# TPUG Newsletter

**Fall — 2015**

## From your President

Fall is upon us and that means yet another season at TPUG. First off I would like to apologize for the length of time that it has taken us to get this newsletter together. It has mostly been my fault.

I would say that I have been experiencing something akin to writer's block or perhaps more accurately, paralysis. Over the last several months I have sat down in front of the keyboard several times intending to bang out this note to the club and no ideas came. My life outside the club has been tremendously busy, but that isn't really a valid excuse because in 2015 everybody has a busy life. Some special motivation is required I guess.

So here it is Friday afternoon October 9. Not only is today my parents' 45th wedding anniversary, it is also the second game of the playoffs for the Blue Jays after 22 years being kept out of the postseason. Perfect inspiration for some nostalgia. After all isn't nostalgia the fuel that keeps the TPUG fire alive?

What do you know? Since I wrote that last paragraph another month has passed, this one quite a bit less happy than the last. I've been in hospital and so has my mom - unrelated health issues thankfully.

We are both on the mend now and I have to get this finished.

The club has had another pretty good year. For the first time in many years our Annual General Meeting back in February was very well attended. Thank you to all that participated. The show of support means you are still interested and that provides the board the extra motivation to carry on.

## World of Commodore

Once again World of Commodore will be held at the Admiral Inn in Mississauga on Saturday December 5, 2015. This is TPUG's big fundraiser of the year so please try to make it out and show your support so that we can continue to run this fun event in the years to come. Anyone that would like to help out, do a formal demo, or reserve some table space for a display please contact me at *icolquhoun@gmail.com*.

As always, check in at ***http://worldofcommodore.ca*** or ***http://www.tpug.ca*** for all the latest info.

*Ian*

## Member Information

Website:          www.tpug.ca
e-mail:           info@tpug.ca

## Membership Rates

**$15 per year**
**else, with e-mailed Newsletter,**
**$10 per year**

### Board of Directors

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| Member Records | Ian Colquhoun |
| Meetings | Leif Bloomquist |
| and | Ernie Chorny |
| Shows | Tom Luff & Ernie Chorny |
| Webmaster | Ian Colquhoun |

### Newsletter

Editor   John Easton (416) 251-1511
         jeaston@rogers.com

## Meeting Schedule

**Westside and Amiga West:** Third Thursday of the month (except summer) 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 Horner Avenue. From the west, exit QEW at Evans Avenue, east on Evans to next 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 - **Leif Bloomquist** (416) 737-2328  leif@schemafactor.com
or          **Ernie Chorny** (905) 279-2730          chorny@bell.net

# From your Editor ...

Well now … and hasn't it been a year?

Sorry for the lack of Newsletters … but hey, when you're somewhat north of eighty, one doesn't sweat the minor inconveniences of Writer's Block.  I just *knew* that three Newsletters last year was pushing it.  **;-)**

And so, for your reading pleasure … might I introduce you folk to a new contributor, Tristan Miller who, though once active in Toronto, now lives in Germany.  His contributions are rather off-the-wall, but none-the-less fun.  And, hey Tristan, I've still another article about SID music on the Internet saved 'till next issue.

Leif Bloomquist still turns up as our primary reporter … like who else gets to travel to exotic venues in search of real news in the Commodore World, and who also has a gift of words.  Thanks Leif!

Rumour has it that Leif is now into limited production of super interfaces to challenge the likes of Jim Brain (who, incidentally should be a featured presenter/speaker at this year's World of Commodore).

And, I just realised that this issue contains no report on **last** year's World of Commodore.  By now, I'd completely forgotten .  OK … I promise, **first** item on the list for the **next** issue is a full report on this year's  event.

For those who **really** want info on last year's event, check our website for links.

Y'r humble servant
**John**

*TPUG Newsletter is meant to be published somewhat twice yearly by the Toronto Pet Users Group (TPUG). TPUG is a volunteer non-profit club dedicated to the service and support of owners and users of Commodore computers.*
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*Advertisements are also welcome. Member's small ads are free. Commercial ads are $100 per page with a $10 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 insisted 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.

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# TPUG AGM

Take notice that the **Annual General Meeting** of TPUG will be held in conjunction with the regular February 18th 2016 meeting, only earlier— 7:00 p.m.  This is your opportunity to discuss club issues and to contribute to the organization as desired.

Typical items covered at an Annual Meeting are, but not limited to: quorum, minutes of the previous meeting, reports on activities within the club, new business, nominations of officers and election of officers.

If you are unable to attend, and wish your proxy vote counted, please ensure that your assigned proxy is in the hands of the Board prior to the meeting. E-mail to the vice-president, *jeaston@rogers.com* will be considered a legitimate means of submitting a proxy to the Board.

Typical Proxy Voting Format

This will allow ……………………….……..... to vote on my behalf on all matters at the Annual Meeting of TPUG held 18 February 2016.

Name …………………………………….....  TPUG Member # ……….......

Signature  …………………………………… Date ……….…….............

This year, the candidates for 2-year renewal as director are:

> James Alexander
> Ernie Chorny
> Ian Colquhoun
> John Easton
> Ian McIntosh
> Mike Stein

Come prepared to volunteer and join the list, but at least … vote

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# Joe's World ... 29  Memo with 8 Groups

```
0 rem "memo 8 groups by Joe Quittner
10 print ch$(144)ch$(14)
11 poke 55,100:poke 56,25:clr:rem "protect
6500+
12 def fna(i)=i-256*fnb(i):def
fnb(i)=int(i/256):def
fnc(i)=peek(i)+256*peek(i+1)
13 for i=820 to 1023:read a:if i>255 then
100
14 poke i,a:next:stop
20 data 230,251, 208,2,  230,252,
96:rem"Increment 251/2
100 print"          MENU:
101 print" 1. Type into memory from 6500
102 print" 2. Read one of the groups
103 print" 3. Save all groups on disk
104 print" 4. Load all groups from disk
105 print" 5. Search memory for text
106 print" 6. Add more typing
109 print"    WHICH?":gosub 997:print g$
110 g=asc(g$)-48:if g<1 or g>6 then 109
111 on g goto 1000,2000,3000,8000,5000,6000
997 poke 204,0:get g$:if g$="" then 997
998 if peek(207) then 998
999 poke 204,1:return
1000 rem " TYPE INTO MEMORY starting at 6500
1001 m=6499:poke 2025,99:poke 2026,25
1002 gosub 1090:rem" Which group?
1003 m=m+1:poke m,g
1004 print " Enter text or an ASCII number.
To enter ASCII numbers hold down";
1005 print " the CTRL key   and type a for
ASCII.  Type 999 to end.
1006 print " To end typing text hold down
the CTRL  key and type e for end. Start now.
1010 gosub 997:g=asc(g$)
1011 if g=1 then 1030:rem" ASCII
1012 if g=5 then print:if p then print#7
1013 if g=5 then 1050:rem "End of text
1014 if g=20 then m=m-1:a=peek(211):if a
then poke 211,a-1
1015 if g=20 then 1010
1020 m=m+1:poke m,g:print g$;:goto 1010
1030 print " Enter ASCII number(s) (0-255),
end with 999
1031 a=m+1:print
1032 input g:if g>255 then 1034
1033 m=m+1:poke m,g:goto 1032
1034 for i=a to m:print
str$(peek(i));:next:print" OK? (y or n)
";:gosub 997:print g$
1035 if g$<>"y" then m=a-1:goto 1032
1040 print "Enter more text, if any:":goto
1010
1050 m=m+1:poke m,0:poke 2025,fna(m):poke
2026,fnb(m):print"Last m="mid$(str$(m),2
1051 m=m+1:poke m,255:gosub 997:goto 100
1090 print" f1 to f8 keys point to groups 1
to 8. Press one of them now.
1091 print" Which group (f1-f8?":gosub
997:g=asc(g$)
1092 if g<133 or g>140 then 1091
1093 poke 2024,g:return
2000 rem " READ ONE GROUP'S CONTENTS
2001 m=64999:gosub 4000
2002 gosub 1090
2003 poke 251,fna(m):poke 252,fnb(m):rem
start
2004 poke 40959,255:rem end
2005 if p=0 then print"To continue reading
hold down the space key
2006 sys 827:if peek(781)=101 then print"
End of text":gosub 997:gosub 2030:gosub
997:goto 100
2010 data 162,0, 160,0, 32,52,3, 177,251,
201,255, 208,3, 162,101, 96
2011 data 205,232,7, 208,239, 96:rem" Same
group?
2012 data 32,52,3, 32,59,3, 177,251,
208,246, 96:rem zero?
2013 i=fnc(251)+1:print i;
2017 a-peek(i)
2018 if a=0 then gosub 2030:poke
251,fna(i):poke 252,fnb(i):goto 2006:rem
next
2019 if a=13 then gosub 2030:goto 2026
2020 if a>31 and a<96 then print ch$(a);:if
p then print#7,ch$(a);
2021 if a>31 and a<96 then 2026
2022 if a>192 and a<219 then print
ch$(a);:if p then print#7, ch$(a);
2023 if a>192 and a<219 then 2026
2024 print a;:if p then print#7, a;
2025 if p=0 then gosub 997
2026 i=i+1:if p=0 then gosub 997
2027 goto 2017
2030 print:if p then print#7
2031 return
3000 rem "  SAVE ON DISK
3010 f$="memo8.d":input "FILNAME or re-
turn";f$:m=6499
3011 close 8:open 8,8,8,"@0:"f$+",s,w
3012 m=m+1:a=peek(m):if a=255 or m=40960
then 3020
3013 print#8,J(D(a),2):goto 3012
3020 :print#8,255:close 8:goto 100
4000 rem"  PRINTER ON?" ... printers differ,
this works for the one I use.
4010 close 5:close 7:open 5,4,5,:open 7,4,7
4011 print"Printer on? ";:gosub 997:print
g$:p=0:if g$<>"y" then return
4012 p=1:for
i=1to5:print#5,chr$(27)chr$(108)chr$(5):rem
left margin=5
4013
print#5,chr$(27)chr$(81)chr$(77):next:return
:rem right margin=77
5000 :rem "   SEARCH FOR TEXT IN MEMORY
```

```
5010 print" Enter text":input g$          fnc(251);::if p then print#7,fnc(251);
5011 k=len(g$):for i=1 to                 5044 for i=fnc(251)to i+30:a=peek(i):if a=0
k:a=asc(mid$(g$,i,1)):poke                or a=255 then 5047
678+i,a:next:poke 678+i,0                 5045 print chr$(a);::if p then
5020 a=6499:poke 251,fna(a):poke 252,fnb(a) print#7,chr$(a);
5021 a=40960:poke 253,fna(a):poke         5046 next
254,fnb(a)                                5047 print:if p then print#7
5022 sys 861                              5048 goto 5022
5023 if peek(781)=101 then print"    END  6000 rem" ADD MORE TYPING
OF SEARCH"fnc(251):gosub 997:goto 100     6001 m=fnc(2025):goto 1002
5030 data 162,0 160,0, 32,52,3, 177,251,  8000 :rem "  LOAD FROM DISK:
201,255, 208,3, 162,101, 96:rem 255?      8010 f$="memo8.d":input" FILENAME or re-
5031 data 165,251, 197,253, 208,9, 165,252, turn";f$:m=6499
197,254, 208,3, 162,101, 96:rem end?      8011 close 8:open 8,8,8,"@0:"+f$+",s.r
5040 data 177,251, 205,167,2, 208,222     8012 m=m+1:input#8,g$:g=val(g$):poke m,g
5041 data 200, 185,167,2, 208,3, 162,102, 8013 if st=0 then 8012
96:rem match!                             8020 print m-1:poke 2025,fna(m-1):poke
5042 data 177,251, 217,167,2, 208,202, 24, 2026,fnb(m-1):poke m+1,255:close 8:goto 100
144,237:rem same?                         9999 data 999
5043 if peek(781)=102 then print          by Joe Quittner, TPUG, April 15, 2010
```

**Kerbal Space Program** is a space simulator game for Windows, Mac OS X, and Linux.  In the game, you manage a space program for the Kerbals who aspire to be a spacefaring species.  You can construct, test, and launch rockets and spaceplanes into orbit and to other planets, with realistic physics and engineering tradeoffs.  The game also lets you use a custom flag for your missions - I chose the classic Commodore "chickenhead" logo, as homage to the machines that got me into computers, video games, and eventually a career in aerospace!

Check it out at www.*kerbalspaceprogram.com*

Thanks to **Lief**
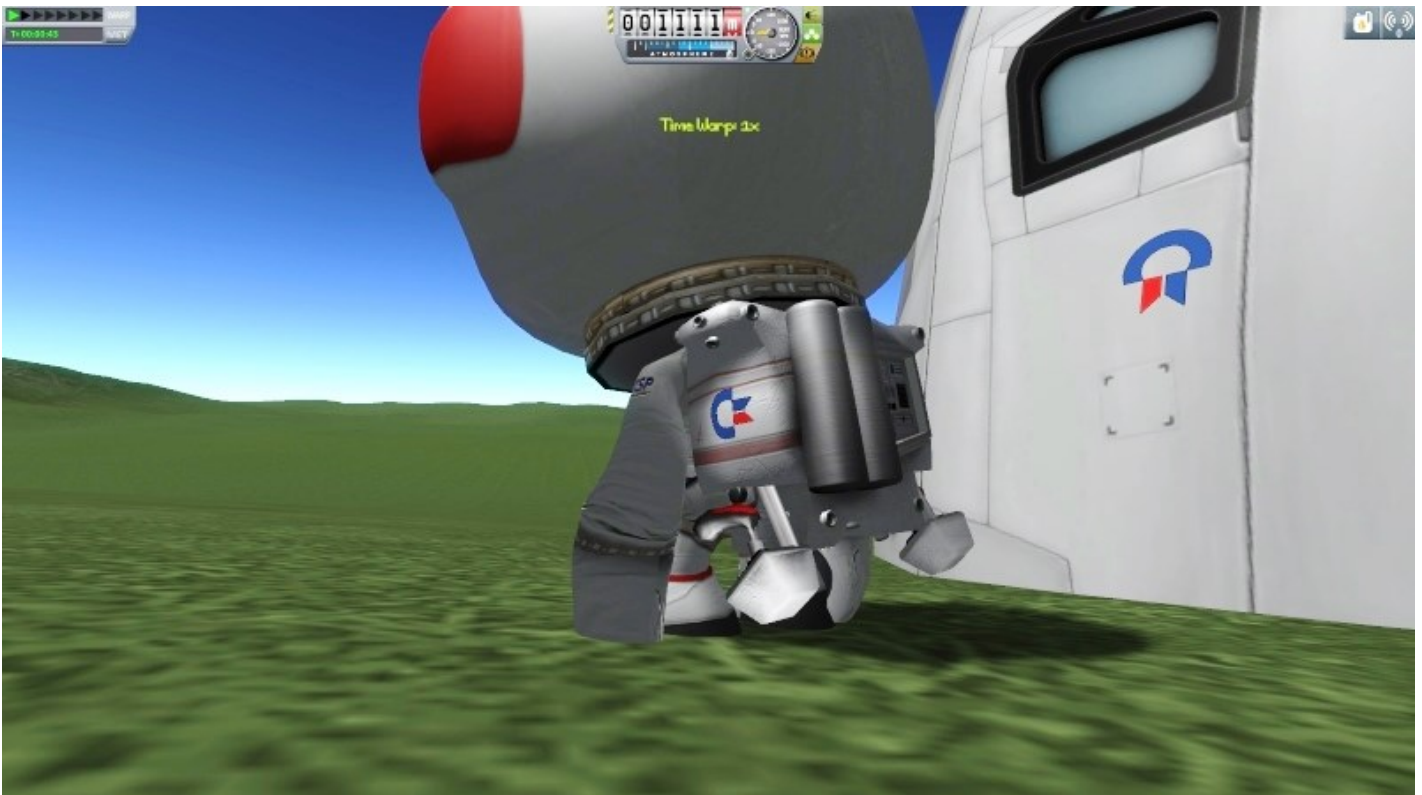
# Commodores in conversation

Our beloved Commodores are not known for being particularly chatty machines.  With the right prompting, however, it's possible to get them to respond to some simple questions, and even tell jokes!  Below are fifteen original one-liners demonstrating how to engage your Commodore computer in conversation—user input is shown in normal text and the computer's responses are shown in bold.  The dialogues were produced on a Commodore 64 but should be reproducible with most other 8-bit models.

fOi=1to11:oPi,0:nE:If I had a file for every C64 ever sold, what would I have?
**?too many files**

reT:Our pal Gosub is really spoiling our vacation. What do you suggest we do?
**?return without gosub**

sA"My, what a lovely new gadget! Did you get it for Christmas?",7
**?device not present**

a="I see you're back from your blind date. How did you find the guy?
**?type mismatch**

cO:Don't worry; you'll find a boyfriend some day! Just keep at it!
**?can't continue**

?pos("")pos("")pos("")How'd you like KFC's new recipe with 37 herbs & spices?
**?formula too complex**

?a(11)"And what did you think about the screenplay for the new Das Boot sequel?
**?bad subscript**

My bit part was cut! I complained to the director, and you know what happened?
**?extra ignored**

fOi=1to6:a$=a$+"You saw the world's biggest ball of twine? How was it?":nE
**?string too long**

What does the Catholic church call its new levy on ungrammatical confessions?
**?syntax**

?5^len("Speaking of church, remind me what happened to my cup in Psalm 23:5?")
**?overflow**

a(-len("Colorado permits possession of 28g of marijuana. What would 29g be?"))
**?illegal quantity**

sT:And if I got caught with that much marijuana, what should I do in prison?
**?break**

oP1,0:oP1,0:Break out of prison? But how could I escape my cell?
**?file open**

0inputa$
**rU**

Some of these jokes are pretty lame. What advice do you have for the writer?
**?redo from start**

<div align="right">

**Tristan Miller**
http://www.nothingisreal.com/

</div>

# TPUG at Toronto Maker Festival 2015

Tom, Chiron, Andrew, Ennio and myself manned the TPUG 'booth' this weekend at Toronto Maker Festival at the Toronto Reference Library on August 1st and 2nd 2015.  The whole event was quite something and better planned from last year. Met a lot of nice folks, and we made a lot of people smile.

We had games like Bubble Bobble, Demon Attack, Pac Man, Space Invaders, ?Metal Dust, Donkey Kong, Frogger and Gyruss, which went over fabulously with the crowds.

We displayed:
- C64 with SDCard
- C64 with SuperCPU with Metal Dust
- Clear case C64C

- Raspberry PI running VICE
- PET with SDCARD drive
- C64 with SDCARD and JiffyDos
- SX64 with JiffyDOS
- Vic20 with MegaCart

Kids and parents alike played on the systems all weekend right up until close. Many questions about how we keep them running, where to get them, and what is the SX64?

It was a full two days for sure.   I think we had the best spot on the 2nd floor, spanning three glass tables overlooking the front entrance.

Service and support by the event volunteers was great.

<div align="right">

-**Rob Adlers**

</div>

# The Great Commodore/Microsoft Easter Egg War

For as long as computers have had a few bytes of memory to spare, hardware and software designers have been stuffing them with Easter eggs—hidden messages accessible only via cryptic commands. For example, on the Commodore 128 a screen crediting the machine's designers can be revealed by entering SYS 32800,123,45,6; a similar message appears when entering SYS 52651 on the Plus/4. However, the most notorious Commodore Easter egg of all was created not by Commodore employees but by Bill Gates, founder of Microsoft and author of Commodore's BASIC interpreter. Gates's hidden message is triggered by typing WAIT 6502,1 on certain Commodore PETs; this causes them to output the text "MICROSOFT!". The routine was disguised so that its message did not show up in a disassembly of the interpreter, and Commodore was reportedly furious when they found out about it. It's well known that Commodore eventually located and removed the Microsoft Easter egg from subsequent revisions of the BASIC interpreter. What has never been reported until now, however, is how they later exacted revenge on Gates with an Easter egg message of their own.

The method Gates used to obfuscate his "MICROSOFT!" message is rather pedestrian: the string is actually stored in ROM beginning at the address $E082, but with the letters reversed and the unused upper bits randomized. By comparison, Commodore's own Easter egg is a true marvel of software engineering: its message is actually embedded inside BASIC's random number generator! The text, a rather gratuitous insult directed at Gates himself, can be revealed by running this simple four-line program:

```
10 A=125708:GOSUB 20:A=33435700:GOSUB20:
A=17059266:GOSUB 20:END
```

```
20 A=RND(-A)
```

```
30 A=INT(RND(A)*22):IF A THEN PRINT
CHR$(A+64);:GOTO30
```

```
40 PRINT:RETURN
```

This program works on Commodore 8-bit machines released after the PET, including the VIC-20, Commodore 64, Commodore 16, and Plus/4. Amazingly, the Easter egg is still present in the Commodore 128, even though by the time of its release Commodore had come to an agreement with Microsoft concerning on-screen credits.

(Credit for discovering this Easter egg is due to the late F. Jacques Beurrechamp, whose rough notes were obtained from the archives of the Tramiel Memorial Library in West Chester, PA and summarized by the present author.)

**Tristan Miller**

http://www.nothingisreal.com/
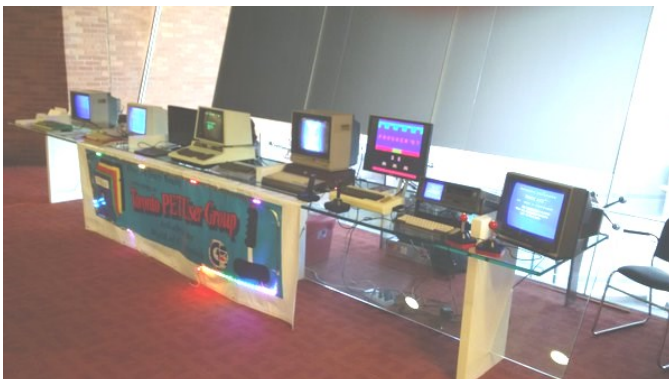
## Maker Festival

# Trip to the Vintage Computer Festival East and InfoAge Science Center

The Vintage Computer Festival East (VCF East) was held at the InfoAge Science and Learning Center in Wall, New Jersey April 17th-19th, 2015. I attended this year, for the first time ever!

Many TPUG members are aware of the Vintage Computing Festival MidWest, which for the last few years has been held alongside the Emergency Chicagoland Commodore Convention (ECCC). The Eastern edition is apparently a lot larger, but I was never able to manage it. This year, there was talk of a carpool going from Toronto, so I said "maybe" and booked a couple of days off of work. As it turned out, everyone else had to cancel or went separately…so a friend and I decided to make the trip ourselves anyway, and it was totally worth it!

The InfoAge Science Center is a fascinating venue, as a former US Army base ("Camp Evans") that was at the forefront of development of radar and communication technology during World Wars I and II. It's also just a few hundred feet from one of Marconi's famous towers used to send radio signals across the Atlantic, and is chock full of computing, communication, military, and broadcasting history.

VCF is of course about vintage machines from all eras, makes and models, but there was a particular focus on minicomputers, especially the Digital Equipment Corporation PDP-8 which came out exactly 50 years ago (wow!).

The event started Friday morning, with several lecture sessions ranging from repair tips to interesting bits of computing history, the history of computer music, and Commodore's own Bil Herd giving a primer on system architecture. To coincide with the 50th anniversary of the PDP-8, there was a special unveiling of a restored PDP-8 used by the R.E.S.I.S.T.O.R.S., one of the first computer clubs for young people (founded in 1967). A couple of former club members (now retired) were in attendance to commemorate the event and tell a few stories.

On Saturday the museum and the main VCF exhibits were open to all. The day started with a keynote speech from Brian Kernighan, one of the authors of the definitive book on the C programming language. He's also a Toronto native and University of Toronto graduate (I didn't know that before), now lecturing at Princeton! I got him to sign my copy of his book, quite an honour.

There was a very small vendor room and two large rooms (one in the basement) of displays specific to VCF East. There were several more PDP-8s (complete with teletypes), a few displays on the early history of Apple products, and more esoteric items like a vintage Fairlight computerized synthesizer and early U.S. census counting machines.

Commodore was well represented with a few displays:

Ontario's own Dan Kovacs, showing a C128 interfaced to a Raspberry Pi through a 64NIC+ cartridge, providing wireless Internet access.

"Bitfixer" was showing off his incredible PETpix project, which takes realtime video from an iPhone camera and converts it into PETSCII characters! You can learn more at *http://www.bitfixer.com/bf/petpix*

Jim Brain from Retro Innovations was there as a vendor, selling ZoomFloppy USB interfaces and his other Commodore products.

Also, Bill Herd (designer of the Commodore 128, among other products) was around for the weekend. He was really approachable and we had a great conversation. He also signed my 128D faceplate!

I spent part of Saturday afternoon checking out the rest of the Museum. There was too much cool stuff to describe in detail. The Museum is also home to the National Broadcaster Hall of Fame, a Shipwreck museum, and down the road from the massive Silent Sentinel Satellite Dish at the Project Diana site, which was running tours all day. (Project Diana was a U.S. Army experiment to bounce radar signals off the moon.)

There were some humorous fringe happenings, such as a small collection of vintage cars that rolled into the parking lot, and a visit from the 2600 Magazine, the Hacker Quarterly's modified "hacker van", adapted from an original phone utility van. There was a large group dinner at a local pub, with music and "entertainment" from a local folk singer with surreal songs and cautionary tales of technology.

A personal highlight was reconnecting with Jason Scott, director of the BBS Documentary and archivist at the Internet Archive, who interviewed me back in 2004. I also got to see a Heathkit HERO 1 robot again – we had one in our Electronics lab in high school!

Sunday was more of the same, starting with a keynote speech from Bob Frankston, creator of VisiCalc, and a continuation of the exhibits from Saturday.

I also met several interesting people, and scored a WYSE serial terminal, something I'd definitely been missing

from my home lab.   One thing I had to miss was the display of the original Apollo Guidance Computer used in the moon missions as the building was under renovations, but that's just another reason to go back next year!

To learn more about the Vintage Computer Festival:  *http://www.vintage.org/*

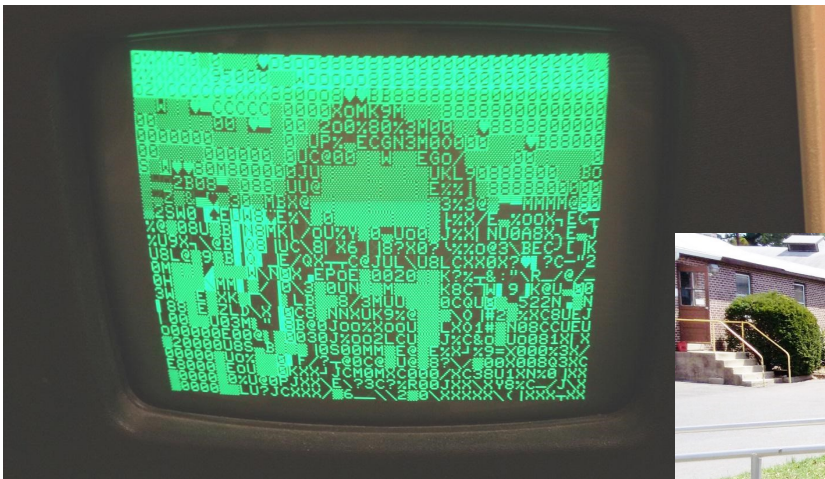To learn more about the InfoAge Science Center:  *http://www.infoage.org/*



Bil Herd, designer of the Commodore 128



Front Panel of a PDP-8



The dish at the Project Diana site



I've been PETSCIIfied!



Vintage computers, right this way!

**Leif Bloomquist**

# Cloud Storage for your Commodore

At the November 2015 TPUG Chapter meeting, we had a special live presentation from Steve "AgentFriday" Davison.  Steve was using a fascinating new screencast feature provided by **CommodoreServer,** allowing us to see everything he was doing on his Commodore 64 on the west coast of the USA, live on our Commodore 64 in Toronto!

terfield's SUPERMON (a nice gesture for TPUG), and showing us how he could disassemble and view machine language programs on his C64, while still running the screencast.  Currently the system is view-only but there are plans to have a version that is interactive, like a remote desktop.

To learn more about **CommodoreServer**, visit *https://www.commodoreserver.com/*

**Leif Bloomquist**
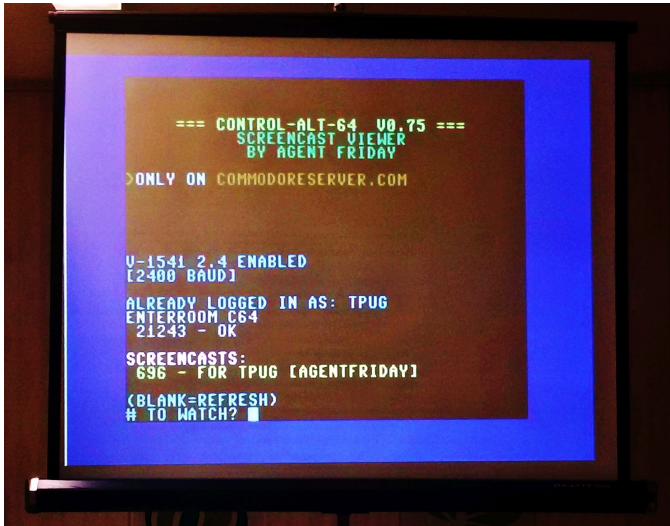
**CommodoreServer** is a "cloud storage" service for Commodore Computers, run by Greg "goog" Alekel.  Using an innovative device driver called V-1541 and any user-port based Internet solution, you can load, save, and exchange virtual disks (in the form of D64 images) from anywhere in the world.  You can manage your D64 collection from a Web browser on a modern PC, then access them from your C64 and share them with friends.

V-1541 operates on Device #2,  so the familiar ,8 is now replaced with ,2 i.e.  LOAD"$",2 for a directory of the remote disk.  There are also commands to change disk images, navigate directories, and much more.

In addition to virtual disks, **CommodoreServer** provides a protocol for playing multiplayer games, a chat system  (which can be linked into Internet Relay Chat) and more.

One of these features is the ability to do live screencasts from one C64 to another (or to multiple other C64s!) We were able to watch Steve type in BASIC programs, change the colors of the screen, and even play a game. He concluded by loading up Jim But-
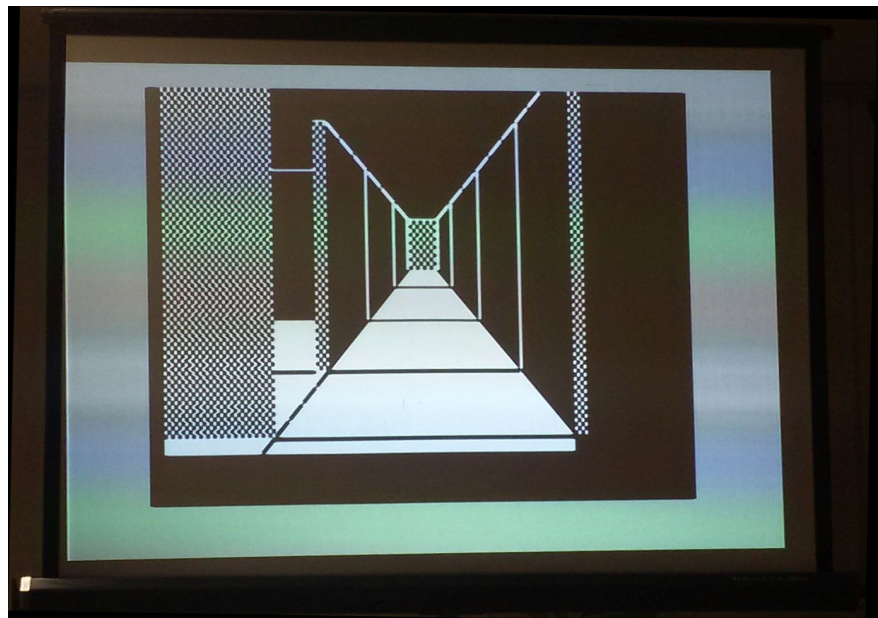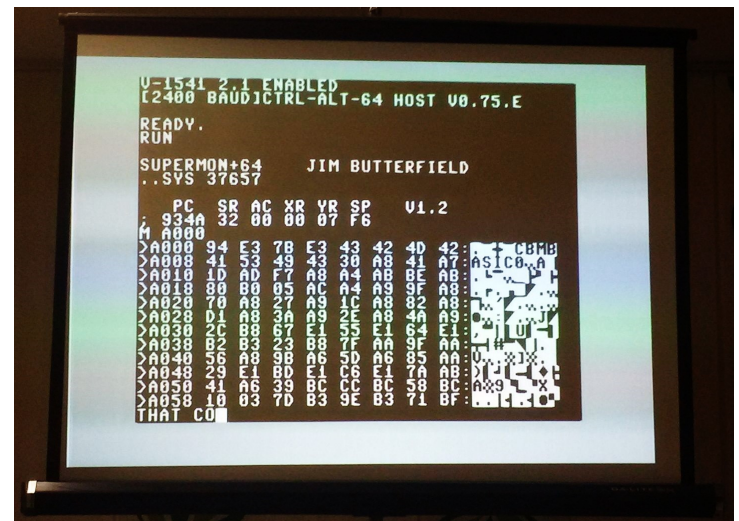
# SDrive —1564

*On 11/13/2015 8:51 AM, Stewart C. Russell wrote:*

Hi - as someone new to the 64 scene, what's the recommended SD card disk emulator for the 64 these days, please? I'm not afraid of a bit of soldering: I built up a Zeta V2 CP/M machine from scratch.



This is the first 5¼" floppy machine I've ever owned (my first used 3" — not 3½" — which you've likely never seen). Man, is the 1541 slow! I grew up with tapes, and even those seem quicker.

cheers,
 Stewart

This is what I have and it rocks!
http://www.ebay.com/itm/C64-SD-card-SD2IEC-SDrive-1564-LCD-SD-card-interface-Commodore-1541-emulator-/111818309104?hash=item1a08e3fdf0:g:WUcAAOSwFnFWAw0Q

Stephen

# Jim Brain's comments:

Love the fact that it has a power switch and the dip switches on the outside. Only thing, it's missing a reset button. But have you figured out what sleep on:off is for? (Holding the right button). I emailed the creator about it and he doesn't even know what it's for.

The seller's perspective is a pet peeve of mine, but first, the answer:

**"sleep"** allows you to effectively remove the device from the IEC bus without powering the unit off.  It forces the unit to ignore the IEC signals.  Sometimes, some copy protection or fastloaders require only one device be on the IEC bus.  In those cases, you can use the "sleep" mode to free up the bus without physically disconnecting it.

Now, to the pet peeve.  I agree these devices are neat (disclaimer, I sell one as well, though mine does not look as cute), but the seller needs to be at least be knowledgeable about his product. Because sd2iec is open source, and the design is open source as well, you find a lot of sd2iec devices on eBay are folks who quickly make a run of the open source PCB, load the open source code on it, and then sell it  (this seller at least has a nice package).

There's also another gotcha on these devices, that folks should pay attention to.

The microcontroller at the heart of this unit (typically an Atmel AVR) has what is called a "bootloader" capability.  If a bootloader program is loaded on the AVR, then the unit can "self update". While it is not "required" to support this, it's become an expectation (Yeah, Frank), the sd2iec can update to newer code, just dump the binary on the root of the SD card and reboot") of all units.  However, some of the hardware manufacturers forget to put the bootloader on the unit, and then the unit can never be upgraded unless you ship it back to the manufacturer.  This is important as INgo Korb (the primary author of sd2iec) releases new versions from time to time, with additional features.

I'm not suggesting this unit does not have a bootloader, but that you should check if you care about field upgrade capability.  I think my concern with this unit is implied by the "Firmware: GNU Public License, based on the sd2iec 0.10.3" line at the bottom.  I think the seller (or someone else) has modified the sd2iec firmware to support the LCD interface without requiring a second CPU (like the original sd2iec firmware requires) and those changes have not been merged back into the main sd2iec project.  If I am correct, one cannot upgrade the firmware beyond 0.10.3 unless the manufacturer releases an update (might be able to use a standard sd2iec firmware, but the LCD would not work).  Understand that I am making some assumptions (it's possible the unit uses 2 microcontrollers, one for the drive and one for the LCD, and so uses the standard sd2iec firmware), but if you care about upgrades, you should ask (0.10.3 is almost 4 years old, as I recall, and I am preparing to move to 1.0.0 release on uIEC.
**Jim**

*On 11/13/2015 12:39 PM, Frank Michielli wrote:*
> *Once you update, you can go backwards?*
Yes, but you have to first install a "dev" firmware (something with an effective version number of 0.0.0.0).  Once you do that, you can then install any version.
The rule in the bootloader is:
if (version_of_file == 0 or version_of_file > version_loaded_on_flash) then copy file to flash

> *And what would be the best boot loader to use ?*
One that supports FAT12/16/32 :-)  I would assume all of them do.
**Jim**

**TORONTO PET USERS GROUP**
**C/O  JOHN EASTON**
**258 LAKE PROMENADE**
**ETOBICOKE, ONTARIO  M8W 1B3**

**— Fall  2015 —**

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