President's Printout

Well it sure has been a long while since we had a meeting at Jimmy Carter! Those long holiday breaks just seem to get me off stride. We did have a pretty good turn out and I expect a better turn out next month. I will try to rattle a few cages!

I just checked the 1996 calendar and it seems that the December meeting this year will fall on Christmas eve! I guess we had better plan on having the main meeting a week earlier so as not to lose another main meeting night. Someone remind us around October or November!!!

We have started receiving replies to our fest questionnaire and so far it looks like we are going to get some good suggestions.

Included in the replies we got were a few that said they were no longer interested in the CoCo, sad to say.

So far the one thing that seems to be everyones suggestion is ADVERTISE, ADVERTISE, ADVERTISE! One reply even suggested that go on the major TV networks for a month before the next Fest. I think we need a few more members before we can afford that.

I didn't mail questionnaires to club members because most of you are already giving us your suggestions, if you want to be heard, send your suggestions to the club mailbox.

Oh yes, let me apologize for not uploading an article for the last newsletter. That oversite could be blamed on the rush of holiday activities or whatever but I don't intend to let it happen again. In fact, part of the cage rattling I intend to do will be to get more articles in the

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newsletter.
That's all for now, see you next month!

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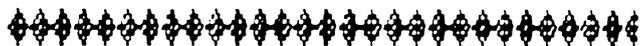
Just a note to let all the locals (Atlantans) know that Austin Electronics has moved into it's new quarters at 6050 Center Place, Norcross, Ga.
Their telephone number is (770)449-8697. Center Place is a Cul-de-Sac off of Live Oak Parkway, not far from Oakbrook Parkway. The building is brand new, they moved the first week in January, and they now have almost twice the floor space of the old store and have a larger warehouse too. I just came back from buying all the parts I need for my part of the club project. Now to get to work! See you all at the next meeting.

<div align="right">Al Dages</div>
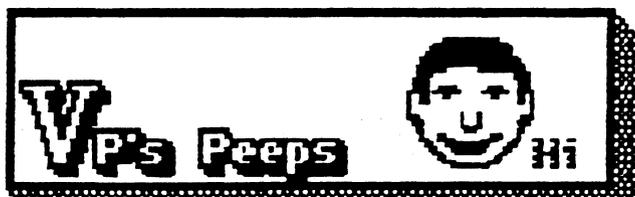
MACHINE LANGUAGE
JOYSTICK ROUTINE
by
Carl England

Following is a routine that will read a joystick and return the value to BASIC.
Lines 110 thru 130 turn off the sound

output. Without this the joystick routine may make strange noises on your monitor.
Lines 140 thru 190 select the joystick port. The port selected is Port 0. That is the horizontal movement of the right joystick. To select Port 1, add this line:

00155   ORA   #8

To select Port 2, add this line:

00185   ORA   #8

To select Port 3, add both lines. Lines 110 thru 190 are only necessary to initialize the joystick port; it is not necessary to call this routine every time you need to get a joystick value. After the A/D ports has been initialized, you only need to call the main routine starting at line 200.

Because the Analog to Digital converter in the CoCo uses only the six most significant bits of address $FF20, its value is a number between 0 and 252 in increments of 4. These values represent a voltage level between 0 and 5 volts.
Because the A/D converter doesn't actually return its value as a number, we have to play "Guess the Number." If we pass a value of 128 (2.5 volts) to address $FF20, the minus bit of $FF00 will either be set or cleared according to whether the input is higher or lower than 128. We could just try all the values between 0 and 255 (0, 4, 8, 16,

20......252), or we can use a technique called "Successive Approximation". With this method, you will be guessing a number between 0 and 252. One half of this is approximately 128, so we guess 128. The computer will tell us if the number is higher or lower. Using this information we guess a number that is half way between our guess and the upper or lower limit. We continue halving the numbers until we arrive at the correct answer. Since the CoCo's Analog to Digital converter only has a six bits, we only have to make six guesses to correctly determine the voltage level. But, because bit 1 of address FF20 is used as an output for the serial port, it is best to turn it on to prevent the printer from running while reading the joystick port. So instead of using 128 as our initial value, we will use 130.

You will probably notice that lines 270, 340, 410, 480, 550, 600, 610 and 620 appear to have unnecessary branch instructions. These were added to insure that values for the port will all take exactly the same amount of time to determine. This is very important if you are timing events while reading the port. If you want the fastest possible reading and aren't concerned that some values will take longer than others, you can leave out these lines. Because the calculation is done in the upper six bits and we want the actual values to be between 0 and 63 we will shift the bits to the right in

lines 630 and 640. And last we will store it where we can access it from BASIC in Line 650. This address is the address that normally returns the value of Joystick 0.

You may have noticed that the calculations in lines 590 and 610 don't follow the normal pattern. This was done to eliminate the bit that was set to prevent printer output.

```
00100           ORG     $E00
00110 JOYINT LDA     $FF23       *TURN OFF SOUND OUTPUT
00120           ANDA    #$F7
00130           STA     $FF23
00140           LDA     $FF01       *SELECT JOYSTICK PORT
00150           ANDA    #$F7        *2 BIT NUMBER
00160           STA     $FF01       *TO SET, OR WITH #8
00170           LDA     $FF03       *BEFORE STORING
00180           ANDA    #$F7
00190           STA     $FF03
00200 JOYIN  LDB     #130        *128 (PLUS 2 TO TRUN OFF PRINTER)
00210           STB     $FF20       *SEND TO D/A CONVERTER
00220           LDA     $FF00       *HIGHER OR LOWER THAN 2.5 VOLTS?
00230           BMI     OVR128
00240           SUBB    #64
00250           BRA     TRY2
00260 OVR128 ADDB    #64
00270           BRA     TRY2             00480           BRA     TRY5
00280 TRY2   STB     $FF20            00490 TRY5   STB     $FF20
00290           LDA     $FF00            00500           LDA     $FF00
00300           BMI     OVR64            00510           BMI     OVR8
00310           SUBB    #32              00520           SUBB    #4
00320           BRA     TRY3             00530           BRA     TRY6
00330 OVR64  ADDB    #32              00540 OVR8   ADDB    #4
00340           BRA     TRY3             00550           BRA     TRY6
00350 TRY3   STB     $FF20            00560 TRY6   STB     $FF20
00360           LDA     $FF00            00570           LDA     $FF00
00370           BMI     OVR32            00580           BMI     OVR4
00380           SUBB    #16              00590           SUBB    #4
00390           BRA     TRY4             00600           BRA     DONE
00400 OVR32  ADDB    #16              00610           ADDB    #0
00410           BRA     TRY4             00620           BRA     DONE
00420 TRY4   STB     $FF20            00630 DONE   LSRB
00430           LDA     $FF00            00640           LSRB
00440           BMI     OVR16            00650           STB     $15A
00450           SUBB    #8               00660           RTS
00460           BRA     TRY5             00670           END     JOYINT
00470 OVR16  ADDB    #8
```

Secretary's Soundoff
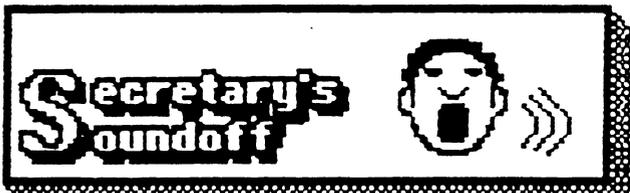
The general meeting for January was called to order by Al Dages at 7:10. The first order of business was old business. The first item brought up by Al was the mailing of the vendor comment letters. Only about 10 - 12 had been sent back so far with replies, and 4 sent back with wrong addresses. The ones sent to Canada were returned due to lack of zip code. The main thrust of the responses received so far was that we need to advertise. Advertise, Advertise, ADVERTISE!!! Not enough people know about it soon enough. (These letters were sent to vendors and attendees)

The second order of business was the proposal for a new bank account which would afford us some interest with our account. Al had checked with First Union and had arranged for an interest bearing account, but not all the officers were there to sign the deposit cards. First Union had sent a letter saying we were $10.00 overdrawn on the new account when we had not finished setting up the account.

Next was the New Business and the first item there was the club project. Terry Dodson had suggested a club project of "connecting the CoCo to the world." Discussion was

brought up concerning the individual parts of the project, as well as the overall effect of the project. Discussion continued until there was a motion to adjourn.

The motion to adjourn was made by R.C. Smith at 7:56.

That is the minutes of the meeting. Now I'm going to soundoff a little. Terry has made an effort to get everyone in the club involved in a project. The idea is to keep the club going and induce a little commraderie. We have way too much apathy in this club. Some are willing to let the others do the work while they sit back and don't help. This idea is to try to get others involved. Terry brought in several articles from Rainbow(tm) Magazine. As far as they go it is a great start. I asked at the meeting what was going to be the final usage of the project, and will admit I wasn't satisfied about the answer. To do these projects just for the sake of doing them is not going to get even MY interest up. I propose that those of you (or us as the case may be) who want this project to have more meaning, do what you (or we) do best, sit back and think about it. But think with a purpose. We need a way to unite these projects to make one whole project. For example we could take readings from 4 areas around Atlanta for 1 month and have a data base showing weather conditions. Or several other comprehensive ideas could come about. But even those of you who are

not all that active in the club can
help by submitting ideas for a use of
these projects after they are built.
NOW GET BUSY!!!!!!!!!!!!!!!!!!!

'Til Later

Editor's Echo — ACS
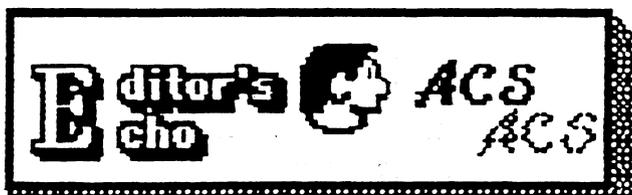
Howdy folks.
Looks like we have the full mix
this month.

It never ceases to amaze me,
technology. I mean, I work for a
major military aircraft contractor
and one of my jobs is to stuff the
computer into a carrier based plane.

Its a full eight hour job and helps
to keep you physically fit. This
computer tracks multiple targets and
is operated by 3 aircrewmen. 1970's
technology.

It seems to me that they could
replace that mastodon with a Coco
that, say, slips under the pilot's seat.
This way they could have another
crew member or even maybe a wet
bar. 1980's technology.

If it were 90's tech, they could just
get the CD-Rom version and not have
to leave the deck.

Library Lookout
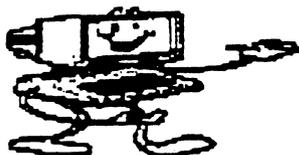
Drawing Anyone?
by Terry Dodson

MAX9---*by* Kevin Darling

If you are into creating your own
artwork try this simple OS-9
drawing program, " MAX9.AR ". You
can find it on the Atlanta Computer
Society's -- bulliten board
(770) 636-2991 8-N-1 , under Area 20 -
OS-9 Misc. Files.

To begin readying your CoCo
system for using MAX9 you must use
OS-9 Level II. To start by hand you
should have a graphics window in
which MAX9 can be brought to life.
Here are a few simple ways to
define a graphics window ----
 Here is one Kevin Darling used
called G40
    display 1b24 1b20 8 0 0 28 18 2 0 1
         1b21 </1
Then type " MAX9 " to begin,
   Another graphics window that
works is called GRW2.
GRW2 lists this way:

    * This is a graphics window
    iniz w2
    merge stdfonts >/w2
    merge stdptrs >/w2
    merge stdpats_2 >/w2
    merge stdpats_4 >/w2

```
merge stdpats_16 >/w2
display 1b 20 8 0 0 28 18 2 0 1
>/w2
shell i=/w2&
echo A 16 color graphics window
echo has been created just for
you.
echo Hit CLEAR 'til you see this
window.
echo Enjoy yourself.
```

You will need the Right Hi Res mouse/joystick.

These are only examples to show you what type of environment MAX9 must operate in.

Now type MAX9 and the first things you see on startup are the Colors and Tools menus.

By pressing the SPACE bar on the CoCo you will be able to jump from colors to tools to your drawing screen. Nice isn't it !!!

As you will soon see the Hi Res Mouse works very well , and you can select any color shown just by scrolling up or down and clicking the left button. Hit SPACE once again and you will be able to select your tool in the same way you selected your color.

What is a nice feature is that once in a menu you can select keyboard characters or mouse to choose your option and you don't have to be in the menu area to choose, once you memorize the keyboard equivalent. This speeds things up quite a bit as you don't have to move the mouse left/ right , just up or down. To get back to the

menu just double-click within .4 sec, or hit the SPACEBAR, or use the second mouse button if you have it.

That's as much as I'm going to tell you for now except that I've placed an InterNet message to Kevin Darling, requesting his help in completeing this little gem of a program. There are no screen dumps or printer drivers included in this program, so it is limited as you will read in the accompanying documentation with this file.

Call The Atlanta Computer Society's BBS and get this program and let us know how you like it.

That's all for now for this month's review.

See you next month. Till then.....
Enjoy Drawing, with MAX9.
　　　　　.Terry Dodson
　　　　　　　=8-)+

Watch Out !!!!
By Terry Dodson

This month has been especially busy for me as I've had to replace the two five volt (5 v.) voltage regulators on my CoCo. Well I didn't do it, but a good friend, Al Dages, did. I was just doodling away at "CoCoMax III", drawing a picture for the ACS NewsLetter, when all of a sudden my screen went black. I sighed and just knew that my CM-8,

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monitor had bit the dust. I called Al and described to him what had happened and after running me through several home test procedures, he determined that my CoCo power source had died instead.

I was even more sad when I heard this, because I would have to buy another CoCo 3 , and give up my old dependable pal. Well, I ended up buying an American made CoCo from Al and leaving my old pal with him to see if anything could be done for it. I expected to have to scrap that CoCo but Al called the next day and said that my old pal had sprung back to life after only minor surgery. Al told me that after diligently testing the circuit board, the five volt power regulators went out, thus no 5 volt power to anything. He told me that the CoCo RUNS on 5 volts.

This is lesson I have learned well, and am GLADLY passing this information along to YOU, the readers, so you may benefit someday too.

Home Test Procedures:

Condition: Blank/black screen....no screen messages or prompts at all.... no opening ROM mesages or prompts.
Test: Check/press RESET listen for relay clicking/noise/activity
Test: Remove MPI from CoCo and turn on CoCo and check for ROM message/version etc.--
Test: Plug in only disk drive and controller to see if any disk ROM prompt/message/version appears
Test: With all else disconnected

from CoCo--except monitor....press CoCo power button on/off several times and listen for relay activity and listen for monitor relay to power up

These things may help you to rule out many of the trouble spots before worrying about the worst problems that could happen.

Enjoy Your CoCo
Terry Dodson
*8-)+

To further expand the club's program we need to add provisions for printing the results if we want to. I have included parts of the existing program to show how/where the new lines are added under LINE 10, 400 and 450. Also lines 600+ are to be added. This program CAN BE TESTED using your joysticks. I encourage each of you to get the program running and then make modifications to fit your individual needs/program.

Regards R. C.

```
10 PRINT
LOOP
RUN gfx2("clear")
PRINT \ PRINT
PRINT "      1    Joystk 0          2    Joystk 1"
PRINT
PRINT "      3    2 nd Bank         4    Quit"
PRINT
PRINT "      5    Print Out (y)     6     Print Out (n)"
GOSUB 310
EXITIF selection=4 THEN RUN gfx2("clear")
ENDEXIT
IF selection=1 THEN GOTO 100 \ ELSE  \ ENDIF
IF selection=2 THEN GOTO 200 \ ELSE  \ ENDIF
IF selection=3 THEN GOTO 500 \ ELSE  \ ENDIF
IF selection=5 THEN GOSUB 600 \ ELSE  \ ENDIF
IF selection=6 THEN lp$="n" \ ELSE  \ ENDIF
ENDLOOP
END


400 PRINT  \ PRINT
IF lp$="y" THEN 610
PRINT "     Date:"; LEFT$(DATE$,8); "    Time:"; RIGHT$(DATE$,8)


450 PRINT  \ PRINT
IF lp$="y" THEN 620
PRINT "     Date:"; LEFT$(DATE$,8); "    Time:"; RIGHT$(DATE$,8)


600 PRINT
DIM print_path:BYTE
DIM name:STRING[2]
name:="/p"
RUN gfx2("clear")
PRINT \ PRINT
lp$="y"
RETURN
610 PRINT
PRINT \ PRINT
```