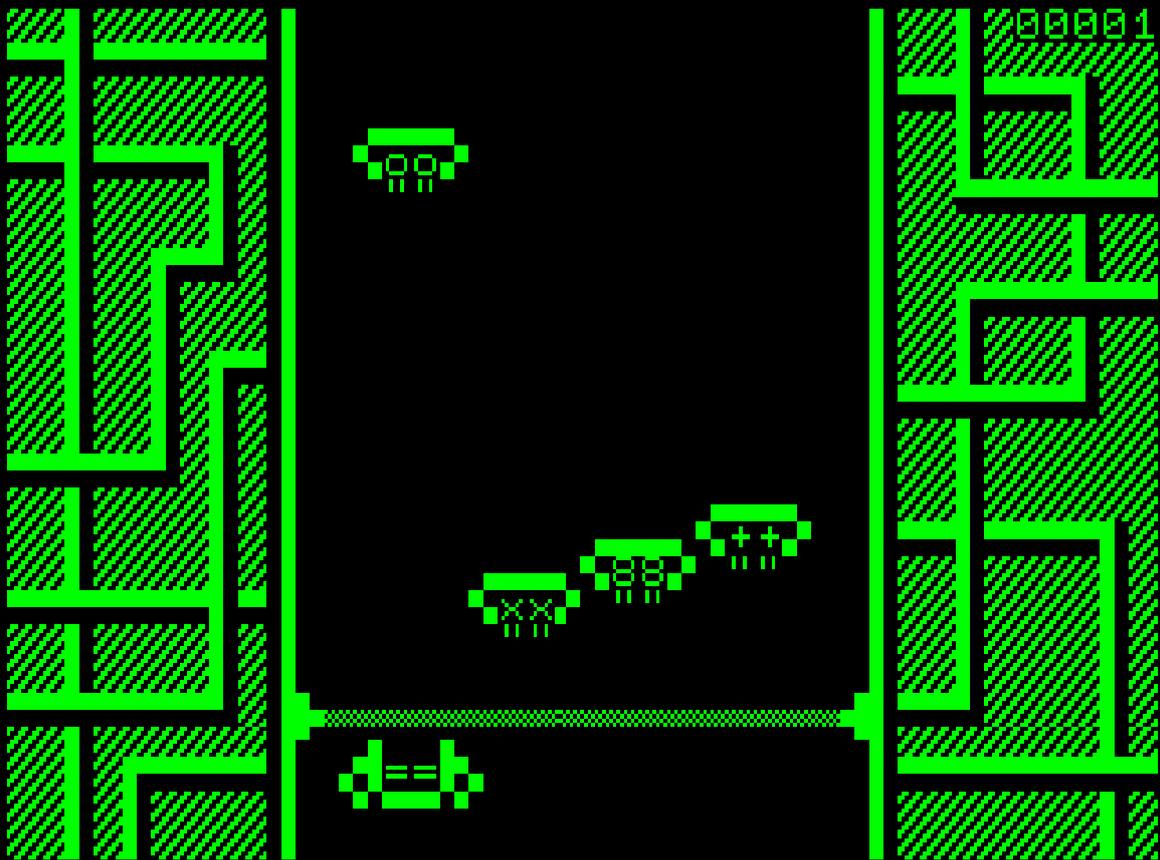


COMMODORE
FREE

AVOLANCHE



SUB HUNTER

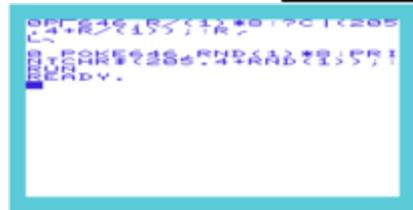
CONTENTS

Editorial	Page 4		
E-Cover Tape 3	Page 7	NEWS PDXCUG.org MEETING VFLI - VIC-20	Page 16
NEWS 2013 C64-RETROINVADERS CALENDAR: ARC64 V2.3 RELEASED	Page 11	NEWS Hyperion AmigaOS 4.1 Update 6 Released MIND.IN.A.BOX & RAY KOEFOED RELEASE NEW SINGLE	Page 17
NEWS THE MINIMIG IS BACK, WITH THE ARM CONTROLLER! NEW ARTICLES ON OBLIGEMENT MAGAZINE	Page 12	NEWS WINUAE V2.5.0 RELEASED	Page 18
NEWS FILMSOFT NEWS UPDATE	Page 13	NEWS NEW ASSEMBLY LANGUAGE PROGRAMMING BLOG	Page 19
NEWS SUPERCPU EMULATOR SOFTWARE 4k GAME CALLED SECRET TUNNEL	Page 15	REVIVAL STUDIOS RELEASES FIRST NEW PHYSICAL GAME RELEASE IN YEARS FOR THE COMMODORE PET COMPUTERS	

COMMODORE FREE REVIEW AVALANCHE FOR THE PET	Page 22
--	----------------



READERS COMMENTS MAGAZINE IDEAS The Commodore FREE One-Liners competition	Page 23
--	----------------



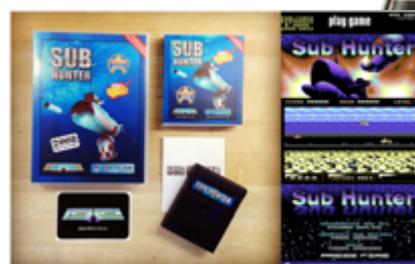
HOME BREWING COMPUTERS IN THE 21ST CENTURY	Page 29
---	----------------



Terrible Nerd Commodore Free Book review	Page 33
---	----------------



SUBHUNTER CARTRIDGE REVIEW	Page 35
-----------------------------------	----------------



TIME TO DUST OF YOUR C64
COMMODORE 64 GAMING IS BACK!

ALIEN BASH 2

"ULTIMATELY A
FUN BLASTER."

MICRO MART



FLIMSOFT
REWINDING TIME

AVAILABLE TO OWN ON CASSETTE NOVEMBER 2012 FROM
WWW.FLIMSOFT.CO.UK  /FLIMSOFT

Editorial

Hi welcome again, this is the first issue of the new year! So as is the earth custom I wish you Salutations and acknowledgements to the new year; fellow earth creatures.

Of course the world didn't end in the latter part of 2012 despite me downloading the count-down applications and sitting under a cardboard box with a tea towel on my head (for maximum protection), after the app bleeped and the message came up to inform me that the world had ended I tentatively climbed out from my "safe" hiding place to the same world I saw when I entered my safe haven. I guess that all the praying people did and the various Shamen who took it upon themselves to save us seemed to have done a great job, unless, maybe someone miscalculated the date?

This issue we have the return of the Commodore Free cover Tape, or more specifically tap file collections, I have been emailed by a few people and the feedback seems to be quite positive for this although some people have expressed that all the files are Commodore 64 related and would like some C16 and Vic programs to play with. Everything is a work in progress and if you have any submissions then feel free to get in touch with me about what you have

It's all the same old same as far as the magazine goes. More news, reviews and even a competition! Wow.

If you ever had the need to code a 1 liner as they call them then now is your chance to show your programming genius on this. Heck the example even has a 1 line skiing game! Just to pick one example and a duel scroll to prove I can't just pick 1 example out of the ones supplied. Thanks to Shaun for his suggestion and text on the competition and of course for volunteering to judge the whole concept. One lucky person will win – well nothing really just the prestigious title of "Commodore Free one line coder winner" Hmmm I need to work on the title, needs some marketing magic to turn it into something snappy and memorable. Still your all welcome to enter whatever platform (well assuming it's a Commodore one)

That's all from me
Stay safe

Regards
Nigel (editor)
www.commodorefree.com

FLIMSOFT
WWW.FLIMSOFT.CO.UK

A NEW NAME IN COMMODORE 64 SOFTWARE PUBLISHING

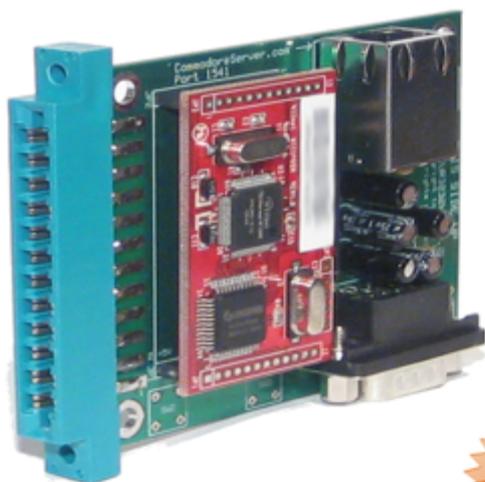
```

10 REM: HOW TO SUBMIT
20 PRINTCHR$(47)
30 PRINT "IF YOU HAVE
WRITTEN YOUR OWN GAME"
40 PRINT "AND WOULD LIKE
TO SEE IT PUBLISHED BY
FLIMSOFT"
50 PRINT "PLEASE EMAIL US
WITH YOUR DETAILS"
60 PRINT "WE WILL RESPOND
WITHIN A DAY OR TWO"
70 PRINT "THANKS"
80 FLIMSOFTPUBLISHING
@HOTMAIL.COM
90 RUN
    
```

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For example:

```
10 OPEN 2,2,2,CHR$(10)
20 PRINT #2, "MY DATA"
30 CLOSE 2
```

FIND OUT MORE AT:

<http://www.CommodoreServer.com>



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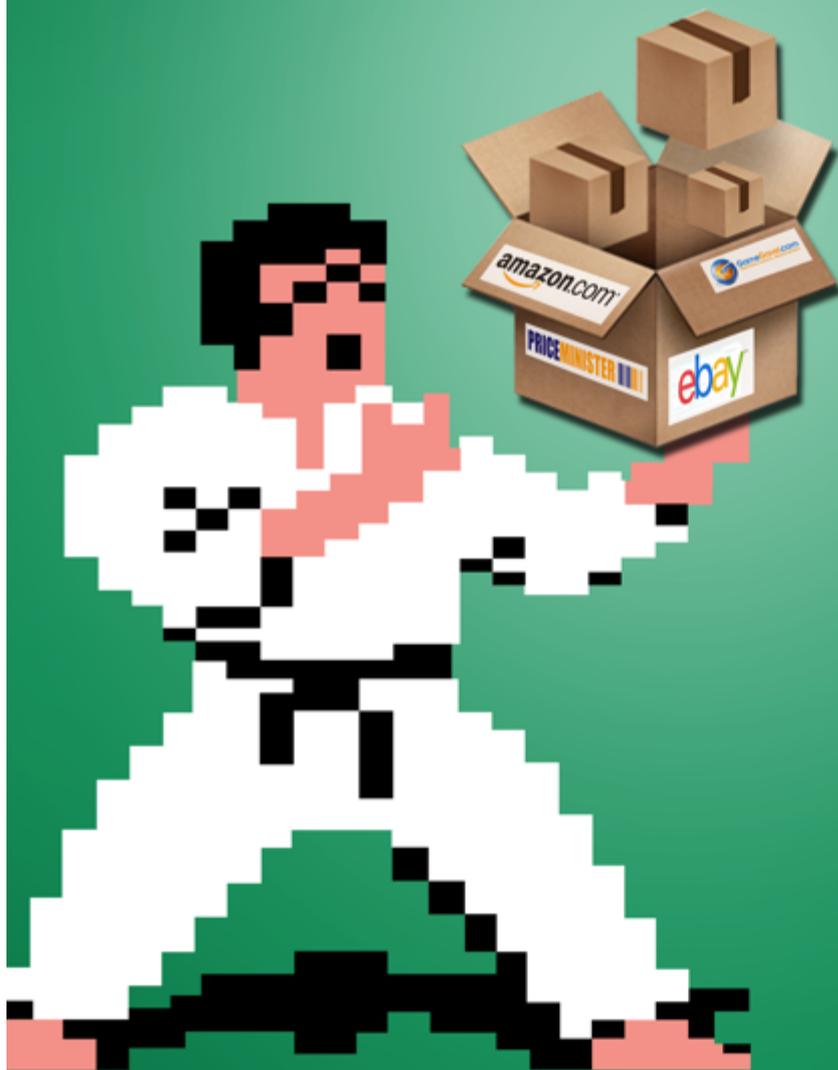
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Commodore Free E-Cover Tape #3

By Richard Bayliss

Last issue there was no cover tape. This was mainly because of me being too busy in real life, having less time for C64 activities. I bet you missed us last issue hmm? Don't panic. Now things are much quieter we are happy to bring you the long awaited mammoth cover tape. Why mammoth? This is because we have some amazing stuff for you this issue to make up for last issue.

Unfortunately due to lack of new contributions we had to delve into the archives to see what great games could be

found for this issue's cover tape. Good news is, I found something quite exclusive and on side 2 of the cover tape – it's all there.

Hopefully in the future some exclusive new games or demos will come to us. If you have a game, demo or utility you feel should be added to our cover tape, then please email it to richardbayliss.c64@gmail.com on .d64, .tap, .prg or whatever. We do all the tape remastering anyway :)

STORMBIRD

(C)2013 Commodore Free Magazine + TND Games
Programming: Anthony Burns (Using SEUCK)

Additional programming: Richard Bayliss

Music: Richard Bayliss

Genre: Shoot 'Em Up (SEUCK Vertical)

Controls: Joystick in Port 1 or 2.

1944 – British and American forces have broken the German defences and are advancing inexorably through occupied Europe. Defeat now seems inevitable for the Reich, and only one thing stands in the way of complete humiliation: The world's first combat-operational jet fighter plane; the Messerschmitt ME 262 "Stormbird". Though faster and more agile than anything the enemy forces can send against it, the ME 262 is seriously outnumbered, as the exhausted German War Machine is not able to produce them in great enough numbers to turn the tide.

Taking command of a squadron of seven ME 262's (With an extra one being assigned for each 10,000 points scored), Your mission is to recapture a V-2 rocket development base that has fallen to allied forces. In order to reach the base,

you will have to penetrate several waves of air defences, as well as relentless barrage of anti-aircraft fire from enemy infantry, and occasional attacks from the heaviest and deadliest bombers the enemy have to send against you.

Shoot down the enemy planes and also the ground forces, and capture the V-12 Rocket plant. Good luck!



REVENGE OF THE TOMATO

(C)2013 Commodore Free Magazine + TND Games

Programming: Richard Bayliss

Graphics: Richard Bayliss, Achim Volkers

Music: Richard Bayliss

Genre: Shoot 'Em Up (Horizontal Scrolling)

Controls: Joystick in Port 2.

It is the year 2173. Planet Earth was full of peace and hope, until one day - while everybody was fast asleep in bed, snoozin' away, dreaming of good things. Aliens hovered above the towns and cities searching for a good source for an invasion. The humble tomato. The very next day, everybody woke up to hear on the radio that an unexpected series of objects are floating above the city. Scientists looked above their telescopes noticing that it is a tomato. When they saw tomatoes floating above the sky. They found it to be hilarious. Unfortunately, what they thought were hilarious, turned into horror. One of the tomatoes swooped down, and sucked a victim. The city was turned into turmoil. Peo-

ple panicked and they started running for their lives. Some of which were just too dumb to even enter back to their flat and office buildings.

The president called for help, and thankfully help comes at hand, by a world's famous heroic leader in the technology market, and Skyship industry ... YOU ... That's right, you are the chosen one.

Your mission is to pilot your Skyship through the towns of cities, which are infested with deadly mutant tomatoes. Blast your mega double laser beams at 'em. They are the main cause for chaos. Luckily for you that's your only mission ... Or is it?

Seriously not. Your mission is to travel all the way across several towns and cities, and countryside. Not only do you have to shoot the tomatoes, but you also have to rescue the people who are stranded on top of buildings or elsewhere. Simply pick them up in the right place, but DO NOT CRASH

Commodore Free E-Cover Tape #2

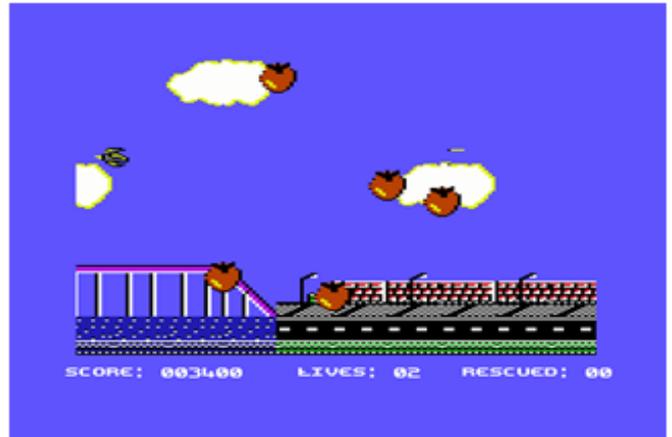
By Richard Bayliss

INTO MOUNTAINS, BUILDINGS, STRUCTURES or any other background. (Light houses you will go past).

At the end of your journey, blasting through the small tomatoes. You will end up facing the final ordeal by fighting against the MEGA TOMATO. This evil guardian requires 50 shots before it gets destroyed.

Those tomatoes will try their best to destroy your space craft if they get near to you - or you get near to them.

Can you save the world from complete fruity chaos, or will the Mega Tomato dominate this planet?. ... I say good luck pilot. Get blasting.



ROCKS IN SPACE DELUXE

(C)1988 Paradox Creations (Public Domain)

Programming: Alan Bond

Graphics: Alan Bond

Music: Alan Bond

Genre: Arcade (Asteroids)

Controls: Joystick in Port 2.

Down on Earth, Astronomers peer through their telescopes and systems noticing asteroids are heading towards planet Earth. With thanks to all of the latest technology and gadgets, a warp craft has been built. Armed with pulse cannons.

We have transported the warp craft into deep space, and you have been assigned to control it. Guide it safely around space, blasting at each and every space rock that comes across. Avoid contact with this space rock, otherwise you'll destroy the ship - and we'll have to warp another one.

As soon as all space rocks have been shot and destroyed, the next wave of space rocks will approach. Keep on blasting those space rocks, and you'll do fine.

This game consists of different game modes. Those are as follows:

Deluxe mode - Nicer graphics, and posh colourful look

Original mode - The older black+white graphics, which were used in the original Space Rocks

Fast mode - Game plays in fast mode.

Slow mode - For the easier game :)

There are 50 levels in total to complete



RENT A COP

(C)2012 Achim Volkers

Programming: Achim Volkers

Graphics: Achim Volkers

Music: Anders Carlsson

Genre: Platform

Controls: Joystick in Port 2.

The shopping mall is under threat of imminent robberies from a series of crazy robbers. Each shopping mall has hired

you, as a cop to go into each mall and try to stop the robbers from pinching stuff from well known stores. To help you on your way, you can use escalators and lifts, but beware. Capturing the robber will be not as easy as you will think. In fact at times, the crazy robber will be too smart. Various obstacles in the shopping mall will be a challenge for the poor copper. There are shopping trolleys and assorted toys out there to slow you down.

Commodore Free E-Cover Tape #2

By Richard Bayliss

Avoid contact with the toys, and most of all the toy helicopters. If they hit you, you are guaranteed a hair cut (or could it be something more sinister?). Capture the robbers before the shopping malls have nothing left to sell, thus a major Recession could occur :)



ALESTE

(C)1992-2013 Lazer Image

Programming: Tim Ager (Created using SEUCK)

Graphics: Tim Ager

Music: Richard Bayliss

Genre: Shoot 'Em Up (SEUCK)

Controls: Joystick in Port 2.

To end this issue's cover tape we have a very special SEUCK creation called "Aleste". Sadly the game never got finished, but it is practically a full game anyway. All you have to do is fight the enemy mechs and try to free your world from oppression. Best of luck to you.

An extra game: While loading each part on tape, you will be treated to an extra game called "Moo-Tilation". This is our old tape loader game, seen on a few TND/Psytronik games, in which you have to blast your way at alien ships that try to capture your cows. Once all cows are captured, to game ends.



NEXT ISSUE:

Expect more fun and games for next issue's cover tape. :)

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News

2013 C64-RETROINVADERS CALENDAR: ACTUAL AND FUTURE GAMES [2012]

A new year calls for a new calendar and what could be better than a retro themed one especially when its free to download, you will of course need to print it out though! Available in different languages and formats pick your from the selection of links below

ESPAÑA

http://csdb.dk/getinternalfile.php/111930/calendario-c64-2013_retroinvaders_es_ES.pdf

English: Monday to Sunday

http://csdb.dk/getinternalfile.php/111904/calendar-c64-2013_retroinvaders_en-mon2sun.pdf

English: Sunday to Saturday

http://csdb.dk/getinternalfile.php/111905/calendar-c64-2013_retroinvaders_en-sun2sat.pdf

Castellano: domingo a sabado

http://csdb.dk/getinternalfile.php/111907/calendario-c64-2013_retroinvaders_es-lunes a domingo.pdf

Castellano: domingo a sabado

http://csdb.dk/getinternalfile.php/111908/calendario-c64-2013_retroinvaders_es-domingo a sabado.pdf

2013 C64-RetroInvaders calendar: actual and future games [2012]



ARC64 V2.3 RELEASED

Arc64 V2.3 - © 2002-2013 Graham - 10.01.2013

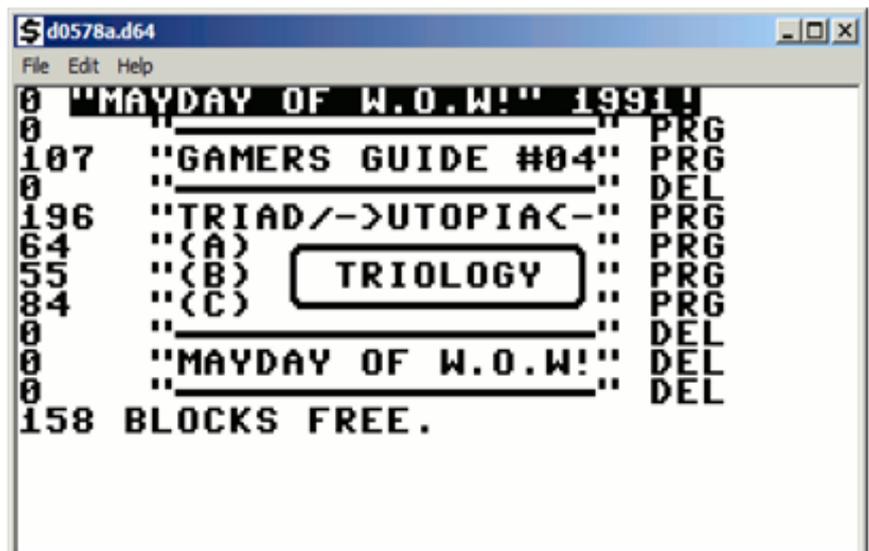
Arc64 is a small tool to deal with D64, T64, LNX and ZipCode archives. <http://csdb.dk/release/?id=114470&rss>

Arc64 may also be called via command line with a file name as argument.

It can be used to edit D64 images, run D64 images in the WinVice emulator, run PRG files via CodeNet, convert T64, LNX, PRG, ZipCode and other formats to D64.

A key feature is the drag & drop support. If you drop a D64 image, it will be opened instead of the currently opened D64 image. If you drop any kind of other file, Arc64 will try to add it to the D64 image. Formats like T64, LNX and P00 will automatically be extracted into the D64 image as PRGs.

Any changes to a D64 won't be saved automatically, you either have to drag the header of the directory into an explorer window, or you have to use the Save-option from the menus.



News

THE MINIMIG IS BACK, NOW WITH THE ARM CONTROLLER!

News from elwood

Dear customers,

The Minimig is now back online! Also the ARM controller is available again.

<https://acube-systemsbiz.serversicuro.it/shop/en/minimig/42-minimig-2mb-without-pic.html>

We thank Jakub Bednarski for his great work and for releasing his design for every Amigans.

Order your items now before it's too late. Go to our on-line shop. It will give you the total including shipping to your country. <http://www.acube-systems.biz/shop/>
We'll start to process orders the first days of January.

Happy new year to everyone!
The ACube Systems team



NEW ARTICLES ON OBLIGEMENT MAGAZINE

The following articles have been added to the website of the French Amiga/MorphOS magazine Obligement (<http://obligement.free.fr>) during the last two months :

- November/December 2012 news.
- Old articles from A-News 17 to 20: Report: Amiga '89 Cologne, File: MIDI interfaces, File: Lamer Exterminator virus, Review of Musical Enlightenment 1.4, Review of HiSoft Basic, Hardware: A-Max, Review of ARexx 1.10, Review of Digi-Paint 3.0, etc.
- Interview with Jonathan Potter (author of Directory Opus).
- Hardware: Turbo Chameleon 64.
- Hardware: ACA 1231.
- Hardware: ARM controller for Minimig.
- Review of Dragon Ninja.
- Review of Tower Of Babel.

- Review of Savage.
- Review of Yo! Joe!.
- Review of Globdule.
- File: Commodore monitors.
- File: Amiga shoot'em ups (1993).
- File: Amiga shoot'em ups (1994).
- Tutorial: optimization of RunInUAE, ScummVM et DOS-Box on AmigaOS 4.
- Tutorial: Photogenics - draw streaks.
- Tutorial: create a video game with Backbone.
- Tutorial: switch from a CRT monitor to a LCD/TFT/LED monitor on AmigaOS 4.
- Special quiz about the first name of Amiga software and hardware.

Rendez-vous on <http://obligement.free.fr> for this nice reading.

All translations are welcome. Please contact David "Daff" Brunet for more info.



Flimsoft News



FILMSOFT NEWS UPDATE

Text from Flimsoft:

Before I begin, Flimsoft and I would like to say a massive thank you to all of those who purchased and continue to purchase copies of *Alien Bash 2*. For a debut release, Tomi Malinen (the man behind the game) and I have been blown away with the high volume of sales with this release given the short time of Flimsoft being established, we seem to have made an impact on the community. So what have Flimsoft got in store for you this coming year? I can certainly tell you that we are starting off with a good 2013 that's for sure, so let's get cracking!!

For some time I have been thinking of incorporating a sub label for specific games. So I came up with 'The Budget Squad', have a guess where this name derived from... The aim of this sub label is to release games that have already been released via CSDb or other Commodore 64 download outlets, specifically those that were released as Public Domain software. There have been some considerable efforts from coders since 1994 and the end of commercial game software, I have played so many titles that were released as PD and now just forgotten about. So the aim of Budget Squad is to give those titles some much earned recognition and get them packaged up and sell them at a very reasonable price (around 2.99-3.99 for a cassette). It is very unlikely at this moment in time that Budget Squad titles will sell on diskette format. Someone asked me a short time back 'Do we really need budget games of this day and age?' I can truthfully answer that it is a very valid question and perhaps not, but on the other hand you will still be getting a cassette game a couple of pounds cheaper than a full price title

So what Budget Squad titles have we got in store for you? Well a couple of months back I was talking to a coder online and I have discovered that he has a small catalogue of titles that have were released a few years back, some of these titles that I came across from the catalogue were just great – I had to do something! Flimsoft selected three of these titles to publish on this new sub label (*Morph 64*, *Chang's Adventure*, and *The Cursed Key*).

Morph 64 is a nice and cute little puzzler game that is based around a certain Commodore Amiga game. The premise of *Morph* is to manoeuvre various marbles to progress onto further levels, a very addictive game indeed and it plays very well. *Chang's Adventure* is a collect-em-up/shooter game which is a case of running around a large map, collecting items, defeating baddies and so forth – also an excellent soundtrack as well as game play. Finally *The Cursed Key* is something along the lines of *Spellbound* ...wondering around a scary mansion and collecting items to progress. Besides these three titles, we have also done a deal with an upcoming coder from California who is in the progress of writing an awesome *Dr. Mario* style game that at the this moment in time we are giving it a working title of *Outbreak*. All in all, a very good line up of games for this new sub label.



Chang's Adventure

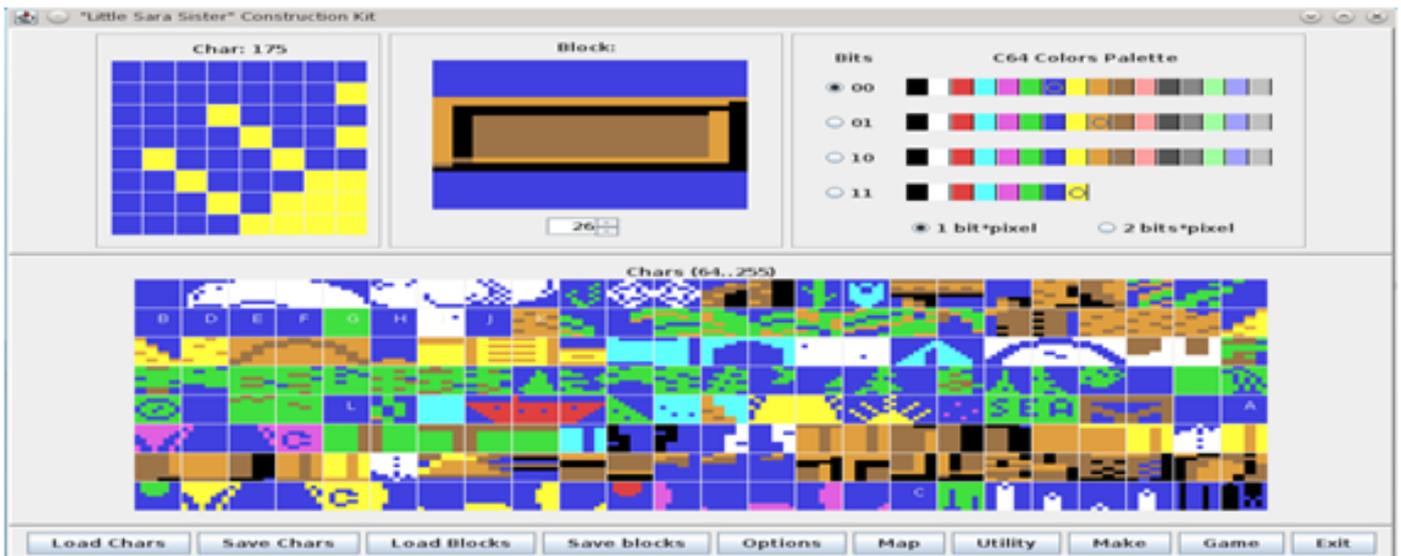
Flimsoft News



Morph 64

A little while back I was talking to the guys behind the recent release of the *Little Sara Sister 2* game – just an awesome platformer if you have yet to play it and just the type of genre that Flimsoft were looking for. The game is loosely based around the original *Super Mario Bros/Great Giana Sisters*. After discussions with the coders we have decided to release this one on both cassette and diskette formats as a trilogy so customers will essentially be buying three games in one (bonus!). The full release will include the original *Little Sara Sister* as well as version 1.5! Those who purchase the release on disk will also receive a digital download of an exclusive level editor that can be used on Windows and Linux operating systems (if you are using a different OS – let us know if it is compatible).

released as the guys behind the game have been working very hard with improvements to game play etc. Once again thank you very much for everyone who have been supporting Flimsoft over the past few months – you people have made us! All I can say is that we have a bright future ahead of us with some great titles coming up in the near future! All the best for now and have a great new year!
 Jamie



News

SUPERCPU EMULATOR SOFTWARE

Just to prove that nothing is impossible, I was contacted recently by Shaun Bebbington from Micromart's retro column and told about a Super CPU emulator software package, you can read more about it here; The file is a customised WinVice package and zipped using 7zip (a free software compression package you will need 7zip to extract the files) zip is available from here

<http://7-zip.org/>
<http://sourceforge.net/projects/vice-emu/files/experimental%20binaries/WinVICE-2.4-x86%20%28scpu64%29.7z/download>

At the moment, it's only in early stages and does not do everything that a SuperCPU does. It's about 75% compatible (try Elite, for instance, and you'll see a good speed improvement).

I don't suppose SuperCPU128 support will be included...? But anyway, download it and see for yourself.

Regards,

Shaun



4k GAME CALLED SECRET TUNNEL

I love these small games, apart from the loading time reduction ☺ it's just amazing what can be done with so little in the way of resources anyway here are the details

Title: SECRET TUNNEL
 Format: Commodore C64
 Type: 4K Game
 Released: November 30, 2012
 By Charles Grey

HOW TO PLAY

Try to get to the end of the tunnel while avoiding 'trap' spots in this multi-screen action adventure game. Collect diamonds and power-up items along the way. Switches in the game can also help you. Watch where you step in this game.

You start the game with 10 health points. The game ends when you either exit the last tunnel or run out of health points. The tunnel is divided into seven rooms. You can move freely back and forth between rooms.

ITEMS

Diamond - 9 points. Not essential to winning the game.
 Heart - Adds 1 health point.
 Shield - Allows you to deactivate one trap spot without losing a health point. You can only carry one at a time.
 Square Switch - Reveals hidden pathways for a short time.
 Diamond Switch - Causes the faces to disappear for temporarily.
 Checkpoint - You will reappear here after losing a health point.

TRAPS

Invisible Trap - They are invisible until you hit one, then will be visible. With a shield you can eliminate it.

Stepping into one will take 1 health point.

Face - These appear and disappear in place. Cross when they are invisible. Stepping into a visible face takes 1 health.

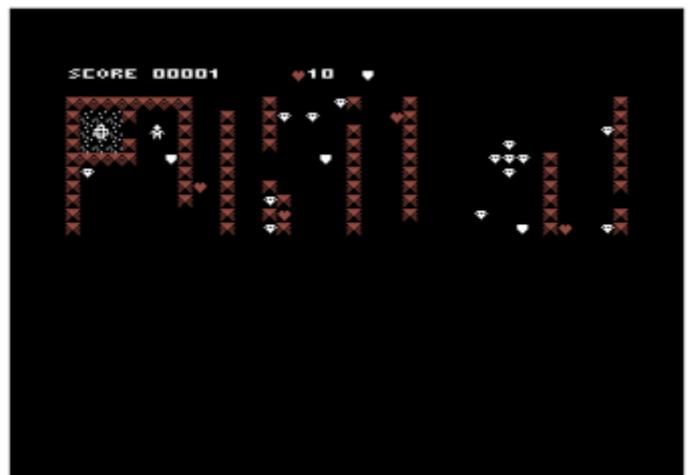
OTHER SECRETS

Invisible Walls
 Fake walls you can walk through.
 Hidden Diamonds

SCORING

Diamond - 9
 Heart - 1
 Shield - 1 / 5 for deactivating trap
 Secret Diamond - ??

<http://noname.c64.org/csdb/release/?id=113538&rss>



News

PDXCUG.org MEETING I KNOW ITS LATE THIS IS JUST FOR REFERENCE

-----Original Message-----

From: commodor-bounces@vcsweb.com
[mailto:commodor-bounces@vcsweb.com] On Behalf Of
rbernardo@iglou.com
Sent: 13 December 2012 02:09
To: commodor@vcsweb.com
Subject: [Commodore] PDXCUG.org meeting Thursday, Dec.
13, 2012 (fwd)

----- Original Message -----

Subject: Reminder: PDXCUG.org meeting Thursday, Dec. 13,
2012 6:00pm PDT
From: "PDXCUG Admin" <pdxcug(at)pdxcug.org>
Date: Tue, December 11, 2012 9:52 pm

Merry Christmas, PDXCUG.org Fans!

Here are some Christmas programs for you to enjoy:
<http://pdxcug.org/blog.asp>

Unable to attend the meeting in person? We have a fun alter-
native:

Come chat with us using your RR-NET, Comet64, Flyer, Win-
dows or VICE

- We'll be chatting with you live from the meeting.
- Interact with others Commodore enthusiasts around the
world.
- Play online games with others

[http://pdxcug.org/Portland-Commodore-Users-Group-
Meetings-Live-Online.asp](http://pdxcug.org/Portland-Commodore-Users-Group-Meetings-Live-Online.asp)

Find us in the c64 chat room

PDXCUG.org Meeting:

Thursday, December 13, 2012 @6:00 pm
More info & location: <http://pdxcug.org/meetings.asp>

Agenda:

- Classroom: Programming in Assembly, Part II
- Demo: All about REL Files
- Show & Tell: Kevin Savetz will show and read a segment
from his new book Terrible Nerd
- Demo: A look at some new software

As usual, we'll have plenty of time for these activities:

- Gaming Time
- Show & Tell: Bring anything you'd like to show off
- Tinker Time:
- Soldering
- Hacking
- Coding
- Repair
- Cleaning of equipment

What you can bring:

- Your favourite Commodore to play on
- Show & Tell item - have something neat to show everyone?
- Equipment that you want diagnose, fix, or just show off
- Cool Commodore gear or software to share
- Your significant other - plenty for all to do and enjoy

See you there,
- Goog

PDXCUG.org is Portland's Official Commodore Users Group
Serving the greater metropolitan area - Portland, OR USA
Meetings every 2nd Thursday of the month
Twitter: @pdxcug
<http://pdxcug.org>

VFLI - VIC-20

Mike (Herr VC) made another improvement to the rou-
tines for the VFLI graphics mode for the Commodore VIC-
20. The colour RAM is now updated just as the VIC has
reads out a certain location. All lines are now exactly 71
cycles long. All display data, colour RAM and a complete
VFLI image file will now fit into the RAM below 32768. If
you want to use this VFLI graphics mode you will need a
PAL VIC-20 with an 32 Kbyte RAM expansion.

[http://www.sleepingelephant.com/v-
web/bulletin/bb/viewtopic.php?t=4828&start=45](http://www.sleepingelephant.com/web/bulletin/bb/viewtopic.php?t=4828&start=45)



News

NEW GAME "ASK ME UP" AVAILABLE FOR AMIGAOS 4.X

News from Games via amigaworld.net

Ask Me Up is a video game about general knowledge. The principle is quite simple: 1 question, 4 possible answers ... Choose the right one! You face the computer on a series of 10 questions. Answer quickly and efficiently to earn points and win medals that allow you to unlock new questions. A "dual" mode is available in L and XL editions: two players compete in turn on the same set of questions.

Ask Me Up is now available for AmigaOS 4.1 computers. More details on www.askmeup.com.

A version for MorphOS should be released in a few days. The game is also available on Android, Linux and Windows devices. Ask Me Up, now you know!



Hyperion Entertainment Blog AmigaOS 4.1 Update 6 Released

[AmigaOS 4.1 Update 6](#) has now been released.

More details and a place for registered users to download the update can be found at [Hyperion's main web site](#).

The following AmigaOS platforms are supported:

- [AmigaOne X1000](#)
- [AmigaOne 500 \(460ex\)](#)
- [Sam440ep](#) and [Sam440ep-flex](#) (all variants)
- AmigaOne XE
- MicroA1-C
- Pegasos II
- CyberStorm PPC
- Blizzard PPC



Update 6 is a rather unique update in that it includes no bug fixes. What Update 6 does include is a new and more efficient way of delivering bug fixes. A new "Update software..." menu item on Workbench now launches [AmiUpdate](#) which will now handle all future AmigaOS software updates.

Since AmiUpdate does not do much without a back end database, a new AmigaOS update database has been created. This database tracks dependencies between components so that users can be assured they are applying the correct updates to their specific systems. The rollback facility may be used to undo updates in the event of problems.

Users are strongly encouraged to install Update 6 as it will be the only way to receive future AmigaOS updates between major releases.

Special thanks to Simon Archer for his amazing AmiUpdate product and the AmigaOS testing team for their invaluable effort on this release.

MIND.IN.A.BOX & RAY KOEFOED RELEASING NEW SINGLE "WORLD WITHOUT A SKY".

You can watch the video here -->

http://www.youtube.com/watch?v=PanLjrCN_PM

<http://www.mindinabox.com>

<http://www.raykoefoed.com>



News

WINUAE V2.5.0 RELEASED

Toni Wilden has just released another update of the p Amiga emulator with a number of improvements, and bugs fixes.

New features and updates:

- GUI is finally fully resizable! GUI font is configurable.
- GUI position, size and fonts saved separately for windowed, full window and full screen modes.
- GUI CD audio volume control added.
- Synchronize clock option does full time sync when emulation is unpaused or exited from GUI.
- Memory configuration can be fully modified (on the fly, loading state file or using Restart button) without need to rerun the emulator.
- RTG screenshot and video recording directly from emulated VRAM if capture before filtering ticked.
- RTG monitor (if multiple monitors) selection added to GUI.
- RTG hardware sprite and hardware vblank emulation are now optional.
- Chipset "Wait for Blitter" too fast CPU workaround added, enabled by default, fixes most graphics glitches if program does not wait for the blitter, more compatible than immediate blitter.
- Optional fake 1G directory hard drive size limit for old programs that think drive is full or has negative space if drive is bigger than 2G. Can be changed on the fly.
- Added disable notification icon option.
- Added blank unused displays(s) (opens full screen topmost black window(s)) option.
- CD32 CD controller emulation improved (Missing Guardian and Universe CD32 CD audio)
- AutoVSync 100Hz/120Hz capable monitor support added.
- Low latency vsync and legacy vsync stability improved.
- Full PC hardware interlaced mode support.
- 68060 missing integer instructions are not anymore emulated if more compatible CPU checkbox is checked.
- Chipset emulation improvements. (EyeQlazer/Scoopex, Blerkenwiegel/Scoopex, No Way Demo/Academy, Brian the Lion AGA, SuperPlus monitor mode)
- Sometimes appearing Windows "no disk in drive" dialogs that point to missing hard drive path are gone.
- Audio emulation quality improved.
- Parallel port sampler emulation audio quality improved.
- GamePorts panel remap option allows separate axis configuration and multiple events.
- Game Ports panel Test mode can be used to test any kind of input event, not just joystick events.
- Lots of Input panel improvements. (qualifiers, custom events etc)
- Easy to use debug logging option added to Paths panel.
- Optional MIDI In to Out routing added.
- 64-bit build supports 2.5G address space, allowing up to 2G of Z3 expansion memory.

Windows XP systems.

- New CDFS didn't work with DVDs (2G size limit) and Joliet CDs.
- Extended ADF write support was accidentally disabled.
- "ALT-TAB or middle mouse button untraps mouse - F12 opens settings" window title was missing.
- Directory file system 64-bit seek packet implementation was broken.
- USB HID game controller [-] and [+] input axis movement was broken.
- SPTI + built-in CDFS crash.
- uaescsi.device error codes fixed (MakeCD)

Older bugs fixed:

- RTG palette (if 8-bit mode) wasn't saved to statefile.
- Disable screen saver option haven't worked properly since 2.0.
- Warp mode didn't work in all vsync modes.
- CD image mounter MDS image CD audio tracks didn't play if sub channel data was not included, MDS image data tracks with sub channel data didn't work at all.
- CD/CD image on the fly switching was unreliable. (Again)
- Random unexplained graphics glitches when cycle-exact CPU enabled and bsdssocket emulation was in use.
- Some chipset mode on the fly configuration changes caused blank screen when returning back to RTG mode.
- Volume control in WASAPI exclusive mode didn't work.
- Windows XP blank screen after ALT-TAB back to Direct3D full screen mode.
- Direct3D pixel alignment errors in some modes. (Again)
- Many Input configuration fixes.
- Windows Mouse mode sometimes stopped at invisible barriers.
- CD32 CD audio was delayed.

You can download the latest version from the links below:

Download Installer version =

<http://download.abime.net/winuae/fil..WinUAE2500.exe>

Download ZIP version =

<http://download.abime.net/winuae/files/WinUAE2500.zip>

For more and the latest please visit the Official WinUAE Website.

<http://www.winuae.net/>



News

NEW ASSEMBLY LANGUAGE PROGRAMMING BLOG

I'm kicking off a new blog on Assembly language programming (6502, PIC/dsPIC, MIPS, ARM, AMD64) with a shout out to Dave/Bil/Terry/Fred of the Commodore TED series and how it managed ROM-over-RAM...

I was reading the data-space portion of the reference manual for the Microchip PIC24EP/dsPIC33EP series of 16-bit micros that came out last year, and thinking "I've seen this before" It's hosted on Wordpress for now...
<http://swissembly.wordpress.com>

D. Zoss



REVIVAL STUDIOS RELEASES FIRST NEW PHYSICAL GAME RELEASE IN YEARS FOR THE COMMODORE PET COMPUTERS

Revival Studios is proud to announce that they started development and publishing for the Commodore PET home computers. Their first release is a port of their game called Avalanche. Avalanche is a fun action game people can just pickup and play. The player has to shoot the various gems that are falling down from the top of the screen. The gems are marked with symbols and the player has to match up the symbol of his ship with the symbol on the gems.

The game will automatically increase in speed, but by strategically shooting gems you can align up to 5 gems in a row to gain points as well as slowing down the game for prolonged gameplay.

Game Features:

- Available on Cassette Tape and as Free Digital Download
- Works on the all PET computers (except for the PET-2001)
- Fast, flicker free, arcade gameplay
- Sound support

You can see the game running on a real Commodore PET system at:

<http://www.youtube.com/watch?v=5BSZTqwrWb0>



The game is available on Cassette tape and as free digital download.

For more information about the new releases for the Commodore PET, including screenshots and packaging photos, visit: <http://cbmpet.revival-studios.com/>





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AMIGA FOREVER AND COMMODORE 64 FOREVER

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<http://www.facebook.com/AmigaForever>

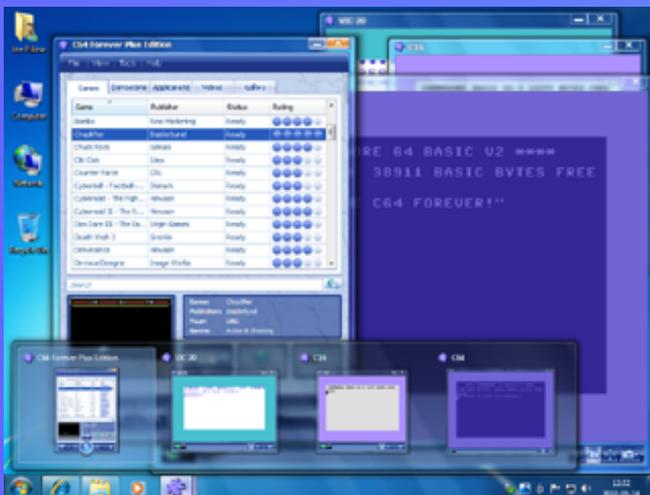
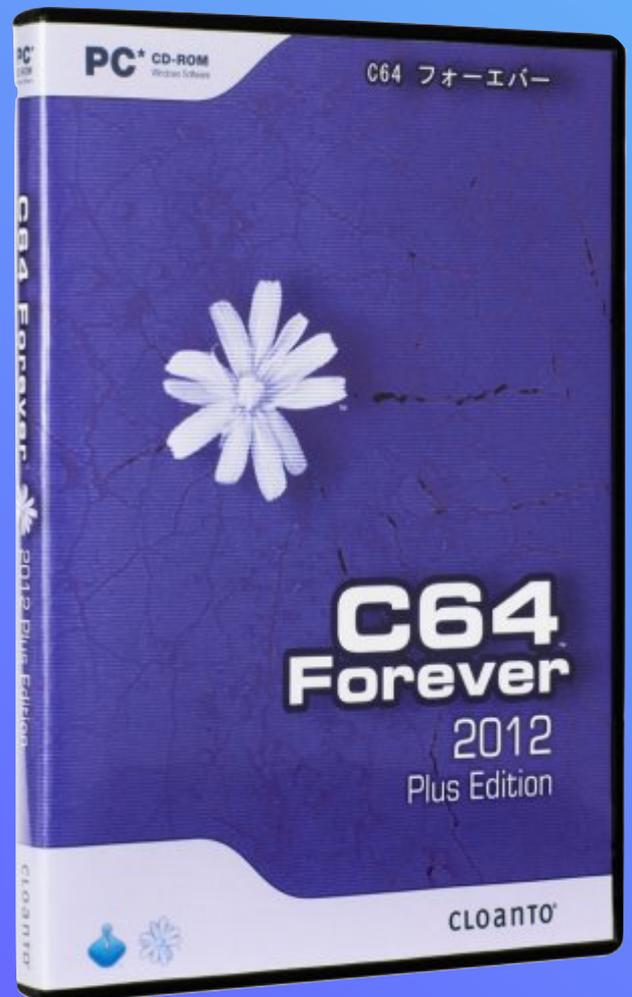
C64 Forever

<http://www.c64forever.com>

<http://www.facebook.com/C64Forever>

RetroPlatform Project

<http://www.retroplatform.com>



COMMODORE FREE REVIEW

AVALANCHE FOR THE PET

How can I possibly pass up this excuse to test Revival studios version of avalanche (that was reviewed recently for the Vic; in Commodore Free). Well I couldn't, so here is the review that I erm couldn't pass up on!

Ok; so maybe my build up was a little weak to say the least, but the game played well on the Vic; and so, it sort of follows that the same game play will work on any platform, remove the colours, change the graphics and you will have a Pet version that plays just as well right?

Actually yes!

it does but for some reason it looks even better on the Pet, than it did on the VIC! Maybe it's a nostalgic trip on my part back to college; or maybe the Green screen has wormed its way into my subconscious, anyway here is the review.....

like I said for the Vic review;

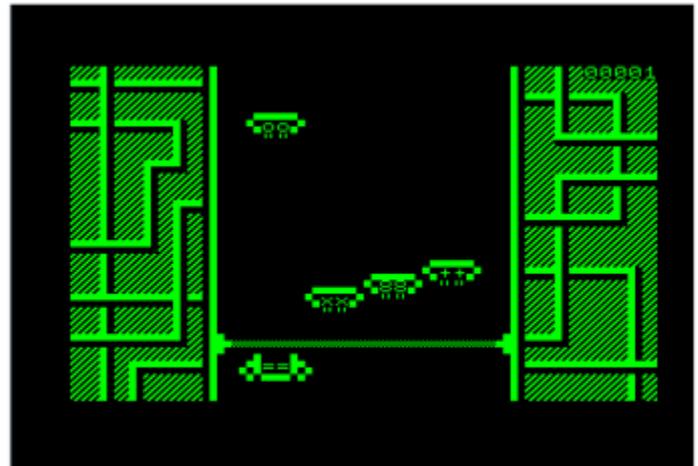
Not many people would attempt to program the Vic; never mind the Commodore Pet, (due mainly to the more limited resources) and as I have always said; "this is a real shame" as the machines are still very capable you just need to apply some lateral thinking, even the limitations could work to a programmers advantage! Its often been said; "a good game is a good game", and "a good game doesn't need to have fancy graphics and effects" and "it's more the idea and implementation", however the limited resources of the Vic and Pet put many programmers off, so it's always interesting to see new programs appear especially when they are cross conversions.

Loading the game

we see a scroll of the logo appear and disappear, looks very inspiring! and then we are presented with the rather stark menu screen with no options just "start game"



Pressing the space bar (as I don't have a joystick) starts the game



The object of the game (as was described recently in Commodore free(is to shoot the aliens as they advance, you note they are all differently designed, and note that you have a design on the front of your ship you can change this by pressing Q you should match your ships designs/Charm (they cycle round by constantly pressing Q) with the aliens; and then shoot! this way gains more points than just shooting; and doing the latter (just shooting) will give you a rather quick game!; where you will score next to zero and find it all ends rather quickly. Match 5 or more hits of the same charms on the aliens to score big bucks. Sounds is minimal blips but really it's all the game needs,

As you have read this is all about strategy.

Sadly the game doesn't have a high score screen and also doesn't display the high score in the game; you just see your total score at the game end, on the Vic version this was the same, I think that it at least needs a high score feature (otherwise I can't really think of any improvements), without the high score feature and playing the game with friends (assuming you have some) could result in arguments about who scored the most.

Q Change the charm
O Move left
P Move right
SPACE Fire

The VIC review can be found here

<http://www.commodorefree.com/magazine/vol6/issue65.html#ARTICLE13>

The game scores the same as the Vic version, and also has the same summary!

Graphics	7/10	Overall 8/10
Sound	6/10	
Gameplay	9/10	

READERS COMMENTS

MAGAZINE IDEAS

From: Shaun Bebbington
 To: Commodorefree@commodorefree.com
 Sent: Thursday, 29 November 2012, 14:46
 Subject: One liners.

Hi Nigel,

I hope that you're well :-)

I've been messing around with BASIC again for a laugh, and I thought that a Commodore FREE One Liner competition (or one liner submissions) would be good, except make it a two-liner competition.

The idea is that you can clear the screen and set up your variables in the first line of BASIC and then do everything else in the second. Setting up the variables first might save some character space in the second line as well.

I've attached one of my favourites from when I was a child: it fills the screen with what appears to be a random maze (and keeps going until Run/Stop is pressed). This will work on the VIC and C64, but you can change the colour randomiser to the 16 available from the C64 by changing the value POKEd to 646 (you can use 16 on the VIC, but it switches to multi-colour mode above 8 if I recall). Can anyone do better...? I'm sure that they can.

Anyway, for anyone who's interested, there is some BASIC compatibility between the C64 and VIC-20, but you get 88

characters on the VIC and 80 on the C64. So, you could write your two liner on the VIC and load it into the C64. Also, remember the short cuts to get more characters per line, like ? is PRINT, P shifted O is POKE etc... This will mean you can break the 80 character limit anyway.

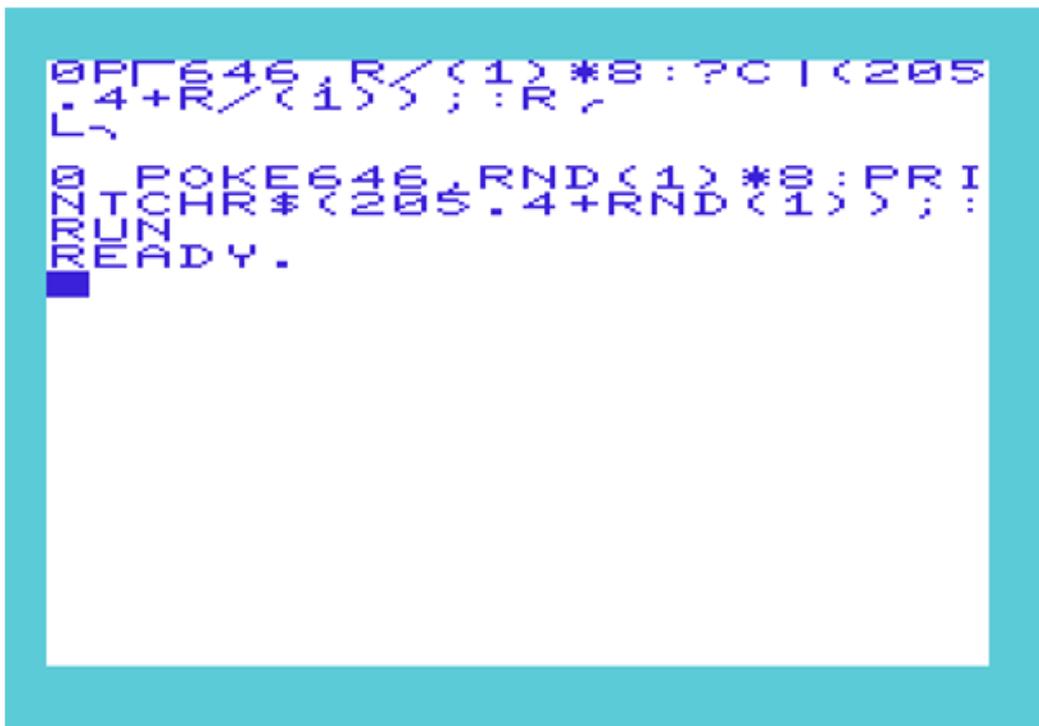
Regards,
 Shaun.

0 poke646,rnd (1) *8:printchr\$(205.4 + rnd (1) ; :run
 Attached are some more 'one liners': a dual scrolly for the VIC-20 and two for the C64 using different methods.

To load into the C64 (because they were written on the VIC), you need to LOAD "DUAL SCROLLY C64",8,0

COMMODORE FREE

After a few emails we have (see next page)



Trevor Storey and Georg Rottensteiner Present:

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The Commodore FREE One-Liners competition

Back in the 1980s, I used to love programming my Commodore 64. I wasn't brilliant, but I could do a bit and, as always, my Mum was impressed. Fast forward to 2009 and I needed a change in career, so I thought that I might be able to cut it as a developer, even though I hadn't done any real programming since the 1990s, so I headed to do a Foundation Degree and to learn all about 'coding' again.

Fast forward again to late 2012 and I recalled some BASIC one-liners that I used to love writing on my Commodore – the best one of them all was this little beauty:

```
0 print chr$( 205.5 + rnd( . ) );: goto
```

Many of you may remember this, as it was, unless my memory has failed me, listed in the VIC-20 user manual. A similar listing was also in the Commodore 64 equivalent. So, I contacted Nigel about having a Commodore BASIC one-liner competition.

As it happens, one-liners were not just on my mind, as there's been a book published about it. Have a look here: <http://10print.org>. It also happens that the book's authors favourite mystical one line on Commodore BASIC is also mine, although the version above is more efficient than theirs is.

Anyway, to celebrate the publication of the book, and just for a bit of fun for those who like programming in BASIC or other high-level languages, let's have a one-liner competition! In fact, because Commodore BASIC 2.0 does not allow so many characters per line (80 on the C64 and 88 on the VIC-20), there'll be two main categories: One-liners and two-liners. There are restrictions on the latter

(more on the rules in a moment), but the extra line will at least allow you to set up any variables and functions, with the rest of the logic free to run in the second line, presumably until there's a stop condition to drop out of the program.

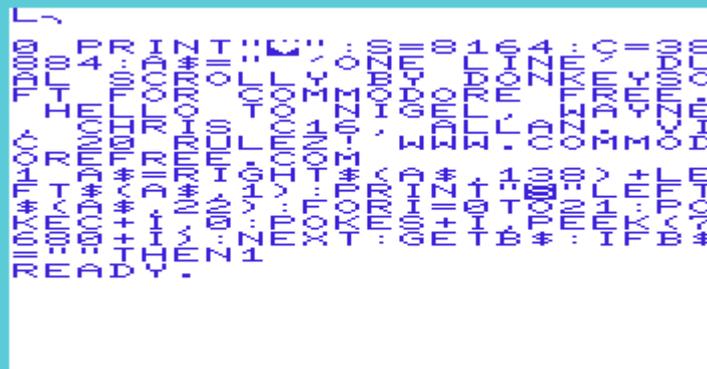
A pro-tip is to use BASIC 2 keywords only and write your program on the Commodore 128, saving it and loading it in on a C64 (or 64 mode), VIC-20 or anything that will be able to read the disk. If you have trouble, remember to load the file name like this:

```
LOAD "MYPRG",8,0
```

This will force the program to load into the area reserved for BASIC programs.

Also, because using the 128 should allow you to get something playable, and of course, you could do a BASIC 7 entry, if you wanted, using the more logical DO WHILE loops and IF ELSE IF conditions that are used a lot in languages like C (or at least, I use them a lot).

Please give as much information about your entries as possible: Where did you get the idea? How did you create your program (on a C64 using BASIC 2, or emulator using BASIC 7 etc)? Is it platform-specific? Or will it work on any popular Commodore



The Commodore FREE One-Liners competition

8-bit, such as the Commodore 16 as well as the C64? The more information you provide, the better. Let's have a look at some examples to get you started (which are available in a D64 image).

Program one: DUAL SCROLLY VIC

This is VIC-20 specific version, written in BASIC 7 to get more text into my message using WinVICE. This displays an 'animated scrolling marquee', as it's known nowadays, or a scrolly text to everyone over the age of 30, which will print out the first 22 characters of the message and then shift each byte in the string one place to the left before adding the first character to the end of the variable A\$. The contents of the top row are copied to the bottom row of the screen by reading each position of the top line and POKEing the values to the bottom, also changing the colour attributes there, for a bit of variety. Then it'll check if any key has been pressed, and if not will loop around to line 1. Simple, eh? Here's the source code of the listing, noting that any special characters are in curly braces { }. Also be aware that spaces are added here to make each listing more readable. Adding spaces will... err... take up unnecessary space in your submission unless you need them (for instance, within a string or something). Be aware that there is no closing quotation mark on the string in line zero as this is not required by BASIC and saves you one whole character as well. Remember to use BASIC 2.0 keyword abbreviations if you're using BASIC 7 to write your programmes as this will allow even more commands or data to fit into one line.

```
0 print "{CLEAR}": s = 8164 : c = 38884 : a$ = "
'one line' dual scrolly by Donkeysoft for commodore
free. hello to nigel, wayne, chris c16, allan. vic 20
rulez! www.commodorefree.com
1 a$ = right$( a$, 138 ) + left$( a$, 1 ): print
"{HOME}" left$( a$, 22 ) : for i = 0 to 21 : poke c + i,
0 : poke s + i, peek( 7680+i ) : next : get b$ : if b$ =
"" then 1
```

Program two : DUAL SCROLLY C64

This is written in BASIC 7 (using only BASIC 2 keywords with abbreviations, of course), which allowed a longer scrolly message than usual. The top line is inverse video, and a copy of this is printed to the last-but-one row. It stops with a key-press or a RUN/STOP key as there's no attempt at protection here. Note that there's no closing quotation mark on

the string in line zero as it's not needed as the string declaration has no other commands after it. Have a look at the listing and experiment.

```
0 print "{CLEAR}": a$ = " c64 dual scrolly 'one lin-
er' for commodore free. hi nigelp2k, tmr, chris c16 &
allan. www.commodorefree.com submit your own
examples to us :-)
```

```
1 a$ = right$( a$, 150 ) + left$( a$, 1 ) : print
"{HOME}{REVERSE ON}" left( a$, 40 ) : for i = 0
to 20 : print : next : print "{REVERSE OFF}" left$(
a$, 40 );: get b$ : if b$ = "" goto 1
```

Program three : DUAL SCROLL2 C64

Similar to the example above, and again written in BASIC 7 to get a longer scrolly message, but takes a copy of the message from the top of the screen by POKEing each byte to the corresponding position on the bottom row.

```
0 print "{CLEAR}": a$ = " c64 dual scrolly 'one lin-
er' for commodore free. hi nigelp2k, tmr, chris c16.
www.commodorefree.com - can you do better than
this? give it a go =-)
```

```
1 a$ = right$( a$, 151 ) + left$( a$, 1 ) : print
"{HOME}{CYAN}"left( a$, 40 ) : for i = 0 to 40 :
poke 1984 + i, peek( 1024 + i ) : next : get b$ : if b$
= "" goto 1
```

Program four: COLOUR MAZE1 VIC

This is the first variant of the randomly scrolling labyrinth that the book mentioned above is based upon.

This is a genuine BASIC 2 entry, which will select a random colour for each diagonal bar which is put on the screen, whilst also setting the border and screen colour to black. This means that some bars do not appear as they too are black on a black background, making a nicer maze in my opinion. Well, there's no point in having a colour computer without using the colours, is there?

Here's the listing:

```
0 poke 36879, 8 : print"{CLEAR}" chr$(8)
chr$(142) : c=646 : x=205.4
1 poke c, rnd(0)*8 : print chr$( x + rnd( 0 ) );: get a$
: if a$ = "" goto 1
```

The Commodore FREE One-Liners competition

Program five: COLOUR MAZE2 VIC

This is similar to the above program, but it POKEs a diagonal bar directly to the screen, waits for a key press and then over writes the previous maze if that happens. This version does not scroll, and also disables the RUN/STOP key when you run it, which means that you cannot break out of the program. Here's the source:

```
0 poke 36879, 8 : print "{CLEAR}"chr$(8) chr$(142)
: c = 38400 : s = 7680 : x = 77.4 : l = 505 : k = 198 :
poke 808, 100
1 for i = 0 to l : poke c + i, rnd(0)*8 : poke s + i, x +
rnd(0) : next : poke k, 0 : wait k, 1 : goto 1
```

Please note that in line zero, the forth variable declaration is a lower-case L and not a number one (as it appears to be on my screen here anyway). Same with line one in the FOR loop – FOR I = 0 TO L it should read.

Program six: COLOUR MAZE3 VIC

This is similar to the above listings, but it uses functions to work out which the random colour and diagonal bar. Functions can be useful, so this is just to demonstrate how to use them. This one doesn't disable the RUN/STOP key, so you can break the program at any time. Be aware that I've used the variable L again in lower-case, and at least with the font I'm using here, it looks almost identical to the number one.

```
0 poke 36879, 8 : print chr$( 8 ) chr$( 142 ) :
c=38400 : s = 7680 : def fna( x ) = 77.4 + rnd( x ) :
def fnb( y ) = rnd( 0 ) * y : l=505 : k=198
1 for i = 0 to l : poke c + i, fnb( 8 ) : poke s + i, fna( 1
) : next : poke k, 0 : wait k, 1 : goto 1
```

Program seven : DUAL SCROLL3 C64

This is a refined version of DUAL SCROLL2 C64, but much quicker, and with inverse text at the top line.

```
0 x = 22 : a$ = " here is another dual scrolly type
thing. we like one liners. i send greetz to the usual
suspects. see what you can do in 1 or 2 lines of basic!
Bye
```

```
1 a$ = right$( a$, 155 ) + left$( a$, 1 ) : for i = 0 to x
: print : next : print left$( a$, 39
)" {HOME} {REVERSE}" left$( a$, 40 ) : poke 2023 ,
peek( 1063 ) - 128 : x = 21 : get b$ : if b$ = "" goto 1
```

Program eight : SKIING C64/128

Written in BASIC 7, this will happily work in 64 or 128 mode, and may also work on the C16 and Plus/4, although I haven't tested it. Use Z and X to move left and right to avoid the trees.

```
0 z = 23 : def fna( a ) = a=88 : def fnb( b ) = b=90 :
def fnc( c ) = rnd( 0 ) * c : x = 7 : s = 0 : l = 0 :
b$="{GREEN}^" : print "{CLEAR}skiing one liner",
"c64/128" : for i = 0 to 18 : print : next : p = 1104 : t
= 30 : k = 40 : i = 0 : u = 22
1 h = p + x : y = fnc( 6 ) : poke h, 33 : poke h + 1, 33
: print tab( y ) b$ tab( 6 + z - fnc( u ) ) b$ : get a$ :
a$ = a$ + b$ : x = x - fna( asc( left$( a$, 1 ) ) ) + fnb(
asc( left$( a$, 1 ) ) ) : if peek( h + k ) <> t and peek(
h + 1 ) <> t then s = s + 1 : goto 1
```

Program nine : SKIING VIC

This is a playable skiing game, more or less. Control the skis with Z and X to move left and right to avoid the keys (up arrows) in green. This was written in BASIC 7, using functions again to read the keys as well as decide a random number. Remember that when you use the GET statement, it cannot return a null value, so I've done a work-around in which I concatenate the contents of A\$ with B\$ and then take the LEFT\$ the new value of A\$ to the first character (otherwise it doesn't work), as the value x is used to move the skier left and right. It also counts your score for each time you miss a tree. As we're limited to two lines of BASIC, and even with BASIC 7 and BASIC 2 doesn't do IF ELSE IF, you have to type PRINT S to see your score.

```
0 z = 11 : def fna( a ) = a=88 : def fnb( b ) = b=90 :
def fnc( c ) = rnd( 0 ) * c : x = 7 : s = 0 : l = 0 : b$ =
"{GREEN}^" : print "{CLEAR}skiing one liner vic" :
for i = 0 to 17 : print : next : p = 7702 : t = 30 : k =
22 : i = 0 : u = 13 : f = 33 : v = 38422
1 h = p + x : y = fnc( z ) : for i = 0 to 1 : poke h + i, f
: poke v + x + i, 0 : print spc( y ) b$ : next : print :
get a$ : a$ = a$ + b$ : x = x - fna( asc( left$( a$, 1 ) )
) + fnb( asc( left$( a$, 1 ) ) ) : for i = 0 to 1 : if peek(
h + k + i ) <> t then next : s = s + 1 : goto 1
```

The Commodore FREE One-Liners competition

Remember to remove the unnecessary spaces and use the 128 in 128 mode when writing this program.

Program : SKIING III

This has been written in BASIC 7 again to squeeze in as much logic as possible, and works with the C64, VIC, C128, C16 and Plus/4, but has been 'sized' in favour of the VIC-20 as this has the smallest screen.

```
0 def fna( a ) = a=88 : def fnb( b )= b=90 : def fnc( c
) = rnd( 0 ) * c: def fnd( d )= d=100 or d=150 or
d=200 : x = 7 : s = 0 : l = 0 : b$ = "{GREEN}^" :
c$="{BLACK}!!" : t = 0 : n = 13 : u$ = "{UP}" :
print "{CLEAR}skiing one liner", , "vic/64/128" :
print : print
1 y = fnc(6) : print tab( x ) c$ chr$( n )tab( y + 1 ) b$
tab( y + 10 - 1 ) b$ u$ : get a$ : a$ = a$ + b$ : x = x -
fna( asc( left$( a$, 1 ) ) ) + fnb( asc( left$( a$, 1 ) ) ) :
if x > y + 1 and x < y + 8 - 1 then s = s + 1 : l = l -
fnd( s ) : goto 1
```

Please email in with any questions that you may have if these rules do not seem clear. Please submit your work by the deadline using email to commodorefree@commodorefree.com, or ask about the Dropbox folder that has been set up to accept submissions.

And now for the rules:

- ⤴ Machine code can be used if it's using a MC loader (DATA/FOR/POKE combo) – 0 sys 2059 which then runs an entire game written in assembly, C or some other compiled or assembled code is not a one liner for the purposes of this competition.
- ⤴ For two-liners, the first line should be used for variables, functions and data, and the second should contain the logic.
- ⤴ Please provide as much information as possible with your submissions, i.e., what you were trying to achieve, and how far you think you got to achieving it; how you created your program (genuine one liner, BASIC 7 or whatever).
- ⤴ Entries are welcome on all Commodore 8-bit formats in any known variant of BASIC – please save them to a D64 disk image along with your documentation. So, you could try something for the C128, for instance.
- ⤴ Have fun with it – remember, 640 bytes ought to be enough for anyone!
- ⤴ The closing date is Friday 8th March 2013 at 11:59pm GMT. The winner will be announced in the next available issue of Commodore FREE, and through the various forums that we use. We will dig out some prizes for you.

HOMEBREWING COMPUTERS IN THE 21ST CENTURY

Building your own computer can be both a very satisfying hobby and a valuable learning experience. This article provides an overview of what is involved and may convince you that it is a trip worth embarking on.

Technology develops at break-neck speed. Today, there is no sensible use for 8-bit, 64 kilobyte computers with less processing power than a mobile phone. Yet, a lively 'Retro computing' subculture has existed ever since the 8080, Z80, 6809 and 6502 processors faded out of view. Already in the early 1990s, nostalgic users wrote software emulators to relive the 'vintage' experience of their old Commodore 64 or Apple II. Others preferred the actual hardware, and began to collect classic computers. As their old machines broke down occasionally, people began to cultivate the art of computer diagnosis & repair into a new form of retro computing.



A Home-Brew N8VEM system

Next to software emulation and hardware maintenance, a third strain of retro computing emerged: designing and building your own system from a "bag of chips" and a circuit board. It actually is amazingly simple to create a functional computer on a little circuit board – that is, with all the information

now freely available on the internet. These retro machines may not have much practical use, but the learning experience itself can be of tremendous value.

Hobbyists without any background in electronics somehow picked up the required skills and share their home brewing experiences online. Although some of their creations are stunningly exotic, most people actually build very simple machines: they take a CPU, add RAM, ROM, a serial port plus maybe an IDE interface for mass storage. And most of them run either Basic (like the 1980s home computers) or use a 'vintage' operating system like CP/M. Running CP/M, in fact, is a very nice target to work towards: lots of good software ensures that your homebrew computer can do something interesting once it is built. As the predecessor it also provides a familiar command line interface; and CP/M has the benefit of being very simple. A few days of study are enough to port it to your circuit board.

Still, one challenge remains: if you want home brewing to be an enduring hobby instead of a one-off project, there should be some perspective beyond putting together a minimal computer and switching it on. But working all on your own, taking the next steps can get progressively more difficult: building graphics subsystems or using exotic processors. Or even adding state-of-the-art microcontrollers to create 'Frankenstein' systems: blends of old and new technology that can do something useful, like automate your home

This is where the N8VEM group comes in. In 2006, Andrew Lynch published his own Single-Board CP/M design with the express intention to engage and involve others. The N8VEM (named after his ham radio license) was intended to be expandable with add-on cards and soon, an informal collaborative effort emerged around a Google mail group. A web site was set up to share the hard- and software that began to be produced. Builders with a wide range of skills got involved – from well-known systems designers to absolute beginners that bought Andrew's \$20 circuit board and then ordered the handful of required electronic components plus soldering iron online from an electronics distributor. Two days of wielding the soldering iron results in owning a nice CP/M computer, using ROM and RAM disks for storage and plenty of vintage software built in. If builders catch a more severe retro virus infection, they can expand it into a powerful (we use the term lightly here) multiprocessor system with 'blinkenlights' and hard disks, graphics subsystems and various operating systems. At the same time, people have spun off to build miniature computers, PC/XT clones and 32-bit machines

HOMEBREWING COMPUTERS IN THE 21ST CENTURY



The N8VEM Single-Board Computer

N8VEM, though, is certainly not about providing soldering kits. It is about joining in, trying out and picking up skills along the way. Skills that range from reading schematics, down to debugging a computer card that does not do what it was supposed to. The learning curve may be steep at times, but because the N8VEM mail group is very active, expert help is at hand when you get stuck. Nothing prevents you from plugging in your own CPU board design, but if you do you're not forced to then also develop all the other expansion boards on your own. And as the novelty of designing a simple SBC (single-board computer) wears off, maybe you prefer to focus your energy on exploring graphics systems, or ways to hook 8 bit machines up on the internet. Or jump into systems software development and share the fruits of it with a few hundred others. It turns out that retro computing is not always backward-looking; making 'Frankenstein' systems by adding modern Propeller chips or FPGAs to old hardware is a nice way to gain experience in modern digital electronics too

First steps: the single-board N8VEM computer

At a size of 10 by 16 centimetres (roughly 4 by 6 inches) the N8VEM computer does not look particularly impressive. Yet, it provides all the capabilities of a commercial microcomputer of the early 80s – in fact, thanks to CP/M it is software-compatible with them, offering a range of very good programming languages including Basic, C, Pascal and of course assemblers. Excellent editors (ZDE) and word processors (WordStar) are also available and the determined could run simple spreadsheets, databases and games (Zork!) as well. The N8VEM is so small due to one concession to modern-day electronics: it uses a single, high capacity RAM chip. All the other electronics are components that would have been used 'back in the day': simple 74LS logic chips, plus a Z80 and classic interface chips. Memory is backed up by a battery, and therefore the RAM disk is a practical storage mechanism. Especially because a ROM disk comes with most essential software installed. You use the N8VEM either with a serial terminal, or (more likely) with a PC terminal program. The Xmodem protocol allows transfer of files to and from the N8VEM.

Core to the expansion options of the N8VEM is the ECB bus. The N8VEM can be plugged into a 'backplane' and access about a dozen or so peripheral cards that have been created so far. However, the first expansion option is actually not an ECB card, but the \$5 PPIDE mini-board, which allows the use of an IDE hard disk or Compact Flash card. Costs are minimal: even an old 256MB drive offers more storage than can reasonably be filled with CP/M software.

The N8VEM is supported by a very effective toolchain. Wayne Warthen's RomWBW project bundles source code of many builders into a smooth-running CP/M system, supporting most ECB peripherals out of the box. The EPROM also contains a ROM disk, which can be filled with your own selection of applications. A suite of utility programs, written by Douglas Goodall, allows easy maintenance of hard drives and terminal settings. And lastly, the well-known simh emulator has an emulation mode for the N8VEM system. Software can thus be developed from the comfort of a modern PC, tested on the emulator and then copied onto compact flash images to run on the real machine.

How to get started: books and tools

The challenge with home brewing is mostly to find out *how* to do things. Once you know, most steps are straightforward. And that is why home brewing as a group makes a lot of sense. Still, two pieces of background information will prove indispensable for any builder: understanding basic computer hardware and having an understanding of assembly language. Reading up on these topics will not only make things easier, but will also add to the understanding of what you are putting together. Some free literature suggestions are at the end of this article.



A typical hobbyists' electronics workbench with the tools of the trade

HOMEBREWING COMPUTERS IN THE 21ST CENTURY

How to get started: books and tools

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Only a few tools are really necessary - although for many, building up an electronics lab is part of the fun. A good soldering iron, a cheap 'solder sucker' to undo mistakes, and a multimeter are absolute requirements. An old second-hand oscilloscope is a tremendously useful extra. A logic analyser can also be a big help, by allowing you to inspect multiple signals at the same time to figure out what is wrong. Old logic probes are expensive and cumbersome - new designs such as the USB-based Saleae are cheaper and better. Lastly, at some point you will need an EPROM programmer, unless you want to depend on others to burn EPROMs for you. Make sure you have a programmer that can deal with a wide range of (E)EPROMs, as N8VEM boards use all sorts of them. Lastly, a laboratory power supply is a wise investment. Mostly because they have a current limiter that cuts power when a short circuit could otherwise blow up your board!

How to go further

The obvious first step is to add the \$20 backplane, and put the N8VEM plus backplane into a case (options range from DIY woodwork to buying a standard 19" card cage). From here on, the choice is a personal one. A few highlights:

- VDU cards: Adding a video card frees you from the use of a PC and brings that warm glow of old CRTs into the room. Using vintage CRT chips is also very interesting from a hard- and software perspective.
- Adding hard and floppy disk drives increases the 'Vintage' qualities of the N8VEM. Although, in practice, you will probably not use the floppy disks very much.
- 'Frankenstein systems': blending old and new technology can be very interesting. For instance, the PropIO card adds mass storage in the form of a modern SD card, but at the same time the on-board Propeller chip supports VGA graphics and PS/2 keyboard.
- Blinkenlights: a front panel with dozens of switches and flashing lights is just good fun. The ECB Bus Monitor card

looks like a classical front panel, but actually is a much more sophisticated debugging tool.



The 20Mhz Zeta board fitted underneath a 3.5" disk drive

Multiprocessor systems

Another option is the 6x0x board, which deserves special attention. It adds a second processor and operating system to the N8VEM. Builders can choose to plug in a 6502, 6802 or 6809 microprocessor and let it run DOS/65, Flex or Cubix. The 6502 will appeal to those with an Apple II or Commodore background, but the 6809 is the most interesting option: it was considered to be the most powerful 8 bit microprocessor, and the Cubix operating system gives it a comfortable operating environment with a full tool chain. Typical for what happens in the N8VEM approach, the 6x0x board was expanded first with an extra I/O board, and then even with a custom backplane to use ECB cards without the Z80 being present as a server.

Having a card rack full of peripherals operating the Big Three 8-bit microprocessors, running everything from CP/M to Flex, the N8VEM becomes a true fetish object for retro computing enthusiasts. It can take years to master that universe of hard- and software, with plenty of manageable yet satisfying projects still waiting to be done. OS/9 is just one builder's project away, for instance.

The cutting Edge

N8VEM has spun off new projects in various directions. If you like to keep things simple, the *Zeta* board is a small project, offering a very fast (20Mhz) CP/M computer, with SD cards as mass storage, VGA connector and an on-board Propeller experimentation area. All on the size of a circuit board the size of a 3.5" floppy drive.

HOMEBREWING COMPUTERS IN THE 21ST CENTURY

The trailing Edge

In the last few years, development efforts have also broadened out towards the well-known S-100 bus, made famous by the original 1975 Altair computer. New S-100 cards provide everything from mass storage devices, video cards, to 80286 and 68000 processor cards. With that range of options, builders can either provide a new lease of life for old S-100 systems, or simply create a brand new one.

Keeping things together

With such a broad array of projects, and involvement from people with widely differing skill sets, it is remarkable how the N8VEM mail group binds all these builders together. The youngest builder is 14 years old; it would be impolite to mention the age of the oldest. But if you have ever used 8-bit computers, you're likely to encounter some of the people that designed those vintage machines on the N8VEM mail group. This loose organisation of builders means that it is quite easy to join in – whether home brewing is a full-time hobby or just a one-off desire to own a \$20 self-built computer for fun.

Suggested literature, freely available online in PDF format:

- Steve Ciarcia, Build Your Own Z80 Computer.
- Rodney Zaks, Programming the Z80.

[N8VEM mail group](https://groups.google.com/group/n8vem): groups.google.com/group/n8vem

[N8VEM depository](http://n8vem-sbc.pbworks.com): n8vem-sbc.pbworks.com

[S-100 board development](http://www.s100computers.com): http://www.s100computers.com

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Origin of pictures:

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Higher-resolution versions of photos are available if desired

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Terrible Nerd

Commodore Free Book review



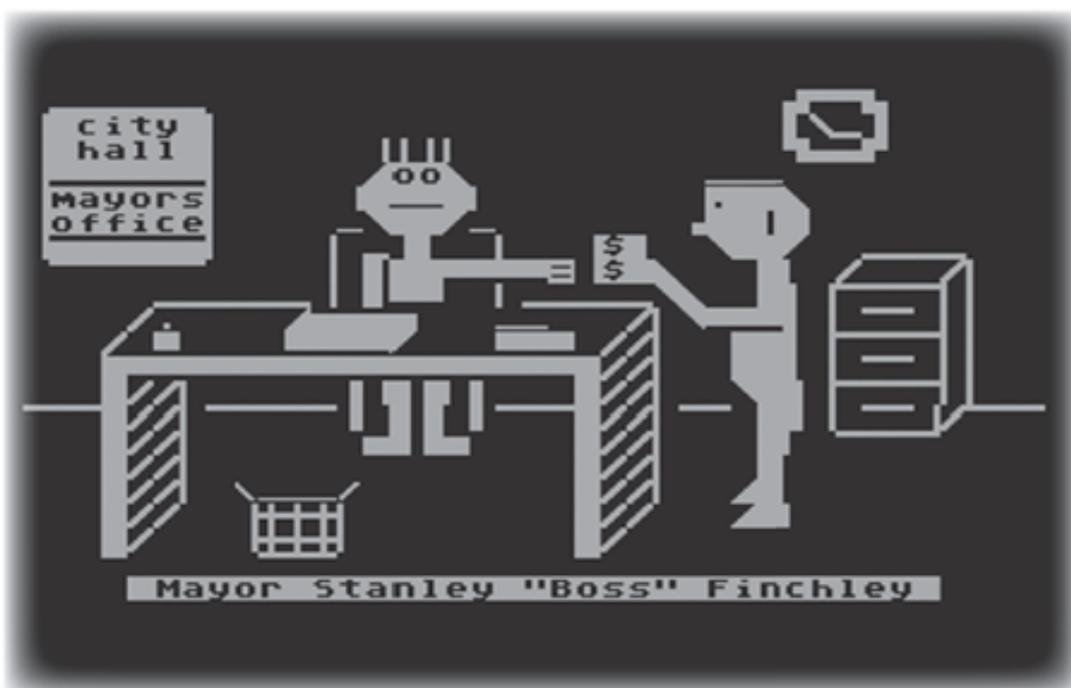
If the title doesn't give the book away; then reading the introduction will! If you don't recognise the writer then you must be of a younger generation; however don't let this put you off.

Kevin Savetz' Tech writer, pours out his memories of growing up in a new era of technology.

Here we have a 41 year old male; who grew up on what many called "new technology" the explosion of the pocket calculator and the birth of the home computer system. Things that had never been seen or experienced before, a glorious era of ideas and interesting music projects and strange hairdos (although to be honest most areas have strange hairdos, I am led to believe this is fashion).

Kevin is the creator of (amongst other websites) the excellent resource www.Atarimagazines.com and while true this isn't strictly a Commodore related website (nor is the book; as Kevin was an Atari baby, however this doesn't matter) the website does house 6502 programming manuals, and of course all items are printed with the original author's permission.

Kevin also created many resources for finding your way around the web in his life; and was also the moderator on many newsgroups. A frequent BBS user and general computer enthusiast and of course self confessed geek, some may call him a nerd (hence the book title). Kevin also helped many with his free internet fax service. And how would we



A citizen gives the mayor of Weird City a bribe.

Terrible Nerd Commodore Free Book review

survive without the glorious fridge magnet site!
<http://www.savetz.com/fridge/fridge.cgi>

The book starts with Kevin growing up with consoles like Atari 2600 and intellivision and his first 8 bit computer system, feeling alienated at school (the nerd) he had access to and the wealth of online services from BBs to CompuServe. The whole school years thing; and of course swapping games with friends in the bike sheds. Girlfriends or the lack thereof, playing Mule and learning about Basic programming. How he created graphics for various BBS front ends.

These early attempts at mastering the electronic beast gave Kevin a foot in the door ahead of many others, Kevin would use his new skills to create friendships of like minded people and hone a hobby into a career in the computing industry.

The book explains about Kevin's hacking of the school computer to dial into BBS's, how he caused trouble on college radio, and one of his altered egos that of AOL's AnswerMan later sections detail meetings with Microsoft and even some writing job offers from the company, yes with pay!

Kevin explains

"While other guys were chasing girls, he was typing in pages of code from computer magazines, swapping software, programming in BASIC, and scouring newsletters for clues to text adventures".

The book covers Kevin's First modem and his murky links to various Bulletin board systems, (this is before the internet for you young ones) School kids Copying games and the types of pirates, some amassed hundreds of titles but probably never played them; others just wanted the latest games, and talking of games the book has references to some especially jumpman and various text adventures and infocom.

While the book isn't a; Commodore or Atari saved my life style of evangelism, it is a look at how growing up in a new

era evolved to a career in Computers as many people have done.

The book is very light hearted and dotted with pictures of various systems, screen shots from games and BBS systems and pictures of Kevin opening presents on Christmas days. While it may not be a true reflection of history from an academic level; its one persons view of growing up in a whole new electronic age of computers, flashing LED lights and speak and spell. Kevin seems to recall everything in crystal clear details, documents things as they were rather than with a rose tinted view of how things should have been.

<http://www.terriblenerd.com/>
<http://www.amazon.com/Terrible-Nerd-ebook/dp/B00A6I85BC>



COMMODORE FREE

SUBHUNTER CARTRIDGE REVIEW

This game was originally connived by Frank Gasking and with the help of Richard Bayliss as key programmer work started on this conversion to the Commodore 64 that would take approximately 4 years to complete! The game was to be later released by Psytronik in disk tape and downloadable formats.

So Fast forward to today and RFGD have released a cartridge of the version with some small fixes and glitches removed. Check here for more details <http://www.rgcd.co.uk/2012/12/sub-hunter-cartridge-available-c64.html> the cartridge version is also Commodore Games system compatible as it doesn't need a keypress!

The Cartridge is available in 2 versions

The standard version is priced at £25 inclusive of UK/Europe shipping, and £26 for the rest of the world, whereas the **deluxe version** costs £30 (UK/Europe) and £32 (rest of world).

Let's have some brief games synopsis then get actually playing something

SYNOPSIS

Apparently a government experiment has gone wrong; and this turns into a cover-up attempt, waste from experiment is dumped out to sea. Unfortunately the 'cover-up' has a dramatic effect on the aquatic life, it seems that swimmers are also going missing and the seas start to spiral out of control. Added to all of this the seas are heavily guarded by agent subs, who were very responsible for the government's bad incident. It is down to you and the war sub to save the ocean and those who are lost.

Instructions

Use a joystick in port 2..

For 10 levels you must save 5 swimmers.

Levels 2,8,15 and 22 - Destroy groups of fish and subs to clear the way for a pack of swimmers to get safely through

Levels 3,9,16 and 23 - Save divers trapped on the sea bed.

Levels 11,18 and 24 - Shark attack! Can you survive the onslaught of deadly sharks?

Final level - Destroy the mother mutant shark.

Bonus level - Collect diamonds for bonus points. If less than 4 lives, extra lives will be rewarded if you complete this stage. Watch out for the bouncy mines. One hit and bonus is over!

GAME ON

The majority of the action is based on a sideways scroller but the levels are varied, as you can see from the above text.

As usual with RFGD the package can't be faulted on quality; you even get a little sticker so you can stick it onto yourself and show how cool you are! Also included are instructions for the game and of course a full colour box to hold all the items in.

So with Cartridge armed in machine I powered on; and the graphics start to tempt you and you know this is one of those really special games.

As you press fire and start the game; the music kicks in and you start to see the game move its silky smooth parallax scrolling; you can't fail to be impressed you get an almost 3d effect; this is without the silly glasses needed, it's just an illusion from the depth of parallax scrolling. But it does seem to draw your eyes to a 1 inch section in the middle of the screen, it can become quite hypnotic.

Your ship can move up, down, left and right but the screen scrolls itself at a constant speed, you will have to be quick as you don't have time to admire the view kill the other stuff and collect the swimmers to move on to the next level, the next level see you bombing fish and is a static screen were your sub is at the top of the screen and you explode bombs onto the fish below, clearing a path for the swimmers.

One thing here is Richard Bayliss has really outshone himself with this game, I know it was a lot of work and Frank put an enormous amount of perfectionist pressure on the project; but it's all paid off this is one hell of a good game! The music also really elevates the game up a notch, this is a must have purchase!

Sound	9/10	Overall 9 / 10
Graphics	9/10	
Gameplay	9/10	

I really really wanted to give it a 10 but.....



Issue 66

2013

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Articles are always wanted for the magazine. Contact us for details .We can't pay you for your efforts but you are safe in the knowledge that you have passed on details that will interest other Commodore enthusiasts.

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