CoCo~123

Glenside Color Computer Club, Inc. Carpentersville, Illinois
Volume 22, Number 1 March, 2002

CoCo ~123 HighLights

G.C.C.C. Inc. OFFICERS

Here is the list of 2001-2002 club officers and how to contact them. If you have questions about our club, call one of the officers for the answers.

POSITION	NAME	PHONE	PRIMARY FUNCTION
President:	Howard Luckey	708-748-5320	The buck stops here
V. Pres.:	Justin Wagner	630-393-7072	Co-ordination
V. Pres.:	Scott Montgomery	773-282-6044	Navigation
V. Pres.:	Brian Goers	708-754-4921	Special Events
Treasurer:	George Schneeweiss	815-832-5571	Dues and Purchasing
Secretary:	Tony Podraza	847-428-3576	Recording/reporting

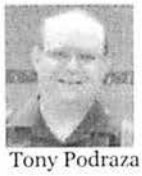

Howard Luckey


Justin Wagner


Scott Montgomery


George Schneeweiss


Brian Goers


Tony Podraza

Brother Jeremy, Justin Wagner, George Schneeweiss and Bob Swoger.

Tony Podraza was missing due to the preparation of the up coming marriage of his oldest son, Craig. Because of Tony's absence, there was no FEST! news. Two members did indicate that they had reserved their rooms for the FEST!

Scott moved that the meeting minutes be approved as published, Brother Jeremy seconded. Vice President Tony Podraza reported that the year end paid membership for 2001 was just over 70. After the collection of dues for year 2002 this evening, Treasurer George reported that our treasury now stood at $1665.97. This brings the total of members paid up until our next FEST! time to 24 plus 32 more members paid through 2002 totaling 56 so far. Nice going, CoCo Community! It is this kind of support that encourages us to keep going.

Software Library - Purpose: to keep CoCo software from being lost forever.
RS & OS9 - cartridge tape disk Os9archive.rtsi.com Brother Jeremy reported that he had a good handle on most of the Radio Shack published software titles and that he was now going after the third party titles. Interested was he that there were almost 40 such titles in our just published newsletter. Discussion on how to ultimately preserve this software was discussed. CD ROM seems to be the most likely way. (Brother Jeremy, please improve anything that needs help. Thanks, Bob)

Carl Boll has written to say that all IDE drivers have been mail out to all known good mailing addresses and postal cards will be sent out to a few remaining others to confirm their latest shipping addresses.

President Howard wishes to remind those who will be attending this years FEST! to get their rooms reserved in time. (Tony, give cut off date.) Howard and the gang wanted also to thank Tony Podraza for putting together another fine newsletter.

The business portion of the meeting adjourned at 8:54 p.m.

George showed us his new Dick Tracy type watch that was equipped with a camera and recording system which can IR transfer to your personal computer. Justin then filled us in on all the new products that impressed him at the Comdex show.

(Justin, please embellish this, and if possible, remind me why I wrote down the name Larry Elison. Thanks, --==GATOR==--)

We retired to the Santé Restaurant just west of Roselle Road on Higgins Road to finish our last meeting of 2001. We wished each other the best for 2002.

January 10, 2002

President Howard called the meeting to order at 7.48 PM at the Schaumburg Township District Library. Present were Howard Luckey, Scott Montgomery, Brother Jeremy, Tony Podraza, Richard Bair, Brian Goers, John Chasteen and Bob Swoger.

Photo evidence of Tony Podraza's absence from the December meeting were presented.

Meeting minutes were read and approved.

Those venders who have mentioned that they will be at this years FEST! are:
Jim Davis
Mark Marlette
Ken Baker

Steve Noskowicz will be the featured event this year putting on a laser show using his CoCo.

As we had no room when we arrived this evening, John Chasteen was asked to procure one the next 5 meetings. In the week that followed, he tore up the phone lines via E-mail with the library. You should have read his report on page two, under CLUB MEETINGS

Bob was asked to get the new contract up on our web site.

Rob Rosen has volunteered to be a guest speaker, however, there are some technical problems to overcome. He cannot travel. Video conferencing may be a possibility, or maybe a video.

Bob Swoger is to get the artwork finalized and send artwork to John Chasteen for buttons. Also, get the shirt artwork finalized and ask Frank and Carol Davis if they would be so kind to do shirts again.

Tony reported that the last mailing cost $69.03.

We have many Amateur Radio Operators in our club. As a result, we have a new CoCo friend, Amateur Radio Operator John Russell, N9HVF. Seems John in an acquaintance of Bob Swoger, K9WVY. They are both members of the Valley

for that idiotic, asinine monitor demands separate but NEGATIVE H and V sync in order to put the picture properly on the screen. Idiotic and asinine because it's the ONLY monitor I know that requires that variety of sync... totally ignoring existing conventions of the period that dictated positive separate (or negative combined) sync.

Assorted monitors from Thompsom, Electrohome, and some others from the period of 1985 to 1990, and some Zenith models from that period also would support analog RGB with 15.75 kHz sync. Some did, some did not. You'd need detailed specs on the particular model in question, tho, to tell which... or need to look inside and do some reverse engineering of the circuit.

MOST CGA monitors can be converted to RGB analog monitor by ripping out the CGA to RGB analog converter circuit, tho sometimes you need to put in some video buffer circuits on the R,G, and B inputs. But you need to know what you are doing, and know enough about video to reverse engineer your monitor...

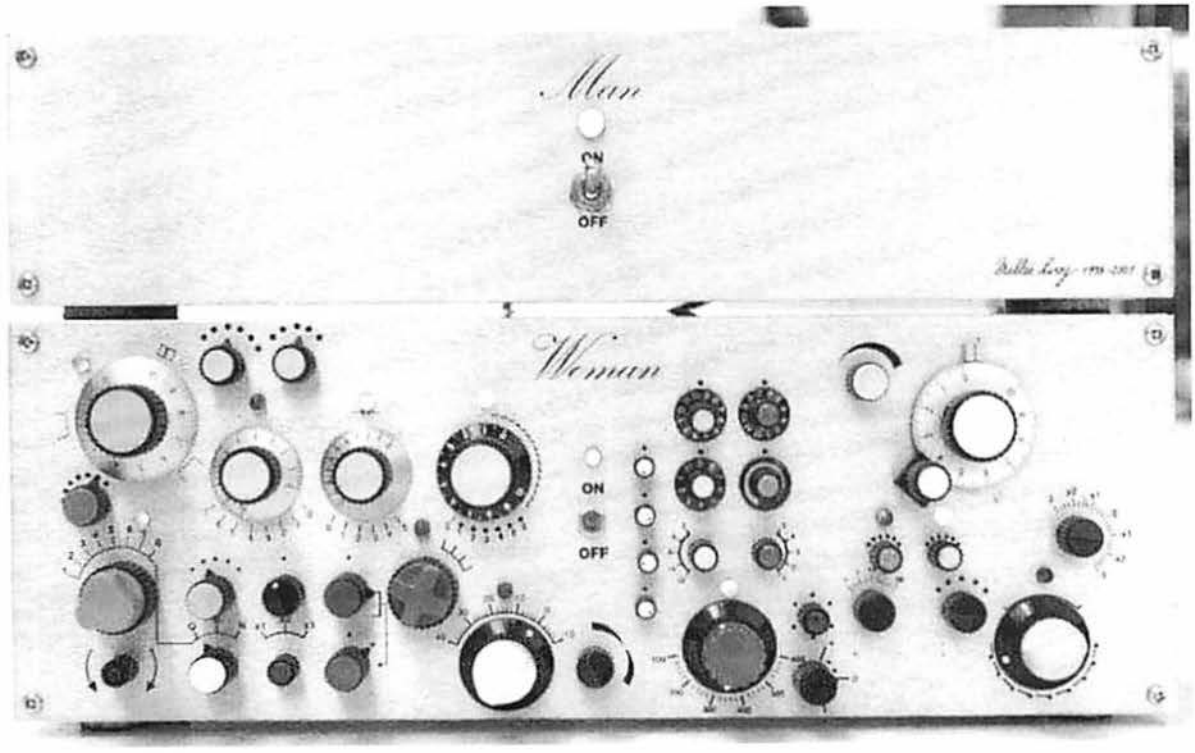
rarely are schematic diagrams available for such 10 to 15 year old monitors! I've done several such conversions on a variety of CGA monitor in the past, until analog RGB used monitors became cheap enough that it wasn't worth my time to do such conversions.

I've seen occasional commercial studio monitors (including one made in Belgium) that had analog RGB input and ability to sync at 15.75 kHz. One recently showed up at a local thrift shop, made in Belgium, in good working order. At $30 I decided not to buy it... I've too many such good analog monitors on my shelf already.

This is pretty much all the useful info I have to answer your very general question. IF you get a PARTICULAR monitor, feel free to check with me about its pin out. I MAY have some info on it.

---marty

The Difference between Men & Women



both occupied by a queen and in a position to attack. Instead, we check the squares we know are positions that could attack the tentatively placed queen to see whether a queen is there; this has the following advantages:

- It looks at 3/8 as many squares.
- Given the row we're trying to place the queen in, the attacking positions in a given column are determined by the distance between that column and the column we're trying to place the queen in, so that only one loop is needed rather than two.
- Since we know the attacking positions are attacking positions, we need only check whether a queen is in fact present, rather than also having to check whether the position is an attacking position.

Stylistically, the following is made a bit clumsy by BASIC09's evaluating both operands of the binary **boolean** operators rather than evaluating only as much as is necessary. I've also taken a bit of liberty with the indentation BASIC09 imposes in this "publication form" which also, as an Algol 68 programmer would say, uses bold stropping rather than case stropping that the BASIC09 interpreter uses with keywords.

```
procedure check
        param board(8, 8): boolean; row, col: integer; result: boolean
        dim delta: integer
        result := true
        for delta := 1 to col - 1
                exitif board(row, col - delta) then
                        result := false
                endexit
                if delta < row then
                        exitif board(row - delta, col - delta) then
                                result := false
                        endexit
                endif
                if row + delta <= 8 then
                        exitif board(row + delta, col - delta) then
                                result := false
                        endexit
                endif
        next delta
        end
```

The show procedure is straightforward. To assist the eye in judging the positions of the queens, we print some guide lines.

```
procedure show
        param board(8, 8): boolean
        dim row, col: integer
        for row := 1 to 8
                for col := 1 to 8
                        if board(row, col) then
                                print "Q";
                        else
                                print " ";
                        endif
                        if col < 8 then
                                print "|";
                        endif
```

current column, put the queen there; then, either we're on the eighth column, in which case we have a solution, or we have to move in a column, which requires remembering where we are in this column and setting up so that we start from the top row in that column.

I've yet to run the program on a CoCo. On the MM/1a, I observe no difference between the recursive and non-recursive versions of the code; both take about two minutes to run. Curiously, over half the time is taken by the show procedure! If the body of show is edited out, the result runs in fifty seconds. On the MM/1b (aka AT306), including the full show procedure, a run takes one minute fifteen seconds. I infer from this that the screen update, or perhaps the scrolling, on the MM/1 and MM/1a is quite slow.

One can do some other things to try to speed up the process, but the point of all this is to show recursion and recursion elimination in a language that will let you easily see what is happening... what the heck, I tried the added speedups anyway, so we might as well describe the methods and results.

The revised check procedure still takes time proportional to the column number fed it, so that we haven't changed its order of complexity, just cut the work down by a constant factor. To really speed things up we have to make check run in constant time. That is, the same number of things need to be tested no matter what column we're checking. How many things would that be? Since there are three paths down which the attack can come, it makes sense that there should be three tests: one for the row, and one for each diagonal. The board is small enough that we could keep a row as an integer with one bit per column, so that the board would then be a one dimensional array rather than two dimensional. One would need only check whether the element corresponding to the row is all zeroes to check the row. But what about the diagonals?

Running those tests in constant time requires two added arrays: one for the diagonals running up from left to right and one for those running down. There are fifteen elements in each array (each has a distinct leftmost endpoint along a vertical edge and a horizontal edge, and it's fifteen instead of sixteen because the edges hold the corner jointly between them). We can keep a count of how many there are...

...but wait! This is the eight queens problem; there can be at most one along each diagonal. Those arrays need only hold **boolean** values, say with **true** for free diagonals, **false** for occupied diagonals. For that matter, there's no need to bother to play bit mask games with the "board" array; there can be at most one piece in each row, so all we need place in each element is the column number of the queen in that row, or, say, zero if no queen is in that row. (With that change, one might argue that "board" is no longer a proper name for the array, because it no longer separately represents each square of the board. Now it is indexed by row and contains either zero or the column into which we've tentatively placed a queen in the given row, so let's call it "column" instead.)

With these changes, here are the resulting main and queen8 procedures. We went ahead and added some timing output to main, and check is now so trivial that we don't bother to split it out from queen8.

```
procedure main
        dim diag, row, nsols, column(8): integer
        dim udiag(15), ddiag(15): boolean
        dim t0,t1: string[32]
        for row := 1 to 8
                column(row) := 0
        next row
        for diag := 1 to 15
                udiag(diag) := true
                ddiag(diag) := true
```

be significant.

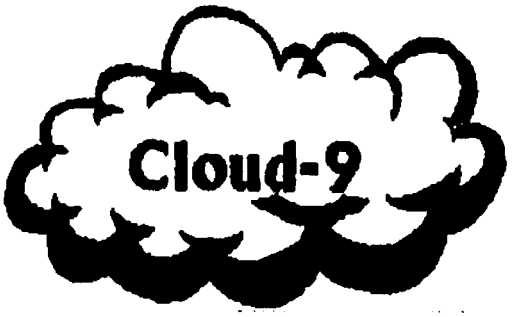
Having gone this far, we might as well write a Color BASIC version. This doesn't really have the recursion eliminated, since it does recursively GOSUB. It just stacks the arguments--or argument in this case. It lacks the comments that Mr. Banerjee's code has, and that should be present in production code, but it matches the last BASIC09 version very closely. In a sense the BASIC09 serves as comments for the Color BASIC version. Mercifully, we've not mashed it as much as one typically sees Color BASIC listings, and the text is in lower case. The first solution, running the code on a real CoCo, takes about thirty-five seconds to appear, and the full run takes, as best I can time it, ten minutes and forty-five seconds. I would recommend that you run the program in WIDTH 80 mode.

```
100 dim cl(8),rs(8),ud(15),dd(15)
110 r$=" ! ! ! ! ! ! ! "
120 for i=1 to 8:cl(i)=0:next
130 for i=1 to 15:ud(i)=1:dd(i)=1:next
140 ns=0
150 co=1
160 gosub 200
170 sound 50,3
180 print ns;"solutions"
190 end

200 for ro=1 to 8
210 if cl(ro)<>0 or ud(ro+co-1)=0 or dd(8+ro-co)=0 then 250
220 cl(ro)=co:ud(ro+co-1)=0:dd(8+ro-co)=0
230 if co=8 then ns=ns+1:gosub 300:else rs(co)=ro:co=co+1:gosub 200:co=co-    1:ro=rs(co)
240 cl(ro)=0:ud(ro+co-1)=1:dd(8+ro-co)=1
250 next
260 return

300 cls
310 for rn=1 to 8
320 qp=2*cl(rn)-1
330 print left$(r$,qp-1);"Q";right$(r$,15-qp)
340 if rn<8 then print "-+-+-+-+-+-+-+-"
350 next
360 return
```

Recursion is an important concept, with innumerable applications, not all of which have alternative closed-form solutions. Just as an example, consider plotting a function f on an interval [a, b] if all you can do on the display is draw line segments. A recursive method is this: pick a point c in [a, b] and look at f(c). If it is "close enough" to lying on the line segment joining (a, f(a)) and (b, f(b)), then just draw that line segment; otherwise, recursively plot over [a, c] and [c, b]. (Numerical methods people will recognize this as essentially "adaptive trapezoidal integration;" if f is close to being a straight line over [a, b], what does that say about the integral of f over [a, b]?) By all means, learn to use recursion, and learn the methods Mr. Banerjee describes to take advantage of recursive solutions even if you don't have access to a language that supports recursion.



Cloud-9
3749 County Road 30
Delano, MN 55328

Web: http://www.isd.net/mmarlett/cloud9.html
Email: mmarlett@isd.net
Voice: 612-972-3261

igned to Enhance the Performance of the CoCo!

Pro-Tector Daughter Board
Price: $16 + $4 Shipping*
This device is plugged into the CoCo's motherboard after a socket is added and buffers
the CPU. Many have used this device for years - it has saved a lot of CPU's! (Processor
not included.)

HD63C09EP
Price: $31 + $4.50 Shipping*
This processor is no longer being manufactured. Get them while you can!

Combo Package
Price: $43 + $5 Shipping*
Get the speed enhancement of the HD63C09EP and the benefits of the Pro-Tector. An additional $4 off separate pricing.

CoCo3 512K SIMM Memory Upgrade Price: $40 Includes Shipping*
Includes memory and memory test program.

CoCo3 512K SIMM Memory Kit Upgrade Price: $20 + $4 Shipping*

Performance of the CoCo!Build it yourself and save $$$$. Kit comes with all parts as above but with 0K.

CoCo AT Keyboard Interface Rev D.
Price: $50 + $5 Shipping*
Interface connects to the CoCo via the standard keyboard connector. It emulates a real CoCo keyboard, no special software drivers are required. This interface can connect to the CoCo and any PC "AT" Keyboard. (Keyboard not included) Now includes the remote mounting option for the ease of connecting a keyboard.

CoCo AT Keyboard Remote Interface Kit
Price: $16 + $4 Shipping*
This kit allows the Rev "C" keyboard adapters to easily connect to the CoCo and the AT Keyboard. No more opening the CoCo to connect or disconnect.

CoCo SCSI Interface RTC Price: $100, WO/RTC Price: $ 85 +$7 Shipping*
This interface has the option of a Real Time Clock with calendars to 2100. Both 6809 and 6309 stacks supported. Parity generation for IOmega devices, ZIP/JAZ. Full SCSI ID's supported. FAST!

WEB WEAVINGS from the COCOLIST

WHY DID THE COCO DIE?

On Mon, 9 Jul 2001, Kevin Muenzler, wrote:

I worked for Radio Shack for 15 years starting just after the TRS-80 Level I, 4k version came out. I saw Tandy get really bold when the Model III came out. It caused Tandy's stock to split twice within a year. Those were the days when Tandy truly owned the PC market. Then they started to get cautious. They were afraid of somehow competing with themselves down the road some day. They didn't want to have something that was "like the competition" in any way, they wanted to have something that was truly "better" even though it wasn't compatible at all, thus the Tandy 2000 with the oddball 720k floppies, 640x400 8-color display that required a particular monitor and totally proprietary boards. So it met an early death.

The Tandy 2000 and others of that age that met early obsolescence were designed to the published specifications that IBM said that a compatible system must meet.

Proprietary cards aside, where they failed is that they were not bug compatible. There were some very serious design bugs in the original PC family that were not built in to the TANDY 2000 other vendor MS-DOS systems. The hardware and apparently some of the BIOS was done in a way that violated Intel's design documents for use of processors beyond the 8086 model.

From my viewpoint it was not a desire to lock in customers that caused these incompatabilities, it was from designers that actually RTFM and followed it.

What killed these other systems is that the software vendors, instead of writing code to the IBM specifications, wrote code that basically required the serious bugs to be present in the underlying system.

While this software practice allowed the code to run faster on a true 8088 machine, and appeared to benefit IBM by making the other systems look bad, it shortly after hurt everyone.

IBM originally said that software that did this would not work with their future systems, but later revised their specifications that the hardware was locked into the design bugs.

Those bugs caused probably expensive pre-shipment problems with the IBM PC jr, and likely greatly contributed to it appearing both later than scheduled, and my guess it is destroyed any profit that it was expected to produce.

The same bugs caused a big problem when the first AT class machines came out, and I am not sure what was the exact fix was. A design change was made to the 80386 chips and later to overcome the problem, and it has recently come to my attention that there are changes in the way the motherboards are wired also to switch the bugs off, so that the newer operatings systems are not slowed down by them.

If you get the issues of EE-Times from that era, and put together all of the articles that reference this, you will see an interesting story, with references that is quite different than the current popularly told history of the evolution of the PC compatable.

The Internet revolution points out exactly why the TRS-80 traditional and Color line died to the IBM-PC.

Almost all of the early adopters of home computers had some experience with timesharing systems, and could get at least 110 baud dialup.

For this to be convenient, the keyboard had to at least have all of the keys for a Teletype KSR 33 system.

The Tandy's system biggest ommision there was the lack of a Control Key. Also this really wanted at least a 72 column display. In short terminal emulation was a killer application.

Based on the people that I know of at the time, had the original TRS-80 contained a Control Key, it would have wiped out most of the sales of the other brands. My guess is this cost them at least 50% of their possible sales.

Before spreadsheets, terminal emulation was a must have application, and was trivial on an Apple][as compared to the TRS-80 line. It was usually

the deciding factor on why more money was spent for the Apple.

When the Control key was added to the models, it was too late to save the line. For one thing it was in the wrong place for a touch typist.

IMHO, if the original TRS-80 line had come with KSR-33 compatable keys at a minimum, and had terminal emulation in mind, the IBM PC would have had a very hard time replacing it, and the other vendors like Apple would have significantly lost marketshare, because the TRS-80 had the dominant economies of scale.

- From: "John E. Malmberg"

`Personal Opinion Only`

take a salary for a few months (the articles and book royalties were my income).

We went to many computer shows, and some of you recall our white-suited Tyvek lab-coat getups, and maybe even me giving a talk several years later at the Princeton RainbowFEST! (one of my last shows, in 1985) in a prisoner's outfit. (Lonnie Falk was not amused.) We gave installation demosin the booth, and generally had a great time wherever we went.

By 1983, though, it started to collapse (not always visibly). It had really begun in 1981 when my co-programmer Phil Hooper (not a part of Micro) was devastated by an Ohio Scientific deal. We had jointly designed a stringy-floppy interface & software for the OSI Challenger computers, but the Exatron people ripped him off, and he killed himself.

Then we started to have competition for the bread & butter products, as customers started to cherry pick for prices at companies who only sold cheap parts. In 1983, the company that published "The Custom TRS-80" (IJG) went 'bankrupt,' selling for 'scrap' their brand-new printing of my book (others', too) -- to a company in a different state that continued to sell it, royalty-free (yes, so-called scrap sales were in my contract; I wasn't away what a scam scrap sales were!). My royalties, which had not been set aside in a separate account, were gone in the bankruptcy. The $15,000 or so that I was owed on paper ended up being a $300 court settlement instead.

Then Ziff-Davis started eating publications. They ate The Color Computer Magazine to kill it, and in the worst business judgment born out of enthusiasm you can imagine, I started UnderColor to pick up the slack. It was expensive, but we had a lot of great authors and also a group of committed advertisers. Most of those advertisers, alas, never paid us. UnderColor, a bi-weekly, went down after 11 issues; I gave the subscription list to Lonnie Falk (another mistake) so he could fulfill the remaining subscriptions with issues of The Rainbow, in exchange for which I would write several articles. His staff edited them so poorly and incorrectly that I quit the deal rather than damage my reputation (the printer buffer project was halted mid-series).

At Micro, we started to work with PC technology, holding to the Tandy line. Unfortunately, by the time we realized we were into a standards swamp with Tandy, the bank had turned us down for interim financing. Out here in the sticks of Vermont, the only technology was IBM, and they were 60 miles north in a guarded enclave (their memory chip fabrication plant). The bank would have nothing to do with this little group of people and their strange circuit boards and no business savvy.

By then, of the original publications I had written for, most were gone. My royalties were gone, but the IRS didn't agree. Our bread & butter company income was gone. UnderColor had drained our bank account. My life savings, invested in Micro, were gone. And then, my vice president (whom some of you knew), who had been using the payroll withholdings to support a drug habit we didn't know about, died in the fall of 1986 of a drug overdose, not only breaking our spirit, but leaving an enormous additional debt ... all of which I was now, as the surviving officer, entirely responsible for.

I closed Micro on December 31, 1986, said a sad goodbye to the four other employees (one died a few years later from AIDS, one is in New York City doing sculpture, one is a carpenter, and one retired), and paid all my IRS debts with plastic. It's now 2002, and I'm still two years away from clearing that debt. My marriage collapsed under the pressure in 1989 – and I'm now remarried in a relationship that has very little to do with the business world!

I certainly met a lot of nice folks over Green Mountain Micro's seven-year life -- and also a lot of very-not-nice folks in the stunningly cutthroat publishing world, including the people at Ziff-Davis, Rainbow, and IJG. I was a novice, a complete innocent in the world of business, having expanded Micro into hardware at the urging of my readers. I thought a good idea carried itself through quality products and loyal customers. It was the wrongest idea I ever had!

So since then, I stayed away from computer business. I continued to write about technology, moved to Europe for a while (where I hope to return permanently in a few years), hiked long stretches of the Grand Canyon several times, and continued my main life purpose, composing music. These days, I do restoration of old tapes and preservation on CD, occasional articles

CoCo ~ 123 INFORMATION

The CoCo ~123 is the newsletter of the Glenside Color Computer Club. Your annual contribution of $15.00 keeps our club going. Send your check to Glenside Treasurer:

George L Schneeweiss
13450 N 2700 E Road
Forrest IL 61741-9629

Our treasury provides newsletters, local meeting room and good times with fellow CoCo users at our annual Chicago CoCoFEST!! Other member benefits include: Sam's Club eligibility; CoCo community supplier discounts; access to club archives; notification of community events (the CoCoFEST!!s); and friendly fellowship.

CoCo ~123 CONTRIBUTIONS

If you have any suggestions for the newsletter or would like to submit an article, please contact the CoCo ~123 Editors:

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Mark Marlette-Ron Delvaux- Bob Swoger
Marty Goodman-Kevin Muenzler
George Schneeweiss-John E. Malmberg
And Justin Wagner

G. C. C. C. MEETINGS

The Glenside Color Computer Club meets the second Thursday of each month at the Schaumburg Public Library, on the 2nd Floor at 7:30 p.m. The dates for the remainder of 2002 are:

Feb 14; Mar 14 *** ;Apl 11; May 9; June 13;
July 11; Aug 8; Sept 12;
Oct 10; Nov 14 and Dec 12

*** Room is on the East side of Audio Video Room
(First Floor)
Ask at the Information Desk, if you have trouble finding the reserved room.
The May meeting will be held after the "Last Annual Coco FEST!". All Coco enthusiasts are welcome.

John Chasteen

A social get-together always occurs at nearby restaurant If you need a map, see our WWW Glenside Homepage at:

http://members.aol.com/clubbbs/glenside
Bob Swoger, Webmaster
Glenside Color Computer Club, Inc.

FROM THE PRESIDENT'S DISK

Hello again folks.

Since the last CoCo~123 many of us in the COCO community were saddened to hear about the death of Carl Boll's wife June. She had been suffering for many months so she is probably in a much better place now. I personally have a great admiration for the care and love Carl has demonstrated over this time.

As president of the Glenside CoCo Club I've had to step down for three or four month because of a commitment to teaching at Prairie State College. Fortunately, Brian Goers, our most recent president, volunteered to fill in for me. Thank you Brian.

This issue of the newsletter has some very fine articles. I especially want to thank James Jones for his article "Recursion, Recursion Elimination and the Eight Queens Problem." Then enjoy reading about "Doctor Doctor" from Marty Goodman, a long time participant in the CoCo community. Also, from the Web we have comment by Kevin Muenzler "Why Did the CoCo Die?" and something about "Campfire Tales" For this edition I think Tony had done of putting the newsletter together. Thank you Tony.

To all members and readers feel free to respond to these articles by adding your ideas about the topics or your counter arguments. The more of us to do this will only make our community and newsletter better.

One more time: Remember the 11th "LAST" Glenside CoCoFEST! is May 4th and 5th, 2002 in Elgin. I hope to see many of you there.

Howard Luckey
President, Glenside Color Computer Club

The Secretary's Notebook
December 13, 2001

After packing the Volume 21, Number 3 newsletters for mailing, President Howard called the meeting to order at 7.56 PM at the Schaumburg Township District Library. Present were Howard Luckey, Scott Montgomery,

Amateur Radio Association Repeater WR9ABQ in Elgin, Illinois. John also happens to have many other hobbies as well as being a Jazz aficionado. John has a radio program every weekend on 90.9 FM - WDCB-FM in Glen Ellyn, Illinois, owned by the College of DuPage. John was driving out to Indiana from his home in Rockford Illinois to spend family time in Indiana when he asked Bob to listen to the special Jazz Christmas show he had spent many, many hours putting together scheduled for 6:30 PM that afternoon, December 22. Bob listened, but heard nothing. Seems that at about 3:30 that afternoon, 30 to 40 mph winds snapped an old guy wire on the 310 ft tower and brought the thing down right in the middle of Chuck Schaden's "Those Were The Days" old-time radio show. John had thought there was instead a power outage at the 5000 watt transmitter site and was really down knowing that all his hard work was not heard by its usual 120,000 listeners.

As John was driving home, he came very close to Bob's home. Tony had called to try to arrange picking up the newsletter we had stuffed at our last meeting. Knowing that John would be passing very close to N9YWH Tony Podraza's home in Carpentersville to get on the expressway back to Rockford, Bob asked John if he might carry the newsletters to Tony and make Tony's day. John accepted and said that it did uplift his spirits a bit to do a GOOD for someone after his day went so bad. That tower will not be replaced until late summer if the college can come up with the money.

The meeting adjourned at 8:28 p.m.

We retired to the Sante Restaurant just west of Roselle Road on Higgins Road to finish our first meeting of 2002.

Notes taken and typed by Bob Swoger

DOCTOR! DOCTOR!

Marty Goodman

RGB Pinouts for the CoCo

(Philippe Hennebert has asked the Doctor about CoCo 3 RGB compatible monitors, and pin outs. We join the consultation with the Doctor's answer...)

Phillipe, the pin out for the CoCo 3 video connector is as follows:

1,2	ground
3,4,5	r,g, and b luminance, respectively. These are analog, 0 - 1.0 volt level signals
6	not connected (key pin, missing)
7	line level audio
8,9	H and V sync. respectively TTL level. Positive (up-going) format.
10	DO NOT USE (hooked to a PIA pin, but NEVER used in any CoCo 3 video cable format)

Pin numbering on the CoCo video connector:

1 3 5 7 9
2 4 6 8 10

(Note this numbering scheme is VERY different from the numbering convention for DB connectors!!!)

As for RGB analog CoCo 3 compatible onitors, not even I have anything approaching a complete list. VERY few (if any) are still made. MOST analog RGB monitors made today are for VGA only, and WILL NOT sync down as low as 15.75 kHz for H sync. They only go to 31.5 kHz.

You need a monitor capable of accepting an RGB analog signal, AND able to sync at horizontal sync frequency of 15.75 kHz.

THAT is the basic definition of a CoCo 3 compatible RGB analog monitor. It's helpful if the monitor can accept separate, positive H and V sync, tho' if not it's easy to convert the sync signals using a single TTL logic chip.

The old original NEC Multisync is fully CoCo compatible, as is the Multisync Plus, Multisync 2, Multisync 2 Plus, AND (I am told) the Multisync 3. Subsequent models of Multisync no longer can sync down to 15.75 kHz, so can't be used with a CoCo 3.

The old Sony CDP 1302 and CDP 1304 monitors work fine with a CoCo 3 (tho you need to make a sync combiner, for they require combined negative sync). So does the old Sony CDP 1310, which I have two of here.

The Magnavox 8CM515 and the Magnavox 1CM135 also works well with a CoCo 3, and the Amiga 1084 works great with a CoCo 3, too, tho some models of 1084 require combined negative sync, while other earlier models (those with 6 pin DIN connectors for rgb analog video) don't need a sync combiner circuit. The Atari color monitor CAN be used with a CoCo 3 (I've got its pin out here) BUT you need to invert the H and invert the V sync coming out of the CoCo 3 before feeding them to the Atari ST monitor,

Recursion, Recursion Elimination, and the Eight Queens Problem

James Jones

In the February 1999 *the world of 68' micros*, Aaron Banerjee discussed recursive algorithms and ways to eliminate recursion. The recursively-defined Fibonacci sequence, for example, has a closed form version and an iterative version. In general, though, recursion elimination involves simulating the implicit call stack of the recursive program with an explicit stack. Hereunder we show the "eight queens" problem in recursive and nonrecursive versions using BASIC09 and we write a more efficient alternative version.

BASIC09, unlike Color BASIC, directly supports recursive procedures with local variables. (Indeed, within the language itself there is nothing but local variables.) We start with a top level procedure:

```
procedure main
        dim row, col, nsols: integer; board(8, 8): boolean
        for row := 1 to 8
                for col := 1 to 8
                        board(row, col) := false
                next col
        next row
        nsols := 0
        run queen8(1, board, nsols)
        print nsols; " solutions"
        end
```

The board array has the **boolean** type because we're not writing a general chess program. We only care that at any given position either there is a queen (**true**) or there is not a queen (**false**). The first parameter of the queen8 procedure is the column we are about to try to place a queen in, and we added a parameter to count the number of solutions found to help verify that we were on the right track. (Recall that parameters are passed by reference in BASIC09, and passing a parameter to be modified is the only way to get a result back.)

We turn queen8 somewhat inside out from the description quoted in Mr. Banerjee's article. Rather than checking on entry whether we're past the last column, we check after we've added a queen whether we're in the last column, in which case we've found a solution and should print the board and increment the solution count, or not, in which case we recur.

```
procedure queen8
        param col: integer; board(8, 8): boolean; nsols: integer
        dim row: integer; ok: boolean
        for row := 1 to 8
                run check(board, row, col, ok)
                if ok then
                        board(row, col) := true
                        if col = 8 then
                                nsols := nsols + 1
                                run show(board)
                        else
                                run queen8(col + 1, board)
                        endif
                        board(row, col) := false
                endif
        next row
        end
```

Now for the interesting part: the check procedure. The version in Mr. Banerjee's article iterates over each board position to the left of the column in which a queen is tentatively placed, looking for a square

```
            next col
            print
            if row < 8 then
                    print "-+-+-+-+-+-+-+-"
            endif
        next row
        print
        end
```

Now let's eliminate the recursion by rewriting the queen8 procedure so that it no longer calls itself. At any stage there is only one thing to remember, namely the row we were on; the column effectively is the stack pointer, so that we needn't explicitly save it. (In general, it would be necessary to explicitly save and restore the column number as Mr. Banerjee's code does; we're taking advantage of the special nature of the eight queens problem.) We presume we're still called with an initial column number of one; if we were really serious about hiding details of implementation from the caller, we'd not have made the caller set up and pass the board, so passing the starting column isn't that big a deal.

```
procedure queen8
        param col: integer; board(8, 8): boolean; nsols: integer
        dim row, rowstack(8): integer; ok: boolean
        row := 0
        loop
                while row < 8 do
                        row := row + 1
                        run check(board, row, col, ok)
                        if ok then
                                board(row, col) := true
                                if col = 8 then
                                        nsols := nsols + 1
                                        run show(board)
                                        board(row, col) := false
                                else
                                        rowstack(col) := row
                                        row := 0
                                        col := col + 1
                                endif
                        endif
                endwhile
                exitif col = 1 then endexit
                col := col - 1
                row := rowstack(col)
                board(row, col) := false
        endloop
        end
```

This is less clear than the recursive version, so some explanation is in order. The **while** loop looks for the first row we haven't looked at so far for which we can safely place a queen in that row and the current column. If there isn't one, then either the current column is the first column, in which case we're done, or it isn't, in which case it means that we should back up to the preceding column, remove the queen from its position in that column, and try positions further down in that column. If there is a safe position in the

```
        next diag
        t0 := date$
        nsols := 0
        run queen8(1, column, udiag, ddiag, nsols)
        t1 := date$
        print nsols;" solutions"
        print "start at "; t0; " end at "; t1
        end

procedure queen8
        param col, column(8): integer; udiag(15), ddiag(15): boolean; nsols: integer
        dim row: integer
        for row := 1 to 8
                if column(row) = 0 and udiag(row + col - 1) and ddiag(8 + row - col) then
                        column(row) := col
                        udiag(row + col - 1) := false
                        ddiag(8 + row - col) := false
                        if col = 8 then
                                nsols := nsols + 1
                                run show(board)
                        else
                                run queen8(col + 1, column, udiag, ddiag, nsols)
                        endif
                        column(row) := 0
                        udiag(row + col - 1) := true
                        ddiag(8 + row - col) := true
                endif
        next row
        end

procedure show
        param column(8): integer
        dim row, qpos: integer; rowstring: string[16]
        rowstring := " | | | | | | | "
        for row := 1 to 8
                qpos := 2 * column(row) - 1
                print left$(rowstring, qpos - 1); "Q"; right$(rowstring,15 - qpos)
                if row < 8 then
                        print "-+-+-+-+-+-+-+-"
                endif
        next row
        print
        end
```

This version runs on the MM/1b in twenty-four seconds. Allen Huffman was nice enough to try it out under the CoCo 3 emulator (using Tune-Up, giving an advantage over stock OS-9), and with sync lock turned on to make it run at CoCo 3 speed, it ran in about two and a half minutes; without sync lock it ran in twenty-eight seconds. I tried a nonrecursive version of the code, but on the MM/1b it only saved three seconds of run time. (Instrumenting queen8 shows only 1,965 calls to it including the one from main, which was less than I expected.) The moral of this part of the story: select your data structure to suit the job; the payoff can

HERE WE GO AGAIN!!! ARE YOU READY FOR THIS??? WILL IT NEVER END???

FLASH **** FLASH **** FLASH **** FLASH **** FLASH

Here are the 5 "W's"

WHO? 1) The Glenside Color Computer Club, Inc. presents
WHAT? 2) The ELEVENTH Annual "Last" Chicago CoCoFEST!!
WHEN? 3) May 4th & 5th, 2002 (Sat. 10am-5pm; Sun. 10am-4:30pm)
WHERE? 4) RAMADA INN of ELGIN
345 W. River Road (A city block from I-90 & IL-31)
Elgin, Illinois (Same great location as last year!)
Overnight single occupancy room rate: $65.00 (plus 10% tax)
There is a $10.00 surcharge for each additional person
(Example: 3 people = $85.00 per night; plus tax)
Call 1-847-695-5000 for reservations.
Be sure to ask for the "CoCoFEST!!" rate.

!!!!! THERE IS A LIMITED SUPPLY OF ROOMS BLOCKED OUT FOR THE FEST! !!!!!
!!!!! RESERVE YOUR ROOM EARLY -- THESE ROOMS WILL BE RELEASED FOR !!!!!
!!!!! REGULAR RESERVATIONS ON April 12, 2002 AND WILL NOT, !NOT! !!!!!
!!!!! BE AVAILABLE TO THE FEST! ATTENDEES !!!!!
>>>>> YOU MUST REGISTER UNDER "COCOFEST!!" TO GET THIS RATE <<<<<

WHY? 5) A. To provide vendor support to the CoCo Community
B. To provide Community support to the CoCo Vendors
C. To provide educational support to new users.
D. TO HAVE AN OUTRAGEOUSLY GOOD TIME!!!!!
(More about this at a later date)

And now, the "H" word.

HOW MUCH? 1) General Admission, ALL ATTENDEES: $5.00/day, $7.00 whole show
******* Children 10 and under - FREE *******

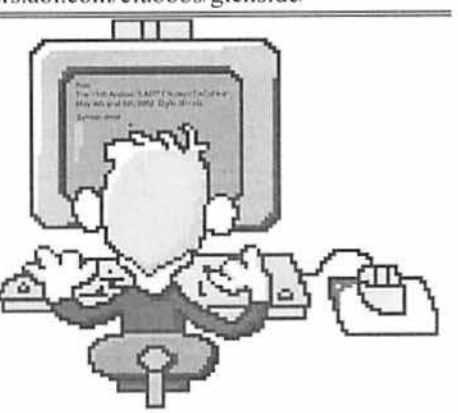
Advance ticket sales available between 1/12/2002 and 4/12/2002 from:
George Schneeweiss
13450 N 2700 E Road
Forrest, IL 61741
Include a Self-Addressed-STAMPED-Envelope (SASE)

For further information, general or exhibitor, contact:

Tony Podraza, Secretary, GCCCI
847-428-3576, VOICE
847-428-0436, BBS
tonypodraza@juno.com

Brian Goers, VP, Spcl Evnts, GCCCI
708-754-4921, VOICE
bgoers@ais.net

Be sure to visit GLENSIDE"S Website "http://members.aol.com/clubbbs/glenside/"



RGB-DOS

Price: $30 + $4.50 Shipping*

Now use your TC^3 SCSI Interface or Ken-Ton SCSI interface to access your SCSI hard drive under RS-DOS! Addresses up to 256 virtual RS-DOS drives, virtually 100% compatible with Disk BASIC. Comes with full documentation.

OS-9 Level One ROM Kit

Price: $10 + $4 Shipping*

This kit replace the internal ROM of the Color Computer 1/2 with an OS9 boot. This EPROM will then allow OS9 to but at power up to OS9 with no floppy or hard drive.

This flexibility gives you the potential to design and embed programs for dedicated applications using the OS-9 operating system.

OS-9 Level Two/NitrOS-9 ROM Kit Price: $10 + $4 Shipping*

This kit replace the internal ROM of the Color Computer 3 with an OS9 boot. This EPROM will then allow OS9 to but at power up to OS9 with no floppy or hard drive.

This flexibility gives you the potential to design and embed programs for dedicated applications using the OS-9 operating system.

ROM Kit Combo Package

Price: $16 + $4 Shipping*

Buy both the Level I and Level II/NitrOS-9 ROM kit and save $$. An additional $4 off separate pricing.

IDE Hard Drives – Various Sizes

Price: $5 + $5 Shipping*

Tested Drives! Your choice

SCSI Hard Drives 540MB and 1GB

Price: $20 + $5 Shipping*

Tested Drives! Your choice

26-3024 Multipak PALCoCo3 Upgrade

Price: $10 + $4 Shipping*

This kit allows Radio Shacks 26-3024 multi-pack to decode the CoCo3's IOmap properly. Without this modification the muli-pack and CoCo3's memory map overlaps and can cause corruption under certain conditions. No soldering is required.

CoCo Super Board

Price: $?? $100 Down payment

This board hasn't been defined yet but you can be assured that it will be the largest expansion card ever for the CoCo. I need to have a commitment of at least 30 orders. See www.isd.net/mmarlett/cloud9.html , follow Superboard link for details.

* All prices are in USD. Shipping is USPS in continental US. If you desire a different shipping method or live outside of the designated shipping area, I will quote additional shipping charges.

CAMPFIRE TALES

In the middle the Adirondaks, beside a trail and around a campfire on a snowy winter's eve, Ron Delvaux asked, "Dennis, tell us, will you, about Green Mountain Micro...?

Ron ...I actually gave quite a long talk at Glenside's CoCoFEST!! a few years ago.

Yes, it (the history of GMM) was depressing, and I'll only give a summary...

I started Green Mountain Micro in 1979 as a one-person consulting operation after two years of writing my 'updates' newsletter, which gave hardware/software mods for the TRS-80 (when there was just one!). Byte published a piece, and 80 Micro gave me a column in 1980, and within a few years I had written for many publications (also Kilobaud, The Color Computer Magazine, The Alternate Source, Programmer, Opinion-80, Software Critique, Desktop Computing, Dynamic Color News, The Rainbow...). Most of you met me through my columns, or my book, "The Custom TRS-80," which sold nearly 50,000 copies.

The columns, especially the hardware ones, generated a lot of interest from people wanting to build the projects, but unlikely to wire-wrap them! So I hired a few folks to help build these from circuit boards I designed. Finding quantities of parts for digital projects wasn't as easy back then as now (no Internet resources!), but I was on line (CompuServe, AT&T, Western Union, and various BBSs) and could get recommendations that way. We found a great circuit board house in California (R-Squared; don't know if they are still around) who could work from my Mylar originals (most of which have since fallen apart, as the adhesive dried out).

So eventually six of us, each paid $6.01 per hour, made up the company. The PC had been introduced ... but so had the Color Computer, by all standards a more interesting machine for projects -- my own focus. I had designed several dozen Model I projects (and manufactured none of those except a bus monitor board), and then for the CoCo another dozen or so. The Lowerkit (many versions as Tandy changed the internal geography) and Color Burner were the most popular, and we also had the CoCoPort and video adapter (I forget its name now). My most ambitious project was the Data Gatherer, a 12 bit A/D-D/A system that worked very well and ended up in some major power backup system manufactured in New York State.

We did a breakthrough piece with the 128K bubble memory upgrade. Unfortunately -- and it's kind of a funny story now -- when we called to place our order for bubble memory modules, we discovered the phone number disconnected. The salesmen had visited us on Friday. On Monday morning, Intel shut down the division. That had set us back a lot, both in terms of time and cost (those bubble memory boards were very expensive, and we had already had them manufactured!)

There was other stuff; I'm working from memory now, so I don't recall what else we made. We did some private work, including circuit design for a digital pen (a very tiny circuit board using then-new surface mount technology) and an interface card for a medical operation.

We also sold my software, including Quaver, the first and only complete and independent multi-voice wavetable synth for the CoCo that required no add-on hardware; of Quaver I was most proud. "Learning the 6809" was another huge project, taking months of preparation and editing, typesetting (pre-desktop-publishing) and design. "Learning the 6809" comes with many funny stories, not least of which were our graphics/layout team. They were friends from Long Island whom I hired for a week to come to Vermont. They arrived and our home was too cold upstairs (heated by wood and fed via floor vents). So I went out and bought a parlor stove. They had *no idea* what I was doing when I put down an asbestos pad, assembled the cast iron box, and hooked up some stovepipe. Then -- to their horror -- I lit a *fire in the house*! Yes indeed, they had never seen a woodstove before, and had no idea that generating heat was anything more than turning up a thermostat. In any case, it was toasty warm in minutes, they finished the layout by week's end, and they still tell the story with astonishment (as do I, but from a different perspective).

Back to Micro. As bread & butter, we also sold memory chips, CPUs, PIAs, and other stuff. We scraped along. By, I think, 1982, I actually could

about retail technology, and am in the odd part-time position as Executive Director of the Vermont Alliance of Independent Country Stores.

Most time-consuming and very rewarding is Kalvos & Damian's New MusicBazaar, a weekly radio show and website (audio dating from September 1995, in the infancy of online audio). We have won several awards, including ASCAP's Deems Taylor Award for Internet journalism. We were featured in theNew York Times last year for our September 11 Musical Gallery, eight hours of music composed around the world in response to those events. Last year, we presented an international FEST!ival of 37 concerts with over 100composers, all in sleepy little Montpelier, Vermont.

My own music continues very well. I just finished a flute concerto called "Mirrored Birds", which will be premiered in March. I was featured in a
seven-minute segment on the Travel Channel last year, touring the Bathory vampire castle in Cachtice, Slovakia, in advance of my yet-to-be-finished opera. And I'll be traveling as a featured guest to the First International Electronic Music FEST!ival in St. Petersburg, Russia, in July.

Other activities are found in my sig. Things are going well, and in a few years, I might even catch up with my debt.

So there's your story, Ron! Lots left out, but it's what I can remember on a Sunday morning two decades later!

Dennis Bathory-Kistz

Ought-One FEST!ival	http://ought-one.com/
Accessibility Reports	http://orbitaccess.com/
The Transitive Empire	http://maltedmedia.com/empire/
Malted/Media	http://maltedmedia.com/
Kalvos & Damian's New Music Bazaar	http://kalvos.org/
Music on MP3.com	http://www.mp3.com/bathory/
Erzsebet The Vampire Opera	http://bathory.org/
Downloadable Scores	http://maltedmedia.com/scores/
The Middle-Aged Hiker	http://maltedmedia.com/books/mah/

EOF

By Tony Podraza

If you don't write to help fill this thing up, I will, so beware my rantings.

"If you haven't been touched by love, you are, of all creation, most to be pitied." (I don't know where that came from...but I like it.)

I don't like loosing. Whether it be my memory (of all the things I miss the most....my mind), my material acquisitions (where did I put that?), or my friends and acquaintances. Some move long distances away, and I can still contact them. Others have had their interests change and they move into other circles. Others just "move on". I found out at a "gathering" of friends for Carl Boll, who was saying "good-bye" to his wife, June, that another spark had gone out of my life. A dear friend and fellow Glenside CoCo-naut, Len Zilinski, 84, left this present world on December 15, 2001. Six or eight years ago, while he and his wife were cruisin' Alaska, he was thoughtful enough to send me a post card. A small thing, but meaningful to me. You see, I was born in the 49th state, but left at 10 months of youth and have never been able to go back, yet. So the card is a touchstone to my beginnings. It's not the big things that endear people to you, but the small kindnesses. And when they leave...well, you know. I got hit with a double whammy, that night, at June Boll's farewell, but whoever said life would be easy? Thanks, Dave, for telling me. And thank you, reader, for your patience.

Check the address label on the envelope. December of the year in the top right corner is the end of your membership. You can renew your membership by following the directions on page two. Did I mention 11th Annual "Last" CoCoFEST!?

Remember, we can always use your articles, experiences, tips and trials. You can now submit material directly to "coco-123@juno.com".

Until next time, I bid you Peace

p.s. We were going to include some pictures of the Picque-Nicque that was held in September, But we'll hold off until the next issue, when we, in the Chicagoland, will NEED to be reminded of the beautiful warm day and the delicious food and fellowship at George Schneeweiss' rural antique shop and car museum. Well, not officially, you know, but the restored Plymouth Road Runners were a sight to behold..

tp