET PCNET
300 ANS
CORESEND
TELE DIALER
PETCOM
ED-TERM
UTP RS232
TERMINAL.I12
TERMINAL.R12
TERM.I12
TERM.R12

COMMODORE 64

D1 - C64 DEALER DISK

C64 CDN DEMO
BOUNCE
SPRITE.DATA
SOUND11.1
SOUND/RING MOD.1
SOUND/PHASE.1
COLOUR TEST
DEMO.BOOT
DEMO.C000
DEMO13
DEMO.GUTS1
C64-8023P.BAS
C64-8023P.B
KAREN
SUPERMON64.V1

D2 - COMMODORE 64

SPRITE BOOT
SPRITE EDITOR
SCROLL.DATA
SAMPLE SPRITES
SPRITE INSTR.
CHAR BOOT
CHAR EDITOR
ROTATE.DATA
STANDARD.SET
CHAR INSTR.
COMPUTER.SET 5
NUCLEAR DEMO
DEMO.C000
BYTS AND BITES
BYTSPRITES

C64/REV3
BOUNCE
SPRITE.DATA
SOUND11
SOUND/RING MOD
COLOUR TEST
C64.MENU
DISK BACKUP

D3 - 64 DEMOES

C64.MENU
BOOT.UK1
BOOT.UK2
DOS BOOT
COPY/64
1541 BACKUP
DIRECTORY
JACK
DEMO.GUTS1
DEMO13
DEMO.C000
DOS 5.1
BAR CHART
DEMO FIN
BOOT2

SPRITES
SCROL
KEY
HUFO
MUSIC2
MUSIC
MATH
LAND
DEMO
BOOT.CLYDE
MONOPOLE
MAZE

TPUG Education

E1 - TPUG-EDUC 1

UNIVERSAL WEDGE
AFRICA & ASIA
EASY ADD & SUBTR
20 QUESTIONS
SPEED.READING
ADDITION GAME
ASK
BIG MATH 1.1
CASH REGISTER
CRYPTOGRAM
DONUTS
ELIZA
EUROPE
FRACTIONS
FRENCH VERBS
GRAMMAR
HAIKU 5
HANGMAN
HANGMAN(HJS)
MATH DICE
MATH TUTOR
MISSING NUMBER
NO
PETS
SPELLING BEE+FIL
STATES&CAPITALS
TACHISTOSCOPE
US PRESIDENT QUI
WORLD CAPITAL QU
TYPING DRILL
VOCAB 1
HIDDEN.WORDS
ANIMAL
READER
STORY.PROBLEMS
MATH.QUIZ
ANIMAL.DATA
NOT.SO.EASY
SPELLING.TEST
Q'S & Z'S
DISPLAY
HISTOGRAM
EDU-TILITIES
EUROPEAN CAPITOL
FISHERY
FLASH CARDS
FRENCH
GLOBAL
ICE CREAM PAR
MATH IQ
HANGMAN 2

E2 - TPUG-CEAB 1

UNIVERSAL WEDGE
DUM 3.2
DISK DATA
HEAT SOLVER 8K
HEAT SOLVER 16K
METRIC
A V OR MINERAL
DART
MATRIX SOLUTION
SMALL MATH
TIC-TAC-PET
TITRATION
HANGMAN
CAPITALS
HYPO SIMULATOR
PRIME NUMBER 16K
POLLUTION
TRIANGLE SOLVING
GRAPH SNAPSHOT
AMORT'N TABLES
SOLVE BY GRAPH
TRACE.REL
SPEAK AND SPELL
GRAVITY TIMER
GEIGER COUNTER
JOHN GRAPH
REFLEX TIMER
GRAPH SUBROUTINE
MICROMATH DEMO
MM1.1 SHERIDAN
MM16.1

E3 - TPUG-CEAB 2/3

UNIVERSAL WEDGE
TICTACPET!
HICALC
POINTS
TICTACARITH!
PROBABILITY MACH
HURKLE!
POP
POLUT
YELLOW LIGHT
WATER
POLICY
USPOP
T-SPELL
S-SPELL
T-HYPHEN
S-HYPHEN
T-PUNC
S-PUNC
PROJ-PLOT
POLAR
CURVE-FIT 2
NUMINT
MULTIPLOT
QUEUE
Z-SCORE
WORLD 2
CURVE-FIT
GEOGRAPHY
CALENDAR
HAMMURABI
HANGMAN
LISSAJOUS
CLOSED-3
SMOG SIMULATION
RESULTANT
BEADS
HIST
DRUNKARD
METCONV
EXPECTANCY
TRACE.REL

E4 - TPUG-CEAB 4

UNIVERSAL WEDGE
COPY DISK FILES
A STORY
BAIRSTOW NTH EQS
BASIC STATISTICS
BEST FIT(LEAST)
COMBINATION WARS
DRIVING TEST
ELEMENT DRILL
FFT
FLIGHT SIMULATOR
FOREST FIRE
FRACTION GAME2.0
GRADES
GRAPH PLOTTER
HANG MATH
HANGMAN 3.0
HARMONIC DISPLAY
HELLO
JOTTO
JULIAN CALENDER
QUADRATIC
LIFE EXPECTANCY
LIFESTYLE
LIN-PRO
LISTENER
LONG DIVISION
MARBLESTAT
MARKS(GRADING AI
METRIC CONVER'N
MORSE CODE
MORSE DECODER
MORTGAGE PRINTER
OPTICAL ILLUSION
POLIFIY
PROGRAMMER RPN
SIMPLE PENDULUM
READABILTY
REG'D PWR SUP DE
ROOT FINDER
SIMEQ SOLVER
WEIGHT WATCH 4.0
SPEED READ
WEIGH
PRIMES
SCROLL
80 COLUMN DEMO
SIM INVENTORY

E5 - TPUG-CEAB 5

UNIVERSAL WEDGE
DDR
INTRO. TO PERCEN
PERCENT
LETTER SEQUENCES
SYLLABLES
INTRO. SYLLABLES
INTRO. JACQUES
JACQUES A
JACQUES B
BALANCING EQU
GENERAL ANOVA
MICROSCOPY
EARTHQUAKE
AMORTIZATION HEL
BONDS
EASY EDIT
BIG BINARY
HEX DEMO
AUTO FILE WRITER
LOCKEY
DEPRECIATE
PHOSYN
ENZYMC
DIET
FIFO

E6 - TPUG-CEAB 6

UNIVERSAL WEDGE
FWCI INTEGER TTT
CHEM NOMINCLATUR
FRENCH VERBS FWC
ADD&SUB
PALKO'S AUDIT
STOCK TICKER
FUNCTION GRAPH
RELATION SKETCH
RELATION GRAPH
DYNALOGIC
STRUCTURE-BASIC
FACTORS
FACTOR RACE
LIFE TABLES
DATES
ALPHA-LIST
CBM 8010
8010 MODEM DRIVR
TAX 80 ONT V2.0
AID4
AID2
SUPERMON 4.REL
SUPERMON 2.REL
SUPERMON2/4 INS
COMPOSE

E7 - TPUG-CEAB 7

UNIVERSAL WEDGE
INSTRUCTIONS
VECTORS
FRACTIONS DRILL
WHOLE NUMBERS
DIVISION
SPELLING DRILL
FLASHER
INTEGERS
FACTORING WHOLES
POWERS & ROOTS
NICE TRIG RATIOS
FACTORING DRILL
'PERCENT' DRILL
MAT 250 MLA
DECIMALS
MLA--ARITHMETIC
CAPITAL CITIES
SKELETON DRILL
WHOLES
LINEAR SYSTEMS
C-C'S CAN & EUR
U.S. CAPITALS
ASIAN CAPITALS
AFRICAN CAPITALS
C-C'S AUST & AME
MECHANICS
PLANES
STRAIGHT LINE
CENTRAL CONICS

E8 - TPUG-EDUC 2

UNIVERSAL WEDGE
SCARDIAC V7
POGO V7
POGO.INS.WP
SCARDIAC 7A.INS
DOC-SCARDIAC 7B
TURTLE
ANTONYMS!
PUZZLE.ENTER
PUZZLE.BOX
TRACE.A.WORD
MARTIAN.HUNT
LIMERICKS
RATIONAL
PI.CALCULATOR
HANGMATH/O'H
WORD.SEARCH+
BASE CONV.ALT
BALANCING EQU
CHEMISTRY CALC
ENGLISH GRAMMAR
MATH IQ
MULT DRILL
SOLAR SYSTEM
CHICK RESULTS
CHICK
PICTURES
WORD LADDER
MELODY CHANGES

E9
- TPUG-EDUCATION 9

UNIVERSAL WEDGE
WO

WORD INVADERS2
N1 COINS EXERCIS
C2 WATER/ZEBRA L
S1 COIN LOGIC PU
STRUCTURE BASIC

MPAK
SCHOOL-MARM
LEMONADE!
MARKET NEW
ELEMENT QZ 80COL
ELEMENT QUIZZER

CHEMIST
DOG BITE
NICHE NEW
TAX COLLECTOR NE
MATH QUIZ V2
VOLCANO INSTR

VOLCANO SIM V2
PAK JANA
QUAL INORG ANALY
OPERATIONS
COMBINATION WAR!
ENCHANTED HOUSE!

GAMES

G1 - TPUG-SIMLTN 1

ADVBOOT
ADVF 0
ADVF 1
ADVF 2
ADVF 3
ADVF 4
ADVF 5
ADVF 6
ADVF 7
ADVF 8
ADVF 9
ADVF 10
ADVF 11
ADVF 12
ADVF 13
ADVF 20
ADVF 21
ADVF 22
ADVF 23
ADVF 24
ADVF 25
ADVF 26
ADVF 27
ADVF 28
ADVF 29
ADVF 31
ADVKEYS
ADVSHOR
ADVMAP
ADVITM
ADVENTURE
HAMURABI
TOMBS A-BNNYCSTL
TOMBS B-BNNYCSTL
EXPLORE-BTTRFLD
LIFE
ADV30 INTRO
ADV30 GAME
QUEST 3.0
HAMMURABI
ADVENTURE-M.B.
ADVENTURE GAME
FISHERY
POLUT
POWER INSTRUCT
POWER SIMULATION
KINGDOM/PICS
DOG.STAR.ADVEN
DUNGEON 1.4
DUNGEON.ALT3

G2 - TPUG-SPACE 1

UNIVERSAL WEDGE
OSC LUNAR
STAR WARS!
STAR TREK
LUNAR LANDER 1
LUNAR LANDER-BFD
STARTREK V18 #
SUPER STAR TREK
ELIZA
STAR WARS
KLINGON CAPTURE
STARTREK.ALT4
EASY.DUNGEON!
PLANET.PROBE
C.C.STARWAR.INS
C.C.STARWAR
SUPERLANDER

SPACESHOOTER.ALT
HUNTER.SATELLITE
STARBASE&UFO!
DEEPSPACE 1.0
STAR WAR TRANINE
AFO WITH SOUND
ATARI II

G3 - TPUG-WRD/NUM 1

UNIVERSAL WEDGE
BAGELSX2-BTTRFLD
CRYPTO-BTTRFLD
JOTTO-BTTRFLD
REVERSE-PUNTER
NIM-BUTTRFLD
BAGELS-BUTTRFLD
ANDROID NIM!
BRAIN STRAIN
PIGS
HANGMAN
HANGMATH
MATH IQ
KENO
MAGIC.SQUARE
CRAPS.ODDS
MASTERMIND
REVERSE.#S
BINGO
LETTER.15
SIMON!
CONCENTRATION.7
HANGMAN.ALT
FAMOUS PHRASES
GUESS IT
3D TIC-TAC-TOE
TIC-TAC-TOE 2.0
STARS
HANGMAN-2/PETS

G4 - TPUG-GAMES 1

UNIVERSAL WEDGE
HORSE RACE
ARROW-BTTRFLD
POKER-PUNTER
DEFLECTION
BATTLESHIPS
BREAKOUT
PETALS ARND ROSE
OTHELLO
SOLITAIRE-PUNTER
BL JACK-PUNTER
ROBOT CHASE!
CHASE/ROBOT
SNAKES!
TARGET-BUTTRFLD
GO-MOKU
CHECKERS 1
ROULETTE
MOTORCYCLE
CHECKERS 2
AWARI
BOWLING
LIFE WAR
FLIGHT SIMULATOR
BLACK BOX!
INSP. CLEW-SO
BOMBER

BLACK JACK 4.1
RACETRACK
PRO FOOTBALL
AIRPLANE
SKI
DAMBUSTERS
TOKER
KENTUCKY DERBY
LABYRINTH
PINBALL
DUCKSHOOT
BLACKJACK!!

G5 - TPUG-GAMES 2

UNIVERSAL WEDGE
KILLER BUNNIES
FAWLTY
OTHELLO
CARD SNAP
DEPTH CHARGE
MOVMAZE1
MOVMAZE2
ARROW
CARDS UTILITY
GRUNGY TOWERS
BREAKOUT
CONCENTRATION
GUNNER
OSERO
SNAKE 2
SUBMARINE!
TARGET
QUBIC.ALT
MOUSEMAZE
QUANDRY
CLOUZOT!
SNAKE.ALT
SPADE.INSTRUCTS
SPADES
ANTI-AIR/BUS
BATTLESHIP.ALT2
BILLIARDS!
CLUE
DOMINOES
DRAW.POKER
M.B.INSTRUCTIONS
MILLE BOURNE
DRAGON.MAZE!
MADMAN.RACE
DICE.PIG
FIND.COLOR

G6 - TPUG-GAMES 3

SIMON
UNIVERSAL WEDGE
TANK.WAR.ALT
HORSERACE
SNOWFLAKE
WUMPUS.ALT
BOWLING
TREES
SUBMARINE
BILLIARDS
CHECKERS.ALT
TORPEDO.BOMBER
AWARI
BLACKJACK.ALT

BOMBER.ALT
TANK.BATTLE
KNIGHT.TOUR.SOL
TAG
WEIGH
MUGWUMP
IAN'S RACE (N)
BREAKOUT 3.1
BRIDGE BID TRAIN
GOLF
QUBIC
REFLECTIONS
SINNERS
ARTILLERY TRAP
BOXING
DOT RACER
HORSES
HURKLE
PONG
POP SHOT
ROAD RALLY
SLOTS/JACKPOT
YAHTZEE
BLACKBOX
BASKETBALL
SOLITAIRE POKER
T.TENNIS
BOGGLE

G7 - TPUG-SIMLTN 2

ADVENTURE80
ADV9 0
ADV9 1
ADV9 2
ADV9 3
ADV9 4
ADV9 5
ADV9 6
ADV9 7
ADV9 8
ADV9 9
ADV9 10
ADV9 11
ADV9 12
ADV9 13
ADV9 20
ADV9 21
ADV9 22
ADV9 23
ADV9 24
ADV9 25
ADV9 26
ADV9 27
ADV9 28
ADV9 29
ADV9 31
ADVSH9
ADVSH8
ADVKEYS
ADVMAP
ADVITM
UNIVERSAL WEDGE
SWORDS & SORCERY
BABY CARE
NICHE
NEW WATER
NEW ROM WARLORDS
NEW WARLORDS INS
OLD WARLORDS INS
OLD ROM WARLORDS

LOST DUTCH GOLD
SPELUNKER
AFRICAN ADV-32K
HS.OF.7.GABLES

G8 - TPUG-GAMES 4

UNIVERSAL WEDGE
MISSION IMP
CAR RACE 4.0
BREAKOUT
BREAK80
STOCK
STOCK 80 COL
ROULETTE
MONOPOLY
CRAZY 8'S

G9 - TPUG-SIMLTN 3

OHARE'S #1
OHARE'S #2
OHARE'S #3
WIZARD'S.CASTLE
TRIP TO ATLANTIS
KING.TUT
SORCERERS.CASTLE

GA - TPUG-GAMES 5

UNIVERSAL WEDGE
BLACKJACK 80 COL
SLOT MACH 80 COL
CYCLE JMP 80 COL
DRAG RACE 80 COL
ASTEROIDS
BLOCKADE
SEABATTLE INST
SEABATTLE
PIRATE ADVENTURE
PINBALL
WILL O' WISP
PET NUC PWR PLNT
PETMAN 5
BASEBALL 7.3
MONOPOLY
SUPERTREK/16KNR
CONNECT 4
PI HUNT

GB - TPUG - GAMES 6

UNIVERSAL WEDGE
STOCK MARKET!
WUMPUS II
RAGING ROBOTS 4
BIG LETTER BOGGL
HANGMAN 7
CONCORD LANDER
JUMBO JET LANDER
QUBIC 4
SUPER 9X9
YAHTZEE IV
SLEUTH
YOTE
BATTLESHIP
DRAGSTER
CROSS WORD

COMMODORE EDUCATION (Works on both PET and C-64)

KAA - ADMINISTRATION

CBM 4032 V2.1
ANALYSIS 1.C2

ANALYSIS 2.C2
ANSWER BOX.C2
BONDS.C2

DOG.C2
EXAM 2.C2
FIGHT.C2

GRADES.C2
LETTER.C2
MARKS.C2

MRK STATS.C2
NOTES.C2
SEX ED.C2

KBA - BUSINESS

CBM 4032 V2.1
ACCOUNTING.C2
AMORT'N TABLE.C2
BONDS.C2
BUDGETACCOUNT.C2
CALENDAR.C2
CREDIT UNION.C2
DATES.C2
DEPRECIATION.C2
FIFO.C2
GROSS PAY.C2
HISTORY QUIZ.C2
ICE CREAM.C2
INVESTMENTS.C2
LEMONADE.C2
LIFE TABLES.C2

KBB - BUSINESS

CBM 4032 V2.1
MARKET.C2
MONEY FLOW.C2
MORTGAGE.C2
OBJECTIVE1.1.C2
PORTFOLIO.C2
SCHOOL-MARM.C2
SIMULATION.C2
STOCK MARKET2.C2
TAX ONTB1V1.C2

KCA - COMPUTER SCIENCE

CBM 4032 V2.1
BIG BINARY.C2
COMMANDS.C2
COMP. CONCEPT.C2
COMPUTING.C2
DISK CMD.C2
DISK LISTER.C2
FEATURES QUIZ.C2
GRAPH SUBROUT.C2
HEX DEC.C2
HEX DEMO.C2
HISTORY QUIZ.C2
HYPO AUTO.C2
KEYBOARD.C2
PLOTTING.C2
PRGM. LISTER.C2

KCB - COMPUTER SCIENCE

CBM 4032 V2.1
RND GENERATOR.C2
SIMULATION.C2
SOUND SUB.C2
STRINGS.C2
TURTLE 1.C2
TURTLE 2.C2

KEA - ENGLISH

CBM 4032 V2.1
A OR AN.C2
A STORY.C2
ALPHA BETTER.C2
ALPHABETIZING.C2
ANTONYMS.C2
APHORISMS.C2
B'BALL MADLIB.C2
COMP. POETRY.C2
CONC WORDS.C2
CONCENTRATION.C2
DEFMATCH.C2
ENG. MONSTER.C2
FLASHER.C2
GRAMMAR 1.C2
HAIKU.C2

KEB - ENGLISH

CBM 4032 V2.1
HANGMAN 2.C2
HANGMAN 1.C2
HANGMAN 3.C2
HOMOCONC.C2
INIT DIGRAPH.C2
JOTTO.C2
LETTER SQUARE.C2
LETTER.C2
MACBETH QUIZ.C2
MADLIB.C2
MATCHING.C2
MEDIAL VOWELS.C2
MISSPELLING 5.C2
MISSPELLING 6.C2
MM 2LADVF.C2

KEC - ENGLISH

CBM 4032 V2.1
MM ADVBFORMS2.C2
MM CRCOMP.C2
MM DARK WOOD.C2
MM HOMONYMS.C2
MM LADVF.C2
MM MUGS 2WM.C2
MM MUGS WM.C2
MM PUNCTUAT'N.C2
MM SADSTORY 2.C2
MM SHARE TIME.C2
MM VB FORMS 1.C2
MM VB FORMS 2.C2
MM VB FORMS 3.C2
MM VB FORMS 4.C2
MM VB FORMS 5.C2

KED - ENGLISH

CBM 4032 V2.1
MM VB FORMS 6.C2
MM VB FORMS 7.C2
MM VB FORMS 8.C2
MM VB FORMS 9.C2
MM WORD MEANS.C2
NEW TACHISTO.C2
NOUNS.C2
P'BLEM P'NOUN.C2
PARTS SPEECH.C2
PETPITPATPOT.C2
PLURALS.C2
PRGM. LISTER.C2
READ LEV&EVAL.C2
READER.C2
REMEMBERING.C2

KEE - ENGLISH

CBM 4032 V2.1
RHYMECONC.C2
RHYMING.C2
ROMEO&JULIET.C2
S'PG ERRORS 4.C2
S'PG ERRORS 5.C2
S'PG ERRORS 6.C2
S'PG ERRORS 8.C2
S-HYPHEN.C2
S-SPELL.C2
SCHOOL-MARM.C2
SCRAMBLE 4.C2
SCRAMBLE 5.C2
SCRAMBLE 6.C2
SCRAMBLE 7.C2
SCRAMBLE 8.C2

KEF - ENGLISH

CBM 4032 V2.1
SHAKESPEARE Q.C2
SNOWYDAYNOUNS.C2
SPD SPELLING2.C2
SPD SPELLING3.C2
SPD SPELLING4.C2
SPD SPELLING5.C2
SPD SPELLING6.C2
SPD SPELLING7.C2
SPD SPELLING8.C2
SPEED READ 2.C2
SPELL MEAN 5.C2
SPELL MEAN 6.C2

KEG - ENGLISH

CBM 4032 V2.1
SPELL MEAN 7.C2
SPELLING BEE2.C2
SPELLINGTUTOR.C2
SWAP NEW ROM.C2
SYLLABLE.C2
SYNONYMS.C2
T-HYPHEN.C2
T-SPELL.C2
THEWORDMARKET.C2
TWENTY QUEST.C2
TWO TO TOO.C2
UNSCRAMBLE.C2
VOCAB.C2
VOCABULARY 3.C2

KEH - ENGLISH

CBM 4032 V2.1
VOCABULARY 4.C2
VOWEL MAGIC.C2
WORD GAME.C2
WORD HUNT.C2
WORD LADDER.C2
WORD POWER.C2
WORD SEARCH 1.C2

KFA - FRANCAIS

CBM 4032 V2.1
DATES.C2
FR. SENTENCES.C2
FRENCH AID #1.C2
FRENCH AID #2.C2
FRENCH DRILL.C2
FRENCH FWC.C2
FRENCH QUIZ.C2
FRENCH TEST.C2
FRENCH VERBS.C2
FRENCH VERBS .C2
MELI-MELO.C2
SERIE 1.C2
SCHOOL-MARM.C2

KGA - GAMES

CBM 4032 V2.1
A BLOCK.C2
A-MAZING.C2
ABSTRACT.C2
ACCELERATION.C2
AFO.C2
APPAREIL JET.C2
ARROW!.C2
ARTILLERY.C2
ATARI II.C2
BAGEL.C2
BATTLESHIP.C2
BIORHYTHM.C2
BLACK BOX.C2
BLACKJACKE.C2
BREAKOUT.C2

KGB - GAMES

CBM 4032 V2.1
CHASE.C2
CIVIL BATTLES.C2
CRAPS.C2
CRAZY BALLOON.C2
CYLON BATTLE.C2
DAM BUSTERS.C2
DUCK SHOOT.C2
ENGGAME2.C2
FLECHE.C2
FOX AND HOUND.C2
FROG RACE.C2
GAME 4.C2
GOLIWOG.C2
GUNNER 2.C2
HAMLET.C2

KGC - GAMES

CBM 4032 V2.1
HAMURABI.C2
HANGMAN 1.C2
HANGMAN 3.C2
HANGMAN 2.C2
HANGMATH 1.C2
HANGMATH 2.C2
HELLO.C2
HI-Q.C2
IN ORDER.C2
JOTTO.C2
LAKES-ENG.C2
LE PERDU.C2
LOGIBLOCKS.C2
MAGIC SQUARE.C2
MASTER MIND1.C2

KGD - GAMES

CBM 4032 V2.1
MASTERMIND2.C2
MASTERMIND3.C2
MATCHES.C2
METEOR.C2
MISSION IMPOS.C2
MOUSE MAZE.C2
MUGWUMPS.C2
PETALS & ROSE.C2
PICTURES.C2
PIZZA.C2
PLANET PROBE.C2
PONG.C2
PUB SILLINESS.C2
PUZZLE.C2

KGE - GAMES

CBM 4032 V2.1
RAGING ROBOTS.C2
ROAD TRACK.C2
ROTATE 1.C2
SNAKES.C2
SNARK.C2
SNERD.C2
SNOOPY.C2
SPACE PILOT.C2
SPACE WEIGHTS.C2
STARTREK 2.C2
STARWARS.C2
STARTREK.C2
STARTREK IV.C2
SUPERDRAW!.C2

KGF - GAMES

CBM 4032 V2.1
TIC-TAC-PRO.C2
TORP BOMBER.C2
TOWER.C2
TURTLE 1.C2
TURTLE 2.C2
TWENTY QUEST.C2
UP THE LADDER.C2
WAREHOUSE.C2
WESTWARD HO.C2
YELLOW LIGHT.C2

KHA - HISTORY

CBM 4032 V2.1
ANCIENT HIST.C2
ELECTION.C2
FAMOUS PEOPLE.C2
HISTORY QUIZ.C2
MEDIEVAL HIST.C2
MODERN HISTOR.C2
PRESIDENT QUIZ.C2
TREND LINE.C2
WORLD WAR II.C2
WORLD WARS.C2

KMA - MATHEMATICS

CBM 4032 V2.1
ADD DRILL.C2
ADD & SUB.C2
ADDITION RACE.C2
ADDITION.C2
ADDS AND SUBS.C2
AGENT BLOTTO.C2
ALG. VECTORS.C2
AMORT'N TABLE.C2
ANALYSIS 1.C2
ANALYSIS 2.C2
ANKOVA.C2
ANOVA.C2
ARITHMETIC.C2
ARTILLERTY.C2
ASTERIOD ADD.C2

KMB - MATHEMATICS

CBM 4032 V2.1
AUTO ADD TCHR.C2
B.T.C. ADD.C2
B.T.C. DECIML.C2
B.T.C. DIVIDE.C2
B.T.C. FRAC.C2
B.T.C. MULT.C2
B.T.C. PERCNT.C2
BAIRSTOW NTH.C2
BALANCE.C2
BASE CHANGE.C2
BASIC STATIST.C2
BATTLESHIP.C2
BEADS IN A JA.C2
BIG ADD.C2
BIG BINARY.C2
BIG DIVIDE.C2

KMC - MATHEMATICS

CBM 4032 V2.1
BIG MULTIPLY.C2
BIG SUBTRACT.C2
BIGTIME.C2
BINOMIAL DRIL.C2
BODMAS.C2
BOMB ADD.C2
BONDS.C2
BRAIN CRANE X.C2
BRAIN CRANE +.C2
BRAIN CRANE -.C2
BRAIN CRANE /.C2
CAR RACE MULT.C2
CHANGEMAKER.C2
CHOICES.C2

KMD- MATHEMATICS

CBM 4032 V2.1
CLOCK.C2
CO-ORDINATES .C2
COLLECTERM 1.C2
COLLECTERM 2.C2
COUNT 1 TO 10.C2
COUNT TEN.C2
COUNT-FIVE.C2
CURVE FIT 2.C2
DART.C2
DATES.C2
DECOMPOSITION.C2
DEPRECIATION.C2
DERIV POLY.C2

KME - MATHEMATICS

CBM 4032 V2.1
DICE THROW.C2
DIVISION DRIL.C2
DRILL SI.C2
DRILL.C2
DRILLS.C2
ELLIPSE-TRANS.C2
ENGGAME.C2
EQN MANIPULAT.C2
EQUAIONS 1.C2
EQUATIONS 2.C2
EXPONENT MULT.C2
EXPONENTS.C2
FACTEUR.C2
FACTOR TRINO .C2
FACTOR TRINOM.C2

KMF - MATHEMATICS

CBM 4032 V2.1
FACTOR WHOLES.C2
FACTORS.C2
FAST MATH.C2
FLIP PROBLEM.C2
FOIL PRACTICE
FRAC EST/SOUN.C2
FRACTION GAME
FUN MACHINE.C2
FUNC PLOT.C2
FUNCTION PLOT.C2
GAUSS REDUCT.C2
GEOMETRY.C2
GEOMETRYTERMS.C2
GRAPH PLOT.C2
GRAPHIQUE1.C2

KMG - MATHEMATICS

CBM 4032 V2.1
GUNNER.C2
HANGMATH.C2
HANGMATH 2.C2
HEXDEC.C2
HI-CALC.C2
HI-LO.C2
HOW LONG.C2
HOW MANY.C2
HURKLE.C2
HYPERBOLA.C2
INT. ADD FAST.C2

INTEGER & DEC.C2
INTEGER ADD.C2
INTEGER ARITH.C2
INTEGER LINES.C2

KMH

- MATHEMATICS

CBM 4032 V2.1
INTEGERS.C2
INTEGRATION.C2
INTERSECT LIN.C2
IQ TEST.C2
LADDER MULT.C2
LAST BOTTLE.C2
LAZER MATH.C2
LIMIT CIRCLE.C2
LIMITS.C2
LINE GRAPH.C2
LINE OF BEST.C2
LINEAR EQUA.C2
LINEAR SYS.C2
LONG DIVISION.C2

KMI

- MATHEMATICS

CBM 4032 V2.1
MAGIC SQUARE.C2
MAKING CHANGE.C2
MATH DICE.C2
MATH DRILL.C2
MATHPACK.C2
MATH QUIZ.C2
MATH TUTOR.C2
MATRIX.C2
METER READING.C2
METRIC(ECCO).C2
METRIC CON.C2
METRIC.C2

KMJ

- MATHEMATICS

CBM 4032 V2.1
MICROMATH +-.C2
MICROMATH.C2
MISSING NUMBR.C2
MIXED NUMBERS.C2
MLA ARITH.C2
MONOMIAL MULT.C2
MONSTER MULT.C2
MORTAGE.C2
MUNCHKIN MULT.C2
NUM RECOGNTN.C2
NUMBER GUESS.C2
OPERATIONS.C2
ORDERED PAIR.C2
PARABOLA.C2

KMK

- MATHEMATICS

CBM 4032 V2.1
PERCENT DRILL.C2
PERCENT.C2
PERIMETERS.C2
PI CALCULATOR.C2
PIZZA.C2
PLACE VALUE#4.C2
PLANES.C2
PLOT.C2
PLOTTING.C2
POINTS.C2
POLAR COOR.C2
POLICE SUBT.C2
POLY PLOT BAS.C2
POLYGON SECT.C2
POWER-FACT.C2

KML

- MATHEMATICS

CBM 4032 V2.1
PRIME-FACT.C2
PRIME NUMBER.C2
PROBABILITY.C2
PROJ-PLOT.C2
QUIZ ADD.C2
QUIZ MULT.C2
R-PLOT.C2
RATE 4.C2
REDUCING FRAC.C2
RESULTANTS.C2
ROLLS TIL ONE.C2
ROMAN NUMERAL.C2
ROOT FINDER.C2
ROOTS QUIZ.C2
SAUCER MULT.C2
SC-NOTATION.C2

KMM

- MATHEMATICS

CBM 4032 V2.1
SHAPES.C2
SIEVE.C2
SIG-DIGITS.C2
SIGNIFCNT DIG.C2
SIMEQ. SOLVER.C2
SIMPLE SUBST.C2
SINE GRAPH.C2
SKIER.C2
SLOPE AND INT.C2
SLOPE/INTERCT.C2
SMALL MATH.C2
SNOOPY.C2
ST LINE PLOT.C2
STATISTICS.C2
SUBTRACTION.C2

KMN

- MATHEMATICS

CBM 4032 V2.1
TABLES.C2
TIC TAC PET.C2
TIMES TABLE.C2
TIMES.C2
TRANSLATION.C2
TREASURE ADD.C2
TRI. SOLVING.C2
TRI.CLASS-ANG.C2
TRIANGLES.C2
TRINOMIAL FAC.C2
UP THE LADDER.C2
VECTOR.C2
VERNIER SCALE.C2
ZERO IN.C2

KMS

- MISCELLANEOUS

CBM 4032 V2.1
A OR AN.C2
BILINGUALSPEL.C2
FINGERSPELL.C2
LATIN 123.C2
SWAP NEW ROM.C2
SWEDISH QUIZ.C2
COMPOSE.C2
MUSIC THEORY.C2
PETUNIA INST.C2
EXPECTANCY.C2
HAMURABI.C2
CHILD ABUSE.C2
HOCKEY QUIZ.C2

KMT

- MISCELLANEOUS

CBM 4032 V2.1
LIFESTYLES.C2
METEOR.C2
REFLEX TIMER.C2
STADIUM QUIZ.C2
MM ADVBFORMS1.C2

KRA - GEOGRAPHY

CBM 4032 V2.1
AFRICA & ASIA.C2
CANADA QUIZ.C2
CANADA.C2
CAPITALS.C2
CO-ORD DIST.C2
ENGLAND MAP.C2
FRENCH TOPICS.C2
GEOG TEST.C2
GEOG.C2
GEOGRAPH QUIZ.C2
GEOGRAPHY.C2
ITALIAN QUIZ.C2

KRB - GEOGRAPHY

CBM 4032 V2.1
KOPPEN.C2
LAKES-ENG.C2
MILEAGE.C2
MILEAGE .C2
NORTH EAST.C2
OCEAN QUIZ.C2
SLOPE(GEOG).C2
STATES & CAP.C2
STATES & REG.C2
WORLD CAPTALS.C2

KSA - SCIENCE

CBM 4032 V2.1
ACCELERATION.C2
ACTINIUM DECA.C2
AVORM.C2
AZIMUTH & ALT.C2
BALANCE CHEM.C2
BALLISTICS.C2
BERNIE TOWER.C2
BOHR ATOM.C2
BOYLE'S LAW.C2
BUOYANCY.C2
CAI MOMENTUM.C2
CASCADE.C2
CHARGE.C2

KSB - SCIENCE

CBM 4032 V2.1
CHEM 12.C2
CHEM EQUA.C2
CHEMIST QUIZ.C2
CHEMIST.C2
CIRCUITS.C2
COMPOUNDS 1.C2
COMPOUNDS 2.C2
CYLINDERS.C2
DEFECT.C2
E.M.T.C2
ELECTRICAL PR.C2
ELECTRO MAG 2.C2

KSC - SCIENCE

CBM 4032 V2.1
ELEMENT.C2
ELEMENTS.C2
ENERGY.C2
ENV. PROFILE.C2
ENZYME.C2
EQUATIONS.C2
EQUIVALENTS.C2
FAMILY.C2
FISHERY.C2
FORCE CONV.C2
FOURIER PLOT.C2
FUSE.C2
GAS EQUATIONS.C2
GEIGERCOUNTER.C2

KSD - SCIENCE

CBM 4032 V2.1
GRAVITY QUIZ.C2
HALF LIFE.C2
HARMONICDSPLY.C2
HEAT SOLVER.C2
INORG CHEM.C2
INTERFERENCE.C2
ION.C2
KINEMATICS.C2
LOCKEY.C2
MALARIA.C2
MARBLE STAT.C2
METER READING.C2
METER READ.C2
METRIC VOLUME.C2

KSE - SCIENCE

CBM 4032 V2.1
MICROSCOPY.C2
MITOSIS.C2
MOLAR.C2
MOLECULE RACE.C2
MOLECULES 2.C2
MOLECULES.C2
MOMENTUM II.C2
MOTION PROB.C2
MOTORCYJUMP.C2
MULTIMICRO.C2
MUTANT.C2

KSF - SCIENCE

CBM 4032 V2.1
NICHE.C2
NOMENCLATURE.C2
OHM2.C2
PEND 1.C2
PEND 2.C2
PERCENT.C2
PERIODIC PROB.C2
PERIODIC TABL.C2
PET NCL REACT.C2
PH PROBLEMS.C2
PHOTEL.C2
PHOTOSYNTHES.C2

KSG - SCIENCE

CBM 4032 V2.1
POLLUTION.C2
RATE 4.C2
REFLEX TIMER.C2
REG PWR SUP.C2
REMDL NOMENCL.C2
RESISTORS.C2
RESOLV'N TIME.C2
RESONANCE.C2
RUTHERFORD.C2
SC-NOTATION.C2
SHEILD EXPT.C2

KSH - SCIENCE

CBM 4032 V2.1
S.I. CONV.C2
SIG-DIGITS.C2
SMPLEPENDULUM.C2
SPECIFIC HEAT.C2
STOICH .C2
TEMP. CONVERT.C2
TITRATION.C2
TWENTY QUEST.C2
USPOP.C2
VERNIER SCALE.C2
WATER II.C2
WAVES 3.C2
WEATHER MAN.C2
YOUNG.C2

KTA - TECHNOLOGY

CBM 4032 V2.1
BIG OHM'S LAW.C2
CIRCUIT 1.C2
CIRCUIT 3.C2
CIRCUIT 4.C2
CIRCUITS.C2
DFW RESIST.C2
DRIVER EDUCAT.C2
ELECTRICAL PR.C2
FUSE.C2
METER READ.C2
MORSE CODE.C2
MORSE.C2
OHM2.C2
PHOTO LOG.C2

KTB - TECHNOLOGY

CBM 4032 V2.1
RESIST TEST V.C2
RESISTORS.C2
SIMULATION.C2

KUA - UTILITIES

CBM 4032 V2.1
ANALYSIS 1.C2
ANALYSIS 2.C2
BAIRSTOW NTH.C2
CHECK DISK.C2
COPY D FILES.C2
DISK LISTER.C2
DUM 5.0.C2
FEATURES QUIZ.C2
GRAPH PRINT.C2
GRAPH SUBRTN.C2
HOME ENERGY.C2
PLOT.C2
PRGM. LISTER.C2

PET Language

L1 - TPUG

-LANGUAGE 1

UNIVERSAL WEDGE
COMAL80+
COMAL80
GENERRORS-E
GENERRORS-D
ENROLL
KEYS
PRINTOUT
ENTERMARKS
WINDOW
CORRECTIONS
DELETE
OLSENMAIN
DELREC
AUNTIE
OTHELLO
STARTOTHELLO
OTHELINSTR
MAX01
SQRT
HANNIBAL
QUICKSORT
FIXPERMUT
TEXTSTAT02
TEXTSTAT01
EUCLID
GROWSTRING
FORWARD
QUEENS
DOUBLE
DISK
LOCAL VAR
COMALERRORS
STRIPVAR
NYKLUB
NYOPRET
NYRETTE
NYVISMEDL
NYLISTMEDL
NYSLETMEDL
BINSEARCH
VDU
PGR05
COMAL EXPLAIN
IFTEST

L3 - TPUG-LANGUAGE 3

LOADER FORTH
FORTH DISK0
FORTH H75.6

Math/Science

N1 - TPUG-MATH/SCI 1

UNIVERSAL WEDGE
CURFIT-BTTRFLD
TRIANGLE-BTTRFLD
METRIC-BTTRFLD
TREND-BTTRFLD
FACTORS-BTTRFLD
MATH TEST-BTTRFL
METRIC TEACHER
SORT
DEMO SORT
HEAPSORT DEMO
EDU-TILITIES
GLOBAL
WEATHERMAN
LISTENER
ELECTRONICS.CALC
LAT+LON.DISTANCE
FUNCTION.MACHINE
ROULETTE.THEORY
CROUT ALGORITHM
DERIVATIVE
NEWTONS ZERO
QUADRATIC
INTERMOD
QUARTIC
RANK CORRELATE
REDUCTION
3D PLOT
PRESSURE CURVE
PROGRAMMER RPN
GRAPHICS.DEMOS-G
METRIC CONVER'N
REG'D PWR SUP DE
ROOT FINDER
OHMS LAW
CRITICAL PATH 2A
PLOTTING
PLANET POSITION3
SORTING DEMO
NATAL CHART
BIOPRINTER 6.3
BIORHYTHM 1.5
LEAST SQUARES
POLIFIY
SQUARE ROOT TEST
SIMEQ SOLVER
CHI SQUARE
LIFE EXPECTANCY
WEIGHT WATCH 4.0

N2 -TPUG-MTH/SCI 2

UNIVERSAL WEDGE
BAR GRAPH 24
FREQ GENERATOR!
CRYPTARITHMETIC
COMPLEX NUMBERS
AUDIO DESIGNER
FILTER
POWER SUPPLY
NET1
BONE TUMOR DIAGN
PHYSIOLOGIC WT
PLEURAL EFFUSION

N3 - TPUG-MATH/SCI 3

UNIVERSAL WEDGE
CONVERSIONS A
CONVERSIONS B
PLANETS
WEATHERCAST
FAMILY GENES
SUNRISE/SUNSET
TANK VOLUME
TRAVERSE

PET Music

S1 - TPUG — MUSIC 1

UNIVERSAL WEDGE
COPY ALL
NEW ROM MUSIC
OLD ROM MUSIC
76 TROMBONES
1950'S MEDLEY
ALLELUJAH
BAMBOO TREE
BARCAROLLE
BAROQUE FANFARE
BLACKBIRD
BUMBLE BEE
CANDY FAIRY
COME SW DEATH
DANSE CAPRICE
DUELIN BANJOS
EASY WINNERS
ELEANOR RIGBY
ELEPHANT
ENDLESS SCALE
ESPANA
FIDDLER
FUGHETTA
FUR ELISE
GAVOTTE&MUSETTE
INVENTION #4
INVENTION #5
INVENTION #8
INVENTION #11
INVENTION #14
JESU/JOY
JET PLANE
JINGLE BELLS
LE TAMBOURIN
LOVE STORY
MAPLE LEAF
MARCHE MILITAIRE
MIN.IN D
MINUTE WALTZ
MNT.GREENERY
MUSETTE
MUSIC BOX DANCER
OB-LA-DI
OCTOPUS
ORGAN FUGUE
PALINDROME
POLONAISE IN BFL
PRELUDE&FUGUE
PRISCILLA
PROMENADE
REED FLUTES
REEL
RICH MAN
SILENCE
SINFONIA
SINFONIA #1
SINFONIA #2
SINFONIA #3
SINFONIA #10
SINFONIA B FL
SKELETON DNCE
SONATA L.82
SONATA RONDO
SONATINA
SPINNING SONG
SPRING SONG
STAIRWAY
STARSPGL BANNER
SYNC. CLOCK
TARENTELLA
TEN XMAS SNGS
THE ENTERTAINER
THREE TUNES
TWO GUITARS
VALSE TRISTE
WATER MUSIC
WEE MAN
WELL TEMPERED
WELLS FARGO
WHEN I'M 64
WONDERLAND
YAKKITY SAX
YELLOW SUB
YESTERDAY

TPUG Monthly Releases

TJ JUN/82

COPY/ALL
FILE RETRIEVER
5TH SCOTTE.INST
5TH SCOTTE
TEDDY-APRIL82
DAISY-APRIL82
TEDDY.INSTR
DAISY.INSTR
TINY FORTH NOTES
TINY 4TH TCHR4.0
TINY.PILOT.INSTR
TINY.PILOT.OBJ
TEDDY.RENUM
-DAVE WILLIAMS--
DOUBLEPROG REL
ML STOPKEY
SEQ->PRG/MERGE
DYNALOGIC
FUNCTION GRAPH
EQUATION SOLVER
COMPUDATE
STRUCTURE BASIC
RELATION SKETCH
RELATION GRAPH
LISTER (SUPERPET)
PHONE NUMBERS
TAPE PHONO-PHILE
DISK PHONO-PHILE
TABLE MATH
DATA GENERATOR
DISKLIST.APL (SUPERPET)

TK - SEP/82

-BASIC 4.0 F40-
INVADERS 4.0
FAST INVADRS 4.0
ACROBAT F40
CAR RACE F40
MISSION IMP F40
NIGHT DRIVER F40
BACKGAMMON F40

--- SEPT 82 ---
DISK MASTER V2
5TH SCOTTE.INST
5TH SCOTTE
STRING THING
TAPE PHONO-PHILE
DISK PHONO-PHILE
PHONE NUMBERS
VIC TAPE INDEX
MASTER TAPE LIBR
WWV
WWVI
WWVII
WWVIII
WWIX
WW WORD LIST
CMPR MOSER SRCE
STRING THING 64
SUPERSPEED SORT
MARKSCALER
FIXFILE
POINTER SORT
FILE
ML DATA MAKER
WWI
WWII
WWIII
WWIV
SUPERMON64.V1
COMM64

TL - OCT/82

COPY-ALL
HOLYHALTER 2
TERMINAL.SERIAL
TERM.SERIAL
VIC KEYSORT
VIC SORT.DEMO1
VIC SORT.DEMO2
RELREAD
SOUP
SPACEWAR 1
SPACEWAR 2
VIC JASPER
VIC COLOR ROOS
VIC POOKY
VIC GARFIELD
DEMONSTRATIE.HI
VIC TRSHY PIC
VIC DESIGN
VIC DESIGN 2
VIC DESIGN 3
VIC DESIGN 4
VIC VIC
DIGICLOCK
HIRESFOURIER
USA SONG
SWAP 16/32K
SWAP 8K
MOCKINGBIRD HILL
FINANCE 1.4
GASSER
TIMETABLE(8032)
BUTTERFIELD
MUSIC LESSON
MUSIC LESSON 2
40 ELEMENT QUIZZ
80 ELEMENT QUIZZ
VIC AID4.REL
VICMUSIC$1201
V 76TROMBONES
V ENTERTAINER
V WONDERLAND
STRING THING 64
BRKOUT.PADL
64 MEMORY CHART
COPY-ALL64
NOS TRANSLATOR3
PACMAN
MULTI-INVADERS!
C-64 VICDISKFIX
C-64 GRAPHER
64 H-R PLOT M/L
BAS&ML COMBINER

TM - NOV/82 (PET)

COPY-ALL
INSTRUCTIONS
PILOT TRANSLATOR
WATERMELON
FOOD
MAGIC SQUARE
SPREAD SHEET 40T
PRINT USING
PRINT USING&TEST
WATCHMAN-40
SPREAD SHEET80DT
PRNT USING ML
SCREEN ROUTINES
BAS&ML COMBINER
QUIET AFTERNOON
Q-BACK CHALLENGE
PIZZA
CLASS ORGANIZER
CM-CSP403
CN-CSP403
CH-CSP403
CHEMDRILL2
CHEMDRILL1
BACKUPDRILL2
BACKUPDRILL1
MULTI-INVADERS!

TN - NOV/82 (VIC)

COPY-ALL
MINIATURE GOLF
TANK VS UFO JOY
TANK VS UFO KEY
SHOOTER JOY
VIC CHASE JOY
VIC CHASE KEY
BREAKOUT KEY
STEAL MONEY
PING-PONG
SUPEREVERSE VIC
VIC 3 OF KIND
WALL DESTROY VIC
CHUCKALUCK VIC
LETTERSQUARES
VIC SQUIGGLE
SLO VICMAN KEYB
MASTERMIND
CRAZY BALLOON
ALIEN WASTER
ASTEROIDS
VIC MAIL
OUTPOST
BUDGET
SEPT 30 RANDOM
WORDPRO 2
VICTERM
CAT
WIZZACALC
DISKMEM B-RR1
DISKMEM INSTR.
VICWORD
VIC CONTROL KYBD
VIC TRIANGULATOR
JOYSTICK TEST
FROGGER.VIC
CENTIPEDE.VIC
PET EMULATOR

TP - DEC/82

COPY-ALL
COSMIC FIGHTER
MUSIC INSTR
FRERE JACQUES
YANKEE DOODLE
CHRISTMAS
CHRISTMASMUSIC
CHRISTMASCODE
CHRISTMASROOT
KEYBOARD RECORD
NEW ROM MUSIC
OLD ROM MUSIC
76 TROMBONES
JINGLE BELLS
TEN XMAS SNGS
JINGLE2
BOOT
CHG LD ADDR V1.2
HEX DUMPER 80
FACE INSTRUC
FACE LOADER
FACE OBJ
FACE DRIVER

PEDIGREE CHARTS
MOVABLE FEASTS
DRAGON
DRAGON DRUGGIN
VECTORS
BIT MAP PLOT 64
BUGS 64
SPRITE MAKER 64
PI HUNT 64
PI HUNT 64.2
MULTI-DICE
FIZZBIN
FIZZBIN 8K RULES
FIZZBIN 8K GAME
SPET 8050-2031

BANK SELECT 6502
PPORT COMMUN.

TQ - JAN/83

PUKMAN
STAR SYSTEM
N.Z.QUIZ
WARLORDS INSTR
WARLORDS GAME
BLOCKADE
ALIEN BLASTER
OUTPOST-ML3

OUTPOST
TOLL BRIDGES
EAR
EYE
REACTION
HIGH Q
MINEFIELD 2
STAR LANES
WORD-SEARCH
TV SATELLITES
BILLBOARD
V JIM IN COLOUR
VIC LOTTARIO
VIC REL WRITE
VIC PRG CHARS

V CHARS@$1C00
VIC FUNCTION KEY
VIC ZIG ZAG
V ADDITION PRACT
V MULTIPLY PRACT
V SUBTRACT PRACT
V ADDRESS FILE
VIC GRAPH PLOT
VIC UXB 1
VIC UXB 2
V BACKGAMMON
VIC-POLY-TURTL
V ZAP
VIC CHECKBOOK
V MAILING EDITOR

V COMPLEX MATRIX
V 555 TIMER
VIC FINANCE
V LO PASS FILTER
VIC FREE-FALL
C64 PET SCREEN
COL.PICT.BOOT
DIANE.C64
DIANE.CDATA
VISIBLE PET
VISIBLE VIC
VISIBLE C64
FACTORS.PET
FACTORS.VIC64
CONTEXT INDEXER
COLOR TEST

PET Utilities

U1 - UTILITIES #1

UNIVERSAL WEDGE
COPY ALL
AID 2.1
SUPERMON2.REL
SUPERMON4.REL
SUPERMON1.REL
SUPERMON1/2/4INS
EXTRAMON9G@$1000
EXTRAMON9B@$1000
EXTRAMON INST
APPEND/RENUM.REL
ROM TEST--BTFLD
TRACE.REL(BASIC)
RAMTEST@$500
SCREEN PRINT
UN-NEW/SYS826
KEYSORT2$7454
KEYSORT2-2DEMO
KEYSORT2-1DEMO
KEYSORT2$1C54
LOW CASE LIST
DISK APPEND
DISK MOD/V1
DISK ID CORRCTOR
DISK PEEK
VIEW BAM
BLOCK GET 1.0
BL GET @$033A
KEYPRINT/826
DISK NAME (R)
COPYPROG
KEYMAKE
COPYDISK/SYS973
TAPE TEST #
TAPE WRITE (#)
COPYCAT!SYS934
COPYCAT'SYS934
AID INSTR7.6
(32K)BASIC-AID
DISK LOGGER
CATALOG
SEARCH
UTINSEL.REL
AID4
COMPACTOR
CASSETTE.TO.DISK
DATAMAKER
KEYSORT.EXE16/32
KEYSORT.DEMO1
KEYSORT.DEMO2
KEYSORT.EXE8K
CROSS-REF
BASIC.AID.EXE
DISK APPEND-M.B.
PRINT USING
DISK VIEW
READ.LINK
READ-WRITE.S/R'S
DIR.ACCESS.S/R'S
PORT.DISPLAY
DESCENDERS/2022
FLOPPY.DISPLAY
JOYSTICK.CTLR.
JOYSTICK.CRSRS
EXTRAMON.4.0B
EXTRAMON.4.0G
MAE/DOS FOR 4.0
USER.COOKBOOK
UTILITY 2.0
UTILITY 4.0
DEMO
LIST LT2
LIST LT2X
LIST GP2

LIST LP2
LIST LP2X
LIST LP4
INS/DEL DEMO
V40.2.B
V40.4.B
V80.4.B
TAPE.TO.DISK
RELREAD
DUMP SEQ FILE
WP TO UPPER

U2 - UTILITIES #2

UNIVERSAL WEDGE
COPY ALL
MINI-COMPILER
TINY.PILOT.EXE
TINY.PILOT.INS
SUPERMON2.REL
SUPERMON4.REL
SUPERMON1.REL
SUPERMON1/2/4INS
LISTER
SCREEN DUMP
TAPE GRAPH 21S
UNLIST
TAPE GRAPH# ROM
BAM MAP CBMDSK
TINY FORTH TCHR
DISC MERGE/BASIC
TINY FORTH NOTES
LOWER CASE LIST
SHIFT UP-LOW CAS
GRAPHIX INSTR
GRAPHICS-LOADER
GRAPHICS-DEMO
ERIC ASSM
8K
MICROMON.INS
BAID.X$9000@2000
BAID4.INS
MICROMON@4096
BAID4B@$7000
MICMON4B@4096
MICMON4B9@1
BASIC AID 4
AID INSTRUCTIONS
CBM 4032
RELREAD
DISK LOGGER
UNASSEMBLER.MAE
UNASSEMBLER.CBM
KEYPRINT2
KEYPRINT4@826
DUMP2
DUMP4
LOCKSMITH

U3 - UTILITIES #3

UNIVERSAL WEDGE
COPY ALL
EASY EDIT/TAPE
EASY EDIT/DISK
EASY EDIT/C
PAGE1 EZE EDIT
PAGE2 EZE EDIT
PAGE3 EZE EDIT
PAGE4 EZE EDIT
PAGE5 EZE EDIT
PAGE6 EZE EDIT
FAST SKIP 2022

STRINGTHING.BIN
CONTENTS
SIGNON
EXEC HELLO
HELLO
BUILD HELLO
NECCL
MXCL
CROSS REF
CRUNCH
APPLESOFT LOADER
ERIC ASSM
8K
CATALOG+6
DISK DOCUMENTER
LIST DUPLICATES
MASTER+6
MASTER+6D
SEARCH+6
STACK SNIFFER
WPRO BUSTER
AX-REF/SYS24576
EXTRA INSTR.
EXTRAMON9B(4)
EXTRAMON9G(4)
EXTRAMON9G(2)
EXTRAMON9B(2)
USEIZE.WP
LITTLEMON.INS.WP
CHANGE/LADR.BAS
SYMBOLIC.DISASS
INSIDE.DOS1&2
MICROMONB@$1
MICROMONB.INS+
BAID4.EXE9@4
BAID4.INS
CRUNCH2
CRUNCH4.0
TINY MUSIC
DEC->FLOATING PT
QUADRA-PET
DEFINE PTR. CHAR
JEM.INS
JEM SYS4111%
DISK DOCTOR
LC LISTER INST

U4 - UTILITIES #4

UNIVERSAL WEDGE
COPY ALL
VIA SCANNER
CASS.LABELER
VARIABLE RANDOM
KUSTOM KEY
FILE MOVER
TAPE LABEL
BAID INST
BAID480CB
BAID480AB
BAID440CB
BAID440AB
BAID240CB
BAID240AB
COPY/ALL
DELETE ALL
EP4 SYS32000/1
EP4XSYS32000/1
CBM 4032 V2
DIR LOADER 2.0
DIR LOADER 4.0
DIR CATALOG
DIR UPDATE
DIR PRINT
DIR MERGE
GRAPHICS
GRAPH SUBS

U5 - UTILITIES 5

UNIVERSAL WEDGE
COPY ALL
COPY/ALL
BASIC-AID.INST1
BASIC-AID.INST2
BAID4F40C
BAID4F40A
BAID440C
BAID440A
BAID240C
BAID240A
BAID480C
BAID480A
EP4 SYS32000/1
EP4XSYS32000/1
DELETE ALL
EXTRA INSTR.
EXTRAMON9B(4)
EXTRAMON9G(4)
EXTRAMON9G(2)
EXTRAMON9B(2)
CBM 4032 V2
DIR LOADER 2.0
DIR LOADER 4.0
DIR CATALOG
DIR UPDATE
DIR PRINT
DIR MERGE
POWER MOD
TAPE-DISK/REL
MERGE 4.0 INST
MERGE 4.0
SET/RESET.REL
SET/RESET DEMO
WORD PRO TH2058
READ WP2040
HI MEMORY106
INSTRUCTIONS#7
WORD P DEMO
WP TAPE2058
READ WP TAPE2040
WORD COUNT 9.0
WORD COUNT BASIC
IEEE VIEW
MICROMON@$1000
MICROMON@$7000
MICROMON80@$1000
MICROMON80@$7000
BACKUP 2031 1.0

U6 - UTILITIES 6

UNIVERSAL WEDGE
MICROMON.INS1
MICROMON.INS2
MICROMON.ADD
MICROMONC@$1000
MICROMONC@$7000
MICROMON++@$5B00
MEMSEE.DEMO
WORD PRO PRINTER
CHANGE DISK
DISK CHECK
DISK VIEW
DISK MOD
DATABASE2.0/4.0
UNDLOAD EASIER
DLOAD EASIER
WP LIST/SCREEN
SUPERCAT@32000

SHL-MTZ LIB V2
SHL-MTZ LIB 2.0
LIBRARY INST
SUPER1 V1.1
SHOW TOKENS
CHEEP PRINT
CHAR.SET.DEFN
STUFFIT
UNCOMPACTOR
EASY EDIT/MX-80
EASY.EDIT.MX-82
MX-82.CHAR.DEFN
MX82.PET.PRNT
VICLOAD4.REL
VICLOAD2.REL
SET-UP
MARCH6
GRAPHIC EDITOR
PRINT EDIT INFO
AUTO DISK BOOT
CBM 4032 V2.1
DATA WRITER
LOCKDISK
FLOADER
MLOADER
INS WATAID 4
F32 WATAID 4
F16 WATAID 4
S32 WATAID 4
S16 WATAID 4
8032 WATAID 4
POWAID4.RUN
POWAID2.RUN

U7 - UTILITIES 7

COPY-ALL
PROCEP.EDITOR
PROCEP.EXAMPLE
PROCEP.INS1.WP
PROCEP.INS2.WP
RELREAD
SOUP
KEYWORD
BASIC-AID.INST1
BASIC-AID.INST2
CBM EDITOR.INST
E-ROM.MON.I1
E-ROM.MON.I2
POWER-AID.INST
TEDDY-APRIL82
TEDDY.INSTR
DAISY-APRIL82
DAISY.INSTR
5TH SCOTTE.INST
5TH SCOTTE
ML STOPKEY
TAPE PHONO-PHILE
DISK PHONO-PHILE
PHONE NUMBERS
MASTER TAPE LIBR
DATABANK.31!
SUPERSPEED SORT
FIXFILE
POINTER SORT
FILE
STRING THING
SUPERMON64.V1
STRING THING 64
NOS TRANSLATOR3

TPUG Bet Best of PET/CBM

X1 - TPUG BEST UTILITIES 1

UNIVERSAL WEDGE
COPY ALL
COPY/ALL
BAID4F40C
BAID4F40A
BAID440C
BAID440A
BAID240C
BAID240A
BAID480C
BAID480A
BASIC-AID.INST1
BASIC-AID.INST2
AID4
AID2
CHANGE DISK
DISK MOD
DISK CHECK
DISK VIEW
DISK NAME (R)
DISK ID CORRCTOR
DISK PEEK
BAM MAP
APP/REN24.REL
CASS.LABELER
DISK FILE RECVRY
KEYPRINT2@826
KEYPRINT4@826
TAPE.TO.DISK
X-REF 24576.ML
WORD COUNT 9
DISK MASTER V2
DELETE ALL
EP4 SYS32000/1
EP4XSYS32000/1
VICLOAD4.REL
VICLOAD2.REL
VIC WEDGE
BACKUP 2031 1.0
SET-UP
AUTO DISK BOOT
CBM 4032 V2.1
WORD PRO PRINTER
WP LIST/SCREEN
DATA WRITER
LOCKDISK
LOWCASE LIST V3
UN-NEW/SYS826
COPYCAT!SYS934
COPYCAT'SYS934
COMPACTOR
UNCOMPACTOR
CROSS-REF
DISK APPEND-M.B.
DUMP2/SYS826
DUMP4/SYS826
STRINGTHING.BIN
WPRO BUSTER
UTILITY 2.0
UTILITY 4.0
DEMO

X2 - TPUG BEST-UTILITIES 2

SUPERMON4.REL
SUPERMON2.REL
SUPERMON1.REL
SUPERMON1/2/4INS
EXTRAMON4@$7000
EXTRAMON4@$1000
EXTRAMON2@$7000
EXTRAMON2@$1000
EXTRAMON.INS9.3
MICROMONC@$1000
MICROMONC@$7000
MICROMON++@$5B00
MICROMON.INS1
MICROMON.INS2
MICROMON.ADD
TINYMON1 FOR VIC
TINYMON INST
SUPER VICMON2
8K
ERIC ASSM
UNASSEMBLER.MAE
UNASSEMBLER.CBM3
DATA WRITER
WP LIST/SCREEN

X3 - TPUG BEST GAMES 1

-- BASIC 2.0 --
INVADERS 2.0
FAST INVADRS 2.0
ACROBAT 2.0
CAR RACE 2.0
MISSION IMP 2.0
NIGHT DRIVER 2.0
BACKGAMMON 2.0
OTHELLO
BREAKOUT
ASTEROIDS
PINBALL
PETMAN 5
JOYSTICK INV 2.0
BLOCKADE
BASEBALL 7.3
OSC LUNAR
SUPER STARTREK
STAR WARS
MASTERMIND
REVERSE-PUNTER
ARROW
BLACK BOX!
BLACK JACK
BOMBER
ROBOT CHASE!
SNAKE 2
YAHTZEE
MOVMAZE2

X4 - TPUG BEST GAMES 2

-- BASIC 4.0 --
INVADERS 4.0
FAST INVADRS 4.0
ACROBAT 4.0
CAR RACE 4.0
MISSION IMP 4.0
NIGHT DRIVER 4.0
BACKGAMMON 4.0
OTHELLO
BREAKOUT
ASTEROIDS
PINBALL
PETMAN 5
JOYSTICK INV 4.0
BLOCKADE
BASEBALL 7.3
OSC LUNAR
SUPER STARTREK
STAR WARS
MASTERMIND
REVERSE-PUNTER
ARROW
BLACK BOX!
BLACK JACK
BOMBER
ROBOT CHASE!
SNAKE 2
YAHTZEE
MOVMAZE2

X5 - TPUG BEST GAMES 3

ADVBOOT
ADVF 0
ADVF 1
ADVF 2
ADVF 3
ADVF 4
ADVF 5
ADVF 6
ADVF 7
ADVF 8
ADVF 9
ADVF 10
ADVF 11
ADVF 12
ADVF 13
ADVF 20
ADVF 21
ADVF 22
ADVF 23
ADVF 24
ADVF 25
ADVF 26
ADVF 27
ADVF 28
ADVF 29
ADVF 31
ADV9 0
ADV9 1
ADV9 2
ADV9 3
ADV9 4
ADV9 5
ADV9 6
ADV9 7
ADV9 8
ADV9 9
ADV9 10
ADV9 11
ADV9 12
ADV9 13
ADV9 20
ADV9 21
ADV9 22
ADV9 23
ADV9 24
ADV9 25
ADV9 26
ADV9 27
ADV9 28
ADV9 29
ADV9 31
ADVKEYS
ADVSHOR
ADVSH8
ADVMAP
ADVITM
ADVENTURE
ADVENTURE80
QUEST 3.0
OHARE'S #3

X6 - TPUG BEST-MISC 1

EASY EDIT/TAPE
EASY EDIT/DISK
EASY EDIT/C
EASY EDIT/MX-80
EASY.EDIT.MX-82
PAGE1 EZE EDIT
PAGE2 EZE EDIT
PAGE3 EZE EDIT
PAGE4 EZE EDIT
PAGE5 EZE EDIT
PAGE6 EZE EDIT
WORD PRO TH2058
READ WP2040
HI MEMORY106
INSTRUCTIONS#7
WORD P DEMO
WP TAPE2058
READ WP TAPE2040
TAX 81 ONT V1.0
GRAPH.PRINTER
GRAPHIX INSTR
GRAPHICS-LOADER
GRAPHICS-DEMO
MAIL LIST 4040
4040 UPDATE
4040 FORMAT
4040 PRINT
4040 MENU
MAIL LIST 8050
8050 FORMAT
8050 UPDATE
8050 MENU
8050 PRINT
V40.2.B
V40.4.B
V80.4.B
E.G SET-UP 80COL
WP3/4 INST1
WP3/4 INST2

X7 - TPUG BEST GAMES 4

-BASIC 4.0 F40-
INVADERS 4.0
FAST INVADRS 4.0
ACROBAT F40
CAR RACE F40
MISSION IMP F40
NIGHT DRIVER F40
BACKGAMMON F40
OTHELLO
BREAKOUT
ASTEROIDS
PINBALL
PETMAN 5
JOYSTICK INV 4.0
BLOCKADE
BASEBALL 7.3
OSC LUNAR
SUPER STARTREK
STAR WARS
MASTERMIND
REVERSE-PUNTER
ARROW
BLACK BOX!
BLACK JACK
BOMBER
ROBOT CHASE!
SNAKE 2
YAHTZEE
MOVMAZE2

Miscellaneous

Z1 - TPUG MISC PROG 1

UNIVERSAL WEDGE
KALEIDOSCOPE
SCRAMBLE-BTTRFLD
PATTERN MAKER
MYSTERY-BUTTRFLD
PEOPLE
MAZE
PET CHARACTERS
NIGHTMARE
SCAN
PHUZZY & WHUZZY
DISPLAY LETTERS
DRAGON
LOVE
HALLOWE'EN
ABACUS
CANARY
FORMAT
CALENDAR-LOWNDES
HALLOWE'EN2
CARTOON!
HEART DRIVER
MELODY CHANGES
BAR.GRAPH.ALT
CALENDAR.ALT
SNOOPY.DANCING
DARTH.VADER.PIC
ETCH-A-SKETCH
SCRAMBLED.MSG
JULIAN CALENDER
GRAPH.PRINTER
PATTERNS
CASCADE
BIG LETTER ADS
GRAPHIX INSTR
GRAPHICS-LOADER
GRAPHICS-DEMO
ONELINE SQUIGGLE
MEMORY CALENDAR2
CANNATA
MEMO CALENDAR
CANBAL&MISSY.SOL
MEMORY MONITOR
TIMES SQUARE
BASIC.HUMOROUS

Z2 - TPUG MISC 2

UNIVERSAL WEDGE
GRAPHICS
GRAPH SUBS
E-ROM DEMO
TWENTY QUESTIONS
WOTAG
RECIPE
SAUCE
INSULTER
GRAPHIX SORT
PEARL HARBOR
CLOCK
CLOCK 8032
PHONE SOUNDS
PI DEMO 8032
SCROLL DEMO
FINE-PLOT DEMO
BANNER/R
NEW LOTTARIO
ESP
WORLD CLOCK
SCUBA ADVENTRUE
MEMOCAL 2.2

VIC-20

V1 - VIC GAMES 1

ROCKET COMMAND
INVADERS
ARTILLERY
DAM BUSTERS
DEPTH CHARGE
MASTERMIND
OTHELLO
CHECKERS
RACE
ARROW
GRAND PRIX
PINBALL
STAR CHASER
SAMU
TRAP
BLACKJACK
BUSH TRAIL
UFO
KILLER COMET
LUNAR LANDER
BREAKOUT
RUGBY
MUKADE
DEFLECTION
VIC SNAKE
DRM BREAKOUT
STAR WARS
DRAGON MAZE
FOREST DRIVER
MAANLANDER
TANK-UFO
CAR RACE
ARROW 2
RIJTEST
BARRICADE
MEMORY
SCHUIFSPEL
REACTION TEST
LONG DIVISION
BANDIT 1
FIRING TANK
PING PONG
BIORHYTHM
PISTOLEN PAULTJE
VIC FREIGHTER
VICBREAK/PADL
MOONLANDER

V2 - VIC UTILITIES 1

TINYMON1 FOR VIC
TINYMON INST
PROGRAMBLE CHAR
VIC CHAR GENR
VIC CHAR DEMO
BUTTERFIELD DEMO
HISTOGRAM
VICLOAD4.REL
VICLOAD2.REL
BASICODE READ
BASICODE SEND
ADDRESSES
VIC DIS1
VIC DIS2
VIC DIS3
DISASM
DIR
VIEW BAM
DISPLAY T&S
CHECK DISK
PERFORMANCE TEST
SEQUENTIAL FILE
RANDOM FILE
VIC WEDGE
SUPER VICMON2

V3 - VIC DEMOS 1

MERRY VIC-MAS
VIC SOUND DEMO
FRERE JACQUES
GRAPHICS+SOUND
DEMO
SOUNDS
VIC KEY
GRAPHDEM0
GRAPHDEM1
GRAPHDEM3
VIC-DEMO
GENERAL DEMO
VIC-KALEIDOSCOPE
LIGHT SHOW
KALEIDOSCOPE
COLOUR BARS
VIC SIL. NITE
HIRES PLOT
CIRKELDEMO
MIAUW
BUMBLEBEE
ROBOTS
MOSAIC
KALEIDOSCOOP
SNOOPY HIRES
HIRES DEMO 1
SOUND DEMO
KEYBOARD DEMO
MORSE
BIRDS DEMO
PIANO
DRAGON
GRAPHIC DEMO 1
HANDIC DEMO3
COMMODORE SYMBOL
LOG & LOGO
HI-RES CLOCK
CALCULART
VIC CLOCK
VIC LISSAJOUS
CANADIAN FLAG
KINETIC ART
TRIG PLOT
BAR GRAPH

V4 - VIC GAMES 2

BRKOUT.PADL
MINIATURE GOLF
TANK VS UFO JOY
SPACEWAR 1
SPACEWAR 2
TANK VS UFO KEY
SHOOTER JOY
VIC CHASE JOY
VIC CHASE KEY
BREAKOUT KEY
STEAL MONEY
PING-PONG
SUPEREVERSE VIC
VIC 3 OF KIND
WALL DESTROY VIC
CHUCKALUCK VIC
LETTERSQUARES
VIC SQUIGGLE
SLO VICMAN KEYB
MASTERMIND
CRAZY BALLOON
ALIEN WASTER
ASTEROIDS
OUTPOST

V5 - VIC UTIL 2

TERMINAL.SERIAL
TERM.SERIAL
VIC KEYSORT
VIC SORT.DEMO1
VIC SORT.DEMO2
VICWORD
VIC CONTROL KYBD
VIC TRIANGULATOR
JOYSTICK TEST
VIC AID4.REL
VIC MAIL
VIC TAPE INDEX
BUDGET
SEPT 30 RANDOM
WORDPRO 2
VICTERM
CAT
WIZZACALC
DISKMEM B-RR1
DISKMEM INSTR

V6 - VIC DEMO 2

VIC JASPER
VIC COLOR ROOS
VIC POOKY
VIC GARFIELD
DEMONSTRATIE.HI
VIC TRSHY PIC
VIC DESIGN
VIC DESIGN 2
VIC DESIGN 3
VIC DESIGN 4
VIC VIC
DIGICLOCK
HIRESFOURIER
USA SONG

V7 - VIC DEC/82

GUESSING GAME
WORD HUNT 8K
VIC TAPE INDEX

VIC KEYSORT
VIC SORT DEMO1
VIC SORT DEMO2
VIC JASPER 5K
VIC COLOR ROOS 5
VIC POOKY 5K
VIC GARFIELD 5K
DEMONSTRATIE.HI
VIC TRSHY PIC
VIC DESIGN
VIC DESIGN 2
VIC DESIGN 3
VIC DESIGN 4
VIC VIC
DIGICLOCK
HIRESFOURIER
USA SONG
OUTPOST
OUTPOST.L

V8 - VIC FEB/83

VIC DT
ZAPEM
MAZE-CHASE
GUESS THE NUMBER
HIRES INSTR.
HIRES HARDCOPY1
HIRES HARDCOPY2
HIRES H/C DEMO
CUSTOM CARDS
V JIM IN COLOUR
VIC LOTTARIO
TURTLE BOOT DISK
TURTLE BOOT TAPE
PLOT ML
TURTLE PROTO
TL]PLOTT
TL]STAR
VIC FUNCTION KEY
V-TERM 5K INST
V-TERM 5K

New Disk Releases

VTS - V.TPUG MAR 83

VIC SLOTS
V TAX 82 ON V1.0
V TAX PART 2
V TAX PART 3
V 8K TAX 82
V RHINO
V 8K-LOAD
V 8K VICAB1
V 8K VICAB3
V 8K VICAB4
V 8K VICAB5
V BOMBER PILOT
V PAINT BY PEN
V CHINESE C'BOOK
V THUNDERBIRD
V ARITH CHALLENG
V NOTONE
V DRUM MANIA
V VICAB2
V BUSINESS DEMO
----LIST ME----

TR - FEB/83

GERMAN(64)BOMBER
LONE(64)RANGER
DOCTOR 8032
DOCTOR.INS
REVIVE
BUDGET
VIC.BUDGET
BOWLING
BALANCE ADD/SUB
CUBE
-D. CAMPBELL C64
PGMABLE CHARSET
CHAR DISPLAY C64
DRAW POKER C64
REVERSE C64
ENTERPRISE C64
WEAVE
CHARACTER GEN 64
PETALS ARND ROSE
-C64 RE-RELEASE-
DOMINOES
M.B.INSTRUCTIONS
MILLE BOURNE
SPADE.INSTRUCTS
SPADES
LABYRINTH
TOMBS C64
COPY-ALL
TAX 82 ONT V1.0
INVOICER
BAS-PATCH.GEN
IRQ-PATCH.GEN
CONSTRICTOR.4
EXPANDER.4
COLOUR.PICT
DIANE.C64
DIANE.CDATA
PETLOAD 64 PRGM
EASY DLOADER

D4 - C 64 PROGRAMS

STRING THING 64
COPY-ALL64
BIT MAP PLOT 64
BUGS 64
SPRITE MAKER 64
PI HUNT 64
PI HUNT 64.2
DIANE.C64
DIANE.CDATA
VISIBLE C64
FACTORS.VIC64
GERMAN(64)BOMBER
LONE(64)RANGER
CHAR DISPLAY C64
DRAW POKER C64
REVERSE C64
ENTERPRISE C64
DOMINOES
M.B.INSTRUCTIONS
MILLE BOURNE
SPADE.INSTRUCTS
SPADES
LABYRINTH
TOMBS C64
TAX 82 ONT V1.0
INVOICER
BAS-PATCH.GEN
IRQ-PATCH.GEN
CONSTRICTOR.4
EXPANDER.4
COLOUR.PICT

SUPERPET

JAN/83.S

ST1 - SUP PET

BYTEAPR81PAL94
SCANS
ETIMAR79PAGE24
HELP
TUTORIAL
PUBLICATIONS

BYTEOCT80PAL92
BYTEJUL81PA331
APL.INDEX
APL.EXAMPLESL
APL.EXAMPLES2
APL.EXAMPLES3
APL.FILES
APL.DOS
APL.MASTERMIND
WSCREATE
WSCONV.APLOLD
DFCONV.APLOLD

SEP27
PRINT
PERT
MATRIX
APL.PLOT

FEB/83.S

ST2 - SUP PET

PLOT-8300P.WP
PLOT-8300P

CHECKSUMS
CHECKSUM-RESULTS
SMOOTH.DAT
PRINT.FILE
RESAMPLE.FTN
PERIODIC.FTN
REGRESSION.FTN
PERIODOGRAM.FTN
SPECTRUM.FTN
INTEGRATION.FTN
FILES-WATERLOO
MNEMONICS
DIRECTIVES

DEVELOPMENT
DISAS.ASM
DISAS.CMD
CRT.ASM
CRT.B09
DISAS.B09
CRT.LIST
DISAS.LST
DISAP.MAP
DISAS.MOD
DISAS.EXP
SCREEN.DUMP
GET-KEYBOARD

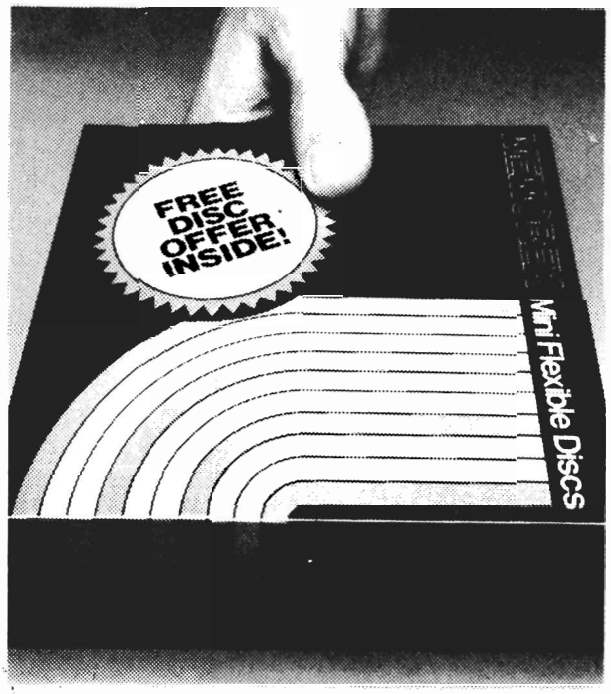
From left to right: Joy Bennett (Entering memberships); Chris Bennett (Business manager); Doris Bradley (Answering inquiries); Bruce Beach (TORPET Editor); Tracy Bennett (Mailing memberships).

The TPUG office is open five days a week for members to drop in programs for the club library or articles for the TORPET. The office is a very busy place and we all make an effort not to distract the employees from serving the membership as a whole.

Some of the services performed in the office include enrolling new members, sending out club diskettes, answering inquiries, and renewing old members.

It is anticipated that the rapid expansion of the club will mean that it will require even larger quarters and more employees in the near future.

More members may mean that the club will be able to hire a full time library co-ordinator and possibly a systems consultant to answer members technical questions.



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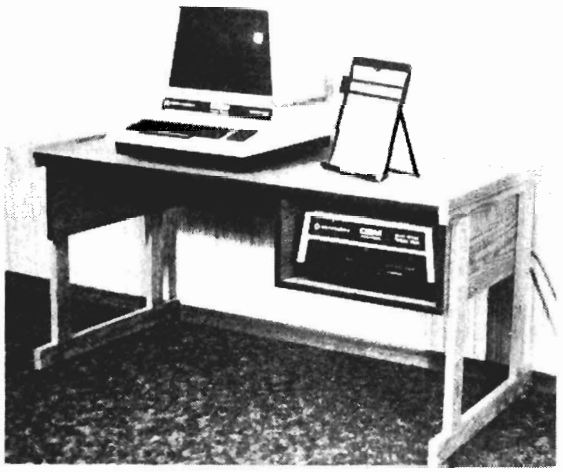

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CLUB ACTIVITIES

TPUG Central Meeting Feb. 1983

by I. A. Wright

As usual, the car was running on fumes, my hasty supper producing ominous rumblings, and the parking lot full. TPUG's Central meeting at Leaside High School for February was starting. Lo and behold this time... only a few minutes late! The school auditorium had been over half full by 7:15 p.m. A year ago you could arrive at 7:30 and be in the first few rows.

The meeting was opened by Mike Bonnycastle with the statement that the VIC group was meeting in another part of the building. This was another indication of the rapid growth of the club. We were presented with some information about the upcoming PET Conference to be held on May 14 & 15 at the Casa Loma Campus of George Brown College.

There was a call for helpers who would introduce and thank our guests, for people to co-ordinate some activities, and many other jobs. Some of the positions are paid; albeit at a low rate. Gord Campbell, the conference chairperson, made this eloquent pitch and distributed sign-in sheets to interested participants.

Special mention was made of the all-day Machine-Language tutorial by our own Jim Butterfield to be held on the Saturday (May 14th). Any person interested is to register with Gord Campbell at 492-9518 before February 20th. As an added attraction this year, there will be displays and also SALES by local dealers on location. A "Sell and Swap Corner" will be available for members who wish to use this conference to aquire or sell computer-related materials. There will be a small charge for the use of the facilities.

A demonstration of telecomputing will be given at the York Library at 1745 Eglinton Ave. West on Wednesday February 23rd at 7:30 p.m. There will be on-line facilities and among the presenters will be Steve Punter.

The club now has its own business office on Avenue Rd. just south of the 401. The telephone number is 416-782-9252.

The TV-Ontario series on computers is to start on the air at 9:00 p.m. on Wednesday February 16th. Sample copies of the handouts and tutorials were available for those that were interested to see what they had missed. Jim Butterfield (the star?) stated that the show was originally designed for about 6,000 registered viewers who will receive the program package. The registration is now closed since about 10,000 people have registered! Plans are underway to re-release the series at a later date.

Jim presented his latest version of the Ontario Tax Program. Although it will run on most machines, Jim suggested that time pressures made a version for the VIC-20 an impossibility. Any interested programmer is invited to create a VIC version of this very useful program. If you have no interest in using the program to calculate or print out your tax form, you should still look at it for the routines for formatting and inputting.

The remainder of the pre-coffee show was Jim Butterfield presenting an illustrated lecture on relative files. The most important feature is that these files will work on ALL MACHINES. As a "relative" novice I present the following material based on scribbled notes:

100 INPUT #15, E,E$,E1,E2 These lines-receive data

110 PRINT E;E$,E1;E2 from the error channel.

OPEN 15,8,15:GOTO 100 This line opens the error channel.

OPEN 1,8,2,"0:BUTTER,L,"+CHR$(25)

This line opens a file#1 and a secondary address #2 to the disk. It was a good job that the error channel was open because after explaining this line the message "DEVICE NOT PRESENT" appeared on the screen. A quick flick of a switch powered up the disk-drive and we were off! The variable "L" refers to the length of the individual records that are to be written. At this point the record length has been set to 25 for all records in this file.

```
PRINT#15,"P"+CHR$(96+2)+CHR$(15)+
          CHR$(0)+CHR$(1)
```

This line lets us set up a block of records (254 characters total) and seek out record #15. In doing this, the drive is also setting up 20 other record areas that contain no information as yet. The CHR$(96+2) sends address #2. For an explanation see pg. 378 in **Programming The PET/CBM** by R. West.

```
PRINT#1,"JOE"+CHR$(13)+"15";
```

This line writes our record #15 as JOE 15 and must be written at one shot. At this point Jim fielded a number of questions from an obviously informed audience. It was reiterated that records should not be written in parts for safety.

```
PRINT#15,"P"+CHR$(98)+CHR$(10)+
          CHR$(0)+CHR$(1)
```

```
PRINT#1,"ALOUISHUS"+CHR$(13)+"132";
```

This pair of lines will write record number 11 with ALOUISHUS 132. The effect of sending a record too large for the pre-arranged space is that an error #51 occurs, and the record is trimmed to the set length. The example we were shown resulted in a record that said "THIS RECORD IS RIDICULOUS"...!

```
CLOSE 1:NEW
```

Knowing that the break to the cafeteria was imminent, Jim then wrote a neat program to read and write a relative file. Note that line 100 does not include the L since the file was created earlier. New files will need to have the line opening file #1 "BUTTER" as above. Line 300 contains the statement CHR$(R AND 255). You can get the low byte for any number less than 32768 ($8000) by (number and 255) =low byte.

```
90  OPEN 15,8,15
100 OPEN 1,8,7"BUTTER"
200 INPUT "RECORD NUMBER";R
210 IF R=0 THEN GOTO 500
220 INPUT "READ OR WRITE";X$
230 IF X$=R GOTO 300
240 IF X$=W GOTO 400
250 GOTO 200
300 PRINT#15,"P"+CHR$(103)+
                 CHR$(R AND 255)+
                 CHR$(R/256)+CHR$(1)
310 INPUT #15,E,E$,E1,E2
320 IF E<>0 THEN PRINT E$:GOTO200
330 INPUT #1,N$
340 PRINT N$
350 IF ST=0 THEN GOTO 330
360 GOTO 200
400 PRINT#1, "JOE"+CHR$(13)+"25";
410 GOTO 200
500 CLOSE 1
```

The notes stop here because there was a stampede to the coffee, drinks and donuts. Following this short recess, smaller groups met in various classrooms. The C-64 group were shown Paperclip for that model by Jim Law. Bruce Beach led a group interested in the TORPET, there was a preview of the first half of the TV-Ontario program, and others that escaped my notes.

The club's monthly disk was ready by the end of the break and this is a real achievement considering the line-up of people at the evening's beginning.

On the drive home it occurred to me that I had enjoyed myself, I had learned a great deal, and took home material for further examination. All this for a nominal fee!

TPUG West Meeting

Feb. 23 At Sheridan College

by John Easton

Say, these meetings are getting more and more crowded - luckily the folks at Sheridan can't fit us into any more classrooms or we'd feel the need to split up into interest groups as the Central Meeting does. Might be a great system for efficiency, but something is always lost in execution. At any rate, bear with us friends, and if you've got a better idea, for goodness sake let us know, remember, it's for YOUR benefit that we run these meetings, and all we can do is try different formats, presentations, 'n stuff to try to keep SOME level of interest in meeting content for ALL of you.

NEW STUFF -

Ted Bangay from Sheridan announced that Sheridan is proposing to set up a course to run either 10 Thursday nights (95.00), or 3 full Saturdays ($125.00) on HOW TO BUILD YOUR OWN COMPUTER. Anyone interested should contact the Training & Leadership Division at Sheridan's Brampton Campus.

A gentleman (who else could ignore all that talking) from York Public Library announced that his library is now loaning out diskettes of public domain PET software (Hint to our librarian: couldn't we, by donation or otherwise, encourage other public libraries across Metro to loan out PET materials? What a boost for our favourite machine, not to mention a convenience for club members.) York Public Library is also now offering computer courses taught by Mississauga's wunderkind and WordPro king, Steve Punter. Imagine how the early Romans must have felt attending Bible classes taught by Peter the Apostle.

Photo: Graham Bailey

There are now five group meetings in the Toronto Area each month. The Central meeting is the largest with approximately 700 attending. This is the West Side meeting.

Autodial on the PET

by David Williams

Toronto

Several of the Bulletin Board Systems (BBS's) in the Toronto area have recently reached a state of extreme congestion. During the evenings, they are busy more than ninety percent of the time. This means that anyone who dials a BBS phone number has less than a one-in-ten chance of being able to sign on to the system. Nine times out of ten, the number will merely produce a busy signal.

Having become utterly bored with fruitlessly dialing BBS numbers, I decided that it was time to take another approach. We always say that computers can contribute to our lives by doing the things which bore and frustrate us, leaving us free for more interesting things, yet I was wearing my dialing finger to the bone while my PET was doing absolutely nothing. Obviously this was a situation in which the machine should take over the task of dialing the numbers, and should alert me only when it successfully made contact with a BBS. In the meantime I could do something more productive,such as watching TV.

Before telling you how I succeeded in making my PET do this, I would like to warn you about the unthinking use of all automatic dialing systems, not only this one, but also those which are available with certain types of modem, such as the Modem--8O and the Hayes SmartModem. It happens quite often that would-be BBS users dial phone numbers which are actually not being used for bulletin boards at the time.

BBS's are in a constant state of flux. Systems come and go almost every week, with the result that many users find themselves with outdated phone numbers. In one infamous example, the TORPET published a number for a BBS which was outdated even before the magazine was distributed! In other cases, BBS's operate on a part-time basis, sharing a phone number which is used for other things at different times, yet the BBS phone number is sometimes published without referring to this fact. Using an autodialler on a phone mumber which is actually not being used for a BBS, subjects anyone at the other end to a dreadful situation. His phone is the target of a barrage of calls, yet there is no way in which he can answer by voice and tell the caller the true situation. So, Please, never use an autodialler on a phone number unless you are absolutely certain that it is being used for a BBS at the time you are calling. If you are not thoroughly familiar with the system and its operating hours, for example if you have just read of its phone number in a magazine or a BBS bulletin, Don't autodial it. Call the number "by hand" first. If it is being used for a BBS, well and good. You can explore the system, making sure of its operating hours, and autodial it in future.

And if the number turns out not being used for a BBS, calling it by hand will allow anyone at the other end to explain the situation to you. He may, for example, be able to tell you the system's new number or its operating hours.

OK. Speech over. Let's get back to the task of making the PET dial phone numbers and alert its users when a BBS is contacted. Obviously this requires both software for the computer and also some kind of hardware connection between the PET and the phone line. Equally obvious, the task (and therefore the hardware and software) can be separated into two distinct functions. The PET must be able to influence what happens on the phone line, simulating what happens when a phone is taken off the hook, dialed, and perhaps hung up. The computer must also be able to receive signals from the phone line, so that it can respond to the presence of a modem answer-tone by alerting the user, or to its absence by hanging up and trying again later.

Projects such as this, which involve both software and hardware, often require some kind of decision to be made as to how much will be done by the hardware, and how much will be left to the computer. For example, the detection of a modem answer-tone (a tone of 2225 plus-or-minus a few hertz)could be done by incorporating a sharply tuned resonant circuit into the hardware.

This would be followed by some kind of non-linear element which would produce a D.C. signal from the resonating frequency, and this could be used to feed a simple on-or-off D.C. voltage to the PET to indicate the presence or absence of the answer frequency. However, there is a digital method of measuring frequencies which can be carried out by the PET itself. In this, the machine simply counts the number of incoming sound waves which arrive in some fixed period of time. This gives a direct measure of frequency which requires very little hardware - only enough to convert the incoming sound waves into square waves of the correct voltage to be fed into the PET.

I decided to minimize the amount of hardware, and to do as much as possible with the computer itself, by writing appropriate software for it. (this is often called performing the task "in software", as opposed to "in hardware".) I also decided to use pulse-dialing for the phone, so that the system could be used anywhere. It might have been easier to dial by feeding simulated "touch-tone" signals into the phone line, and these would have been accepted by my local phone exchange. But not all exchanges can handle these signals, so I decided to simulate the simple pulses which are generated by old-fashioned rotary phone dials, and which are accepted by all exchanges.

A schematic of the hardware is shown in the diagram.

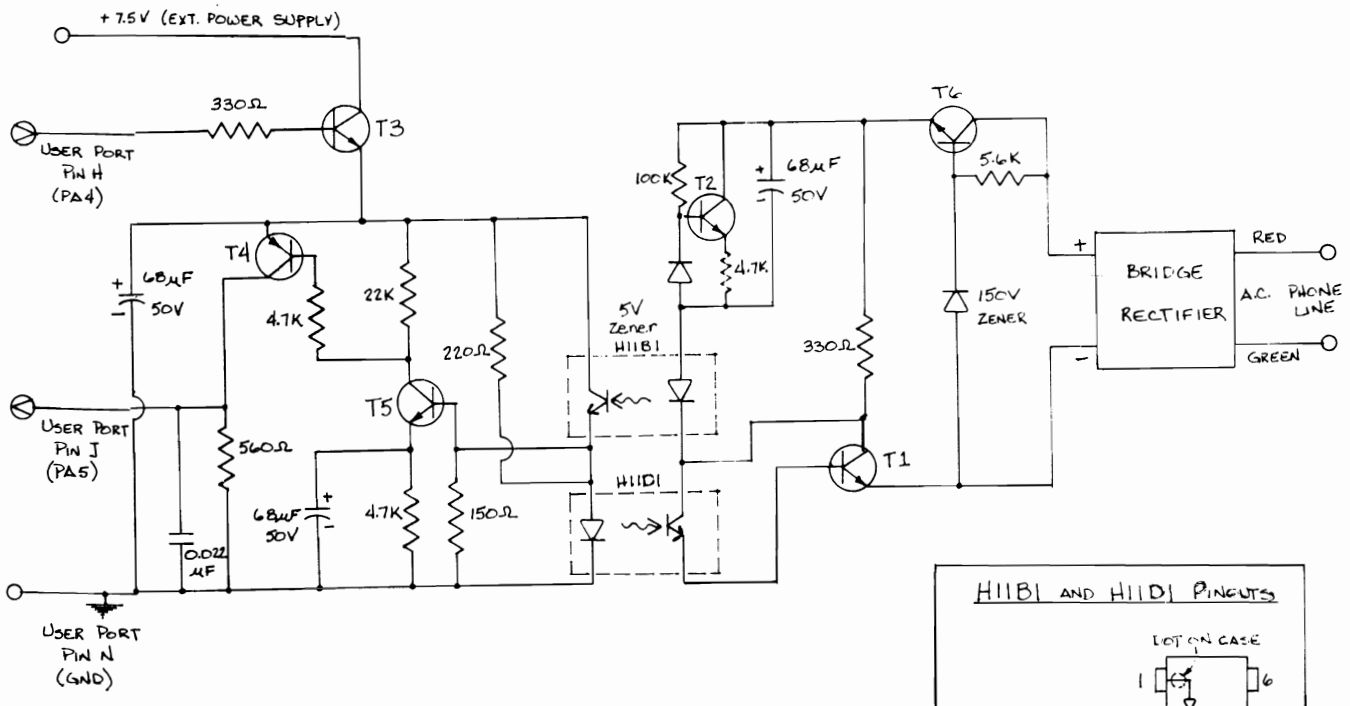
Electrically, it consists of two separate parts, one of which is connected to the PET's user port, and the other to the phone line. The two parts are linked by two opto-isolators. These are devices which contain light-emitting diodes and phototransistors, electrically isolated but arranged in an optically sealed container so that light from the diode can fall into the transistor. They allow the PET to communicate with the phone line while being totally isolated from the high voltages on it. The phone line is also protected, since its part of the circuit is entirely passive, with nothing which might feed damaging voltages into it.

The H11D1 isolator is a type with a high-voltage phototransistor. This, in a Darlington arrangement with the high-voltage transistor is used for switching the phone circuit on and off, both to simulate lifting and hanging up the phone, and also for pulse-dialing. This is controlled by a signal from the PET's user port Pin H (PA4), through an emitter-follower transistor, T3. The emitter of this transistor is essentially either at zero or plus five vclts, relative to ground, depending on the Pin H signal. This either does, or does not, drive current through the diode in the H11D1, closing or opening the phone circuit.

When the phone circuit is closed, a current of about one milliamp passes through the constant-current arrangement around transistor T2, biasing the diode in the other opto-isolator, which is a type H11B1. The A.C. component of the phone signal bypasses the constant current arrangement, by means of a capacitor, and thus passes through the opto-isolator. The transistors T4 and T5, which are arranged between plus five volts and ground, amplify this signal and clip it to a TTL- compatible square wave, which is fed into Pin J of the PET's user port.

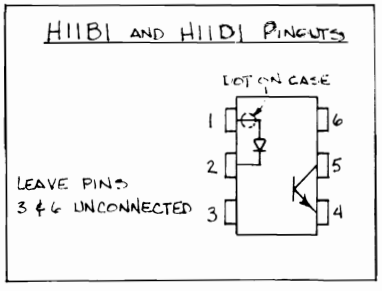
The software to run this arrangement is available for downloading from TPUG's BBS. Its phone number is (416) 223-2625, and the hours of operation are 7:30 p.m. to 9:00 a.m. (Eastern time) Monday to Saturday, and all day Sunday. It consists of a machine- language segment called "Autodial ML", which generates dial pulses, counts incoming sound waves, and performs various other functions, and a BASIC driver program called "Autodial Term". This is an expanded version of Steve Punter's public-domain terminal program "Terminal.R12". It contains all of Steve's routines, together with several other functions which have accreted to it over the past year or so, including the Autodial routine.

The signal with which this system alerts its user, when an answer-tone has been successfully acquired, is a combination of CB2 sound and flashing of the entire screen between normal and reverse field. If you have a large-screen PET, the sound will be audible, though not very loud, from the machine's own speaker .If you have a small-screen PET, or if you wish to make the



PET AUTODIAL INTERFACE

DAVID WILLIAMS 1983



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Have fun with this, but please, as I said earlier, use it considerately. Don't use it to dial numbers which are not being used for BBS's or other computer-communications systems.

NEW PRODUCTS

Enter the Z8000

by P.J. Rovero

Monterey, CA

Commodore computer users have had few central processor adjustments to make in the past. In the midst of changing ROMs, keyboards, and screens it sometimes seemed that the 6502 was the only part of their systems that did not change from model to model. The picture has changed somewhat with Commodore's introduction of the 6509 and 6510 processors but these are basically 'souped up' 6502s. A number of other companies are bringing add-on Z80, 6809, and 68000 processors to market. These machines normally do not replace the 6502 but can be selected as an alternative.

A major change is in the wings. Soon after Commodore and Zilog announced a technology transfer agreement, Commodore selected the Z8000 as the chip to be used in their future 16 bit processors. The Z8000 processors are very capable, but complex and very much different than the familiar 6502.

Table 1 lists a few of the Z8000 characteristics. The Z8001 is the more complex of the two and is capable of directly addressing 48 MEGAbytes of memory. The Z8002 addresses 'only' 448K. These memory figures may seem large but the prices are decreasing as fast as the need for more memory is increasing. The processors divide the total address space into 7 smaller address spaces. Separate instruction, data, and stack address spaces are provided in each of two modes. In the user mode certain opcodes are priveleged or unavailable for use. This can be used to provide operating system or proprietary software security. Both processors have 64 K bytes of input/output address space.

This form of memory segregation is new for microprocessors. Multiuser mini- and mainframe computers have developed these systems over the years in response to disruptions of operations caused by intentional or accidental interference between systems and user programs and data. Note also the huge (by current standards) stack address spaces. The large segregated stack is advantageous in implementing multi-user and concurrent operating systems, high level languages, and supporting extensive interrupt processing.

The instruction set of the Z8000 contains 414 variations of 110 instruction types. Ninety percent of the instructions use the 5 main addressing modes on 8, 16, or 32 bit data types. The processor has 16 16-bit registers which may be grouped into combinations of 8, 16, 32, or 64 bit registers. The numerous and flexible registers allow extensive data manipulation and calculation to be performed entirely within the register space with register addressing, which is usually the most time efficient addressing mode. Many Z8000 opcodes directly execute complex functions that would be coded as subroutines on most other processors. Instructions are available for string and block searches, comparisions, and transfers; division with both quotient and remainder result; and byte/code translation using tables. A group of opcodes has been reserved for the use of extended processing units. These are special purpose processors designed to relieve the CPU of such time intensive tasks as floating point arithmetic and local network communications.

The assembly language for the Z8000 is understandably complex. Learning it will be quite a challenge for those programmers now comfortable with the 6502. The new nmemonics, register structure, and address spaces will at first complicate the task. Eventually the capabilities of the Z8000 will allow the programmer more freedom and less restrictions. The users of application packages and high level languages will reap the benefits without such drastic adjustments.

NEW PRODUCTS

As far as the author can determine, Olivetti is currently the only manufacturer with a Z8000 computer and operating system 'on the street'. Whether Commodore uses the same or similar operating system remains to be seen. At this point there is no 'popular' Z8000 operating system.

Programmers who wish to learn about the Z8000 before Commodore's new generation of 16-bit computers are introduced should read the 'Z8000 CPU User's Reference Manual' (Prentice-Hall 1982).

Table 1.

Processor	Z8001	Z8002
Address range total	48M	448K
Address space each	8M	64K
Address space i/o	64K	64K
Instruction types	110	110
Total Instructions	414	414

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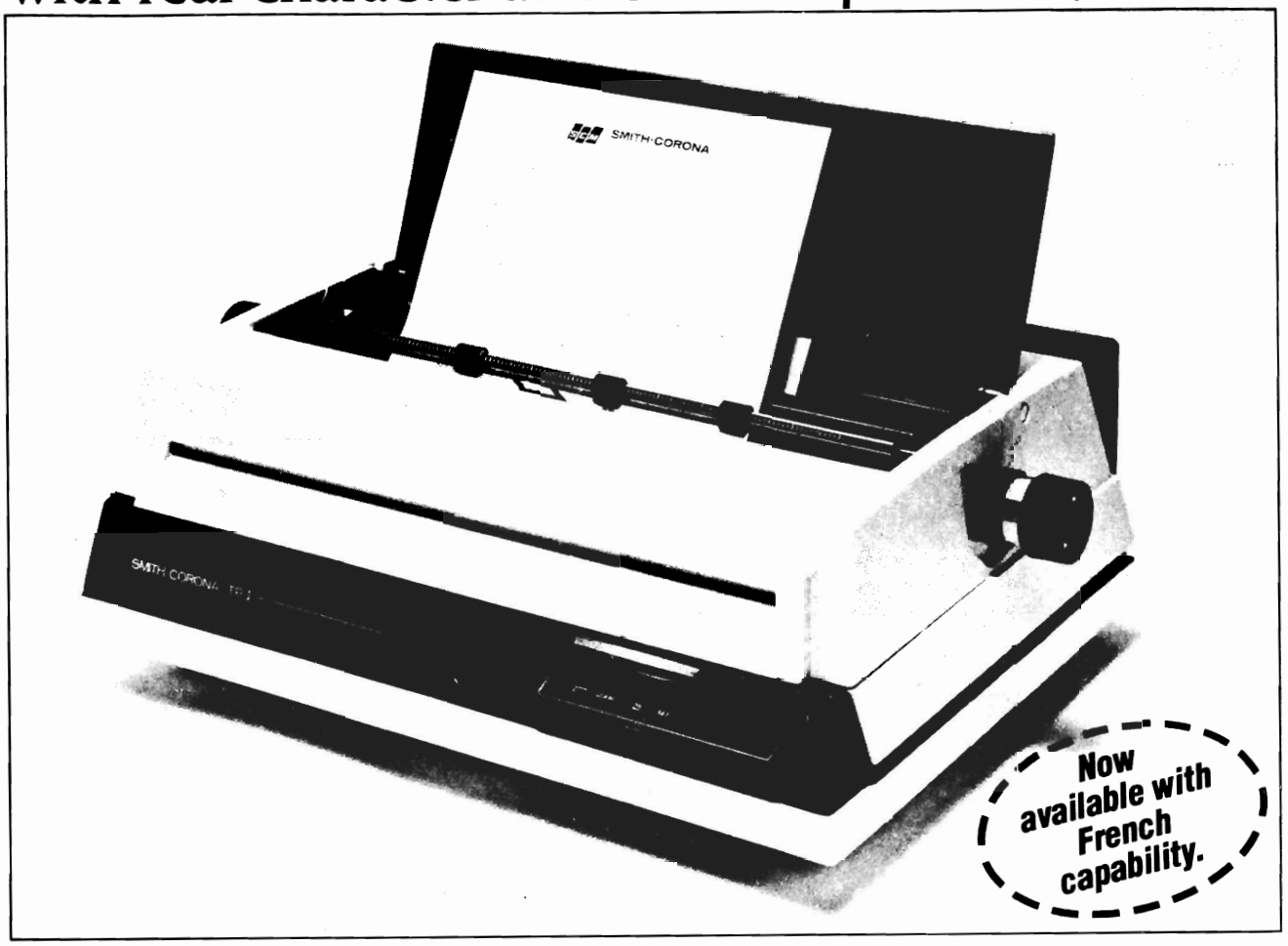

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T

Standard VIC 20

no additional memory needed

(CG008) Alien Panic $12.95
Race against time as your guy digs holes to trap aliens in 4 floor laddered, brick construction site. Requires joystick.

(CG096) Antimatter Splatter $24.95
This game is as good as its name. Another pure machine code game, this one is fast! The alien at the top of the screen is making a strong effort to rid the world of humankind by dropping anti-matter on them. The splatter cannon and you are our only hope as more and more antimatter falls. Joystick again is optional equipment.

(CG026) Collide $12.95
"Vic" controls one, you the other as cars go opposite directions on 4 lane track. Requires joystick.

(CG094) Exterminator $24.95
Recently scoring a rating of 10 out of a possible 10 this game was praised as "one of the best I've seen on any computer" by a prominent reviewer in a leading magazine. The idea is to shoot a centipede before it overuns you, the problem being every time you hit it, it divides into two separate shorter ones. Several other little creatures bounce around during this struggle. All of them lethal. 100% machine language makes the rapid fire action very smooth. A joystick is optional, but as always, recommended, (a trac ball is also very nice!).

(CG054) Krazy Kong $12.95
Three screens, a gorilla, barrels, and changing difficulty levels help to make this one of our most popular. Joystick optional.

(CG098) Racefun $19.95
Extensive use of multicolored character capabilities of the "Vic" make this one very appealing to the eye. Fast all machine language action, quick response to the stick or keyboard controlled throttle, combine with the challenge of driving in ever faster traffic to make it appeal to the rest of the body. Joystick controlling is an option.

(CG058) Rescue From Nufon $12.95
Must find 30 hostages in this 100 room, 5 story, alien infested, graphic adventure game. A continual big seller. Keyboard only (n. = north w = west etc.)

(CG068) The Catch . . . $12.95
Another all machine language game based on the principle that one person with one joystick guiding one catch/shield can catch everything that one alien can throw at one. The action comes slowly at first but by the fourth wave you'll be aware of . . . "The Catch" . . .

Expanded Memory Vic 20 Games

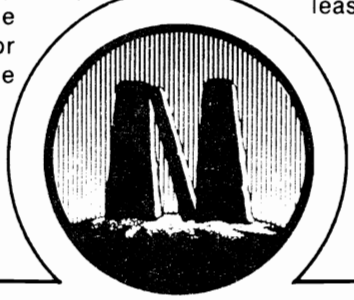
(CG090) Defender On Tri $19.95
Pilot a defender style ship on mission to save trapped scientists from a fiery fate (they are aboard an alien vessel deep in the gravity well of sol). Excellent graphics. Short scene setting story in the instructions. "Defender On Tri" requires at least 3K added memory.

(CG092) 3D Man $19.95
The maze from probably the most popular arcade game ever, with perspective altered from overhead to eye level. The dots, the monsters, the power dots, the side exits, the game is amazing. "3D Man" requires at least 3K added memory.

(CG088) Space Quest $19.95
Our first 8K memory expander game and its a beauty. The scene (a short story is included) is far in the future, a time when man's knowledge has reduced an entire galaxy into a mapped series of quadrants. This game has stratagy (you plot your own hyperspace jumps on Galaxy map), action (against a starry background you find yourself engaged in a dogfight, laser style), exploration (you must fly your ship deep into caverns to pick up necessary fuel). "Space Quest" requires at least 8K memory expansion and a joystick.

Commodore 64

(CG602) 3D-64, Man $19.95
This available on the expanded "Vic 20" game, has been completely rewritten for the 64 and uses sprites, sounds, and other features not available on the "Vic". This one requires a joystick.



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SCRIPT 64

A Review by Marc Swanson

Toronto

Script 64 is a word processing program for the Commodore 64, written by David Foster and released by Richvale Telecommunications. It is an excellent word processor that is easy to use and powerful enough for most needs.

What I Liked

A word processor stands or falls on its text editing features and the ease with which you can make a successful printout. The program has to be powerful enough to accomodate a wide variety of uses, while remaining easy enough to use without having to phone the distributor. For the most part, Script 64 handles editing and printing powerfully but simply.

Editing

Besides the usual methods of inserting and deleting large or small amounts of text, Script 64 also allows for a variety of other ways to enter and manipulate text. French text can be entered directly to the screen. The powerful global search and replace option allows a user to search for and replace multiple items of text at the same time. There is a numeric mode for adding and subtracting columns of numbers. Text is easily centered. Depending on your printer, Script 64 also allows you, from edit mode, to enter commands for superscripts and subscripts, underlining, bold print and italics print. All of these are easily and quickly accessed with, at most, three keystrokes.

Printing

Script 64 prints using any serial or parallel printer that interfaces with the 64. Script 64 allows the user to see his text formatted before it goes to the printer by sending the printout to the screen. The format of the printout can be easily altered from a Control Map containing print format instructions.

Other Features

There are a number of other user-friendly features, such as three Help Screens if you get stuck, prompts before you do anything damaging to your disks and a dictionary/spelling checker mode which checks the spelling of words you build up from your own text and vocabulary. There are other minor but useful features such as the ability to change text and background colors (a must with some monitors!) and a print option using the RS-232 port that allows a printout to be sent over a modem.

Most of Script 64's major options are displayed on the menu line and easily accessed with two keystrokes.

What I Did Not Like

The list of things I did not like about Script 64 is fairly short and very picky.

The video print scrolls horizontally to allow you to use the 40-column display to view an 80-column printout. At first this is very impressive, but after a while, trying to follow the scroll with your eyes becomes irritating. It is still a necessary and very useful feature.

The program saves word processing data in numbered screens. This makes saving to disk or tape very convenient, because there is no need to name a file or specify drives when saving. The "Index" part of the program provides a place to log the name of the file saved in the numbered screens. However,

the user has to go into the Index to log the contents of the various screens. This is time-consuming and unless you are very conscientious about making entries to the index and keeping it updated, you soon lose track of which numbered screen contains what data.

The dictionary/spelling checker mode of the program does not really check the spelling of words. It only checks to see whether or not you have used the word before in your text, and logged it onto a dictionary disk.

Summary

I liked Script 64 very much. The things about I did not like are not serious. They are the result of longing for an ideal word processor that only exists in my mind. In general, it is easy to use, and well worth looking at for serious use.

Script 64 is available in tape or disk version for $129.00 from Richvale Telecommunications in Richmond Hill.

RAPIDWRITER

Review by Mark Caplan

Concord, Mass.

Being the owner of a Vic 20 and a computer novice, I was desperately looking for a word processing program that could be easily used and understood. I have looked at most of the programs available to VIC users and was very discouraged by the inadequacy of the instructions and the inability of the programs to work with printers better than the 1515 or 1525 -- that is until I found **Rapidwriter**!

This program, offered by H.D. Manufacturing Inc. of Leverett, Massachusetts, is a bargain at 39.95. Pages 258 and 260 of the February issue of **Compute Magazine** summarize the many features offered by the program. What it fails to mention is how user friendly the program is and how well documented the instructions and tutorial are. The author makes extensive use of the function keys and simple key commands for the most commonly used features, such as line feed, page feed, centering, double sizing of characters, underlining, erasing, tabbing, vertical spacing, duplicating and moving lines, etc. All of the keys on the VIC 20 are used in their standard mode. There are no special commands to remember to change format.

The program allows multi-column printing, which is easy to do, and has a special feature which allows the user to simply go into a calculator mode, make a computation, and return to the program with the answer noted in the proper place. Additionally, the program makes extensive use of simple prompts for all of its features. In short, it is like following a bouncing ball, whether you are loading text, saving text, printing , or formatting.

The only negative criticism this writer can offer is the lack of the ability to right-hand justify.

The author has the program available for tape or disk, the VIC 20 or the 64, and for most any printer that can be hooked up with either machine. This writer has a Commodore 4022P printer which is normally used with the larger Commodore machines. The author furnished me with a program version that works beautifully with that printer.

Most important the author furnished a well written, easy to follow 30 page instruction and 15 page tutorial with the program. This is a feature which I have found lacking with most programs offered to the small home computer buff. I also found out that quantity discounts are offered to VIC user groups who purchase in lots of five (5) or more.

For those of you who would like to use your VIC as a word processor, I would highly recommend **Rapidwriter**.

SuperScript Review

by Terry Taller

Kanata, Ontario

As with any product which is both first in its market, and successful, it doesn't take long for similar products to appear which will compete for a market share. These new products can be in one of two categories --a pure imitation or an improvement upon the original. **SuperScript** is in the latter category; while it lacks a couple of the features of Punter's WordPro 4 plus, it has important improvements in a number of key areas. Since **SuperScript** is less than half the price of WordPro, PSI must now improve its product or face the fact that it will have to severely reduce its price for WordPro.

It is obvious that when **SuperScript** was written the serious shortcomings of WordPro were kept in mind. The author, Simon D. Tranmer, states that he used the opinions of Commodore Users Groups in Britain to refine the package; he must also have listened to reviews of WordPro.

The most commonly heard complaint about WordPro is the lack of space in memory --in fact 115 lines. **SuperScript** provides a total of 250 assuming an 80 column production. While there is no Extra Text area, for most of the work required by most writers, this is no loss.

The next advantage is that separate lines are not needed for line or centering commands. For instance, if you are typing a standard paragraph (as I am right now), instead of having to leave a blank line between paragraphs one need only put the (ctrl) ln1 (return) at the end of the previous paragraph; not only convenient, it saves memory. The same is true for centering functions; instead of requiring a separate line to turn centering on or off, it can all be done on one line; e.g., (ctrl)cn1, THE BIG BROWN FOX (ctrl)cn0 which, again, has the effect of saving lines and memory.

The next feature, which I enjoy best, is that Tranmer has allowed users to access features in non-CBM printers. For instance, I use a Star Micronics GEMINI-15 (I can't see why anybody would buy an EPSON printer now) which has italics in its ROM. One needs to get at the Escape function to use it; **SuperScript** provides for this. When writing this review, instead of having to use the underline feature to designate italics to the editor, I simply called in the appropriate control feature to turn italics on and off. Very nice.

In WordPro one spends a lot of time moving the cursor up and down through the text. In **SuperScript** I use the control function and space bar to move forward through pages and control shift/space to move back through pages. Again, a convenient time saver.

The next important difference from WordPro is that you can use a maximum of 240 columns. Admittedly one can as well on WordPro but the screen wraps and you have to count your strokes to make sure that you (return) at the appropriate moment. In **SuperScript** the screen will pan to the right as you type in your work and wrap at the designated right margin. This makes it so much easier to set up work for a 15'' carriage printer like the GEMINI-15. Like WorPro, in **SuperScript** you have to output to video to see the setup; unfortunately when you use a right margin larger than 80, ''what you see, ain't what you'll get.'' To make life easier when reviewing a screen larger than 80 columns, Tranmer built in a panning function; i.e., when you press (ctrl) right-cursor all you have to do is sit back and watch as the screen moves in front of you -- if you want to speed up the action you hold down the shift key. Again, very nice if you are working with 132 columns.

The next outstanding difference between **SuperScript** and WordPro is the fact that you can get at the disk functions without **losing** your text from memory. This alone will make people buy **SuperScript** instead of WordPro. When I think of the number of hours I have spent saving items because I wanted to get at the Directory with WordPro I could cry: as rookies with WordPro how many of us have called in the Directory only to have forgotten to save the text in memory. Not fun!

Most of the control commands in **SuperScript** are identical to those of WordPro -- and some of them make more sense. For instance, to get into the insert mode insead of Shift plus RVS in WordPro, you RVS plus I to turn Insert ON and RVS plus I to turn it OFF.

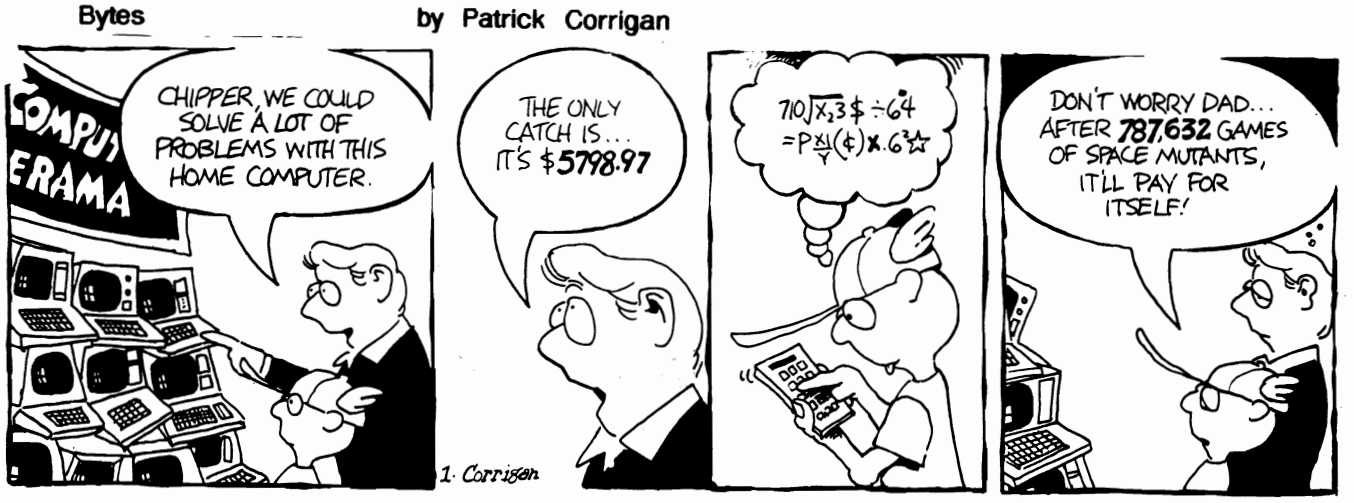
What doesn't **SuperScript** have? It doesn't have an arithmetic function when it comes to columns of numbers. It does have decimal tabs, though. Also the position of tabs is not displayed on the screen: instead to see the position of tabs you must (ctrl) plus P and the tabs are displayed as slashes on the status line. Because of the work that I do, I find this inconvenient. **SuperScript** provides the option of vertical tabs --if you want them.

It is obvious that money has been saved with the documentation. It is not nearly as thorough as WordPro. It comes in a spiral bound binder which I immediately removed and three-hole punched. Suprise -- Precision Software used metric sized paper which doesn't fit your normal binder. A very nice feature provided by the publishers is a Quick Reference Guide in the middle of the documentation; also on the disk provided is the Quick Reference Guide which you can print out and keep handy. I do think that anybody trying to get into **SuperScript** without any previous experience with a package like WordPro will spend a lot of time familiarizing themselves with it. That's a small price to pay for a difference of $300.

Another problem I found with **SuperScript** is the flashing cursor. I find the flashing cursor useful when programming but it is a nuisance when writing.

I could spend a great deal of time giving an item for item comparison of **SuperScript** and WordPro which isn't the point of a review. There is no doubt in my mind that a person who wants an excellent package which would meet all of the needs of the **average** office should buy **SuperScript** instead of WordPro. Not only is it a better buy but the files created by **SuperScript** are compatible with WordPro, WordCraft, and Silicon Office.

The current price of **SuperScript** is $150 Canadian.



PET

Storywriter

A Review by I.A. Wright

Toronto

STORYWRITER - Tape loaded machine language wordprocessor for junior students using the PET computer. Available for educational use from the Toronto Board of Education, 155 College St., Toronto (416-598-4931). The program is free, but restricted in use as above. A single page 8 1/2"x 11" of hardcopy instructions are included.

Storywriter is a most valuable program for teachers of junior (grade 3 - 6) students. In essence a simple wordprocessor, Storywriter can introduce students to the marvelous world of the micro-computer. This simple program can answer the teacher's requests for programs that will aid in the teaching of the English language.

Written by Joe Vayda, and C.C. Capon, Storywriter uses a simple one-screen menu.

The student can load a story, save a story, print a story, write or edit a story file, erase a story, and leave Storywriter. These are all the commands and can be obtained through one numeric keypress.

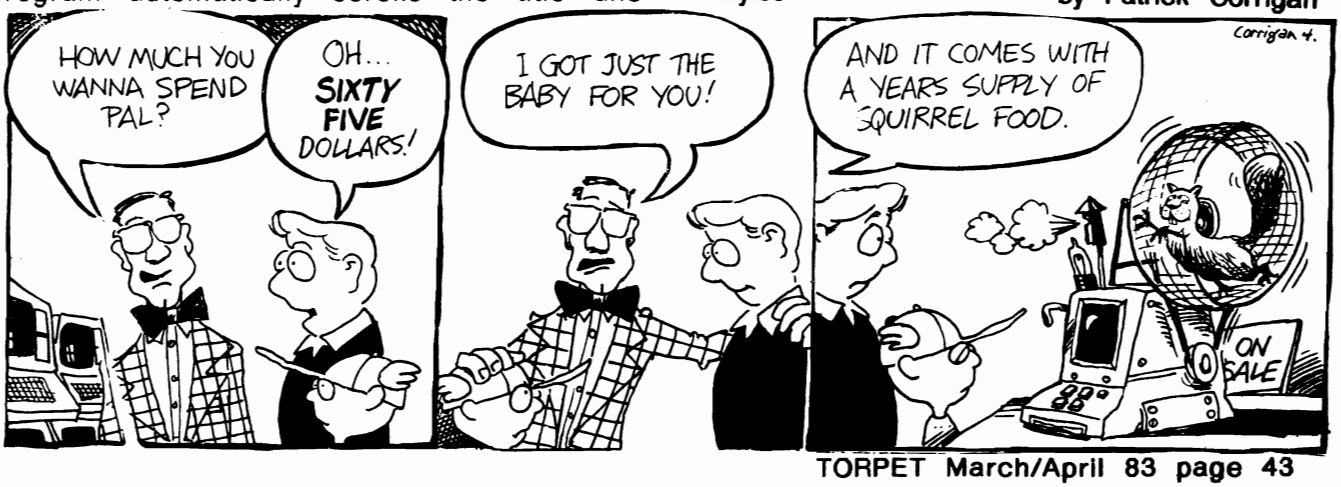
The program starts by asking the student for his/her name. This input then becomes part of the program, along with the title of the story. As the student writes, the program automatically scrolls the title and name across the top of the screen. On printout, this information is automatically formatted into a header.

The child can edit the story using the INST/DEL key to remove letters, words or phrases, or insert spaces or lines. The CLR/HOME key is used to return to the start of the screen or text. To print, the child is presented with a few simple instructions and a choice of Commodore or Epson printers and the story is printed.

If the correct printer is chosen, the output will be in double width characters which is great for smaller children. Later, the teacher may decide to print the files using the "opposite" printer choice. This will produce a 40-column output with the right side of the page ready for a picture.

A number of teachers in both City and borough schools are using this program with their pupils. A few of the comments that I have heard include ... "I've never had a Grade 5 class write so much!" ... "The children **want** to correct their stories" ... "I can sit with a child and explain corrections and omissions without using a red pen". The response of the students is equally enthusiastic. This program is terriffic!

Bytes **by Patrick Corrigan**



PAPERCLIP

A Review by I.A. Wright

Toronto

PAPERCLIP - ROM, disk and manual from Batteries Included, 71 McCaul St., Toronto M5T 2X1, Phone 416-596-1405. The program is available for all 4.0 ROM Commodore machines (including the C-64) and can be ordered with French or Math character sets.

At a quick glance through the latest issue of COMPUTE! magazine, I found advertising for wordprocessors for Commodore computers from $16.95 to over $300.00 U.S. The U.S. price of Paperclip is $125.00 ($150.00 in Toronto) and is in the middle price range. The features of Paperclip, however, make it one of the best wordprocessors available regardless of price.

The Paperclip version reviewed is #2.84 and consists of a 2K ROM that sits at $A000, an 85 block disk program, numerous printer files, and a 112-page manual. Although it comes on disk, Paperclip is completely tape compatible. This has proved a boon to the many teachers who have a 4032 PET with a cassette drive in their classroom.

As with all quality wordprocessors, Paperclip allows complete manipulation of text. The total command list has over 100 separate functions. In addition there are 41 formatting commands. This may seem somewhat overwhelming to a novice, but within a short time the system can be broken into the "commonly used" and the "look-up" functions.

Text can be appended, inserted, deleted, moved, copied, and transferred by word, phrase, line, and range. The ability to instantly change the position of some piece of text is a major advantage of all wordprocessors. Paperclip provides all the combinations that you could possibly want.

A feature of Paperclip that puts it ahead of its competition, is the ability to manipulate columns as well as text lines. One of the great difficulties of using the 40-column PET as a wordprocessor is the formatting of printer columns for 80-column printers. The same might be said for formatting 126 columns on an 8032. The Paperclip solves this problem by allowing you to set the screen width to any value from 40-126 columns, and then the screen will scroll **horizontally**. Having been involved in writing charts for publication, I know how valuable this feature is. I suggest that any such files be set up as linked files because the line width cannot be changed within a text file. The file-length in Paperclip is 222 lines of 40-column text, but using linked files you can write forever.

Another feature that relates to columns is the ability to set numeric tabs so that all decimal numbers are aligned neatly. If you decide that the columns should be moved, there is a command to shift them. If you forget a column, then insert one. Other column commands include: set, erase, repeat, add, subtract, and even sort. Yes you can enter names, addresses, phone numbers, etc., and sort the entries by sub-fields!

Disk operating commands such as reading errors, global copy and scratching of files can be sent from within Paperclip. You can change printer and disk device numbers to allow multiple peripherals. Very useful is the support of the Arbiter system that is in use in many schools. From within Paperclip the user can enable or disable the arbiter, or grab exclusive use of the bus. Teachers with access to a computer studies room can turn it into a wordprocessing room with up to 32 computers using one disk drive and printer.

Some business functions are well supported by Paperclip. String searches can also search and replace so that references can be altered throughout a file allowing "boilerplate" paragraphs. A similar function uses variable blocks which are kept in a separate sequential data file to change addresses and salutations on form letters. One enterprising young man uses this system for personalized handouts that advertise his business.

When you are ready to print your formatted text to the printer Paperclip offers another feature that is worth its weight in 4032's - the video output. Other wordprocessors such as WordPro 4+ have this feature, but it is not available for the 4032 PET. Admittedly, the 40-column PET only shows the left-hand side of a printer page, but that's enough to be of great value.

The video output can be globally linked and can insert variable blocks just like a regular print out. The screen scrolls vertically, and can be paused and re-started using the space bar. The scrolling stops automatically at the end of each page, and you can quickly see those "widows" - hanging lines at the start or the end of a paragraph. This video output is formatted the same as the hard copy, thus you can see changes to indenting, headers and footers, and pagination before you run the printer. All special characters are shown in reverse video so they can be checked also. In my estimation, this feature alone makes the Paperclip THE wordprocessor for 40 column screen machines.

Once the written file has been checked for accuracy and format, you can output to a printer. Not just a few kinds, but any printer can be supported. If your printer can print boldface, italics, emphasized, wide, super or subscripts, etc., then Paperclip will allow you to send these commands from within the text. If you have to pause to change a daisywheel, then put that command in the text at the appropriate place. If you have access to a number of types of printer, then you can change printer files and output to each of them without re-typing or re-loading.

If you use only one printer, then the disk has a program to re-write the Paperclip program so that your special printer file is automatically loaded when you start. If you find an error on page 15 of the text you have written, use the video output to print pages 1 - 14 then press "p" to print a corrected page 15. In my estimation this flexibility of printing is another of the features of Paperclip that puts it at the head of its competition. It has saved me reams of paper.

An unusual function in a wordprocessor that is as inexpensive as Paperclip is the "tb" command. Using this you can create a table of contents as you write the text.! Auto-indent is a useful function for report writers because it will offset the first line of all subsequent paragraphs to a variable amount. Another function is the ability to predefine phrases that are repeatedly used in the text. The phrase "Toronto PET Users Group" can then be written with two key presses. Any commands that may effect the existing file are double checked using an "Are you sure?" input. This has saved my text on more than one occasion.

What are some of the drawbacks to this program? The most upsetting to me has occurred at the startup when after loading the program and a text file to work on, the program exits to monitor and then locks up. This does not happen very often, but it can prove rather frightening. Another bug is the extended use of the insert key which forces the program into uppercase "loc". Again, this does not happen all the time. An earlier version of Paperclip did not support the "vp" or vertical position command.

I assume that there will be updates and revisions to correct this latest version. Beyond the bugs the program has a few areas that would be advantageous if included. The disk directories can be read without losing the current file, but cannot be printed without exiting the program. The video output cannot be printed at a variable speed. There is a definite need for a tutorial that would walk a neophyte through

the system. The manual is valuable if you know what to look for, but it is not good enough for a person new to wordprocessing.

To sum up, I have used WordPro 3+ and have access to $12,000.00 Burrough's wordprocessor systems. But I have bought Paperclip for my use and for the use of my staff. I heartily recommend this program to you.

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GROUP NOTICE

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Butterfield Box

by Jim Butterfield
Toronto, Canada

Computers and Show Biz

Since many local TPUG members have noticed that I have a television series under way (TV Ontario, The Academy, Wednesday nights) ... I should probably comment on television as a means to computer education. These comments are my own, of course; I'm not attempting to give you TVO's opinions or position.

I had a fair amount of input during the writing of Bits and Bytes, the half-hour program on computer fundamentals. Here are some of the factors that entered into the picture:

You can't teach programming in a half-hour TV show. The average viewer's attention span won't allow it. Such a thing might be possible in, say, five minute chunks ... but a half hour of programming theory would overload almost all watchers. It seems to me that beginning programmers need a great deal of hands on usage .. and that won't fit the format. I could imagine saying, "OK, now try it yourself; I'll just wait here. Be sure to be back in five minutes..." Here's a silly thought: many inexpensive computers connect to a home television set. So the dialogue might go, "OK, disconnect this program now and try it on your computer ... be sure to hook up again in five minutes so we can continue..."

We didn't want to produce a "gee whiz" show. This is the easy way out: computers chatting with you, walking around and lighting your cigarette, driving your car to the gas station. It looks good. It's even technically feasible to a certain extent. But it doesn't have much to do with the way we use small computers today, or even with the things we need to know about computers.

So what's left? A dull recital of computer applications in home, school and office? Never!

Small computers are exciting .. intriguing .. thought provoking .. challenging. And that's what we decided to show: the sense of discovery; the fun of it all. As club members, we know that people get caught up in computer activities: they like to chat, swap notes, brag, ask questions and in general interact with each other. Why? Because it's great fun ... even when we're learning.

By showing "Everyman" learning about computers, and having a good time doing so, we can show an essential part of our own experience. On the way, a good deal of solid information can be given about small computers, how they work and how they are used.

The term "Computer Literacy" has been used for this type of thing. You won't end up an expert: but you will have been exposed to a wide variety of microcomputer facts, buzzwords, and applications.

That's fine for the first half hour. What about the second part - the Academy on Computers, with almost-live" follow up?

In some ways, The Academy is more limited. It doesn't use animation or location shots. It's all done in the studio in one taping session. Yet it has some advantages, too. Bits and Bytes was restricted to two actors, each with a role to play. The Academy portion isn't so restricted: we can bring in guests, and we can be ourselves. We can be more informal; indeed, we have to be, since the show can't be scripted with the lavish detail that was given to Bits and Bytes.

The Academy must relate to Bits and Bytes, since the two run together. It can't say exactly the same things. But it can reinforce; it can supplement;

it can complement. We can show things from a different angle. We can add more detail. We can ask users about their experiences.

One thing that would be nice to do - but it's hard to do - would be to tell people what to buy. I know that members of TPUG might have very strong views on this subject; but even here, we'd all give a similar answer: you must decide what you want to do with computers before you can know which computer you need. And here we have the chicken-and-egg situation: you often don't know what you really want to do with a computer until you've tried your hand at using one. So how can we advise our viewers what to buy?

There are a number of possibilities. If they do not have a computer now, we can show them how computers are used. We can teach them the technical ideas and buzzwords so that they can better fend for themselves in a computer store. We can let them hear the experiences and opinions of present day users. And perhaps we can suggest that they start with an inexpensive computer and expect to trade up as they understand better what their needs are.

It would be unfair to mention the two half hours without pointing out that the TVO Computer Academy has a third element: the additional resource materials that go along with the broadcast. Registrants get a lot more in the way of materials and interaction with the Academy than do mere viewers.

What about computer brands? There's a fierce loyalty among users for their own machines. But during discussions with users, it's interesting to note that you cannot tell the machine just from listening to a user recounting experiences or giving opinions. Only when a product, game, or special feature is mentioned by name can we guess which machine is involved. Maybe we have more in common than we often think...

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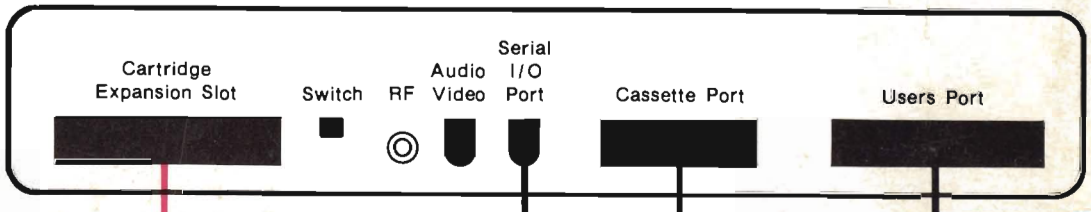

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