# TPUG Newsletter

*Views and News of Toronto Pet Users Group, Inc.*

P.O. Box 48565, 3605 Lakeshore Blvd. W., Etobicoke, Ontario, M8W 4Y6 (416) 253-9637

**Volume 5, Number 6** **Winter 1996**

## From the President -

### On the Perils of Premature Praising

In the last issue of the TPUG newsletter, I commented favourably on the efforts made by ESCOM/AMIGA Technologies to revive the AMIGA computer.

Shortly afterwards, the news that ESCOM had declared bankruptcy was released!

Since then, rumours have swirled about the AMIGA community about who would buy AMIGA Technologies (which was and is for sale), what they would do with it and when it would all happen.

For some time, it seemed that VISCorp of Chicago, Ill. was in the driver's seat. VISCorp had already licensed some of the technology for use in the operating system of their 'ED' set-top box (a communications link to the world outside your home using TV/cable) and it seemed reasonable that it was better to own the technology than to lease it. VISCorp indicated that they would also carry on the development of the AMIGA computer.

Lately, there has been talk that VISCorp is no longer in a position to acquire AMIGA Technologies (financing problems?) and that other companies are now appearing on the scene.

But, TPUG carries on!

We participated in the AMIGAFest portion of the ComputerFest show held on November 29, 30 and December 1 in Mississauga, Ontario.

At this show, AMIGA dealers, component manufacturers and User Groups had their own area to display products, hold seminars and generally promote the AMIGA. The turnout was excellent with many PC/MAC users being exposed to the joys of the AMIGA.

Being TPUG, we also promoted the C64/C128 computers and one visitor berated us (in a nice way) for not having a PET on display (maybe next time - the Chicklet keyboard one!).

Look inside the Newsletter for an announcement about our plans to provide facilities for hands-on work with Fun Graphics Machine - an excellent graphics package for the C64.

As the end of 1996 approaches so does WinterSwap '97 (our semi-annual swapmeet) to be held at the end of January - see inside for more details.

And, since it is almost the end of 1996, it's appropriate to close this column, by wishing you, on behalf of TPUG, Season's Greeting and the best for the New Year.

*Ernie Chorny*

**For users of all Commodore Computers :**

- * PET/CBM
- * SuperPet
  - * B-128
- * VIC 20
- * Commodore 64
  - * PLUS-4
  - * C-16
- * Commodore C 128
- * AMIGA
- PC/MS-DOS

* Registered products of Commodore Business Machines, International

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## Member Information

**Voice Info (416) 253-9637**
Please leave a message

## Membership Rates

Canada ..... $25
USA ..... US $25
International ..... US $25

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..... and Ernie Chorny
Shows .....Ian and Dug
BBS SysOp .....Sylvia Gallus

## Newsletter

Editor John Easton (416) 251-1511
..... john.easton@ecunet.org

## Meeting Schedule

**Amiga Central**: Second Tuesday of the month.
Contact - George Cripps (416) 255-1436
**C-64/128:** Fourth Tuesday of the month.
Contact - Ernie Chorny (905) 278-2730
The above meetings commence at 7:30 p.m. in the York Public Library, 1745 Eglinton Ave. W. (just east of Dufferin), in the Auditorium or Story Hour Room.

**Westside and Amiga West**: Third Thursday of the month at Alderwood United Church, 44 Delma Drive. Delma Drive is just west of and parallel to Browns Line, south of the Queen Elizabeth Highway, north of Homer Avenue. From the west, exit QEW at Evans Avenue, east on Evans to 2nd stoplight, south on Gair to Delma Drive. From the north or east, follow signs from QEW or Hwy. 427 to Browns Line, exit right to Evans Avenue, turn south on Gair (first stoplight) to Delma.
Contact - Ernie Chorny - (905) 279-2730
or George Cripps (416) 255-1436

## TPUG BBS — PunterNet Node 2

*(905) 273-6300 14.400 (8N1)*
***24 hours a day, 7 days a week***

## Internet

***TEMPORARILY john.easton@ecunet.org***

***a note from your Editor:***

This stuff I've mentioned before ... but my apologies, on behalf of the Board, for a terrible year of looking out for the interests of our members. We as a volunteer group have had our hands full with address changes, volunteer changes and loss of pertinant files as a result of such changes. We (your Board) now meet at least once a month as a body - at which time such things as memos, messages, orders and new member requests are sorted out. Please realise that we all have other responsibilities, but still attempt to keep up with our members requests as time allows. The obvious solution, should you really care, is to volunteer your services in an area where you may feel your interests or concerns lie. Feel free to contact any of the current Board members with your suggestions and offers of assistance.

Now, by way of apology, perhaps you will appreciate this rather larger than normal issue, thanks in part to an offer by J.P. PBM Products to pay for the extra postage involved in sending you a copy of their current catalogue on disk with this newsletter. All part of the service!

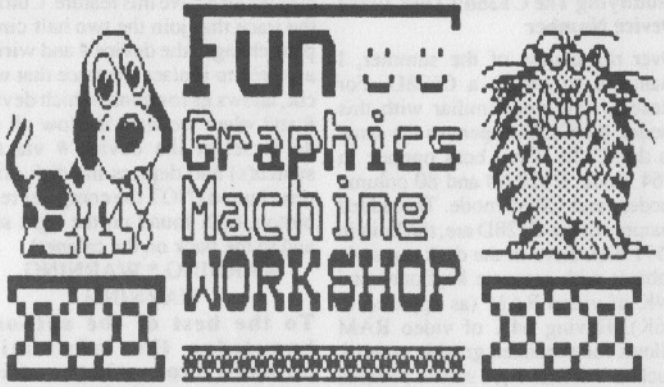
*Tpug Newsletter is published somewhat quarterly by the Toronto Pet Users Group Inc. (TPUG). TPUG is a volunteer non-profit corporation dedicated to the service and support of owners and users of Commodore computers.*

*Articles, letters, tips, questions, art, etc. are welcome. Send hardcopy or disks "Attn: TPUG Newsletter", or use our BBS's, or Internet.*
*Advertisements are also welcome. Member's small ads are free. Commercial ads are $200 per page with a $25 minimum.*

## Notice to new owners of SuperPet and CBM 8296 machines

TPUG has copies of the Waterloo LANGUAGE DISKS (3 in 4040 format) as supplied with the SuperPet on original purchase.
TPUG has the EXECUDESK disk (8050 format) as supplied with the CBM 8296 on original purchase.
These disks are an integral part of the operating systems of the above machines and since Commodore insists on referring owners of these machines to TPUG for service, we have added these somewhat proprietory (and also virtually unobtainable) disks to our library - all part of the TPUG mandate of service to our members.
We also will attempt to search out copies of original program disks to replace corrupted disks. In this category you will find such programs as VISICALC, WordPro, and PaperClip.

## TPUG News




Fun Graphics Machine is a graphic manipulation program for the C64. It out-performs PRINTSHOP(tm) and PRINTMASTER(tm) by allowing greater flexibility for your designs. FGM features 3 changeable fonts, and the 2 built-in computer fonts, 5 exchangeable PRINTSHOP/ PRINTMASTER (tm) graphics, and uses NEWSROOM(tm) clipart. Text is handled as a graphic, complete with mirror, flip, adjustable size, and other functions. With FGM you can do labels, greeting cards, business cards, letterheads, calendars, and anything you can come up with. You are limited only by your imagination and the size of the paper.

Like most of the powerful programs, they can be intimidating due to the numerous features and functions you need to remember. Starting in January, we will be conducting a 3 month workshop for Fun Graphics Machine. Demo disks and tutorial sheets will be available for a small fee of $5.00 to cover the cost of copying. This will be a hands-on workshop, with several C64's set-up at the meetings. To better prepare for the workshop it would advisable to contact Tom Luff at (416) 503-0753 and leave your name and phone number and which meeting central or westside C64 meetings. you wish to attend.

## Classified

***For Sale:***

2 - C64s, 2 - 1541 disk drives, 2 - 1701 colour monitors, joysticks, printers, and printer interfaces.

Call Tom Luff (416)503-0753.

***Wanted:***

Parts and Manuals for VIC, 64, 128. Disk Drives: 4040, 8X50, 1571, etc. Pet Roms: PaperClip, etc.

Call Allan Higgins (416) 741-6660

## Exclusive -

Dr. Robyn Jaynes and Dr. William Harley continue with their regular column addressed to the specific interests of progressive educators. This month's article is based on a paper by Doctors Jaynes and Harley that was presented at the Educational Technology Workshop at OISE (Ontario Institute for Studies in Explicatives) in June 1996. Dr. Jaynes is an avid supporter of all Scottish traditions related to Macs. Dr. Harley's main interests lie in medieval ceramics, especially 6510 and buffalo chips.

Winter Swapmeet. 25 January 1997
Alderwood United Church
44 Delma Drive, Etobicoke
10 to 3 - Saturday, January 25

**Modifying The C128d's Disk Drive Device Number**

Over the course of the summer, I managed to obtain a C128D. For those of you not familiar with this model, the C128D operates the same as the C128. They both operate in C64 mode, C128 40 and 80 column modes, and CP/M mode. The added features of the C128D are, the built in 1571 disk drive in the desk top style cabinet with separate keyboard and 64K of video RAM (as apposed to 16K). Having 64K of video RAM allows for expanded graphic control, such as interleaving 2 screen pictures into one, enhancing colour and detail. FREE SPIRIT SOFTWARE INC.(tm) has several programs that use this feature, all based around their 'BASIC 8' program.

The C128D having a built in 1571 disk drive was a great idea, however, this convenience has sacrificed another. A regular 1571 disk drive has a dual dip switch located at the rear of the drive for changing the device # from 8 to 11. The built in 1571, of the C128D, is factory set to device #8, with no external means to change the device number, except by a software change. This means extra programs to run and the change defaults back to 8 if the computer has to be reset.

I normally operate with two 1571s and two 1581s on the same system. Thus allowing me to disk copy for backups and file copy between 3.5 in and 5.25 in disks. Since a lot of programs require device #8 as the operating drive, it becomes necessary to have one of each drive type to be addressed as device #8, one turned off while the other is running.

The C128D makes things a little more difficult to operate in my usual fashion. COMMODORE was not totally inconsiderate, they did use an old idea on this newer machine. The large 1541's had a couple of split circle pads on their circuit boards to allow for device # changes. The 1571 circuits also have this feature. Cutting the trace that join the two half circle pads changes the device # and wiring a switch to replace the trace that was cut, allows us to choose which device # and when we want it. Now all we do is select the device # via the switch(s) and depress the disk drive reset button (NOT the computer reset button, both found on the right side and to the back on the cabinet)

WARNING * WARNING

WARNING

**To the best of the author's knowledge the information presented is correct but he advises readers to proceed at their own risk and that those unfamiliar with soldering to seek assistance from a qualified technician .**

Here are step by step instruction to install device # switch(s):

1) With the power turned off, remove all peripherals and cables to prevent electrical shock and damage.

2) Remove 3 screws from the rear of the cabinet. They are positioned at 9, 12 and 3 o'clock.

3) Remove 2 more screws from the bottom ledge, directly behind the front panel.

4) Now slide the lid back, about 1/4 to 1/2 inch. Lift lid and it should separate from bottom.

5) To remove the disk drive (the area under the drive is where we need access to), first pull the door latch straight out and off. CAUTION : Pull door latch by the elbow, NOT the knob.

6) Remove 3 screws from the sides of the drive. One on the left and two on the right.

7) Remove the 4 connectors that wire the drive to the board. NOTE: Mark or make note of where and how each connector connects to the board so you do not improperly reconnect and damage the drive.

8) You can now slide the drive back to remove it.

9) Decide where on the front panel you wish to place the switch(s) and drill the hole(s). Keep in mind that the wires most go through the metal false plate and the switches should not interfere with the drive.

10) Locate the 2 pairs of half circles and determine the distance to the switch(s) based on the route the wires will follow. I like to add a few extra inches so I can get access to the bottom of the circuit board for repair.

11) Cut 2 wires for each switch at the length determine in step 10. Solder the wires to the switch(s).

12) Mount switch(s), keep in mind that you need to know the closed or on position of the switch(s) so you can mark the device # on the panel. (both switches closed = 8)

13) Solder the wires from one switch to one pair of half circle pads. And the other wires to the other pads. The pair closest to the front panel selects Device #8 & #9. The following is the method I used to solder the wires to the pads:

A) Tin the wires - strip a 1/4 inch of insulation off the ends of each wire and apply iron and solder to bare wire to coat wire.

B) Bend the bare wire at the insulated end, to a right angle and cut the bare wire so that it is no longer than the width of the pad.

C) Touch the soldering iron to the pad and apply a small amount of solder to the pad (do NOT flood the pad).

D) With the iron still on the pad, touch the bare wire to the pad and after a second or two, remove the iron while holding the wire in place. Wait 5 seconds before letting go of the wire. CHECK to make sure that you have not shorted the two pads. If the gap has been bridged by solder or wire then repeat step D, while adjusting the wire's position.

14) Follow steps 8 thru 1, doing the opposite procedures to re-assemble the computer.

There are four device # combinations available using a two switch system. To change device #, set the switches to the combination desired, depress the reset button and the drive will now be reset with the new device number. The C128D has two reset buttons, one resets the computer, the other resets the drive. Reset the drive and only the drive is altered, reset the computer and everything in memory and the rest of the system is reset and lost.

For reference we will call the pads closest to the front panel, switch A and the other switch B:

For device #8 switch A is on and switch B is on.
For device #9 switch A is off and switch B is on.
For device #10 switch A is on and switch B is off.
For device #11 switch A is off and switch B is off.

I would not recommend doing projects like this unless you can use and benefit from it on a very regular bases. The old adage 'If it ain't broke don't fix it' should be adhered to. Why run the risk of damaging your system if you are not going to need it too often.

*Tom Luff*

## Tips

*From H.C.U.G. News*
*Hamilton, Ontario*
*December 1995*

*(This may have originally appeared in Run Magazine)*

**A BETTER WAY TO SAVE**

Like any good programmer, I periodically save whatever program I'm working on. Of course, the 1541 and early 1571s suffered from a Save with Replace bug, which means that if you're a C-64 user, you avoid the SAVE @0:filename,8 syntax at all costs. So rather than perform the time-consuming task of scratching and then saving a file, I save the file each time as "fllename 1.0", "filename 1.1", "filename 1.2", and so forth.

If I make a major revision, I save the file with a higher number, such as 'filename 3.0', to distinguish it from earlier versions. When the program is complete, I save it as "filename". I then enter: LOAD "$filename????",8. Next, I list the directory. If I want to delete all those earlier versions, I enter: OPEN 15,8,15, "S0:filename????": CLOSE 15

My disk is then cleared of all the earlier, unfinished versions, with of course, the finished version preserved.

***Michael Ross, Lynchburg, Va***

*From A.C.E.S. Newsletter*
*Albany Indiana USA*

**Never Validate a 1571 Disk in 1541 Mode**

The 1571 disk drive has a major quirk the user should be aware of. This quirk is when the VALIDATE command is used in the 1541 mnde on a 1571 formatted disk.

The fourth byte on Track 18, Sector 0, is the double-sided flag. This byte is set to $80 for double-sided, and $00 for single-sided. When the VALIDATE command is used in the 1541 mode on a formatted 1571 disk, the 1571 drive rewrites this byte as $00.

A standard 1541 drive will not rewrite this byte, so you are safe from corrupting your disk. Commodore had made at least 8 different changes in the 1571 drive, so the newer ones may not have this bug.

## Aprotek 2400 Review

The Aprotek 2400 baud modem is a modulator/demodulator that connects directly into the user port of your 128/64. There is no interfacing necessary. The telephone line attached to the modem then connects into your telephone wall jack.

The Aprotek comes with a short manual which I used only once. This was to find out how to increase the sound on the ringer. I found that the default setting for the ringer was barely audible. This is a very minor complaint for this excellent modem.

The Aprotek was a very easy modem to setup. Plug it into the user port, put the telephone line into the wall jack, boot up your favourite terminal program and off you go. Do remember to set your terminal program for 2400 baud rate and ensure that its set for 8-n-1.

After using a 1200 baud modem for the last year or so, it was nice to be able to take advantage of the Aprotek's faster speed. You can still go and get yourself a cup of coffee when downloading a large file from your local BBS or the WWW though. For example, a 377000 byte file off the WWW will still take approx. 1/2 an hour to download.

If you want to hook up a telephone or an answering machine on the same jack that the modem is using then you will have to purchase a 3 way modular jack, as there is no connection on the Aprotek itself. These attachments can be had for a reasonable price at any Radio Shack.

I was pleased with the performance of the Aprotek, with its ease of use and faster speed. The old 1200 baud will take some getting used to again.

I would like to thank J.P. PBM Products for the loan of the Aprotek for this review. Please see the J.P. PBM advertisement also in this newsletter.

*Tom Haslehurst*

## New A3000 SCSI Controller Chip

*From: Internet via Donald Dalley*

**Gateway Amiga Club Aug. '96**

As you may know, there are several problems that can occur when adding additional SCSI devices to the SCSI bus on the A3000. Most common are random SCSI bus lockups, especially with CD-ROMS and tape drives, and random checksum errors when copying large files between devices. These problems can, in most cases, be attributed to the WD33C93A SCSI controller chip in the A3000. Most, if not all, A3000's shipped with the WD33C93A-PL 00-04 chip revision. This chip had known bugs when multiple devices were present on the SCSI bus. With a single device, problems rarely occurred. As soon as the user started to add devices to the bus, the problems mentioned above would start to appear. The WD33C93A-PL 00-08 chip revision addresses and fixes the above problems. I would like your user group to know that I am a source for this upgrade chip.

Current asking price is $22.50 (US) per chip but I am reducing that price to $20.00 (US) per chip for user groups. An additional 5% discount is available if 11 or more chips are purchased which would bring the price to $18.00 (US) per chip. This price DOES include shipping to anyplace on the planet. Cash, check (drawn on a U.S. bank), or money order (converted to U.S. funds) are all acceptable forms of payment.

Although I have referred to the A3000, this chip also works in the A2091 SCSI controller card, GVP SCSI controller card and any other SCSI controller card that uses the WD33C93A SCSI controller chip. Also, I have recently been informed by Western Digital that they are no longer in the chip production business. Fortunately, AMD (Advanced Micro Devices) manufactures a clone chip which performs as well or slightly better than the Western Digital chip. While I am currently unable to obtain any more of the WD chips, I do have the AMD clone chip.

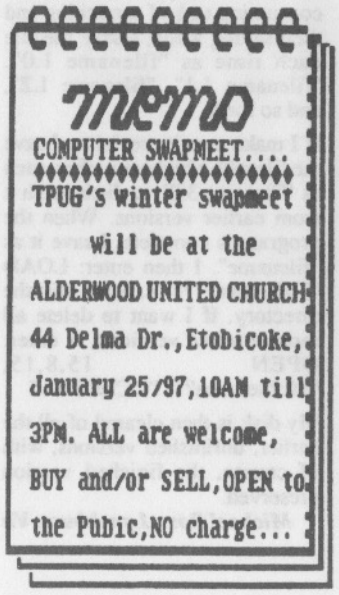
On a personal note, before I upgraded my chip, I was unable to complete a tape backup on my A3000 without a SCSI bus lockup. Since I upgraded, I've had zero lockups and have added a CD-ROM and another hard drive.

If you or any other members of your user group are interested in upgrading this chip, or if you have any additional questions, I can be contacted at the following places:

E-Mail: bobk@paradigmtech.com
Mail: B. Krusinski,
7556 S. Madison Circle,
Littleton, Colorado 80122
Fax: 303-292-1812

Thanks for your time.

*Sincerely, your fellow Amigan*
*Bob Krusinski*



## Project Phoenix

*SPECIAL ANNOUNCEMENT:*

TPUG's stand on piracy is that it is still wrong. Piracy is the copying of software and its distribution, so that the legal copyright holder is denied revenue from the sale of their software.

In these days of depleting sources for new and used Commodore software, it becomes necessary to protect your software investment. It is legal to make back-up copies of software strictly for your personal use. For one reason or another, there may come a time when your software becomes damaged to the point that it will never run again, and replacement product cannot be found.

TPUG announces Project Phoenix. Phoenix is a collection of disks released by COMMODORE, with COMMODORE trademarked labels. In the event you need to replace a disk, (which must have the COMMODORE(tm) label), just send the bad disk along with payment to TPUG, and we will send you a copied disk of the same software.

NOTE :
1) You must send the bad disk or your payment will be sent back.
2) No bad disks will be returned.
3) All disks sent out will have a TPUG label or a COMMODORE SOFTWARE label.

At this time, we still do not have all the titles that COMMODORE released, therefore, we ask for your assistance. If you have duplicate software, or software you no longer want, (it must be a disk with the COMMODORE(tm) label), PLEASE donate it to Project Phoenix so TPUG can expand its collection in order to help our members.

The cost for this service is the same as for regular disks. Members, 5-1/4" for $ 3.00, 3-1/2" for $ 4.00, and for non-members, 5-1/4" for $ 6.00, 3-1/2" for $ 8.00. NOTE: Disks size as received shall be sent.

Remember, this is not a product purchase, nor is it an upgrade service. What you send is what you get back.

The current titles available are as follows:

**Title (5-1/4 " disks)**
C1541 Test/Demo Disks
Diagnostics 1541 v2.0
C128 Tutorial /Demo Disk
C128 CP/M v3.0C1571 Test/Demo Disk
C64-1764 RAM Expansion Utility Disk
C128-1700/1750 ram expansion Test /Demo Disk
1351 Mouse Utility Disk
C64 Screen Editor
Logo (C64105)
Logo Utilities (C64105)
C64 Comal-80 v0.14
The Manager (64216)
C64 Easyscript ESC6440
4040 Utility Diskette: Test/Demo

**Educational Software:**
Mathematics Disk MC
Zork I (C64625)
Zork II (C64626)
Zork III (C64627)
Suspended (C64628)
Starcross (C64629)
Deadline (C64630)
Games I (C64724)
C64 Program Pak
C-64 Sky Travel

Title (3-1/2" Disks):

C1581 Demo/Utilities
C1581 CP/M v3.0

**Title (Cassettes):**
VIC20 Home Calculation Program Pack (VT.107.E)
- 6 cassette package -

VT1007 Personal Finance I & II
VT1008 Personal Finance III & IV
VT1009 VIC Typewriter/Typing Tutor
VT1010 Expense Calendar I & II
VT1011 Canadian Loan & Mortgage Calculator I & II
VT1012 Home Inventory I & II

C64 Software Starter Kit (C64150)
- 5 cassette package -

Tape 1 - Supermon & Sounds
Tape 2 - Sounds, Labyrinth, Amort
Tape 3 - Lemonade, Bits, Bytesprites
Tape 4 - Snoopy Math, Mortgage
Tape 5 - Calendar, PET Emulator

*Tom Luff: Board of Directors*
*5/30/96*

## NOVATERM ver 9.6 Special Offer

NOVATERM ver 9.6 was released this summer by Nick Rossi. It was rumoured that ver 9.6 would be available only in cartridge, instead it is only available on 5-1/4" and 3-1/2" disks. Earlier versions were public domain software, ver 9.6 is being sold as commercial software.

*"NOVATERM ver 9.6 is a powerful telecommunication software package for the Commodore 64 and 128. On the Internet, you need an 80-column display and special terminal emulation. NOVATERM ver 9.6 can emulate ANSI and VT100/102 terminals in 80 columns. And with a SwiftLink, CommPort, or Hart cartridge, you can reach speeds up to 38,400 or 57,600 bps. You'll be able to use Lynx to browse the World Wide Web and FTP to download files."*, claims the NOVATERM ad. The ad also lists the following features:

- ANSI, VT100/102, and VT52 emulation in 80-column mode.
- Supports the C128's VDC 80-column mode.
- Commodore graphics in 40-column mode.
- Supports the SwiftLink, CommPort, and HART cartridge for speeds up to 57,600 bps.

- Supports REU, BBG/GEORam, RAMLink, RAMDrive for buffer captures, downloads.
- File transfer protocols: Zmodem, Ymodem-g, Ymodem, Xmodem, Kermit, Punter, and more.
- Multiple 19-entry phone books.
- 16 user-definable macro keys.
- Script langauge for automatic operation.
- Text editor with integrated script langauge compiler.
- Mini BBS module.
- Fully compatible with the PAL (European) Commodore 64.

Now for the real good news. The regular price of NOVATERM ver 9.6 is $29.95 (us). plus $1.50 (us) for shipping and handing. However, Nick Rossi has made a 50% discount offer to Commodore User Groups.

In order to take advantage of this offer TPUG needs at least 10 or more orders from our members. TPUG will also be required to register our group, an additional cost of $30.00 (us). Worst case you would be looking at:

| | | |
|---|---|---|
| $ 29.95 (us) reg. | $ 15.00 (us) | discount price. |
| $ 1.50 (us) | $ 1.50 (us) | shipping and handing |
| | $ 3.00 (us) | registration fee (may be less with more orders |
| ========== | ========== | |
| $ 31.45 (us) | $ 19.50 (us) | TOTAL (us) |
| x 1.40 | x 1.40 | conversion rate |
| ========== | ========== | |
| $ 44.03 (can) | $ 27.30 (can) | FINAL TOTAL (canadian) |

So you could be looking at $ 16.73 (can) saving or better if more then 10 orders are received at TPUG. All savings will be passed on to the members. To order the discount write to TPUG, indicate you wish to be added to the list for NOVATERM ver 9.6, include your membership number, current full address, and a phone number where we can easily contact you. Send no money at this time. Although we should already have this information in our data base, it will insure prompt response and correct our data base incase something has changed. TPUG will contact all parties after we received enough orders to tell you how much to send to TPUG. So order soon.

**For more information contact Nick Rossi at:**

**E-mail : voyager@eskimo.com**
**Internet :**
**http://www.eskimo.com/-voyager/novaterm.html**

**Postal : 10002 Aurora Ave. N. #3353,**
**Seattle, WA 98133 USA**

## Amiga Software Review

***John Buller***

*Division by Ken Winfield - Fred Fish 721*
*Counting Fun by Ken Winfield - Fred Fish 722*
*Reflex Test by Jason Lowe - Fred Fish 751*

In the spirit of 'Back to School', I recently did a survey of the educational software in TPUG's Fred Fish software library. There is surprisingly little listed under this heading, but I came up with three programs that are all in the category of arithmetic drill. While these are not sophisticated programs, they provide good examples of the difference between good and bad programming.

The two authors work with the same elements, but one author uses them in an interesting way, while the other has made bad decisions that destroy the effectiveness of his program.

**Division**

Ken Winfield's Division is really two modules: the icons are labeled Div1.1 and Division Test. Div1.1 has good, if static, graphics. The screen shows a classroom from the point of view of one of the students. There is a teacher's desk with an apple on it, and a blackboard. Above the blackboard are the letters of the alphabet in upper and lower case. It looks just like a schoolroom. Long division problems appear on the blackboard. The guy has even found a font that makes the numbers look as though they are drawn with chalk. He provides a separate icon that you can click to install this font on your disk.

Unfortunately, the same attention to detail did not go into the way the program works. You can choose one of four levels of difficulty with the mouse. Your answer to the problem appears, not on the board, but in a small window near the bottom of the screen. Pressing Return gives you feedback on your answer. This is where the trouble really starts. Possible responses to your answer are (and I quote) "Right", "To High", and "To Low". He actually points this out in the accompanying text file. "Sorry for the bad grammar", he writes. Why didn't he go back and fix it? How hard could it be? Doesn't he realize that any children using the program will have these bad constructions drummed into their heads along with the arithmetic?

There is not much incentive for children, or anyone else, to use the program. The easy level is not bad, but higher levels require pencil and paper. Taking problems from the program rather than a book just adds a level of drudgery to a process that is

already not very interesting to most children. It isn't fun after about the first twenty seconds.

The second module, Division Test, is even worse. You are given twenty problems worth five points each, for a possible score of 100. Again there are four levels of difficulty. The problems are presented one at a time. After you answer the last one, you are shown your score.

Only it doesn't work. I took the test four times (the last three times at the easy level) to make sure I really was entering the correct answers. The first time, the program said I had four correct answers out of 20. The second time it recognized only two correct answers. The third and fourth times I wrote everything down to be sure I had entered the correct answers. My scores were 10 (two correct) and 15 (three correct).

There are actually two problems here. One is that the program never shows you which problems it thinks you answered incorrectly. This is frustrating even when the program is scoring correctly. Students should be able to look back at their work and see where they went wrong.

The other problem, the bad scoring, is explained by a note in the text file. "You must press the return key twice in the test program to move to the next problem." Right. I should have seen it the first time I read the file. What happens when you press the return key only once? The problem number changes, but the problem doesn't. You think you are answering problem 2, but really you are answering problem 1 again. On the next round, you see problem 2 labeled as problem 3, and so on. The only time you enter a correct answer is when there are two problems in a row with the same answer. This is inexcusable. If Mr. Winfield found it necessary to use two returns, he should have either prevented anything from changing until the second return, or else removed the old problem after the first return and shown only the new number.

**Counting Fun**

The other program by Ken Winfield, Counting Fun, has an inaccurate title. It's really drill in addition, subtraction and multiplication, and has nothing to do with counting. It isn't much fun either. Okay, it's drill, it might be useful. Why say that it's fun?

Counting Fun is much like Div1.1, but the graphics are not so sophisticated. There is another fancy font, but it is not used as effectively as the chalkboard font in Div1.1. This is partly offset by the lack of bad spelling. In fact there isn't any spelling. Feedback is provided in the form of a happy face and a bell tone for a correct answer. A wrong answer earns you a snarly face and a loud, unpleasant sound. This will be fine for some children. On the other hand, children who have trouble answering in the classroom will probably not find abuse from a program very amusing. They can always turn the sound off.

**Reflex Test**

Jason Lowe was 19 years old when he wrote Reflex Test. The full name of the program is The Mathematical Reflex Test, Part 2. This is also a misnomer. It is a mathematical speed test, and does not test reflexes. It is, however, done well and without any errors that I can find.

Reflex Test has three main categories: Algebra, Division, and Fractions. After choosing one of these categories, you are presented with an array of problems, all set in a large, easily readable font. A blinking cursor is positioned over the space for the first answer. Type in the answer, and the cursor moves to the next problem. You can't go back and you can't correct an error. The idea is to be as fast and as accurate as you can.

As soon as you type in the final answer, the program shows your score. Any problems answered incorrectly are left visible for inspection. The score is based on correctness and speed. The formula is not explained, but I can't do much better than 85%, even with all the answers right. The only way to get a better score is to work on speed.

Jason's approach is to treat Reflex Test as another video game. He has published the high scores of his friends, and offers to publish your high score too, if you send it to him. It seems to me that this would appeal to many young people who are used to playing video games. They can compete against themselves and also see how they stack up against their friends, and against a bunch of kids in Australia, where Jason lives.

**Algebra**

There are 18 problems in each screen. Because the cursor moves by itself from problem to problem, all the answers have to have the same number of keystrokes. Jason has opted for one-digit answers. This limits the kind of problem that can be presented -- the answers have to be positive too, because the minus sign counts as a keystroke. I think this was done to ensure that every screen would require exactly the same number of keystrokes to complete. I would like to see a little more flexibility here, even at the expense of speed.

**Division**

There are 30 division problems in a screen. Again the answers are one-digit numbers, but it's still good practice.

**Fractions**

I think this is the most fun of the three sections. There are 15 problems in each screen. In each problem you have to add or subtract two common fractions, which may or may not have the same denominator. This means for me that in the mad rush to convert to a common denominator I often forget to notice whether I should add or subtract until it is too late. (I do not have a cool head). Since you have to supply both the numerator and the denominator, each problem requires two keystrokes.

Be sure to read Jason's own views on motivating students. After you stop laughing, you may decide that you agree with him.

**Summary**
I think that all of these programs are usable except Division Test. Counting Fun can be used by younger children if they will stick to it. It's not likely to grab their interest. Slightly older children can use Div1.1 for practicing long division, but parents should point out the spelling mistakes and show the correct spellings. Div1.1 actually presents a greater variety of division problems than Reflex Test. Again, it probably won't be much fun. Reflex Test will appeal to some older students. If you have school-age children who need to work on their arithmetic, give these programs a try. You might have a little fun yourself.

**PS**
I have just discovered that there are other programs by Jason Lowe in the Fred Fish series, including Part 1 of The Mathematical Reflex Test, but I haven't had time to look at them yet. I think that most the programs mentioned in this review will soon appear on a TPUG disk.

*John Buller*

## SuperCPU Sneak Previw

Here's your chance to see the latest CMD project, our upcoming SuperCPU 64 20 MHz Accelerator for the Commodore 64 and 128 (in 64 mode). Check below for details.

**SuperCPU 64 Circuit Board**
**Processor**
The Wester Design Center's 20 MHz W65C816S. This is the fastest version of this chip ever produced and provides 8-bit 65C02 emulation, as well as an enhanced 16-bit register mode. The 65C816 is capable of directly addressing 16 MB of memory. The enhanced instruction set allows more powerful programming using fewer instructions, yet remains fully backward-compatible with all legal 65xx family processors instructions.

An Altera Complex Programmable Logic Device was chosen to control the various signals that interface the new processor to your computer. CMD spent several hundred manhours creating the custom programming for this chip that is vital for making the SuperCPU emulate the C-64's own internal logic.

**RAM**
128K of Fast Static RAM (lower left corner, just below the ROM). Half of this fast RAM is used to replace the 64K of RAM that you normally have for programming in the Commodore 64. The other half is used as a form of Operating System ROM (OSROM). By reading the OS into RAM, the SuperCPU can deliver full speed when accessing routines that are normally ROM-based. If a ROM were used instead, wait-states would be required during such accesses.

**ROM**
128K. This ROM contains the Operating System overlays, which are downloaded into part of the OSRAM.

**Pass-Thru Port**
Standard 44-pin Commodore Expansion/Cartridge Port. This lets you plug in and use many of the cartridges and I/O devices available for Commodore computers.

**Rocket Socket**
Not actually a socket, but a header (located along the left side). This connector provides high-speed expandability for future options.

**Switches and Indicators**
The three toggle switches (located along the top right edge) provide a master Unit Enable/Disable, JiffyDOS Enable/Disable, and Turbo Select (Enable/Disable). Whenever the unit is operating in 20 MHz mode, the Turbo Indicator LED (top edge left of center) lights to indicate this A push-button Reset switch is also provided (top left edge).

**Miscellaneous**
To the right of the CPLD is the clock oscillator circuit, and there are several other components and chips on the board that form support and glue circuitry.

**SuperCPU 64 Preliminary Information**
The SuperCPU 64/20 is an accelerator module that plugs into the C64/128 Cartridge port. At its heart is the W65C816S microprocessor running at 20 MHz, along with 128K Bytes of high-speed Static RAM (the same type of high-speed cache memory found in 486/Pentium systems), 128K Bytes of ROM, and a Complex Programmable Logic Device IC

The SuperCPU is contained within an enclosure approxomately 6"wide, 3-1/2"tall x 2" deep. The enclosure has an opening for the Cartridge-Port Pass-Thru connector at the rear, exactly in line with the computer's Cartridge Port. The main circuit board in the SuperCPU mounts vertically, so as to keep the depth of the unit to a minimum. This helps to prevent devices plugged into the pass-through port on the CPU from extending too far back from the computer. Three easy-to-use toggle switches line the upper front edge of the unit: A Unit Enable/Disable switch; a JiffyDOS Enable/Disable switch; and a speed selection switch. A push-button Reset switch and Turbo mode indicator LED are also provided.

Installing the SuperCPU is simple: just plug it into the Cartridge port.

No wiring or jumpers need to be installed inside of the computer.

Operating the SuperCPU requires no special knowledge. The user can perform all computer tasks in exactly the same manner as with a stock system, and still gain the benefit of the greatly accelerated speed. The toggle switches on the unit are clearly labeled, easily accessible, and can be used without having to refer to a manual in order to determine their function. The SuperCPU has been designed to work out-of-the-box with any C64 or 128 computer -- no manual adjustments required.

The SuperCPU 64 operates with C-64 and C-64c computers as well as the

C-128/128-D in 64 mode. The W65C816S processor supports all legal 65xx-family processor opcodes, providing a very high level of compatibility with existing software -- including GEOS. The C-64 memory map is emulated exactly, and proprietary write-thru logic ensures full compatibility with all VIC graphic modes and memory mapping.

To help achieve a high level of performance, all operating system routines are downloaded into the high-speed Static RAM upon power-up, eliminating the bottleneck caused by ROM-based operating system code (on PC's, this technique is called ROM-BIOS shadowing). 64K of high-speed SRAM remains free for programs -- just like in a standard C-64. In addition, buffered write-thru circuitry (similar to PC cache-controllers) helps the SuperCPU avoid having to slow down when writing data back into the C-64's RAM.

**Additional Features**

**JiffyDOS:**
The JiffyDOS Kernal ROM for the computer is built into the SuperCPU, providing DOS-Wedge commands and enabling high-speed serial transfer rates to and from JiffyDOS-equipped disk drives. A JiffyDOS disable switch is provided so that the SuperCPU can load programs which are not compatible with JiffyDOS. This switch can be used to enable or disable JiffyDOS while the CPU is running, and does not affect the operating speed.

**Pass-Thru Port:**
The SuperCPU includes a Cartridge Port Pass-Thru connector which enables the full use of most plug-in hardware devices such as Commodore REU's, RAMLink, Swiftlink, SID Cartridge, and GEORAM. These devices will work with the CPU running at 20 MHz and will not require a slowdown to 1MHz. Most ROM cartridges (generally games) will either force the SuperCPU to 1 MHz mode, or require that you manually switch off Turbo.

**REU Compatibility:**
The CPLD chip in the SuperCPU includes special DMA transfer logic to provide 100% compatibilty with all types of data transfers to and from Commodore REU's. The SuperCPU does not have to slow down to 1 MHz in order to perform DMA transfers to and/or from the REU.

**RAMLink Compatibility:**
The SuperCPU is 100% compatible with RAMLink, and contains its own version of RLDOS, which will run from the SuperCPU's high-speed static RAM. The faster RLDOS, along with the efficiency of new 65C816 opcodes will enable the SuperCPU to transfer data to and from all of the memory on RAMLink's RAMCard at speeds which rival the DMA transfer rate of Commodore REU's. Transfer rates to and from CMD HD-Series hard drives connected to RAMLink's parallel port will also be significantly faster.

**GEOS:**
Special features include the necessary Configure and driver software to optimize GEOS for operation with the SuperCPU. In addition, an intelligent write-thru hardware circuit designed especially for GEOS effectively eliminates a major performance bottleneck associated with earlier accelerator designs such as the Turbomaster and Flash-8. This design feature, coupled with the 20 MHz clock speed of the 65C816 will boost the performance of GEOS far beyond anything currently possible or imaginable.

**Expansion Capability:**
The SuperCPU includes a connector (called the "Rocket Socket") which will enable the user to plug in a CMD-supplied RAM Expansion card (available seperately). This card will have on-board SIMM sockets and can contain from 1 to 16 Megabytes of Dynamic RAM (DRAM). The RAM on this card can be used as either data or program storage.

**Speed Selection:**
The speed selection switch provides on-the-fly switching between 1 MHz mode and 20 MHz (Turbo) mode. The 1 MHz option can be used for compatibility with programs (such as some games and cartridges) that may operate too quickly in the Turbo mode. Speed can also be altered via software using a simple POKE command, provided the unit is in Turbo mode. (Note: The SuperCPU performs disk access functions properly in any speed mode.)

**Development Support:**
CMD is actively seeking developers willing to create new commercial software and/or modify existing software to take full advantage of the SuperCPU. A comprehensive package will be avialable which will include an assembler which supports all 65C816S opcodes and addressing modes as well as documentation providing pertinent technical specifications and guidelines. This package will enable developers to produce programs which take advantage of the 65C816S's enhanced instruction set, 16MB addressing capability, and additional RAM available on the SuperCPU's optional RAM Expansion Card.

**128-Mode Compatible Version:**
CMD has announced that a C-128/128-D version of the SuperCPU will be made. This version will offer all the capabilities of the 64 version, but will include additional hardware to allow it to operate in 128 mode.

An estimated retail price of approximately (US)$199 has been announced for the SuperCPU 64. The estimated retail price of the 128 version is $299. These prices are, however, subject to change prior to release.

Advanced orders - with a $50 deposit are being accepted now, and will guarantee delivery from the first production run at a price no higher than the announced estimated price. Contact CMD Sales at 1-800-638-3263 to place your order.

## A Shortcut that isn't a Myth

*Jim Butterfield*

*from Input/Output Newsletter of the Arizona Commodore Users Group June 1996*
*Reprinted from Civic 64/128, April, 1996*

Anyone who has ever tried to read a disk file from BASIC has run into the limitations of input#. It just has too many delimiters: it won't read commas, colons, is limited to 80 characters, etc. Most programmers end up using get# instead, which is slow, but reads everything.

String Thing is one of those little gems that advanced programmers keep hidden away in their bag of tricks. It's been around since the early PET days. Jim Butterfield published the 64 version a few years back. It is a short Machine Language routine that replaces BASIC's input# statement. String Thing has only one delimiter, the carriage return, so it always returns an entire line of text. This is the routine that creates it:

```
2 in$ = "?": for i = 1 to 7: in$ = in$ + in$: next
4 in$ = left$ (in$, 127) + in$
6 na = 896
8 for i = na to na + 41: read n: poke i, n: next
10 data 160, 2, 177, 45, 153, 137, 0, 200, 192
12 data 6, 208, 246, 162, 1, 32, 198, 255, 32
14 data 228, 255, 201, 13, 240, 15, 164, 142
16 data 145, 140, 200, 132, 142, 196, 139, 240
18 data 4, 165, 144, 240, 234, 76, 204, 255
```

The Machine Language is relocatable. It can reside anywhere that is safe from BASIC. This version resides at address 896 which is in the middle of the cassette buffer. Change the address in line 6 to locate it elsewhere.

These are the rules for using it.

1. The routine MUST be the very first thing executed in the program, either at program top as is done here or as a subroutine. This is because in$ must be the first variable defined. From then on, use sys na instead of input#1.

2. The disk file must be opened as file 1 (the first number in the open statement, like open 1,8,8). However this can be changed by poke na+13, file number.

3. The delimiter defaults to chr$(13) (carriage return), but can be changed to anything by a poke na+21, ASCII value of the desired delimiter.

4. The input data always ends up in in$. How much comes in must be determined by peek(142), though in$ is always 255 bytes long regardless of how much data comes in.

To use it, open the disk as file channel 1 and sys na. String Thing gobbles characters and puts them into in$ until either in$ is full or a carriage return is found. Then manipulate in$ string with mid$, left$ or right$ as necessary, using peek(142) to determine the length of the data received.

The following demonstrates its use. In this instance, the drive command channel 15 is accessed to read the drive's status. It reads the whole status message in one string, commas and all.

```
100 open 1, 8, 15: sys na
110 print left$ (in$, peek(142)): close 1
```

Something that all BASIC programmers eventually get around to writing is a sequential file reader.

The following is a simple one. Run and enter the name of a sequential file on the disk in the drive. Time it to see how long it takes to read the file.

```
200 input "file name"; f$
210 open 1, 8, 8, f$ + "s, r": for x = 0 to 1
220 get# 1, g$: x = st: print g$;: next: close 1
```

Now read the same file with the String Thing file reader following. Time it.

```
300 input "file name"; f$
310 open 1, 8, 8, f$ + "s, r"
325 sys na: print left$ (in$, peek(142))
330 if st = 0 then 325
340 close 1
```

Plainly, String Thing combines the speed of input# with the convenience of get#. And it can be made to read any type of file. Just change the S in the open statement to P and you have a PRG. file reader. Or make it U to read a USR. file. Such flexibility and ease of use makes it readily adaptable to any programming situation.

**Note: this program, at times called STRING THING, even back to days of the PET, is available on TPUG Disks from our library.**

## Back to Basics

**Bill Snyder**

*From Input/Output*
*Newsletter of the Arizona Commodore Users Group*
*June 1996*

Have you discovered the most useful program ever written for the Commodore C-64? "What program are you talking about?" you're probably asking about now. It's a program that came with your 1541 disk drive on the 'Test/Demo' disk. If you don't know about it, you have been doing a lot of extra work to enter commands and make your work on the computer more difficult.

The program (really two programs in fact) is the C-64 Wedge and the machine language program DOS 5.1 which is called by the 'wedge'. I don't know who the author of these two programs is, but all C-64 users owe him or her a debt of gratitude.

When the Disk Operating System (DOS) was created by Microsoft they didn't provide for any command entry shortcuts. The complete command (which could use 'wildcards') was all that they gave us to use.

Enter the C-64 Wedge - A very useful support program which would allow us to use command short-cuts when we were utilizing our system. Unfortunately, with the advent of the program, they didn't provide any documentation to go along with it. So, many C-64 owners were not made aware of what the program could do for us and worse still, didn't know how to use it, even if they did know it was available to them.

To use this program, all you need to do is to turn on your system, insert a disk with the C-64 Wedge & DOS 5.1 programs on it, 'Load' using the 8,1 form and 'Run' the program and you are ready to take advantage of all the available short-cuts it offers. As long as you don't turn off the computer the program is available (in background mode, where you don't have to worry about it) to enter your commands.

Once you have the program in memory you can use most of its features by typing > and a few more characters to identify the command and then pressing the return key.

Following is a list of the DOS 5.1 wedge commands:

| | |
|---|---|
| Copy A File | C: newname = oldname |
| Concatenate files (combine) | C: newname = file1,file2,(etc) |
| Directory | $ |
| Selective Directory | $: filename |
| Erase Directory From Disk | N: filename |
| Format A Disk | N: filename, ID |
| Initialize Disk Drive | I |
| LOAD A BASIC Program | / filename |
| LOAD & RUN A BASIC Program | (Up arrow) filename |
| LOAD Machine Language Program | % filename |
| Quit The Wedge Program | Q |
| Rename A File | R: newname = oldname |
| SAVE A BASIC Program To Disk | (Back arrow) filename |
| SAVE With Replace (dangerous) | (Back arrow) :filename |
| Scratch A File (Delete file) | S: filename |
| Set Active Device Number | #n |
| Speed Change - C-64 Speed | UI+ |
| Validate A Disk | V0 |

You can even use "wild-cards" with the wedge commands.

The C-64 Wedge program should be copied from the Test/Demo disk onto a disk that you keep handy to load immediately after turning on your system. One caution - The copy program on the wedge DOES NOT copy files from disk to disk. You must use a disk file or copy program to do this job. There are many such programs available 'utilities' on public domain disks.

Because the wedge is of such importance, it is included on many commercial fast load devices, such as Jiffy-DOS & Fast-Load cartridges. If you have one of these 'speed-up devices' you get the wedge for free.

Once you start using the capabilities of the C-64 Wedge you will wonder how you ever got along without it.

For example, to Format a disk using system commands you must enter the following:
Open 15,8,15: Print#15,N0:filename,ID (return)

With the wedge installed:
N0:filename,Id (return)

Even the 0 (zero) isn't required, but I recommend that you use it. Remember it is the number 0 not the letter O.

## The Teachers' Corner

I am intrigued by the fact that the true potential of computer-aided learning has yet to be recognized by most educators. There is much emphasis on having the latest in hardware and software with all the bells and whistles to promote 'computer literacy'. Little thought is given to the simple fact that today's hardware and software is tomorrow's garbage. The endless quest for the latest chip is much like a dog chasing its tail.

Thirteen years of hands-on experience with pupils and computers has convinced me that computers can function as learning turbo-chargers. The age of a computer is immaterial providing it works and has appropriate software.

But, before we can engage in computer-aided learning, several critical steps are necessary.

1. **Precise, measurable learning objectives.**
2. **Tests to confirm achievement of the learning objectives.**
3. **Computer programs that incorporate the specified learning objectives and tests.**
4. **Continuous pupil performance feedback for pupils, teachers, and parents.**

The power of computer-aided learning lies in the intense level of concentration between a pupil and a challenging computer program. With good programs, most pupils sail right along with few hangups. When hangups do occur, the computer lab teacher can focus precisely with the pupil on the problem. Here the real power of computer-aided learning strikes home because of a basic fact of life.

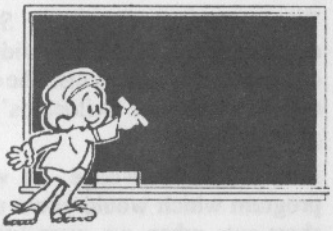
***There is no point talking about the solution if the pupil doesn't understand the problem.***

When a pupil gets hung up on a specific problem, the teacher can provide human flexibility and teaching skills to clear up the problem. Then, the pupil can drop back into the individual stimulus-response-feedback-consequence cycle of self-instruction.

It should be noted that the most effective use of computer-aided learning (CAL) requires a computer lab staffed by teachers who are trained to exploit the CAL process. Computers stuck in regular classrooms can only interfere with the normal activities of a classroom teacher.

If years ago I'd had access to a good computer-aided learning lab, I might have become an astro-physicist. What are todays' pupils getting from their computer activities?

Bill Cumberland
1996:10:21



## Educational Technology vs Instructional Technology

*Robyn P Jaynes PhD (Strathglen) and William C Harley PhD (Axon)*

There is evidence of some confusion amongst educators over the terms 'educational technology' and 'instructional technology'. Recognizing this fundamental dichotomy, therefore, we must strive to discriminate between intra- and interacademic perspectives as well as human/machine interfacing; including advanced ergonomics. These will, ipso facto, lead us to a new paradigm framework to which all will necessarily adapt within the educational structures.

Recognizing this fundamentally important viewpoint, therefore, the optimal academic structure must involve the interacting strategies and mechanisms of a veritable human enhancement process. This necessitates a fundamental and integrity-verified assessment of all factors essential to the pursuit and attainment of reasonable goals adduced from an normative relationship analysis of all the actual and potential variables contributing to a valid and verified outcome from the aforementioned dichotomy.

This matter requires considerable attention since an outcome-oriented analytical perspective (acadam-amische Wissenschaft) virtually demands significant input from all participants likely to have an interest, vested or otherwise, in the terminal outputs that will, in all probability, accrue. (Cogito ergo viva.)

Accrual processes, over time, will indubitably necessitate the selective termination of less desirable alternatives as related to assessed and re-assessed outcomes. In no manner does this reduce the normal requirement for essentially positive attainment expectations (veritas integritas). Indeed, rational expectations would lead one to suspect that this article contains all those essential ingredients which fully support the nourishment of flora and hence is of some earthly value.

# TPUG Toronto Pet Users Group, Inc.

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