COLORADO COMMODORE COMPUTER CLUB

| AUGUST | **NEWSLETTER** | 1997 |

Vacation Paradise
in the Rocky Mountains
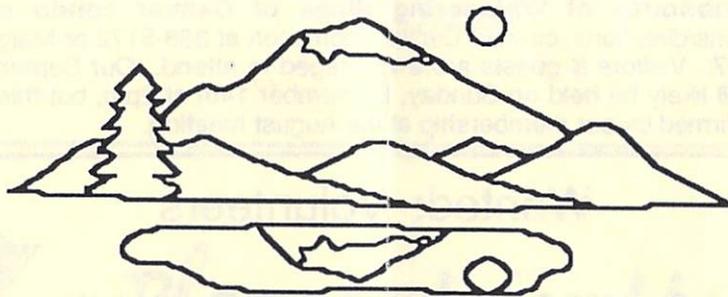
from mile high Denver, Colorado

COLORADO COMMODORE COMPUTER CLUB'S NEWSLETTER AUGUST 1997

CLUB OFFICIALS

President:	Ron Fick	303-452-2456
Vice President:	Daniel Dye	303-433-4601
Secretary/Treasurer:	Margie Weller	303-779-5617
Newsletter:	Ron Fick	303-452-2456
DOM Volunteer:	Earl Cook	303-771-4819
Program Chairman:	Daniel Dye	303-433-4601
Head Librarian:	Ron Snyder	303-344-5340
North Librarian:	Jim Spears	303-288-6951
South Librarian:	Darrell Thompson	303-366-5172

Meeting Info

The August CCCC meeting will be held **Tuesday, August 12th at 7:00 pm at the clubhouse of Whispering Pines of Denver condo complex.** For questions/directions, contact Darrell Thompson at 366-5172 or Margie Weller at 779-5617. Visitors & guests are encouraged to attend. Our September club meeting will likely be held on Sunday, September 14th at 2pm, but this decision will be confirmed by our membership at the August meeting.

Wanted: Volunteers

Our CCCC Program Chairman, Daniel Dye, is soliciting volunteers from within our membership for demos of computer hardware or software for future meetings.

Please don't be bashful, none of us are pro's at this hobby, but we all will enjoy learning more from each other. Contact Daniel at 433-4601.

Local BBS's

CCCC club members communicate with each other and the CommNet network of C= bbs's via these member owned bbs's which run C-Net 128 v6 bbs software:

Batcave	303-252-0735	Land of Oz	303-985-3980
(Ron Fick)		(Don Koblischke)	

The Colorado Commodore Computer Club (CCCC) held its regular monthly meeting Tuesday, July 8, 1997 at 7:00 P.M. in the Whispering Pines of Denver clubhouse, 7755 E. Quincy Avenue, chaired by President Ron Fick. Attending were members Jim Carson, Daniel Dye, Norm Edwards, Darin Erickson, Oliver "Mitch" Mitchell, Jim Spears, Margie Weller, and Barbara Williams. Also present were guests Dennis, Floyd and Oletha King, and Bob Williams.

The chairman opened the meeting with an offer to take names for another bulk order of Gaelyne Gasson's book, The Internet For Commodore Users, saying anyone who is interested can contact him or send him a check for $23.95, which is about half the price of a single copy order. Then followed a discussion of our meeting schedule. Ron said the survey form he sent out had returned 9 votes for the second Sunday of each month at 2:00 P.M., and 7 for the second Tuesday at 7:00 P.M., adding there were some who voted for alternating meeting times, so those votes were counted for both options. Currently, the club is scheduled to continue Tuesday evening meetings through August, so Ron suggested we plan on a Sunday meeting in September and see if more votes come in before setting a more permanent schedule. He offered a survey form to anyone who didn't get one previously and expressed the hope that more members will return the surveys and vote their preference for the meeting time(s).

Ron brought up the matter of whether to encourage a newer member, who is not an 8-bit Commodore user, to come to meetings with the understanding he is welcome to occasionally demonstrate his Amiga computer system and write articles about it for the newsletter. Ron and Daniel spoke in favor of this but no one else commented, relative to the question, and no vote was taken. (NOTE: Ron already knew, from an ongoing exchange of email, of this writer's opposition to encouraging non-Commodore-8-bit users to believe the current members want them to share their "other platform" interests. This has not been demonstrated at any club meetings by the majority of regular attendees. If the club is to change its singular focus from the use, information and maintenance of 8-bit Commodores, then I believe it must be by an actual counted vote of participating members, and not left to Ron alone to make this important decision that would affect the future direction of the club.)

As the first item of new business, Daniel offered an opinion regarding items donated to the club. He said Darrell, who has been receiving club contacts, has indicated he refuses C64 equipment and tells the would-be donors we really don't need it. But Daniel thinks that should be a club decision, rather than Darrell's personal decision, and that we should continue with our present policy of having Darrell go ahead and make the contact, then get in touch with the member living closest to the donor to try to arrange for that member to pick up the donated items. He added he thinks we should accept all Commodore equipment. Ron said he understood Darrell to say he does not accept donations of just one or two items of C64 hardware, but he too thinks it is worth our efforts to pick up all Commodore equipment unless we run into storage problems, in which case, he said, we could have another auction to clear out the club's inventory. He said the treasury really doesn't need more money, but that if a reasonable price is put on it then someone who really wants or needs the equipment will buy it. More discussion followed, but no vote was taken.

Barbara said she would like to see demos of some of the interesting programs used by other members and that she has a Geos program that her son, Earl, had shown her how to use and it's a great program that she feels she should be using, but she has been using something else and hasn't yet switched over. It was generally agreed we need someone to demonstrate Geos to the club, as its unique operating system can be intimidating to the

new user. (Unfortunately, Earl doesn't live in the Denver area, so does not attend CCCC meetings.) Ron suggested member Jim North, who was not present, is a Geos user and might be persuaded to give a demo.

Ron showed us current pictures sent back to earth from the Pathfinder Mission's small rover on Mars, which he had downloaded from the WWW with his Commodore 128 the day before and printed out on a laser printer. He said the pictures could be downloaded in .gif, .jpg, or .tif format in either low-res or high-res, and that our Commodores can view the low-res.gifs with a .gif viewer program that is available for downloads on his Batcave BBS. He said he was unable to connect to the Pathfinder website listed in the Denver Post, but did succeed with the JPL (Jet Propulsion Lab) site listed as an alternate.

The chairman gave out sample disks of the Commodore Gazette magazine, created by new CCCC member Christopher Ryan of Detroit, Michigan. He said every month the disk magazine consists of two disks, one each for the C64 and C128. He had spoken with Chris on the phone and reported him to be an enthusiastic 24-year-old, a dedicated Commodore 8-bit supporter who has been producing the Commodore Gazette since October, 1995. The July CCCC newsletter contains Chris's ad for that disk magazine.

Mitch reported he had spoken with Earl Cook, who he said is feeling a bit better now. Earl told Mitch he had detected that the Discover magazine's editor had been flaming Jim Brain and Jim had become annoyed with this "and threatened to just throw in the whole towel on the Commodore."Mitch and "Cookie" (Earl) wanted to encourage anyone who could contact Jim to do so and tell him how much we need him to keep working with us, and that

we're pleased with what he's doing for the Commodore world. Ron added that on the local Commodore BBSs we can "email" Jim Brain, whose handle (alias) is "Brain", at First Contact BBS in Omaha, Nebraska by entering "NS" to send and selecting Node #2. He also noted Gaelyne's book has Jim's email and WWW addresses.

Ron reported he had talked with Ron Snyder earlier in the day, and expressed regret that Mr. Snyder has been in poor health and unable to attend meetings recently, saying Snyder is quite an asset to the club and he wishes that long-time member could be here and share more with us.

Daniel presented the disks-of-the-month for sale to members, after which the drawing was held for door prize and Darin was the lucky winner of the $20.00-bill. The business meeting was then adjourned for the main event, which followed.

For presentation of the evening's demo, Ron introduced Robert Williams, an active supporter of the Nyx BBS who offers help and advice on Nyx matters through the "nyx.support" newsgroup. Mr. Williams gave an online demonstration, accompanied by detailed instructions in how to log on, get a validated account with full user privileges, get around on Nyx, and use some of its many fine features and programs. He gave printed handouts to all members so we could follow along with his presentation and have a good reference for later use. Our special thanks go to Mr. Williams!

The next regular meeting of the Colorado Commodore Computer Club will be Tuesday, August 12, 1997 at 7:00 P.M. in the Whispering Pines of Denver clubhouse, 7755 E. Quincy Avenue, located approximately 1/4 mile northeast of the junction of I-25 and I-225. We welcome new members and visitors.

(CORRECTION: The Secretary/Treasurer, at the June 10th meeting and in the Secretary's Report for June 10, 1997, stated that the $100.00 check donated by the CCCC to Nyx April 21, 1997 had not yet been cashed. I am embarrassed but glad to say this statement was in error, due to a careless oversight! The check had cleared immediately and the April bank statement and treasury records reflected that fact all along, so the figures I reported were correct; but I had failed to notice the check had cleared when I made that misstatement.)

August Disks of the Month

NOW AVAILABLE BY MAIL DOM's are now available to anyone by mail. This month's selections will be mailed to you for a fee of only $3 covering the cost of both disks and mailing.

Make your check payable to "CCCC" and mail to Earl Cook, 7192 S. Albion St., Littleton, CO 80122.

These DOM's will also be available at the regular Aug meeting for $2 for the set.

The emphasis this month is on "demo" programs, along with some C=128 utilities for practical use. A number of the C=64 programs are paired with text files containing insightful comments by Jeff Jones and Fender Tucker of Loadstar. (used with permission) E-Z Reader is available to view these sequential files. Each disk has a convenient Disk Menu program that enables you to load and run programs selected from the directory. The C=128 disk autoboots this program.

C=64 Disk of the Month for August 1997

- Stick Boy - primitive animation
- 4Gasm - winner of 4K byte competition, by Elwix
- Test Pattern - first demo by PSW group
- Snowflakes - exploring fractal patterns, by Elwix
- Juliamorph - weird world of Julia sets
- New 97 CSD Demo - latest from Chameleon
- Spin - unusual scroll by PSW
- Jungle, Aphasia, Perplex - fascinating multi-page demos by Electron group
- Premiere, TSA Winner, Waterlogged, Living Again - demos by Venom group

C=128 Disk of the Month for August 1997

- 3D Isometric - plot functions $z=f(x,y)$ to screen or printer
- Draw 'n Paint - Hi-Resolution or Multicolor graphics
- Sketch - simpler drawing program
- Sprite - viewer/editor
- Doodle Loader - graphic viewer
- Automaton - abstract patterns from simple rules
- Funny Tunnel - spiral vortex of nested polygons
- Animals Show - music fun for youngsters (with doc.)
..several simple graphics displays..
- Disk Dump - file contents in hex and characters
- Unscratch - recover deleted files
- Word Count - for text files
- 1571 Copy v3.5 - single-disk backup
- Random File - sample record handler
- Cross Ref - examine program variable use
- Boot Validate - validate disks having boot sectors
- 1571 MFM Formatter - IBM/Kaypro/Osborne
- 128 Asm - machine language assembler / editor (with doc.)
- Sound Editor - change parameters
- The Grapher - bar graphs, pie charts, functions
- Load Address, Header Change, Seq Reader, 8563 Explorer, Menu v6

Newsbriefs

New Release of NZP128

For anyone (64 or 128 users) who ever have reason to unzip files on the Commodore, David Schmoll has released his latest Unzip 128/64 program, NZP12818.SFX. It has Unzip128 AND Unzip64... these will unzip PKZip 1.x files - and he's changed it so the Unzip64 program works fine with the 64SuperCPU and the 128 version should have the same touches for when the 128 SuperCPU arrives.

Unzip 64/128 no longer requires the file extension to be ".zip", as it will give a directory listing of all files in a selected directory, and you just choose the one you want from the list.

Of interest to those who use either QWKRR128 or QWKie for offline mail reading, David updated the program called "QPE" so that it works with the changes Rod Gasson made to QWKRR128 v5.1. QPE can also be used in C64 mode for those who use QWKie, and it includes some added programs so you can make use of it with your REU (Ram Expansion Unit).

This new version is available in the Commodore UD directory under C= Utilities on Batcave bbs, 303-252-0735. (out of area callers get instant full access on Batcave)

Survey Forms

As of this newsletter publication date, only 21 CCCC survey forms have been received by your editor. This is only about 1/2 the membership. We do have about 10 new members who may not receive their forms until receipt of this issue, so hopefully those folks can send in their forms immediately.

This club should be a two way street with member input besides leadership from the executive officers.

Please take a moment this month and fill out the survey form and mail it back to the return address on the newsletter or bring it to the August meeting.

Telecommunications

As most of the membership should know by now, your President's speciality is telecommunications with the Commodore. Think about how much more fun your computer hobby would be if you were able to hear exciting news about Commodores daily instead of waiting until your next issue of Commodore World arrives or until your next CCCC newsletter arrives. If you run into a problem using your Commodore, why not just post your question on one of our local bbs's where 100's of fellow Commodore hobbyists are there to assist you?

Several of our CCCC members are active daily on our local Commodore boards and will be happy to assist you in learning how to telecommunicate. Anything you've not tried before can be intimidating, but modeming with your Commodore is not all that difficult.

Now that our meeting room has a telephone connection, I'm sure our program chairman will be scheduling more telecommunications demos.

LUCKY to Join Network

The LUCKY Commodore club of Louisville, KY has recently voted to network their club owned bbs with the CommNet network that our local Commodore bbs's are in. Ron Fick invited LUCKY to join CommNet and wrote a two 2 page article for their July newsletter explaining to their membership what will be involved with networking. Fortunately, LUCKY bbs has been running C-Net 128 bbs software just like our local boards, so networking will be easy to set up.

Currently, GOCUG in Omaha and WCCUG in Grand Junction and our CCCC members can all communicate with each other on the special Natl Clubs message base via the network. Let's get active on that message base to give a big welcome to the LUCKY members and make some new Commodore friends in Louisville.

We Use PC's Too!!

From: jpnan@prairienet.org (Jean P Nance)
Subj: Use of term, "PC"
Date: Fri Jul 04 08:33:44 MDT 1997
Organization: University of Illinois at Urbana-Champaign

I am on a little private campaign. I wish those in the Commodore community would resolve not to use the term "PC" to mean a personal computer that is IBM compatible. What the heck is a Commodore, or an Atari, or an Apple, or a Mac? It is a "personal computer". I can't think of a brief acronym for the IBM compatible types, and the actual IBMs, that are included under the term "PC" now, though. But why should the owners of those machines be able to preempt the designation of "personal computer". If somebody can dredge up an acronym, not necessarily respectful, for those "other computers", maybe we could start using it. Just a small step against the tide?

On this July 4th, let us declare our independence of terminology that is incorrect, and insulting to our own machines!

Editor note: Jean Nance was one of the first Presidents of "Meeting 64/128 Users Through the Mail" back in 1987 and has been a faithful supporter of the Commodore computing hobby for at least that many years. She is located in Urbana, IL..

From: Tom Adams <tomadams@sysnet.net>
Subject: Finding an ISP

Regarding Joe Fenn's remarks about looking for a provider, I was real lucky in choosing Sysnet. I signed up in person because I wanted to ask some questions. When it came to the question of the shell account the lady turned me over to the senior tech, Dave Tipton. Dave asked what Computer I was using and I said a Commodore 128. I expected a big laugh and the usual "you can't do that" but was surprised that Dave had run a BBS during his college days on a Commodore 128. He was amazed that people were still using them and asked me if I could find him one. I found one on the 'net and he bought it. To quote Joe Fenn, the senior tech for my ISP was "in hog heaven".
-=-
Tom Adams
President - Meeting 64/128 Users Through the Mail

*Editor note: A couple of our CCCC members are also members of "Meeting 64/128 Users Through the Mail" club which has a bi-monthly newsletter that is quite interesting with Commodore news and for sale ads. This is a by mail club with members all over the world willing to help others with their Commodore hobby. A complete publication of "Bio's" of the membership are published each March & September. Dues are only $12 per year. Requests for new memberships should be mailed to: Tom Adams, President, 4427 39th St., Brentwood, MD 20722-1022 but make your check **payable to J.Y. Powell** (treasurer).*

The 1581 Story

In 1987, Commodore released a 3.5 inch floppy drive, the 1581 which was (thanks to its WD 1772 controller chip) capable of the MFM format, too. Alas, they did not produce as many as the 1541, though it is much better than the old 5.25" drives. Probably this is due to its incompatibilities caused by the different format and the new operating system.
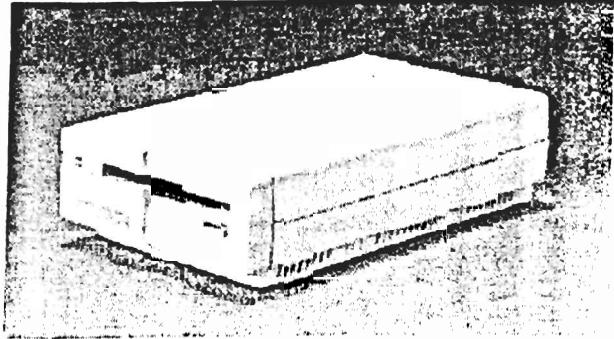

Fig.1 Picture of 1581

Figure 2 depicts the version Commodore was planning to release first, and maybe really released, but is seems to be very rare. Another version which looks like the one in Fig. 1 has a different power jack, a mini-DIN connector.

Later on, Commodore worked on a new drive, a 1581 with a high density drive, but never released it. In comp.sys.cbm, Jack Vander White <ceejack@crl.com> writes:

2 prototype disk drives that have shown up since Commodore's warehouse sale:

1590-D-1

This is an HD/DD 3.5" disk drive for the 64/128. At least 3 units made. Uses a Mitsubishi HD 3.5" drive in a 1581 case.

Uses a 1581 Motherboard with DOS v4.13. 1772 controller. Has a hardware switch to go from HD to DD. Formats to 6336 Blocks in High density mode. Sound familiar?

[...]

This is what I refer to as 1591 (that is the name used most on the net); I will try to get a photograph of it.

Another prototype, the 1563, has been built into a C-128D. Wile E. Coyote <coyote@gil.net> posted the following to comp.sys.cbm:

1563 3.5 Disk Drive [12 Nov 95]

I have a 128 Portable (European model) with a 1563 3.5 disk drive installed. It came from Fred Bowens office, says CMD where I got it from. This has to be the most hacked board I have ever seen.Daughter boards everwhere. If anyone wants to help me figure out whats in it, I'll post more about it.
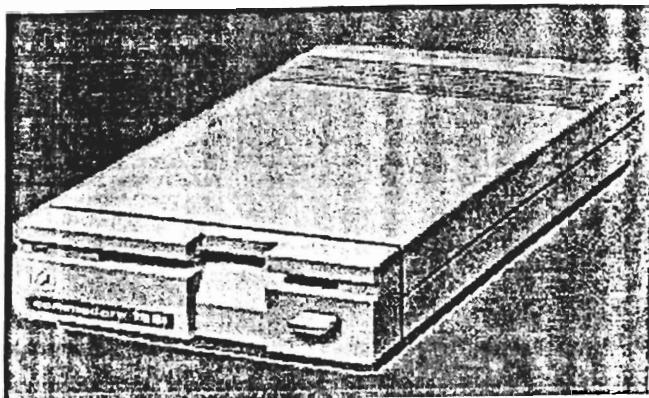
Fig. 2 Picture of mysterious 1581

Technical data

Medium:	3.5" double density, single sided (1581)
	3.5", high density, double sided (1591)
RecordingFmt:	GCR and MFM
Capacity:	790kB (80 tracks) (1581)
	1.6MB (80 tracks) (1591)
Speed :	3.5 kB/sec
Interface:	serial IEC bus
CPU :	6502 @ 2MHz
RAM:	8kB SRAM
ROM:	1x32kB
Power supply:	external transformer (5V+12V)
Extras:	external device address switches

QWKRR128 V5.1 Commodore 128 Off Line Reader is Released

Author: Rod Gasson

FEATURES:

* Inbuilt ZIP packer.
* Inbuilt full screen editor, with macro support.
* Handles full 255byte character sets.
* Handles any length message.
* Handles any number of messages.
* Handles any number of conferences.
* Supports most disk drives, including 1541, 1571, 1581, CMD's FDxx series, hard drives, and Ramlink.
* Forward/reverse reading.
* Read mail "as it comes", or sorted by conference
* Export messages in several different formats (ASCII, PETSCII, DAT, etc)
* Import text from several different formats.
* Flags/reads personal mail (to/from you) in all conferences.
* VIP list to highlight or view messages from "VIPs" (works like personal mail for other user names)
* TWIT list allows you to never see messages to or from TWITS ever again.
* Decodes UUencoded messages to screen, disk, or printer
* Decodes BASE64 files (MIME), to screen, disk or printer.
* Supports file attaches to messages, in several formats, including Base64 and UUencodes.
* Uses keyboard tables so it can be re-configured for non-English users.
* Automatically formats addessing for fido netmail.
* Automatically formats addressing for Internet mail
* Intelligent address book will use the correct address for fidonet or internet styles.

* Handles UUCP<>fidonet gating addresses
* Intelligent message parsing to extract valid email/netmail addresses from messages being replied too.
* Can open multiple mail packets without quitting program. Text can be cut and pasted between different mail packets.
* Supports macros of any length, both for its "trigger" and its output string. This can be used as a 'simple' spell corrector. (eg, a macro such as "Ismeal=Ismael" will ensure that you'll never transpose the "a" and "e" in Ismael again.
* Quote initials can be changed 'on the fly' (this is useful when quoting from Email messages where the default initials are often meaningless).
* Supports taglines (unlimited number)
* Grabs taglines from messages to add to your own.
* Ability to 'hide' certain lines (user defined) to elimitate a lot of the 'junk' in internet headers.
* Screen blanking.
* Mark messages for later retrieval.
* Browse headers only ability.
* Word search capabilities.
* Context sensitive help screens.
* Supports both parallel and serial printers.
* User defined colourisation for normal text, quoted text, taglines, braglines, and origin lines.
* PAL/NTSC compatible.
* Doesn't require Windoze95 and 32meg of RAM (Runs on a stock C=128, with only 128Kbytes) :-)
* When used on a hard drive or Ramlink, it is as fast as any PC OLR :-)

For those of you with Internet access, it can be obtained via FTP from ftp://videocam.net.au/cbm/qwkrr/ Also available from the C= UD's on Batcave 303-252-0735 and will be distributed free to CCCC members as a bonus disk along with the DOM's for September 1997.

Filenames are: QWKRR5-0.TXT, QWKRR5-1.SFX, QWKRR5-2.SFX, QWKRR5-3.SFX, QWKRR5-4.SFX, QWKRR5-5.SFX

Club Property Sale

Hardware	Cartridges @ $1 each
C= MPS803 Printer, manual, extra ribbon $5 C= 1541 Disk Drive, cables, demo disk $10 Cardco +G Printer Interface, manual $3 needs connector repairs (2) Joysticks each $2	Logic Levels Centipede Sea wolf Pac Man

Disk Programs with docs @ $1 each

Spell Diver, Logic Builders, Mystery Double Feature, Suspect, Better Working FilePro 64, Timeworks Word Writer

Disk Programs @ $1 each

Number Chaser, Yearn to Learn, Mathaletics I, The Planner, Typing Tutor, Directory Utilities, Disk Cataloger & Viewer, Home Finance Organizer, Home Expense Manager, Personal File Keeper / Business Letters, Database Manager /Personal Finance Worksheet, Paperback Writer, Recipe Box, Sid Ceaser, Wheel of Fortune, Freedom Fighters, Land-Sea-Air Adventures, Crazy 8's & Spades, Space Trek & Space Lords, Adventures (3), Atomic Challenger

Used Disks (30) $3

To purchase these items, contact Daniel Dye (303)433-4601.

Recent Membership Renewals

Paul Correa - Thornton, CO
Lloyd Nelms - Camden, TN
Jim Spears - Commerce City, CO

Stephen Wilson - Lakewood, CO
Anna Ballou - Pueblo, CO
Norm Edwards - Arvada, CO

A very warm welcome to our new CCCC members -

Terrance Deak - Dickson, TN
John D. Summa - Jacksonville, FL
Eric Pearson - Mahopac, NY

Leslie Richardson - Lakewood, CO
Clinton M. Thomas - Englewood, CO

Project: **Circuit to even kill reset resistant programs**
Target : C64 (all models)
Time : 25 min.
Cost : ~2 US$
Use   : No need to switch off C-64 for getting rid of reset resistant programs,
        thus enhancing the C-64's lifetime.

EXTRACT: Pull /RESET and /EXROM to LOW simultaneously.

DETAIL: During the reset procedure the C-64 checks whether the memory locations
$8004-$8008 contain the string 'CBM80', which usually indicates the presence of a module
attached to the expansion port and makes the processor execute the reset routine the address of
which is located in $8000/$8001. If this string is absent, the computer proceeds with the normal
reset routine. This 'module reset vector' can be changed by any program which causes the CPU
to execute the program's reset routine (which does not necessarily have anything to do with a
reset) instead of the kernal reset routine. That is when you hit the reset button but it does not look
like a normal power on. To avoid the CPU finding the string 'CBM80' if a program wrote it into the
very memory location, we have to prevent the RAM at $8000 being read during the reset routine.
To accomplish that, we pull the expansion port's /EXROM pin to LOW which makes the C-64
switch off the RAM from $8000 to $9fff so that accesses to these locations are usually redirected
to a module's ROM. If no module is plugged in, the data bits are floating (contain no valid values),
which renders the probability of reading the string 'CBM80' at $8004 quite low :)

The circuit below works as follows: the reset line gets a short LOW signal (independant from how
long you pressed the button) until the capacitor is loaded. At the same time, /EXROM gets pulled
to LOW for just a little longer than the reset line. This makes the processor start the normal reset
routine (because it cannot detect the 'CBM80' string).

Although this seems to 'kill' reset resistant programs, their own code including the reset vectors
and the 'CBM80' string still reside in memory, so that an NMI (activated by the RESTORE key) or a
software reset (SYS 64738) restarts the program. To avoid this, simply type POKE 32772,0 to
overwrite the first character of the string 'CBM80'.

If you want to implement a reset protection in your own programs, be sure to choose the right
ASCII values for the string 'CBM', because there are two different values for each character,
depending on the character set. The correct ones are those above $80:

C = 195 ($c3), B = 194 ($c2), M = 205 ($cd)   8 = 56 ($38), 0 = 48 ($30)

Of course, this trick as well as the hard reset switch does not work with a module plugged in, which
occupies memory at $8000 or at $a000 (banking out memory at $a000-$bfff (accomplished by
pulling /GAME to LOW) implies banking out memory from $8000).

INGREDIENTS: - 1 single-pole push-button switch (normally open)
                        - 1 resistor 10 kohm
                        - 1 resistor 12 kohm
                        - 2 electrolytic capacitors 10 uF

10

Reset project continued -

INSTRUCTIONS

1. Open case, disconnect power plug!

2. Build the following circuit:
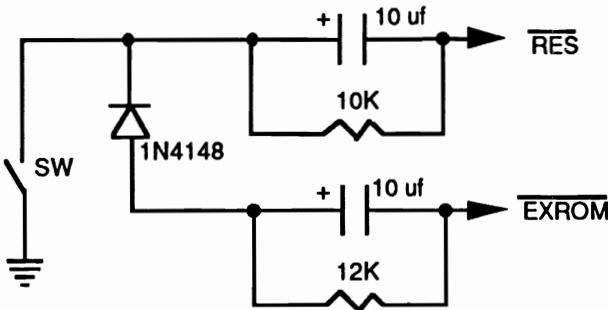
The easiest way to build it is the so called 'Drahtigel' the literal translation of which would be 'Wire hedgehog'. This simply means you do not need any kind of pcb, Vector board or similar struts. But do not forget to insulate your circuit.

3. Now solder the circuit according to the above picture to /EXROM, /RESET and GND. You can find all three signals on the expansion port and above that, /RESET and GND on the user port.

4. Now switch on your C-64 and press the hard reset switch very shortly, then press it again and hold it down for 5 seconds. If in both cases the power up screen appears again, the hard reset switch basically works correctly.

5. Now load a reset resistant program and try to kill it using the hard reset switch. If that works, you can attach the switch to the case and close it again.

POSSIBLE FAILURES

- Is the push-button switch really normally OPEN?
- Check polarity of the capacitors and of the diode
- Did the diode get damaged while soldering?
- If pressing the hard reset switch leads to a startup screen showing only '30719 BASIC BYTES FREE' or if it leads to other strange results, then you are probably using a speeder (Speed-DOS, Dolphin DOS, Exos, etc.) which has a shortened reset routine and thus the 12kohm resistor has to be slightly reduced to 11k or 10.5k (12k works for my SpeedDOS+).

Created in Jan '97 by Marc-Jano Knopp and Daniel Krug
http://www.student.informatik.th-darmstadt.de/~mjk/c64.html

Project: **Make RESTORE key behave like all the other keys**
Target : C64 (old)
Time   : 15 min.
Cost   : <1 US$
Use   : Never hear the RESTORE key singing
         'Killing me softly ...' again.

EXTRACT: Replace 'NMI-capacitor' C38 by a 4.7nF one.

DETAIL: The value of the built in capacitor responsible for triggering the NMI via the timer 556 is too little in old C-64's (big PCB). On account of the pressure dependant resistance of the keys, pressing the RESTORE key just as softly as the other keys is not sufficient for producing a trigger signal at the timer's TRIG input. Therefore, we will replace it with a 4.7nF capacitor.

The problem described above was fixed in the new (small) PCB's and in the SX-64.

INGREDIENTS: 1 capacitor 4.7nF

INSTRUCTIONS

1. Open case, disconnect power plug!

2. Search for capacitor C38 (51pF) below the leftmost CIA. In most boards it is built into a resistor case with green base color! Its color code is: green-brown-black

3. Unsolder it and replace it with the 4.7nF one.

4. Connect power plug.

5. Switch your C-64 on. After the startup screen appeared press [STOP]-[RESTORE] just as softly as you would usually hit the other keys. Repeat that procedure a few times and if the RESTORE key seems to behave like the other keys, close the case again.

POSSIBLE FAILURES

- Replaced the wrong capacitor. Often the capacitor is built into a resistor case.

Created in Jan '97 by Marc-Jano Knopp and Daniel Krug
http://www.student.informatik.th-darmstadt.de/~mjk/c64.html

Please Join Us

Colorado Commodore Computer Club
Newsletter Subscription / Membership Application

Name _____   Street Address _____

City _____   State ___   Zip _____   Phone _____

Make check payable to C.C.C.C. for $10 for one year newsletter subscription and club voting membership. Additional family member memberships are $5 each.
Mail to club treasurer: Margie Weller, 7755 E. Quincy Apt. A7-204, Denver, CO 80237

Colorado Commodore Computer Club News

C.C.C.C.
P.O. Box 370
Eastlake, CO 80614